Dear Annual Meeting Attendee:

The American Geriatrics Society Annual Scientific Meeting is the premier educational event in geriatrics, providing the latest information on clinical geriatrics, research on aging, and innovative models of care delivery. The 2015 Annual Meeting will address the professional and educational needs of geriatrics professionals from all disciplines through state-of-the-art educational sessions and research presentations.

This supplement of the *Journal of the American Geriatrics Society* is devoted to abstracts of the scientific presentations that are scheduled for the 2015 AGS Annual Scientific Meeting. We are hopeful that this supplement will be helpful to those of you who are planning to attend the meeting so as to maximize your attendance at educational, research, and clinical presentations of interest to you.

We are also pleased to provide these abstracts to subscribers of the Journal. We believe that they are an important way of keeping JAGS readers up-to-date on the latest advances in the field.

Sincerely,

Matthew K. McNabney, MD
Wayne C. McCormick, MD, MPH
2015 AGS Annual Meeting Program Chair
AGS President
FRIDAY, MAY 15, 2015

10:00 AM – 11:00 PM
PLENARY PAPER SESSION

P1 - Implementing Dementia Care Management in a Medicare Managed Care Plan: A Randomized Controlled Trial
Joshua Chodosh, MD, MSHS

P2 - The Effect of Physical Activity on Mobility Disability in Obese, Abdominally Obese and Non-Obese Older Adults: The Lifestyle Interventions and Independence for Elders
Stephen Kritchevsky, PhD

P3 - Upregulation of Skeletal Muscle Atrophy Markers in Young and Aged Mice during Influenza Infection
Sarah J. Pan, BS

12:00 – 1:00 PM
POSTER SESSION A: Abstracts A1 – A207

1:00 – 2:30 PM
AGING: USING TECHNOLOGY TO PROMOTE BEST PRACTICE PAPER SESSION

P4 - Using Preceptor and Peer Ratings to Evaluate Geriatric Interprofessional Virtual Teams
Peter Boling, MD

P5 - High-Intensity Telemedicine Decreases Emergency Department Use by Senior Living Community Residents
Manish N. Shah, MD, MPH

P6 - Facebook as a Resource for Informal Caregivers of Dementia Patients
Sara E. Noble, MA

P7 - Using a Virtual Case System to Assess the Geriatric Competency of Students
Sarah Hobgood

P8 - Photographing Geriatric Injuries: Development and Evaluation of a Standardized Protocol for Research, Forensics, and Clinical Practice
Elizabeth M. Bloemen, MPH
P9 - Is Adopting Electronic Medical Records Associated with Increased Influenza Vaccination Rates in Nursing Homes?
Ning Zhang

2:45 – 4:15 PM
GERIATRIC EDUCATION PAPER SESSION

P10 - Do US Medical Graduates know how to use screens for Cognitive Disorders and Falls?
Christine Chang, MD

P11 - The Practice Improvement in Education (PIE) Project: Patient Outcomes Related to Education on Depression in Nursing Homes
Sung Eun Jang, MD

P12 - Talking about “Burden” in the Clinic: Caring for Older Patients with Multimorbidity
Stephanie W. Zuo

P13 - Core Competencies in Geriatric Dentistry Fellowship Programs: A Delphi Study
Christie M. Hogue, DDS

P14 - Falls Prevention Education: Interprofessional Training to Enhance Collaborative Practice
Elizabeth Eckstrom, MD, MPH

P15 - Tough Conversations: Training Medical Students to Lead Family Meetings
Yuya Hagiwara, MD

4:30 – 6:00 PM
PRESIDENTIAL POSTER SESSION B: Abstracts B1 – B193

SATURDAY, MAY 16, 2015

7:30 – 9:00 AM
EPIDEMIOLOGY PAPER SESSION

P16 - Incidence and Determinants of Fall-Related Major Bleeding among Older Adults with Atrial Fibrillation
John A. Dodson, MD, MPH

P17 - Concordance among Anticholinergic Burden Scales
Jennifer G. Naples, PharmD, BCPS

P18 - Toward a Rational Combined Hip Fracture Endpoint
Cathleen S. Colon-Emeric, MD, MHS

P19 - Beta Blocker Use among United States Nursing Home Residents After Myocardial Infarction: A National Study
Andrew R. Zullo, PharmD

P20 - Impact of Midlife Cardiovascular Risk Factors on Late Life Physical Function: The Atherosclerosis Risk in Communities Study
Kimystian Harrison, MS

P21 - Performance of the Gail Model among Women Aged 75 and Older.
Mara A. Schonberg, MD

12:00 – 1:00 PM
POSTER SESSION C: Abstracts C1 – C217

12:30 – 2:00 PM
HEALTH SERVICES & POLICY RESEARCH PAPER SESSION

P22 - Net Harm of Overly-Aggressive Blood Pressure (BP) Control on Cardiovascular (CV) and Fall Injury Events in Older Americans
Lillian Min, MD

P23 - Older Adults with Multimorbidity and Risk of Preventable Hospitalizations Associated with Specialty of Ambulatory Provider
Julie Bynum, MD, MPH

P24 - Influence of Ownership Status on Infection Prevention Program Resources Between For-Profit and Not-For-Profit Nursing Homes: A National Study
Lona Mody, MD

P25 - Validation of the Family Inpatient Communication Survey
Alexia M. Torke, MD, MS

P26 - Health Characteristics Associated with Switching into Medicare Managed Care
Allen K. Tong, MD, MPH

P27 - The Cost of Delirium in the Intensive Care Unit: Considering Intensity and Mortality
Eduard Vasilevskis, MD, MPH

2:15 – 3:45 PM
COMORBIDITY AND COMPLEXITY PAPER SESSION

P28 - Impact of Comorbidity Dyads on Heart Failure Treatment in Older Persons
Jerry H. Gurwitz, MD

P29 - Hospitalizations of Uncertain Benefit: Approaches in Nursing Homes with High and Low Hospitalization Rates
Andrew B. Cohen, MD, PhD

P30 - Parkinsonism Motor Findings in the UCSF HIV over 60 cohort
Eric K. Lau, BA

P31 - Medical Burden of Suspected Infections in Advanced Dementia
Elizabeth F. Yates, BS
P32 - The Course of Functional Impairment in Older Homeless Adults
Theora Cimino, BS

P33 - Relationship of Anticholinergic Burden to Depression, Activity Engagement, and Quality of Life in Older African-Americans
Anita R. Modi

3:15 – 4:15 PM
POSTER SESSION D (Students & Residents): Abstracts D1 – D137

SUNDAY, MAY 17, 2015

10:45 AM – 12:15 PM
BODY COMPOSITION AND AGING PAPER SESSION

P34 - Normal Weight-Central Obesity Is Associated with the Highest Mortality Risk in Older Adults with Coronary Artery Disease
Saurabh Sharma, MD

P35 - Proteomic Characterization of Caloric Restriction and Rapamycin's Effect on Protein Aggregation in the Aging Liver
Yuxin Liu, BS

P36 - Trunk Lean Mass & its Association with 3 Measures of Kyphosis in Older Community Dwelling Persons
Justin K. Yamamoto, BS

P37 - Dichloroacetate and gei-8 RNAi Augment Mitochondrial Activity during Muscle Aging in C. elegans
Alex S. Jepsen, BS

P38 - The Long-Term Effects of Intentional Weight Loss on Body Composition and Physical Function in Older Adults: A Pilot Study
Denise K. Houston, PhD, RD

P39 - The Prevalence of Frailty, Sarcopenia, and Cognitive Dysfunction in Older Persons with Diabetes Mellitus
Anthony P. Liccini, BS

12:30 – 2:00 PM
NEUROSCIENCES: A BASIC UNDERSTANDING OF DEMENTIA PAPER SESSION

P40 - A Key Role of TOR in Cognitive and Vascular Aging
James M. Cuvillier, MS

P41 - Dysphagia, Not Excessive Salivation, Causes Drooling in Parkinson's Disease
June Sadowsky, DDS
P42 - Nasal Administration of Lactate Inhibits Feeding and Enhances Memory Processing in CD-1 Mice
Rikki M. Koehler, BS

P43 - Ketogenic Diet Reduces Epileptiform Activity and Improves Cognitive Performance in a Mouse Model of Alzheimer’s Disease
John C. Newman, MD, PhD

P44 - Impact of Losartan on Alzheimer’s Disease Neuropathology: Role for Chronic Inflammation
Sri Ramya Vajapeyajula, BS

P45 - Executive Function, Gait Function, and Cerebral Glucose Metabolism in Healthy Older Women
Ryota Sakurai
P1
Implementing Dementia Care Management in a Medicare Managed Care Plan: A Randomized Controlled Trial

J. Chodosh,1,4,1 K. Connor,3 S. Vassar,2 M. Pearson,1 M. Lee,3 B. Mittman,1,4 D. Ganz,6,4 B. Vickrey,4,1 1. RAND Health, Santa Monica, CA; 2. UCLA, Los Angeles, CA; 3. VA GLAHS, Los Angeles, CA; 4. VA GLAHS, UCLA, Los Angeles, CA.

Supported By: The SCAN Foundation

Objectives: To implement an evidence-based dementia care management (DCM) program in a Medicare managed care plan and evaluate the program’s effectiveness and costs.

Methods: The health plan randomized 248 primary care physicians (PCPs) from 7 participating medical groups to intervention or usual care. Patient-caregiver dyads that agreed to participate were attributed to their PCP’s randomly assigned group. Care managers (social workers specially trained in evidence-based dementia care) provided telephonic assessment and care management. Using care manager surveys (9 and 18 months) and medical records, we estimated between-group differences on measures of recommended dementia care within areas of 1) assessment, 2) treatment, 3) safety, and 4) education and support. We compared caregiver satisfaction, burden, social support, self-efficacy, and healthcare utilization costs and conducted a formative evaluation utilizing stakeholder interviews to assess implementation fidelity.

Results: 242 and 256 patient-caregiver dyads were enrolled in the intervention (DCM) and usual care groups, respectively. Care quality improved significantly across all areas for both DCM and usual care; the DCM group demonstrated greater improvement compared to usual care in a few areas. Based on 100 point scales, post-intervention healthcare satisfaction was 89.6 (SD = 14.9), 3.3 points higher for DCM caregivers (p = 0.061). Caregiver self-efficacy was 5.6 points higher (p = 0.046). Caregiver perceived burden and sense of social support did not differ between groups. Any nursing home use during the intervention period was 17.5% in usual care compared to 7.6% in the DCM arm (p = 0.042); overall healthcare costs were no different between groups. Stakeholder interviews revealed considerable sharing of dementia care management strategies between specially-trained dementia care managers for the DCM arm and other health plan care managers who were available to usual care arm providers.

Discussion: Dementia care quality improved across both groups with few significant between-group differences in other outcomes. Unintentional spread of DCM approaches suggests their perceived usefulness by care managers as well as a possible role in overall improved healthcare quality. This may also account for a lack of between-group differences warranting further assessment.

P2
The Effect of Physical Activity on Mobility Disability in Obese, Abdominally Obese and Non-Obese Older Adults: The Lifestyle Interventions and Independence for Elders (LIFE) Study


Supported By: The LIFE Study was supported primarily by NIH/NIA Cooperative Agreement U01 AG22376 and NHLBI supplement U01AG022376.

Background: Obesity is common in older adults and contributes to mobility disability. Previous studies suggest that the benefits of exercise on mobility are blunted in obese older adults. We sought to clarify the issue in the LIFE Study.

Methods: LIFE randomized 1,635 sedentary men and women aged 70-89 years at high risk for mobility disability to either a moderate-intensity physical activity (PA) program or a health education program. Major mobility disability (the inability to walk 400 m) was ascertained every 6 months over an average of 2.6 years of follow-up. Using body mass index (BMI) and waist circumference (WC), participants were divided into groups: 1) non-obese (18.5 kg/m² ≤ BMI < 30 kg/m²) - non-abdominally obese; 2) non-obese - abdominally obese (WC ≥ 102 cm [men], > 88 cm [women]); 3) class 1 obesity (30 kg/m² ≤ BMI < 35 kg/m²); and 4) class II obesity (BMI ≥ 35 kg/m²). We excluded 22 participants who were underweight or missing data. Cox proportional hazards models stratified by sex and clinic were used to compare the two interventions within obesity type and test an obesity type by intervention interaction.

Results: At randomization obese participants regardless of type were: younger, walked slower, and were more likely to be women and have diabetes. Intervention adherence was similar across groups. The PA intervention had the largest relative benefit in participants with class II obesity (Table). However, there was no significant difference in benefit across obesity groups (p-interaction = 0.45).

Conclusion: A regular physical activity program prevented mobility disability even in extremely obese older adults.

Hazard Ratio of Major Mobility Disability Associated with Randomization to Physical Activity by Baseline Obesity Category

<table>
<thead>
<tr>
<th>Obesity Category</th>
<th>Non-Obese, Normal WC</th>
<th>Events (%)</th>
<th>Hazard Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Obese, Normal WC</td>
<td>417</td>
<td>15 (3.6%)</td>
<td>0.85 (0.65, 1.12)</td>
</tr>
<tr>
<td>Non-Obese, High WC</td>
<td>434</td>
<td>38 (8.8%)</td>
<td>0.85 (0.61, 1.20)</td>
</tr>
<tr>
<td>Class I Obese</td>
<td>450</td>
<td>14 (3.1%)</td>
<td>0.91 (0.64, 1.28)</td>
</tr>
<tr>
<td>Class II Obese</td>
<td>212</td>
<td>28 (13.2%)</td>
<td>0.68 (0.48, 0.96)</td>
</tr>
</tbody>
</table>

P3
Upregulation of skeletal muscle atrophy markers in young and aged mice during influenza infection

S. Pan, L. Haynes, G. A. Kuchel. University of Connecticut School of Medicine, Farmington, CT.

Supported By: NIH P01 AG021600

Sarcopenia is prevalent with aging, as are declines in muscle mass and quality following common homeostatic challenges. Older adults are at greater risk of influenza infection, hospitalization, weight loss and subsequent disability yet underlying mechanisms leading to disability remain unclear. Ubiquitin E3 ligases atrogin-1 and MuRF-1 are atrogens, key effectors of protein degradation in inflammation-associated muscle loss; dysregulation may be mediated by proinflammatory cytokines IL-6 and TNFα. We hypothesized that influenza infection induces greater upregulation of atrogens in aged than in young mice, and that this contributes to enhanced weight loss and overall vulnerability observed with aging.

Young (11 w.) and aged (17 m.) C57BL/6 male mice were infected with a sublethal dose of live influenza virus and sacrificed 7 or
14 days later. Tibialis anterior (TA) and gastrocnemius (GA) muscle RNA was extracted. Atrogin-1, MuRF-1, IL-6 receptor α, and TNFR 1b mRNA levels were determined by RT-qPCR.

Influenza infection induced significant weight loss by day 7 in young and aged mice. Over days 9-14, aged mice were significantly slower to regain weight. Young mice returned to baseline weight on day 11 while aged mice had not reached it by day 14. In GA muscle of non-infected mice, expression of atrogin-1 was higher in aged. At day 7, atrogin-1 and MuRF-1 were increased in both infected groups. Similar changes were observed in TA muscle. IL-6Ra expression was increased at day 7 and decreased at day 14 in both young and aged infected mice. There were no significant changes in TNFR expression. Importantly, expression of atrogin-1, MuRF-1, and IL-6Ra at day 7 correlated positively with percent weight loss, and this correlation was strongest in the aged groups.

Influenza infection induced expression of atrogenes and IL-6Ra in young and aged skeletal muscle and prolonged weight loss in aged mice. The strong correlation between weight loss and atrogin-1, MuRF-1 and IL-6Ra expression in the aged group indicates that their expression during influenza infection is associated with and may contribute to muscle atrophy, weight loss, and disability in old age. Further studies will be required to elucidate mechanisms of this aging-related vulnerability in order to devise novel interventions for sarcopenia and frailty.

Paper Session
I AGING: USING TECHNOLOGY TO PROMOTE BEST PRACTICE

Friday, May 15
1:00 pm – 2:30 pm

P4
Using Preceptor and Peer Ratings to Evaluate Geriatric Interprofessional Virtual Teams
P. Boling, A. Dow, K. Lockeman, S. Johnson, A. Conlon. Virginia Commonwealth University, Richmond, VA.
Supported By: Donald W. Reynolds Foundation

Background: Our previously described web-based case system is used to teach and evaluate individual and interprofessional team performance by senior professional students as they solve a complex geriatric virtual case that unfolds over 4 units. Students share clinical data in a virtual EHR, make multiple-answer choices to questions individually, collaborate on the case system message board, and answer the same questions as a group. Each team’s preceptor rates each student on overall contribution to group effort at the end of each unit. Each student also anonymously rates team members’ contributions after each unit. We analyzed peer and preceptor ratings for individual data in a virtual EHR, make multiple-answer choices to questions in-

Methods: For a 12-week period in 2014, 295 students from medicine (98), nursing (84), pharmacy (63), and social work (50) were assigned to 50 interprofessional teams. Preceptors assessed individual contribution to team effort on a scale of 0-3 for each case unit which summed for a cumulative preceptor score (0-12). Students also assessed each teammate (peer) on a scale of 1-10. Peer scores were summed for each case unit and divided by the number of peer raters to create an average unit peer rating (0-10). Mean peer ratings for the 4 units were summed for a total peer score.

Results: Cumulative peer ratings for students correlated highly with cumulative preceptor ratings (r=0.60, p < .001). ANOVA results revealed significant differences by student profession in mean preceptor ratings (p < .001). Nursing (Mean=9.2, SD=1.6) and social work students (M=9.7, SD=1.7) were similar to each other, and rated higher than medicine (M=7.9, SD=2.0) and pharmacy students (M=8.2, SD=1.7), who were similar to each other. There were also significant differences in peer ratings. Again, nursing (M=49.6, SD=4.9) and social work (M=49.4, SD=4.7) students had similar higher ratings than medical (M=43.0, SD=7.9) and pharmacy (M=45.7, SD=5.5) students. Among peers, ratings for pharmacy students were significantly higher than medical students.

Conclusions: The strong correlation of preceptor and peer ratings of teamwork performance provides evidence for the validity of virtual peer assessment as an evaluation tool. The variation in contribution scores by discipline, which was consistent regardless of rater, should be explored further to understand why medicine and pharmacy students receive lower ratings.

P5
High-Intensity Telemedicine Decreases Emergency Department Use By Senior Living Community Residents
Supported By: AHRQ (R01 HS18047)

Background: Providing timely acute illness care to older adults is challenging due to access barriers, including transportation and appointment availability. Challenges lead to delayed care or emergency department (ED) use. Our objective was to evaluate the effect of a high-intensity telemedicine program, which provides acute illness care for senior living community (SLC) residents, on the rate of ED use.

Methods: We performed a prospective cohort study in which we enrolled subjects from a primary care geriatrics practice that provides care to 22 SLCs. Consenting residents at six SLCs comprised the intervention group, which had access to patient-to-provider, real-time or store-and-forward high-intensity telemedicine services for acute illness care. Non-consenting residents and residents at non-participating facilities comprised the control group. We compared the ED use rates between these two groups using generalized estimating equations, controlling for patient and facility characteristics.

Results: 70.1% of the patients we approached agreed to be intervention subjects. Our analysis included 479 intervention subjects and 1058 control subjects. Among all 1537 subjects, the median age was 85, 71% were female, 48% had a diagnosis of dementia, and 63% specified that they wanted limited life prolonging treatments. Among intervention subjects, ED use decreased at an annualized rate of 18% (RR: 0.82, 95% CI: 0.70 - 0.95), whereas in the control group there was no statistically significant change in ED use over time (RR: 1.01, 95% CI: 0.95 – 1.07). The interaction effect between group and time was statistically significant (p<0.01). Primary care use and mortality were not significantly different between the two groups.

Conclusions: This high-intensity acute care telemedicine program significantly reduced ED use among SLC residents with access to telemedicine without increasing primary care use or mortality. This innovative alternative to traditional acute illness care can enhance access to acute illness care for this vulnerable and growing population and should be integrated into population health programs.

P6
Facebook as a Resource for Informal Caregivers of Dementia Patients
S. Noble, S. Sanchez-Reilly, J. Ross.
1. The University of Texas Health Science Center at San Antonio, San Antonio, TX. 2. GEC/GRECC, South Texas Veterans Health Care System, San Antonio, TX.
Supported By: Supported by: MSTAR/AFAR

Background: The Internet is a widely used resource for caregivers seeking support to ease the burden of care. This study aims to describe Facebook usage as a resource for informal caregivers of dementia patients.
Methods: Facebook searches were conducted for the terms dementia, Alzheimer's, and Lewy Body, +/- modifiers caregiver and support. The top 150 results for each term search were quantitatively and qualitatively analyzed based on: type (Page vs. Group), reach (likes or members), most frequent member age group, frequency of posts, owner, and support function(s) provided between January-June 2014.

Results: 308 pages and 66 groups were analyzed. Significant findings include: 1) Median (M) and interquartile range (IQR) for reach of Pages (M 719, IQR 306-1639 likes) vs. Groups (M 163, IQR 79-595 members), p<.001; and 2) Median and interquartile range for number of posts in the previous month on Pages (M 14, IQR 3-26) vs. Groups (M 39, IQR 18-48), p<.001. Support functions were categorized into eight functional domains. Mean number of support functions performed by Pages (5.2 functions) vs. Groups (2.6 functions) was significant, p<.001. Proportion of Pages (P) vs. Groups (G) that provided support functions varied by category: social support (P 85%, G 74%); caregiver skills (P 72%, G 62%); advocacy (P 92%, G 52%), p<.001; news/research (P 75%, G 23%), p<.001; inspiration (P 61%, G 18%), p<.001; fundraising (P 59%, G 15%), p<.001; in-person event promotion (P 59%, G 9%), p<.001; and live web/radio chat promotion (P 13%, G 5%), p<.05. Distribution of owner type among Pages vs. Groups was significant, p<.001, with non-profit organizations (P 50%, G 5%), p<.001, and individual community members (P 18%, G 92%), p<.001, owning the majority of Facebook resources.

Conclusions: While individual Pages have a wider reach, perform a broader range of support functions, and are organized and supported by formal organizations, Groups offer more personalized caregiver support, are more active in posts/level of activity, and typically organized by individual community members. Clinicians should be aware of the broad range of Facebook support functions for caregivers and the significant difference in nature of caregiver support offered by Page vs. Group resources.

P7
Using a Virtual Case System to Assess the Geriatric Competency of Students
S. E. Hobgood, P. Boling, K. Lockeman, A. Dow, R. Selby-Penczek. IVM/Geriatrics, Virginia Commonwealth University, Richmond, VA.
Supported By: Donald W. Reynolds Foundation’s Next Steps program

Background: We developed a virtual case system to train and evaluate interprofessional teams on management of geriatric patients. Content was based on the AAMC’s 26 medical student geriatric competencies and 8 domains. Students shared data, then answered questions both individually and collaboratively as a team. We analyzed individual performance by students to identify curricular deficits in geriatric concepts.

Methods: Over a 12-week period in 2014, 50 interprofessional teams of senior students from medicine, nursing, pharmacy, and social work (total n = 295) followed a virtual patient through a sequence of 4 health episodes. Students entered case data into a virtual health record, then individually answered questions about patient care and treatment. We revised it iteratively in consultation with experts in medical photography for use in research, forensics, or clinical practice have not been published. In preparation for a study of injury patterns in elder abuse, our goal was to develop and evaluate a protocol for standardized photography of injuries.

Methods: We conducted a comprehensive literature review for techniques and standards in medical, forensic, and legal photography. We developed a novel protocol describing types of photographs and body positioning for 8 body regions, including instructional diagrams. We revised it iteratively in consultation with experts in medical photography, forensics, elder, child, and domestic abuse. The resulting protocol requires a minimum of 4 photos of each injury at multiple distances with and without a ruler/color guide. To evaluate the protocol’s efficacy, multiple researchers photographed the injuries, and non-treating physicians evaluated the photos using a five point scale (1= not at all to 5= very well) to indicate their ability to characterize injury domains.

Results: The protocol was used to photograph 55 injuries, from 18 patients, by 3 photographers. For this analysis we utilized photographs of 6 injuries, consisting of 2 injuries for each major injury type (bruises, lacerations, abrasions). Physicians felt that all photographs were adequate for all domains of injury characterization. Notably, all physicians highly rated their ability to describe the precise location and shape of each injury type for all cases.

Conclusions: Photographing injuries for clinical and research assessment can be standardized and conducted by non-professional...
photographers. A standardized photography protocol will ensure that this tool is optimized, particularly in investigations of potential elder abuse.

P9
Is Adopting Electronic Medical Records Associated with Increased Influenza Vaccination Rates in Nursing Homes?
N. Zhang,1,2 S. Lu,3 J. H. Gurwitz.2 1. Public Health, University of Massachusetts, Shrewsbury, MA; 2. University of Massachusetts Medical School, Worcester, MA; 3. School of Management, Purdue University, West Lafayette, IN.

Background: Immunization rates among nursing home (NH) residents are far below the goal of 90% that was suggested by Healthy People 2020. The objective of our study was to examine the relationship between electronic medical record (EMR) adoption and influenza vaccination rates in NHs.

Methods: Employing merged Minimum Data Set (MDS), Certification and Survey Provider Enhanced Reporting (CASPER), Nursing Home Compare (NHC) and Healthcare Information and Management Systems Society (HIMSS) datasets 2005-2011, a propensity score matching estimation model with state and year fixed effects was developed. The model compared the vaccination rate by EMR adoption status. Five EMR applications were assessed separately: a clinical data repository (CDR), clinical decision support systems (CDSS), order entry (OE), computerized provider order entry (CPOE), and physician documentation (PD). To cover the whole flu season (October to May), the MDS records from October through the following May were selected. Facility-level flu vaccination rates were obtained from the NHC. Two types of influenza vaccination rates were used: vaccination rates for long-term (LT) residents and for short-term (ST) residents. In total, 1729 NHs were identified.

Principal Findings: Across all six seasons, the influenza vaccination rate for short-stay residents was 74.14% (SD = 19.24), and 86.57% (SD=18.88) for long-stay. For short-stayers, flu shot rates were 3% higher (CI = [-0.73, 0.54]) for NHs adopting CDR, 1.20% higher (CI=[1.03, 2.01]) for CDSS, 2.56% higher (CI=[1.87, 4.01]) for OE, 7.73% higher (CI=[6.81, 8.01]) for CPOE, and 10.11% (CI=[9.4, 10.41]) for PD. For long-stayers, these rates were 0.5% higher (CI= [-1.27,1.01]) for CDR, 0.51% higher (CI=[-0.76, 0.77]) for CDSS, 1.77% higher (CI=[1.57, 2.01]) for OE, 5.71% higher (CI=[4.88, 6.01]) for CPOE, and 6.91% (CI=[5.79, 7.41]) for PD.

Conclusions: Adoption of advanced EMR methods (CPOE and PD) was associated with improved flu vaccination rates in NH residents. Hence, adopting EMR may be an effective way to improve preventative in the NH setting.

Paper Session
GERIATRIC EDUCATION

Friday, May 15
2:45 pm – 4:15 pm

P10
Do US Medical Graduates know how to use screens for Cognitive Disorders and Falls?
C. Chang,1,2 E. H. Callahan,1,2 W. Hung,1,2 D. C. Thomas,1,3 R. M. Leipz Ig,1,2 L. V. DeCherrie,1,3 1. Icahn School of Medicine, New York, NY; 2. Geriatrics and Palliative Medicine, Mount Sinai, New York, NY; 3. Dept. of Medicine, Mount Sinai, New York, NY.

Background: The Minimum Geriatric Competencies for medical students’ require interns to be able to screen for falls and cognitive impairment. This study evaluates self-perceived ability to perform and interpret these screens in Internal Medicine (IM) residents who graduated from medical school prior to the publication of these competencies.

Methods: From 2005 to 2010, all second-year IM residents participated in a mandatory geriatric ambulatory care rotation and prospectively completed a questionnaire that measured knowledge about familiarity, ability to administer, interpret and intervene on results of several geriatric assessment tools.

Results: 188 residents completed the questionnaire. 95% of whom graduated from an accredited US medical school. Pre-curriculum, over 95% of residents reported that they were familiar with the more commonly used geriatrics assessments such as the Mini Mental State Exam, the 3-item recall, and clock draw test, but less than 60% were familiar with others (ie animal naming, Timed get up and go, and 3 balance stances). Despite familiarity with the first 3 tests of cognition, fewer than 40% knew what to do with an abnormal test (see Table). This pattern held true for the other three less familiar tests.

Conclusion: The majority of these US medical graduates did not know how to use common screens for cognitive impairment and falls in their care of older adult patients. These numbers are striking, particularly for PGY-2 residents who are midway through residency. These residents graduated medical school prior to 2008. It will be important to see whether this deficiency has been remedied by the introduction, in 2009, of the Minimum Geriatric Competencies whose purpose is to assure competent care to older patients by new interns.

1Academic Medicine. 84(5):604-10, May 2009

Resident’s familiarity with geriatric assessment tools and their ability to interpret and intervene with an abnormal result

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Familiar with test</th>
<th>Can interpret test</th>
<th>Know what to do if test is abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini-Mental State Exam</td>
<td>98.6% (99-99.9% CI)</td>
<td>97.3% (95-99.3%)</td>
<td>95.0% (94.0-96.0%)</td>
</tr>
<tr>
<td>3 Item Recall</td>
<td>100.0% (99.9-100.0%)</td>
<td>97.3% (95.9-98.7%)</td>
<td>95.0% (93.9-96.1%)</td>
</tr>
<tr>
<td>Clock Draw Test</td>
<td>94.7% (93.5-95.9%)</td>
<td>96.7% (95.6-97.8%)</td>
<td>94.7% (93.6-95.8%)</td>
</tr>
<tr>
<td>Animal Naming</td>
<td>96.4% (95.3-97.4%)</td>
<td>95.6% (94.4-96.8%)</td>
<td>94.7% (93.6-95.8%)</td>
</tr>
<tr>
<td>Timed Up and Go Test</td>
<td>93.8% (92.7-94.9%)</td>
<td>93.6% (92.5-94.7%)</td>
<td>92.5% (91.4-93.6%)</td>
</tr>
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P11 Encore Presentation
The Practice Improvement in Education (PIE) Project: Patient Outcomes Related to Education on Depression in Nursing Homes
S. Jang,1 A. Wen,1 C. Bell,2 S. Parkins,2 C. Stevens,3 J. Shishido,2 K. Masaki.1 1. Department of Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Kuakini Geriatric Care, Honolulu, HI; 3. PharMerica, Honolulu, HI.

Supported By: The Pacific Islands Geriatric Education Center (HRSA grant UB4HP19065), the John A. Hartford Foundation Center of Excellence in Geriatrics, the Donald W. Reynolds Next Steps Training Grant, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Kuakini Geriatric Care, Inc; HRSA GACA K01HP20503 (Dr. Bell); PharMerica

Background: Depression is an important factor related to agitation and other behaviors in nursing home residents. As the next step in our Geriatric Education Center (GEC) Practice Improvement in Education (PIE) project on depression in nursing homes, we focused on non-pharmacologic behavioral management and psychoactive medication reduction.

Methods: This quality improvement (QI) pilot included training on effective interdisciplinary management approaches for depressive symptoms and challenging behaviors, and implementing an adapted ABC (antecedents, behaviors, consequences) log and behavioral activation. We targeted two nursing home floors and included data on residents present both before and after the QI, in June 2013 and July 2014. We examined changes in depressive symptom scores (Patient Health Questionnaire, or PHQ-9, scale 0-27, higher=worst) and anti-psychotic/antidepressant medication use with paired T-tests and Fisher’s exact tests.
Results: Of the 66 nursing home residents in this QI pilot, 70% were female, 60.6% were ≥89 years old (range=48-108, mean=88.8), 83% were Asian and 51% had severe cognitive impairment. Mean PHQ-9 scores decreased significantly from 3.74 to 2.38 (p=0.017). Of the 13/66 (19.7%) residents on antipsychotic medications, 10/13 (76.9%) had dose reductions and 4/13 (30.8%) had medications completely discontinued (p<0.0001 for change pre/post). Of the 34 (51.5%) residents on antidepressant medication, 15/34 (42.9%) had dose reductions and 3/34 (8.8%) had medications completely discontinued (p<0.0001 for change pre/post).

Conclusion: Mean depression scores and antipsychotic and antidepressant medication use decreased significantly in this GEC PIE QI project to manage depression and behaviors non-pharmacologically in nursing home residents.

P12 Talking about “Burden” in the Clinic: Caring for Older Patients with Multimorbidity
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Background: Multimorbidity, or the co-occurrence of multiple chronic medical conditions within one person, is associated with increased patient “burden.” Although some studies have explored patients’ perspectives on this topic, little is known about the way older patients with multimorbidity discuss and define “burden” in the clinic. The aim of this study was to characterize how older patients with multimorbidity and their residents talk about “burden” during primary care clinic visits and to identify the types of burdens described in order to identify opportunities to improve resident training in primary care.

Methods: As part of a larger study, 30 clinic encounters between 21 internal medicine residents and 30 patients (≥65 years old with ≥2 chronic conditions) were audio-recorded. Open coding of the transcripts resulted in the identification of multiple aspects of the topic of “burden.” One-third of the transcripts were independently coded by multiple reviewers and compared for agreement.

Results: On average, patients in the study were 73.6 years of age, had 3.7 comorbidities, and were on 12.6 medications. Types of patient burden discussed fell into three major domains: “Symptom Burden,” “Treatment Burden,” and “Chronic Behavioral Burden.” Major sub-themes included chronic disease flare and uncertainty of symptom cause (“Symptom Burden”) as well as scheduling, monetary and testing burden and perceived ineffectiveness of medication (“Treatment Burden”).

Additionally, patients tended to repeat their concerns if they felt their burdens were unacknowledged. Residents did not always provide a medical solution to patients’ burdens, but through listening and acknowledging patients’ concerns, they were often able to conclude the conversation and shift to a different topic. Notably, while older patients with multiple chronic diseases often expressed specific symptom burdens during the clinic visit, eliciting treatment burdens often required resident probing.

Conclusions: Older multimorbid patients initiated conversations about burden in various ways and were more likely to discuss symptom burdens compared to treatment burdens. On the other hand, residents regularly used questions related to treatment burden to discuss patient burden. These results could inform future resident training on how to approach and discuss older patient burden in the clinic.

P13 Encore Presentation
Core Competencies in Geriatric Dentistry Fellowship Programs: A Delphi Study

Background: Older adults suffer from clinically significant dental problems. Geriatric trained dentists are at the forefront of efforts to address this problem. Currently, there are no competencies specifically addressing Geriatric Dental Fellowship Programs. The purpose of this study is to formulate a set of competencies for Post-Doctoral Geriatric Dental Training. Methods: A series of three rounds of anonymous questionnaires were e-mailed to geriatric dental experts (Delphi Technique). Participants were identified as experts according to pre-defined criteria: 1) Previous/current director of a geriatric fellowship program, 2) Completed advanced training program in geriatric dentistry, 3) involved as administrators/faculty in geriatric education, 4) practicing geriatric dentist. In Round One, we proposed 45 Competencies based upon our literature review. Of 54 sent e-mails, there were 19 respondents. The participants completed a demographics questionnaire. Proposed competencies were ranked on a Likert Scale. Participants were also asked to propose additional competencies. Based on the consensus of the group during Round 1, competencies were rated as critical/important at a 80% level. In Round 2, the 19 respondents from Round 1 were asked to edit the initially proposed competencies, as well as edit and rank the competencies proposed in Round 1. Fourteen participants responded. We utilized the scores to determine which competencies would be included based on a cumulative score of 75% or greater. In Round 3, 8 out of the 14 respondents replied. Participants were asked to create a final list of competencies by voting to either include or exclude the competencies listed. Results: In Round 1, 19 out of 54 participants completed the questionnaires and voted on the 45 proposed competencies. In Round 2, there were 14 out of 19 respondents’ whose edits narrowed our list to 39 competencies with an additional 21 new competencies. In Round 3, 8 out of 14 participants formulated a final list of 42 competencies. The final list of competencies is available at a wiki web site: www.geriu.org/corecompetencies_geriatricdentalfellowship. Conclusion: The Delphi process resulted in 42 core competencies for Fellowship Trained Geriatric Dentists. Dental educators may use these competencies to design curricula for advanced geriatric training.

P14 Falls Prevention Education: Interprofessional Training to Enhance Collaborative Practice
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Supported By: Health Resources and Services Administration Bureau of Primary Health Care/Bureau of Health Professions (Award No.: UB4HP19057)

Background: The gap between the complex health care needs of older adults and the availability of geriatrics-trained health care professionals is widening. Interprofessional (IP) education offers an opportunity to engage multiple professions in interactive, clinically relevant learning to achieve high quality patient-centered care.

Methods: Twenty-five IP practice teams were recruited from ambulatory and long term care settings throughout the state. Teams were educated on evidence-based falls risk reduction strategies including tai chi, physical and functional assessment, environmental modification, medication review and reduction, and vitamin D supplementation.
Participants were coached in teams to determine best ways to implement these strategies in their own environments. Educational measures included a pre-post 15-item knowledge survey, a post-intervention confidence survey using 5-item Likert scales, and a self-report of commitment to practice change. Analyses of surveys were performed using paired T-tests for survey results. Descriptive statistics were calculated to evaluate participants’ commitment to collaborative practice change items and for process evaluation of training.

Results: Ninety-five health professionals from medicine, nursing, pharmacy, and social work participated in the training. The intervention increased knowledge about falls risk reductions strategies (pre-intervention avg score 52%; post-intervention avg score 74%; p<.001). There were statistically significant increases in confidence for all ten evaluated skills. The largest increase in confidence scores was “confidence in recommending tai chi to my patients who are at risk of falls (2.24 to 4.46, p < .001).” Top practice change commitments were to educate patients and other staff about tai chi (55%); to systematically screen patients for falls using the TUG or other assessments (48%); and to ensure patients received targeted medication reviews (39%).

Conclusions: Community practices can support the training of IP teams across outpatient and long term care settings. Interprofessional education may be feasible and effective to enhance care of older adults in community settings.

P15 Encore Presentation

Tough Conversations: Training Medical Students to Lead Family Meetings

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Supported By: Hartford CoE Award, HRSA

Background: Family Meetings (FMs) are valuable interventions which promote communication between the health care team and the seriously ill patient and family. However, few educational interventions have been developed to teach FM communication skills. We developed an innovative curriculum to address this gap.

Methods: 4th-year medical students during 2011-2013 (n=674) completed the course on conducting a FM. This included didactic information and opportunities for students to role play the tasks of leading a FM. To assess the effectiveness of this training, students completed a FM Objective Structured Clinical Exam (OSCE). Students watched a video of a team meeting where the case of a terminally ill patient dying in the intensive care unit was discussed. Subsequently, each student was asked to assume the role of the physician leading a complex FM (standardized family members). Tasks included discussion of prognosis, establishment of goals of care and demonstration of conflict resolution skills when family members “disagreed.” Direct one-to-one feedback from both standardized family members and faculty observer was given immediately after each encounter. Students were evaluated in 15 domains on a 1-5 point Likert scale. Group debriefings with faculty were held after the OSCE experience.

Results: Preceptor feedback comments revealed four themes in which many students required improvement; 1) Discussing prognosis, 2) Explaining palliative care/hospice, 3) Avoiding medical jargon, 4) Discussing cultural/religious preferences. Evaluation total mean score was 28.2 (Min 15, Max 63; SD 7.57), and identified student’s need to: 1) Ask more about the degree of knowledge family members want, 2) Ask religious beliefs, 3) Assess family member’s level of education (p<.001). Qualitative analysis of group debriefings suggested that student perception of the OSCE experience was positive overall. Students found the case to be realistic and immediate feedback to be helpful. Many students commented on their lack of experience giving bad news or with conflict resolution.

Conclusions: Conducting a FM is an advanced skill. More extensive training would be required for students to achieve the targeted level in all domains. This study shows that it is possible to develop training and assessment in relation to conducting a FM.

Paper Session

EPIDEMIOLOGY

Saturday, May 16
7:30 am – 9:00 am

P16

Incidence and Determinants of Fall-Related Major Bleeding among Older Adults with Atrial Fibrillation

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Supported By: NIH/NIA

T. Franklin Williams Award (Atlantic Philanthropies, John A. Hartford Foundation, AAIM-ASP, ACC)

Background: Fall-related major bleeding is a common concern among clinicians hesitant to prescribe oral anticoagulants for older adults with atrial fibrillation (AF). However, the incidence and risk factors for this outcome are largely unknown.

Methods: We created a retrospective cohort of 33,732 Veterans with AF aged ≥75 who were new referrals to VA warfarin clinics from 1/1/02 – 12/31/12. Patients with other reasons for warfarin (e.g. mechanical valve) were excluded. Data were extracted from the VA electronic medical record and linked with Medicare inpatient claims data. The primary outcome (fall-related major bleeding) was defined as hospitalization for traumatic intracranial hemorrhage (ICH), hemorrhosis, or fracture-related bleeding. Cox proportional hazards regression was used to determine predictors of interest.

Results: Mean patient age was 81.1 ± 4.1 years, 98% were male, and comorbidities were common (hypertension 82%, coronary disease 43%, diabetes 34%). Over the study period, the incidence rate of fall-related major bleeding was 4.60 per 1000 person-years, and nearly all events (99%) were due to traumatic ICH. In the unadjusted model, significant predictors for this outcome are largely unknown.

Conclusions: Conducting a FM is an advanced skill. More extensive training would be required for students to achieve the targeted level in all domains. This study shows that it is possible to develop training and assessment in relation to conducting a FM.
P17 Concordance Among Anticholinergic Burden Scales

Supported By: This research was supported by NIA Contracts (N01-AG-6-2101; N01-AG-6-2103; N01-AG-6-2106) and grants (P30-AG024827, T32-AG021885, K07-AG033174, R01-AG028050) and NINR grant (R01-NR012459).

Background: There is no gold standard to identify anticholinergic (AC) medications that may increase adverse events in older adults. The objective of this study was to evaluate concordance among three common AC scales (Anticholinergic Drug Scale [ADS] with 122 drugs, Anticholinergic Cognitive Burden [ACB] Scale with 94 drugs, and Anticholinergic Risk Scale [ARS] with 50 drugs) that rank included drugs as having low, moderate, or high AC activity. Additionally, concordance between two scales incorporating dosage (Drug Burden Index anticholinergic component [DBI-ACh]) with 74 drugs and Summated Anticholinergic Medications Scale [SAMS] with 41 drugs from the 2012 AGS Beers Criteria) was examined.

Methods: Each scale was applied to self-reported medication use data from 3,055 baseline Health Aging and Body Composition Study participants (41% black, 52% female, mean age 74 years). Weighted agreement between ADS, ACB, ARS score categories (none, 1, 2, ≥3) was determined. Spearman rank correlation was used to compare summed standardized AC dosage from the DBI-ACh and SAMS, calculated by dividing daily anticholinergic dose by the minimum effective dose defined by each scale and summing across medications.

Results: The rate of AC use was 43% for the ADS, 51% for the ACB, and 23% for the ARS. Weighted kappa statistics among categorical scores were 0.70 for ADS vs ACB, 0.62 for ADS vs ARS and 0.54 for ACB vs ARS. The rate of AC use was 29% for the DBI-ACh and 16% for the SAMS. Summated standardized doses were 0.50 ± 1.58 and 0.20 ± 1.06 for the DBI-ACh and SAMS, respectively, with a correlation of 0.50 (p < 0.0001).

Conclusions: Moderate concordance between the five anticholinergic scales suggests they are not interchangeable. Future research is needed to examine differences, if any, in consequences with respect to clinically relevant outcomes.

P18 Encore Presentation
Toward a Rational Combined Hip Fracture Endpoint
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Supported By: Department of Defense W81XWH-12-2-0093

Background: Osteoporosis trials are underpowered for hip fractures. Different anatomical sites have varying properties which confer different levels of fracture risk and response to treatment. We identified fracture types which cluster with hip fracture. If treatment results in similar risk reductions within the cluster, trials can use a combined endpoint to increase power.

Methods: Cohort study using VA and CMS administrative data. Veterans (n=5,036,536) aged 50-99 years receiving primary care in the VA between 1999-2009 were included. Fractures were ascertained using ICD9 and CPT codes and classified by fracture type. Pearson correlation coefficients for each pair of fracture types were calculated, and logistic regression was used to calculate odds ratios and kappa statistics for the occurrence of each fracture type with hip fracture. Latent class analysis was used to identify clusters of highly correlated fractures in men having 2 or more fractures.

Results: Over the study period 595,579 (11.8%) men suffered 1 or more fractures and 140,905 (2.8%) suffered 2 or more fractures. Hip fracture was the most common fracture type (49% of individuals with fracture), followed by spine (31%), femur (26%) and shoulder (21%). The fracture types most highly correlated with hip fracture were pelvic/acetabular (OR 47.6, p<0.0001), femur (10.1, p<0.0001), and shoulder (9.1, p<0.0001). Correlation coefficients and kappa statistics are below. Latent class analysis revealed good loading onto a single factor (rho <0.10 or >0.90).

Conclusion: Pelvic/acetabular, femur, and shoulder fractures cluster with hip fractures at greater than expected frequency. If further analyses confirm similar treatment risk reductions within that cluster, then a combined endpoint could be used to better estimate the effect of new therapies on hip fracture risk.

P19 Beta Blocker Use Among United States Nursing Home Residents After Myocardial Infarction: A Nationwide Study

Supported By: NIH

Background: Guidelines strongly recommend prescribing beta blockers (BBs) to adults following myocardial infarction (MI). However, limited reports suggest undertreatment of these drugs in older nursing home (NH) residents after MI. Our objective was to evaluate the epidemiology of BB use in the United States NH setting.

Methods: We used a 2007-2010 nationwide sample of NH residents who were not taking a BB at baseline, were hospitalized for MI, and subsequently returned to the NH for skilled nursing and/or long-term care. BB use was assessed via Medicare Part D data. Other covariates were assessed using Medicare Parts A and B, NH facility, and Minimum Data Set data. Multivariable logistic regression was used to evaluate the independent associations between patient- and facility-level characteristics and BB use after MI.

Results: Among 9960 long-term care NH residents with MI, mean age was 83 years, 70% were female, and mean value on a validated 28-point scale of independence in activities of daily living was 15.9 (SD 7.4), indicating moderately impaired ADL abilities. Overall, 5846 patients (59%) received a BB upon returning to the NH, and 4114 (41%) did not. On multivariable analysis, several clinical conditions showed weak to moderate associations with BB use in expected ways, including heart failure (odds ratio 1.25, 95% CI 1.14-1.36) and COPD (OR 0.78, 95% CI 0.71-0.86). After controlling for these disease states, few other patient or facility factors were strongly associated with BB prescribing. For example, increasing age and functional dependence were both weakly associated with lower rates of BB use, with 1% lower odds of receiving BB for both a one-year increase in age and 1-point increase on a 28-point ADL score (95% CI 0.98-0.99 and 0.99-1.00, respectively).

Conclusions: BBs are not prescribed to 41% of older NH residents returning to the NH after MI. The absence of observed factors that strongly predict BB use may indicate a lack of consensus on how to manage these patients, and suggests the need to develop and disseminate thoughtful standards of practice.
Impact of Midlife Cardiovascular Risk Factors on Late Life Physical Function: The Atherosclerosis Risk in Communities Study


Supported By: Medical Student Training in Aging Research Program (T35AG038027-01 MSTAR) American Federation for Aging Research (AFAR) NHLSBI (HHSN268201100005C, HHSN268201100006C, HHSN268201100007C, HHSN268201100008C, HHSN268201100009C, HHSN268201100010C, HHSN268201100011C, HHSN268201100012C) American Heart Association Life’s Simple 7 score (LS7), with late life modifiable risk factors, which may influence later life physical function, have not been elucidated. The objective of this study was to examine the association of midlife cardiovascular (CV) health, using the American Heart Association Life’s Simple 7 score (LS7), with late life physical function.

Methods: Baseline LS7 (0-14, higher scores are better) was calculated in the Atherosclerosis Risk in Communities cohort (Exam 1, 1987-89; n=15744, mean age 54; 45% men, 27% Black), based on systolic and diastolic blood pressures, cholesterol, glucose, smoking, body mass index, physical activity, and diet. Exam 5 (2011-13, n=6520, mean age 76; 41% men, 24% Black) physical function measures included usual gait speed (meters/second [m/s]) and Short Physical Performance Battery (SPPB, 0-12). SPPB was considered an ordinal and categorical outcome (“Good SPPB” ≥10); gait speed was continuous. Linear, logistic and negative binomial regression models were used as appropriate, adjusting for baseline age, race-site, sex, education, body mass index, physical activity, and diet. Exam 5 (2011-13, n=6520, mean age 76; 41% men, 24% Black) physical function measures included usual gait speed (meters/second [m/s]) and Short Physical Performance Battery (SPPB, 0-12). SPPB was considered an ordinal and categorical outcome (“Good SPPB” ≥10); gait speed was continuous. Linear, logistic and negative binomial regression models were used as appropriate, adjusting for baseline age, race-site, sex, education, body mass index, physical activity, and diet.

Results: Mean (SD) of baseline LS7=7.87(2.4), Exam 5 SPPB=9.21(2.6), and gait speed=0.93 m/s; 50% (n=3288) had Good SPPB. Each 1-unit increase in mid-life LS7 was associated with a 2% higher SPPB (RR=1.02 [95%CI 1.02, 1.03], p<0.001), a 23% greater odds of having Good SPPB (OR=1.23 [95%CI 1.21, 1.26], p<0.001), and a 0.02 m/s faster gait speed ([95%CI 0.015, 0.021], p<0.001) in older age.

Conclusions: Better midlife CV health was strongly associated with better late life physical function. Our findings motivate consideration of targeted trials to improve CV risk factors in middle age to determine their impact on physical function and related outcomes of vital importance to older adults.

Performance of the Gail Model Among Women Aged 75 and Older


Supported By: This work was supported by the National Institute on Aging at the National Institutes of Health (R01 AG041860).

Background: The Gail model (GM) is commonly used for breast cancer prediction; however, it has not been validated for women ≥75 years.

Methods: We used Nurses’ Health Study (NHS) data from 2004-2009 and Women’s Health Initiative (WHI) data from 2005-2010 to compare the GM’s performance in women ≥75 years with women 55-74 years. In predicting breast cancer risk, the GM considers age at menarche, age at first live birth, family history, history of benign breast biopsy; age and race specific population breast cancer incidence; attributable risk explained by the model; and competing-risks of non-breast cancer death. We examined the GM’s calibration by age by comparing expected/observed (E/O) ratios of breast cancer incidence. We examined the GM’s discrimination by computing c-statistics for the GM within each age group.

Results: There were 84,154 NHS and 97,081 WHI participants. WHI participants were more racially/ethnically diverse and were more likely to get breast cancer (2.0% developed breast cancer in 5 years in WHI vs. 1.2% in NHS). E/O ratios by age were 1.7 (55-64), 2.0 (65-74), and 2.2 (75+) in NHS, and 1.1 (55-64), 1.2 (65-74) and 1.2 (75+) in WHI. In both cohorts, the GM over-predicted breast cancer incidence among older women, particularly for those in poor health and at the highest deciles of risk. C-statistics ranged between 0.57-0.60 in both cohorts and there were no significant differences by age.

Conclusions: New breast cancer risk prediction models for older women are needed and should consider factors that influence life-long estrogen levels (e.g., obesity) and a woman’s individual competing risks of non-breast cancer death.

Net harm of overly-aggressive blood pressure (BP) control on cardiovascular (CV) and fall injury events in older Americans


Supported By: University of Michigan Pepper Center, Hartford Foundation

Background: Despite evidence of CV benefit of modest BP control in older patients, it is unclear when overly-aggressive treatment results in risk of fall injury that exceeds the CV benefits.

Methods:
Design: Longitudinal observation
**Sample:** 5518 participants in the biennial Health and Retirement Study, age ≥65, with self-reported hypertension and taking BP medications, and who had BP measured by an enhanced HRS exam in 2008 or 2010 (randomly-assigned, mutually-exclusive cohorts).

**Measures:** 2-year self-reported fall injury requiring medical care or acute CV event (stroke, infarction, heart failure), as a multimomial outcome: CV or fall injury, CV only, fall only, neither event. Increasing SBP control was tested in categories: (1) untreated or (2) inadequately-treated SBP ≥160 mmHg; (3) adequate treatment 121-159 mmHg, (3) overly-aggressive treatment to <120 mmHg.

**Analysis:** Multinomial logistic regression to calculate net changes in risk across categories of BP control, controlling for age and sex.

**Results:** Fall injury (12%) increased with age and was more prevalent than CV event (5%). Net harm of overly-controlling BP to <120 mmHg (compared to adequate control) was significant after age 73 (fig).

**Conclusions:** Aggressiveness of BP care should be individualized by patient to steer clear of net harm, especially for older adults at advanced ages.

Fig 2: Net harm of overtreatment

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**P24 Influence of ownership status on infection prevention program resources between for-profit and not-for-profit nursing homes: A national study.**

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**Objective:** To identify differences in infection prevention resources between for-profit and not-for-profit nursing homes (NHs).

**Methods:** We surveyed 237 NHs participating in the ‘AHRQ Safety Program for Long-term Care: CAUTI’ to assess resources devoted to infection prevention and the existing process for CAUTI surveillance. Descriptive statistics by profit status were generated for the survey items.

**Results:** 218 NHs from 15 states within the US responded (92% response rate). Respondents included infection preventionists (IPs), administrators and directors of nursing. Facilities ranged in size from 20 to 453 beds. 134 (61%) of the respondent NHs were for-profit, 84 (39%) were not-for-profit. The mean no. of registered nurses (12.6 vs. 15.3, p=0.05), licensed practice nurses (18.1 vs. 23.3, p = 0.02) and certified nursing assistants (52.2 vs. 69.9, p=0.002) were lower in for-profit NHs. 68% of IPs at not-for-profit NH held infection prevention positions for more than 3 yrs compared to 53% of IPs in for-profit NH (p=0.03) suggesting a higher turnover.

Despite these staffing differences, for-profit NHs generally provided higher acuity care including IV infusions (94% vs. 86%, p=0.04), short-stay rehabilitation (98% vs. 87%, p < 0.001), and greater access to laboratory services on weekdays and weekends (95% vs. 87%, p=0.04). For-profit NH were more likely to have policies for appropriate use (89% vs. 79%, p=0.04) and documentation of residents with indwelling urinary catheters (90% vs. 79%, p = 0.03). However there were substantial differences in CAUTI surveillance practices with for-profit NH less likely to conduct CAUTI surveillance (60% vs. 79%, p=0.005), track rates over time (65% vs. 79.8%, p=0.02), create CAUTI reports (53% vs. 71%, p = 0.007), and share these reports with leadership (66% vs. 79%, p=0.03).
Conclusions: In a national sample of NHs, we show key differences in staffing, acuity of care services and CAUTI prevention practices by ownership status. With the changing delivery of healthcare, for-profit NHs are providing higher acuity of care and yet have fewer resources devoted to their infection prevention program.

P25 Validation of the Family Inpatient Communication Survey
Supported By: The Indiana University Purdue University at Indianapolis Research in Palliative and End of Life Communication and Training (RESPECT) Center; the National Institute on Aging (R01AG044408).

Background
There are few tools to measure quality of communication with surrogate decision makers. We developed and validated the Family Inpatient Communication Survey (FICS) to capture surrogate perspectives on communication quality.

Methods
We constructed a draft survey through literature review and expert opinion, with 45 items in 6 subscales with 5 response categories (strongly disagree to strongly agree). Following cognitive interviewing, we administered the FICS, demographic items and the Decision Conflict Scale to 250 surrogates of hospitalized adults 65+ at three diverse hospitals. Patients who needed a surrogate were identified through the electronic health record. Surrogates were interviewed within 10 days of hospitalization. Additional outcomes were administered 6-8 weeks later.

Results
No items had problematic floor or ceiling effects. One item regarding staff support to other family was not answered by 24.8% and was dropped. Cronbach’s alpha was 0.97 for the total scale and from 0.74 to 0.91 for subscales, indicating excellent internal reliability. Confirmatory factor analysis (CFA) revealed moderate fit to the data (CFI = 0.96; RMSEA = 0.07) for the hypothesized 6 factor model. There was strong support for a single factor, with CFA fit statistics being nearly as good (CFI = 0.95; RMSEA = 0.08) and the scree plot from exploratory factor analysis (EFA) revealing a dominant single dimension. Post-hoc inspection of 2-factor through 6-factor EFA models revealed a conceptually sensible two-factor model, similar but slightly improved fit (CFI = 0.96; RMSEA = 0.07) compared to the one factor model. The total score showed convergent validity based on significant associations (p<0.05) with the Decision Conflict Scale (Pearson correlation -0.43), Predictive validity was supported by significant correlations (p<0.05) with 6-8 week outcomes, including overall satisfaction with the hospital stay (HCAHPS; 0.52), and depression (PHQ-9; -0.13), but not decision regret (-0.16) or posttraumatic stress (Impact of Events Scale-R; -0.13).

Conclusion
The FICS show high reliability and validity in measuring communication experiences for hospital surrogates. The scale has promise for measurement of family experience and is predictive of important outcomes such as surrogate satisfaction and depression.

P26 Health Characteristics Associated with Switching into Medicare Managed Care

Background
The impression that enrollees into Medicare managed care (MMC) are healthier than seniors remaining in fee-for-service (FFS), i.e. traditional Medicare, has been based solely on differences in self-reported health and claims data. Little is known of the differences between these two populations in terms of chronic disease burden and functional status. We aim to determine, in our study population, whether more favorable chronic disease burden and/or functional status are significantly associated with switching from FFS into MMC.

Methods
Data from the Cardiovascular Health Study (CHS), a population based, longitudinal study of 5,888 individuals aged 65 and older who underwent extensive regular clinical examinations were merged with CMS claims data. We fit Cox proportional hazards models to identify health characteristics associated with switching from FFS into MMC.

Results
5,314 CHS participants met inclusion criteria. 4,863 participants were enrolled in FFS at the beginning of the study. During 19 years of follow-up (1992-2011), 1,453 participants switched from FFS into MMC. Participants who remained in FFS averaged 76 years in age (SD=5.7) versus 74 (SD=4.6) for those who switched. 43% of participants who remained in FFS were male versus 38% for switchers. Adjusting for age, gender and race, the majority of health characteristics, including CAD, CHF, chronic lung disease, diabetes, cancer, number of medications, self reported health, ADL impairment, gait speed and grip strength, were not significantly associated with switching into MMC. Only lower IADL impairment was significantly associated with switching [HR = 0.86 (0.76,0.97); p=0.013].

Conclusions
To our knowledge, this is the first study to examine whether specific health characteristics are associated with switching from FFS into MMC. Our findings challenge the belief that older adults who switch from FFS into MMC are healthier, on average, than those who remain in FFS. This adds to the complexity of how risk selection potentially affects managed care plans. Our conclusions are limited to the time frame in which switching from FFS into MMC occurred in our cohort as well to the 4 geographic regions where the CHS was conducted.

P27 The Cost of Delirium in the Intensive Care Unit: Considering Intensity and Mortality

Supported By: National Institutes of Health: National Institute on Aging: 5K23AG040157-02. GRECC - Geriatric Research, Education and Clinical Center

Background: ICU delirium duration has been associated with increased costs, however, it is unclear if this relationship is independent of time-varying changes in illness. In addition, delirium is associated with early mortality, and it is unclear the extent to which costs are impacted by this.

Methods: Using data from a prospective study of critically ill patients (BRAIN-ICU) we estimated the association between acute brain dysfunction (ABD = delirium or coma) and costs. This was done using a three-part model that estimated for each patient-day: a) predicted probability of survival, b) predicted cost if a patient died on that day, and c) predicted cost if a patient survived that day. The estimates of the models were combined for all patients over 30 days to calculate the mean cost over a 30-day length of stay and the incremental effect of delirium, divided into resource intensity and mortality. Covariates included baseline factors (age, insurance, cognitive impairment, comor-
P29 Encore Presentation

Hospitalizations of uncertain benefit: approaches in nursing homes with high and low hospitalization rates

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Supported By: NIA (T32AG019134)

John A. Hartford Foundation / AFAR

Background: More than a quarter of long-stay nursing home residents are hospitalized every year, and many hospital transfers occur for care near the end of life that is of uncertain benefit. Although there is substantial variation in hospitalization rates between facilities, little is known about how attitudes and practices of nursing home staff either promote or prevent these potentially burdensome hospitalizations.

Methods: Data from LTCFocus.org were used to identify nursing homes in Connecticut with hospitalization rates in the highest and lowest deciles. Facilities were excluded if more than 50% of residents were receiving the Medicare SNF benefit. At selected facilities, in-depth, semi-structured interviews were conducted with key respondents, including physicians, nurses, social workers and administrators. Interviews were conducted with 31 respondents at 8 facilities (4 high-hospitalizing and 4 low-hospitalizing) before thematic saturation was reached. Qualitative content analysis was performed using grounded theory.

Results: Providers at nursing homes with high and low hospitalization rates identified many of the same barriers to preventing hospitalizations at the end of life, including families pushing for inappropriate transfers and concerns about liability. Several themes distinguished the two groups: (1) Pathways to hospitalization. At high-hospitalizing facilities, participants described a default process in which patients were hospitalized reflexively, whereas staff at low-hospitalizing facilities reported engaging with families in a difficult and uncertain process of case-by-case decision-making. (2) Ability to change families’ minds. Providers at high-hospitalizing facilities felt unable to prevent families from insisting on hospitalizations of uncertain benefit. Staff at low-hospitalizing facilities described a sense of responsibility for changing families’ minds.

Conclusions: Many themes were shared, but staff at low-hospitalizing facilities more frequently reported engaging with families in tailored decision-making and felt more responsible for influencing families’ choices. These findings may help direct efforts to determine whether specific processes of care exist in low-hospitalizing facilities that, if more widely adopted, might help to reduce hospitalizations at the end of life.

P30 Parkinsonism Motor Findings in the UCSF HIV over 60 cohort

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Supported By: This work was supported by NIH [K23-AG032872 (VV), P50-AG023501 (BM), ULI RR024131 (UCSF GCRC), the Larry L. Hillblom Foundation, P30-AI027763 (UCSF CFAR), the UCSF AIDS Research Institute, and the Medical Student Training in Aging Research (MSTAR) program.

BACKGROUND: Due to widespread availability of effective antiretroviral regimens, the HIV population over 60 years old is growing, but this population suffers from more morbidity. This morbidity includes HIV Associated Neurocognitive Disorders (HAND) and it

...
METHODS: HIV-infected subjects were enrolled into the UCSF HIV over 60 cohort and subjects with normal cognition and Alzheimer’s disease (AD) were evaluated from matching studies at the UCSF Memory and Aging Center. Trained physicians completed the Unified Parkinson’s Disease Rating Scale motor exam (UPDRS). Nonparametric ANOVA was used to compare UPDRS scores across groups. All UPDRS comparisons were adjusted for age and Clinical Dementia Rating score. Spearman linear regressions were used to investigate correlation between UPDRS scores and brain volumes measured by FreeSurfer® from 3T Siemens images.

RESULTS: The UPDRS scores were significantly higher in HIV compared to controls (median [IQR]: 4 [1-5] and 2 [0-2], respectively, p=0.003). HIV infected subjects with cognitive impairment had higher UPDRS scores than those without (p=0.018). Although both were higher than controls, HIV and AD groups did not differ from each other on UPDRS scores (p=0.48). The amygdala and thalamus volumes both correlated with UPDRS score in the HIV group in models adjusted for intracranial volume (amygdala r²=0.131, p=0.006, thalamus r²=0.053, p=0.085); but significance was lost in thalamus volume when adjusted for age.

CONCLUSIONS: These findings provide evidence that motor findings are more frequent in HIV and AD compared to controls; but we did not find evidence that they were higher in HIV compared to AD. The volumes of the thalamus and the amygdala showed a weak but significant correlation with UPDRS scores supporting their involvement in motor dysfunction.

P31 Medical Burden of Suspected Infections in Advanced Dementia

E. Yates; 1 S. L. Mitchell; 2, 3 D. Habtemariam; 4 A. DuFour;
J. L. Givens. 1 1. Medical School, University of Michigan, Ann Arbor, MI; 2. Hebrew SeniorLife Institute for Aging Research, Boston, MA; 3. Medicine, Beth Israel Deaconess Medical Center, Boston, MA.

Supported By: American Federation for Aging Research: MSTAR 1 T35 AG038027-04 (EY)

National Institute on Aging: R01AG032982, K24AG033640 (SLM), T35 AG038027-04 (EY)

Supported By: American Federation for Aging Research: MSTAR 1 T35 AG038027-04 (EY)

METHODS: The UPDRS scores were significantly higher in HIV compared to controls (median [IQR]: 4 [1-5] and 2 [0-2], respectively, p=0.003). HIV infected subjects with cognitive impairment had higher UPDRS scores than those without (p=0.018). Although both were higher than controls, HIV and AD groups did not differ from each other on UPDRS scores (p=0.48). The amygdala and thalamus volumes both correlated with UPDRS score in the HIV group in models adjusted for intracranial volume (amygdala r²=0.131, p=0.006, thalamus r²=0.053, p=0.085); but significance was lost in thalamus volume when adjusted for age.

CONCLUSIONS: These findings provide evidence that motor findings are more frequent in HIV and AD compared to controls; but we did not find evidence that they were higher in HIV compared to AD. The volumes of the thalamus and the amygdala showed a weak but significant correlation with UPDRS scores supporting their involvement in motor dysfunction.
Paper Session
BODY COMPOSITION AND AGING

Sunday, May 17
10:45 am – 12:15 pm

P34 Encore Presentation
Normal Weight-Central Obesity Is Associated with the Highest Mortality Risk in Older Adults with Coronary Artery Disease
S. Sharma, 1, 2 J. A. Batsis, 3 T. Coutinho, 4 V. K. Somers, 5 A. Kanaya, 5 F. Lopez-Jimenez. 6 1 Division of Cardiovascular Diseases, Albert Einstein Medical Center, Elkins Park, PA; 2 Division of Cardiovascular Diseases, Mayo Clinic, Rochester, MN; 3 Dartmouth Hitchcock Medical Center, Dartmouth, NH; 4 University of Ottawa Heart Institute, Ottawa, ON, Canada; 5 University of California, San Francisco, CA.

Background: In subjects with coronary artery disease (CAD), mortality is inversely related to body mass index (BMI) (“obesity paradox”), while central obesity is directly associated with mortality. Moreover, the combination of normal BMI with central obesity [normal weight-central obesity (NWCO)] confers the highest mortality risk. Whether these associations are also present in elderly subjects is unknown.

Methods: From a database of subjects with CAD from 5 cohort studies, we studied those who were ≥65 years old (n=7057). Normal weight, overweight and obese were defined by standard World Health Organization BMI cut-offs offs. High waist-to-hip ratio (WHR) was defined as ≥0.85 for women and ≥0.90 for men. High waist circumference (WC) was defined by National Cholesterol Education Program Adult Treatment Panel III cutoffs of ≥88 cm for women and ≥102 cm for men. Subjects were also classified on the basis of sex specific tertiles of WHR. For males, WHR of 0.94 and 0.98, and for females, 0.86 and 0.93 were used as second and the third tertile cut-offs respectively. Multivariate logistic regression analysis adjusting for potential confounders assessed mortality risk at 5 years according to different combinations of BMI with WHR and WC (referent=normal BMI with normal WHR/WC).

Results: Mean age was 73.0 ± 6.0 years. 53% were women. There were 3532 (50%) deaths over a median follow-up of 2.01 years. Elderly subjects with CAD having normal BMI but with central obesity (high WHR) have the highest mortality risk than any other combination of BMI and WHR (2.86; 2.26-3.63). WC alone or in combination with BMI did not show statistically significant results. BMI alone was inversely associated with mortality. Females were 3 times and males were 2 times as likely to die as compared to their gender specific counterparts in 1st tertile based on WHR.

Conclusion: In older adults with CAD, the “obesity paradox” is present and NWCO, as measured by WHR, and not by WC, is associated with the highest risk of mortality. The study highlights the need to combine measures of total and central obesity in adiposity-related risk assessment of older adults.

P35 Encore Presentation
Proteomic Characterization of Caloric Restriction and Rapamycin’s Effect on Protein Aggregation in the Aging Liver
Y. Liu, 1 N. Basisty, 2 P. Rabinovitch. 3 1 SUNY Upstate Medical University, Syracuse, NY; 2 University of Washington School of Medicine, Seattle, WA.

Supported By: This research was funded by The Medical Student Training in Aging Research Program, the National Institute on Aging (T35AG026736), the John A. Hartford Foundation, and the Lillian R. Gleitsman Foundation.

Background: Impaired proteostasis is a hallmark of aging and age-related pathologies, which can be mitigated with the anti-aging interventions of calorie restriction (CR) and rapamycin (RP). Accumulation of protein aggregates such as lipofuscin, or indigestible cellular inclusion, is a typical manifestation of age-related proteostatic decline that was described over 150 years ago. Despite years of study, the composition of insoluble protein aggregates and their responses to CR and RP remains elusive.

Methods: Protein lysates of C57BL/6 livers were extracted from 4 cohorts (each n=6): young 4-months-old mice fed a control diet (YCL), and old 26-month-old mice that were exposed to a control diet (OCL), 40% caloric restriction (OCR), or 2.24mg/kg rapamycin (ORP), for 10 weeks. Soluble protein fractions were first separated. Detergent insoluble protein aggregates were collected by a solubilization of the remaining pellets in 8M Urea. As protein aggregates are modified with poly-ubiquitin chains, overall aggregation levels were determined with western blot analysis of poly-ubiquitin. Shotgun mass spectrometry (MS) was used to ascertain protein identities and characterize insoluble proteome abundance differences between the 4 cohorts.

Results: Protein aggregates were significantly higher in OCL compared to YCL (p = 0.02). Compared to OCL, the level of po-
ly-ubiquitinated aggregates in OCR showed a downward trend (p=0.059). MS analysis revealed that the abundances of proteins found in the actin cytoskeleton, PKA signaling, and mitochondrial function pathways were significantly increased in the OCL insoluble fraction compared to YCL. Insoluble protein abundance ratios of OCR/OCL mimicked the ratios of YCL/OCL (r=0.51, p=1.29e-14). Similar trends were seen when ORP/OCL abundance ratios were compared to YCL/OCL ratios (r=0.50, p=2.18e-13).

**Conclusion:** Age-related aggregation of proteins is not indiscriminate and can be uniquely profiled to proteins sharing similar functional pathways. Calorie restriction and rapamycin partially reverse these changes, thereby restoring the proteome to a more youthful state. Our results show that proteomic analysis of detergent insoluble protein fractions can be a useful method for identifying candidates that participate in protein aggregation and furthering our understanding of the mechanisms of proteostatic decline in aging tissues.

**P36**

**Trunk Lean Mass & its Association with 3 Measures of Kyphosis in Older Community Dwelling Persons**

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Supported By: NIH/NIAMS AR06828, NIA T35 AG26757, UCSD Academic Senate, Family Preventive Medicine Pilot Funds, Stein Institute for Research on Aging.

**Background:** Vertebral fractures affect only 1/3 of older persons with the worst kyphosis, suggesting there are other major causes. Besides osteoporosis, muscle quality and lean mass may play an important role in maintaining normal kyphosis. To test this hypothesis, we investigated whether 3 measures of body composition are associated with kyphosis in older persons.

**Methods:** We recruited 72 persons aged ≥65 yrs to participate in a prospective study designed to evaluate kyphosis using 3 measures (Debrunner kyphometer [DK], flexicurve [KI] and blocks) in association with detailed balance and fall assessments. At the clinic visit, participants answered a health questionnaire and had their bone mineral density (BMD) and body composition, including appendicular lean mass/height (ALM), trunk lean mass (TLM) and android/gynoid (AG) fat ratio measured using Dual Energy X-ray Absorptiometry (DXA). They had kyphosis measured using a moveable protractor [DK] and architect’s ruler [KI] in the standing position. The blocks measure was done on the DXA table, where if unable to lie flat, 1.7 cm blocks were used to obtain a neutral head position. We used multivariable linear/logistic regression to assess the association between each body composition and 3 kyphosis measures.

**Results:** Women (n =52) were an average age of 76.8 (SD 6.7) and men 80.5 (SD 7.8) yrs. They reported overall good/excellent health (93%), the average body mass index was 25.3 (SD 4.6) and 35% reported a fall in the past year. In linear regression models, with decreasing TLM, there were trends towards greater kyphosis using all 3 measures (p<0.05). Using previously published or population prevalence cut-offs to define hyperkyphosis [HK] (≥53° for DK, ≥18 for flexicurve or ≥3 blocks), after adjusting for age, sex, weight and hip BMD, persons with lower TLM were more likely to be hyperkyphotic when using the standing kyphosis measures only (OR = 1.69, 95% CI: 1.05, 2.72). There was a single significant association in logistic regression models of ALM and HK by the DK method (p = 0.03), but overall, findings were negative between ALM or AG and kyphosis.

**Conclusions:** Our results support the hypothesis that lower TLM is associated with HK in older persons. The results were stronger when standing measures of kyphosis were used, suggesting that the effects of muscle on thoracic kyphosis are best appreciated under spinal loading conditions.

**P37**

**Dichloroacetate and gei-8 RNAi augment mitochondrial activity during muscle aging in C. elegans**


**Background:** Mitochondria perform many essential cellular functions, including the generation of ATP which provides energy for the activity and maintenance of muscle. Declines in mitochondrial activity may contribute to the age-related loss of muscle mass and strength termed sarcopenia. As a result, if mitochondrial dysfunction during aging can be delayed or reversed, this could produce a novel approach to treat or prevent sarcopenia. Here we investigate the effects on muscle mitochondrial activity produced by the treatment of the non-parasitic nematode Caenorhabditis elegans with dichloroacetate (DCA), which inhibits pyruvate dehydrogenase kinase and promotes Krebs cycle activity, or treatment with RNA interference directed against gei-8, which is the ortholog of NCO1 and inhibits mitochondrial proliferation.

**Methods:** To examine the effects of DCA and gei-8 RNAi on mitochondrial activity, we used C. elegans due to its short lifespan, ease of manipulation, and optically transparent body. To visualize mitochondrial mass, we used a GFP transgene that labels muscle mitochondria. We compared ATP levels in living treated animals by using ATeam, a fluorescent ratiometric biosensor which produces a reproducible change in fluorescence in response to cellular ATP levels. To test if changes in mitochondrial function lead to changes in muscle function, we used a swimming assay to compare the mobility of control and treated animals.

**Results:** We found that gei-8 RNAi significantly increased the mitochondrial mass and increased cellular ATP levels in middle-aged day 5 adult animals. In contrast, DCA treated animals showed no changes in mitochondrial mass but did show preserved mitochondrial structure and an increase in ATP levels in day 5 animals. Further, treatment with DCA, but not gei-8 RNAi, produced a marked improvement in muscle function during swimming in day 7 adults.

**Conclusion:** DCA treatment improves mitochondrial function in aged muscle, as reflected by preserved mitochondrial morphology and increased ATP production. DCA also leads to improved muscle function, but this is likely independent of its effects on ATP production and may occur through other effects on mitochondria, such as reducing damage during aging. DCA might be a novel approach to improve muscle function during aging.

**P38**

**The Long-Term Effects of Intentional Weight Loss on Body Composition and Physical Function in Older Adults: A Pilot Study**

D. K. Houston, M. E. Miller, D. W. Kitzman, W. J. Rejeski, S. P. Messier, M. F. Lyles, S. Kritchevsky, B. J. Nicklas. 1. Sticht Center on Aging, Wake Forest School of Medicine, Winston Salem, NC; 2. Dept of Biostatistical Sciences, Wake Forest School of Medicine, Winston Salem, NC; 3. Dept of Health and Exercise Science, Wake Forest University, Winston Salem, NC.

Supported By: Wake Forest Pepper Center (P30-AG21332)

**Background:** Obesity is associated with declines in physical function. Short-term randomized, controlled trials (RCTs) show intentional weight loss improves physical function and overall health in older adults; however, the long-term benefits (and risks) of intentional weight loss are unknown. We conducted a pilot study to assess the feasibility of recalling prior participants that had been involved in RCTs of intentional weight loss to assess the long-term effects.
Methods: A random sample of 60 participants from 5 previously completed RCTs of weight loss (n=854; mean age at randomization, 67.3 yrs; 69% women, 30% white) who were assigned to weight loss plus exercise (WL+EX) or exercise only (EX) were contacted and invited to return for a clinic visit. Physical function (SPPB, 400-m walk) and body composition (DXA) were assessed. Individuals who were unable/unwilling to return for a clinic visit completed a phone interview.

Results: Follow-up information was obtained on 89% (42 attended a clinic visit, 10 completed a phone interview, and 1 was deceased) of the participants. Among those who attended the clinic visit, the mean (SD) weight change during the RCTs was -9.9% (6.5%) in WL+EX (n=21) vs. -3.8% (4.7%) in EX (n=21; p=0.01); following the RCTs, the mean weight change was +6.6% (7.1%) in WL+EX vs. -1.9% (7.5%) in EX (p=0.001). Both fat (-16.1% (12.6%)) and lean (-6.0% (4.5%)) mass was lost during the RCTs in the WL+EX group; however, following the RCTs, weight was regained as fat (+25.3% (26.0%)) while lean mass (-2.3% (6.8%)) continued to decline. In the EX group, fat mass (-6.3% (9.0%)) declined during the RCTs, while lean mass (-6.8% (6.3%)) declined following the RCTs. Physical function at the follow-up visit was similar between groups: 400-m walk time of 5.4 (0.8) minutes and SPPB score of 10.8 (1.6) vs. 10.8 (1.5) in WL+EX vs. EX.

Conclusions: The rate of return was excellent. Despite significant weight loss and regain in those randomized to intentional weight loss, long-term changes in weight and body composition from baseline and physical function were similar in both groups.

P39 The prevalence of frailty, sarcopenia, and cognitive dysfunction in older persons with diabetes mellitus
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Supported By: This study was supported by the Medical Student Training in Aging Research (MSTAR) Grant Program which is awarded by the American Federation of Aging.

Background: Diabetics undergo premature aging, increasing the likelihood of hospitalization, a decreased quality of life, and mortality. This study used the FRAIL, SARC-F, and Rapid Cognitive Screen (RCS) to investigate the prevalence of frailty, sarcopenia, and cognitive dysfunction in a diabetic population.

Methods: This project was an observational study that involved diabetic subjects between the ages of 50 and 90. The subjects were recruited at Saint Louis University outpatient clinics. Participants of the study were chosen as a convenience sample. The sampling took place over ten weeks starting in June 2014 and ending in August 2014. The RCS uses the criteria of clock drawing, word recall, and insight to evaluate cognitive function. Subjects who scored less than a 4 on the RCS were excluded from the study. The FRAIL is a five question, self report questionnaire that evaluates the presence of frailty in an individual. The SARC-F is a five question, self report questionnaire that evaluates the presence of sarcopenia in an individual. The data was analyzed by descriptive statistics and logistic regression.

Results: 198 diabetic subjects were recruited into the study. 95.5% of the subjects had type 2 diabetes and 4.5% had type 1 diabetes. 47.5% of the subjects were female and 52.5% were male. 50% of the sample was Caucasian and 48.5% was African American. 59.6% of the sample was taking metformin. There was a trend towards higher scores on the RCS by subjects taking metformin compared to the subjects not taking metformin (p=0.05). Table 1 summarizes the prevalence of frailty, sarcopenia, and cognitive impairment by age group.

Prevalence of frailty, sarcopenia, and cognitive dysfunction by age group

<table>
<thead>
<tr>
<th>Frailty (FRAIL ≥ 5), %</th>
<th>Healthy (0)</th>
<th>Pre-Frail (1-2)</th>
<th>Frail (3-5)</th>
<th>Sarcopenia (SARC-F &gt; 50%, %)</th>
<th>Yes (4-10)</th>
<th>Cognitive Dysfunction (RCS ≥ 10, %)</th>
<th>No (8-9)</th>
<th>Yes (≤ 7)</th>
</tr>
</thead>
</table>
Conclusions: We have shown that RAPA, the only drug known to prolong lifespan in mammals, also protects against age-associated neurological changes as well as pathological changes associated with Alzheimer’s disease and atherosclerosis animal models. Rapamycin is an FDA approved drug indicated for the prophylaxis of organ rejection in renal transplantation, but has been shown to prolong lifespan and slow age related pathologies in a growing number of well-studied animal models.

P41 Encore Presentation
Dysphagia, Not Excessive Salivation, Causes Drooling in Parkinson’s Disease
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Supported By: UTHealth Consortium on Aging, Albert and Ethel Herzstein Charitable Foundation Geriatric Studies for Junior Faculty

Introduction: Parkinson’s disease (PD) is characterized by hand tremors, stooping posture, and shuffling gait. Less appreciated but often equally invasive oral symptoms (e.g., dysphagia and drooling) undermine oral health and quality of life. Contrary to reports identifying excess salivation as the cause of drooling, other studies suggest swallowing difficulties (dysphagia) may be a larger contributor to drooling. Our objectives were threefold: (1) Assess the major cause of drooling in patients with PD, (2) ask patients how intrusive they deem their oral symptoms, and (3) determine if patients with salivary disturbance are being diagnosed.

Methods and Observations: We enrolled 37 PD patients during their routine visits to the neurologist. Loss of saliva and dysphagia were assessed by the saliva and swallowing subscales of the RADBOUD standardized questionnaire. A stimulated saliva sample determined flow rate. RADBOUD saliva and swallowing scores were significantly correlated, linking loss of saliva and swallowing difficulty (R=0.573). All but one patient exhibited hyposalivation, with an average 0.37 mL/min flow (normal=1-2 mL/min). Twenty-four percent of patients reported that their oral symptoms were equally or more intrusive than their motor symptoms, while 16% responded they were almost as intrusive. The 40% of patients complaining of oral symptoms had an average swallowing score 3.76 points higher and an average saliva score 7.11 points higher than patients not complaining of oral symptoms. Of the 37 patients enrolled, only 2 patients received diagnoses of salivary disturbance, though all but 1 had insufficient salivary flow.

Conclusions: We assert swallowing difficulty as the primary cause of loss of saliva in PD. For half of patients, oral symptoms are as or more intrusive than motor symptoms. Patients were under diagnosed for salivary disturbance.

Significance: Swallowing deficits leading to debilitating drooling in patients with PD should be treated by a team of health professionals. Rather than treatments aimed to reduce salivation, neurologists should consider therapies to improve swallowing and should also refer to a dentist.

P42 Nasal Administration of Lactate Inhibits Feeding and Enhances Memory Processing in CD-1 Mice
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Supported By: Ms. Koehler is supported by the Medical Student Training in Aging Research program of the American Federation for Aging Research.

Background: Lactate administration has been implicated in the central process of long term memory and feeding. Peripherally administered lactate inhibits feeding via the hypothalamic AMP kinase/malonyl-CoA signaling pathway, increasing anorexigenic peptides. Studies suggest that astrocytes provide neurons energy in the form of lactate. The present study uses nasal administration of lactate to evaluate whether lactate affects feeding and memory processing in CD-1 mice.

Methods: Each mouse was anesthetized with 4% isoflurane and injected nasally in close proximity to the cribriform plate with 1 μl of 0.9% NaCl, 1.0, 1.5 or 2.0 mg of lactate (dissolved into 1 μl of 0.9% NaCl). In the first study we examined the effect of lactate on food intake in fasted mice. A pre-weighed amount of food was placed 15 minutes post-injection to allow for recovery from anesthesia. The food was reweighed every 60, 90, and 120 minutes after placement on cage. In the second study we examined the effect of lactate on memory using T-maze foot shock avoidance and object recognition tests. In T-maze mice were trained to effect. Immediately after training, mice received a nasal injection of vehicle or lactate. Retention was tested one week later. For object recognition, mice were placed for 5 minutes in the test apparatus with 2 like objects. Retention was tested 24 hours later. Mice were placed in an apparatus with 1 object from the prior day and 1 novel object.

Results: Lactate at a concentration of 1.0 mg significantly decreased feeding among CD-1 mice at 60, 90, 120 minutes and 24 hours after nasal injections in comparison with controls. In the memory tests, mean trials to criterion for the T-maze was significantly decreased respectively with 0.5 mg and 1.0 mg of lactate given after training as compared to controls. When injected 24 hours after T-maze training, there was no significant difference between 1.0 mg and the vehicle. At 1.0 mg lactate significantly increased the time exploring a novel object in object recognition as compared to controls.

Conclusions: The current studies suggest that lactate in the CNS decreases food intake and improves consolidation with nasal administration in CD-1 mice.

P43 Ketogenic diet reduces epileptiform activity and improves cognitive performance in a mouse model of Alzheimer’s disease

Supported By: NIH/NIA and AFAR/Hartford Foundation Paul B. Beeson Clinical Scientist Development Award in Aging (1K08AG048354)

Larry L. Hillblom Foundation
Glenn Foundation for Medical Research
NIH/NIA Institutional Training Grant (2T32AG000212)
John A. Hartford Foundation

Background: Alzheimer’s disease (AD) imposes ever-greater burdens on the individuals and institutions of our aging society, and new therapeutic approaches are needed. Mouse models of AD show epileptiform activity caused by dysfunction of inhibitory interneurons. Enhancing interneuron function or suppressing epileptiform activity
improves cognition. We tested if ketogenic diet, effective in certain epilepsies, could rescue epileptiform activity and cognitive performance in a transgenic APP mouse model. Understanding the mechanism of such effects may lead to new therapeutic approaches for AD.

Methods: Studies were conducted with transgenic hAPP/20 mice, fed ketogenic or control diets based on AIN-93M and matched for protein content and other variables on a per-calorie basis. Ketogenic diet contained no carbohydrates. Food intake, body weight, and serum beta-hydroxybutyrate (bHB) levels were tracked. We tested cognitive performance in habituation to the open field and Morris water maze (n=11-14 per group). In separate longitudinal cohorts of mice (n=10-13 per group), we obtained over 1000 hours of video-monitored and open-field EEG recordings before, during, and after short-term treatment with ketogenic diet.

Results: Ketogenic diet rescued cognitive performance in habituation to the open field (P=0.02), dependent upon serum bHB levels. Baseline open field characteristics were not affected. In the water maze, hidden platform (learning) performance was significantly improved (P=0.01), but not probe trial (memory) performance. Two longitudinal EEG studies showed 34% and 43% reduction (P=0.0001 for each) of epileptiform spikes on the ketogenic diet, with a majority of mice showing significant improvement. Spike reduction was independent of gamma (inhibitory interneuron) activity, and induction of gamma by exploration was unchanged.

Conclusions: In this mouse model of AD, a ketogenic diet improved cognitive performance and suppressed epileptiform spikes, downstream of inhibitory interneuron function. The mechanism may be similar to the (unclear) mechanism by which ketogenic diets exert antiepileptic activity. Further work will identify the specific metabolic component of the ketogenic diet that is required for these effects in APP mice, and whether improved mitochondrial function or epigenetic regulation of gene expression by bHB might be the relevant mechanism.

P44 Impact of Losartan on Alzheimer’s disease neuropathology: role for chronic inflammation

Supported By: AFAR
MSTAR
NIH

Background: In older patients chronic inflammation commonly accompanies frailty and increases risk of neurodegenerative disorders. The primary dementia-protective benefits of Angiotensin (Ang) receptor type1 (AT1, R) blockers like Losartan (LOS) are believed to arise from systemic effects on blood pressure. However, there is also a brain specific Angiotensin System at work. Aberrant brain-specific angiotensin AT1 receptor (AT1, R) signaling may increase inflammatory burden and might thereby accelerate the development of neurodegenerative disorders. This prompts the question: Do Brain Ang receptors play a role in AD pathogenesis? Moreover, does brain AT1, R blockade contribute to the salutary effects of LOS? We investigated brain angiotensin II type I and type II receptors (AT1, R, AT2, R) of RAS pathway, downstream effectors on oxidative stress and accumulation of Tau proteins using mouse models of aging, inflammation and the combination of aging and inflammation.

Methods/Results: Proteins from Frontal cortex and cerebellar tissue from aged (100 wks old) control and Losartan (0.9 g/Liter in drinking water, Merck) treated IL10-/- (chronic inflammation model) mice were extracted. Changes in the expression of AT1, R & AT2, R and their downstream effects on nNOS, Nitrotyrosine (NT), and total Tau (Tau5) proteins were analyzed using western blot. Our data suggest that AT1, R levels were elevated in the cortex of IL10-/- mice (1.54±0.54) compared to wild type (0.63±0.35 AU, P=0.0037). A similar increase in AT1, R was also observed in cerebellum (1.90±0.73 AU in C57Bl6 vs. 4.14±2.26 AU in IL10-/-). In contrast, there was a decrease in the protective AT1, R proteins in the cortex of IL10-/-. LOS treatment led to reduction in cortex (P<0.04) and cerebellar (P=0.0534) AT1, R. LOS also decreased nNOS (P<0.04) and the oxidative stress marker NT in the cortex (P=0.0095) and cerebellar tissue NT (P=0.06). LOS also significantly reduced protein levels of Tau5 (P=0.0038) in the cortex.

Conclusion: Chronic inflammation and oxidative stress constitute primary theories of aging, and have been implicated as major contributors to pathogenesis of AD. Understanding how RAS related oxidative stress might be mitigated or exacerbated is critical to advancing the field. Our data suggests a role for a crosstalk between a dysregulated brain RAS and chronic inflammation in the pathogenesis of neurodegenerative disorders.
A1 Physical Activity, Grip Strength and Physical Limitations in Abdominally Obese Seniors
C. M. Germain, 1 J. A. Batsis, 2 E. Vasquez, 3 1. Psychiatry and Behavioral Science, Duke University Medical Center, Durham, NC; 2. Geisel School of Medicine at Dartmouth-Hitchcock Medical Center, New Hanover, NH; 3. School of Public Health, University at Albany (SUNY), Albany, NY.

Background: Obesity and muscle weakness are independently associated with increased risk of physical impairment in older adults. Physical activity is also associated with higher muscle strength and improved function. We examined the combined effects of physical activity and muscle strength on physical limitations in abdominally obese seniors.

Methods: The sample comprised of 3,543 subjects ≥60years with abdominal adiposity (WC females≥88cm; males≥102cm) from the 2006 and 2008 waves of the Health and Retirement Survey (HRS).

Prevalence odds of physical, ADL/IADL limitations were calculated by sex-specific grip tertiles for active and inactive (exercising < 1 per week) adults. The total score from the HRS physical limitation index was used to define PL. ADL limitation was defined as difficulty/inability with dressing, eating or getting out of bed. IADL limitations were defined as difficulty/inability with meals, chores, managing money. Models were adjusted for age, sex, race, education, current smoking status and number of comorbidities.

Results: Thirty-one percent of the sample was male. Overall prevalence of PL was 55.1%, 44.0% for IADL and 43.6% for ADL. Mean grip strength was 32.0kg (men) and 30.3kg (women). Higher grip strength was associated with lower odds of PL and IADL limitations in abdominally obese elders. Those in the highest grip tertile had lower odds of PL and IADL limitations than those in the lowest grip tertile.

Conclusion: Physical activity and muscle strength are associated with lower the odds of physical and IADL limitations in older adults with abdominal adiposity.

Odds of Physical and ADL/IADL Limitations in Abdominally Obese Older Adults

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<th>Grip Strength</th>
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A2 Encore Presentation
Prevalence of sarcopenia in elderly patients attendent at the obesity clinic in the National Hospital of Geriatrics and Gerontology in Costa Rica.
F. Madrigal, I. Barrientos. Geriatric Hospital Costa Rica, San Jose, Costa Rica.

Supported By: No financial disclosure

Background.
Changes in body composition during aging, produce a decrease in muscle mass and increase in fat mass. The presence of sarcopenia is an important cause of frailty, disability and loss of independence in older adults. According to the World Health Organization (WHO), obesity is defined by a BMI (body mass index) ≥30 kg/m². Describe the prevalence of sarcopenia, and the clinical- functional features of older adults obese patients evaluated at the Obesity Clinic in the National Hospital of Geriatrics and Gerontology, Costa Rica.

Methods.
Patients seen at the obesity clinic, from june 2013 to may 2014, with bioimpedance and complete information on the record. Analysis of frequencies through the program SPSS v 17. Analyzed variables: age, gender, comorbidities, physical inactivity. Sarcopenia was defined if BMI ≥ 30kg/m² lower muscle mass, low muscle strength or poor physical performance.

- Muscle mass measured by bioimpedance, Tanita BC-41:
  - Low muscle mass (Janssen formula), if IMF index was:
    - ≤8.51 kg/m² in men
    - ≤5.75 kg/m² in women.

- Muscle strength by Jamar dynamometer in dominant hand:
  - Dinapenia if: ≤ 20 kg in women ≤ 30 kg in men
  - Physical performance: gait speed 6 meters
  - Low <0.8 m/sec

Results.
42 patients were analyzed. Age average 74.5 years. 86% were women. Hypertension was the chronic disease more prevalent (87.8%) followed by osteoarthritis (71.4%) and diabetes (40.8%). Sedentary lifestyle was found in 81.6% of the patients. Weight and BMI averaged: 90.4 Kg ± 9Kg and 38.5 ± 3kg/m². The average of BMI was 9.5 kg/m². 45% of patients have a speed gait < 0.8 m/sec. The prevalence of dinapenia was 46.9%. Only 4.8% presents sarcopenic obesity. Conclusions: Obesity is accompanied by chronic diseases that accelerate the decrease in muscle strength and physical performance deterioration. Dinapenia and sarcopenia are potentially preventable, and must be addressed from the youngest ages.

A3 Evaluation of BMI in Louisiana Nursing Home residents with and without Diabetes Mellitus
R. Nastasie, 1 E. A. Aguilar, 2 S. Barry, 2 C. Cefalu, 1 T. Reske, 1 W. Hudson, 1 A. Abdo, 1 J. Campbell, 1 I. Zeinaty, 1 1. Internal Medicine/Geriatric Medicine, Louisiana State University Health Sciences Center in New Orleans, New Orleans, LA; 2. Medicine, LSUHSC-NO; New Orleans, LA; 3. Family Medicine, LSUHSC-NO, Kenner, LA.

Introduction.
The incidence of diabetes mellitus (DM) has increased in the USA and is a source of concern due to negative consequences on the ever-growing aging populations’ health. The rising rate of overweight/obesity in the elderly imposes massive and rapidly changing burdens of ill-health in Nursing Home (NH) setting. The purpose of this study is to evaluate the usefulness of BMI in the management of DM in NH residents.

Methods.
A cross-sectional study was carried out in 11 NH in the Greater New Orleans Area from April 2012 to August 2013 and approved under LSU Health Sciences Center-New Orleans IRB #7951. Medical parameters were collected including gender, age, body mass index (BMI), and Diabetes Mellitus (DM) status. Data were obtained from the charts of those who met the inclusion criteria of residing for ≥3 months in those facilities.

Results.
727 residents met the inclusion criteria. 509 were females (70%) of which 150 (30%) had DM and 359 (70%) did not. 218 residents (30%) were males and 76 (35%) had DM whereas 142 (65%) did not. Females from non-DM group were 80±13 year old and had a mean BMI of 20±6. Female residents with DM were slightly younger (age 78±12) and had a higher mean BMI (23±6). Males without DM were 70±15 year old, with a mean BMI of 24±6. Diabetic males age averaged 68±11 year old and had a higher BMI (27±6). Among men and women, the lowest averaged BMI was in non-diabetic female
Conclusion: The negative health outcomes of overweight/obesity are well known. Our results suggest that regardless of the gender, DM is associated with higher BMI level.

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DM: Diabetes Mellitus; DM-F: Diabetes Mellitus Females; NDM-F: Non-Diabetic Females; DM-M: Diabetic Males, NDM-M: Non-Diabetic Males

A4

An usual case of Onset of Squamous Cell Skin Cancer in an Elderly Nursing Home Patient

R. Duger, A. Iraqi. Syracuse VA medical center, Syracuse, NY.

Introduction:

Squamous cell cancer (SCC) is the second most common skin cancer. It typically grows over a period of weeks to months. SCC appears on areas of skin most often exposed to the sun. They present as scaling, red areas which may bleed easily and ulcerate, resembling an non-healing sore. The major cause of these skin cancers is years of sun exposure. It is not common to have the onset of SCC in an elderly patient who is residing in a nursing home and does not have excessive sun-exposure. The most common affected site for SCC is the head and neck with arm not the common site.

We describe a case where an elderly patient developed SCC on the left forearm after residing in a nursing home for more than two years.

Case Description:

Mr. X is an 86 year old with medical history including advanced dementia and degenerative joint disease relocated from his home to a nursing home as his wife had difficulty managing his functional needs. On admission his ambulation was at wheelchair level. After about two years of residing in a nursing home he was noted to have a 0.5cm flat scabbed area on his left forearm. Topical bacitracin was initiated with the impression of a localized wound. After initial improvement in a week, lesion began to enlarge again despite bacitracin use. After eight weeks the area enlarged to 1.5 cm raised scaling ulcerated lesion with the appearance of basal cell carcinoma (BCC). Due to the suspicion for BCC the patient underwent an excisional biopsy which revealed SCC with margins completely excised. The excision site healed well within a week with no further recurrence over next two months.

Conclusion:

This case demonstrates the importance of recognition of possible SCC/skin cancers in the elderly nursing home patients. These lesions may develop after a lapse, for many years, from sun-exposure. Clinicians should be aware of the possibility of the onset of a malignant skin lesion even if patients may not have recent sun-exposure but have in their remote past.

A5

Is Melancholy Linked to Malignancy? A Case of Cancer-Related Depression

A. J. McKinnon, D. Remolina. Geriatrics, Rush University Medical Center, Chicago, IL.

Background: Although pancreatic carcinoma and depression have been linked for years, the relationship between depression and other types of malignancies are not as common. Recognizing the complex neuroimmunological interactions of depression in elderly cancer patients may have tremendous implications for diagnosis and treatment for these patients.

Presentation: L.D. was an 89 year-old female who was transferred from an outside hospital to the Psychiatry unit at Rush University Medical Center for progressively worsening anxiety and depression. She had previously presented with complaints of severe left-sided leg pain and was found to have SIADH. She received treatment with fluid restriction and demonstrated improvement of her sodium levels. All studies at the outside facility including x-rays, lower extremity doppler ultrasound, and bone scan were negative. On exam, patient was noted to have a large sternal mass along with prominent, diffuse lymphadenopathy. Laboratory data confirmed hyponatremia due to SIADH, elevated LDH level and anemia.

CT scan of the chest revealed a large soft tissue mass surrounding the sternum with associated osseous destruction concerning for malignant neoplasm, enlarged supraclavicular and bilateral axillary lymph nodes, as well as bilateral pulmonary micronodules. CT guided FNA and core biopsy of anterior chest wall mass was performed. The patient was transferred to the general medicine floor for further management. The final pathology revealed diffuse large B-cell lymphoma.

She was evaluated by Hematology specialists, however, the patient and family chose supportive care for management. The patient was later referred to hospice and died two weeks later.

Discussion: Greater awareness is needed of the link between mood disorders and lymphoma as well as other forms of cancer. Depressive symptoms have also been linked to pain in cancer patients. Treatment of these patients may improve survival time and quality of life among other important factors.

A6

WHEN HOME IS NO LONGER SAFE: AN HBPC IDT RESCUE

R. M. Kaiser, A. Mohammed. 1. Geriatrics and Extended Care, DC VA Medical Center, Washington, DC; 2. Geriatrics and Palliative Medicine, GWU School of Medicine, Washington, DC.

Supported By: Nothing to disclose

Older adults with cognitive decline may be reluctant to leave home, even when they are no longer able to care for themselves. The ability of the medical and legal systems to resolve such situations is slow, imperfect and tilted toward respecting the patient’s wishes. Ms. A is an 84 year old single woman with progressive cognitive decline, hypertension, glaucoma and arthritis. She lived alone in a 2-story home and received monthly visits from the VA Home Based Primary Care (HBPC) Team. Neighbors assisted her with transportation, shopping, and banking. Over several months, the HBPC Team noted a decline in her ability for self-care. She bathed infrequently and her house was ill-kempt. She rejected offers for a home health aide. She took prescription medication inconsistently and declined to attend medical appointments for Ophthalmology. Her ID was stolen by someone who went to the bank for her. Her brother, who lived out of state, was her health care surrogate and phoned and visited her regularly. He invited her to live with him and his wife, but she declined. HBPC contacted Adult Protective Services to investigate, but she refused to let the case-worker visit. The HBPC Social Worker advised her brother to file for guardianship. A hearing took place, and guardianship was granted. She continued to refuse to leave home, until her brother invited her to an annual family reunion and she agreed to go. On arrival at his home, she refused to go to the doctor or help with personal care. After the reunion, she eloped and was taken by police to a community hospital. She was seen in the ER and discharged. The HBPC Medical Director contacted the ER physician at the local VA hospital, and her brother escorted her there. She was admitted, treated, and transferred to the State Veterans’ Home, where she now resides. Successful relocation of an individual with dementia requires a systematic, persistent coordination of effort between the health care team, the family, the legal

Hyponatremia is the most common electrolyte disturbance in elderly hospitalized patients. Although more rare than the Syndrome of Inappropriate Anti Diuretic Hormone Secretion (SIADH), cerebro spinal fluid wasting (CSW) should be considered in patients with recent neurosurgery.

A healthy 71 year old man underwent an uncomplicated resection of a benign subependymoma. By day 7, his sodium was 127 mmol/L and serum osmolality was 273 mmol/L with urine osmolality 760 mosm/kg and urine sodium of 177 mmol/L. Despite fluid restriction for presumed SIADH, his sodium was 122 on postoperative day 9. Hypertonic saline was initiated for presumed refractory SIADH, but his sodium only rose to 129. On day 14 he was lethargic, hypertensive and bradycardic (Cushing reflex) and he underwent emergent craniotomy. His sodium corrected with saline replacement for what was then apparent cerebral salt wasting (CSW).

Although we commonly think of SIADH, CSW should be considered in hyponatremic patients following brain surgery. SIADH and CSW share many features including low serum sodium, low serum osmolality, elevated urine osmolality and elevated urine sodium. SIADH causes increased absorption of free water with an inappropriately concentrated urine (Uosm >100) and moderately elevated urine sodium (UNa>40). SIADH leads to increased extracellular volume because of water retention and treatment is free water restriction. CSW is thought to be caused by impaired renal tubule sodium reabsorption because of disturbances in the sympathetic nervous system after neurosurgery or because of elevated levels of brain natriuretic peptide (BNP). Patients lose sodium and water leading to volume loss and treatment is volume replacement. His elevated intracranial pressure with hypertension and Bradycardia may have masked his volume depletion, but the high urine sodium was a red flag for potential CSW. Although common and thought to not be as complicated as “brain surgery”, hyponatremia can be challenging and requires careful review of the data in order to optimize management.

**A8**

Hyponatremia: It’s not brain surgery... or is it?

D. T. Feldstein, D. Bynum. Division of Geriatric Medicine, University of North Carolina, Chapel Hill, NC.

Hyponatremia is one of the most common electrolyte disturbances in elderly hospitalized patients. Although more rare than the Syndrome of Inappropriate Anti Diuretic Hormone Secretion (SIADH), cerebro spinal fluid wasting (CSW) should be considered in patients with recent neurosurgery.

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**A9**

**Serotonergic Stimulation - A double-edged sword**

E. Ang, M. Sirca, A. Bhata, S. Berry, L. Lipsitz. 1, Beth Israel Deaconess Medical Center, Boston, MA; 2. Harvard Medical School, Boston, MA.

**Case Report:** An 82-year-old functionally independent woman presented with sudden altered mentation: lethargic and responding nonsensically to questions. At baseline, she independently completes activities of daily living (ADLs) and instrumental activities of daily living (IADLs) except for driving. Past medical history includes depression and hypothyroidism. Her medications were tramadol, duloxetine, gabapentin, levothyroxine and oxybutynin. The duloxetine dose doubled two months ago. She had a similar presentation two months prior to this admission with unremarkable work-up including CXR, CT of head, abdomen/pelvis in addition to CBC/CMP. On admission, the patient was somnolent but arousable to voice. She was completely disoriented and attention was impaired, screening positive for delirium based on the Confusion Assessment Method (CAM). She was afibrile with normal vital signs. A resting tremor was appreciated on her left upper extremity, along with 3+ deep tendon reflexes diffusely and hyperreflexia at the ankles. Facial flushing was present. Testing of CBC, CMP, liver profile, lipase, TSH, B12 level, CRP, Lyme serology, blood cultures/toxicology, and urine studies/toxicology were unremarkable. CXR and CT of head, chest, abdomen/pelvis were unrevealing. MRI of head was unremarkable. EEG was negative for seizures. Duloxetine and tramadol were held upon admission given suspicion of serotonin syndrome. She returned to near baseline functional status after four days and was discharged to a SNF on a tapering dose of duloxetine. Tramadol was stopped. Discussion with a toxicologist confirmed that serotonin syndrome was the most likely diagnosis.

**Discussion:** Serotonin syndrome was likely the cause for this patient’s delirium. Serotonin syndrome is a clinical diagnosis made in the presence of a drug that increases serotonin levels plus any of the following Hunter Criteria: spontaneous clonus; inducible clonus plus agitation or diaphoresis; ocular clonus plus agitation or diaphoresis; tremor plus hyperreflexia; hypertonia plus temperature above 38°C plus ocular clonus or inducible clonus. This patient demonstrated tremor and hyperreflexia in the setting of an increased dose of a selective serotonin reuptake inhibitor (duloxetine) in combination with tramadol. Serotonin syndrome can have serious sequelae including delirium and death. Nonetheless, it is often underdiagnosed. Clinicians should be cognizant of its clinical features.

**A7**

**Depressed Mood, Taste Changes, and Urinary Incontinence in a Geriatric Oncology Patient**

C. Presley, K. Rothenberg, P. Kirwin, H. Chao. Geriatrics, Yale School of Medicine, New Haven, CT; 2. Oncology, VA Medical Center, West Haven, CT; 3. Geriatric Psychiatry, VA Medical Center, West Haven, CT.

Case: A 91 year-old veteran with a history of a total colectomy presented to a geriatric psychiatry clinic for a 4-week follow-up for depressive symptoms. On the first visit, depressive disorder secondary to medical condition was discussed. During this follow-up visit, he was seen together with a geriatric psychiatry and a geriatric oncology fellow as part of their integrated curriculum.

He had a new diagnosis of metastatic prostate cancer and was receiving hormonal blockade from his urologist. Review of symptoms was again positive for anorexia, fatigue, and depressed mood but had new symptoms of urinary incontinence, taste changes, and poor exercise tolerance. On this follow-up visit, low-dose venlafaxine was initiated and an MRI to rule out neurological compromise was ordered which revealed bilateral hydronephrosis and bladder outlet obstruction due to a large, exophytic prostate mass. Bloodwork in oncology clinic showed acute kidney injury with necessitated subsequent inpatient admission. While inpatient, with Foley placement, his taste changes, appetite, and exercise intolerance improved while kidney function returned to normal. Motivation, mood and fatigue gradually improved with venlafaxine over a two-month timeframe.

Discussion: Diagnosing depression in the geriatric oncology patient is a multifaceted challenge as depressive symptoms are less commonly identified and treated. In this patient, low mood with fatigue corresponded with symptoms attributable to bladder outlet obstruction with resulting acute kidney injury. Co-evaluation resulted in appropriate diagnosis and medical and psychiatric treatment. Geriatric oncology is a growing field that specializes in addressing the special care needs of older cancer patients. A multidisciplinary approach is required to adequately care for the burgeoning number of geriatric oncology patients. A comprehensive evaluation and joint management approach led to targeted diagnostic evaluation and dual intervention. Geriatric oncology patients have complex problems and represent a challenge for traditional single specialty practice. They benefit from a collaborative healthcare environment and from the integration of geriatrics into subspecialty training.

**A7**

**Depressed Mood, Taste Changes, and Urinary Incontinence in a Geriatric Oncology Patient**

C. Presley, K. Rothenberg, P. Kirwin, H. Chao. 1. Geriatrics, Yale School of Medicine, New Haven, CT; 2. Oncology, VA Medical Center, West Haven, CT; 3. Geriatric Psychiatry, VA Medical Center, West Haven, CT.

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A10
Communication Breakdown: Slowly Progressive Intermittent Aphasia

Background: Primary Progressive Aphasia (PPA) is a focal neurodegenerative disorder that begins with relatively isolated atrophy of the language center of the brain. PPA spares memory for years before degenerating into dementia that limits independent activities of daily living (ADLs). We present a case of a patient with increasing expressive language deficits over 20 years which culminated in a diagnosis of PPA when she experienced acute functional decline.

Case Report: An 85 year old woman presented for geriatric assessment for communication difficulties. She suffered from unusual episodes of inability to understand verbal language from others as well as limited language fluency. Nearly two decades ago, sudden episodes of aphasia were triggered by ringing telephones or doorbells, lasting hours, with normal interactions between episodes. Neuroimaging, EEGs, and metabolic workups were negative. Neuropsychiatric testing noted only limited language fluency during episodes. Psychiatric assessment attributed symptoms to a hysterical reaction. Over years, symptom length and frequency increased, yet she had an active social life, was an avid reader, and communicated with family by typing. On comprehensive geriatric assessment she had receptive aphasia for days, and her family had noted worsening of short term memory deficits. On neuropsychiatric testing, limited by her aphasia, her memory, recall, and language fluency were poor, and compared to prior testing, she had declined measurably over five years. Given decades of progressive receptive and expressive aphasia with recent cognitive decline and functional impairment, she was diagnosed with PPA.

Discussion: PPA is an unusual clinical syndrome that begins before the 6th decade as a focal neurodegenerative disease and develops into a pervasive dementia over time. Three core diagnostic criteria for PPA include receptive and expressive aphasia, progressive neurodegenerative disease, and relatively isolated language impairment at onset. Additional neurologic deficits that affect ADLs develop years later in the disease course. PPA is a sporadic disease, with multiple causes including Alzheimer’s disease and frontotemporal degeneration. Unfortunately there are currently no modulators for the disease. However, establishing a diagnosis for PPA is useful in order to effectively counsel patients and families on disease progression, adaptive strategies, and expectations.

A11
Rethinking of Candidacy for Bariatric Surgery in Geriatric Population
F. Famoori, D. Chau, R. Aminbakhsh. UCSD, San Diego, CA.

Introduction: Numbers of patients older than age 65 undergoing bariatric surgery (BS) increased from 2005(2%) to 2009(4.8%). Guidelines recommend BS between age of 18-65 but few studies provided information on the safety and effectiveness of BS in elderly.

Case description: A 69 year old obese male underwent sleeve gastrectomy in 2012 with a wt loss from 303 to 144 lbs and constant low prealbumin of 14.9 during 2 years.Mirtazapine was started which helped slightly. Later patient developed dystonia of Lt extremit which when extensive work-up no cause was found. Patient was sent home with TPN infusion by Picc-line for 3 months which was discontinued due to the line infection. Finally after 9 months follow-up in Endo/Wt clinic due to not gaining wt and low prealb, patient was admitted to SNF for NG-tube feeding with goal of getting NL prealb and permanent J-tube placement. Review of all tests by Geriatricians revealed patient had normal BMI 23,albumin,vit B12 and electrolyte. Elevated homocysteine/MMA were found, indicating a functional B12 deficiency given his gastric antrum removal which might cause hemichorea in this patient. After further discussion by geriatricians with endo/surgery team, the decision was made to optimize medical management with oral protein supplementation, monthly parenteral Vit B12 and short-term anabolic steroid supplementation to improve muscle wasting. NG-tube was removed and patient was sent home. Interestingly after 3 months patient had wt gain by %7 and improvement of chorea.

Discussion: BS in elderly is controversial due to a paucity of established guidelines. Considering more post operation complication and vitamin, protein deficiency, especially as sarcopenia as a geriatric syndrome accelerates in elderly patients, intensive lifestyle interventions with an emphasis on exercise and strength training is preferred over BS in obese elderly. A Preoperative consultation with a Geriatrician should certainly be completed before BS for elderly patients. There is poor correlation between serum protein levels and nutritional status. Inflammation, many other conditions can decrease albumin and pre-alb. Decreasing intake does not consistently correlate with a decrease on alb and prealb, nor does increasing intake necessarily increase these levels. In light of this discrepancy it would be safe to conclude the serum proteins are neither specific, nor sensitive indicator of nutritional status. We discourage widespread usage of albumin or prealb as markers for malnutrition.

A12
Come Out of the Blue, the evaluation of rapidly progressive dementia
F. Famoori. Geriatrics Medicine, UCSD, San Diego, CA.

Supported By: No financial disclosure

Introduction: Creutzfeldt Jakob disease affects one person in every one million people per year worldwide and in US about 300 cases per year. The most common form of CJD occurs sporadically. 2/3rd of individuals die within 6 months often of pneumonia.

Case description: A 74 year old male with PMH of Malt lymphoma presented to VA/San Diego in Feb/14 with progressive cognitive decline, UTI and multifocal pneumonia after he was told to follow in VA/SD at VA/Oklahoma. Apparently he was at his baseline in 10/2013 doing all his ADL/IADL. Then in January he began to decline, having bowel movement in his cloths, urinating in the cups, seeing snakes and unable to walk. Due to rapid cognitive decline a vast work-up was done including CT-head/thyroid panel/vitamin B12/Rheumatology screen/ lumbar puncture for meningitis/eencephalitis, also CSF protein 14-3-3.All studies resulted negative. Accordingly Infectious or Metabolic Encephalopathy, autoimmune disorders and stroke were ruled out. EEG exhibited diffuse nonspecific abnormalities suggesting brain dysfunction. Regarding negative 14-3-3 protein and atypical EEG for CJD plus history of malignancy patient was started on IVIG for possible paraneoplastic syndrome which was discontinued because gastric biopsy was consistent with low grade stable Maloma since 2004.MRI brain indicated extensive cortical Ribboning on left parietal and bilateral frontal region supported by FLAIR sequence. After reviewing the entire data by Geriatric,Neurology,Neuroradiologist team and in collaboration with Prion Specialist at UCSF conclusion was made that CJD is definite diagnosis. The patient was sent to Hospice care who died in July/2014.

Discussion: Precise investigations of rapid progressive cognition alteration are important to rule out reversible cause of dementia before confirming a CJD diagnosis. There is currently no single diagnostic test for CJD. The 14-3-3 assay with sensitivity 92%, specificity 80%, although of moderately high diagnostic accuracy, should not be relied to exclusively establish the diagnosis of CJD. The usefulness of 14-3-3 assay should be employed in the context of clinical judgment. Periodic sharp and slow wave complexes on EEG with sensitivity 66%, specificity 74% tend to occur in older patients, in half of them 6 months or
more in the course of disease and then to decrease as the condition progresses. Due to EEG pattern variation and regarding high sensitivity 93.8% and specificity 95% of FLAIR sequences, MRI is emerging as valuable tools in diagnosing CJD.

A13 Crossing the line: Diagnosing HSV Encephalitis in a Hospitalized Patient with Confusion

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Introduction: Delirium is a common cause of altered mental status (AMS) in hospitalized geriatric patients with an estimated prevalence of 30 to 40 percent. Less common is Herpes Simplex Virus (HSV) encephalitis which annually accounts for 2,000 to 4,000 viral encephalitis cases, and is the most common cause of sporadic fatal encephalitis. If untreated, HSV encephalitis has a 70% mortality rate versus 19% if treated.

Case: A 72 year old woman was admitted to the hospital with new onset headache, confusion, and generalized weakness. On exam, the patient was alert and oriented, but inattentive and easily distracted. Head CT and initial labs were unremarkable with the exception of mild leukocytosis without left shift and low B12 which was supplemented. Within 48 hours, visual hallucinations, confusion, and expressive aphasia were evident. Concern for benzodiazepine withdrawal prompted re-initiation and taper of alprazolam 1mg bid that was discontinued on admission. Seroquel 50 mg qhs was started for agitation. MRI of the brain demonstrated findings suggestive of right temporal infarct.

Within hours, the patient became somnolent in the setting of fever, Tmx of 103. Seroquel and alprazolam were discontinued and intravenous lorazepam was started given concern for withdrawal and seizures.

Neurology reviewed the MRI of the brain which showed bilateral restricted diffusion with temporal lobe involvement and suggesting possible HSV encephalitis. A lumbar puncture showed glucose of 52, 9 RBC, 196 WBC, protein of 71, and 9 lymphocytes. Acyclovir was started and HSV PCR returned positive a few days later.

Discussion: HSV encephalitis must be considered in patients with fever plus at least one common focal neurological symptom including AMS, focal cranial nerve deficit, hemiparesis, dysphagia, aphasia, ataxia or focal seizures. MRI of the brain typically shows white matter lesions in the medial temporal lobe. As demonstrated in this case, lesions crossing midline are highly suggestive of an infectious process. Confirmation of HSV encephalitis is made by CSF evaluation using HSV-PCR which has 98% sensitivity and 94% specificity for up to one month following presentation of clinical symptoms. Prompt diagnosis and treatment with IV acyclovir or valacyclovir is essential as delays in treatment are associated with poorer clinical outcomes due to rapid viral replication.

A14 An Unusual Habit Causing PanDEWmonium


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Introduction

Caffeine is a widely consumed substance present in many foods & beverages (chocolate, coffee, tea, soft drinks) and many medications. The most widely used CNS stimulant, caffeine, has well recognized addictive potential. Prolonged and excessive intake leads to caffeinism, a serious medical condition with often deleterious effects.

Case

A 61 yo man presented with 7 month history of intermittent chest pain, dizziness & bilateral wrist tremors. His daughter also endorsed him experiencing episodes of confusion, memory loss, falls, insomnia, worsening depression and anxiety during this time. PMH included CAD s/p stents, COPD, tobacco abuse and HTN. The Acute Care for Elders (ACE) Team was consulted for further assessment; their exam noted significant findings of low-normal BP, bilateral high amplitude wrist tremor with resting and action components, diminished sensation below ankles, and slightly wide-based gait. MMSE score was 26/30, GDS was 9 and CAM was negative. Work-up showed normal basic blood chemistry and routine cardiac imaging. Alcohol and other intoxicants were absent, and reversible cognitive workup including syphilis serologies was normal. Brain MRI with head/neck MRA was unrevealing. He was, however, found to have new onset DM with A1c of 9.4% and antihyperglycemic agents were initiated. Most revealing, however, is that comprehensive ACE consultation identified he typically consumed up to 24 cans of Mountain Dew® daily since his wife died 8 months prior, constituting his entire daily caloric intake most days. Given this new information, he was diagnosed with psychostimulant overdose in the form of caffeine intoxication as well as depression. Most symptoms (tremor, imbalance, etc.) improved with decreased intake of caffeine in hospital. He developed a mild headache which was treated supportively, and low dose SSRI + grief support was begun to address his depression.

Discussion

Caffeinism is a syndrome consisting of physiological & behavioral symptoms resulting from chronic caffeine consumption. Symptoms span nervous irritability, tremors, palpitations, sensory disturbances, diuresis, GI disturbances, insomnia, depression and anxiety. The development of caffeinism in this patient was likely due to excessive ingestion of Mountain Dew®. This case emphasizes the importance of obtaining a meticulous dietary and social history to avoid overlooking this diagnosis.
DISCUSSION – Assessing elderly drivers involves evaluation of multiple domains of cognition, as well as information obtained from family members. Impaired judgment and insight may present as an early manifestation of dementia and may cause slight but important impairment in complex tasks such as driving. This information may not be reported by the patient or family members as they may not have noted significant changes yet. Conducting basic cognitive testing related to judgment and executive function at scheduled intervals of 6-12 months may aid in detecting impaired driving ability before it manifests itself in a more dangerous form.

A16 Where have all my platelets gone?: A case of ITP presenting as AMS
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Introduction: Recent studies reveal that the highest age-specific incidence of immune thrombocytopenic purpura (ITP) is in adults over 60 years of age: 4.6 per 100,000 people. Up to 50% of elderly patients presenting with ITP will require treatment for thrombocytopenia for at least 6 months (chronic ITP), and 20% to 30% may not respond to conventional treatments (chronic, refractory ITP) although recognition of the characteristics of clinical presentation and complexity of differential diagnoses for thrombocytopenia in the elderly may differ from that of pediatric and young adult ITP.

Case Description: The patient is a 86 year old woman with dementia of the Alzheimer’s type, atrial fibrillation, hypertension, hyperlipidemia, and remote transional cell carcinoma of the bladder, who presented with 4 days of altered mental status. She had a platelet count of 50,000/µL on admission and decreased the next day to 16,000/µL. Coagulation studies were complicated by a elevated D-dimer without schistocytes on peripheral smear. A head CT was negative for bleed and a broad infection workup was negative. A CT chest, abdomen, pelvis showed no lymphadenopathy or relapse of bladder cancer. The patient had outpatient mild intermittent asymptomatic thrombocytopenia in the preceding year. Giant platelets were seen on peripheral smear. She responded initially to 2 unit platelet transfusion with platelet count rise to 50,000/mcL and subsequently declined in less than 12 hours to 29,000/µL consistent with suspected ITP. She was then given 0.5g/kg of IV gamma globulin for 3 days with a response back to normal within 1 week. Her mental status improved close to baseline.

Discussion: This case illustrates an unusual case of ITP presenting with AMS and minimal petechiae in an older patient in contrast to acute bleeding seen in the younger ITP patients. The patient required a broad evaluation for cause of thrombocytopenia given significant comorbidities and considerations for management. Although rare, ITP may occur in the geriatric population and require complex evaluation for diagnosis. Prompt diagnosis and hematology consultation for appropriate treatment was critical in managing and stabilizing her condition.

Conclusion: In elderly patients with AMS presenting with thrombocytopenia careful diagnosis is based on exclusion of causes of thrombocytopenia. Prompt hematology consultation and treatment with close follow up is required

A17 CADASIL, a rare cause of strokes, dementia, and mood disorders
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Introduction: Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is a hereditary disorder that can manifest as migraine headaches with aura in the 30’s, strokes in 40’s-50’s, dementia in the 50’s, gait difficulties in the 60’s, and eventual death from complications of the illness. In some instances CADASIL may also present with psychiatric symptomatology. Since CADASIL is inherited in an autosomal dominant fashion, it has profound ramifications for family members as well as the patient. We present a case that highlights the clinical symptoms and progression of this disease, and testing needed to confirm the diagnosis, and considerations for counseling and testing of family members of patients with CADASIL.

Description: Mr A is a 63 y/o male who developed strokes in his late 50’s and presented with dementia and delusions in his 60’s. The patient’s head CT and MRI demonstrated multiple lacunar infarcts as well as infarcts in the left temporal lobe. Cardiac monitoring did not reveal atrial fibrillation, but an echocardiogram with bubble study showed a patent foramen ovale which was subsequently surgically closed. Despite aggressive management of all his significant risk factors by his primary care physician and neurologist, the patient continued to suffer recurrent stroke’s with worsening dementia as well as loss of executive function, sexual disinhibition, and onset of delusions. The patient underwent further diagnostic testing that confirmed the diagnosis of CADASIL.

Discussion: This case highlights an important cause of strokes, dementia, and mood disorders that is often overlooked. CADASIL is a progressive, non-amyloid, angiopathy involving the small arteries and capillaries due to a mutation in the NOTCH 3 gene on chromosome 19. MRI findings may suggest the diagnosis. Patients usually present with lacunar lesions and temporal lobe findings may also be present. CADASIL is a progressive disease and even aggressive modification of risk factors for cerebrovascular disease may not alter the course of the illness. Asymptomatic family members should be informed about the inheritable nature of the disease and genetic consultation and counseling should be offered.

A18 Fracture of Unknown Origin
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Supported By: The authors have no financial disclosures

Fractures are common in the geriatric population and can lead to significant impairment in health status. Osteoporosis is a commonly recognized cause of fracture in older adults. However, less common but potentially more detrimental causes of bone fragility can be overlooked if not considered in the geriatric patient presenting with fracture.

A 77 year-old female living independently in the community with hypertension, hyperlipidemia, and osteopenia presented to the emergency room with acute onset of chest and left elbow pain that awoke her from sleep. There was no history of trauma. The chest pain was located below her left breast and axilla and was aggravated by movement and deep inspiration. Physical examination was significant for left lateral chest wall tenderness and left elbow swelling, erythema, ecchymosis, and decreased range of motion. Initial laboratory studies including inflammatory markers and uric acid level were normal except for an elevated D-dimer of 1.12 µg/mL. Cardiac workup including troponins and EKG were unremarkable. X-rays of the ribs and left elbow did not show any evidence of fracture. A ventilation-perfusion scan was low probability for pulmonary embolism.

The patient was admitted to the inpatient geriatric service for pain control and further evaluation. Chest CT uncovered a displaced fracture of the left fifth rib and a spiculated 8 mm nodule at the lateral right upper lobe. Left upper extremity CT showed a comminuted fracture of the radial head. Underlying causes of pathological fractures including osteoporosis, osteomalacia, Paget’s disease of bone, and benign bone tumors were considered with particular attention paid to malignancy, given the newly discovered lung nodule on CT scan.
The patient subsequently underwent a CT of the abdomen and pelvis, which revealed a lobulated intraluminal non-calcified mass in the duodenum. An EGD with biopsy was done and returned with benign pathology, although a malignant lesion could not be completely excluded. The patient was discharged home to follow up with GI for endoscopic removal of the mass, an outpatient PET scan to look for evidence of malignancy, and a repeat chest CT in 3 months to follow the lung nodule.

This case illustrates the importance of careful consideration and thorough evaluation of underlying pathology in patients who are found to have seemingly unassuming fractures. More serious diagnoses such as malignancy can otherwise be easily overlooked.

A19
Diagnostic Challenge in a Case of Cerebellar Stroke with Amyloidosis
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BACKGROUND
Cerebellar strokes are no more than 3% of all strokes. The average age of patients is 65 year and two-thirds of them are male. While accurate diagnosis is frequently challenging due to non specific presenting symptoms, as high as 60% patients receive delayed diagnosis.

CASE
A 65 year old Ethiopian male with Hypertension, Amyloidosis and Diabetes Mellitus admitted to skilled nursing facility for physical and occupational therapy and medical optimization as a preparation for stem cell transplant for primary Amyloidosis. He was wheel-chair bound and minimally ambulatory. Diagnosis was delayed in spite of multiple symptoms caused by amyloidosis including gastrointestinal bleeding, hematuria, catheter site bleeding, cardiomegaly, peripheral neuropathy and autonomic neuropathy with syncope due to orthostatic hypotension. Renal biopsy revealed AL amyloidosis. Urine and serum immunofixation showed Lambda light chain. Cardiac MRI reported cardiac amyloidosis. During his stay at nursing facility, he developed nausea and vomiting without headache or focal weakness. He refused to get up from bed and the neurologic assessment was limited. Initial investigations for a systemic illness were completely normal and covering physicians and staffs decided to just monitor him. However, due to persistent symptoms over a day and history of multiple bleeding, he was sent out to hospital. Brain scan revealed cerebellar stroke and hydrocephalus. Neurosurgical intervention was ruled out due to high bleeding risk. All conservative measures failed and he expired.

DISCUSSION
Nausea and vomiting occur in over half of cerebellar strokes. These can be predominant presenting symptoms and disproportionate to any associated dizziness. Insufficient examination and imaging can result in misdiagnosis. Central nervous system cause of vomiting should be taken into consideration in patients lacking associated symptoms suggestive of a systemic disease. Such case should be examined for cerebellar signs that might otherwise be overlooked in non-ambulatory patients. Relatively young patient are more prone to be misdiagnosed. Early correct diagnosis is crucial to prevent and/or treat potentially fatal complications, such as brainstem compression and obstructive hydrocephalus.

REFERENCE
1. Lancet Neurol 2008;7: 951-84

A20
Serotonin Toxicity in Hospice: To treat or not to treat?
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Introduction:
Serotonin Syndrome (or Toxicity) is a potentially life-threatening condition associated with increased serotonergic activity in the CNS. The dilemma in hospice/palliative medicine is whether or not to pursue aggressive treatment & intervention for life-threatening complications when the expected survival is already poor & the focus is on treatment burden reduction (rather than introduction).

Case:
68 year old male with a metastatic Pancoast tumor & unfavorable progression despite chemotherapy & radiation. He was admitted to our nursing home hospice unit for end of life care. Upon admit, the patient had severe & debilitating involuntary jerking, hyperreflexia, tachycardia & hyperthermia. Other comorbidities included anxiety, depression & chronic subdural hematomas. Prior to admission, he experienced intractable Pancoast tumor related neuropathic pain & had been unsuccessful treated with maximal doses of Gabapentin, Capsaicin, Morphine & Fentanyl. Nortriptyline was recently initiated as adjuvant medication to address neuropathy. Other medications included Citalopram & Senna/Docusate. He was diagnosed with Serotonin Syndrome due to concurrent use of Citalopram & Nortriptyline. We elected to pursue aggressive symptom palliation; this included the discontinuation of the offending drugs & the use of Cyproheptadine for reversal. Additionally, benzodiazepines were used for myoclonus. Complete reversal was achieved after 24 hours of intensive therapy. The patient’s symptoms abated completely & he died peacefully 2 days later.

Discussion:
Unfortunately, Serotonin Syndrome is widely unrecognized amongst clinicians; a lack of awareness of the syndrome can result in progression to severe illness and suffering. The triad of mental status changes, autonomic hyperactivity & neuromuscular abnormalities can be extremely distressing to both patient & their caregivers. Traditionally, the philosophy in hospice/palliative medicine has been “less is more” – decreasing the treatment/pill burden for a patient in efforts to improve their quality of life. However, we strongly advocate that potentially reversible causes of acute illnesses (such as Serotonin Syndrome) that lead to unnecessary suffering & discomfort in hospice patients should be treated proactively. Such an approach will lead to better outcomes in the form of improved symptom relief, family satisfaction with care & smoother transitioning towards the end of life.

A21
A Case of Rapidly Progressive Amyotrophic Lateral Sclerosis in an Older Adult
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Purpose:
Recognize Amyotrophic lateral sclerosis (ALS) as a cause of progressive motor neurologic symptoms in an elderly patient and that disease progression can be rapid.

Case:
A 79 year old African American female with a history of hypertension, type 2 diabetes, atrial fibrillation, goiter, depression and GERD presented for evaluation with a 6 month history of 60 lb weight loss along with progressive dysphagia, dysarthria and weakness. Initially, her weakness manifested as right foot drop and right leg weakness but progressed to include left leg and right hand weakness. She developed muscle twitching, hoarseness, dyspnea on exertion and orthopnea. EMG was diagnostic for ALS. She was treated by a multidisciplinary team. Riluzole was not used given her age and comorbidities.
Her disease advanced rapidly, with declining motor and speech function, difficulty swallowing and respiratory compromise. She died 6 months after presentation in home hospice.

**Discussion:**
ALS, also known as Lou Gehrig’s disease, is the most common degenerative disease of the motor neuron system and is incurable. The prevalence is 3.9 cases per 100,000 persons in the U.S. general population. It is more common in Caucasian males in their 60s. Only 5-10% of cases are familial. Nerve conduction studies and EMG are used to confirm the diagnosis. The goal of treatment is to improve quality of life. A multidisciplinary treatment team including speech, occupational and physical therapists, pharmacists, physicians and social workers is most helpful. Special attention is paid to nutrition, respiratory support, energy conservation strategies and maintaining the ability to communicate. Approved for ALS treatment, riluzole can prolong survival by months, but requires liver function monitoring. Average life expectancy is 3-5 years, with decline in pulmonary function most closely correlating with death.

**Conclusion:**
This case highlights that Geriatricians should consider ALS in all patients presenting with progressive motor weakness and bulbar symptoms, even those of more advanced age. Although life expectancy is usually a few years, the course can be rapidly progressive in older adults with other comorbidities and less functional reserve. Treatment is supportive and pharmacologic. Goals of care and end of life discussions should be addressed once ALS is diagnosed.

**A22**
**Delayed Osteoporotic Fracture Healing in a Case of Vitamin D Deficiency**

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**BACKGROUND**
Vitamin D metabolites have been shown to be critical for fracture healing. Low vitamin D levels has been associated with delay in bone repair.

**CASE**
64 year old Caucasian female with history of diabetes, asthma with frequent steroid use and vitamin D deficiency, had bilateral distal femur fracture from a ground level fall. Surgical intervention was done for both fractures. Functional improvement was minimal for over two months, then she was allowed partial weight bearing on right lower extremity (LE) and weight bearing as tolerated on left LE. Five months later, she was allowed to fully bear weight on left LE, but only toe-touch on right LE. X-ray of distal femurs showed unsatisfactory healing. Vitamin D level prior to the fractures was 11 ng/ml and repeat was 16 ng/ml after eight months of treatment with 200 units of vitamin D3 twice daily.

**DISCUSSION**
Glucocorticoid therapy is the most common cause of secondary osteoporosis and often the presenting manifestation is fracture. Vitamin D deficiency in adults can precipitate or exacerbate osteoporosis. Older adults and those on steroid treatments require higher doses of vitamin D to correct deficiency. Low vitamin D levels is reported to be associated with the development of delayed or non-unions and increased risk of fracture.

**REFERENCES**

**A23**
**An Unusual Cause of Obstructive Hydrocephalus: PET Negative Malignancy**

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**Case Report**
89-year-old female with past medical history of GERD, sick sinus syndrome s/p pacemaker, atrial fibrillation, hypertension and severe pulmonary hypertension presents to geriatric clinic for evaluation, accompanied by her daughter who reports rapid memory decline since a fall 1-month prior. Since then her gait has declined and she has developed new fecal incontinence. The patient reports increased weakness and fatigue in the months prior to her fall and an overall progressive physical decline. She denied back pain or weight loss. Previously dependent in all IADLs but independent inBADLs. After the fall, she required assistance in bathing, dressing and ambulation (needed a wheelchair).

On examination, she was awake and alert, unable to rise from wheelchair without using the arms, and was very unsteady on her feet. Motor strength was weaker at the lower extremities; reflexes were symmetric and unremarkable. Cognitive testing revealed a MOCA score of 18/30 and a Geriatric Depression Scale score of 11/15. CT of the brain showed obstructive hydrocephalus.

The patient was admitted and underwent right-sided endoscopic third ventriculostomy & external ventricular drain placement. CSF
cell count & differential, cultures, cytology, AFB, and listeria were unremarkable. PET scan of the brain revealed no areas of intensity, but MRI showed an infiltrative mass lesion involving the pons, right middle cerebral peduncle, and bilateral cerebral hemispheres as well as a lobular extramedullary intradural lesion extending into the left C2-C3 neural foramen with mass effect. CT of the chest/abdomen/pelvis performed to look for a primary malignancy was unrevealing.

**Discussion**

Common causes of acquired obstructive hydrocephalus include CNS infections, bleeding, or tumors, specifically medulloblastomas, astrocytomas and ependymomas (Bradley, AJNR 2000). Gliomas typically are diagnosed based on structural and functional neuroimaging modalities as biopsy is often inaccurate (Omor, JAMA 2013). Management algorithms for this type of lesion are often dependent upon the neuroimaging findings (Sanai, J Neurosurg, 2011). The inability of such modalities to characterize this woman’s lesion provides a diagnostic and management challenge and illustrates the limitations in available technology to guide clinical care.

A24

**A Curious Case of Obscure Bleeding**


In patients who present with recurrent GI bleeding despite a history of both ulcers and diverticulosis, further evaluation may be needed. We report a case of obscure overt GI bleeding from invasion of a pancreatic cystadenoma into the small bowel and discuss palliative management of bleeding.

An 87 year old woman with past medical history significant for pancreatic cystadenoma, gastric ulcer, and diverticulosis presented to the hospital for recurrent hematochezia requiring multiple PRBC transfusions. The patient did not take alcohol, NSAIDs or antiplatelet agents. She had 5 hospitalizations for GI bleeding in the last 18 months along with 4 EGDs and 3 colonoscopies. EGDs showed shallow non-bleeding ulcers. Her colonoscopies showed old blood without a source of bleeding. This admission, she underwent tagged red cell scan which showed abnormal activity near the distal jejunum. Angiography by interventional radiology did not locate a source. She underwent small bowel enteroscopy which showed a large necrotic tumor invading into the duodenum with active bleeding. It was felt the patient’s pancreatic cystadenoma eroded into the small bowel causing persistent bleeding. It was not amenable to embolization by IR or endoscopic intervention. She was also at high risk of morbidity for surgical resection. When the patient was medically stable, she elected discharge home with hospice and transfusion of red blood cells for symptomatic anemia.

Serous cystadenomas are historically diagnosed in women during their seventh decade of life as an incidental finding. Malignant transformation into serous cystadenocarcinoma is rare. Malignancy is determined by clinicopathologic findings of locoregional invasion and metastasis. Surgery is indicated for pancreatic cystadenoma in symptomatic patients and in those with rapid enlargement. Palliative management of GI bleeding in cancer patients depends upon source but includes interventional methods such as radiotherapy and embolization as well as non-interventional methods such as octreotide and antifibrinolytic agents. Red blood cell transfusion for palliation is determined by clinicopathologic findings of locoregional invasion and metastasis. Palliative management of bleeding in cancer patients depends upon source but includes interventional methods such as radiotherapy and embolization as well as non-interventional methods such as octreotide and antifibrinolytic agents. Red blood cell transfusion for palliation is determined by clinicopathologic findings of locoregional invasion and metastasis. Palliative management of bleeding in cancer patients depends upon source but includes interventional methods such as radiotherapy and embolization as well as non-interventional methods such as octreotide and antifibrinolytic agents. Red blood cell transfusion for palliation is determined by clinicopathologic findings of locoregional invasion and metastasis.

A25

**Fever from a Hot Shower at a Skilled Nursing Facility**

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Case Description: The patient is an 88-year-old lady with impaired mobility brought in by family for three days of fevers, rigeors, and malaise. One month ago she had a Right Hip Revision Arthroplasty, and one week ago she was discharged home from a Skilled Nursing Facility (SNF). She denies infectious contacts though recalls taking a hot shower at the SNF. On presentation, her vitals were Temperature 39.5 C, Heart Rate 70s, Respiratory Rate 15, Blood Pressure 120/80 and Oxygen Saturation of 95%. Physical examination was notable for passive behavior compared to baseline, and breathlessness with conversation. Abnormal labs included platelets 137 x 10^9/dL, sodium 131 mEq/L, and total bilirubin 2.5 mg/dL. Chest xray revealed right lower lobe infiltrate. Empiric Vancomycin, Zosyn, and Tobramycin were initiated, but by Hospital Day (HD2) she had failed to defervesce and developed hypoxia. HD3 urinary antigen came back positive for legionella, and azithromycin was started. She subsequently defervesced, but her oxygen requirement continued to increase. HD4 CT Angiogram showed increasing right lobe consolidation and bilateral pleural effusions, and on HD5 she developed atrial fibrillation, elevated cardiac enzymes, and EKG changes consistent with NSTEMI. Despite pharmacologic treatment of Acute Coronary Syndrome and trial of diuresis, her hypoxia and effusions continued to progress. By HD6 her Oxygen Saturation was 90% on 10 liters hi-flow nasal canula, and she declined Continuous Positive Airway Pressure and throcarentes. HD9 conclusion of ongoing goals of care conversation was such that she focused exclusively on comfort. HD20 she passed away peacefully with family at the bedside.

Discussion: This lady’s high fever relative to heart rate, hypotremia, and liver function test abnormality exemplify a classic presentation of Legionnaires’ Disease, an important yet under-recognized cause of pneumonia in SNFs that is acquired through man-made water reservoir sources. While annual sampling for Legionella in potable water sources is recommended to SNFs, it is not required and is infrequently done. The Legionella urinary antigen test is cheap, sensitive, and specific, and when positive, should prompt a report to the Department of Public Health to help identify the source.

A26

**Dementia and the “Great Imitator”: Neurosyphilis in a Veteran Presenting with Delirium**

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Introduction: Case reports of syphilis are a vital part of medical history and literature. Given its insidious nature and diverse clinical phenotype, syphilis is known as “The Great Imitator.” Neurosyphilis (NS) is a long term outcome of untreated T. Pallidum infection occurring 10 to 20 years post initial infection. Clinical suspicion is triggered in a select patient group with a progressive change in mental status. Once serology is confirmed, a LP is obtained to assess for WBC, protein, and FTA-ABS. Treatment is with IV Penicillin (PCN) G for a 10-14 day course.

Case Description: We present a case of a 74 year old male with a h/o mild Alzheimer’s Dementia manifested by increasing confusion and forgetfulness. His wife brought him to the ED in 4/2013 for a mental status change. He was disoriented, confused and unable to recall his past military service. He was suspicious and unable to participate in cognitive or physical exams. Workup revealed a positive EIA and RPR 1:16 and a low B12 level of 81pg/ml. HIV was negative. A LP was recommended but declined and treatment was started with IM PCN with PO Probendecid then IV PCN for 14 days. His B12 level was
corrected. Three months later he improved cognitively with an MMSE 30/30 and passed a driving test. Six months later his psychosis recu-
desced. Labs showed a RPR 1:8, which was not dilute enough to be considered successfully treated. LC showed 0 WBCs, normal protein,
CSF VDRL of 1:1, and negative cultures. He received a 2nd course of
Remedies, REM sleep disorder, rigidity and orthostasis - symptoms
CSF VDRL of 1:1, and negative cultures. He received a 2nd course of

Discussion: In tertiary syphilis, T. Pallidum reactivates and
spreads to organs including the CNS with lasting damage. Our case
highlights the complex nature of NS. With syphilis’ incidence rise in
the HIV population, clinicians should remain vigilant to the diagnosis
of NS and its varied presentations. We believe our patient had NS, not
AD or LBD based on confirmed CSF VDRL and his ensuing improve-
ment with treatment, but his low B12 level may have contributed to his
initial presentation. T. Pallidum truly deserves its title as “The Great
Imitator”.

A27
Improved Glycemic Stability with Reduced Injections Utilizing
V-Go® Disposable Insulin Delivery Device in the Long-Term
Care Setting
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Background: Poorly controlled diabetes mellitus (DM) and
fluctuations in blood glucose (BG) present a significant problem for
patients (pts) and staff in the long-term care (LTC) setting. V-Go pro-
vides insulin via a continuous pre-set basal rate with on-demand bolus
dosing, is replaced every 24 hours, and simplifies insulin therapy.
The objective was to describe the impact of utilizing V-Go in pts requiring
insulin for Type 2 DM in the LTC setting.

Methods: A retrospective review of 4 pts evaluating 31 days
Pre- and Post-V-Go use was conducted. Efficacy variables included
proportion of time in euglycemia (100 -200 mg/dl), change in total
daily insulin (TDD), and the associated change in insulin cost. Daily
BG readings were obtained by nursing staff at up to 4 time points at
the same time each day.

Results: The mean age was 79 years. Pts were on insulin ther-
apy. Pre-V-Go mean BG was 198 mg/dL and Post-V-Go was 176mg/
dl reflecting a calculated A1C change of 8.53 to 7.76%. The percent-
age of time spent in euglycemia (100mg/dl -200mg/dl) Pre-V-Go was
45.1% and Post-V-Go was 56.2%, figure 1. There was no reported
BG>50mg/dl and the incidence of BG exceeding 200 mg/dl was re-
bduced by 37%. Mean TDD was reduced by an average of 7.3 units/day
and was achieved by using one rapid-acting insulin instead of different
insulins (long- and rapid-acting) which require multiple daily injec-
tions. The resulting insulin therapy cost was reduced by approximately
$135/month. The mean number of injection sites decreased from 5.25/
day to 1/day.

Conclusions: This first report on the use of V-Go in the LTC set-
ting resulted in improved glucose control, reduced BG fluctuations and
number of injections. Additional studies are needed to assess V-Go as
well as cost and resource utilization in the LTC setting.

A28
Tangled up in plaques: Dementia in Multiple Sclerosis
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Introduction: Cognitive impairment (CI) is common in individ-
uals with multiple sclerosis (MS) but progression to dementia is rare.
Diagnosis and treatment of MS related dementia is a clinical challenge.
Case: A 66 year-old male was admitted from a nursing home
(NH) to the inpatient psychiatric unit for inappropriate sexual behav-
ior. He was diagnosed with MS 40 years ago when presenting with
diplopia followed by recurrent optic neuritis. Natalizumab resulted in
clinical stability of MS but was discontinued after testing positive for
JC virus. CI was evident five years prior when his wife noted difficulty
with instrumental activities of daily living. He continued to have pro-
gression of memory loss in addition to personality changes and agita-
tion. A trial of cholinesterase inhibitor and NMDA receptor antagonist
were not beneficial. His depression improved with venlafaxine after
unsuccessful trials with other antidepressants. NH placement ensued
due to functional decline, increased dependence, and caregiver burden.
Worsening behavioral issues not controlled with various antipsychot-
ics resulted in admission to an inpatient psychiatric unit. CBC, CMP,
UA, TSH, and B12 were unremarkable. Mini-Mental Status Exam
was 8/30 compared to 23/30 five years ago. MRI showed extensive
pericallosal white matter plaques and global volume loss without evi-
dence of progressive multifocal leukoencephalopathy. MS related de-
mentia was diagnosed and up-titration of venlafaxine and quetiapine
improved behavioral disturbances.

Discussion: CI is well documented in MS patients with an estimated preva-
ience of 40-65%. Progression to dementia is less common and difficult
to predict because cognitive decline generally does not correspond
with either disease duration or disability. The extent of periventricular
demyelination and atrophy on neuroimaging often correlate with degree
of deficit. Data are limited regarding effects of disease modifying
therapies but early treatment with immunomodulators may reduce CI
and slow down progression. Cholinesterase inhibitors and NMDA re-
ceptor antagonist have not been shown to be beneficial. Treatment of
underlying mood disorders is important and often helpful. Similar to
other types of dementia, the best approach includes early recognition
of CI, risk factor modification, and optimal patient and caregiver edu-
cation and support.

A29
An Unlikely Link: Paget’s Disease of the Vulva and Colonic
Adenocarcinoma
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Mount Sinai, New York, NY.

Introduction. Extramammary Paget’s disease (EMPD) is a rare
neoplasm affecting the skin of the anogenital area. EMPD of the vulva
(EMPD-V) mainly affects postmenopausal Caucasian women over the
age of 50, with mean age of 65. This case report of EMPD-V demon-
strated a clinical presentation of delayed diagnosis and the linkage
between EMPD and other malignancies.
Case Presentation. A 77 year old white female with depression presented with functional decline and vulvar mass. She reported abdominal bloating and mass-related pain, tingling, and bleeding. She perseverated on “letting it grow for too long” and believed that nothing could be done. Pelvic exam showed an extensive firm erythematous plaque covering the perianal region, perineum, and bilateral labia majora with an exophytic papillary mass arising from the left labium majus, patchy white and erythematous papules around the groin, and serosanguinous drainage. Psychiatric exam revealed depressed mood without suicidality, flat affect, and tangentiality with paranoid and fatalistic delusion. Her hospital course was complicated by bowel perforation. She underwent an emergent exploratory laparotomy with sigmoid resection and vulvar biopsy, and later with vulvar resection and reconstruction. She was diagnosed with stage III-B sigmoid colon adenocarcinoma and EMPD-V.

Discussion. Unlike primary EMPD, which comprises of 75%-96% of the cases and arises from local intra-epidermal apocrine glands, eccrine glands, pluripotent keratinocyte stem cells of the epidermis, or from Toker cells in the vulvar epidermis, this patient likely had secondary EMPD, which is the result of epidermotropic spread of an internal malignancy, mainly gastrointestinal or genitourinary carcinoma. High index of suspicion is required for diagnosis which may be delayed with an average time of 2 years. There is no randomized controlled trial to compare different interventions in women with EMPD-V. Surgery is the mainstay of treatment. Currently, there are no guidelines on the frequency of the follow-up, but two to four times a year of monitoring has been suggested depending on the type of EMPD, with more frequent follow-up for secondary EMPD given the prevalence of recurrence. Future studies should investigate the treatment of choice in older adults with complex co-morbidities and aide in the development of guidelines appropriate for this population.

A30
A rare case of systemic amyloidosis with muscle pseudohypertrophy, alopecia and nail dystrophy
Q Wang, M. Zhu, X. Liu. Geriatric Department, Peking Union Medical College Hospital, Beijing, China.

Background To present a rare case of systemic amyloidosis involving muscle, hair and nail. Methods We described a case with muscle pseudohypertrophy, alopecia and nail dystrophy, finally diagnosed as systemic amyloidosis. Meanwhile, relevant literature of amyloidosis was also reviewed. Results The patient was a 64 years old lady, presented as swelling and hardness of lower limb muscle, as well as alopecia and nail dystrophy. Biopsy of gastrocnemius and scalp skin showed amyloid deposition, with Congo red-staining. Diagnosis of systemic amyloidosis was confirmed, with skeletal muscle and skin involvement, whereas without common kidney, liver or gastrointestinal involvement. Amyloid myopathy is a rare type of systemic amyloidosis, characterized by macroglossia, muscle pseudohypertrophy, palpable tumors or nodules within muscle, and muscle weakness. Muscle biopsy revealed amyloid deposition with Congo red-staining, and the presence of a monoclonal protein in serum or urine is an important diagnostic clue in amyloid myopathy. The prognosis of amyloid myopathy is usually poor, although occasionally long-term survivors are reported. Alopecia and nail dystrophy are also very rare symptoms of amyloidosis, only six cases reporting hair and nail involved in systemic amyloidosis, and no similar case with the combined presence of amyloid myopathy, alopecia and nail dystrophy from Pubmed. Conclusions This patient with amyloid myopathy, alopecia and nail dystrophy is a very rare case of systemic amyloidosis.

A31
“Please help me” - A Caregiver’s Stress
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Caregiver burden is frequently overlooked by clinicians. In 2009, over 43 million family caregivers provided an estimated 40 billion hours of unpaid care.

An 87 y/o woman with PMH of vascular dementia recently transferred care to our geriatric primary care practice; she has been wheelchair bound for the last 2 years due to bilateral lower extremity spastic weakness of unclear etiology. She was living alone in her own single family house, and had 2 sons, one of whom is the sole caregiver. When we first met her son, he was exhausted and unable to concentrate, with delay in response when answering questions. It turned out he was suffering from months-long sleep deprivation. In addition to working full time with a 40 minute commute, he was spending nearly every night with his mother, assisting with most ADL and IADL. On average, it was taking him 6 hours to bathe and dress his mother, a daunting task due to significant spasticity of her legs. He tried to access community home care agencies but was denied services due to income. They tried using paid personal care assistance but stopped due to cost. A referral to our social worker was made to assist in getting access to the available community services. A month later we did a home visit; the son and new personal care assistant were present. He was able to get access to senior home care agencies after filing a frail elder waiver. The patient appeared well and her son looked rested and focused.

Discussion: Family members or friends of older, frail and medically complex patients play a vital role in delivery of healthcare services and ensuring safety at home. Demand for caregivers is expected to rise by more than 85% over the next few decades due to the growing population of older adults. Caregivers’ experiences are considered chronic stressors which pose significant impact on the psychosocial and physiologic well-being of the caregivers. Caregiver assessment is a systematic process that involves gathering information to identify the main problem and specific needs of the caregiver. Providing quality of care for older adults requires an understanding of the family caregiver situation and needs.

Clinicians need to recognize and address family caregiver burden when caring for frail, medically complex older adults. Interventions should be tailored to the needs of the patient and the caregiver. A useful toolkit to guide practitioners in assessment of the need of family caregiver is available on the Family Caregiver Alliance website.
A32
Unusual infection after cat bite in an older woman
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Purpose: Animal bites account for about one percent of emergency department visits and 10,000 inpatient admissions annually. The incidence of mycobacterial infection with animal bites is likely underestimated given lack of routine testing.

Case: A 78 year old female with history of hypertension, CAD, hypothyroidism, diet-controlled diabetes and depression presented to geriatrics clinic after she was bitten by a stray cat on her right forearm. Patient denied having fever or chills, no exposure to water, dirt or fish tanks. Her initial physical examination showed right upper extremity healing scratch and bite marks with nodular areas along the lateral aspect of mid forearm that were firm and tender to palpation. Her initial labs were unremarkable with normal WBC, CRP and ESR.

She underwent incision and drainage with cultures positive for Mycobacterium chelonae (MC). She received 3 month course of clarithromycin and doxycycline which were stopped due to GI side effects and patient not wanting to take antibiotics for so long. However, relapse of infection occurred after 2 months of stopping antibiotics and required additional 6 months of clarithromycin.

Discussion: MC is a rapidly growing Mycobacterium which is an environmental organism found worldwide that grows in subculture and patient not wanting to take antibiotics for so long. However, relapse of infection occurred after 2 months of stopping antibiotics and required additional 6 months of clarithromycin.

Conclusion: MC is a slowly growing human pathogen and should be considered for unhealing cutaneous wounds including recurrent abscesses, nodular lesions with purple discoloration and chronic discharging sinuses most common 3-6 weeks after penetrating skin injury.

A33
HIV In The Elderly
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Case: A 71-year-old man with ESRD presented with acute onset fever, dyspnea and intermittent confusion, after a recent prior admission for pancytopenia and GI bleeding. Hemodialysis had been started after his relocation to our area from Puerto Rico two months prior. CXR revealed diffuse interstitial infiltrates. He was begun on broad-spectrum antibiotics for HCAP. An ID consult was obtained due to his lack of response to antibiotics and an HIV test was ordered. On hospital day 10, the HIV antibody was positive with confirmatory western blot test and CD4 count consistent with a new diagnosis of AIDS. His pulmonary process was reexamined and he was found to have PCP pneumonia. He was started on Bactrim but deteriorated rapidly. A discussion about goals of care was initiated with the family who decided to proceed to comfort measures.

Discussion: The diagnosis of AIDS in this elderly patient was delayed despite multiple clues in his history. Diagnosis of HIV infection in the elderly is increasing, but remains underdiagnosed. AIDS cases reported to the CDC in adults aged 50 or over have increased sevenfold from 1990 to 2005. In 2009, ACP suggested that age of routine HIV screening be expanded to 75 years due to this trend. When testing for HIV is undertaken in older patients, the diagnosis is often made later in the natural history of their disease. At the time of diagnosis, our patient was intermittently delirious and unable to comprehend a discussion of his condition. A written consent for HIV testing had been obtained from the patient but that form did not include consent to inform third parties. In our state, verbal consent is sufficient to proceed with HIV testing but disclosure to third parties requires a written consent. Our patient was able to indicate verbally his approval to disclose his AIDS diagnosis to his daughter (HCP) and this was considered sufficient by our Risk Management team given that she would aid in decision-making and consent for procedures. Interestingly, hepatitis B and C screening tests but not HIV testing are routinely performed in patients starting on hemodialysis irrespective of HIV seroprevalence rates.

Conclusions: HIV infection remains underdiagnosed in the elderly and should be considered in hospitalized patients with atypical presentations. Physicians should be aware of state laws around HIV testing which can be a complicated process in the elderly given the higher risk for delirium and the common involvement of a health care proxy.

A34
A patient presenting with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) with Respiratory Compromise
S. Koduru, M. Eskildsen. Geriatric medicine, Emory university school of medicine, Atlanta, GA.

Authors- Srividya Koduru MD, Manuel Eskildsen MD; Department of Medicine, Section of Geriatrics Emory University School of Medicine

Background: CIDP is an acquired disorder affecting peripheral nerves leading to progressive weakness of proximal, distal muscles and impaired peripheral sensory function. Involvement of the phrenic nerve with respiratory failure is rare.

Case Summary: A 66-year-old female with history of rheumatoid arthritis and atrial fibrillation presented with worsening bilateral upper extremity weakness, edema and respiratory insufficiency to Emory University Hospital (EUH). She had had cerebral spine surgery a year ago, with postoperative dyspnea and diaphragmatic weakness. Prior to surgery she had been having left arm weakness and burning which progressively affected all extremities. Before coming to EUH, she was diagnosed with vasculitis and was treated with cyclophosphamide with no improvement. Initial exam at EUH showed oxygen saturations 94% on 4 liters of oxygen, muscle strength of 3/5 in both arms with absent deep tendon reflexes and decreased vibratory sensation in both hands. Lab tests showed elevated total CO2 of 49. Chest x-ray showed hypoinflated lungs with elevation of right diaphragm. MRI of neck and brain (3 months prior) showed no CNS lesions or nerve compression. Diagnosis was unclear at that point, and though vasculitis was ruled out, she was treated with prednisone as a non-specific autoimmune disorder with no improvement. After a month in hospital, she was transferred to skilled nursing facility. She required BiPAP while in bed. An EMG obtained while at the SNF showed polyneuropathy suggestive of CIDP. She was treated with rituximab, with some mild improvement in her upper extremity strength before she was discharged to home.

Discussion: CIDP is rare, with an annual incidence 0.50-1.60 per 100,000. The diagnosis should be considered in patients with symmetric or asymmetric polyneuropathy more than 2 months. Treatment may speed up improvement or minimize the worsening of symptoms. It may include steroids, immune suppressants, plasma exchange and IVIG. Respiratory compromise is rare (2-7% of cases) and is due to phrenic nerve paresis.
A35

The Pressures of Womanhood: Uterine Prolapse Decubitus Ulcer, An Unusual Cause of Delirium

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Background: Delirium, a common occurrence in long term care (LTC), is associated with increased morbidity and mortality. Determining the diagnosis and etiology of delirium in individuals with cognitive impairment can be difficult. In LTC residents with severe dementia it can be extremely challenging.

Case Report: Ms. L, a 96 year old Greek female LTC resident with advanced dementia, was evaluated for increasing agitation. At baseline she enjoyed speaking about her past, in both English and Greek, and typically was cooperative with nursing care and examinations by providers. Over a two week period the patient began refusing to speak in English, becoming less talkative and withdrawn, refusing blood draws and taking of vital signs. Lab work revealed no abnormalities. The patient became more combative and physically aggressive with staff, as well as shouting at other residents. No identifiable cause of delirium was found, thus it was believed that her symptoms represented a progression of her dementia. However, one day during her personal care a nursing aide noticed a protrusion of tissue out of the vagina. A physician was called. After some time and being spoken to in Greek, the patient allowed a full exam. The exam revealed a reducible Stage IV prolapsed uterus with ulcerations over areas corresponding to pressure points. She was referred to gynecology for evaluation, subsequently undergoing surgical correction of her prolapse. Following the procedure the resident’s agitation gradually abated. Over time her mentation and behavior returned to baseline.

Discussion: Delirium has many causes. The diagnosis and treatment of obscure causes may be difficult in patients who cannot voice their symptoms. The diagnosis and treatment of delirium in patients who cannot voice their symptoms can be difficult. In LTC residents with severe dementia it can be extremely challenging.

A36

A Case of Collaboration between Geriatrics and Transplant Nephrology to Evaluate Suitability for Transplant in an Elderly Male

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Supported By: No financial disclosures

Introduction: The elderly are the fastest growing subpopulation with end-stage renal disease, and patients older than 65 are now being evaluated for transplant more frequently than ever before. Given the complexity of post transplant care, co-management with experts in complex older adults such as geriatricians is essential to identify health priorities and assess the transplant candidate’s ability to adhere to complex medical and surgical regimens.

Case: A 78 year old man with end stage renal disease on hemodialysis secondary to hypertension was being evaluated for kidney transplant. Initial assessment included laboratory studies that were stable. A cardiac evaluation was recommended to complete the medical work up. A psychosocial evaluation revealed a prior episode of depression secondary to the death of close friends, and a lack of a social support system as his only family included a sister who did not live close by. The transplant nephrology service recognized that early comanagement with the geriatric service would help identify risk factors that could predict poor outcome. The patient was scheduled for a comprehensive geriatric assessment prior to being considered for transplant. He was referred to the Geriatrics clinic for a comprehensive evaluation of cognition, depression, functional status, nutritional status, medication management and medical decision making. Based on this thorough geriatric evaluation it was determined that due to his age, co-morbidities, limited social support, and poor understanding of the transplant and medication regimen, he was not a suitable transplant candidate.

Conclusion: This case illustrates the value of early comanagement with a geriatrician as part of the comprehensive assessment of older adults who are candidates for complex surgical procedures. It also illustrates the critically important risk factors that may be identified when geriatric assessment results are provided to the transplant team. Our unique expertise allows us to identify and manage pre, peri, and postoperative risk factors in our geriatric population.

A37 Encore Presentation

Treatment Plan Adherence to Guidelines in Senior Adult Oncology Patients

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Background: Most new cancer diagnoses occur in adults ≥ 65 years of age (senior adult oncology (SAO) patients). Evidence in the literature suggests that SAO patients may be less likely than younger patients to receive care adherent to national guidelines. This report characterizes SAO patient treatment plans in terms of plan adherence to guidelines, and identifies factors associated with plan adherence status.

Methods: The research team reviewed records for SAO patients treated in 2011-2012. Demographic and clinical data were inspected to determine whether clinicians recommended a treatment plan that did or did not adhere to National Comprehensive Cancer Network (NCCN) guidelines (i.e., an adherent plan (AP) or a non-adherent plan (N-AP)). Bivariate and multivariable analyses were performed to identify factors associated with plan adherence status.

Results: Medical records on 52 SAO patients were reviewed. Patient demographic characteristics were: > 70 years of age (81%), female (62%), and white (65%). Overall, clinicians recommended an AP for 40 (77%) patients. Multivariable analyses show that patients who presented with stage II or III disease with limited performance status (PS) were significantly more likely to have N-AP than patients with stage 0, I or IV disease and active PS (p=0.04), or those with stage 0, I or IV and limited PS (p=0.01).

Conclusions: The combination of patient disease stage and performance status was associated with treatment plan adherence to guidelines. Further research is needed to document variation in treatment plans, identify those factors that influence AP or N-AP recommendations, and determine the impact of plan adherence status on patient outcomes.

Likelihood of Receiving an N-AP Recommendation

<table>
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<tr>
<th>Subgroup of interest</th>
<th>Subgroup of reference</th>
<th>OR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
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<tr>
<td>Stage I-II/ECOG 1/3</td>
<td>Stage I-II/ECOG 1/3</td>
<td>0.64</td>
<td>(0.94, 4.53)</td>
<td>0.057</td>
</tr>
<tr>
<td>Stage I-II/ECOG 1/3</td>
<td>Stage I-II/ECOG Active</td>
<td>7.00</td>
<td>(3.7, 20.0)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Conclusions: This case illustrates the value of early comanagement with a geriatrician as part of the comprehensive assessment of older adults who are candidates for complex surgical procedures. It also illustrates the critically important risk factors that may be identified when geriatric assessment results are provided to the transplant team. Our unique expertise allows us to identify and manage pre, peri, and postoperative risk factors in our geriatric population.
A38

Ability of ambulatory ECG-based T-wave alternans to modify risk assessment of cardiac events

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BACKGROUND Exercise-based spectral T-wave alternans (TWA) has been proposed as a noninvasive tool-identifying patients at risk of sudden cardiac death (SCD) and cardiac mortality. The ability of ambulatory electrocardiogram (AECG)-based TWA for risk stratification of cardiac events has not been well established. This study sought to review data regarding 24-hour AECG-based TWA and to discuss its potential role in risk stratification of fatal cardiac events across a series of patient risk profiles.

METHODS Prospective clinical trials of the predictive value of AECG-based TWA obtained with daily activity published between January 1990 and August 2014 were retrieved. Major endpoints included composite endpoint of SCD, cardiac mortality, and severe arrhythmical events.

RESULTS Data were accumulated from 5 studies involving a total of 1,588 patients, including 317 positive and 1,271 negative TWA results. Compared with the negative group, positive group showed increased rates of SCD (hazard ratio [HR]: 7.49, 95% confidence interval [CI]: 2.65 to 21.15), cardiac mortality (HR: 4.75, 95% CI: 0.42 to 53.55), and composite endpoint (SCD, cardiac mortality, and severe arrhythmical events, HR: 5.94, 95% CI: 1.80 to 19.63). For the 4 studies evaluating TWA measured using the modified moving average method, the HR associated with a positive versus negative TWA result was 9.51 (95% CI: 4.99 to 18.11) for the composite endpoint.

CONCLUSION The positive group of AECG-based TWA has a nearly six-fold risk of severe outcomes compared with the negative group. Therefore, AECG-based TWA provides an accurate means of predicting fatal cardiac events.

A39

Association between CYP2C19 gene polymorphisms and clopidogrel resistance in Chinese elderly patients with coronary heart disease

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Objective: To elucidate the preliminary association between Cytochrom P450 2C19 (CYP2C19) gene polymorphisms and clopidogrel resistance (CR) in the Chinese elderly patients with coronary heart disease (CAD).

Methods: A total of 568 patients aged ≥60 years with CAD (386 with stable angina pectoris and 182 with acute coronary syndrome) who received percutaneous coronary intervention (PCI) and treated with clopidogrel for 12 months were enrolled. The vasodilator-stimulated phosphoprotein (VASP) phosphorylation state was determined in all patients received a value of VASP index. VASP index of >50% was regarded as CR. The presence of CYP2C19 gene polymorphisms were determined by polymerase chain reaction fragment length polymorphism (PCR-RFLP) analysis. Then the distribution of the frequencies of genotypes and alleles among CR and NCR groups was analyzed. And we investigated the impact of CYP2C19 gene polymorphisms on long-term prognosis of clopidogrel-treated patients after PCI. The primary endpoint was angina recurrence, urgent coronary revascularization, acute myocardial infarction, stent thrombosis, death and the combined endpoints.

Results: There were 321 patients in the CR group, indicating the occurrence of CR at a rate of 56.6%. Compared with SAP, patients with ACS were at a higher rate of occurrence of CR (65.82% vs 47.53%, P<0.05). Among 568 patients, the genotype distribution of the CYP2C19 *1/*1 was 36.45%, *1/*2 was 45.79%, *1/*3 was 4.67%, *2/*2 was 10.28%, *2/*3 was 2.80%, *3/*3 was 0. Statistically significant difference was observed between CR and NCR groups for distribution of the genotypes (P<0.05). The genotype (*1/*1, *1/*2, *1/*3, *2/*2, *2/*3, *3/*3) distribution of the CYP2C19 were 25.54%, 55.45%, 5.29%, 11.84%, 1.87%, 0% and 50.61%, 33.19%, 4.05%, 8.10%, 4.05%, 0% in the CR and NCR groups, respectively. G681A allele carriers were more likely to develop CR (OR=2.64, 95% CI:1.16-3.86, P<0.01). The incidence of angina recurrence, urgent coronary revascularization and the combined end points occurred more frequently in *2 carriers and *3 carriers than in *1/*1 patients.

Conclusions: CYP2C19 gene *2 carriers and *3 carriers are associated with the occurrence of CR. CYP2C19 gene *2 carriers and *3 carriers are a determinant of prognosis in coronary heart disease patients receiving chronic clopidogrel treatment after PCI.
A41 Exercise and nutrition supplementation on hematological factors in community-dwelling Japanese frail elderly women – RCT placebo trial

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Supported By: The Japan Society for the Promotion of Science

The Ministry of Health Labour and Welfare

Background: Frailty has been associated with disability, dependency, falls, and mortality, and its early prevention is very important. The purpose of the study was to investigate the effects of a 3-month intervention program on hematological factors in community-dwelling Japanese frail elderly women. Methods: Comprehensive health surveys were conducted on 1,835 women over 75 years old. A total of 331 (18.0%) were defined as frail, presenting with ≥3 or more of the following criteria: weakness, slow walking speed, low physical activity, exhaustion and unintentional weight loss. Out of 331 frail women, 131 participated in the randomized controlled trial and were assigned randomly to one of four groups: milk fat globule membrane (MFGM) nutrition group (n=32), placebo (n=33), exercise+MFGM (n=33), and the exercise+placebo group (n=33). Exercise classes were held twice a week for one hour each, and the nutrition group ingested a 1g MFGM pill daily for 3 months. Analyzed blood components included BDNF, IGF-1 to IGFBP-3 ratio, β2microglobulin, and myostatin.

Results: Significant interactions were observed in BDNF (P<0.041) and IGF1/IGFBP3 (P=0.029) from pre to post-intervention. Within group analyses showed BDNF significantly increased 11.4% (95% CI=2.0 to 20.8) in the exercise+MFGM group, and 12.4% (95% CI=4.3 to 20.6) in the exercise+placebo group, however significant differences were not seen in the MFGM or placebo groups. Percent change for β2microglobulin and myostatin were significant, -14.2% (95% CI=17.9 to -10.4) and -17.4% (95% CI=23.0 to -11.8) in the exercise+MFGM group, respectively, and -12.4% (95% CI=16.8 to -8.0) and -7.9% (95% CI=15.7 to -0.2) in the MFGM group, respectively. IGF1/IGFBP3 significantly increased in the exercise+MFGM group by 9.3% (95% CI=1.8 to 16.8), but decreased in the placebo group by 10.5% (95% CI=18.3 to -3.4).

Conclusions: Exercise and nutrition alone each had varying effects on hematological factors. The combination of exercise+MFGM may have overall benefits in improving factors such as BDNF, β2microglobulin, myostatin and IGF1/IGFBP3. (Clinical Trial Registration ID: JMA-IIA00069)

A42 Encore Presentation

Dextromethorphan/Quinidine (AVP-923) Efficacy and Safety for Treatment of Agitation in Persons With Alzheimer’s Disease: Results From a Phase 2 Study (NCT01584440)

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Supported By: Study supported by: Avanir Pharmaceuticals, Inc.

Background: Agitation/aggression is common in Alzheimer’s disease (AD), increasing caregiver burden and risk for institutionalization.

Methods: Multicenter, double-blind, 2-Stage, 10-week, Sequential Parallel Comparison Design (SPCD) study. In Stage 1 (Weeks 1-5) patients with probable AD and moderate/severe agitation were randomized (4:3) to placebo or AVP-923 titrated to 30/10 mg BID. In Stage 2 (Weeks 6-10) the AVP-923 group continued on the same dose; the placebo group was stratified by response and re-randomized 1:1 to placebo or AVP-923. Primary endpoint was NPI agitation/aggression (NPI-A/A) domain change from baseline using standard SPCD methodology including: Stage 1 (all patients) and Stage 2 (re-randomized placebo non-responders from Stage 1). Secondary endpoints: change in total NPI, individual NPI domains/domain clusters, NPI Caregiver Distress, Clinical/Patient Global Impression of Change (ADCS-CGIC, PGI-C), Caregiver Strain Index (CSI), MMSE, and Cornell Scale for Depression in Dementia (CSDD).

Results: 220 patients enrolled; 194 (88%) completed. Stage 1: AVP-923 (n=93); placebo (n=127); Stage 2: continuing on AVP-923 (n=83); re-randomized placebo non-responders (n=89) and responders (n=30). On the primary outcome (overall SPCD), the NPI-A/A domain improved significantly for AVP-923 vs placebo (P≤0.001); significant improvement was also seen for Stage 1 and 2 analyzed separately (effect sizes -0.505; -0.340; ANCOVA; P=0.001, P=0.021, respectively). Secondary endpoints including ADCS-CGIC agitation, PGI-C, NPI total, NPI-4D, NPI-4A, NPI Caregiver Distress, CSDD, and CSI were also significant for AVP-923 over placebo. AEs occurred in (AVP-923 vs placebo) 61.2% vs. 43.3%, led to discontinuation in 5.3% vs. 3.1%, and were serious in 7.9% vs. 4.7%. No clinically meaningful between-group ECG differences were observed; AVP-923 was not associated with sedation/somnolence or cognitive decline (P=0.053 favoring AVP-923 on MMSE).

Conclusion: AVP-923 significantly improved AD-associated agitation, reduced caregiver burden, and was generally well tolerated.

A43 Strategies of Recruitment and Retention of Older Adults With Osteoarthritis for a Yoga Intervention: Clinical Trial

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Supported By: National Institutes of Health/National Center for Complementary and Alternative Medicine (1R15AT007352-01A1)

Background

Potential challenges to recruiting and retaining physically vulnerable older adults in clinical trials include recruiting enough participants, finding community-based sites, comorbidities, safety issues, and participant unwillingness to be in a control group. This paper addresses key strategies to overcome these challenges.

Method

Participants were recruited at two aging service centers in Florida. In a randomized control trial, participants age 65+ with osteoarthritis and who spoke English or Spanish but could not participate in standing exercise due to physical disability, fear of falling, or balance problems were assigned to either an intervention group (chair yoga) or control group (health education program; HEP) for 16 sessions, each 45 minutes, over 8 weeks. Data were collected at baseline, after 4 and 8 weeks, 1 and 3 months after intervention to determine sustainability of effects. Retention was defined as continuing through completion of the study; adherence was measured as the number of sessions attended (at least 12 of 16).

Results

Key strategies to overcome the challenges were newspaper publicity, a facility with easy access to sessions, provision of transportation, trained bilingual data collectors, training for all research team members, provision of chair yoga classes for control group participants after the intervention, early feedback from participants to detect risk for dropout, and monetary incentives for participation in follow-up assessments.

These strategies produced success. In the first cohort, 48 persons were screened; 40 met criteria and were randomized and 2 dropped from the study, resulting in 38 participants. All attended at least 12 of the 16 sessions to meet adherence and participated in both follow-up...
sessions. In the second cohort, 44 participants were randomized, 3 dropped prior to intervention and 2 dropped during the intervention; 39 adhered and completed follow-up sessions.

**Conclusion**

This study overcame potential challenges by employing specific strategies to demonstrate feasibility of recruiting and retaining older adults in a clinical trial. This study may inform researchers about how to improve recruitment and retention of older adults with OA by using strategies.


**A44 Encore Presentation**

Risk of Hypoglycemia in People Receiving Linagliptin: Pooled Data From 1489 Adults Aged ≥65 Years With Type 2 Diabetes Mellitus (T2DM)

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Supported By: Boehringer Ingelheim

**Background:** Risk of hypoglycemia (HYPO) in elderly patients with T2DM is a major concern, especially when drug regimens include either insulin (INS) or secretagogues (SECR). We pooled data from a global clinical trials program to further assess the safety of the DPP-4 inhibitor linagliptin (LINA), focusing on HYPO.

**Methods:** Adults with T2DM aged ≥65 years who participated in 11 randomized, placebo (PBO)-controlled, Phase III trials were included. Efficacy was assessed by change in HbA1c from baseline to Week 24 using the full analysis set (FAS). Incidence of confirmed HYPO (plasma glucose ≤70 mg/dL) or severe HYPO (requiring third-party assistance) was assessed in the treated set (TS) with consideration for background therapy: regimens including INS but no SECR, SECR but no INS, or neither therapy.

**Results:** Overall, 1489 patients were treated (TS: LINA, n=948; PBO, n=541). Mean (SD) age was 70.9 (4.6) years (range, 65-91). In both treatment groups (FAS: LINA, n=936; PBO, n=530), mean (SD) baseline HbA1c was 8.1% (0.8). Linagliptin significantly decreased HbA1c at Week 24 by a PBO-adjusted mean of −0.60% (95% CI: −0.69, −0.51; p<0.0001). Incidence of confirmed HYPO was 26.3% in the LINA group and 34.0% in the PBO group (RR: 0.77 [95% CI: 0.66, 0.90; p=0.017]). In the subgroup of patients receiving INS but no SECR (LINA, n=247; PBO, n=256), incidence was 53.4% vs. 55.9%, respectively (RR: 0.96 [95% CI: 0.82, 1.12; p=0.5922]). In the subgroup receiving a SECR but no INS (LINA, n=309; PBO, n=126), incidence was 32.0% vs. 25.4% (RR: 1.26 [95% CI: 0.90, 1.77; p=0.2050]). Finally, in those whose regimens included neither SECR nor INS (LINA, n=371; PBO, n=152), incidence was 1.3% vs. 3.3% (RR: 0.41 [95% CI: 0.12, 1.39; p=0.1636]). Overall, incidence of severe HYPO was low in both groups (LINA, 0.8%; PBO, 1.3%).

**Conclusions:** In an elderly population, overall risk of HYPO was not increased when LINA was added to improve hyperglycemia, with lower incidence rates compared to PBO when LINA was given with background INS but higher rates with background SECR.

A45 Encore Presentation

Integrated Efficacy and Safety Analyses of Droxidopa for Symptomatic Neurogenic Orthostatic Hypotension

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Supported By: Lundbeck LLC.

**Background:** Neurogenic orthostatic hypotension (NOH) represents autonomic failure to generate noradrenergic responses to postural changes. Droxidopa is an oral norepinephrine prodrug. Here we assessed its utility for symptomatic NOH, using integrated data from 2 clinical trials pivotal to droxidopa’s U.S. approval.

**Methods:** In Study NOH301, patients underwent open-label droxidopa titration. Responders entered 7-day washout, followed by a 7-day double-blind trial of droxidopa versus placebo (100–600 mg TID). In Study NOH306, patients with Parkinson’s disease underwent double-blind droxidopa or placebo titration, followed by an 8-week double-blind trial of maintenance treatment (100–600 mg TID). Subjective change was assessed by Orthostatic Hypotension Symptom Assessment (OHSA) Item 1, a 0-to-10 self-rating of dizziness/light-headedness. Standing blood pressure (BP) was assessed when subjects had stood for 3 minutes.

**Results:** From randomization to the end of double-blind Week 1, mean change on OHSA Item 1 among 174 droxidopa and 185 placebo recipients was −2.5±3.1 vs. −1.3±2.9 units (P=0.001, ANCOVA), and mean change in standing systolic BP among 173 droxidopa and 184 placebo recipients was +8.6±20.5 vs. +9.9±18.5 mmHg (P=0.001). Overall, 195 subjects were exposed to double-blind droxidopa, and 189 to placebo. The incidence of reported adverse events (AEs) during double-blind treatment was 18.5% vs. 14.8% in Study NOH301 (maximum 1-week exposure), and 79.8% vs. 80.6% in Study NOH306 (maximum 10-week exposure). The only AE reported in both trials by ≥5% of subjects on either double-blind drug was headache on droxidopa (NOH301: 7.4% vs 0%; NOH306: 1.2% vs 7.4%). During study drug exposure, 5.6% of the pooled double-blind droxidopa group and 3.2% of the pooled placebo group had a systolic BP >180 mmHg at 3 observations during a 10-minute supine period.

**Conclusions:** In an integrated NOH sample, droxidopa was superior to placebo by subjective and objective measures. Safety was consistent across the studies and with previous studies.

A46 Evaluation of a Clinical protocol for Staff in the Management of Behavioral and Psychological Symptoms of Dementia in Residential Aged Care Settings

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Supported By: National Health and Medical Research Council

**Background:** Behavioral and psychological symptoms of dementia (BPSD) cause significant stress and distress to both aged care residents and staff. This study evaluated a training program to assist staff to manage BPSD in residential care.

**Method:** Staff (n=204) and residents (n=187) from 16 residential care facilities were enrolled in a RCT to evaluate the effectiveness of the training program. Facilities were randomly assigned to four staff training conditions: 1) training in the use of a BPSD structured clinical protocol, plus external clinical support, 2) a workshop on BPSD, plus external clinical support, 3) training in the use of the structured clinical protocol alone, and 4) care as usual. Staff and resident outcome measures were obtained pre-intervention, three months and six months post-intervention. The primary outcome was changes in...
BPSD, measured using the CMAI, as well as frequency and duration of challenging behaviors. Secondary outcomes were changes in staff adjustment. Repeated measures analyses of variance were conducted for all dependent variables.

Results: There were improvements in challenging behaviors for both intervention conditions that included training in the BPSD clinical protocol, but these were not maintained in the condition without clinical support. The training/support condition resulted in sustained improvements in both staff and resident variables, whereas the other conditions only led to improvement in some of the measured variables.

Conclusions: These results demonstrate the effectiveness of the BPSD protocol in reducing BPSD and improving staff self-efficacy and stress. These findings demonstrate the importance of systematically determining the cause of the BPSD and implementing appropriate procedures to manage both the cause and the behavioral symptoms.

Natioanl Health and medical Research Council

A47 Encore Presentation
Bedside testing for audiitive impairment in the elderly
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Supported By: MedEL International

Background:
In geriatric care nearly every third patient > 70 yrs. and every second patient > 75 yrs. is hearing impaired to such a degree that a reliable conversation cannot be achieved without the use of handicap-oriented communication strategies or amplification(Lerch/Deckker-Maruska 2007). In most hospital situations this handicap is not recognized, due to lacking awareness on behalf of the staff and the reluctance on behalf of the patient to acknowledge his own deficiency. This situation leads to a dysfunctional communication, misunderstandings, aggression and non-compliance.

Method:
Over a six month period 128 of 321 geriatric patients (43 male, 85 female, mean age 81 yrs.) that meets the criteria (exclusion: Geriatric patients (age< 70), unable to use the iPad due to poor vision, MMSE <12, consent withheld) were screened with the three-digit screening test, using an iPad and Sennheiser earphones, in a bedside situation. Each patient was afterward included in the geriatric hear care service, subjected to an ENT exam and PTA for reference. Further, the patient and the nurse/therapist filled in a questionnaire to judge the test concerning applicability, handling and helpfulness.

Results:
Nearly 40% of the participants found the test straight forward, but only 1/3 was able to use it without external help. 73% found the test result congruent with their expected hearing ability. Unfortunately, > 45% of the participants were unlikely following up on a pathological result. 97% of all participants showed a pathological test result which complies with the PTA results.

Conclusion:
The three-digit online test is a feasible bedside test for a geriatric setting. Nevertheless the test procedure is unlikely to be undertaken unassisted. Apart from that, the likelihood of an follow up with an ENT physician or an audiologist, regarding a hearing impairment and its treatment, was not enhanced by a pathological test result.

A48 Encore Presentation
Dextromethorphan/Quinidine: Safety, Tolerability, and Effectiveness for Pseudobulbar Affect in Patients with Alzheimer’s Disease/Dementia: PRISM-II-Dementia-Cohort Results

Supported By: Study supported by: Avanir Pharmaceuticals, Inc.

BACKGROUND: Pseudobulbar affect (PBA) is a neurologic condition characterized by frequent, uncontrollable laughing/crying episodes that are exaggerated or incongruent with social context/mood state. PRISM II evaluates the effectiveness, safety, and tolerability of dextromethorphan/quinidine (DM/Q) 20/10 mg twice daily for PBA secondary to dementia, stroke, or traumatic brain injury; the dementia cohort has completed and results are reported.

METHODS: Open-label, 12-week, multicenter, US trial; patients had clinical diagnoses of dementia (Folstein Mini-Mental State Examination [MMSE] ≥10) and PBA (Center for Neurologic Study/Lability Scale [CNS-LS] ≥13). Primary endpoint was CNS-LS change from baseline to Day 90/early withdrawal. Additional endpoints: PBA episodes/week, quality of life visual analog scale (QOLVAS), Clinical and Patient/Caregiver’s Global Impression of Change (PGI-C and CGI-C), Patient Health Questionnaire-9 (PHQ-9), MMSE, and AEs.

RESULTS: 134 patients enrolled, 28 (20.9%) discontinued, 14 (10.4%) for AEs. Baseline mean (SD) CNS-LS was 20.1 (4.2); patients/caregivers reported 25.8 (23.2) PBA episodes/week. PBA symptoms decreased progressively at Days 30 and 90. On the primary outcome mean (SD) CNS-LS improved by -7.2 (6.0) points (P<.001 vs. baseline). PBA weekly episodes were reduced 67.7% at Day 90 (P<.001 vs. baseline). PBA symptom reduction appeared clinically meaningful with 76% of PGI-C and 77% of CGI-C ratings “much” or “very much” improved. Depression symptoms (PHQ-9) and QOLVAS also improved significantly. AEs, mostly mild/moderate intensity, were reported by 49 (36.6%) patients, including headache (7.5%), urinary tract infection (4.5%), and diarrhea (3.7%); 14 (10.4%) had serious AEs, none considered treatment-related.

CONCLUSIONS: DM/Q was generally well tolerated and associated with clinically meaningful PBA symptom reduction as rated by patients, caregivers, and clinicians. PBA improvement was consistent with previous Phase III trials in patients with ALS or MS, supporting DM/Q effectiveness irrespective of PBA etiology.

A49 Basal/Basal-Bolus Insulin (B-BI) vs. Sliding-Scale Insulin (SSI) Therapy in Long Term Care (LTC):
Glucose Excursions, Efficacy and Adverse Events from a 21-Day Intervention Trial
(Sponsored by AMDA Foundation)
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Supported By: Study was planned and sponsored by the AMDA Foundation. The Foundation received a study grant from Sanofi.

Introduction
Despite several organizations not endorsing SSI use, the practice is widespread in LTC and perceived as suboptimal care. In this study, we compared the efficacy of SSI [control (C)] and B-BI [intervention
(I)] therapy during a 21-day intervention trial in older nursing home residents.

**Methods**

14 LTC facilities participated; 110 residents w/ type 2 diabetes volunteered to participate; 35 failed inclusion criteria, 75 signed informed written consent, 11 were discharged to home/hospital or withdrew consent; data from 64 subjects are reported. Demographics, medication use, CKD, dementia and comorbidity factored. Recent labs: fasting blood sugar (FBS), HbA1c, chemistries. Four glucose readings (pre-breakfast/lunch/dinner & bedtime), all hypoglycemic (<70 mg/dL) and hyperglycemic (>200 mg/dL) episodes, all anti-glycemic drug doses/changes and adverse events/serious adverse events (AE/SAE) recorded daily. Subjects randomly either remained on SSI or were shifted to the B-BI group.

**Results**

Nursing home residents [80 ± 8(sd) yrs; 66% female; 67% White, 22% African American, 7% Hispanic, 4% Asian; 27 C & 37 I] participated. C & I subjects had similar age, gender, race distributions, known & active comorbidity, and 3-day ave. pre-trial FBS levels (all P>.05). At end of study, I subjects had significantly lower 3-day ave. FBS levels vs. pre-trial (P=.021) while C subjects had no change in 3-day ave. FBS (P=.050). During the trial, C & I subjects had similar rates of hypoglycemia, hyperglycemia, AE events and hospitalizations (SAE), but none related to the SSI or B-BI therapy (all P>.05).

**Conclusions**

B-BI therapy produced significantly lower fasting blood sugar levels at the end of the 21-day trial.

SSI & B-BI subjects had similar rates of hypo and hyperglycemia during the trial.

SSI & B-BI subjects had similar rates of AE & SAE, none attributable to therapy.

B-BI therapy provided better glycemic control than SSI therapy in this trial.

Switching to B-BI therapy appears feasible and safe in a LTC setting.

**Reference**

AGS Guidelines for Improving the Care of Older Adults with Diabetes: 2015 Update

**A50**

**Reduced Brain Atrophy Rates and Improved Cognition in Patients with Hyperhomocysteinemia**

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Supported By: Drs. Shankle and Hara are employees of Nestlé Health Science-Pamlab, Inc. Funding for this study was provided by Nestlé Health Science-Pamlab, Inc. Covington, Louisiana.

Background: Retrospective analysis showed that a prescription medical food containing L-methylfolate and other B vitamins (LMF-B) significantly slowed cognitive decline among hyperhomocysteinemia (HYH) patients. This prospective study examines LMF-B’s effects on brain atrophy rates and cognition in this population.

Methods: 121 patients with various age-related cognitive disorders (N=32 HYH patients treated with LMF-B, N=89 matched controls with no HYH and no LMF-B) were enrolled from a memory clinic. Regional brain volumetrics, memory (MC1 screen), structural praxis (CERAD Drawings), object recognition (Ishihara Color Plates), executive function (Trails A, B), and phonemic fluency (FAS) were assessed longitudinally. Function ability was assessed using the Functional Assessment Staging Test. A mixed effects analysis was performed to predict changes in cognitive tasks and brain atrophy rates using the following covariates: demographics, diagnosis, disease severity, memantine and/or cholinesterase inhibitor use, LMF-B use, baseline homocysteine level, and genetic variants.

Results: Holding other significant predictors constant, 36 months of LMF-B significantly reduced hippocampal atrophy by 0.21 cm³/year (-3.3% of mean baseline hippocampal volume: P<0.001). Similarly, higher LMF-B compliance significantly reduced cortical atrophy among HYH patients by up to 3.3 cm³/year (-0.8% of mean baseline cortical volume: P=0.007). LMF-B treatment also significantly improved performance on cognitive tasks of memory, object recognition, visual spatial processing, complex attention, executive function, and verbal fluency.

Conclusion: The present study extends findings of the previous retrospective study. LMF-B treatment and treatment duration were associated with reduced rates of brain atrophy and improved cognition in HYH patients, suggesting that decline in cognitively impaired HYH patients could be delayed with early and prolonged LMF-B treatment. While recent reviews of studies using folic acid and B vitamin supplementation failed to show cognitive benefits, the findings of this study suggest that LMF-B warrants further consideration.

**A51**

**How Oral rehabilitation can improve Quality of life for the Older post Stroke patient: Case Report**

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BACKGROUND: Stroke survivors experience significant reductions in Health-Related Quality of Life (HRQoL) when compared with the general population. The direct consequences of stroke on the oro-facial system may comprise motor and sensory deficiencies potentially resulting in impairment of the lips, tongue, masticatory muscles, soft palate, and pharynx. Speaking, eating, and drinking may become difficult and interfere with the patient’s social interactions, affecting Oral Health-Related Quality of life (OHRQol). While many studies focus on the effect of stroke on HRQol, little is known about its’ impact on OHRQol, in particular with regard to chewing efficiency.

CASE: A 92-year-old woman with a history of recent CVA, hemiparesis, dysphagia, and osteoarthritis was referred to the Geriatrics Dentist for fabrication of a new complete lower denture. The patient wore complete upper and lower dentures for many years, but the lower one was lost while she was in post-stroke rehabilitation. Oral exercises to strengthen and coordinate the muscles involved in chewing and swallowing failed to show cognitive benefits, the findings of this study suggest that LMF-B warrants further consideration.
A52 Encore Presentation

A Systematic Review Examining the Oral Health Status of Persons with Dementia

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Supported By: No financial disclosures

Background: While the oral health of persons with dementia has been shown to be poor, no systematic reviews have been published previously that examined the topic in depth across the full spectrum of disease severity, and evaluating a broad scope of oral health assessments.

Methods: A systematic search of 5 databases (CINAHL, Pubmed, EMBASE, Scopus, and ISI Web of Science) was conducted to identify all relevant studies published up to March 2014. There were no exclusions related to study type, severity of dementia, dentate status or living arrangements. Results are reported descriptively and summarized. Pooled analyses were performed where possible, and reported as mean difference (MD) or standardized mean difference (SMD), with a 95% confidence interval (CI).

Results: Twenty-three studies were identified. The types of assessments conducted included tooth status (n=21), the presence of periodontal diseases (n=9), denture status (replacing missing teeth) (n=11), hygiene (plaque/calculus) of natural and dentures (n=9), dental active caries (n=11), and oral health-related quality of life (n=2). Across all evaluations, persons with dementia generally had scores/results suggestive of poor oral health. In pooled analysis, compared with persons without dementia, those with dementia had significantly fewer number of teeth (MD= -1.25, 95% CI -0.832 to -5.89, p<0.0001; n=8 studies), a significantly higher number of decayed, missing and filled teeth (MD=2.46, 95% CI 2.17-2.75, p<0.0001; n=5), a higher number of carious teeth (SMD=0.291, 95% CI 0.005-0.577, p=0.046 ;n=8). Persons with dementia also had significantly worse oral hygiene, evaluated using a broad range of assessment tools (SMD=0.806, 95% CI 0.405-1.21, p<0.0001; n=5). Although pooling of data were not possible for the other outcomes of interest, there were frequent reports of bleeding gums, loss of tooth attachment, poor denture hygiene, unsatisfactory denture stability and retention and denture-associated stomatitis.

Conclusions: The oral health status of persons with mild to severe forms of dementia, who were living in both the community and in residential care facilities, was found to be poor across a broad range of dental assessments.

A53 Identifying Fall Risks in the Emergency Department: A Missed Opportunity

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Supported By: The project described was supported by Grant 1C1CMS331055, Department of Health and Human Services, Centers for Medicare and Medicaid Services.

Background: Geriatric patients, the fastest growing population in the US, account for 20.3 million visits to emergency departments (ED) annually, a 25% increase since 2000. Many of these visits are preceded by a nonfatal fall, highlighting the mounting problems of impaired mobility and threatened independence among the elderly population. The ED visit can provide an opportunity for fall risk identification. We sought to incorporate the Timed Up & Go Test (TUGT) as a tool to identify those at high fall risk in the acute care setting through a geriatric nurse liaison model.

Methods: Patients aged 65 and older presenting to an urban ED were evaluated as part of the Geriatric Emergency Department Innovations through Workforce, Informatics, and Structural Enhancements (GEDI-WISE) model. GEDI-WISE is an initiative to improve the quality of ED care of the elderly by equipping emergency medicine clinicians and staff with geriatric-specific skills. Patients triaged to receive a GEDI consult were seen by a nurse liaison who performed validated geriatric assessments, including the TUGT. An abnormal TUGT or other concerns for gait and balance impairment then prompted referrals to physical therapy, social work and home health along with PCP and caregiver discussions.

Results: Gait assessment with the TUGT was performed on elderly patients (n=443) between 4/1/13 and 5/31/14. A prior fall was reported in 37% patients in the last 12 months. Positive TUGT scores were seen in 368 patients, with resulting orders for physical therapy while in the ED in 17.1% of participants. More than 10% were ordered to receive outpatient physical therapy, and social work was consulted in almost 50% of positive TUGT cases.

Conclusion: Opportunities for the identification of elderly patients at high risk of falls may be missed despite frequent health care contact in the ED. This study shows that the TUGT, a simple and time efficient screen, can be incorporated into a geriatric nurse liaison model leading to appropriate physical therapy and social work referrals. Performance of fall-risk identification tests such as the TUGT should become standard of care in the ED as we work to change the trajectory of functional decline in our elderly population.

A54 Emergency Medical Service, Nursing, and Physician Providers’ Perspectives on Delirium Identification and Management

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Supported By: This research was funded by the John A. Hartford Foundation. Dr. LaMantia additionally is supported by a grant from the National Institute on Aging (1K23AG043498).

Background: Older adults are frequent visitors to emergency departments (EDs) and often suffer from delirium. Our objective was to understand providers’ perceptions regarding identifying and treating delirious older adults in the pre-hospital and ED environments.

Methods: We conducted structured focus group (FG) interviews with separate groups of emergency medical services (EMS) staff, emergency nurses, and emergency physicians. Recordings of each FG session were transcribed, coded, and analyzed for themes with supporting quotations identifying challenges.

Results: Providers shared that the busy ED environment was the largest challenge to delirium recognition and treatment. When describing delirium, they frequently detailed hyperactive rather than hypoactive features of delirium. No one shared a comprehensive depiction of delirium that approximated its DSM definition. Participants shared that they employed no clear diagnostic strategy for identifying delirium, that their comfort managing delirium varies greatly by circumstance, and that they used heterogeneous treatment approaches. To improve delirium care, nurses identified the need for more training around the management of the condition. EMS providers requested more support in managing agitated patients when in transport to the hospital and more guidance on what information to collect from the patient’s home environment. Physicians felt that delirium care would
be improved if they could have baseline mental status data on their patients and if they had access to a simple, accurate diagnostic tool for delirium.

Conclusions: Emergency providers frequently encounter delirious patients, but do not employ clear diagnostic strategies for identifying the condition and have varying levels of comfort in managing the condition. Clear steps should be taken to improve delirium care in the ED including the development of mechanisms to communicate patients’ baseline mental status, the adoption of a systematized approach to recognizing delirium, and the institution of a standardized method to treat the condition when identified.

A55 Emergency Department Use Among Older Adults with Dementia

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Supported By: This work was supported by grants from the National Institute on Aging (5P30AG024967, 1K23AG043498, 5K24AG024078).

Background: Older adults with dementia have high rates of hospitalization and associated health care costs. Relatively little is known about the health profile, patterns of health care use, and rates of long-term survival for patients with dementia who access care in the emergency department (ED).

Methods: We linked data from our public hospital system with Medicare and Medicaid claims, resident-level Minimum Data Set, and Outcome and Assessment Information Set data to evaluate 175,652 ED visits made by 10,354 individuals with dementia and 15,020 individuals without dementia between 1999 and 2009. Survival rates after ED visits and associated charges were examined.

Results: ED use varied by patients’ dementia status. Among individuals with a current dementia diagnosis at the time of an ED visit, between 37% and 54% of individuals visited the ED in a given year, while 20% to 31% of individuals without a current dementia diagnosis made an ED visit in a given year. Patients with dementia had the highest number of comorbidities and were hospitalized from the ED more frequently (39.7% vs. 29.6%, P=0.001) than patients without dementia. Persons with dementia had an increased odds of returning to the ED within 30 days of an index ED visit as compared to persons who never had a dementia diagnosis (odds ratio 2.29, P<0.001). This finding persisted after adjustment for age, race, gender, and number of comorbidities (odds ratio 1.37, P<0.0001). Mortality rates differed significantly between patients by dementia status. Mean Medicare payments for ED services were significantly higher among patients with dementia as compared to patients without dementia ($6028 vs. $3454, P<0.001).

Conclusions: Older adults with dementia are frequent visitors to EDs and have greater comorbidity, incur higher charges, and are admitted to hospitals at higher rates than patients without dementia. Survival and ED returns rates differed also according to patients’ dementia status.

A56 Descriptive Analyses of Prehospital Documentation for Older Adults Presenting to the Emergency Department

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Background: Emergency Medical Services (EMS) care for geriatric patients begins with on-scene assessment of the environment and condition in which a patient is found and ends with the completion of an ambulance care report (ACR), which serves as the only written record of EMS assessment and care. This document is particularly important for older adults, whose social and environmental circumstances often dictate care decisions. Our goal was to describe the detail and consistency of content in ACRs for older patients, in order to identify areas where prehospital documentation could be improved for this vulnerable population.

Methods: This retrospective study included patients aged 65+ transported to a large, urban, academic emergency department (ED) by ambulance during a one year period (4/2011–3/2012). We randomly ordered the 6,320 visits meeting the inclusion criteria and reviewed approximately 10%. Descriptive results are presented as frequencies with proportions.

Results: Of the 725 patients brought to the ED by EMS, 137 (19%) did not have an ACR in the electronic medical record. The details most frequently documented in the 588 available ACRs were: vital signs (97%), reason for the call (96%), call location (94%), current mental status (94%), and medication names (86%). ACRs infrequently contained information about home care services (22%), medication dosing (12%), mobility aids (6%), emergency contacts (5%), medication frequency (2%), or advanced directives (1%). 494 ACRs (84%) were handwritten and 94 (16%) were typed. 19% of handwritten ACRs were at least partly illegible (faded marks or writing [12%], poor penmanship [10%, unclear meaning of words [1%], and other reasons [1%]). Compared to handwritten ACRs, typed ACRs more frequently contained baseline mental status (5% vs 12%), home care services (16% vs 52%), and medication names (84% vs 95%) but less frequently listed allergies (86% vs 77%) and medication doses (5% vs 14%) (all P<0.05).

Conclusions: We observed wide variability in documentation of information important for care of older adults in the ED. While less than 1/5th of ACRs were illegible, differences were observed between information included in handwritten compared to typed ACRs. Future work should focus on improving the content and consistency of prehospital documentation in order to avoid information loss during transitions of care for older adults.

A57 An Urban Emergency Department’s Progressive Senior Care Program

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Background: With the growing number of older adults entering the healthcare system, emergency departments (EDs) will face significant obstacles in the coming years. These patients often have multiple health problems and consume more time and resources than younger patients. Traditionally, the care needs of elderly patients may not be aligned with the priorities of how classic ED care is rendered. In 2011, our ED implemented a new program with a specific focus on the care for patients 65 and older. This program included specialized training for clinical staff on the management of senior patients and a “No Wait” department policy. This policy meant that patients 65 and older are expedited into a private room or care area immediately after check-in or ambulance drop-off.

Method: This is a prospective survey of ED patients 65 years and older and ED attendings about our hospitals “No Wait” policy.

Results: One hundred and seven patient and six physician surveys were completed. Sixty-five percent of patients reported they waited less than five minutes, twenty-eight percent reported a wait time of less than 15 minutes. No patients reported a wait time of greater than 30 minutes. Patient satisfaction with the policy was very high (95%) and most felt it would improve the patient experience (85%) and clinical
outcome (84%). Eighty percent of ED physicians reported that they believed this policy would improve the care of elderly patients.

Conclusion:
Our “No Wait” policy is a new and applicable ED method focused on the care of older adults. It reduced waiting time before providing healthcare services and was associated with significant satisfaction among patients.

A58
An Association between Depressive Symptoms and Previous Exposure to Abuse among Older Adults Living in Bogotá, Colombia

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Supported By: Administrative Department of Science, Technology and Innovation – Colciencias, Code 120054531692 and the Pontificia Universidad Javeriana.

Background: Depression has been identified as a potential consequence of violence; however, we have few data among older Latino populations. The purpose of this study was to 1) estimate the previous exposures to psychological and/or physical abuse in older Latinos living in Colombia and quantify the association between these abuse forms and depressive symptoms.

Methods: Using data from the SABE (Salud, Bienestar y Envejecimiento) Bogotá Study, a cross-sectional survey conducted in 2012, in urban and rural areas of the city of Bogotá, Colombia, we analyzed 2,000 community-dwelling adults aged 60 years and older to assess current level of depressive symptoms and past exposure to physical and/or psychological abuse. Depressive symptoms were assessed using the Geriatric Depression Scale (GDS; >5/15 indicates subclinical depression), psychological abuse by asking “Have you ever been the victim of offensive language or insults?” and physical abuse by asking “Have you ever been a victim of personal injury or physical aggression (hitting, slapping, or kicking)?” We estimated the weighted prevalence for the abuse types and estimated the adjusted odds for depressive symptoms associated with each abuse type using logistic regression.

Results: The weighted prevalence estimates were 22.2% for psychological abuse and 16.7% for physical abuse exposure. Model 1 (past psychological violence), adjusting for socio-demographic factors, comorbidity, functional status (Lawton and Barthel scales), self-rated health, and cognitive status (MMSE), estimated significantly higher odds of depression (adjusted OR 2.05, 95% CI 1.62-2.58). Similarly, in model 2 (physical violence), there was a significantly higher odds of depression (adjusted OR 1.84, 95% CI 1.43-2.38).

Conclusion: Previous exposures to psychological or physical abuse is associated with higher odds of depressive symptoms in Colombian elderly. Further studies are needed to obtain more precise prevalence estimates of abuse in this and other Latino populations and to better understand the temporal association between psychological and physical abuse and their effect on late-life depressive symptoms.

A59
Opportunities for vaccine prevention of pneumococcal disease among residents of retirement communities

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Supported By: Pfizer ASPIRE award

Background. Immunization against Streptococcus pneumoniae may prevent individual disease and, in the case of pneumococcal conjugate vaccines (PCVs), also provide herd protection through reduced nasopharyngeal acquisition of vaccine serotypes. The goal of this study was to evaluate adherence to the Advisory Committee on Immunization Practices (ACIP) recommendations for pneumococcal immunization in older adults living in retirement communities, and assess the potential for herd protection from PCVs. To accomplish this goal, we aimed to determine: 1) coverage with the 23-valent pneumococcal vaccine (PPSV-23), 2) uptake of the 13-valent pneumococcal conjugate vaccine (PCV-13) among groups at high risk for pneumococcal disease per 2012 ACIP guidelines, and 3) nasopharyngeal carriage of S. pneumoniae.

Methods. We conducted a cross-sectional observational study of English-speaking adults ≥65 years of age living in 2 retirement communities in central North Carolina recruited between December 2013 and April 2014. Exclusion criteria included: moderate or severe dementia, hospice care, or current respiratory illness. Participants responded to a survey of demographic characteristics, chronic illnesses, and immunization history. Chart review was performed to confirm immunization history and record chronic conditions difficult to capture by self-report. A nasopharyngeal swab was collected from each participant and cultured for S. pneumoniae.

Results. Participants were 212 older adults of which 64.6% were female, 99.5% were non-Hispanic white, and mean age was 81.5 years. Eighty-seven percent of participants reported receiving PPSV-23 at age 65 years or older. Among the 13% of participants with a high-risk condition, only one had received PCV-13. Nasopharyngeal carriage of S. pneumoniae was detected in 2% of participants.

Conclusions. In this sample of retirement community residents, PPSV-23 coverage was high, but receipt of PCV-13 among individuals with high-risk conditions was low. Nasopharyngeal carriage of S. pneumoniae was low, suggesting that immunization with PCV-13 would primarily provide individual benefit, yet has the potential to provide a small community benefit.
American, mean age at menopause – 49 years, mean age at functional testing – 79 years), accounting for differential survival of women to the physical function test, we examined the association of early natural menopause [age 40-44.99, as compared to age 45-60 years] with the Short Physical Performance Battery (SPPB) which objectively assesses balance and mobility. Methods. SPPB was scored 1-13 (13 = excellent) with incident deaths that occurred before the function assessment assigned 0. Association of SPPB with early menopause was tested using negative binomial regression, with covariate adjustment for age at menarche, current age, race, study center, education, income, live births, HRT usage, current smoking, alcohol, BMI, and chronic disease history. Results. Women with early menopause had a 24% lower SPPB than women without early menopause (estimate = 0.76, 95% CI 0.65-0.89). However, after accounting for potential confounders, the association of early menopause with SPPB was no longer significant (estimate = 0.97, 95% CI 0.84-1.11). Factors that were independently associated with lower physical function included nulliparity, older age, African-American race, lower education and income, higher BMI, history of stroke, and smoking. Conclusion. Our results suggest that by older age (~30 years after menopause) there is no independent contribution of early menopause to poor physical function. The role of reproductive timing in somatic aging may be more relevant for women in the early post-menopausal period.

A61
Injury Deaths Among Adults Aged 65 and Over: United States, 2000-2012

Background: Injury deaths are a large burden on society, and many of these deaths are preventable. Injury deaths are classified by intent (e.g., unintentional, suicide, homicide) and by mechanism (e.g., motor vehicle traffic, firearm, fall, suffocation). Unintentional injuries were the seventh leading cause of death among adults aged 65 and older in the United States in 2012, resulting in over 44,000 deaths.

Methods: This research describes the magnitude of injury deaths among adults aged 65 and over in the United States using mortality data from the National Vital Statistics System. Trends in unintentional injury death rates are shown for 2000-2012, and detailed descriptions of unintentional injury deaths by age, sex, race/ethnicity and urbanization in 2011-2012 are presented. We highlight the five leading causes of unintentional injury death among the U.S. population aged 65 and over: falls, motor vehicle traffic accidents, suffocation, poisoning, and fire or flame.

Results: Analyses show that slightly more than half of all unintentional injury deaths among adults aged 65 and older were due to falls, and the rate of fall injury deaths has been increasing. Death rates from motor vehicle traffic accidents among older adults were 1.7 times higher in non-metropolitan areas than in metropolitan areas. The rate of death due to fire or flame for older non-Hispanic blacks was more than twice as high as the rate among non-Hispanic whites and Hispanics.

Conclusion: Understanding the patterns of injury deaths among the older population can help prevention efforts. Healthy People 2020 prevention objectives related to older adult injury are discussed.

A62
Mortality predictors for demented and non–demented patients after hospitalization
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Supported By: “Instituto de Salud Carlos III” through “Fondo de Investigaciones Sanitarias” (CODE PI08/90564)

Objective: Predictive tools differ depending on the sample characteristics. Mortality risk factors are not the same for frail elderly patients (i.e., demented patients), when compared with healthy individuals. Our objectives are: 1. To define mortality risk factors for patients with and without dementia 6 months after hospitalization. 2. To evaluate disagreements in those prognostic factors

Methods: Prospective cohort of 903 patients admitted to an acute geriatric unit and discharged alive. Sociodemographic and functional characteristics, pluripatality (Charlson’s index score ≥3 points –CI–), medications, body mass index (BMI) and medical complications (delirium and pressure sores –PS–) were collected. Grip strength (GS) was used as a frailty marker and measured at discharge. Patients were considered to have dementia if DSMIV criteria were met. Outcome was 6-months mortality. Bivariate and multivariate analysis were performed for demented and non–demented patients to obtain independent mortality risk factors; differences between both groups are high–lined.

Results: Average age was 87±6yr, 49% had dementia. Characteristics for demented vs non–demented patients were: 65vs58% were female, 27vs88% lived in a nursing home,11 vs 16% used NSAIDs chronically, 9 vs 36% performed over the 4th quartile on GS, 45vs31% developed delirium, 30vs26% scored CI>3 points, 43vs5% were fully dependent at discharge and 75vs40% at discharge. Presence of PS and delirium for demented patients; male sex, dependency in ambulation at baseline and full dependence at discharge, BMI<25Kg/m2, pluripatality (CI>3) and chronic use of NSAIDs before admission for non–demented individuals.

Discussion: Functional variables, gender, BMI and use of NSAIDs seem to be more important in non–demented patients when predicting mortality; demented individuals are more sensitive to delirium long–term and institutionalization effects. Presence of PS may reflect both functional and nutritional status and it can be the reason why those parameters didn’t remain in the multivariate analysis. Pluripatality was a relevant mortality predictor in both cohorts. Age was not an important issue in any group.

A63
Potentially Unsafe Activities and Living Conditions in Dementia
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Supported By: Dr. Amjad’s fellowship is supported by HRSA grant D01HP08789.

Background: Ensuring safety of persons with dementia is a clinical and public health challenge. The prevalence of potentially unsafe activities and living conditions in persons with dementia has not been previously reported using population-based, nationally representative data.

Methods: The National Health and Aging Trends Study (NHATS) follows a nationally representative cohort of 8,245 Medicare beneficiaries age ≥ 65. NHATS classifies community-dwelling older adults as having probable dementia (n=1038), possible dementia (n=996) or no dementia (n=5,575) based on self or proxy reported physician diagnosis, AD8 proxy screening interview and cognitive
tests. We used 2011 data to compare the prevalence of potentially unsafe activities (driving, preparing hot meals, managing finances or medications, attending doctor visits alone, smoking) and conditions (falls, living alone, unmet ADL/IADL needs) by dementia status. We further stratified the subset with probable dementia according to whether they reported a diagnosis of dementia. We used chi-square analyses to examine associations of activity/conditions with dementia status and the adjusted Wald test to compare cognitive test results in the probable dementia strata.

**Results:** Among older adults with probable dementia, the prevalence of driving (22.9%), preparing hot meals (31%), managing finances (21.9%) or medications (36.6%), and attending physician visits alone (20.6%) is lower than persons with possible or no dementia. The prevalence of annual falls (48%) and unmet ADL/IADL needs (42.4%) is higher than in those with possible or no dementia (p<0.01). In persons with probable dementia, the prevalence of potentially unsafe activities other than smoking is higher in those without reported dementia diagnosis. Persons with no reported diagnosis performed slightly worse on tests of executive function and memory than persons with reported diagnosis (p<0.05).

**Conclusion:** Older adults with probable dementia have lower prevalence of potentially unsafe activities compared to persons with possible or no dementia though the magnitude may still be important. Among persons with probable dementia, persons without report of diagnosed dementia are more engaged in potentially unsafe activities despite poor cognitive test scores. Understanding the activities of older adults with potentially undiagnosed dementia may have implications for dementia screening and safety.

**A64**

**Ability to Climb Stairs without a Handrail Predicts Survival**

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**Background:** Measures of performance are becoming increasingly recognized as useful clinical indicators of health, disability and survival. We examined the relationship between the ability to climb stairs without using a handrail, and subsequent survival, among a representative cohort of community-dwelling people followed from age 70-90 years.

**Methods:** This work is part of the Jerusalem Longitudinal Study, which follows an age-homogenous, representative cohort, born 1920-21, of West Jerusalem residents. At age 70, 78 and 85 (1990, 1997, and 2005) a total of 456, 922, and 1115 subjects underwent comprehensive assessment, including the question: “Are you able to climb stairs without using the handrail?” Mortality data were collected from 1990-2010.

**Results:** The need to use a handrail to climb stairs became increasingly common with advancing age, being 24.1%, 42.2% and 87.5% at ages 70, 78 and 85 respectively. Use of handrail across all ages was associated with a negative profile of social, functional and physical parameters. Survival among subjects using a handrail compared to subjects not using a handrail, between age 70-78 was 67.8% vs. 80.2% (log rank p<0.005); between age 78-85 was 58.2% vs. 74.9% (log rank p<0.0001); and between age 85-90 was 71.9% vs. 81.4% (log rank p<0.005). The Relative Risk of mortality associated with handrail use was 1.6, 1.7, and 1.5 from age 70-78, 78-85, and 85-90 respectively.

**Conclusions:** The need to use a handrail to climb stairs was consistently associated with reduced survival, and predicted mortality. This simple assessment of daily performance may be a useful tool in clinical assessment of older people.

**A65 Encore Presentation**

**Association of Physical Impairments with FNIH definitions of Clinical Weakness: The Health & Retirement Survey**

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Supported By: Department of Medicine and the Dartmouth Centers for Health & Aging.

**Background:** The Foundation for the National Institutes of Health (FNIH) Sarcopenia Project recently proposed criteria for identifying persons at risk for clinical weakness. We ascertained prevalence of weakness in a representative cohort of the US.

**Methods:** Data from the Health & Retirement Study (HRS), 2006-2010, were used to identify 5,610 adults aged ≥60 years with measures of grip strength. Physical limitations (PL) were defined as an inability or difficulty in: walking several blocks, walking 1 block, sitting 2 hours, getting up from chair, climbing 1 flight of stairs, stooping, reaching arms, pulling/pushing large objects, lifting weights and picking up a dime. Those with ≥2 limitations were classified having a PL. Activities of Daily Living (ADL) included difficulty/inability with bed transfers, eating, or dressing; Instrumental ADL (IADL) included difficulties with meal preparation, managing money or completing chores. Grip strength (GS) (men<26; women<16kg) and GS adjusted for body mass index (GS:BMI) cutoffs (men<1.0; women<0.56) were applied to our cohort. We determined prevalence of clinical weakness. Sex-specific logistic regression analyses identified the odds of PL, ADL and IADLs comparing the effect of FNIH-defined weakness in each sex, adjusting for age, education, race, current smoking status and number of comorbidities.

**Results:** Mean age was 69.4 years in males and 68.6 years in females. Overall prevalence of PL and IADL limitations were 52 and 42% in both sexes, respectively. Mean GS and BMI were 29kg and 29kg/m² in both sexes. ADL limitations were 42 and 44% in males and females, respectively. Using GS and GS:BMI criteria for weakness, in males, prevalence of PL was 42.2 and 49.8%, and 7.9 and 9.5% in females. The table outlines the association of impairment with given cutoffs.

**Conclusion:** The new FNIH criteria demonstrate that these criteria strongly are associated with physical and IADL impairments in both sexes.
A66 Encore Presentation

Inflammation and functional decline in aging subjects from NHANES 2001 – 2010

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**Background:** Higher systemic inflammation is associated with worse health outcomes for multiple co-morbidities and has been associated with functional and cognitive decline. We evaluated inflammation in the geriatric population in the National Health and Nutrition Examination Survey (NHANES 2001-2010) as a prediction tool for functional decline. **Methods:** C-reactive protein (CRP, mg/dL) was analyzed using logistic regression and quartiles developed from our dataset adjusting for age and worse health than previous year. Functional decline utilized five constructs: Activities of daily living (ADL); Instrumental activities of daily living (IADL); Leisure and social activities (LSA); Lower extremity mobility (LEM); and General physical activities (GPA). Logistic regression was performed for each type of decline utilizing CRP quartiles and. Odd ratios are reported. **Results:** The highest quartile (4th quartile) of CRP was significant to < 0.0001: ADL: 1.82 (1.29 - 2.57); IADL: 2.06 (1.55 - 2.73); LSA: 2.65 (2.04 - 3.45); LEM: 3.33 (2.45 - 4.52); GPA: 2.66 (2.08 - 3.40). The second and third quartiles of CRP were also significant for LEM and GPA. **Conclusion:** Elderly subjects with higher level of systemic inflammation, as measured by CRP, had decreased function on evaluated scales. With further study, CRP may be a useful clinical tool to aid clinicians in predicting functional decline in elderly patients.

A67

The risk of norovirus disease in adults aged 65 and above

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Supported by: LL, JW and TV received financial support from Takeda Vaccines Inc. Deerfield, IL, to perform the literature research in this study. IDC and PVD have no financial declarations for this report, but their university has received research grants from Takeda Vaccines for performing clinical studies of vaccine candidates.

**Background:** Noroviruses are the most common cause of acute gastroenteritis worldwide, leading to both sporadic and outbreak-associated illness. Older adults are at an increased risk of exposure due to frequent outbreaks in long-term care facilities (LTCFs) and of symptomatic severity and complications due to co-morbidities.

**Methods:** A systematic literature review was conducted to summarize the published risk estimates of norovirus-associated illness, hospitalization and death among individuals aged ≥ 65 years. A structured search was performed in the PubMed and EMBASE databases of studies in humans published between January 1, 2003 and May 16, 2013.

**Results:** We identified 39 studies from high income (HI) and upper-middle income (UMI) countries, of which 7 pertained exclusively to LTCFs. The majority of publications provided risk estimates based on laboratory-confirmed or epidemiologically-linked population-based surveillance data using molecular diagnostic methods. Estimated rates of NoV cases in HI and UMI countries among older adults were: 29-120/10,000 illnesses; 18-54/10,000 outpatient visits; 1-19/10,000 hospitalizations; 0.04-0.32/10,000 deaths. Norovirus was responsible for approximately 10-20% of gastroenteritis hospitalizations and 10-15% of all-cause gastroenteritis deaths in this age group. Within the United States and Australia, approximately 6-8 norovirus outbreaks occur annually per 100 LTCFs (median outbreak duration: 1.5-2.5 weeks). Attack rates ranged from 3-45%; case hospitalization and fatality rates ranged from 0.5-6% and 0.3-1.6%, respectively. Norovirus disease severity increased with age, presence of co-morbidities and C114.4 genotype.

**Conclusions:** Elderly adults are at increased risk of severe norovirus-associated health outcomes, in particular when living in LTCFs. NoV-associated hospitalizations in this age group were more frequent, with more severe manifestations and resulted in longer stays and greater costs compared with younger patients. As the burden of norovirus is anticipated to rise as an increasing proportion of society is aged 65 or older, with an increased need for institutionalized care, effective prevention measures will be expected to significantly impact a growing healthcare problem.

A68

Successful Cognitive Aging in a Population Based Study

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Supported by: The research was funded by National Institute of Health grants (U01 AG006786, K01 AG028573 and K01 MH06351) and by the Robert H. and Clarice Smith and Abigail Van Buren Alzheimer’s Disease Research Program.

**Background:** Our aging society has generated increased interest in identifying markers of cognitive impairment. Understanding successful aging is equally important. However, no consensus exists as to what defines it. Our objective was to develop a definition of successful cognitive aging to predict survival and avoidance of incident mild cognitive impairment (MCI) in the Mayo Clinic Study of Aging.

**Methods:** Participants were 1,932 cognitively normal persons, aged 70 years and older, who were followed for outcomes of death or development of incident MCI. Comprehensive medical and cognitive assessments were performed every 15 months. A global z-score was generated from baseline neuropsychological test scores from four cognitive domains: memory, attention, language and visuospatial function. Successful aging was defined, using a previously validated model, as a mean global z-score in the top 10% of our sample. Participants scoring in the remaining 90% were classified as “typical agers”.

**Results:** By our cognitive definition, 193 participants (60.1% female; 17.6% ApoE4 carriers) were classified as successful agers and 1,739 (49.5% female; 25.1% ApoE4 carriers) as typical agers. Successful agers were significantly younger (mean 75.7 ±3.7 vs 79.5 ±5.1 years) and better educated (mean 15.6 ±2.6 vs 13.7 ±2.9 years of education) than typical agers. Successful agers were more likely to live in their own residence rather than a retirement community or assisted living, to have less medical co-morbidity, fewer depressive symptoms and faster gait at baseline. Over a mean (standard deviation) follow-up of 4.8 (2.9) years, successful agers converted to MCI at a lower frequency than typical agers (n=14, 7.3% vs n=485, 27.9%; p<0.001). Mortality was also lower for successful agers than for typical agers (n=19, 9.8% vs n=502, 28.9% died; p<0.001).

**Conclusions:** Our definition of successful cognitive aging identified those least likely to experience incident MCI or death in this cohort. This, in combination with other physical biomarkers may help stratify older people into aging risk categories.
A69

A comparison of emergency department utilization for injury and illness in older adults: United States, 2010-2011
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Supported By: There were no funders that supported this research.

Background: Emergency department (ED) visits for injury represent an important subset of emergency care of older adults; however, there have been few studies comparing injury and illness visits. The objective of this study is to compare the characteristics and resource use of ED visits made for injury with those made for illness in persons aged 65 and over.

Methods: This is a cross-sectional analysis of 2010-2011 ED data from the National Hospital Ambulatory Medical Care Survey (NHAMCS). NHAMCS is an annual, national probability sample survey of visits to nonfederal, general, and short-stay U.S. hospitals. An injury visit was defined as having a 1st-, 2nd-, or 3rd-listed cause of injury, or reason for visit or diagnosis code that is injury or poisoning related. Weighted least-squares regression was used to test for a linear trend by age group, and differences among other subgroups were evaluated using a two-tailed t test (p<0.05).

Results: An annual average of 4.9 million and 15.0 million ED visits were made for injury and illness, respectively, by persons aged 65 and over. The overall annual visit rates were 125 per 1000 for injury and 379 per 1000 for illness. Both injury and illness visit rates increased with age. Females had a higher visit rate for injury (137 per 1000) than males (110 per 1000). Non-Hispanic black persons had a higher visit rate for illness (695 per 1000) than non-Hispanic white persons (355 per 1000) or Hispanic persons (369 per 1000).

Injury visit rates did not differ significantly by race/ethnicity. Injury visits more frequently arrived by ambulance (42.3%) than illness visits (34.6%) and more frequently included an imaging test (73.4% vs. 61.6%). Injury visits more frequently resulted in hospital admission than illness visits (22.2% vs. 18.6%). Injury visits were made for injury and illness, respectively, by persons aged 65 and over.

A71

Prevalence and Correlates of Behavioral and Psychological Symptoms of Dementia Among Residents of Long Term Care Facilities
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Supported By: None for this study.

Dr. Melisa Andrew is engaged in research on influenza vaccination in older adults which is funded through Collaborative Research Agreements between CIHR, GSK and Pfizer. She has no personal financial interests.

Background: Behavioral and psychological symptoms of dementia (BPSD) are common among older adults with dementia in long term care (LTC) facilities, where the prevalence of BPSD is estimated to be as high as 70%. There is controversy regarding the prevalence of different manifestations of BPSD across the stages of dementia. This study examined the prevalence of BPSD in LTC in Nova Scotia (Canada). We also aimed to create a profile of different components of BPSD across the spectrum of dementia severity. Emotional (low mood and anxiety) and behavior clusters (four categories: verbal non-aggressive, verbal aggressive, physical non-aggressive, physical aggressive) were documented.

Methods: LTC chart reviews were conducted between September 1, 2011 and January 31, 2012 using a Comprehensive Geriatric Assessment (CGA) tool adapted for Long Term Care: the LTC-CGA. A total of 269 LTC residents from 10 LTC facilities were included, of whom 199 had a documented diagnosis of dementia. Group comparison of demographic variables, BPSD symptoms, and function in Activities of Daily Living (ADLs) were performed across stages of dementia severity, as measured by performance on the Folstein Mini Mental State Examination (MMSE).

Results: BPSD were present in 76.9% of 199 residents with dementia, and a similar behavior pattern (but without physical aggression) was also reported in 10-35% without a dementia diagnosis. Speech impairment was associated with the severity of dementia but not with the presence of BPSD. Emotional and behavioral clusters of BPSD were equally present in mild and moderate dementia, with a decline in prevalence as the severity of dementia progressed to a severe stage (prevalence 30% and 18% for emotional and 65% and 42% for behavioral clusters respectively).

Conclusions: BPSD is highly prevalent in our sample of LTC residents. Prevalence of BPSD was equal between mild and moderate stages of dementia, while it was reduced at more severe stages, possibly consistent with a “burn out” phenomenon. In contrast to often-held views that BPSD is a manifestation of severe dementia, here BPSD appeared to be prevalent across the spectrum of dementia severity. Many behavioral and psychological clusters were indeed identified in residents without a documented diagnosis of dementia, suggesting possible under-recognition of dementia.
A72
Symptom Burden in the Homebound: the National Health and Aging Trends Study
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Supported By: This project was not supported by external funds. Dr. Soones is supported by the Mount Sinai Primary Care Research Fellowship, funded by the Health Resources and Services Administration through the Ruth K. Kirchstein National Research Service Award. Dr. Ornstein is supported by grants from the National Institute on Aging (K01AG047923) and National Palliative Care Research Center.

Background: A growing number of adults have multiple chronic conditions, increasing disability, and ultimately become homebound. Small studies have shown that the homebound have a high symptom burden- a potential contributor to homebound status. This study describes symptom burden among homebound older adults in the US.

Methods: We examined cross-sectional data from the 2011 National Health and Aging Trends Study- a nationally representative sample of 7603 community-dwelling adults >=65 years. Participants reported the presence of the following symptoms and consequent activity limitations: pain, difficulty breathing, balance problems, upper and lower extremity strength and movement, and low energy. Only the presence of depression, anxiety, difficulty sleeping, and unintentional weight loss was assessed. Using Chi-squared analyses, we compared overall symptom burden across three categories of homebound status: the “homebound” who leave home once a week or less; the “semi-homebound” who went out at least twice a week, but never by themselves, needed help or had difficulty; the “not homebound” who went out at least twice a week without help or difficulty.

Results: The prevalence of at least one of the 10 symptoms in the homebound and semi-homebound was almost universal (>99%) compared to 82% of the not homebound. On average, the homebound had more than twice the number of symptoms as the not homebound (5.4 vs. 2.4). The prevalence of an activity-limiting symptom was higher in the homebound (p<.01) including low energy (66% vs 21%), pain (56% vs 22%), lower extremity (62% vs 17%), balance (57% vs 8%), upper extremity (44% vs 11%) and breathing problems (29% vs 7%). Over four times as many homebound screened positive for depression (43% vs 10%; p<.01) or anxiety (38% vs 8%; p<.01). Sleep difficulties (56%) and unintentional weight loss (34%) were highly prevalent and more commonly seen in the homebound (p<.01) than non-homebound.

Conclusions: Individuals who are homebound or semi-homebound may benefit from directed services to assess and palliate symptoms as a potential means of promoting independence.

A74
“How does one decide?” Students’ Perceptions of Ethical Dilemmas in Caring for Elderly Patients
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Background: Medical students are exposed to a variety of ethical dilemmas during their clinical years; however, little is known regarding the type of dilemmas encountered while caring for the elderly. During their internal medicine clerkship, students at FIU HWCOM are required to submit a structured assignment describing an ethical dilemma encountered while caring for adult patients. The purpose of this study was to identify and categorize the ethical themes reported by students during encounters with elderly patients.

Methods: This is a cross-sectional descriptive study. Structured assignments submitted by all students over the past three years were de-identified by the lead author. Together, the authors identified assignments involving elderly patients and determined the categories of ethical dilemmas. Patients were classified as elderly if any of the following were present: age ≥ 65; students used terms like “elderly” or “older”; or a diagnosis generally associated with the elderly (e.g., advanced dementia) was reported. Ethical dilemmas were classified under one or more of four themes: (i) Shared Medical Decision Making, (ii) Lack of Professionalism, (iii) Patient Privacy and Confidentiality, and (iv) Organizational/Social Ethics.

Results: 112 assignments were reviewed and 45 (40%) involved ethical dilemmas in elderly patients. The case distribution of the elderly cohort within the four ethics themes were: Shared Medical Decision Making - 25 (55.2%), Organizational/Social Ethics - 9 (20%), Lack of Professionalism - 5 (11.1%), Protecting Patient Privacy and Confidentiality - 1 (2.2%). In several cases conflicts dealing with two themes were identified: Lack of Professionalism and Shared Medical Decision Making - 4 (8.9%), Lack of Professionalism and Organizational/Social Ethics - 1 (2.2%).

Conclusions: Ethical dilemmas involving elderly patients were commonly identified by students. The most common ethical dilemmas involved Shared Medical Decision Making. Surprisingly, ethical dilemmas involving Patient Privacy and Confidentiality was only reported once. Multiple ethical dilemmas were reported in about 10% of assignments. Future studies on ethical dilemmas encountered by students in elderly patients are needed to corroborate our findings, and

A73
Association Between Elder Abuse and Metabolic Syndromes: Findings from the Chicago Health and Aging Project
X. Dong. Internal Medicine, Rush University, Chicago, IL.

Supported By: Dr. Dong and Simon were supported by National Institute on Aging grant (R01 AG042318, R01 MD006173, R34MH100443, R34MH100393, P20CA165588, R24MD001650 & RC4 AG039085), Paul B. Beeson Award in Aging, The Starr Foundation, American Federation for Aging Research, John A. Hartford Foundation and The Atlantic Philanthropies.

Background: Elder abuse and metabolic syndromes are both important public health issues and are associated with increased morbidity and mortality. This study aimed to examine the associations between elder abuse and risk for metabolic syndromes.

Methods: Chicago Health and Aging Project (CHAP) cohort is a population-based study (N=4,586). We identified 676 participants with some form of elder abuse reported to a social services agency. The primary independent variable was elder abuse reported to a social services agency. Outcomes were metabolic syndrome as categorized by World Health Organization (WHO), American Heart Association (AHA) and International Diabetes Federation (IDF) criteria. Bivariate and logistic regression analyses were used to assess the association between elder abuse and different definitions of metabolic syndromes.

Results: In the bivariate analyses, elder abuse victims were more likely than those without elder abuse to have metabolic syndromes (22.4% vs. 10.7% [WHO], 50.7% vs. 40.0% [AHA], and 47.7% vs. 33.5% [IDF]). After adjusting for potential confounding factors, elder abuse was associated with increased risk for metabolic syndromes according to WHO (OR, 3.95 (2.86-5.47), AHA (OR, 2.03 (1.56-2.64) and IDF (OR, 2.55 (1.97-3.29) criteria. Interaction term analyses indicate that the association between elder abuse and metabolic syndromes may be moderated by sociodemographic characteristics, but not by health related or psychosocial factors.

Conclusion: Elder abuse is associated with increased risk for metabolic syndromes. Research is needed to examine the association between elder abuse and cardiovascular disease.
to enhance student ability to assist elderly patients and their families in making care decisions.

A75
An Advance Directive Quality Improvement Initiative in a Primary Care Practice
K. Schiro, University of the Incarnate Word, San Antonio, TX.
Supported By: No funding associated with project.

Purpose: A 12-week advance directive (AD) quality improvement (QI) project on was implemented to determine AD completion, AD documentation, and staff AD knowledge in a primary care clinic.

Background: Completing an AD in primary care is important, allowing the patient to exercise their right to make determinations about medical care prior to becoming incapable of making decisions (American Medical Association, 2013). The optimal time to initiate an AD is between the ages of 50 and 65 during a routine checkup in the primary care provider’s office (Spoelhof & Elliot, 2012). In a San Antonio primary care clinic, a need to provide AD staff education and introduce an AD process for documentation and completion was identified by the Doctor of Nursing Practice (DNP) student.

Methods: Patients over 50 years were targeted in an AD QI project by providing staff education, registry cards, handouts, and access to an AD website. Two staff education sessions were performed using the Texaslivingwill.org site in addition, 956 charts audited.

Results: A pre/post test showed an increase in aggregate staff (N=20) knowledge using an Independent t-Test. Posttest scores (M = 83.64, SD 9.14) improved from pretest scores (M = 52.73, SD 10.46). There was an insignificant increase in AD completion (95% CI:0.0050-0.0192) and a marginal improvement in AD documentation (m = 23.6%, SD 10.62).

Conclusions: A multipronged interventional approach delivered modest improvements in AD completion and documentation. As a leader in healthcare, the DNP is in an optimal position to promote ADs in primary care.

Analysis of Documented and Undocumented ADs by WH Staff

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of ADs documented by staff</td>
<td>19%</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>Percentage of ADs undocumented by staff</td>
<td>81%</td>
<td>76%</td>
<td>77%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
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</tr>
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</table>

Confidence level 95%

A76
Interleukin-6 and age predicted hospital length of stay following open-heart surgery
A. L. Ai, Florida State University, Tallahassee, FL.

Background: Open-heart surgery is a common practice in aging. Interleukin-6 (IL-6) is a biomarker of cardiac disease severity because of its link with myocardial gene expression. IL-6 is directly associated with myocardial injury and thereby may play an important role in the development of systemic inflammatory response syndrome (SIRS) following cardiopulmonary bypass (CPB). This study investigated the predictive value of preoperative plasma IL-6 on hospitalization (LOH) following open-heart surgery of 235 patients.

Methods: All patients recruited by trained research assistants (RAs) were scheduled for non-emergency, non-transplant open-heart surgery, requiring CPB. Two weeks prior to their scheduled operation, RAs blinded to cardiac indices and lab data conducted a face-to-face psychosocial interview at the hospital. Key cardiac indices were obtained from the National Society of Thoracic Surgeons’ (STS) Adult Cardiac Database. Blood samples were collected on the morning three days after surgery for biomarker assays. IL-6 was measured using a sandwich enzyme immunoassay kit, Quantikine High-Sensitivity IL-6 (R&D Systems, Minneapolis MN) with no modification of the manufacturer protocol.

Results: In univariate analyses, correlated with LOH were age, more medical comorbidities, perfusion time and postoperative IL-6. Regression model [F(10,N=215)=8.042,p<0.001,R2=.282] demonstrated that among known predictors in the previous report and other STS cardiac indices, only age, perfusion time and postoperative IL-6 were significantly associated with LOH (p<.01).

Conclusion: Beyond the previous finding linking postoperative IL-6 with perfusion time, the present study found the association of plasma IL-6 and LOH, which could mediate the influence of age and medical comorbidities on LOH in bivariate analyses.

A77
Inhibition effect of verapamil on the development of electromechanical cardiac alternans and ventricular arrhythmias in acute myocardial ischemia
C. Zhang, Y. Deng, J. Zhao, X. Quan, J. Lv, L. Ruan. 1. Department of Geriatrics, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China, Wuhan, Hubei, China; 2. Department of Cardiology, Yuhuangding Hospital, Yantai, Shandong, China, Yantai, China; 3. Department of Cardiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China, Wuhan, China.

Background: T-wave alternans (TWA) and mechanical alternans (MA) are strong predictors of ventricular arrhythmias under condition of acute myocardial ischemia. Abnormal intracellular calcium handling contributes importantly to the genesis of electromechanical alternans. This study was designed to examine the ionic basis concerning calcium handling in the development of electromechanical cardiac alternans and ventricular arrhythmias in the setting of acute myocardial ischemia.

Methods: Transmembrane action potentials were simultaneously recorded from epicardium and endocardium together with a transmural ECG and isometric contraction force in the arterially perfused left ventricular wedge preparations.

Results: TWA and MA were reproducibly induced and preceded ventricular arrhythmias in the acute myocardial ischemia wedge preparations (P < 0.001). Verapamil (1 μM), an I_{ca L} blocker, abolished electromechanical alternans (0/10 vs 10/10, P < 0.001) and ventricular arrhythmias (0/10 vs 5/10, P < 0.05), the inhibition effect of verapamil was diminished by low concentration of ryanodine (10 nmol/L) (7/10 vs 0/10 and 3/10 vs 0/10, P < 0.05). Another type of I_{ca L} blocker, nifedipine (1 μM), could not block electromechanical alternans or arrhythmias, when combined with high concentration of ryanodine (3 μmol/L), the ability of nifedipine against TWA was enhanced (3/10 vs 9/10, P < 0.05).

Conclusions: Verapamil significantly inhibited the development of electromechanical alternans and ventricular arrhythmias in ischemic rabbit LV wedge preparations, the mechanism is related to blockade of both I_{ca L} and Ryanodine receptor.

A78
The low estrogen level is correlated with osteoporosis and atherosclerosis risk in postmenopausal Chinese healthy women
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Supported By: This work was supported by grants from the National Basic Research Program of China (973-Program G2000057006, 2007CB507405, and 2013CB530804).

Background: Osteoporosis and atherosclerosis are belong to aging and aging-related disease, also are frequently seen in postmenopausal women. This study aimed to investigate the role of estrogen in these risks in postmenopausal Chinese healthy women.

Methods: A total of 216 female participants were recruited in the investigation which included 159 postmenopausal female participants, aged 37 to 87. Divided four groups according to menstrual history (premenopause: menopause for 1-10years 11-20years and >20years).

Results: Serum estrogen level was measured with ELISA. Osteoporosis was as-
essed with bone mineral density (BMD) and bone T scores of lumbar and hip. Atherosclerotic burden was assessed by ankle-brachial index (ABI), brachial-ankle pulse wave velocity (baPWV), and carotid intima media thickness (CIMT). The correlation analysis was performed with spearman’s correlation analysis using Graphpad Prism 5 software. P<0.05 was considered statistically significant.

**Results** The BMD and indices of atherosclerosis risk were significantly different between menopausal and premenopausal participants (p<0.01). The level of serum estrogen significantly was decreased postmenopausally, and showed a significantly inverse correlation with postmenopausal time (r = -0.423, p < 0.001). The estrogen level revealed significantly positive correlations with BMD and T scores of lumbar and hip (r=0.490, p<0.001; r=0.556, p<0.001; r=0.523, p<0.001; r=0.620, p<0.001). Estrogen level also showed significantly positive correlation with ABI and inverse correlations with baPWV and CIMT (r=0.228, p<0.01; r=0.250, p<0.01; r=0.203, p<0.01).

**Conclusion** This present study showed that estrogen level is significantly correlated with osteoporosis and atherosclerosis risk in postmenopausal Chinese healthy women, early prevention is very important for them.

### A79 Encore Presentation

#### Safe Mobility for Older Adults in Acute Care Settings:

**Simulation Training for Interprofessional Providers**

A. G. Rothrock, D. Bearden, E. Simmons, P. Sawyer, C. Brown, K. Flood.

**University of Alabama at Birmingham, Birmingham, AL.**

**B. Birmingham Veterans Affairs Medical Center, Birmingham, AL.**

**Supported By:** Health Resources and Services Administration

**Background:** Simulation has long been used in formal healthcare career training programs. However, simulation is not routinely utilized for continuing education in clinical practice. The UAB Geriatric Education Center implemented a two-part “Safe Mobility” evidence-based practice program in the acute care setting.

**Methods:** Part one of the Safe Mobility simulation included a 30-minute didactic orientation, delivered during the clinical unit monthly staff meeting. Part two included mandatory participation in a half-hour simulation session, repeated 17 times over three days. The simulation focused on the interaction of an older patient and his daughter (both actors) who were resistant to staff efforts to get the patient out of bed. A team of clinical observers rated staff performance on a battery of environmental hazards and clinical behaviors related to safe mobility.

**Results:** Part one participants (N=42) had a mean age of 42 with 35% between the ages of 20-29; all were female with 45% African American and 52% Caucasian. The predominant discipline was nursing (75%); others were medicine and social work. The 36 participants who completed the simulation had similar demographics. Ninety percent of part two participants (N=28) reported that the simulation increased their confidence, that they strongly agreed they would be able to apply the principles learned, and that the experience was valuable. The majority of participants rated the program as good (16.7%), very good (22.2%), or excellent (61.1%).

**Conclusions:** Simulation training in the acute care setting is feasible and perhaps preferable at given times. Trainees found the training valuable and reported that it increased with confidence in applying principles of safe mobility. The presentation will include details regarding the process of case development and implementation, the simulation sessions, and the process of observation, debriefing, and evaluation.

After attending this presentation, participants will be able to:

1. describe an evidence-based practice program focused on simulation training for safe mobility of older patients in an acute care setting

2. describe the process of coordinating unit staff and resources to deliver an educational program during clinical service

### A80

**A Bimonthly Interdisciplinary State-Wide Palliative Care Case Conference Promotes Education, Networking, and Emotional Support**


**1. Department of Geriatric Medicine, John A. Burns School of Medicine of the University of Hawaii, Honolulu, HI.**

**2. Pain and Palliative Care Department, The Queen’s Medical Center, Honolulu, HI.**

**Supported By:** The Queen’s Medical Center, Honolulu, HI

**The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, University of Hawaii**

**Background:** Meeting emotional, educational and professional development needs for palliative care practitioners is a priority of clinical practice guidelines for quality palliative care. We evaluated a novel, state-wide interdisciplinary case conference.

**Methods:** This free, interdisciplinary case conference is open to all hospice and palliative care clinicians in Hawaii. The conference has convened every other month since 2010 and is jointly sponsored by Hawaii’s largest hospital-based palliative care program and Hawaii’s hospice and palliative care organization. Meetings are held on the island of Oahu with 20-40 participants, with remote participants from other islands. Attendees on May 15th, 2013 completed an anonymous evaluation tool designed for this purpose. Demographic data were analyzed and inductive content analysis was carried out on open-ended questions.

**Results:** Of the 24 participants, the majority were female (75%), older than 50 (62.5%) and working in palliative care less than 10 years (67%). The leading disciplines of participants were nursing (46%), medicine (25%) and chaplaincy (12.5%), and most worked in interdisciplinary teams (87%). The primary work settings were hospice (67%) and hospital (25%). Of the participants, 21% had attended more than 10 meetings, while 42% had attended less than 5 meetings. Participants cited education (96%), networking (87%) and emotional support (37%) as reasons for attending. Inductive content analysis revealed the most valued benefits of attending were educational, an enhanced sense of being part of a community of providers, emotional/psychological support, and validating current beliefs and practices.

**Participants** agreed that the format of the conference would work in other communities (100%) and that they would recommend the conference to others (100%).

**Conclusions:** This interactive case conference is an innovative and sustainable state-wide approach to meeting diverse educational, emotional, and networking needs for practitioners in palliative care. Participants expressed confidence that this approach could be successfully disseminated to other states.

### A81

**Geriatric Education Tool: Effect of SBAR Training Video and Simulation on Communication During an Interprofessional Delirium Simulation**


**Landon Center on Aging, University of Kansas School of Medicine, Kansas City, KS.**

**Supported By:** Kansas Reynolds Program in Aging – Donald W. Reynolds Foundation

**Background:** A standardized tool, SBAR (Situation, Background, Assessment and Recommendation) is used to improve effectiveness of communication among members of the healthcare team. There is evidence that the teaching of a communication tool improves medical student communication during simulated telephone referrals and that SBAR use improves the ability to effectively convey a message during
a telephone referral. We developed a brief educational video on the SBAR communication tool for third year medical students.

Methods: Third year medical students completed a pre-test KidSIM questionnaire (a measurement of attitudes toward teams in training), watched the SBAR video, received a white coat SBAR pocket card, completed a standardized patient encounter including telephone presentation of the patient to an attending, were evaluated on SBAR communication with a developed rubric and completed a post-test questionnaire. The results were compared to students who completed the same standardized patient encounter but not exposed to the SBAR video and phone presentation.

Results: To date, we analyzed the data from 120 sets of pre and post-test KidSIM questionnaires, 99 before the intervention and 21 after the intervention. KidSIM communication sub-scores improved in both groups, however there was no significant difference between the two groups (p=0.76). Lastly, we analyzed the rubrics of 20 students who completed the encounter with the SBAR intervention. Fifteen of the 20 students (75%) achieved 7 or 8 out of 8, demonstrating superior performance on the SBAR communication.

Conclusions: Although there was no significant difference in communication scores between students who completed the SBAR intervention and those that did not, a significant proportion of students demonstrate superior performance using SBAR based on rubric results after the SBAR intervention. This tool is effective in teaching medical students SBAR communication.


A83
An Interprofessional Workshop to Practice Effective Provider-Patient Communication in Plain Language
D. R. Dahm. Medicine, University of Texas Health Science Center at San Antonio, San Antonio, TX.

Supported By: This project was supported by HRSA Grant Geriatric Academic Career Aware K01HP20458.

Background: Low health literacy is a significant barrier to providing optimal care to older adults. Low health literacy has been linked to poor health outcomes, including increased rates of hospitalization and reduced use of preventive services. Therefore, it is important that learners develop skills that enable them to effectively communicate in plain language with elderly patients who have low health literacy.

Methods: An interactive workshop was developed to improve students’ ability to communicate in plain language. Students (medical, nursing, physician assistant, and pharmacy) engaged in three role play scenarios in which they discussed test results and reviewed a management plan for three chronic conditions commonly encountered in geriatric patients. They also participated in a fast-paced round which challenged them to rapidly “translate” medical jargon into plain language. At the conclusion of these activities, students debriefed with experienced clinicians to review particularly successful strategies and brainstorm solutions to challenging situations encountered during the exercises.

Results: Students actively participated in the session and reported improved confidence in their ability to communicate in plain language upon conclusion of the workshop.

Conclusions: This interactive workshop provided interprofessional students with an opportunity to improve their communication skills using role play and discussion.

A84
Reflective Essays as a Method for Assessing Geriatrics Knowledge for Internal Medicine Residents

Supported By: Sarah Stone Endowed Fellowship in Medical Education

Background: Written reflection can be an effective means of demonstrating a learner’s understanding of an educational experience. Home visits are a valuable method of teaching geriatric medicine and patient safety. We describe the successful use of a home visit reflective piece within the home care curriculum for PGY3 internal medicine residents as part of their Ambulatory Care Block (ACB).

Methods: The ACB is an annual 1-month required rotation including geriatric medicine, gender medicine, primary care core curriculum and intensive continuity clinic experience, with a 3-year cyclical curriculum.

PGY3 residents are assigned an independent home visit with an older adult patient from their continuity panel and a home visit with Elder Services of Worcester Area. After the independent home visit, the residents are required to write both a progress note and reflective essay about the visit with their patient. Residents are given a structured home visit checklist to complete when seeing their patient and are required to submit these for review within the ACB. Residents then evaluate the ACB curriculum through an end-of-course evaluation. We reviewed
the reflective essays for themes regarding reason for patient selection, assessment approach and lessons learned.

Results: In the 2013-2014 academic year 23 PGY3 residents completed a home visit and reflective piece. The most common (18/23) theme residents described was the ability to evaluate for safety and fall risks in the home. 15/23 residents described the home visit as an opportunity to evaluate the functional level of the patient. Thirty-nine percent of residents noted that the patient was chosen in order as an opportunity to evaluate the functional level of the patient. Thirty-nine percent of residents noted that the patient was chosen in order as an opportunity to evaluate the functional level of the patient. Thirteen percent of residents described the home visit theme residents described was the ability to evaluate for safety and fall risks in the home. 15/23 residents described the home visit highlighted new information that would not be gained in an office visit. Overall, we found that with the addition of a reflective essay residents were able to demonstrate the value of home visits specifically in terms of gaining new knowledge and better understanding of the patients’ medical conditions and geriatric issues.

A85
A palliative care education needs assessment survey in surgical residents

Background: Surgeons frequently encounter and care for patients with serious life-limiting illnesses and until recently there was little emphasis placed on formal education in palliative care (PC) and end-of-life care (EOLC) in surgical residency training. In order to design and implement an effective PC curriculum for the surgical residents at our institution, we conducted a survey study to identify the educational needs regarding (and interest in) PC/EOLC and related communication topics.

Methods: The anonymous survey consisted of the following components: demographics; baseline PC knowledge; interest level in PC education; self reported ratings of comfort level in various domains of symptom management and communication; preferred teaching modalities. Residents were asked to fill out the survey at their weekly academic meeting. The target population includes all general surgery residents at our institution.

Results: Fifteen residents have completed our survey so far (average age 30 years old, 80% male). During residency, 80% of respondents have had to discuss PC and/or EOLC issues with a patient or family. All residents agreed or strongly agreed that surgeons need a basic PC skill set. Only 26.6% agreed or strongly agreed that surgical resident curriculum contains an adequate amount of communication education and only 33.3% agreed there was adequate PC/EOLC education. Sixty percent agreed or strongly agreed that they would like to have more palliative care education and 66.6% felt that surgical residents would benefit from additional PC/EOLC education. Sixty percent or more of the residents rated themselves as good at managing pain, nausea, care of the dying patient, prognostication, discussing code status, breaking bad news and offering emotional support to patients and families. Greater than 50% rated themselves as average or poor in managing dyspnea or delirium, discussing hospice care, withdrawal of life support, leading family meetings, and offering bereavement support for families. Most residents (53.3%) ranked direct participation as their preferred method of learning and the least preferred was internet/web based learning.

Conclusions: These preliminary results suggest that surgical residents frequently discuss PC/EOLC issues with their patients/families during training and a majority desire additional training in these topics. Surgical residents would likely benefit from a palliative care curriculum.

A86
Evaluation of a Safe Mobility Simulation Training Program for Interprofessional Providers
H. L. Herrington, A. Rothrock, E. Simmons, K. A. Booth, C. Brown, F. K. Flood, D. Bearden, L. University of Alabama at Birmingham, Birmingham, AL; 2. UAB Hospital/Health System, Birmingham, AL; 3. Birmingham/Atlanta GRH/EC, Birmingham, AL.

Supported By: HRSA- GEC

Background: Falls in hospitalized older adults are associated with significant morbidity and mortality. Moreover, the Centers for Medicare and Medicaid Services classify hospital falls with trauma as a preventable complication or “never event”, for which they will not pay, making fall prevention strategies appealing to hospital systems. As part of the UAB Geriatric Education Center, a Safe Mobility Simulation Training Program was developed to maintain mobility and decrease debility and falls in hospitalized older adults.

Methods: This program was presented to 34 interprofessional healthcare providers on UAB’s Acute Care for Elders (ACE) Unit, including nurses and patient care technicians. A 10-item retrospective pre-post test evaluation examined the efficacy of the simulation training program with regard to participants’ beliefs and attitudes toward safe mobility in hospitalized older adults. A Likert scale was used to indicate how strongly attendees would have agreed or disagreed with each item before training compared to their feelings after training.

Results: Following the simulation training program, participants were more likely to strongly agree with a statement emphasizing the importance of safe mobility in hospitalized older adults (p=0.012). They indicated that they were more confident in their ability to assess older adults for safe mobility (p=0.001) and were more confident in their colleagues’ ability to implement a safe mobility plan (p=0.003). They were also more likely to indicate strong agreement with a statement that maintaining mobility could reduce falls in hospitalized older adults (p=0.006). Additionally, after the simulation training program, participants were more likely to strongly agree that the specific teaching tools used would help them more effectively communicate with patients and families (p=0.012), particularly when communicating an interprofessional safe mobility plan of care (p=0.002).

Conclusions: This evaluation showed that the Safe Mobility Simulation Training program was successful in improving participants’ attitudes and beliefs about maintaining mobility in hospitalized older adults.

A87
Inpatient Care for the Silver Tsunami: Near-Peer Teaching for Graduating Medical Students

Supported By: Donald W. Reynolds Foundation

Background: Educators must prepare trainees to care for elderly inpatients. However, faculty that are many years removed from training cannot draw from personal experience to identify what today’s students need to learn in the transition to internship. This education innovation was created and led by housestaff for a medical school capstone course on four key areas of inpatient management of older adults.

Methods: A Medicine intern and two Geriatrics fellows advised by geriatricians used Kern’s 6-steps for curriculum development to design and facilitate an interactive case-based one-hour workshop with these objectives: 1) Identify high-risk medications using Beers criteria; 2) Diagnose delirium with the Confusion Assessment Method; 3) Complete a Physician Orders for Life-Sustaining Treatment (POLST);
4) List key components of an effective care transition. Handouts included laminated geriatrics-specific pocket cards.

Results: Twenty-five students selected this session. All (100%) submitted a pre- and post- knowledge self-assessment and anonymous evaluations on a scale of 1-5. Mean ratings were 4.5 ("very good" to "excellent"), with highest ratings for pocket cards (4.88), organization (4.76), and overall quality (4.56). Knowledge improved significantly for all learning objectives (p<.01), with all mean ratings above 4 ("probably can"). Students cited strengths of trainee instructors, organization, and learning materials. The majority (72%) stated that all graduating students need this session. Housestaff self-reported positive impact on confidence and skills with curriculum design, teaching methods, and content knowledge.

Conclusions: Important geriatrics clinical skills can be taught to graduating medical students in a workshop designed and led by housestaff. They can be mentored by faculty with minimal time investment to create a new and relevant curriculum. Near-peers have credibility and skills to teach. This strategy prepares the next generation of clinicians and educators for the care of older adults.

A88 Development of an Advance Care Planning Communication Evaluation Tool
J. K. Yuen, S. Berns, R. Karani. Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.
Supported By: John A. Hartford Foundation, Arnold P. Gold Foundation

Background: Advance care planning (ACP) communication is essential to the care of older adults to ensure that patient’s preferences and goals for care are met. However, many internal medicine (IM) residents report lack of comfort with discussing ACP particularly in the outpatient setting. To address this need, an innovative ACP curriculum was developed for IM trainees. To evaluate the curriculum’s impact on trainee communication skills, an ACP communication evaluation tool is needed but no such tool exists in the literature. Our objective is to develop an evaluation tool to assess trainee ACP communication skills based on real-time observation of clinical encounters.

Methods: We conducted a literature review and consulted with 4 content experts to identify the key steps in the ACP process and compiled the communication tasks for each step into a checklist. A training manual with working definitions of each task was also developed. The checklist was piloted with 6 faculty with expertise in communication skills who evaluated videotapes of simulated resident OSCE encounters with a standardized patient conducted before and after receiving the ACP curriculum. The group convened to identify disagreements and refined the tool to enhance its clarity and discriminating ability. Multiple iterations were made until agreement was reached by all in the evaluation of 6 videotaped encounters.

Results: Our ACP communication evaluation tool consists of 5 key steps in ACP communication and 30 distinct communication tasks (Table). The tool adopted communication tasks from the validated SEGUJE Framework for communication assessment, FaMCAT observation tool and the ACGME IM Milestones.

Conclusion: Our ACP communication evaluation tool consists of communication tasks that can be used for assessment of learner’s skills for curriculum evaluation. Our next steps are to determine the usability and reliability of the tool through evaluation of our pre- and post-curriculum OSCE of 30 IM trainees as well as its value as a teaching and learning feedback tool that can be used for an ACGME Entrustable Professional Activity.

ACP Communication Evaluation Tool

<table>
<thead>
<tr>
<th>ACP Steps</th>
<th>Sample Communication Tasks</th>
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<tbody>
<tr>
<td>Getting buy-in to discuss ACP</td>
<td>Identifying and involving health care proxy (HCP)</td>
</tr>
<tr>
<td>Identifying and involving health care proxy (HCP)</td>
<td>Discusses importance of involving HCP in ACP discussion</td>
</tr>
<tr>
<td>Clarifying health status/worse prognosis</td>
<td>Assesses patient’s understanding of health status/prognosis</td>
</tr>
<tr>
<td>Existing goals/value/preferences</td>
<td>Explains patient’s wants/preferences regarding health/life issues</td>
</tr>
<tr>
<td>Matching care to goals</td>
<td>Provides recommendations for care plan that matches patient’s goals/values/preferences</td>
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A89 Sparking high school students’ interests in healthcare careers serving the aging

Background: The population aged 65 and older is projected to double from 43.1 million in 2012 to 84 million in 2050. Meanwhile, the United States has roughly half the number of certified geriatricians needed to serve its rapidly aging population. Current training programs do not produce enough geriatricians to meet the growing need, largely because students lack interest in a career in geriatrics. Studies have shown student exposure to the elderly and initial interest in aging result in a higher likelihood of working with older adults. We propose building a pipeline for careers in aging by engaging high school students in interactive, educational events. Methods: In November 2014, the House Calls Program at North Shore-LIJ Health System hosted six 11th grade students from a local high school at its office for 5-hours as part of an initiative to expose students to healthcare careers. Students participated in hands-on activities simulating the frailty and functional impairment prevalent in older adults with multiple chronic conditions – the population served by the Program. Question and answer sessions with eight different clinical and non-clinical roles in the Program contextualized the care teams that address patient and caregiver concerns daily, as well as associated operational challenges. Results: Pre and post surveys, including the Aging Semantic Differential, were administered to participants. The event was associated with a positive change in students’ attitudes towards the elderly and made students “more open to career paths [in healthcare].” Participants reported their favorite parts of the experience included “simulating deterioration of health and hearing while sorting pills,” “listening to various experiences each [provider] had,” and “learning that healthcare is more than medicine.” Furthermore, students felt that “[the Program] was dedicated to serving [its] patients and getting the best for them” and stated they would be proud to work in such a healthcare career. Conclusions: Exposing students at a young age to programs that serve the aging can build empathy for and spark their interest in working with the elderly, and ultimately create a pipeline for future careers in geriatrics and related fields. Like many interventions shown to be effective in caring for an aging population, these interactive learning experiences that can be provided to high school students are relatively inexpensive and therefore replicable across multiple settings.

A90 Improving Physician Trainee Knowledge in a Fall Assessment Clinic
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Background: Falls among the elderly are common - 1 in 3 adults aged 65 or older falls yearly. Falls are the leading cause of injury death and the most frequent cause of hospital admissions for trauma in this age group. Physicians often lack awareness of fall morbidity and mortality and the time to adequately address a multi-factorial problem. Part of the challenge may be related to the scarcity of education about fall prevention during physician training. Our objective was to evaluate the confidence of physician trainees in their knowledge to assess fall risk
and prescribe interventions for patients referred to a Fall Assessment Clinic (FAC). We hypothesized that the trainees’ confidence would improve after spending time in the FAC.

**Methods:**

Internal medicine residents and geriatric medicine fellows spent an average of 6 half-day sessions at the FAC over the course of 12 months. Time in FAC was divided into two components: clinical evaluation of a patient with a history of recurrent falls and a didactic portion about different aspects of fall prevention. Each trainee was asked to fill out an anonymous survey on a 5-point Likert Scale assessing confidence in their knowledge about fall prevention in the ambulatory elderly population. The survey was provided at both their first ("pre") and last ("post") sessions at the FAC.

**Results:**

21 trainees provided pre-surveys and 9 trainees provided post-surveys. Initial pre-FAC confidence was minimal – only 23.8% of trainees felt their ability to adjust medications associated with falls was “very good” or “excellent”; this improved to 77.7% on post-FAC surveys. Trainees also felt they lacked the knowledge to adequately perform a gait and balance examination – only 14.3% felt “very good” or “excellent” about their ability to do so. This improved to 66.6% on post-FAC surveys. Improvements across other aspects of fall prevention knowledge were also seen in post surveys.

**Conclusions:**

Physician trainee knowledge and confidence in identifying risk factors and prescribing interventions to minimize patient falls improved after spending time in a fall assessment clinic dedicated to evaluating recurrent elderly fallers.

**A91 Using a Systems Change Framework as an Evaluation Tool in Geriatric Education Projects**


Supported By: DHHS-BHPr-HRSA, Geriatric Education Center grants.

Healthcare providers implement evidence-based practices (EBPs) in clinical settings. Contextual factors surround EBPs, which can become institutionalized with time. Kurt Lewin’s 3-stage model of change allows us to explore EBPP occurrence and surrounding factors as a result of geriatric education with providers. This session will highlight changes emerging from falls risk assessment practices of the Maine and Virginia Geriatric Education Centers (GECs). The changes occurred from a DHHS-BHPr-HRSA initiative to increase the prevalence of EBPs among providers.

The UNE Maine GEC trained rural Emergency Department (ED) nurses to focus on improving the quality of care for older adults utilizing 12 indicators (Assessing Care of Vulnerable Elders-ACOVE) (Chang JT, Ganz DA, 2007) incorporated into a Multifactorial Fall Risk Assessment (MFRA). This presentation will give a holistic overview of project evolution within the framework of Lewin’s 3-step model. Chart reviews spanning four months in time were conducted each year of a 2010-2015 grant to ascertain assessment and/or intervention practices upheld in the clinical setting. In 2014, more patients meeting inclusion criteria received the MFRA, more than doubling the percentage of those receiving the EBP from 2013. The systems changes surrounding these practices will be explored in Lewin’s terms of Unfreezing, Movement and Refreezing.

At Virginia GEC, initial EBP trainings at a single PACE site in 2011 led to dissemination of the 24-hour program at five PACE sites (current, 2014). The emergent norms from the initial training (part of Lewin’s Movement) had become solidified during Refreezing and became cemented into the organizational culture. An examination of physician records (2013-2014) showed a 16.3% increase in the documentation of post fall assessments (n=126). With respect to interventions, the proportion of post-fall patients receiving management of postural hypotension increased by 10%, and physician orders for home environment modifications also increased by 10%.

**A92 Teaching Elder Abuse to Interprofessional Healthcare Providers—Does an educational intervention make a difference?**

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Supported By: Health Resources and Services Administration (HRSA) from Department of Health and Human Services (Grant #UBHP19058)

**BACKGROUND:**

The US Centers for Disease Control and Prevention, the US Administration on Community Living and the World Health Organization have made elder abuse and mistreatment a healthcare provider priority. In the United States, 8000 Baby Boomers celebrate their 65th birthday daily. It is anticipated that with this aging populace there will be a significant increase in elder abuse (physical, sexual, financial exploitation, caregiver neglect, psychological and emotional abuse, abandonment and self-neglect). The Houston Geriatric Education Center presents educational lectures on Elder Abuse and Mistreatment to interprofessional audiences. We utilize experts from our Texas Elder Abuse and Management (TEAM) Institute to review educational content and present lectures. The face to face educational lectures are case based presentations. Our objective was to ascertain if Elder Abuse and Mistreatment Education intervention enhances knowledge in an interprofessional healthcare provider audience.

**METHODS:**

**Design:** Pre and post testing evaluation. **Setting:** In-person educational intervention occurring at multiple healthcare facilities including academic, acute care hospital, long term care and community health care settings. **Participants:** Interprofessional audience including physician, advanced practice nurses, registered nurses, social workers, physical therapy, occupational therapy, social work, speech and language pathologist, dentist, dental hygienist, and other community health care providers. **Measurement:** Nine question multiple choice test evaluating elder abuse and mistreatment information.

**RESULTS:**

A total of N=104 pre-test and post-test pairs were analyzed to estimate the effect of the Elder Abuse and Mistreatment educational intervention. The average change between pre-test and post-test scores for the group was M = 0.90 with a standard deviation of Std.Dev. = 2.11 points. Due to violations of normality, the signed-rank test was conducted and demonstrated a statistically significant difference between pre-test and post-test scores (p-value <0.0001).

**CONCLUSIONS:**

This educational intervention significantly increased participants knowledge. Participants program evaluation qualitative comments have led us to develop additional on-line elder abuse and mistreatment educational toolbox. These educational tools will be shared with our audience.
page concise, peer-reviewed evidence-based educational summaries on key geriatrics topics to increase medical knowledge. However, while ACGME Milestone residency/fellowship reporting requirements emphasize developmental learner assessment, quick, concise, point of care learner assessments are scarce.

**Objectives:** Create quick, online assessment tools (quizzes) paired with GFF content, to be used by learners at the point of care to assess knowledge of geriatric content aligned with ACGME Milestones.

**Methods:** An interprofessional team (geriatricians, educators, tech) members worked to develop quiz features and design. Initial and ongoing needs assessment identified desired and essential quiz design features and functionality. Created “wireframes” outlined all features/flow of user to ensure functionality for purpose. Frequent review and revision by the core team and extended team members provided key feedback to keep quiz creation moving forward.

**Results:** Short, (13 item or less) quizzes are now incorporated into the GFF MEW to assess learner medical knowledge. Design elements include quiz content searchable by topic, links to corresponding GFFs, MCQ short answer question formats and ability to include images. Learners enter brief demographic information to start (institution, email of self and up to 1 other) allowing annotated score results, displayed immediately after quiz completion, to be sent to themselves and one other individual (faculty, program director). Back end statistical analysis allows for overall quiz item evaluation/metrics and determination of use by the GFF team.

**Conclusions:** Quick quizzes, available on hand held mobile devices at the point of care and linked to GFF content provide learners and program directors information of learner knowledge assessment linked to ACGME Milestones.

**A94**

**Acting Locally to Impact Geriatric Education Globally**

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**Background:** Medical education now includes local face-to-face (F2F) classrooms and globally accessible, digital based delivery systems (e.g., twitter journal clubs, MOOCs, online sites). Scaling local educational tools/resources to an external audience requires shifts in design focus, platforms and engagement strategies. For example, Geriatric Fast Facts (GFFs) [www.geriatricfastfacts.com] became a “live” mobile enabled website in January 2014. It contains 1-2 page concise, peer-reviewed evidence-based educational summaries on key clinically oriented topics in geriatrics; is searchable using free word text or categories (e.g., review of systems, geriatric topics, underlying conditions); and allows users to tag favorites and share via e-mail and/or social media.

**Objectives:** To enhance GFFs’ global impact by moving from local hosting, local authorship and reviews to collaborative author/editorial processes, external host with strong analytics.

**Methods:** Stepwise process utilized to move globally. (1) Partnered with collaborative but competing statewide health care system, requiring both legal departments to agree on disclaimers/terms of use and relocation of online resources to an external, neutral platform. (2) Created national advisory board of senior faculty/leaders to provide guidance/identify project needs and gaps. (3) Invited mid to senior faculty/leaders to form a national editorial board to solicit authorship and review submitted GFFs prior to online publication and make recommendations for updates in site content and features.

**Results:** Partnering with 2 regional health care systems increased visibility and perceived validity from practicing physicians in both health care systems. Forming national advisory and editorial boards expanded site content and increased external collaboration and sustainability. Site relocation analytics showed increased global influence: in a 7 day period from 11/24-11/30/14, 77 sessions representing 10 countries (range: US 47 sessions, Brazil 10 sessions, 1-2 sessions from remaining 8 countries) were recorded.

**Conclusions:** Expanding local on-line educational efforts lightens individual educator workload, increases sustainability and moves site from local to global educational impact.

**A95**

**Can You Swallow This? A Practical Approach to Dysphagia**

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**Supported By:** Donald W. Reynolds Foundation

**Background:** While dysphagia may be simply defined as “difficulty moving food from the mouth to the stomach”, the local presence of the airway increases risk of adverse events. Complications may include aspiration with pulmonary complications or obstruction, poor rehabilitation potential, and even death. Muscular strength, neuromuscular coordination, cognition and cardiopulmonary strain are all necessary for a safe swallow. In a curricular environment of limited time and competing educational priorities this key content area may be overlooked.

**Objectives:** 1) Identify the 3 phases of swallowing (oral, pharyngeal, esophageal) and conditions causing potential dysphagia, 2) List 5 indicators that a patient may be at risk for aspiration, 3) List treatment options for aspiration (swallowing exercises, position changes, dietary modification).

**Methods:** This interactive, “hands-on”, small group session emphasizes a practical approach to the diagnosis and management of dysphagia in older adults. Created by a speech/language pathologist and geriatrician team, the session begins with a brief overview of swallowing anatomy and phases. A small group brainstorming session then highlights potential etiologies of dysphagia, followed by the use of videofluoroscopic studies and the learners’ sampling of thickened liquids and trials of swallowing maneuvers to make learning “stick”.

A Frequently Asked Questions/References (Ask the Speech Therapist Sheet) supplements the session.

**Results:** The interactive dysphagia session was part of a regional workshop of interprofessional providers (advanced practice providers, nurses, physicians, residents, students). Participants (N=35) rated the session on a scale with 1=poor to 7=excellent. They consistently gave the workshop high marks. For example, the average of the rating for “Overall content of the session” was 6.5, “Instructional strategies advanced my learning”, “Overall effectiveness of session” and “Overall impact of this session on your ability to provide quality care for your next geriatric patient” were all 6.4.

**Conclusions:** An interactive dysphagia workshop incorporating small group work, video swallow studies and participant trials of thickened liquids aided learners in identifying aspiration risk factors and initial assessment and management plans to improve the quality of care for geriatric patients.

**A96**

**Interdisciplinary Geriatric Rehabilitation: A Novel Curriculum Designed for Geriatric Medicine Fellows**

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**Background:** The RRC requires that geriatric medicine fellowships provide meaningful exposure to rehabilitation in long term care. Programs must ensure that interdisciplinary relationships occur between the fellows and members of physical medicine and rehabilitation. We present a novel, recently piloted curriculum from our geriat-
eric medicine fellowship. Methods: We developed a curriculum to meet the ACGME requirement that geriatric medicine fellows demonstrate knowledge of geriatric rehabilitation, including the care of patients with orthopaedic, rheumatologic, cardiac, pulmonary, and neurologic impairments. These principles should include those related to the use of physical medicine modalities, exercise, functional activities, assistive devices, environmental modification, patient and family education, and psychosocial counseling. Results: A twelve unit curriculum was integrated into a twelve week patient care block rotation in SNF-rehabilitation. It was piloted over the course of a year with three geriatric medicine fellows. The units provided interdisciplinary readings, interactive exercises, and didactic presentations. The content covered was drawn from social work, nursing, medicine, physical, occupational, and speech therapy. The units included: Introduction to SNF-rehabilitation, Medicare and rehabilitation, post-amputation care, spinal cord injury, post-stroke care, joint replacements, falls and gait aids, spasticity, pressure ulcers, cardiopulmonary rehabilitation, and discharge planning. The twelfth unit was reserved for the fellow to present on an area of their choosing. A guidebook was provided. There were weekly didactic sessions for each content area between the fellow and geriatric attending. Fellows participated in orthotics/prosthetics and spinal cord injury outpatient clinics offered through the Department of Physical Medicine & Rehabilitation. Fellows also benefited from participating in PM&R consultations for SNF-rehabilitation patients. All participating fellows reported the pilot curriculum enhanced their knowledge of geriatric rehabilitative medicine. Conclusion: This novel geriatric rehabilitation curriculum may provide guidance and resources for geriatric medicine fellowship programs seeking to enhance their interdisciplinary rehabilitation educational experiences.

A97
Incorporating Oral Health into Geriatrics Medical Curriculum
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BACKGROUND: An oral health didactic session was added to medical students’ one month Geriatrics Clerkship rotation. The goal was to increase students’ knowledge of oral health. Healthy People 2020 targets oral health as one of the top nine health indicators needing improvement for older adults’ overall health. Oral diseases, including cavities, gum disease, and oral cancer, may cause pain, functional limitations and decreased quality of life. Research linking oral and systemic diseases, specifically the association of periodontal disease with diabetes, heart disease, and stroke, highlights the importance of oral health education.

METHODS: From 2013 to 2015 fourth-year medical students participated in an interactive session led by a dentist specializing in geriatrics. Students generated oral health topics that were of interest and the discussion was facilitated by the dentist who incorporated the session objectives into the student motivated discussion. The session objectives were to 1) define oral health and connect it to function and quality of life, 2) understand the associations between systemic disease and oral health, and 3) manage common oral health conditions in older adults. Students rated the session content and presentation on a Likert scale and answered an open-ended question asking them to describe how the session will impact their practice, patient care, and/or view of the system in which they work. Descriptive statistics were calculated and free-text responses were analyzed for common themes.

RESULTS: 59 students completed the session evaluation. 96% of the respondents rated the session content as clear, organized and that it fulfilled the stated learning objectives. 81% of the respondents rated the content as interesting. Themes emanating from the response to the open ended question included having increased awareness of oral health, intention to ask their patients oral health questions during primary care visits, and recognition of little prior education about oral health in medical school.

CONCLUSIONS: Student feedback demonstrated that an interactive session led by a geriatrics dentist successfully met the objectives of the session. Furthermore, the medical students’ responses showed that the session increased their awareness of oral health and provided them with specific questions related to oral health that they can ask patients.

A98
Enhancing Palliative Care in the Nursing Home (EPaC-NH): A novel approach to educating interns in the long-term care setting
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Supported By: University of Alabama at Birmingham Division of Gerontology, Geriatrics and Palliative Care, matching funds from the Hartford Center of Excellence.

BACKGROUND: Nursing homes are unique health care settings to which housestaff receive little exposure. It is an ideal setting to introduce basic palliative care concepts and highlight challenges encountered when caring for medically complex patients. Knowledge gained from first-hand experience with these challenges can be applied to any medical practice. There is a need for novel, relevant approaches to teaching palliative care in nursing homes. Methods: EPaC-NH is a comprehensive teaching exercise designed to improve intern knowledge of palliative care principles in the nursing home by applying the principles of adult learning theory and promoting emotional growth through self-reflection. EPaC-NH uses a three-pronged approach comprised of a self-directed educational module, a bedside teaching experience, and a reflective narrative exercise. The educational module consists of board-style questions introducing palliative care concepts. Interns spend one afternoon at a nursing home seeing palliative care consults with an attending physician dually trained in geriatrics and palliative care. The reflective narrative exercise guides learners in examining how their initial attitude toward geriatric medicine may have changed during the rotation and how this knowledge may apply to other patient care experiences. Results: Evaluations from bedside teaching sessions have been positive. Learners “agreed”/“strongly agreed” that sessions enhanced their understanding of palliative care. The reflective narratives have been insightful and instructive. Several learners related how their newly gained knowledge would have affected the clinical care provided to patients in the past. Many also indicated they planned to apply geriatric principles to their medical practice. Conclusion: The EPaC-NH curriculum provides unique exposure to palliative care in the nursing home. The tasks build upon one another and provide time for reflection on medical practice and one’s path to becoming a caring, competent clinician. Reflecting on one’s own practice is rare in medical training and its importance is often overlooked. By providing time and space for learners to reflect upon their unique experiences, this exercise may provide a means for facing complex emotions and identifying how these emotions affect clinical practice.

A99
Reflections on Frailty from First Year Internal Medicine Housestaff
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Supported By: University of Alabama Division of Gerontology, Geriatrics and Palliative Care; matching funds from the Hartford Center of Excellence.

BACKGROUND: Housestaff receive little formal education on the concept of frailty and the role it plays in complex medical care of older adults. Although housestaff may be familiar with the term and
also improved more in their total scores (females increased 12 points, males increased 10 points), P=NS. When comparing how each gender improved in scoring, there was statistical significance, with female MS 12 point improvement (p<0.0001) and male MS 10 point improvement.

Conclusion: Incorporating chronic pain education into MS curriculum can improve attitude development toward chronic pain patients, as demonstrated by the changes in perception exhibited on posttest scores by second year MS in this study. Literature suggests that clinicians’ attitudes toward chronic care patients are predominately negative and that these perceptions develop over time. Targeting MS early in their education and providing them with the skills and specialized training to treat chronic pain patients can influence MS’ attitudes in the positive direction and improve patient satisfaction and quality of care.

A101
Education can Improve Staff Recognition of Clostridium difficile in the Nursing Home
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Supported By: no funders who supported this research

Background: Clostridium Difficile (C. Difficile) is an infectious disease as it can cause diarrheal infection, pseudomembranous colitis, and death. C. Difficile infections in the nursing home (NH) which, if undetected, may lead to undesirable outcomes like emergency room visits, hospitalizations, and mortality. Mortality rates from this infection continue to increase. From 5.7 per million population in 1999 to 23.7 per million in 2004.

Methods:
An anonymous multiple choice pretest was given to 31 staff at AG Rhodes Skilled Nursing home and Rehabilitation facility in Atlanta, Georgia. Completing the assessment included certified nursing assistants (N=9), registered nurses (N=1), licensed practical nurses (N=12), and physical and occupational therapists (N=9). The identified deficits were incorporated into a 30 minute face-to-face didactic session led by a physician. Immediately after the didactic session there was a similar post test to determine if the knowledge increased regarding identified deficits. 20 posttest were received which consisted of MD (N=1), OT (N=1), LPN (N=14), CNA (N=4).

Results:
The pretest included: Identification of infection symptoms (N=27, 87%), Risk factors for C. Difficile infection (N=27, 87%), Infection control knowledge (N=26, 83%), Identifying when to call a doctor with diarrhea (N=23, 74%). Post-intervention assessment: Identification of infection symptoms (N=20, 100%), Risk factors for C. Difficile infection (N=20, 100%), Infection control knowledge (N=20, 100%), When to call doctor with diarrhea (N=16, 80%). The post-test included usefulness of the didactic session which was rated as “excellent”. (N=20, 100%) The non-respondent rate can be attributed to the number of staff on night shift that could not attend the session.

Conclusions:
Directed teaching increased knowledge base and potentially can decrease infection rate. This can improve patient care by reducing hospital admission, ER visits, and mortality related to C. Difficile.

Another significant finding was that staff showed a unanimous interest in increasing their knowledge base.

References
CDC: http://wwwnc.cdc.gov/eid/article/13/9/06-1116_article.htm
http://www.cdc.gov/VitalSigns/Hai/StoppingCdifficile/
A102
Geriatrics Case Teleconference for Rural Healthcare Professionals: Evaluation of Barriers
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Background
New programs have been developed to bridge the knowledge gap in specialty care by providing education to rural healthcare professionals (HCPs) through case-based consultation at a distance, such as demonstrated in the Extension for Community Health care Outcomes (ECHO) in New Mexico. There are limited opportunities for rural HCPs to learn about geriatrics. The Geriatric Research Education and Clinical Center- community-based outpatient clinics Connection (GRECC-Connect) aims to provide geriatrics education through case-based teleconference from VA Medical Centers to rural HCPs for veterans in rural areas. Our objective is to describe barriers to participation of GRECC-Connect Case Conference.

Methods
We sent an e-mail inviting HCPs on the GRECC-Connect list sever in Veterans Integrated Service Networks 2 and 3 to participate in a 30-minute semi-structured phone interview, surveying the perceived barriers to participate in monthly GRECC-Connect Case Conference. From September 16, 2014 through November 15, 2014, interviews were audio-recorded with consent or recorded by tandem note-taking by two authors. The authors coded data and performed thematic content analysis.

Results
Nine HCPs participated in the phone interviews. They were from different disciplines, including social work, nursing, pharmacy, and clinician. Some also had roles as trainees, such as pharmacy resident and nurse practitioner students. Four HCPs worked in home-based primary care, and others worked in outpatient primary care. Five HCPs attended the case conference, and one also presented cases. The most frequently reported barriers to attending were competing clinical tasks, prioritizing patient care over conference attendance, presence of other meetings, difficulty with conference time coordination across disciplines, availability of local geriatric specialists, difficulty with technology, and unfamiliarity with case conference. The most frequently reported barrier to presenting was perceived knowledge deficit.

Conclusion
The most important barriers to participation of GRECC-Connect Case Conference were competing clinical tasks for attendance and perceived knowledge deficit for presentation. Gaining insight to barriers will allow for program improvement and dissemination of knowledge in geriatrics education in rural areas.

A103
Delirium Education for Internal Medicine Residents!
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Background
Delirium in hospitalized older adults is associated with increased morbidity and mortality. Geriatric medicine competencies guide the development of curriculum for IM and FM residency training programs, and include residents’ ability to diagnose and effectively manage delirium. The purpose of this project is to teach Internal Medicine residents about validated screening tools, evidence based management of delirium, and outcomes of prolonged delirium.

Methods
Our project involves a sixty minute, case based, small group teaching session on delirium for Internal Medicine residents at Cleveland Clinic. The session is conducted once a month, during the residents’ rotation in Geriatric Medicine. Two standardized cases take the residents through the hospital stay of each patient and highlight clinical presentation, risk factors, management, and outcomes.

After the session, residents receive a REDCap link via email, to write a reflective essay on a delirious patient they managed in the past, and what they may have done differently. Residents do not provide any identifying information about the patient discussed in their essay. The study was approved by IRB of Cleveland Clinic.

Data Analysis
All essays written by Internal Medicine residents in REDCap during 1/2014-7/2014 were analyzed. Data was extracted on problems identified during management of delirious patients, current practices, concepts learnt during the activity, and interventions the residents feel they’d be able to employ in future patient encounters.

Results
Sixteen essays were analyzed. Residents identified presence of polypharmacy, sleep problems and hyperactive delirium as the leading problems when encountering delirious patients. Review of medication list, followed by employing non-pharmacologic interventions esp. targeting sleep hygiene, and optimal pain control were the three leading interventions residents noted they’d like to employ more often in future patient encounters.

Conclusion: Our project is an interactive educational activity for internal medicine residents. It enables them to learn evidence based management of delirium, and allows them to reflect on current practices and how to improve them.

A104
Geriatric Bootcamp: Geriatric Fellowship Immersion Training in the First Month of Program
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Supported By: HRSA: Geriatric Academic Career Award and Geriatric Education Center Award

The Next Accreditation Steps (NAS) requirements that will be implemented for Geriatric Fellowship Programs in July 2015 requires monitoring and assessing certain skills and competencies throughout the year to ensure mastery of the geriatric content. One approach to address knowledge and skills is to frontload with geriatric content at the beginning of the 1 year training program. We developed a “Geriatric Bootcamp” to serve as a four week block at the start of the academic year. It was broken up into weekly themes. Week 1: Introduction to Geriatrics and Educational Tools, Week 2: Geriatrics Examination, Week 3: Team and Team Communication, and Week 4: Putting it all Together. This was initiated with the 3 geriatric fellows for the 2014-2015 academic year. Embedded in these weeks were clinical experiences, curricular content provided through Blackboard, Delirium OSCE, and small group discussion. Initial feedback has been favorable from both the trainees and the faculty. This has allowed for early identification of gaps of knowledge, as well as a uniform geriatric knowledge base from which to evaluate and base expectations. Next steps will be refinement of the curriculum, content and experiences to optimize the experience.
A105
Leveraging Geriatric Education Center Resources and Professional Organizations to Enhance Learning Experiences for Community-Based Healthcare Professionals

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Supported By: The Health Resources and Services Administration, Bureau of Health Workforce, award no. U44HP19215 – Atlanta Regional Geriatric Education Center.

Background: Geriatric Education Centers (GEC) offer expertise and high quality interprofessional (IP) education on geriatric care. Professional organizations such as the Gerontological Advanced Practice Nurses Association (GAPNA) can act as conduits for GEC-sponsored trainings to community-based providers. The Georgia Chapter of GAPNA and the Atlanta Regional GEC (ARGEC) partnered to expand GA-GAPNA’s pre-existing nursing CE Day in 2010 and merged the event with ARGEC in 2012. Resulting enhancements included: addition of NASW and ACCME CE credits; recruitment of nationally recognized speakers via academic networks; introduction of social/policy concurrent sessions. Registration data from 2010-2014 was reviewed for attendee profession information, participation in breakout sessions, and general attendance rates. Results: 2010 to 2014 attendance rates increased 93% (n=60 to n=116), with peak participation of Social Workers (n=20, 17% of registrants) and Medical Disciplines (MD/PA’s n=9, 8% registrants) in 2014. Allied health and non-clinical attendees represent ~ 6% of registrants across 2012-2014. No social workers, allied health or non-clinical researchers attended CE Day prior to 2012. 7 physicians attended CE Day in 2011. 2012-2014 registration data indicate high degree of participation of clinicians in social/policy sessions, ranging from 17% (2013) to 70% (2014). Conclusion: The GA-GAPNA/ARGEC partnership has afforded each organization the ability to expand knowledge on geriatric care while promoting frameworks of innovative, team-based approaches to care. This model may be easily replicated across GEC’s and professional organizations’ local chapters.

A106
Preliminary Outcomes from an Educational Intervention to Promote Antimicrobial Stewardship and Improve the Care of Older Adults with Infections


Supported By: This work was supported by the Veterans Affairs Healthcare System (T21 Non-Institutional Alternative to Long-Term Care Grant; G541-3) and the Clinical and Translational Science Collaborative of Cleveland, UL1TR000439 from the National Center for Advancing Translational Sciences (NCAT) component of the National Institutes of Health.

Background: Potential consequences of inappropriate antimicrobial use include acquisition of multi-drug resistant pathogens, Clostridium difficile infection and drug-drug interactions. Antimicrobial stewardship programs seek to reduce inappropriate antimicrobial use. We developed and implemented a case-based, antimicrobial stewardship-themed educational intervention to help providers who care for older adults improve the diagnosis and treatment of common infections and avoid inappropriate antimicrobial use.

Methods: We developed a 5-hour case-based curriculum about infections common among older adults, stressing antimicrobial stewardship. It was administered to providers at long-term care facilities (LTCFs). We asked participants to complete a pre- and post-course survey, including questions about knowledge of common infections, beliefs about antimicrobial stewardship and confidence regarding appropriate prescriptions. Survey results were analyzed using descriptive statistics and Student’s t-test.

Results: Sixteen people from 6 LTCFs completed both surveys. All respondents were female (100%), 11 (69%) worked in a LTCF and 12 (75%) completed at least 4/5 sessions. The average knowledge score increased from 69% to 86% (P<0.005). On a 100-point scale, respondents reported significantly increased confidence to distinguish between symptomatic urinary infections and asymptomatic bacteriuria (64 vs. 81; P<0.005), to determine the appropriate length of therapy for respiratory tract infections (59 vs. 81; P<0.001) and to modify therapy based on diagnostic test results (55 vs. 82; P<0.005).

Conclusion: This preliminary study indicates that the case-based educational intervention improved provider knowledge and confidence to care for older adults with infections. Future work will investigate the potential influence of the intervention on clinical practice and patient outcomes.

A107
Cancer Care Training Content of U.S. Geriatric Medicine Fellowship Programs: A Survey of Geriatrics Fellowship Program Directors

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Background: The number of older adults with cancer is rising. Training geriatric medicine fellows (GMFs) regarding cancer care principles will be important. The aim of the study was to elucidate the extent to which geriatric medicine (GM) fellowship programs in-
tegrate cancer care (CC), including geriatric oncology (GO) concepts, into their training.

Methods: An electronic RedCap survey was distributed to GM fellowship program directors (PDs) through the American Geriatrics Society fellowship PD list. Survey data were collected from May 6, 2014 to October 27, 2014. Frequencies are used to present results.

Results: Of 140 PDs/associate PDs contacted, 65 (46%) responded. Most PDs reported (68%) that their GMF programs are Internal Medicine-based, and 95% reported having an associated cancer center/division. Seven (11%) reported offering a pathway for both GM and Oncology fellowship training. 38% reported mandating GO clinical training, with 40% of GMFs receiving ≤4 hours; moreover, 61% of GMFs receive ≤3 hours of GO didactics. 45% reported having selective/ elective CC training opportunities in general. 55% of PDs agreed/strongly agreed that a standardized GO curriculum should be established. 74% reported that web-based GO training modules would be helpful, whereas 43% reported that a half-day symposium targeting GMFs focusing upon GO skill development would be helpful.

PDs view the following CC/GO training content as very important for GMFs: 1) cancer screening (79%); 2) cancer-related pain management (70%); 3) pre-treatment assessment of cognitive status/geriatric syndromes (61-64%); 4) optimizing functional status (64%). PDs strongly agree that appropriate roles for geriatricians in CC include: 1) consulting to assess vulnerability (63%); 2) consulting to assess physical and cognitive status to inform goals of care (63%); 3) participating in CC decision-making when the geriatrician is the primary provider (59%).

Conclusions: GM PDs view Geriatric Oncology as important and that future steps are needed to better incorporate CC, including GO principles and skills, into GM fellowship training.

A109
Comfort Level with Nursing Home Call of Entering Geriatric Fellows
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Supported By: There are no relevant financial disclosures.

Background: Nursing home call is significantly different from other types of care provided by internists and family practitioners. Nursing home patients tend to be more complicated, have more chronic problems and longer medication lists, and be more frail than other patients encountered. Furthermore, while taking call, physicians do not typically have the benefit of examining patients before making care decisions. Finally, most physicians are not familiar with the specifics of the types of care that can be provided at nursing homes. Nevertheless, the vast majority of overnight and off-hour nursing home coverage is provided by physicians without any formal training in geriatrics or in the art of taking nursing home call.

Methods: We conducted a survey of the entering class of geriatric fellows at Harvard Medical School (N=7) to assess their previous experience providing nursing home care and their comfort level with different aspects of taking nursing home call.

Results: The majority of incoming fellows had little or no experience caring for nursing home patients prior to starting fellowship (70% < 20 hours total since graduating medical school, and 29% < 5 hours total). The majority of incoming fellows had considerable anxiety about taking nursing home call (29% answering “very anxious” and 57% “somewhat anxious”). All respondents were either “very confident” or “somewhat confident” about handling common issues as well as communicating with nurses by phone overnight. Only 33%, however, were either “very confident” or “somewhat confident” about what can and cannot be done in a nursing home and about making clinical decisions without seeing a patient in person.

Conclusions: Incoming geriatric fellows had little experience in nursing home care and were overall anxious about taking nursing home call. Among the top concerns were not being familiar with the abilities of nursing homes and the prospect of making care decisions without being able to physically examine a patient. Given that most nursing homes are covered at night by non-geriatricians, measures to improve the training and comfort level of interns and family practitioners in the telephone management of nursing home patients would likely be beneficial.

A110
Improving Residents’ Long Term Care Experience Using Case Based Learning
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Background: As the population ages, the need for physicians from all specialties who have had exposure to effective training in long term care medical issues will also grow. Evidence indicates that conventional bedside teaching is not optimal for resident physicians

Conclusions: Although not mandatory, a significant number of students initiated AD discussions among elderly household residents. Faculty training was likely a key element in helping students initiate this discussion. We plan to make a discussion of AD a mandatory component of the NHELP program for future classes to include both young and old household members. To aid both students and household members, we will develop an educational AD “tool kit” that is user-friendly and produced in the 3 languages common to our NHELP community.
and that incorporating clinical vignettes may be a more effective way to standardize the educational experience.

**Method:** Seven didactic vignettes involving common long term care medical issues were developed. Vignettes were emailed monthly to third year internal medicine residents during their longitudinal experience at the long term care facility. The case vignette included pertinent pre-assigned articles and electronic links to the clinical practice guidelines. Case vignettes were supplemented with resident led small group educational sessions to facilitate review of long term care medical issues. Third year residents completed a pre-test and post-test to measure changes in knowledge, attitudes and skills in geriatric long-term care.

**Results:** 17 pretests and 18 post tests were completed. The global test for attitudes, skills and knowledge showed significant improvement pre vs post test (p=0.016). There was no significant difference pre vs post test when just attitudes were compared (p=0.148), although attitude scores were high at baseline. Self-reported skills improved pre vs post test, though not significantly (p=0.079). Overall knowledge improved significantly pre vs post test (p=0.031). All questions comprising the attitude, skills and knowledge subscale (except questions concerning Advance Directives) showed improvement post test, although only the importance of learning about disease presentation, managing dementia, and knowledge about cognitive impairment, sleep disorders, and falls showed statistically significant improvements. 83% of residents felt the vignettes improved their knowledge of geriatric medicine in long term care, 67% felt it changed their clinical practice and 89% indicated that they would not have studied all of the geriatric issues presented if the vignette format had not been utilized.

**Discussion:** Case-based vignettes can be an effective method to teach about geriatric long-term care conditions and may help improve geriatric issues presented if the vignette format had not been utilized. Attitudes about geriatric medicine. Improved methods to teach about geriatric long-term care conditions and may help improve geriatric issues presented if the vignette format had not been utilized.

**A111 Health Professions Trainees’ Satisfaction with the Geriatric Transitions Objective Structured Video Examination (GT-OSVE) and Self-Efficacy in Care Transitions Domains**

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**Supported By:** The development of the GT-OSVE was supported by a HRSA Geriatric Academic Career Award (GACA), K01HP20487. The simulation center activity was supported by the University of Utah College of Nursing Research Committee.

**Background:** Poorly executed care transitions are associated with increased rates of adverse medication events and hospital readmissions. It is imperative that all health professions trainees enter practice with competency to perform effective care transitions. The Geriatric Transitions Objective Structured Video Examination (GT-OSVE) is a new approach to teach care transitions competencies. We assessed health professions trainees’ satisfaction with the GT-OSVE and their self-efficacy in care transitions.

**Methods:** 42 trainees representing the disciplines of medicine (interns and physician assistant students), pharmacy, nursing, social work, nutrition and care management were recruited. Trainees viewed one GT-OSVE case individually and another GT-OSVE case as a team in a simulation center. The two GT-OSVE videos depicted an older adult transitioning from the hospital to outpatient and skilled nursing facility to home settings, respectively. After viewing each video, trainees completed written transitions care plans and a 5-point Likert scale survey (5 = completely agree).

**Results:** Trainees across all 6 disciplines rated the GT-OSVE as a practical (4.12 +/- 1.06; mean ± SD) and authentic (4.74 +/- 0.45) educational tool. Trainees expressed comfort with care transitions domains such as medication reconciliation (3.83 +/- 1.32), identifying factors increasing risk of hospital readmission (3.85 +/- 1.03), formulating follow-up plans (4.05 +/- 0.93) and identifying barriers to effective transitions (4.34 +/-0.72). However, trainees expressed relatively low overall self-efficacy in managing care transitions (3.45 +/- 0.99) and desired additional training in care transitions (4.55 +/- 0.59). They also preferred a team-based rather than an individual approach to patient care (4.36 +/- 0.85).

**Conclusions:** The GT-OSVE was well received by health professions trainees. Additional work is needed to compare satisfaction with the GT-OSVE and self-efficacy in performing care transitions among different disciplines, and to compare the quality of individual versus team transitions care plans generated during the GT-OSVE activity.

**A112 Educational Effectiveness of an Interprofessional Teamwork Simulation Exercise for Nursing, Pharmacy and Medical Students at the University of Hawaii**

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**Supported By:** The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Translational Health Science Simulation Center, School of Nursing and Dental Hygiene, University of Hawaii; School of Pharmacy, University of Hawaii; Office of Medical Education, John A. Burns School of Medicine, University of Hawaii.

**Background:** Interprofessional teamwork is important in managing older patients with multiple complex problems. Simulation-based training is an effective method to teach interdisciplinary teamwork before trainees enter clinical practice.

**Methods:** We implemented an interprofessional team simulation exercise for third-year nursing, pharmacy and medical students, with two case-based scenarios requiring an interprofessional team. Pharmacy students participated from another island via remote video conferencing. The first case was an elderly patient with multiple medical problems and high fall risk and the second case was a young child with newly diagnosed acute leukemia. The goal was for the team to develop a safe discharge and treatment plan for the cases and then conduct a family meeting. Each team debriefed with faculty about teamwork skills. At the end of the two sessions, students self-rated their Interprofessional Collaborative Practice core competencies using a retrospective pre/post survey, with eight items rated 1 to 5 on a Likert scale (higher—better). We analyzed the change in self-assessed attitudes and skills before and after the simulation exercise using T-tests.

**Results:** A total of 126 students (50 nursing, 43 pharmacy and 33 medical students) participated in the simulation exercise. Mean scores significantly improved for all eight self-assessed skills questions, including Values/Ethics competencies (4.65 vs. 4.84, p<0.0001); Roles and Responsibilities (3.67 vs. 4.19, p<0.0001); Communication competencies (3.68 vs. 4.22, p<0.0001) and Teamwork (3.84 vs. 4.25, p=0.02). There were no statistically significant differences between disciplines.

**Conclusions:** We implemented an interprofessional team meeting simulation exercise for nursing, pharmacy and medical students, and found significant improvements in self-assessed Interprofessional Collaborative Practice core competencies. This exercise successfully
brought together students from 3 disciplines on two different islands, and could serve as a model for interprofessional education outreach to rural areas.

A113
Gait analysis during dual task performance in frail and mild cognitive impairment institutionalized nonagerians
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Background: Fried’s definition of frailty is still the most frequently used, however, including other common conditions linked to the aging process has become, recently, a matter of considerable debate. Cognition is considered in various studies as a component of the frailty syndrome. Various studies show that both entities could be related and part of the same spectrum disease. Dual task conditions have recently become novel tools to explore the relationship between gait and cognition. Consequently, it is important to compare gait patterns and characteristics under dual task conditions in frail and mild cognitive impairment(MCI) in order to improve diagnostic criteria.

Methods: Cross sectional, 41 institutionalized nonagerians were included into three groups: the frail without MCI, the frail with MCI group (Frail + MCI) and the non frail group. They completed 5-m walk test at their normal gait velocity and after with arithmetic and verbal dual task conditions. Kinematic and dynamic data were acquired from a tri-axial inertial Orientation Tracker. The significance level of the differences in the mean obtained in the three groups was calculated with Student t-test.

Results: Spatial-temporal and frequency parameters related with gait pattern did not show significant differences between frail and frail +MCI groups. During normal gait velocity test significance differences were found between non-frail and frail with MCI groups in step regularity (p<0.001) stride regularity (p=0.001), stride time CV (p<0.001), RMS (Root Mean Square Value) (p 0.027) and THD (Total Harmonic Distortion) parameters (p<0.042). Regarding the comparison between frail and frail+ MCI groups, only significant differences were observed in the stride regularity (p 0.040). During dual task conditions, significance differences were found in all parameters measured between non-frail and the other two groups. Conclusions: Gait analysis with acceleration signals shows similar characteristics in a group of frail nonagerians compared with frail + MCI participants. These results could be explained due to a similar dual task cost in the frail and MCI syndromes. Moreover, our results reinforce the hypothesis of including cognitive decline as a part of the frailty syndrome

A114
Unmet Geriatric Care Needs Among HIV-Infected Patients Over 50 Years Old
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By 2015, 50% of HIV patients in the US will be over 50 years old, and they present a unique challenge for the healthcare system. They may have multiple geriatric syndromes before age 65, but are too young to receive geriatric care. We surveyed aging HIV patients to identify geriatric care needs among this population.

HIV patients over 50 were surveyed on demographics, types/number of geriatric issues, and requests for geriatrician referrals. Logistic regression was used to determine factors associated with types/number of geriatric issues and requests for geriatrician referrals.

Baseline characteristics from 126 surveys are shown in table 1. Many patients were younger than 65 (91%), had >2 geriatric issues (75%), and requested geriatrician referrals (62%, OR 3.3 per geriatric issue, p<0.02). Hispanics reported 1.3 more geriatric issues than other races (p<0.01), including pain (OR 2.2, p=0.04), sleep (OR 3.3, p=0.01), and memory problems (OR 1.9, p=0.09). Patients with home health aides reported 1.7 more geriatric issues than others (p<0.01), including hearing/vision problems (OR 3.1, p=0.08), falls (OR 7.4, p<0.01), need for medication help (OR 4.4, p=0.03), and need for advanced care planning (OR 4.5, p=0.02).

HIV patients have multiple geriatric syndromes before age 65 when they are too young to receive geriatric care. Pain, sleep and mood problems are the most common. Many requested a geriatrician referral, suggesting unmet geriatric care needs. HIV patients over 50 should be screened for geriatric syndromes, and clinicians should pay careful attention to Hispanics or those with home health aides, as they are more likely to report geriatric syndromes than others. A geriatrician referral should be considered if screening is positive.

A115
Impact of Potentially Inappropriate Use of Antimuscarinic Medications on Healthcare Costs in Patients with Overactive Bladder
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Supported By: The research was funded by Astellas Scientific and Medical Affairs, and was conducted as part of the Astellas-Humana Research Collaboration.

Background
Inappropriate prescribing of medications among older adults can lead to increased risk for adverse events and increased healthcare costs. This study examines the prevalence of potentially inappropriate medication (PIM) use among older adults initiating an antimuscarinic (AM) overactive bladder (OAB) medication, and the impact of PIM on healthcare costs and OAB medication utilization.

Methods
The study was a retrospective database analysis using medical and pharmacy claims data for time frame 2007-2013. Medicare Advantage Prescription Drug Plan (MAPD) members age 65 years or greater and newly initiated on an AM OAB treatment were identified. Members were assigned into PIM and non-PIM comparison groups based on American Geriatrics Society Beer’s list criteria and/or the presence of a concomitant medication with significant anticholinergic burden at the time of initiation on AM OAB treatment. Outcome measures include healthcare costs and AM OAB medication utilization.

Results
A total of 66,275 members were included; 31.1% of members initiated on an AM OAB medication had a drug-drug or drug-disease/syndrome interaction present. Dementia was the most common disease/syndrome interaction (11.3%), followed by constipation (8.6%) and delirium (2.9%). Paroxetine (2.6%), amitriptyline (2.2%), cyclobenzaprine (1.7%), and meclizine (1.6%) were the most common in-
teracting medications. Unadjusted total healthcare, medical, and pharmacy costs were greater in the PIM group compared to the non-PIM group (P<0.001 for all). PIM members had statistically significant greater total healthcare costs over 12 months of follow-up compared to the non-PIM group after controlling for baseline characteristics and pre-index healthcare costs ($9,373 vs. $12,001, P<0.001). PIM was associated with a 1.7 percentage point greater proportion of days covered with OAB medication (B=0.017, P<0.001). There was no difference between the PIM and the non-PIM groups in terms of odds of discontinuing OAB treatment at 12 months after controlling for baseline characteristics (OR 0.98, CI 0.89-1.07, P=0.628).

Conclusion

PIM use was highly prevalent among MAPD members initiating AM OAB medications, with greater healthcare costs in the PIM group compared to the non-PIM group.

A116
Detecting geriatric needs in older breast cancer patients through use of a brief screener

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Supported By: The work was funded by donations from a generous patient.

Background: Geriatric assessment is underutilized in oncology and has the potential to lead to interventions that will improve outcome.

Methods: Through a brief geriatric assessment, we sought to determine frequency of common geriatric issues, including lack of social support, depressed mood, deficits in activities of daily living (ADL) and instrumental ADL, falls, weight loss and nutritional issues, polypharmacy and ability to pay for medications, and memory deficits in older women seen at the Duke Multidisciplinary Breast Cancer Clinic. A brief geriatric assessment, adopted from Overcash (Crit Rev Oncol Hematol 2006;59:205), was administered to consecutive patients age 65 or older. The tool consists of a nurse administered memory assessment and a 1-page, self-administered questionnaire. Deficit in ADL or IADL were determined when the patient indicated they could not perform, consistently perform, or needed help with the activity.

Results: From 1/2012 to 7/2013, 282 patients, with mean age 76 years (range 65-94) were assessed. Results are tabulated below.

Conclusions: In a group of older breast cancer patients, these were the needs that were identified. In oncology practice, referral networks are needed to address these issues in older patients.

Results

<table>
<thead>
<tr>
<th></th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td></td>
</tr>
<tr>
<td>If necessary, is there someone who could help take care of you? (yes)</td>
<td>244 (86.5%)</td>
</tr>
<tr>
<td>Do you feel sad more days than not?</td>
<td>28 (9.9%)</td>
</tr>
<tr>
<td>Depression</td>
<td>30 (10.6%)</td>
</tr>
<tr>
<td>Have you lost interest in things you need to enjoy (hobbies, food, sex, being with friends/family)</td>
<td></td>
</tr>
<tr>
<td>ADL, IADL</td>
<td></td>
</tr>
<tr>
<td>Have you tripped or fallen in the past year?</td>
<td>120 (42.6%)</td>
</tr>
<tr>
<td>Age, year</td>
<td>63 (22.1%)</td>
</tr>
<tr>
<td>85 (30.5%)</td>
<td></td>
</tr>
<tr>
<td>Nutritional status</td>
<td></td>
</tr>
<tr>
<td>Have you lost 5 pounds or more in the past 6 months without dieting?</td>
<td>56 (19.9%)</td>
</tr>
<tr>
<td>Has your diet decreased in the last 3 months?</td>
<td>55 (19.5%)</td>
</tr>
<tr>
<td>Has there been a change in the types of foods you are able to eat?</td>
<td>45 (16.9%)</td>
</tr>
<tr>
<td>Polypharmacy</td>
<td></td>
</tr>
<tr>
<td>How many medications/herbal/vitamins are you taking?</td>
<td></td>
</tr>
<tr>
<td>Memory deficit (MMSE score &lt;10; Spell 5-letter word backwards (5 points); Month, day, year, day (4 points); Recall of 3 objects (3 points))</td>
<td></td>
</tr>
<tr>
<td>253 (89.7%)</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>57 (20.0%)</td>
</tr>
</tbody>
</table>

A117
Improving screening and intervention rates for falls in a large, urban Family Medicine practice: Evolution of a 4-year quality improvement project


Supported By: Eastern Pennsylvania-Delaware Geriatric Education Center, Health Resources and Services Administration

Background: In 2010, a project to improve screening and intervention rates for falls was launched at the Jefferson Family Medicine practice. The project has been evaluated, expanded, and improved annually. Data from each project have been presented before; now we are presenting lessons learned over the past 4 years about implementing QI projects involving falls in a large primary care practice.

Methods: The project began with a needs assessment involving a survey of providers in the practice regarding their knowledge and practice about falls screening and interventions. Based on the results, during Year 1, providers received education about falls screening and interventions via Grand Rounds and a web-based self-study module. A brief screening tool was also piloted with 16 providers. In Year 2, the screening tool was implemented practice-wide. During Year 3, the screening tool was implemented at a satellite site. Staff training and patient education components were added. In Year 4, falls education for medical students was incorporated. They were involved in administering the Timed Up and Go and reviewing risk factors for falls.

Results: Lessons learned in a 4-year QI project include these tips for success and ongoing challenges:

Reminders: Staff, providers, and students need weekly reminders about the project, its purpose and protocols to ensure ongoing participation.

Staff involvement and ownership: Recruiting willing staff and involving them in project planning enhance implementation.

Reliance on specific staff: Using staff champions can be beneficial, but their absence/absence can jeopardize project sustainability.

Competing demands: Early recognition that competing demands will slowly take precedence and undermine the project is key to establishing the need for constant vigilance.

Simple and uniform: Simplifying and standardizing processes can ensure adherence and sustainability.

Conclusion: A continuous QI effort to increase falls screening and intervention rates was launched in 2010 in a primary care practice and has evolved annually. Ongoing evaluation and improvement has strengthened the project and led to other successful components. Key lessons learned are constant need for reminders, importance of staff involvement and ownership, dangers of overreliance on specific staff, omnipotence of competing demands, and the requisite to make processes simple and uniform.

A118
Case of frostbite in a confused elderly man locked out of his home in winter

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Background: In Northern Chile, the pre-Columbian mummified feet of an individual are cited as the first documented case of frostbite. In the current era, geriatricians must recognize that the homeless and older adults with cognitive deficits are among the groups most vulnerable to frostbite.

Case: A confused 65-year-old man in opened his back door at 5 a.m. in February of 2014 and got locked out when it was about 20° F outdoors. He was reported to be disoriented and barefoot by his neighbor who contacted EMS for transport to the ER at the University of Michigan for evaluation.
PMHx was significant for CHF, COPD, HTN and Thrombophlebitis. Subjective history at the hospital revealed painful toes. On physical exam, BP was 212/119 and several abrasions on his face, knuckles, feet and extremities were noted. He was also confused and oriented x 2. Many digits appeared dusky, but pulses were palpable. He received IV labetalol for his elevated blood pressure. Head CT and LP were normal, but his CKP was 16,000, creatinine 1.8, sodium 126 and an AST of 547. Bilateral ABI’s were normal.

Many of the acute problems seemed to come from frostbite, kidney injury, rhabdomyolysis and delirium. Days later, the patient’s mental status cleared, orientation improved and he scored a 29/30 on the MOCA. His blood pressure remained controlled on several agents. His kidney function and rhabdomyolysis improved with IV Fluids. The trauma/burn team suggested conservative management for his frostbite injury.

Three months later, the affected digits showed signs of dry gangrene and eventually auto-amputation resulted. Wound care consisted of topical bacitracin and wearing clean socks. Gabapentin was used to control neuropathic pain in his hands and feet.

**DISCUSSION:** Frostbite almost always involves the extremities, followed by ears, nose, cheeks and penis. Three mechanisms seem to cause injury with frostbite and include: tissue freezing, hypoxia and release of inflammatory mediators.

When managing frostbite injuries it is imperative that efforts of resuscitation and re-warming techniques be considered if appropriate as diagnosis of hypothermia often co-exist. Geriatricians must be able to recognize frostbite, give tetanus prophylaxis and control neuropathic pain. It is more likely to affect the homeless as well as older adults with delirium and/or dementia.

**A119**

**Improvement of drug adherence and glycemic control in elderly diabetic patients with dementia following a once-a-week medication for diabetes**


Supported By: Ministry of Health, Labour and Welfare of Japan.

**Background:** The number of patients with type 2 diabetes (T2D) is markedly increasing, particularly among elderly people all around the world, including Japan (1). In addition, the comorbidity of T2D and dementia is reported to be quite high in elderly people. The guidelines regarding diabetes in many countries recommend that reasonable glycemic targets should be set according to age, disease (diabetes) period, possibility of hypoglycemia, and support system. Needless to say, it is quite important to keep blood glucose levels as stable as possible. However, many conventional antidiabetic drugs are required to be taken before or after every meal. This burdensome task significantly worsens drug adherence particularly in diabetic patients with dementia. Recently, “exenatide,” a glucagon-like peptide-1 agonist (GLP-1 agonist) medication belonging to the group of incretin mimetics, was released as a once-a-week injection drug (2).

**Methods:** We changed antidiabetic drugs from the conventional ones to exenatide in diabetic patients with dementia and observed their drug adherence and glycemic status [blood glucose and hemoglobin A1c (HbA1c) levels].

**Results:** Drug adherence of the patients was very poor and their glycemic control was also inappropriate before the diabetic drugs were changed. However, after we changed the drugs to exenatide, their drug adherence markedly improved. In addition, their glucose metabolism and HbA1c levels became significantly better.

**Conclusions:** As the number of elderly people with T2D and dementia increases, we should more carefully consider not only blood data and cognitive functions but also drug adherence and care systems. **References:** (1) Bunn F et al., Comorbidity and dementia: a scoping review of the literature. BMC Med. 2014 12:192. (2) Mann KV and Raqskin P, Exenatide extended-release: a once weekly treatment for patients with type 2 diabetes. Diabetes Metab Syndr Obes. 2014 7:229-39.

**A120**

**Urinary Incontinence…The elephant under the carpet!**

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**Background:** Urinary Incontinence is one of the less decorated geriatric giants. Studies have shown that 64.3 percent of population reported lower urinary tract symptoms at least once. The incidence increases with the age. Incontinence increases the cost and care burden due to loss of independence and confidence, falls and fractures as well as transfer to long term care facilities.

We wanted to assess the incidence of urinary incontinence in the patients in our practice.

**Methods:** A questionnaire based on standard guidance was designed to explore various incontinence symptoms. Data was collected from 114 patients (52 men and 52 women) from 4 base Elderly Care wards during January and February 2014. This cohort consisted of a wide age range of 37 to 102 years.

**Results:** 17% (19/114) patients reported daytime frequency; while 47.36% (54/114) patients admitted urge symptoms. 35.9% (41/114) had stress incontinence whereas 26.3 (30/114) had urge incontinence. 63.1% (72/114) had nocturnal frequency. Overall there was female predominance. 15.7% (18/114) patients had dysuria. 41.2% (47/114) patients had history of bed wetting. Nearly 90% had symptoms for months and only 35% tried to seek help in this regard.

**Conclusions:** Nearly half of the patients admitted to having lower urinary tract symptoms. In 90% cases the problem was going on for months and still in 2/3 cases patients did not approach any healthcare professional for treatment in this regard.

Questions to elicit history of incontinence should be an integral part of initial assessment by a physician especially in elderly patients.

There is also a need for improving awareness about urinary incontinence, regarding the impact on health, across patients and healthcare professionals.

**A121**

**Encore Presentation**

**Frailty Burden is Associated with Survival in Elderly Patients with Diagnosis of Multiple Myeloma**

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Supported By: No financial disclosure to list

**Background:** Frailty is a geriatric syndrome that included a decrease in the physiological reserve. It has been associated with increased mortality in multiple cohorts. However, to our knowledge, the
real impact of the level of frailty in survival of elderly patients with multiple myeloma is unknown. This study aims to evaluate the impact of the level of frailty in survival of elderly patients diagnosed with multiple myeloma.

Methods: this retrospective, observational and analytical study included a cohort of 48 patients older than 65 years diagnosed with multiple myeloma from January 2000 to December 2012 at the outpatient setting of Hospital Italiano de Buenos Aires. A check list for frailty burden measurement was used and included: cognitive impairment, depressive disorder, polypharmacy, urinary incontinence, functional impairment, gait disturbance / falls, low weight/weight loss and previous hospitalization. Level of frailty was scored as the sum of each area involved. Record of all the variables was obtained from a retrospective review from the centralized and computerized medical records, using own predefined standard criteria. The impact of the level of frailty in the long-term survival was evaluated. SPSS for statistical analysis was used. Survival analysis survival curves using Kaplan Meyer was performed. ANOVA was used to compare more than 2 populations.

Results: the mean age at diagnosis was 77 years (65-94 years) and 66.7% of patients were older than 75 years. 50% of patients were female, mean Charlson score of 3 (0-8) and 64.6% of patients presented with ISS stage 2 or 3. Mortality of patients older than 85 years was 100% at one year follow-up. 91.5% of patients had at least one criterion of frailty: 0-2 criteria 53.2%, 3-4 criteria 27.6%, 5-6 criteria 14.9% and 7-8 criteria 4.2%. The median overall survival was 59.2 months (IC 95, 40.3 to 78.2). The median survival for patients with mild to moderate frailty was 63.4 months (IC 95, 43.1 to 83.4), while those with severe frailty was 21 months (IC 95, 5.2 to 36.8).

Conclusions: This study shows that the prevalence of frailty syndrome in elderly patients with a diagnosis of multiple myeloma is high, and that patients with severe frailty have a significant increase in mortality at long-term follow up

A122

Comparison of nutritional risk screening tools for predicting sarcopenia in hospitalized patients

M. Yuruyen,1 H. Yavuzer,2 S. Yavuzer,2 M. Cengiz,2 Z. Kara,1 F. Demirdag,1 N. Yurttas,1 M. Islamoglu,2 E. Imre,2 A. Alitoska,1 A. Doventas,1 D. S. erdincler,2 T. Beger,1 1. Division of Geriatrics, Cerrahpasa School of Medicine, Istanbul, Turkey; 2. Division of General Medicine, Cerrahpasa School of Medicine, Istanbul, Turkey.

Background: The nutritional status and its negative effects on hospitalized patients couldn’t be measured with a single test. The aim of this study was to assess the risk of malnutrition in hospitalized patients with three different tests and to compare these tests by the means of the long hospitalization period and sarcopenia.

Methods: In this cross-sectional study, the hospitalized patients in clinical internal medicine were included. Patients were grouped as under 65 years (Group 1) and over 65 years (Group 2). Nutritional status of patients was performed using Nutritional Risk Screening-2002 (NRS-2002), Malnutrition Universal Screening Tool (MUST), Mini Nutritional Assessment Short-Form (MNA-SF) and full tests. The diagnosis of sarcopenia was assessed via bioimpedance analysis for muscle mass, hand grip strength and “time grip up and go tests”. Nutritional tests were compared for the sarcopenia and long hospitalization (>15 days) with ROC analysis.

Results: The mean ages were 54 (Group 1, n=84) and 76 (Group 2, n=112). According to NRS 2002, MUST and MNA-SF the risk of malnutrition were found 14.3%, 18%, 40% in Group 1 and 44%, 30%, 71% in Group 2 (respectively p<0.001, p=0.057, p=0.001). The sarcopenia was found 5% and 33% in Group 1 and 2 (p=0.001). MNA-SF in Group 1 (Area under curve (AUC) =0.585, p=0.26; sensitivity 41%, specificity 44%) and MUST in Group 2 (AUC=0.614, P=0.048; sensitivity% 25, specificity 86%) were better predictors for the long hospitalization. MNA-SF test was associated with the sarcopenia for both groups (AUC=0.716, p=0.147; sensitivity 63%, specificity 64%; AUC=0.762, p<0.001; sensitivity 86%, specificity 48% respectively). MNA-SF was a better predictor for low lean muscle mass index (LMMI) (AUC=0.762, p<0.001; sensitivity 86%, specificity 48%), low grip strength (AUC=0.594, p=0.27; sensitivity 65%, specificity 50%) and reduced walking speed (AUC=0.642, p=0.01; sensitivity 71%, specificity 47%) in Group 2.

Conclusion: All three tests are not high sensitive and specific for predicting sarcopenia. However, MNA-SF is a better test to evaluate lower LMMI, low hand grip strength and walking speed than other tests and MUST is related to the long hospitalization in the older patients.

A123

Characteristics Associated with Diagnostic Strategies for Syncope in Hospitalized Older Patients


Background: Syncope accounts for an annual 740,000 ED visits at a cost of $2.4 billion for US Health Care, with 30% of adults having at least one lifetime syncopal event. Despite intensive diagnostic strategies, almost 50% of patients are discharged with unresolved etiology. This study aimed to explore clinical factors associated with the degree of complexity in the diagnostic work-up.

Methods: Retrospective electronic chart review of all patients ≥65, admitted to a hospital from the ED with a diagnosis of syncope (ICD-9 Code 780.2) from 1/13 to 12/13. Data included demographics, admission medications, admission status (LOS ≤>2days), Charlson Comorbidity Index (CCI) and frequency/type of diagnostic tests. Fisher’s exact was used to examine associations between categorical variables and to compare proportions of interest between groups. Mann-Whitney was used to determine significant differences between groups.

Results: In the consecutive charts reviewed (n=70), average age was 82.7 (range 65-97), 46% were male, and most (75%) had Medicare insurance. Median admission medications was 6 (IQR 3-8); CCI was 5 (IQR 4-7); overall tests per patient was 15.9 (range 0-46). When examining factors for admission status, there were no significant differences in age, gender, insurance, albumin, cardiovascular history, dementia or CCI. With regards to factors specifically associated with ordering a Two-Dimensional Echocardiogram (2D Echo) and a Head Computed Tomography (CT) scan, there were no significant differences in age (≥80: 62%, >80: 71%; ≤80: 62%, >80: 65% respectively), gender (male 72%, female 66%; male 66%, female 63%), insurance (Medicare 71%, other 62%; Medicare 69%, other 69%), CVD yes/ no (67%, 69%; 72%, 62%), dementia yes/no (65%, 70%; 65%, 64%), median number of admission medications (6, 6; 6, 5), median hypertensive medications (1, 1; 1, 1). Of interest, the only significant factor with regard to types of tests ordered and Head CT was median marital status (married/partner=3, IQR=2.5-3.5 vs non married=2, IQR=1-3, p <0.02; married/partner: 54% vs non married: 79%, p<0.043).

Conclusion: Unexpectedly, this study did not demonstrate any significant patient characteristics associated with diagnostic strategies for the work up of syncope in hospitalized older patients, except for marital status. This finding suggests that clinicians reconsider their standard approach to the common problem of syncope in the older adult.
Nutrition, or Nutrition and Exercise? A Systematic Review of Interventions in Frail Elderly People

R. Abi Saleh,1 S. Lirette,2 J. Elisson,3 M. A. Waqar,3 J. Anaya, S. M. Marcano, S. Estrada, Z. Cespedes, A. Solla, P. Cardona. 1. Family Medicine and Geriatrics, University of Puerto Rico, Medical Science Campus, Carolina, Puerto Rico. Supported By: Supported By: No financial disclosures

Methods: Retrospective Cohort Chart Review of all patients with CKD that were admitted to the Reno VA Medical Center and Community Living Center (skilled nursing unit) between 7/2013 and 4/2014 and had a fall during the stay; a total of 108 patients were included in this QI study. We reviewed vitamin D levels in these patients.

Results: See in table section

Conclusions: Patients with CKD that had suboptimal vitamin D levels were 1.5 times more likely to fall than patients with normal vitamin D levels. 15.9% of our study population had no information on vitamin D levels on record. In patients who had ESRD and were currently on dialysis, 60% of our study population had a normal vitamin D level.

Discussion: Vitamin D deficiency is both easily diagnosed on routine blood testing and easily treated with oral supplementation. Physicians need to be proactive in obtaining and assessing Vitamin D levels in patients with CKD, regardless of their history of falls in the past.

Results: Association of vitamin D levels with CKD stage in fallers:

<table>
<thead>
<tr>
<th>Stage of CKD</th>
<th>eGFR (ml/min)</th>
<th>Number of patients (%)</th>
<th>VITAMIN D LEVEL (ng/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 3</td>
<td>30-59</td>
<td>88 (81.5%)</td>
<td>10 (9.5%)</td>
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<td>Stage 4</td>
<td>15-29</td>
<td>10 (9.3%)</td>
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<tr>
<td>Stage 5</td>
<td>&lt;15</td>
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Conclusions: Nutritional interventions and exercise have some benefits in frail older people, although uncertainty still exists. The present findings suggest that exercise or nutrition alone have a stronger effect on frailty than both combined. These findings suggest there is a need for further long-term studies of nutritional supplements, exercise and the combination of both for the treatment of frailty in the elders.

Association Between Vitamin D Levels and Falls in Patients With Chronic Kidney Disease

S. Win,1 N. Shumaker,2 M. A. Waqar.2 1. Nephrology, Lenox Hill Hospital, New York, NY; 2. VA medical center, University of Nevada, Reno, Reno, NV.

Methods: The most common PIMs with 11% and 8% respectively. A positive relationship (p<0.05) was found with the number of prescription drugs and the occurrence of PIMs with subjects using ≥ 5 prescribed drugs.

Conclusions: The most common diagnoses associated to the use of

Beers and STOPP criteria for identifying potentially inappropriate medications in older Hispanics patients who visited Emergency Department at the regional hospital.

J. Anaya, S. M. Marciano, S. Estrada, Z. Cespedes, A. Solla, P. Cardona. Family Medicine and Geriatrics, University of Puerto Rico, Medical Science Campus, Carolina, Puerto Rico.

Supported By: Supported By: No financial disclosures

Methods: Retrospective Cohort Chart Review of all patients with CKD that were admitted to the Reno VA Medical Center and Community Living Center (skilled nursing unit) between 7/2013 and 4/2014 and had a fall during the stay; a total of 108 patients were included in this QI study. We reviewed vitamin D levels in these patients.

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Methods: The most common PIMs with 11% and 8% respectively. A positive relationship (p<0.05) was found with the number of prescription drugs and the occurrence of PIMs with subjects using ≥ 5 prescribed drugs.

Conclusions: The most common diagnoses associated to the use of
PIMs were falls and abdominal pain, being the benzodiazepines the most common PIMs prescribed drugs for both criteria. A statistical significant relationship was found between the number of prescription drugs (≥5 drugs) and the emergence of Potentially Inappropriate Medications (PIMs).

### A127 Balance and Mobility in Community-Dwelling Older Adults: Impact of Daytime Sleepiness

**S. Tvaghi, S. Perera, J. Brach. UPMC, Pittsburgh, PA.**

Supported By: Claude D. Pepper Older Americans Independence Center (OAIC- NIA P30 AG024827; PI: Dr. Greenspan), NIA and AFAR Paul Beeson Career Development Award (K23 AG026766; PI: Dr. Brach)

**Background:** Balance impairment is a known risk factor for falls in the elderly. Emerging evidence suggests that sleepiness resulting from acute sleep deprivation affects postural balance, but the impact of insomnia and related daytime sleepiness on postural balance and falls is not known. We examined the impact of self-reported daytime sleepiness on performance based balance measures and self-reported balance confidence in community-dwelling elderly.

**Method:** Cross-sectional secondary analysis was performed of an observational cohort study designed to develop and refine measures of balance and mobility in community-dwelling older adults. Gait and balance were assessed using performance-based measures obtained from GaitMat II including gait speed, double support time, base of support, variability of stance time and step time. In addition, narrow walk, stepping over obstacles, and timed standing balance tests including tandem and unilateral stance time were also obtained. Activities-Specific Balance Confidence (ABC) Scale was also included as a self-reported measure. Daytime sleepiness was assessed as Epworth Sleepiness Scale of ≥9 points. Impact of medication use, specifically use of psychotropics and sedative/hypnotics was also assessed.

**Results:** Data from 120 healthy, community-dwelling older adults mean age 78.2 ± 5.9 years with an average gait speed of 1.07 ± 0.26 m/s was analyzed. Overall, 45% had daytime sleepiness and 16% used psychotropics/hypnotics. Two-way ANOVA of medication use and daytime sleepiness showed no significant interaction effects; medication use was not significantly associated with gait/balance; and those with daytime sleepiness had 0.11 m/s slower gait speed, 0.02 meters wider step width, 0.02 seconds greater double support time, 0.02 meters wider step width, 0.01 m increased step width variability, 0.72 seconds greater narrow walk time and scored 1.3 points less on ABC (all p<0.05).

**Conclusion:** Daytime sleepiness is associated with slower gait speed and poor balance independent of psychotropic/hypnotic use in community-dwelling elderly.

### A128 Health Outcomes and Functional Status of Overactive Bladder among the Medically Complex Vulnerable Elderly in the United States

**C. Chuang, 1 E. Yang, 1 K. Zou, 2 A. Araiza, 2 A. Wang, 1 X. Luo 2 1. Evidera, Lexington, MA; 2. Pfizer Inc, New York, NY.**

Supported By: Pfizer, Inc

**BACKGROUND:** Limited data exist regarding the impact of overactive bladder (OAB) on health outcomes/functional status among the medically complex vulnerable elderly (MCVE). The objective of this study was to compare health outcomes/functional status between patients with and without OAB among the MCVE in the US.

**METHODS:** Using 2001–2010 Medicare Current Beneficiary Survey, MCVE subjects were identified using the Vulnerable Elders Survey-13 (score ≥3; age ≥65). OAB patients had ≥2 medical claims of OAB diagnosis 30–365 days apart or ≥1 antimuscarinic use (first observed date of OAB diagnosis or antimuscarinic use denoted the index date). Non-OAB patients had neither OAB diagnosis nor antimuscarinic use during the study period. All patients were required to have a 6-month pre-index and a 1-year post-index continuous enrollment. Descriptive and logistic regression analyses were conducted.

**RESULTS:** There were 444 OAB respondents (mean age=79.3; 64.1% female) and 5,964 non-OAB respondents (mean age=78.5; 63.9% female) among the MCVE. During the post-index period, OAB patients had significantly worse health outcomes and functional status vs. non-OAB patients (Table 1; all p<0.01). Multivariate analysis showed that OAB patients had greater odds of having falls/fractures (odds ratio [OR] =1.61; 95% confidence interval [CI]: 1.32–1.96), urinary tract infections (OR=4.32; 95% CI: 3.49–5.35), depression (OR=2.24; 95% CI: 1.79–2.80), institutionalization (OR=1.88; 95% CI: 1.40–2.52), limitations in daily living (ADL) (OR=1.39; 95% CI: 1.14–1.70), and instrumental ADL (OR=1.53; 95% CI: 1.21–1.95), compared with non-OAB patients.

**CONCLUSIONS:** OAB patients had worse health outcomes/functional status, compared with non-OAB patients among the MCVE. Efforts to better identify and manage the MCVE with OAB are recommended.

**Table 1. Health outcomes and functional status of MCVE during the 1-year post-index period**

<table>
<thead>
<tr>
<th></th>
<th>OAB (N=444)</th>
<th>Non-OAB (N=5,964)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls/fractures</td>
<td>55.4%</td>
<td>42.2%</td>
</tr>
<tr>
<td>Urinary tract infections (%)</td>
<td>43.7%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Depression (%)</td>
<td>23.9%</td>
<td>11.6%</td>
</tr>
<tr>
<td>Institutionalization (%)</td>
<td>17.5%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Any ADL (%)</td>
<td>61.2%</td>
<td>52.7%</td>
</tr>
<tr>
<td>Any Instrumental ADL (%)</td>
<td>71.9%</td>
<td>62.2%</td>
</tr>
</tbody>
</table>

**A129 Encore Presentation**

A GIS Approach to Defining Socially and Medically Vulnerable Populations of Older Adults in South Florida

**E. Hames, 1,2 S. Tewary, 2,5 J. Stoler, 3,9 C. Emrich, 1,5 N. pandya, 1,5 1. Geriatrics, NSU-COM, Ft Lauderdale, FL; 2. Health Choice Network, Miami, FL; 3. Geography, University of Miami, Coral Gables, FL; 4. Geography, University of South Carolina, Columbia, SC; 5. Geriatrics Education Center, Nova Southeastern University, Ft. Lauderdale, FL; 6. Public Health Sciences, Miller School of Medicine, Miami, FL; 7. Hazards and Vulnerability Research Institute, Columbia, SC.**

**Background**

Florida contains the highest state-level percentage of older adults 65 and above (17.3%) and 85 and above (2.3%). The process of defining socially and medically vulnerable populations of any age group is complex, without consensus, and has seldom targeted older adults.

**Methods**

We analyze South Florida’s tri-county region of Miami-Dade, Broward, and Palm Beach Counties at the census tract level by applying principal components analysis (PCA) to a large set of variables previously identified as specific indicators of social and medical vulnerability. We map the tract-level vulnerability scores using a geographic information system (GIS), and we use spatial analytic methods to identify patterns of social and medical vulnerability in regions with higher proportions of older adults aged 65 and older, and 85 and older.

**Results**

We observe substantial intra-county heterogeneity of socio-medical vulnerability of older adults across the study area. Some age-dependent emerging areas of medical vulnerability are observed in Palm Beach County. Key factors contributing to older adult social vulnerability include age, large household size, and Hispanic ethnicity, while medical vulnerability is driven by disease burden, access to emergency cardiac services, availability of long term care and hospice beds, access to home health care, and available mental health services.

**Conclusions**

The identification of socially and medically vulnerable populations of older adults is vital for healthcare and emergency management planning in both the public and private sectors. Analysis of geographic
patterns in South Florida can improve understanding of the dynamic spatial organization of healthcare, health care needs, access to care and outcomes, and ultimately serve as an input for health care planning across our aging nation.

A130 Predicting Aerobic Activity among Older African Americans with Chronic Conditions

Supported By: John A. Hartford Foundation

Background: Adults 65 years and older are not meeting the physical activity objectives outlined in Healthy People 2020. Across ethnic groups, older African Americans demonstrate low levels of physical activity compared to older European Americans. The objective of this study was to determine the predictors of aerobic activity in a sample of African Americans 65 years old and older with chronic conditions.

Methods: A secondary data analysis based on a study of diabetes self-management in a sample of 125 community-dwelling older African Americans was conducted. Data from questions about type and amount of aerobic activity and diabetes management support were analyzed. Comorbidity was assessed using the physical health section of the Multidimensional Functional Assessment of Older Adults. Stepwise logistic regression was conducted to predict self-report of aerobic activity, which was dichotomized (yes vs. no). Demographic variables, number of years diagnosed with type 2 diabetes, and number of chronic conditions were entered into the model as potential predictors based on statistical significance.

Results: The majority of respondents were female (81%). Respondents ranged in age from 65-94 years (M = 72.8, SD = 5.7). Median number of chronic conditions was approximately five (M = 4.90, SD = 2.07). Age, gender, education level, income, marital status, and years since type 2 diabetes diagnosis were not significant predictors of self-report of aerobic activity. There were strong relationships between social support and aerobic activity (O.R. = 7.25) and fewer chronic conditions (O.R. = .62) and aerobic activity (R² = 0.292) (p < .01).

Conclusions: Physical activity is preventive and cost effective. Anyone, regardless of age and health status should incorporate a degree of physical activity into his or her life. Given the benefits of physical activity and the influence of social support in predicting self-report of aerobic activity among respondents in this study, physicians and other healthcare professionals assisting older African Americans with the management of chronic conditions should consider prescribing physical activity, such as walking and other aerobic activities, to this population and encourage support from members of their social networks as part of disease management protocols.

A131 Encore Presentation
Age, Gender and Race/Ethnicity Economic disparities in Hospitalized older Floridians with Type 2 Diabetes
A. Srivastava,1 H. Li,1 L. Tamariz,1,2 H. Flores,1 W. Valencia,1,2 1. Department of Public Health Science, University of Miami, Miller School of Medicine, Mckinney, TX; 2. Miami VA Medical Center, Miami, FL

Background: Type 2 Diabetes (T2D) and its complications are major health issues affecting the growing geriatric population. While T2D may impose an economic burden to this population, it is less clear if gender and race/ethnic disparities are associated with T2D hospitalizations.

Method: We conducted a cross-sectional analysis of 2009 data from the Florida Agency for Healthcare Administration Hospital Ad-
A133
Characterization of the Older Adult Refugee Population at Thomas Jefferson University’s Center for Refugee Health (CRH)
K. Beldowski, N. Patel, B. Salzman. Thomas Jefferson University, Philadelphia, PA.

Background: Established in 2007, the CRH has served over 1,000 refugees of all ages as they resettle in Philadelphia, PA. Research about refugee populations generally focuses on infectious disease, women’s health, pediatrics and mental health, with minimal research on the older adult refugee population. The objective of this study was to describe the characteristics of the older refugee population served by the CRH, focusing on chronic disease, smoking status, immunization and cancer screening rates, and presence of geriatric syndromes.

Methods: Patients were identified using the CRH Patient Registry and a retrospective chart abstraction was done from our EMR using ICD-9 codes, medication lists, imaging studies and progress notes. Population data was entered into the CRH Patient Registry from 2007 through 2014. Patients age 60 and older at the time of their initial examination were included. Data was compared to general US population data from the Federal Interagency Forum on Aging Related Statistics and Centers for Disease Control.

Results: Of 1,066 refugee patients, 89 were aged 60 and older. Their charts were reviewed, with 57% of patients aged 60-69, 35% were aged 70-79 and 8% over the age of 80. Female patients made up 52% of the population. Bhutan, Iraq and Myanmar were the main countries of origin. CRH colon, breast and cervical cancer screening rates were lower (15%, 46% and 65% respectively). Pneumococcal vaccination rates were higher at 97%. Diabetes and hypertension were more prevalent (26% and 67%), as well as current smoking status (16%). Dementia, falls and incontinence were not well documented. Patients taking 5 or more medications were higher (61%). Visual impairment was more prevalent. DEXA screening and depression rates were comparable to national statistics.

Conclusions: The study describes the characteristics of an older refugee population in relation to the general older US population. We found that they have a higher prevalence of diabetes, hypertension, visual impairment, and current smoking status. Screening rates for colon, breast and cervical cancers were lower than the general older population. Vaccination rates were higher. Congruent with a higher burden of chronic disease, older refugee patients had higher rates of polypharmacy. Geriatric syndromes were not documented. This research provides us with data to better understand and address healthcare needs of this unique population.

A134
Prognostic Indices for Hospitalized Older Adults: A Meta-analysis and Systematic Review
A. Khan,1,2 A. Maria,1 I. Hocker,1 M. Singh,1 M. Simpson,1 S. Akbar,1,2 J. Yoo,1,2 A. Nazir,1 S. Kim,1 M. Malone,1,2 I. Aurora Health Care, Milwaukee, WI; 2. University of Wisconsin School of Medicine and Public Health, Madison, WI; 3. Indiana University School of Medicine, Indianapolis, IN; 4. Yonsei University College of Medicine, Seoul, Korea (the Democratic People’s Republic of).

Background: A prognostication predictive model incorporated into the electronic health record (EHR) may be useful in assisting the health care team in accurately predicting mortality and may be used in appropriately allocating palliative care services.

Objective: To systematically review and summarize current medical literature regarding the factors predictive of mortality in an inpatient population above age 65 years of age.

Inclusion criteria: Non-disease specific prognostication indices that predict 1-year mortality in an inpatient population of adults over the age of 65. We excluded studies that estimated ICU, disease-specific or in-hospital mortality.

Data sources: A MEDLINE, CINAHL, OVID and COCHRANE literature search of English-language articles that developed and/or validated a prognostication index to predict mortality.

Results: Review of 3600 citations revealed 53 articles that reported variables associated with mortality. Based on the inclusion criteria nine studies were included in the final analysis.

Data Extraction: Data was extracted from the 9 studies using the following parameters: adequate method of description of population, non-biased selection of patients, low loss to follow-up, adequate prognostic factor measurements, adequate outcome measurements and method of validation. We performed qualitative analysis on 4 studies and 5 studies were pooled for a quantitative meta-analysis.

Data Synthesis: The 1 year mortality rate for the 21,228 patients included in all the studies was 30% (95% CI 28%-30%) and the mean age was 80.95 years. Factors significantly associated with mortality included male sex (OR=1.2; 95% CI, 1.09-1.42 p-value =0.001), chronic obstructive pulmonary disease (COPD) (OR=1.8; 95% CI, 1.45-2.4 p < 0.0001) and congestive heart failure (CHF) (OR= 1.79; 95% CI, 1.46-2.2 p < 0.0001).

Conclusion: One year mortality for inpatients aged >65 years was high and was associated with male sex, COPD and CHF. Generalization of these findings to all older adults should be made with caution because of insufficient published information. In the future, our results may be used to develop a prognostication tool that draws patient data in real-time from the EHR to identify vulnerable older adults in the hospital.

A135
Evaluation of Hospital Discharge Clinical Summaries
E. Sarzynski, B. Given. Michigan State University, East Lansing, MI.

Background: Clinical summaries are templates generated by electronic health records (EHRs) to fulfill CMS Meaningful Use (MU) objectives. Patients receive clinical summaries during the hospital discharge process. CMS recommends that clinical summaries be brief (1-2 pages), contain key information about the hospitalization, and identify actionable discharge instructions. Clinical summaries produced at our institutions are lengthy, poorly organized, and written at high reading levels, all of which may limit their usefulness for patients. Furthermore, they often omit key elements endorsed by the Society for Hospital Medicine (SHM) for improving patient safety during care transitions.

Methods: We developed an audit tool to standardize evaluations of clinical summaries based on MU and SHM criteria. We also used validated assessment tools to evaluate document organization, readability, and usability (Patient Education Materials Assessment Tool). We audited 100 clinical summaries at two hospitals that use different EHR systems (Epic and Cerner, which account for 30% of the inpatient EHR market share). We assessed clinical summaries for three key components: 1) presence or absence of MU and SHM elements; 2) organization; and 3) readability, usability, and actionability.

Results: Preliminary results indicate that clinical summaries are lengthy (5+ pages), provide too many distinct pieces of information, and may fail to identify patients’ reason for hospital admission. Discharge instructions are frequently omitted and of variable quality. Many free-text discharge instructions are lengthy paragraphs, rather than an actionable “to do” lists. Clinical summaries frequently omit key information, including care team members, procedures performed, pending results, warning signs and symptoms, and a 24/7 callback number. Recommended follow-up appointments are rarely scheduled prior to discharge (<20%). Document language is universally above the recommended 6th grade reading level. Documents score poorly on usability and actionability assessments.
**Conclusions**: Providers, healthcare organizations, and EHR vendors share overlapping roles for developing patient-centered clinical summaries for older adults to use after hospital discharge. Our research will generate evidence-based recommendations for improving clinical summaries.

**A136**

**Insuring successful implementation of a registry to assess quality in home-based medical care: an implementation case study**

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Supported By: California HealthCare Foundation Retirement Research Foundation

**Background**: With the shift towards value-based care, home-based medical care practices must be able to measure and report the quality of care they provide. We are developing the first national practice-based quality of care registry to address this need, and it will be pilot tested at three of the twelve practices in the National Home-based Primary Care and Palliative Care Network. Given lack of knowledge of home-based medical practices’ needs, our objective was to understand the unique contextual factors pertaining to quality improvement (QI) and registry implementation at the registry pilot sites.

**Methods**: In a mixed methods study we performed a web-based survey (likert scale, poor to excellent) and semi-structured interviews with representatives from all three practices piloting the registry. The survey and interviews explored pilot sites’ current engagement with and perceived barriers/facilitators to QI, and issues surrounding barriers/facilitators to registry implementation. Basic descriptive statistics and qualitative analysis for emergent themes were employed.

**Results**: Survey: N=3. 100% of respondents rated their knowledge of QI as “good” but 67% rated their ability to perform QI in their practice as “fair.” Respondents indicated a need to learn the specific components of the QI process: identifying a quality gap/clearly stating the quality problem, identifying an intervention to test, engaging others, and conducting a PDSA cycle. Semi-structured interview: N=4. Perceived barriers to registry-guided QI implementation varied by site but included time constraints, provider workload, technological challenges, unclear benefits, and provider engagement. Facilitators included a positive attitude about registry use, a desire to use registry data to identify gaps in quality, plans to create QI workgroups to develop strategies to improve care, use of the data for benchmarking against other practices, and use of data to demonstrate value to a health system/payer.

**Conclusions**: Findings suggest enthusiasm to engage in practice-level data-driven QI. There is an array of needs among home-based medical practices regarding QI and registry implementation. This study will inform our development of a tailored approach to training and implementation at each practice.

**A137**

**Integration of MyHealthTheVet (MHV) into the Management of Heart Failure (HF) patients in the Patient Aligned Care Teams (PACTs)**


Supported By: VA Office of Geriatrics

**Background**: This project implemented MHV, the VA’s comprehensive online personal eHealth record, for Veterans with HF as an educational case management monitoring platform via secure messaging (SM). This allows for the observation of patient weight and symptoms common to HF such as shortness of breath, weight gain, or swelling of the legs.

**Methods**: The project enrolled 118 HF patients for MHV and instructed them how to navigate MHV, and how to reply to SMs. We have usability data from the 118 participants we enrolled. Their average age was 65.1 ± 9.6 years, range from 41-91 years. A total of 103 (87.3%) were non-Hispanic, and 15 (12.7%) were Hispanic or Latino; included were 90 (76.3%) Whites, and 20 (16.9%) Blacks. Sixty two (53%) were married, 29 (25%) divorced; median yearly income was $20,292. The Veterans were asked to log onto MHV weekly and report their weight and symptoms common to HF such as shortness of breath, weight gain, or swelling of the legs.

**Results**: Initial monitoring of enrolled participants lasted for 26 weeks. Among the 118 participants, 55 (46.6%) used MHV for a number of weeks ranging from 7 to 26. Their response rate averaged 46.6 ± 29.6%, and ranged from 5% to 100%. No participants were disenrolled for nonresponse.

Out of the 55 participants who ever responded, 17 (31%) responded ≤25% of the weeks, 12 (22%) responded 25-50% of the weeks, 16 (29%) responded 50-75% of the weeks, and 10 (18%) responded >75% of the weeks. A total of 26 (47%) participants responded at least 50% of the weeks they were enrolled. Among the 55 participants who ever responded, the number of response weeks ranged from 1 to 26 with a median of 8 and a mean of 9.4 ± 7.

**Three questionnaires** were administered at baseline and 3 months follow-up to evaluate quality of life (QoL) and patient knowledge. There was no significant change in QoL based on the Minnesota Living with Heart Failure (p=0.128) or Chronic Disease Self-Efficacy (Stanford Questionnaire) (p=0.256). There was, however, a statistically significant improvement in patient knowledge on the subject of CHF as measured by the Dutch Heart Failure Knowledge Scale (p=0.011).

**Conclusions**: Patient health record-based interventions are a feasible way to improve patient education and quality of life. Most of the usability and technical issues faced by participants can likely be overcome by additional training sessions for both patients and staff.

**A138**

**The Effect of Age on Technology Acceptance by Cancer Patients**

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Supported By: Supported by Conquer Cancer Foundation / American Society of Clinical Oncology Young Investigator Award

**Background**

The number of cancer survivors is expected to rise over the next decades. The need for innovative methods of providing health services for growing number of cancer patients is being felt. Latest technologies (e.g. wireless communications methods) may provide an opportunity for remote care of cancer patients. Our aim is to assess the technology acceptance (videoconferencing) by cancer patients, especially comparing younger group (age < 65) (YG) vs. older group (age ≥ 65) (OG).

**Methods**

A questionnaire based on “technology acceptance model” is developed. It assesses patients’ prior exposure to videoconferencing applications (e.g. Skype), attitude toward benefits of such applications, the challenges and peer pressure. Also, willingness to receive education about chemotherapy / procedures via videoconferencing is asked. Cancer patients presenting to Memorial Sloan Kettering Cancer Center Gastrointestinal Oncology Clinics have completed the questionnaire.

**Results**

So far, 73 cancer patients have completed the questionnaire. Overall, slightly above half (50.7%) preferred to get education via videoconferencing. The sample included equal distribution of YG and OG.
OG (49.3% & 50.7%). The two groups did not differ significantly in gender, education and marital status. More patients of YG compared to OG had prior exposure to videoconferencing applications (69.4% vs. 35.1%, P<.005), strongly agreed that these applications are good to stay in touch with friends (66.7% vs. 44.1%, P=.058), and family (75% vs. 48.6%, P=.022), that their friends or many people of their age use these applications (65.7% vs. 28.1%, P=.002 and 58.3% vs. 11.4%, P=.001), strongly disagreed that these applications are difficult to use (33.3% vs. 13.9%, P=.052), and require lots of training (52.8% vs. 25.7%, P=.02). In contrast, more patients of OG compared to YG agreed that these applications may play a significant role in their healthcare, help nurses and doctors to be more aware of their health, or be a good substitute for routine healthcare (34.3% vs. 22.2%, 50% vs. 75% vs. 48.6%, P=.022), that their friends or many people of their age use these applications (65.7% vs. 28.1%, P=.002 and 58.3% vs. 11.4%, P=.001), strongly disagreed that these applications are difficult to use (33.3% vs. 13.9%, P=.052), and require lots of training (52.8% vs. 25.7%, P=.02). In contrast, more patients of OG compared to YG agreed that these applications may play a significant role in their healthcare, help nurses and doctors to be more aware of their health, or be a good substitute for routine healthcare (34.3% vs. 22.2%, 50% vs. 75% vs. 48.6%, P=.022), that their friends or many people of their age use these applications (65.7% vs. 28.1%, P=.002 and 58.3% vs. 11.4%, P=.001), strongly disagreed that these applications are difficult to use (33.3% vs. 13.9%, P=.052), and require lots of training (52.8% vs. 25.7%, P=.02). In contrast, more patients of OG compared to YG agreed that these applications may play a significant role in their healthcare, help nurses and doctors to be more aware of their health, or be a good substitute for routine healthcare (34.3% vs. 22.2%, 50% vs. 75% vs. 48.6%, P=.022), that their friends or many people of their age use these applications (65.7% vs. 28.1%, P=.002 and 58.3% vs. 11.4%, P=.001), strongly disagreed that these applications are difficult to use (33.3% vs. 13.9%, P=.052), and require lots of training (52.8% vs. 25.7%, P=.02).

Conclusion
Significant age barrier is noted in acceptance of technology; however, older cancer patients appreciate the value of these technologies in receiving health services more than younger ones.

A139
Impact of the Choosing Wisely patient educational materials
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Supported By: Canadian Institutes of Health Research Betty Haven’s Knowledge Transfer Award in Aging

Background: Modeled after the American Choosing Wisely initiative, the Choosing Wisely Canada® (CWC) campaign was launched on April 1, 2014 to inform Canadian physicians about 5 tests and treatments to avoid in each specialty, and promote patient receptiveness to the restriction of unnecessary tests and treatments. The effectiveness of the patient educational materials for changing patient knowledge around the overuse of medical resources has never been evaluated. Prior to investing government funds in a widespread media campaign to expose Canadian citizens to the CWC patient educational materials, we sought to assess the impact of these materials on a) changes in patient knowledge around the overuse of certain tests and treatments, and b) patients’ intentions to discuss the necessity of these tests and treatments with a health care professional.

Methods: A cross-sectional iPad survey with an embedded pre-post experimental design was delivered to all male and female patients aged 50 years and older waiting to see their family practitioner in the waiting room of an academic clinic in Toronto, Canada over a 4-week period. Participants were queried on knowledge of the appropriateness of sedative-hypnotic use, antipsychotic use for dementia, imaging for low back pain, antibiotics to treat sinusitis and routine use of EKGs, before and after being exposed to the CWC patient educational materials. McNemar’s test was used to examine pre-to-post changes in knowledge (significance set at p<0.05). Participants were asked if they intended to discuss the information with a health care professional.

Results: The survey was completed by 291 patients (mean age 63, range 50-91, 42% male). Knowledge improved significantly for 4 of the topics with the following proportions of respondents showing improved knowledge about antipsychotics (77%), imaging for back pain (70%), the use of antibiotics to treat sinusitis (70%), and sedative-hypnotics (53%). On average, 70% of participants reported intent to discuss the information. Older age (50-64 versus 65+) did not differentiate willingness to discuss the materials with a healthcare provider.

Conclusion: There is value in exposing patients to the CWC patient educational materials. Whether ensuing conversations with health professionals result in a reduction of unnecessary tests and treatments remains to be determined.

A140
Patient-provider communication about sleep apnea: Results from focus groups with older adults
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Supported By: Research reported in this publication was supported by the National Institute On Aging of the National Institutes of Health under Award Number K23AG045937 and The Beeson Career Development in Aging Research Award Program (supported by NIA, AFAR, The John A. Hartford Foundation, and The Atlantic Philanthropies). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Background: Sleep apnea (SA) is prevalent among older adults and has a high rate of treatment non-acceptance and non-adherence. Patient-provider communication is essential for effective care of SA, but no studies have examined older adults’ perspectives on patient-provider communication about SA. Understanding these perspectives is critical to developing tools to improve communication.

Methods: We conducted 4 focus groups with 35 individuals aged ≥65 years with SA who responded to recruitment flyers posted in two large healthcare systems that offer a variety of SA treatments (e.g., positive airway pressure [PAP], oral appliance, surgery). We explored participants’ interactions with their healthcare providers, preferences for communication about SA diagnosis and treatment, and opinions about a proposed communication tool (i.e., decision aid). A moderator led the audio-recorded sessions, which were professionally transcribed. Two team members independently applied a coding tree we developed to each transcript.

Results: Participants (86% male, 57% non-Hispanic white) received their SA diagnosis from a variety of provider types (e.g., polysomnographic technician, physician), either in-person or by telephone. Discussions about SA with patients by providers occurred during or after a diagnostic sleep study. Some participants expressed frustration that they received insufficient or no information about other available treatment options, aside from PAP. The vast majority felt that more details from providers about SA would be helpful, including information about treatment options specifically tailored to each patient’s needs, expected side effects of each option, and ways to help them troubleshoot commonly encountered SA equipment issues. Participants expressed interest in a patient decision aid. They diverged in their opinions about optimal delivery modality, content, length, and delivery location.

Conclusions: Older adults with SA want more details about their condition and treatments and are interested in a decision aid to help them understand their different options. These findings suggest that a decision aid to improve communication about SA treatments may help older adults with SA make better decisions.

A141
Comparative Approaches to Elder Care: Lessons from Japan and the United States

Background: Important questions are currently being asked about how best to restructure the United States healthcare system to integrate medical, economic, quality of life, and end of life care for older adults. Systems of care currently utilized in other nations are worthy of our consideration because of the example they provide of potentially novel approaches to care for the elderly that might be cross culturally trans-
ferable to the United States or to other nations. The combination of good health outcomes and longevity combined with a declining birth-rate has led the nation of Japan to have one of the highest percentages of older adults in the world. The purpose of this project was to explore different aspects of elder care currently in place in one city in Japan (Kyoto), compared with services currently in place in a comparison city in the United States (Rochester, New York).

**Methods:** A qualitative inquiry through a critical ethnography approach was employed for this study. A variety of care environments in each locale was visited. These included memory clinics, nursing homes, home visit programs, adult daycares, respite centers, community centers, physical therapy and various advocacy groups and seminars run by the local municipalities as well as professional advocacy organizations. Observations were recorded in the form of journal entries, field notes and critical reflections from which a conceptual framework was synthesized.

**Conclusions:** Three common challenges for older adults were apparent in both locations: community accessibility, lack of adequately trained caregivers/caregiver relief, and lack of awareness of available social services within the community. In the United States, these challenges are primarily addressed through various private, non-profit, or grant-funded organizations, or in the case of veterans, by the Veterans Administration health system. In Japan, government financial support for long-term care through the creation of a mandatory long-term care insurance system has led to a comparatively wider range of flexible services from which elders and caregivers can choose at reasonable cost. These services include a robust home visit primary care system, as well as a network of small neighborhood based cross-over combination adult-day/short-respite homes. These approaches are worthy of further examination for feasibility in modified form as care systems for older adults in the United States.

**A142 The cost effectiveness of mirabegron for the treatment of overactive bladder: three US perspectives**


Supported By: Astellas Scientific and Medical Affairs, Inc., funded the analysis described in this publication.

**Background:** Antimuscarinics are the standard oral treatment for overactive bladder (OAB), but are associated with anticholinergic adverse events (AEs), increased anticholinergic burden (ACB) with risk of cognitive impairment, and relatively poor persistence. Mirabegron is an oral OAB treatment that, as a β3-adrenoceptor agonist, is not associated with anticholinergic effects and has early evidence of improved persistence. Our analysis assessed the cost effectiveness of mirabegron versus six antimuscarinics prescribed for OAB.

**Methods:** A Markov model was developed to assess US private payer, Medicare Advantage, and societal perspectives over a 3-year time horizon. Micturition and incontinence frequencies were each stratified in five bands: ≤ 8, >8-10, >10-12, >12-14, and >14 per day, and 0, >0-1, >1-2, >2-3, and >3 per day, respectively. Transition probabilities between bands were derived from a mirabegron pivotal trial (NCT00689104) and a mixed treatment comparison. Therapy began with an oral agent, then switched to another oral agent or discontinuation, and finally, surgical therapy or onabotulinumtoxinA. The primary outcome was cost per quality-adjusted life year (QALY). EQ-5D equivalent utilities were mapped from demographics and incontinence and micturition frequencies. AEs and OAB-related comorbidities triggered utility decrements and added costs. The higher ACB associated with antimuscarinics increased healthcare utilization and probability of cognitive impairment, based on analysis of medical and pharmacy data from a large healthcare system. One-way and probabilistic sensitivity analyses were performed on 16 variables.

**Results:** Mirabegron was both least expensive and most effective from the societal perspective. From the private payer and Medicare Advantage perspectives, mirabegron was less expensive and more effective or had a lower cost per QALY than all treatments with the exception of oxybutynin, which was the least expensive treatment.

**Conclusions:** Our analysis estimated that mirabegron is a cost effective treatment option for patients with OAB from the US private payer, Medicare Advantage, and societal perspectives, due to fewer projected AEs and comorbidities, and data suggesting better persistence.

**A143 Partnering with Caregivers to Enhance Minority Older Adult Research Participation**

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Supported By: Research reported in this submission was supported by the National Institute On Aging of the National Institutes of Health under Award Number R21AG042801. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

**Background:** Recruiting minority older adults into research is challenging. Historic abuse, carry-over suspicions and lack of understanding frequently contribute to recruitment difficulties with potential African American older adult research participants. This report provides observations from a health promotion research project that substantially overcomes barriers to minority older adult recruitment.

**Methods:** The project queries whether home care aides (HCA), or paid caregivers, can effectively engage homebound older adults in an evidence-based exercise program, “Healthy Moves for Aging Well”2. Given its urban foundation in a Medicaid-funded home care program, the study targeted African Americans aged 60+ who are at risk for nursing facility placement. The fact that most older African American home care participants are served by African American HCAs resulted in a study design that strategically involved the simultaneous recruitment of minority dyads.

**Results:** Within 7 months of recruitment period, 89 older home care participants provided written consent to release contact information to the research team. 73 were eligible for the study (e.g., can sit in a chair for 15+ minutes; can respond to survey questions.) The project manifested an unusually high minority enrollment rate: 79% of those eligible enrolled. They were 3% white, 2% Hispanic and 95% African American with 100% of older African Americans receiving care from an African American HCA.

**Conclusions:** This remarkable African American recruitment results from multiple factors. Over 1/3 of enrolled dyads (older adults and HCA) were family related. The other dyads without family ties have had long-term caregiving relationships under a Medicaid-funded home care program. These facts and race congruence between older adults and their HCAs may be the key reason for successful minority older adult recruitment into this study. Additional factors appear to be research staff’s persistent recruiting efforts, home care managerial staff supportive of research and HCAs’ perception that they are “adding” something more to their clients than simple ADL support. These observations reveal the importance of connecting minority older adults with a race-matched caregiver for successful enrollment in clinical research.
A144
Timing is Everything: A look at the effect of time of day at discharge on readmission rates

Background: Thirty-day readmission rate is an important hospital outcome quality indicator. Variations in transitional care processes have been associated with 30-day readmissions. There is a lack of research looking at the effect of time of day at discharge on readmission rates. We examined time of discharge to determine whether discharges later in the day were associated with higher readmission rates.

Methods: This is a retrospective chart review from a 545-bed hospital system in Northeast Ohio. All patients 65 years of age and older, discharged within the first quarter of 2014 were included. Patients who left against medical advice (AMA) and patients who were discharged to hospice were excluded. Pearson Chi-Square was used to analyze differences in the proportion of patients with all cause readmissions within 30 days who were discharged before and after 19:00, as well as patients discharged before and after 17:00. In our institution the Transitional Care Coordinators leave at 17:00, and 19:00 marks nursing shift change.

Results: Over the first quarter, there were 2,494 discharges. 271 of the 2,494 discharges occurred after 19:00 and 860 occurred after 17:00. All cause readmissions occurred 351 times within 30 days of discharge. There was a statistically significant higher rate of readmission for patients discharged after 19:00 when compared to those discharged before 19:00 (28% vs 21.7%, p=0.02) as well as those discharged after 17:00 when compared to those discharged before 17:00 (24.7% vs 21.2%, p=0.05).

Conclusion: This study showed significantly lower readmission rates for patients discharged earlier in the day when compared to those discharged later in the day. The higher readmission rate for those discharged after 17:00 may be explained by several factors including medical supply stores closing by 17:00, decreased likelihood that prescriptions will get filled after 17:00, lack of patient education, poor information exchange, and poor communication with primary care providers or receiving facilities. In addition, the infrequency of night discharges and the relative inexperience of some night shift nurses may explain the even higher readmission rate for those discharged after 19:00. Further research into the factors contributing to this difference is warranted to optimize transitions of care.

A145
Framing Decisions about Advanced Directives
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Background: A critical task in health care is to ensure that end-of-life care is consistent with patient preferences. 30% of older Americans need critical healthcare decisions made near the end of life but may lack the capacity to make those decisions. Surrogate decision makers are then called upon. Having an advance directive in place benefits the individual, families, healthcare providers, and society as a whole.

Research suggests that one motivator to establish an advance directive, is desire to avoid burdening family members with difficult decisions during a time of crisis. We tested how best to frame messaging about family burden, in order to increase advance directive uptake. Framing, a behavioral economics technique, postits that the way in which information is delivered matters to how individuals make choices. No previous research has investigated the role of framing in encouraging individuals to record an advance directive.

Methods: We tested the persuasiveness of two framed messages presented via videos portraying friends/family members of a deceased patient. The first message was positively-framed, portraying a family expressing gratefulness and relief that their loved one had an AD. The second message was negatively-framed, portraying a family expressing grief and confusion about decisions that had to be made regarding their loved one’s end-of-life care in the absence of an AD. We asked participants (n=54) for feedback on the persuasiveness of the videos, attitudes about advance directives, and planned future actions regarding end of life planning.

Results: Participants considered the negatively-framed video to be more persuasive (57%) in encouraging advance directive uptake. However, they preferred the positively-framed video (67%). Participants suggested this was because it did not contain people who were distraught. 87% of respondents had health insurance, but only 4% had an advance directive. 64% of participants indicated that they would talk to their family, and/or doctor, to learn more about advance directives. The sample was 46% male with a mean age of 27.7 (SD=5.4, 22-56 years), 43% were married, and 23% had children.

Conclusions: How advanced directive conversations are framed may make a difference in how patients are motivated to make decisions regarding end of life planning.

A146
An Opportunity to Innovate: The Aging of Eastern Queens and Nassau County
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Supported By: North Shore-LIJ Health System

Background: In Queens and Nassau County, New York, the number of people 65 and older is the size of the entire population of New Orleans. Many have multiple chronic illnesses in an advanced state and functional impairments. North Shore-LIJ Health System (NS-LIJ) partnered with the New York Academy of Medicine (NYAM) to assess the needs of these older adults and their caregivers in preparation of a strategic plan to address this growing population. Methods: We interviewed frail older adults in their homes or health care setting, and conducted focus groups in the community. Participants were identified through community-based organizations, hospice, an outpatient geriatric medical practice, and a home-based primary care program. Older adults were defined as individuals with a birth date before 1960; frailty was defined as having at least one functional impairment and/or late-stage chronic disease. To assess the demographic landscape, we analyzed 2010 US census and 2007-2011 American Community Survey 5-year population estimates. Results: Fourteen key findings reflect important priorities and challenges for the communities analyzed, including: a widespread desire to remain at home; governance structures and municipal boundaries can lead to unequal access to services such as transportation and community supports; coordination of care for older adults with serious illness is often overwhelming for the individual, their family, and clinicians, and is often not reimbursed; older adults associated positive healthcare experiences with kindness more so than clinical quality. Conclusions: To respond to these key findings, institutions should advocate for and develop programs that integrate services across a continuum, improve navigation and transitions of care, and support innovation and quality improvement. This requires funding essential non-reimbursable services and scaling programs that deliver geriatric and palliative care expertise. As health care transitions from volume- to value-based reimbursement, these investments will prove pivotal in health systems’ abilities to provide better care at lower costs for frail and older adult populations.
A147
Brazilian consensus of potentially inappropriate medications in the elderly: preliminary data
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Supported By: Universidade Federal da Bahia, Brazil

Background: The use of potentially inappropriate medications (PIM) in the elderly may increase the risk of adverse events in this population. In Brazil, there are no criteria to define the prescription of inappropriate drugs to elderly people.

Objective: To describe preliminary data from the Brazilian consensus of PIM in the elderly (drugs that should be avoided regardless of the patients’ medical condition).

Methods: A Delphi evaluation with a 2-round survey was used to reach Brazilian consensus criteria for PIM in the elderly based on the 2012 Beers criteria and STOPP 2006. The expert panel consisted of 9 geriatric subjects and 1 clinical pharmacist. Using a 5-point Likert scale (from strong disagreement to strong agreement), mean ratings from the experts were evaluated for each criterion selected. In the first Delphi round, participants were asked to evaluate the potential inappropriate nature of a preliminary list of drugs, and to propose additional drugs for a second Delphi round that were absent in the previous questionnaire. All drugs with an upper limit of 95% confidence interval <4.0 in the 2 rounds were classified as potentially inappropriate.

Results: All experts completed the 2-round Delphi survey. Forty-four criteria were evaluated; 22 were derived from the 2012 Beers criteria; 11, from STOPP 2006; and 9, from both. Of the 44 criteria evaluated in the first round, 13 had a 95% confidence interval <4.0, and as a result, were entered into the second round. Ultimately, 42 criteria achieved consensus, including drugs/drug classes used in Brazil as PIM, independent of the clinical condition. The 2 criteria that did not reach consensus among Brazilian experts were the use of aspirin for the primary prevention of cardiovascular events and a sliding scale of insulin use.

Conclusion: Preliminary data from the Brazilian consensus of PIM for the elderly provide a list of drugs that should be avoided in this population, regardless of the patient’s clinical condition; this list may help healthcare professionals choose safer drugs to administer to the elderly.

A148
A Health System’s Approach to Caring for Advanced Illness
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With the U.S. population’s average age increasing, geriatric, palliative, and hospice care are emerging as essential disciplines in medicine. A needs assessment of these resources available to ten inpatient hospital facilities across one of the largest health systems in the United States was completed to plan for improving care of a growing advanced ill population.

A 47-question survey was developed and administered to hospital leadership to assess the presence of geriatric, palliative, hospice services, including inpatient, outpatient, and community resources across a health system. Survey questions were developed through consultation with subject matter experts and literature review. Survey administration was performed electronically and clarified through follow-up interviews.

All of the hospitals have palliative care consultation services. Two hospitals have dedicated units for palliative or hospice care. The co-existence of palliative care with curative approaches was not understood by all participants. Geriatric medicine services exist in five of ten sites. Evidence-based geriatric models of care (e.g., geriatric care units) do not currently exist. Outpatient geriatric and palliative medicine services are limited. As described by hospital leadership “most clinicians/providers do not understand differences between advanced illness, geriatric, palliative or hospice care.” All hospital leadership expressed a need to educate staff how to hold family meetings and goals of care conversations. Leadership understood that hospice is underutilized and referrals occur too late in a course of a disease. Spiritual and social support systems are available in the tertiary care sites but are not accessible in the outpatient setting.

The results of this analysis indicate existence but the scope of these services lack clarity for the hospital staff and results suggest that increasing evidence models of care that will respond to this population is a need.

Potential next steps to address this population:

Move to align or more closely integrate Geriatric, Palliative, and Hospice Medicine models of care to lessen confusion to staff.

Create a curriculum to improve skills to hold conversations regarding complex care.

Add spiritual and social work services to teams caring for seriously ill patients.

Develop outpatient advanced illness programs.

A149
Implementation of geriatric consultation teams (GCT) in acute hospitals in three European countries

Supported By: This study (KCE 2013/14) was financed by the Belgian Healthcare Knowledge Centre.

Background: GCTs are multidisciplinary teams advising and sensitizing healthcare professionals in the hospital for elderly care. They were large-scale implemented in the Netherlands, France, and Belgium despite lacking evidence on effectiveness. This study aimed to understand how GCT implementation was facilitated.

Methods: Systematic database and grey literature search; cross-sectional survey.

Results: GCT implementation was supported using a Senior Friendly Hospital (SFH) Quality Label in the Netherlands, and legislation in France and Belgium. Forty-six (47%) hospitals in the Netherlands were awarded the Quality Label in 2013 and 82 (83%) had a GCT. The majority (n = 56, 68%) of the GCTs scored 75% or more on the GCT quality indicators, a minimal standard for SFH eligibility. The Dutch National Society for Clinical Geriatrics specified different ways to implement consultation based interventions: clinical geriatric consults, geriatric or structural co-management. In 2002 the Ministry of Health in France decreed on the Geriatric Care Network (GCN) for better elderly management stating that the GCN should include a GCT and a geriatric unit, short-stay unit, day hospital and rehabilitation unit. It also regulated GCT activities and provided the possibility for out of hospital consultation. In 2011, 216 French public acute care hospitals (31%) had a GCT. In Belgium a Care Program for Older Hospitalized Patients was published in 2007, and revised in 2014, by the Ministry of Public Health: acute hospitals should have an acute geriatric hospitalization ward, outpatient’s clinic, and day care hospital, a GCT, and an external liaison service. Over 90% of 108 Belgian acute hospitals had a GCT in 2013. Structural financing for GCT ac-
tivities is provided since 2014. For evaluating GCTs, France and the Netherlands apply quality indicators.

**Conclusions:** Although a heterogeneous approach for patient screening, assessment, and follow-up was found, legislation, structural financing and quality indicators were facilitators to promote implementation of geriatric care models on a national level in Europe.

A150

**Piloting PREPARE in an Academic Geriatric Outpatient Primary Care Clinic: Insights on its impact in Advance Care Planning.**


**Background:** By 2015, CMS will require medical practices to document advance care planning (ACP) in patients over 65 years of age. At our outpatient geriatric clinic, only 46.9% of patients had such documentation. A quality improvement (QI) focus group convened and chose to use the ACP tool, PREPARE1, to improve this percentage. The next step was to determine how to disseminate this tool, evaluate its impact on ACP documentation, and assess usefulness from patient and physician perspectives.

**Methods:** The PREPARE pamphlet was distributed to all English speaking patients for one week either by the front desk staff (Phase I) or by their physician (Phase II). Patients who received the pamphlet were called by their physician 1-2 weeks after their visit to complete a feedback survey. Physicians were electronically surveyed on their perspectives.

**Results:** Seventy-three patients were seen during Phase I and 65 during Phase II. The PREPARE pamphlet was disseminated to more patients by their physicians (46%, n=30) than the front desk staff (25%, n=18). The top three reasons cited by physicians for not giving the pamphlet included: not enough time (12%), patient refused (10%) and communication barriers i.e. foreign language or no surrogate available (8%). For those patients who received the pamphlet, the rate of ACP documentation during their visit was higher during Phase II (27%, n=8) than Phase I (17% n=3). Feedback was reported from 18 of the 48 patients who reviewed the pamphlet (Overall response rate 38%, Phase I: n=6, Phase II: n=12). Most surveyed patients found the pamphlet easy to read (89%) and all found it useful. Fewer patients visited the website (28%) and amongst these patients, all found the website useful. Of note, only 61% (n=11) patients who reviewed the pamphlet had access to the internet. All participating physicians completed the survey (n=13). Most found PREPARE to be a useful ACP tool (69%) and would recommend it for other providers (84%).

**Conclusions:** The ACP tool PREPARE was better delivered by physicians, did result in ACP documentation during office visits, and was well received by both patients and providers.


A151

**Medication Reconciliation and falls during hospitalization: A Report from 2007-2014 HERON database on geriatric patients in the hospital**

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**Supported By:** Authors do not have any disclosure to report.

**Background:** Falls during hospitalization, an important measure of care quality and patient safety, continues to be a challenge for both the medical and administrative services. Hospital charges are about $4,200 higher for patients with inpatient falls compared to those who did not fall. Identifying patient characteristics of those with a history of inpatient falls may help understand causes of and strategies to prevent falls during their hospital stay. Using the Healthcare Enterprise Repository for Ontological Narration (HERON) database, we propose to better characterize geriatric patients (≥65 years) with high risk of fall and those who had a fall during inpatient visits between 2007-2014.

**Methods:** HERON is a database that integrates clinical and biomedicale data for translational research at the University of Kansas Medical Center facilities. For the current analysis, we included patients who were considered “High Risk of Fall” during an inpatient stay and patients who experienced a “Fall” ≤2 days after being identified as high risk upon admission to the hospital. Study patients were identified using inpatient flowchart and nurse assessment indicators based on “Morse Fall Scale for Identifying Fall Risk Factors”.

**Results:** Over the 8-year period, a total of 80,400 geriatric patients had an inpatient visit. About 28% of these visits (22,667/80,400=28.19%) included patients determined as “High Risk of Fall”. This proportion tended to increase over the study period, and varied across gender and diagnosis of different disease states. Among these high risk elderly patients (16,692/22,667), 73.6% had BMI≥25, 51% were female, and 78.2% were White. One hundred and thirty six patients had a fall ≤2 days after their admission to the hospital. Medication reconciliation was done for only 46.3% (63/136=46.3%) of these patients.

**Conclusions:** Between 2007 and 2014, an estimated (136/22,667) 5 per 1000 high risk of fall patients (≥65 years) experienced a fall during hospitalization. Medication reconciliation was sub-optimal (46.3%) for these patients. Further research is warranted to determine if optimized medication reconciliation can improve inpatient falls among the at risk elderly patients.

A152

**Preventable visits to the emergency department by geriatrics clinic patients, a quality improvement project**


**Background:** Current use of the emergency department (ED) for non-emergent geriatric health issues contributes to less use of the geriatric clinic which results in less continuity of care and higher costs for both patients and the hospital. The aim of this project was to characterize the variability in the utilization of ED by Geriatric patients in a large, urban safety net hospital.

**Methods:** The geriatric department at Boston Medical Center launched a quality improvement project along with the Geriatric Fellows to identify inefficiencies and implement solutions for reducing geriatric patients ED visits. Process maps and chart reviews were conducted along with quantitative data. 118 chart reviews, semi-structured interviews with patients (n=25) and physicians (n=8) were conducted to understand the process of care for patients that used ED for non-emergent care.

**Results:** Multiple inefficiencies were observed in the process such as inadequate information provided to the patients, communication barriers for patients, and differences in the perception of patient and physician insight. 69% patients reported did not contact the geriatric clinic before going to ED, 37.5% were not aware that there is an on-call physician after business hours. Some of the interventions that are being considered include providing physician information magnets, engage providers to counsel patients on ED visits, among others.

**Conclusions:** The QI project in an urban safety net university hospital-based geriatrics clinic assisted in understanding the root cause of ED visits by geriatric patients. Our next steps include pilot testing recommendations and implement a sustainable workable solution. Additional studies are needed to identify what features of patient navigation are most critical to achieving success and to better understand the role of navigators in other settings.
Information Extraction to Assess Care of Veterans with Injurious Falls

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Supported By: VA National Center for Patient Safety and JAH VA Hospital.

Background: The AGS Clinical Practice Guideline for Prevention of Falls in Older Persons outlines a multi-factorial fall risk assessment for older adults. The Veterans Health Administration Computerized Patient Record System provides a unique opportunity to measure guideline adherence; however, the information is stored in text-based clinical notes and not readily available for analysis. Information Extraction (IE) is extraction of predefined types of text information through the use of Natural Language Processing (NLP). IE aims to extract/encode text information converting it to structured data which can be readily analyzed. Objective of this proof-of-concept study was to describe practices in fall risk assessment for Veterans with injurious falls.

Methods: Retrospective analysis of a random sample of 130 Veterans over 65, hospitalized for an injurious fall (with fall related E-code, in FY 2012, in the VA Informatics and Computing Infrastructure) out of a national cohort of 37,000 patients. Notes spanned from 2 days prior to admission to 3 months post discharge. 2886 notes were reviewed and annotated to develop NLP algorithms. The General Architecture for Text Engineering software was used to create NLP algorithm to extract the information from the unstructured text data. Number of items targeted was reduced, based on previous pilot work, to 2 assessment items (postural hypotension, gait/balance/mobility) and their associated interventions (minimize meds, provide exercise program, assistive devices/equipment, education) due to budget/time constraints. The differences were adjudicated, and a final set of reference text spans developed.

Results: We found that 89% patients had some form of gait/balance evaluation, 53% had an assistive device issued, 37% had medications reviewed/adjusted, 46% had fall related education provided and 22% were assessed for orthostatic hypotension.

Conclusion: We found that individual recommendations from the AGS Guideline were followed to differing degrees. The least common performed was the evaluation for orthostatic hypotension followed by medication review/adjustment and patient education. This study indicates that text mining is a promising tool to assess health care practices on a large number of patients. Our next step is to apply the newly developed tool to the national sample to provide information to guide improvement efforts in the future.

A154 Exposure to High Risk Medications is Associated with Worse Outcomes in Older Veterans with Chronic Pain

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Supported By: VA, NIH, Rheumatology Research Foundation.

Background: Chronic pain is common, costly, and leads to significant morbidity in older adults, yet we have limited data on medication safety. We sought to evaluate the association of incident High Risk Medication in the Elderly (HRME) with mortality, emergency department (ED) or hospital care among older adults with chronic pain.

Methods: A retrospective Veterans Health Administration cohort study was conducted examining older Veterans with chronic pain diagnoses and use of incident HRME (opioids, skeletal muscle relaxants, antihistamines, and psychotropics). Outcomes evaluated included all-cause mortality, ED visits, or inpatient hospital care. Secondary outcomes were ED visits or inpatient admissions due to falls or non-spine fractures. Descriptive statistics summarized variables for the overall cohort, the chronic pain cohort, and those with and without HRME. Separate generalized linear mixed-effect regression models were used to examine the association of incident HRME on each outcome, controlling for potential confounders.

Results: Among the 1,807,404 veterans who received VA care in 2005 and 2006, 584,066 (32.3%) had chronic pain; 45,945 of Veterans with chronic pain (7.9%) had incident HRME exposure. The strongest significant associations of incident HRME were for: high-risk opioids with all-cause hospitalizations (OR 2.08, 95% CI 1.95-2.23) and ED visits related to falls or fractures (OR 2.15, 95% CI 1.78-2.62); skeletal muscle relaxants with all-cause ED visits (OR 2.62, 95% CI 2.52-2.73) and mortality (OR 0.80, 95% CI 0.74-0.86); antihistamines with all-cause ED visits (OR 2.82 95% CI 2.72-2.95) and hospitalizations (OR 2.22, 95% CI 2.12-2.32); and psychotropics with all-cause hospitalizations (OR 2.15, 95% CI 1.96-2.35).

Conclusions: Our data indicate that incident HRME is associated with clinically important adverse outcomes in older Veterans with chronic pain and highlight the importance of being judicious with prescribing certain classes of drugs in this vulnerable population.

Reasons for Emergency Room Visits or Hospitalization Among Home Hospice Patients through the Eyes of the Primary Caregiver

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Background: Caregivers provide a significant proportion of care for patients on home hospice in the US. Many patients decide to go onto home hospice to focus on comfort at the end of life. Hospice care has been associated with better quality of care and patient satisfaction; however, there is a subset of patients that utilize the emergency room and/or get hospitalized. Emergency room visits and/or hospice care have been identified as points in transitions of care that can potentially lead to adverse events and negative patient outcomes. This study sought to ascertain reasons for ERVH among home hospice patients through the perspective of the patient’s primary caregiver.

Methods: This qualitative cross-sectional study consisted of phone interviews with primary caregivers of patients on home hospice who disenrolled from hospice because they utilized emergency room care and/or were hospitalized. Patient and caregiver data were obtained from the largest not-for profit home hospice agency in New York City. Phone interviews were semi-structured, audio recorded and transcribed. Two investigators independently reviewed each interview transcript to identify unique themes.

Results: Of 29 caregivers contacted, 25 (86%) agreed to participate. Caregivers consisted of children (n=13), spouses (n=5), relatives (n=4), friends (n=2), and parents (n=1). The top three patient symptoms contributing to ERVH were: breathing problems (n=7), lethargy/change in mental status (n=7), and pain (n=6). While a majority of family members (n=15) initiated the call to have the patient hospitalized, outside physicians (n=4) and members of the hospice agency (n=4) also contributed to ERVH in some cases.

Conclusions: Many factors can trigger ERVH among home hospice patients. These data provide a descriptive account of triggering factors that contribute to ERVH among home hospice patients from the primary caregiver’s point of view. Acute or worsening symptoms appear to...
be a very common reason. By understanding factors that contribute to ERVH, we may be able to better address gaps in care delivery for patients receiving home hospice care.

A156
Improving Gaps in Home Care: Examining the Role of Therapeutic Self-Care in Supporting Home Care Safety for Older Adults
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Supported By: Nursing Health Services Research Unit, University of Toronto
Registered Nurses’ Foundation of Ontario

The purpose of this mixed methods study was to examine the concept of therapeutic self-care in the context of home care, as well as its influence on the safety of home care clients and their informal caregivers. The quantitative approach used a retrospective cohort design and utilized secondary databases available for Ontario home care clients in Canada. Logistic regression analysis was used to examine the association between therapeutic self-care and adverse events. The qualitative approach utilized one-on-one interviews with the clients and their informal caregivers recruited from one home care agency in Ontario, Canada. Qualitative description was used to analyze data that generated themes about clients and their caregivers’ perspectives of home care safety in relation to therapeutic self-care and informal caregiving.

The quantitative results indicated that low therapeutic self-care ability was associated with an increase in the odds of clients experiencing: (1) unplanned hospital visits; (2) decline in activities of daily living; (3) falls; (4) unintended weight loss, and (5) non-compliance with medication. Analyses of the qualitative interview data revealed four over-arching themes: (1) Struggling through multiple aspects of safety challenges; (2) Managing therapeutic self-care by developing knowledge, competency and self-confidence; (3) Coping with informal caregiving through problem-solving, stress management and caregiver relief; (4) Seeking education, support and collaboration from home care.

This mixed methods study advanced understanding of therapeutic self-care in the context of home care. The results provide a better understanding of the relationship between therapeutic self-care ability and the prevalence of adverse events experienced by home care clients. The qualitative findings provide insight into the safety problems related to therapeutic self-care and informal caregiving. This knowledge is vital to policy formulation related to the role of home care services in improving client’s therapeutic self-care ability to reduce safety related risks and burden for home care recipients.

A157
Healthcare Resource Utilization and Cost of Overactive Bladder among the Medically Complex Vulnerable Elderly in the United States
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Supported By: Pfizer Inc.

BACKGROUND: To compare healthcare resource utilization (HRU) and cost among the medically complex vulnerable elderly (MCVE) with and without overactive bladder (OAB) in the US.

METHODS: This study analyzed data from the 2001–2010 Medicare Current Beneficiary Survey. MCVE subjects were identified using the Vulnerable Elders Survey-13 (score ≥3; age ≥65). OAB patients were defined as having ≥2 medical claims of OAB diagnosis or ≥1 antimuscarinic use 30–365 days apart. First date of OAB diagnosis or antimuscarinic use denoted the index date. Non-OAB subjects were defined as having no observed OAB diagnosis or antimuscarinic use during the study period. Only subjects with 6-month pre-index and 1-year post-index continuous enrollment were included. Descriptive and multiple regression analyses were conducted.

RESULTS: There were 444 MCVE subjects with OAB (mean age=79.3; 64.1% female) and 5,964 without OAB (mean age=78.5; 63.9% female). During the 1-year post-index period, MCVE with OAB had significantly higher HRU and cost than those without OAB (Table 1; all p<0.001). After adjusting for baseline characteristics, MCVE with OAB were more likely to have hospitalizations (odds ratio [OR] = 1.56; 95% confidence interval [CI]: 1.25–1.95), emergency room visits (OR = 1.60; 95% CI: 1.29–1.98), outpatient visits (OR = 2.08; 95% CI: 1.54–2.82) and office visits (OR = 4.00; 95% CI: 2.16–7.40) compared with MCVE without OAB. The adjusted mean annual incremental cost per MCVE with OAB was $7,188 in 2013 US dollars.

CONCLUSIONS: MCVE subjects with OAB had significantly higher HRU and cost compared with those without OAB. Efforts to identify cost-effective treatments for MCVE subjects with OAB are warranted.

| Table 1. HRU and cost of MCVE during the 1-year post-index period |
|--------------------|------------------|------------------|
|                    | OAB (N=444)      | Non-OAB (N=5,964) |
| Any hospital admission (%) | 37.54            | 25.89            |
| Any outpatient visits (%)   | 86.38            | 74.27            |
| Any office visit (%)        | 97.94            | 91.84            |
| Any emergency room visits (%) | 46.73          | 33.73            |
| Any skilled nursing facility stays (%) | 11.69   | 5.54            |
| Any eyecare procedures (%)   | 17.99            | 2.14             |
| Any anyother procedures (%)   | 17.54            | 9.45             |
| Number of distinct prescription classes (SR) | 7.71 (2.24) | 5.26 (0.95)     |
| Mean annual total healthcare cost (SD) | $172,077 (SD=133,338) | $12,077 (SD=107,246) |

A158
Outcomes of Transitional Coaching in a VA Medical Center
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BACKGROUND: Department of Veterans Affairs has a unique, comprehensive and coordinated health care system with a single electronic medical record, primary care patient aligned care teams (PACT), telemedicine, disease-specific subspecialty clinics, home based primary care (HBPC) and community-based services. In order to better serve patients whose needs were not being met by existing services, one VA Medical Center started a Transitional Coaching (TC) program to bring an extra layer of support. Primary care providers referred patients at risk of losing independent living despite utilization of existing programs.

METHODS: TC was delivered by two Nurse Practitioners and a Medical Director. The TC intervention included up to 10 home visits, comprehensive functional assessment, advance care planning, disease and medication education, home safety evaluation, and linking patients and caregivers to various VA and non-VA resources (home care services, Medicaid waiver, tele-health, my health-e Vet, respite, hospice or home based primary care). Outcomes of the first 100 TC recipients were assessed and included mortality, site of residence, hospice use and referral to Home Based Primary Care. Follow up time ranged between 24 and 48 months.

RESULTS: At the time of review in October 2014, 47 TC enrollees are alive, 44 have died, and 9 are lost to follow-up. 37/47 (79%) dwell in the community, and of those 14 (30%) have Home Based Primary Care. Of those who died: 13/44 (30%) died in a hospital, 25% at home, 32% in a nursing home, 48% enrolled in hospice and 32% received care from HBPC. Hospitalization varied widely with a small number of TC patients having multiple hospitalizations prior to death. TC patients were at high risk for mortality, and almost a third chose hospice at the end of life. Most survivors continue to live in the community. We will share case examples highlighting stories of collaboration within the health system.
Conclusion: TC identified patients at high mortality risk. Most patients were able to stay in the community, and collaboration with hospice and HBPC was common.

A159 Development of an Interdisciplinary Memory Impairment/ Dementia Consult
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Background: Given the rising prevalence of dementia and multiple comorbid medical conditions among US veterans, accurate assessment and management of cognitive concerns is crucial. However, within our VA medical center, consults for memory issues have historically been directed to geriatrics, mental health, or neurology without clear guidelines to assist ordering providers in choosing the most appropriate specialist. As a result, veterans were often not seen by the appropriate specialty (i.e. significant mental health issues impacting their memory concerns directed to geriatrics instead of psychiatry) and had to make return appointments to better address their needs.

Methods: Recognizing the need to appropriately triage memory impairment/dementia consults, geriatrics, mental health, and neurology formed an interdisciplinary team to reform outpatient dementia care. Other key players including social work, PM&R brain injury, and occupational therapy were queried to determine how to most appropriately involve them in interdisciplinary dementia care.

Results: An “intelligent”, electronic consult order set was formulated which guides providers to refer veterans to the appropriate specialist. Initially, ordering providers are asked to identify their concerns: diagnostic assistance; management assistance; safety concerns; education and support; and other. Based on the concerns, they are directed to answer a series of questions regarding the patient’s past medical history and obtain basic diagnostics (labs, head CT versus MRI, etc.). Based on these results, the consult is routed to the most appropriate specialist(s) within an interdisciplinary dementia clinic.

A geriatrician, psychiatrist, and neurologist will review the requests in person.

Conclusion: Appropriate triage of memory impairment/dementia consults, geriatrics, mental health, and neurology formed an interdisciplinary team to reform outpatient dementia care. Other key players including social work, PM&R brain injury, and occupational therapy were queried to determine how to most appropriately involve them in interdisciplinary dementia care. A geriatrician, psychiatrist, and neurologist will review the requests in person.

Conclusion: Appropriate triage of memory impairment/dementia consults to the appropriate discipline through the use of a guided consult order set will ensure veterans receive optimal, timely care. Outcome measures including time to appointment, need for secondary referral, and satisfaction of the ordering provider will be assessed.

A160 Can We IMPROVE prescribing for Rural Geriatric Veterans? Barriers and Strategies to Clinical Translation
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Supported By: Supported by: VA Office of Rural Health

Background: Meeting the specialized needs of the rural geriatric Veteran population is challenging due to limited availability of specialty trained geriatricians and geriatric pharmacists. The Integrated Management and Polypharmacy Review of Vulnerable Elders (IMPROVE) concept has demonstrated feasibility, effectiveness and acceptability when implemented with a frail elderly population at an urban geriatrics clinic at the Atlanta VA. We present an approach to translation of this successful urban care model to the rural VA Community Based Outpatient Clinic (CBOC) setting.

Methods: We sought to obtain stakeholder buy-in, execute the project effectively, and sustain organizational changes over time by engaging rural providers and pharmacists as collaborators and active partners in the project. Prior to implementing the IMPROVE intervention in rural CBOCs, we conducted semi-structured interviews with 11 primary care providers (PCP) and 4 pharmacists to identify potential individual and system level barriers and facilitators to implementation of the program in rural clinics. Eleven providers also completed an online survey to determine level of comfort with geriatric topics.

Results: Recurrent themes among PCPs and pharmacists included lack of a structured approach to medication review, lack of familiarity with tools such as the Beers criteria, and limited time for medication reconciliation during routine appointments. Rural PCPs were hesitant to stop medications started by consultants, mental health providers, or non-VA providers. Providers felt least prepared to address sociobehavioral issues affecting older patients, such as end-of-life care and behavioral disturbance in dementia. Facilitators to translation included a clinical pharmacist on site in each VA clinic and the potential to enlist nursing and clerical staff in the medication reconciliation process.

Conclusions: Information obtained through pre-implementation collaboration and communication with rural PCPs and pharmacists facilitated the translation of the IMPROVE model to the rural CBOC setting, allowing specific focus on PCP and pharmacist education, empowerment, and tools to meet the unique needs of each clinic.

A161 POISe-Care: A Model of Patient-Centred Care in a Skilled Nursing Facility
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Supported By: This work was supported by grants from a Geriatric Academic Career Award (K01HP20517) through Health Resources and Services Administration.

Background/ Objectives: Several barriers (e.g. low staffing, inadequate staff-training and time constraints) impede provision of interdisciplinary and patient-centered care in skilled nursing facilities (SNFs). Physician and patient-engagement in care is critical for high quality. A team that included the SNF medical director, nurses, administrator, front-line staff and two patient representatives was assembled to design and implement a model that a) included providers and patients as active team members, incorporated tools for consistent care, and provided continuous feedback to the team on its performance.

Methods: The initiative was conducted at Westpark, the Center for Patient-Oriented and Team-based Rehabilitation— an 82-bed, urban SNF in Indianapolis. The team met regularly to design the model, discuss logistics, and devise tools and strategies for implementation and evaluation.

Results: "Patient-Oriented Interdisciplinary Sub-acute Care" (POISe-Care) model was designed with philosophy of "Patients as the CEO of their own health". To ensure involvement, the model offers patients and caregivers a flexibility of selecting the most suitable time for team-meeting that includes several SNF disciplines and the physician. Content of the meeting includes: 1) discussion of progress in context of top three patient-defined goals, 2) provision of functional, cognitive, medical and psychosocial updates to the patient, 3) review of patients’ satisfaction with care, their awareness of their diagnoses, and barriers and facilitators to effective discharge, and 4) documentation of action-plans and team members responsible to address them. Patient-level indictors including functional and cognitive scores and surveys provide the team an ongoing performance feedback. Facility-level progress is monitored by a dashboard that includes hospitalizations, medication errors, overall customer satisfaction, length of stay and proportion of successful discharges. An implementation
timeline and a checklist helped with successful implementation of the model.

**Conclusion:** A SNF-based team, with the help of patient representatives, designed and implemented POISe-Care that sees patients as the “CEOs” of their own health. A robust evaluation plan, incorporated in the model will help understand impact of this new model on patient-centered and healthcare utilization outcomes.

**A162**

**Impact of an Inpatient Geriatric Consultative Service on Outcomes for Cognitively Impaired Patients.**

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Supported By: This work was supported by grants from a Geriatric Academic Career Award (K01HP20517) through Health Resources and Services Administration; RO1AG034205, and K23-AG043476 from the National Institute on Aging; and the John A. Hartford Foundation Center for Excellence in Geriatric Medicine. The sponsors had no role in the study design, evaluation, or manuscript development.

**Background:** Impact of geriatric consultative services (GCS) on outcomes of hospitalized patients that are cognitively impaired (CI) is not known. The objective of our study was to evaluate the impact of a GCS on hospital readmission and mortality among CI inpatients.

**Methods:**


**Setting:** Study conducted at Eskenazi hospital, a 340-bed, public hospital with over 2,300 yearly admissions of 65 or older.

**Patients:** 415 inpatients aged 65 and older with CI were enrolled from July 2006 to March 2008.

**Measurements:** 30-day and one year mortality and hospital readmission following the index admission. Cox’s proportional hazard models were used to determine the association between receiving GCS, re-admission or mortality while adjusting for demographics, discharge destination, delirium, Charlson Comorbidity Index, and prior hospitalizations. The propensity score method was used to adjust for the non-random assignment of GCS.

**Results:** Patients receiving GCS were older (79; 8.1 SD vs 76; 7.8 SD; p<.001 with higher incidence of delirium (49% vs. 29%; p<.001)). No significant differences were found between the groups for hospital readmission (Hazard Ratio (HR)=1.19; 95% CI= 0.89, 1.59) and mortality at 12 months of index admission (HR=, 91 ; 95% CI= 0.59, 1.40). However, a significant increase in readmissions was observed for the GCS group (HR=1.75; 95% CI= 1.06-2.88) at 30 days post-discharge.

**Conclusion:** One year post-discharge outcomes of CI patients that received GCS were not different from patients who did not receive the service. New models of care are needed to improve post-discharge readmission and mortality among hospitalized patients with CI.

**A163**

**Impact of Mobile Acute Care for Elders Consultation at a VAMC**

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Supported By: VA T-21 NILTC

**Background:** Geriatric syndromes are often not identified or addressed during acute hospitalization. Thus, older hospitalized patients often experience geriatric complications that can lead to prolonged stays, increased hospital costs, increased risk of institutionalization, decreased quality of life, and increased morbidity.

**Objective:** Describe the impact of a mobile Acute Care for Elders (ACE) Consult Service on length of stay (LOS), costs of hospitalization, and 30-day readmissions at a VAMC.

**Methods:** Medical records of Veterans age 65 and older hospitalized on the Medicine Service at the Roudebush VAMC were screened for geriatric syndromes as soon as possible after admission. The ACE Team (geriatrician and nurse practitioner) then requested permission from the admitting team to conduct a comprehensive geriatric assessment; admitting teams were also encouraged to request consults as desired. ACE then collaborated closely with the admitting team, rehabilitation therapies, nursing, social work, and pharmacy to address geriatric issues in ways that were complimentary to the care of the acute illness and to the care goals of the Veteran. Eligible Veterans who did not receive ACE consultation served as the comparison group. Data on comorbidity, LOS, costs, and readmissions were pulled from VA databases.

**Results:** In two years, ACE conducted 540 consults on 461 unique veterans (mean age 82.5 years, range 65-97; 98% male). The comparison group consisted of 491 hospitalizations of 411 unique veterans (mean age 83.3 years, range 66-96; 98% male) who did not receive ACE consultation; reason for non-consult included decline of consent offer by admitting team or consult not being available due to ACE team being full. Care Assessment Need scores were the same between groups (mean 97.7, range 90-99). The table below summarizes data on mean LOS, costs, and 30-day readmissions of the two groups. Because of concern of possible selection bias, we also conducted a second analysis of the two groups after outliers (defined as any veteran having LOS > 10 days) were removed from both groups.

**Conclusion:** ACE Consultation is associated with reduction in length of stay and 30 day readmission while keeping cost similar to that of usual care.

**ACE vs Comparison LOS, Costs, Readmissions**

<table>
<thead>
<tr>
<th></th>
<th>LOS (days)</th>
<th>Hospitalization cost</th>
<th>% with 30-day readmit</th>
<th>Mean days to readmit</th>
<th># of outliers</th>
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<th>Cost w/o outliers</th>
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<td>ACE</td>
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<td>14.6</td>
<td>13.3</td>
<td>77%</td>
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**A164 Encore Presentation**

**Stepwise Approach to Securing Key Stakeholder Support for Inpatient Geriatric Models of Care**

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**Background:** Hospitals can be hazardous environments for older adults. An estimated 1 in 7 Medicare patients experiences an adverse event during a hospitalization. Studies have demonstrated that well-coordinated, person-centered care for older adults can be accomplished through geriatric care models. We outline the stepwise approach that the UAB Inpatient Geriatric Team utilized to secure expanding support for inpatient geriatric programs despite increasing financial constraints.

**Methods:** The UAB Inpatient Geriatric leadership team utilized components of the process outlined by ACE Unit founders for sustaining all inpatient programs. This implementation strategy, known as the “ABC’s of ACE Unit Implementation,” outlines the following stepwise approach for geriatric program development: 1) Agreement on the need by key stakeholders, 2) Build the program through interdisciplinary leadership support, 3) Commence the new program with ongoing monitoring, 4) Document every phase of program implementation, 5) Evaluate all processes and outcomes, and 6) Feedback to key stakeholders for ongoing support and direction.

**Results:** Prior to 2007 UAB Hospital did not have any inpatient geriatric programs. Using the ABC methodology our Inpatient Geriatric Team has maintained hospital leadership support for multiple new
programs. New clinical programs include a 26 bed ACE Unit and a Geriatric Consult Service that now averages >95 consults/month. New educational programs include the Geriatric Scholar Program started in 2009 and a new Scholar Program for non-licensed staff launched in 2014. These scholar programs have enrolled or graduated >160 non-physician providers and staff. New funded positions since 2008 include 0.2 FTE ACE Unit Medical Director, 1.0 FTE ACE Unit Coordinator, 2.0 FTE NICHE Coordinators, 2.0 FTE Nurse Practitioners and 2.0 FTE Geriatricians for consults, and 0.5 FTE Hospital Geriatric Quality Officer.

Conclusions: Following a step-wise approach can ensure hospital leadership support for geriatric programs even during financial constraints.

A165
A Care Planning Tool for Interdisciplinary Providers with Multimorbid Patients
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Supported By: The Hartford Foundation

Background: The American Geriatrics Society (AGS) issued Guiding Principles for the Care of Older Adults with Multimorbidity to assist clinicians in providing optimal care for multimorbid patients. Our objectives were to 1) develop a care planning tool based on these principles and 2) test the impact of the tool on achieving care goals as defined by AGS in the multimorbid patient.

Methods: We created a five-step, provider-led care planning intervention which was then implemented with 17 multimorbid older adults immediately following a comprehensive geriatric assessment. The impact of the intervention on patient understanding of key care goals was tested using pre- and post-intervention surveys. The survey assessed patient agreement with the following statements using a 5-point Likert scale: 1) I have a care plan that reflects my personal preferences, 2) I have a care plan based on scientific evidence, 3) I have been told how long people in my state of health usually live, 4) I know what steps I can take to really make my health plan happen, and 5) I know the most important next steps for my health. Change in item responses was assessed using a Wilcoxon Signed-Ranks Test.

Results: The scores for the statement “I have been told how long people in my state of health usually live,” were significantly higher post-intervention ($W(8) = 3, p \leq .05$). The scores for the statement “I know what steps I can take to really make my health plan happen,” were significantly higher post-intervention ($W(6) = 0, p \leq .05$). There was a trend towards improvement across all remaining statements, and patients ranked geriatricians highly overall.

Conclusions: The multimorbid patient care planning tool resulted in universally positive patient ratings of geriatricians in the achievement of key care goals, as defined by AGS, for older adults in a pilot sample. While geriatricians seem to be doing well overall in achieving these goals, significant improvement was made in areas of patient prognosis and clinical feasibility after intervention with a standardized tool. Our future research will focus on further developing the standardized care planning tool so that it can be more widely used across various practice settings and by non-geriatricians, and on testing this tool in a larger sample.

A166
The Integrated Community Care Team: An Innovative Care Model for Frail Seniors
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Supported By: Ontario Ministry of Health and Long-Term Care, BRIDGES, University of Toronto

BACKGROUND: Complex, frail seniors often receive fragmented care that contributes to high healthcare utilization and poor patient outcomes.

METHODS: The Integrated Community Care Team (ICCT) connects older adults who have difficulty accessing office-based care to an inter-organizational, inter-professional team consisting of primary, community and specialty care resources. The ICCT model tailors its services to the needs of primary care physicians through the options of consultation, shared care or transfer of care to ICCT. A mixed methods formative evaluation includes the following: data from the Resident Assessment Instrument-Home Care to describe the patient population; process measures to document service provision; the Dimensions of Teamwork Survey to evaluate inter-professional team function; and interviews with patients and their caregivers, primary care physicians and team members to document the implementation experience and satisfaction with care.

RESULTS: The team saw 361 patients from March 2013 to September 2014; 67% consultation, 23% shared care and 10% transfer of care. Mean patient characteristics were age 85.0, Cognitive Performance Scale 2.1, Depression Rating Scale 2.4, IADL 4.9 and ADL 1.7; 69% were female. We have interviewed 4 patients, 3 caregivers, 2 community physicians and 9 team members. Important lessons learned include: operational governance of inter-organizational models poses unique challenges that need to be addressed early; dedicated project management is crucial to timely, successful implementation of complex care models; timely role clarification for providers from different organizations is essential for team cohesiveness and efficiency; community primary care physician engagement is challenging and requires multimodal approaches; and the use of data from the evaluation to inform changes to the model is critical in establishing a workable model.

CONCLUSIONS: The ICCT is a novel model of care to meet the needs of complex, frail seniors in the community by supporting their primary care physicians. The model continues to evolve with the use of rapid quality improvement cycles informed by data from the formative evaluation.

A167
USE OF PHYSICIAN PARTNERS (P2) TO IMPROVE THE EFFICIENCY OF GERIATRICS VISITS
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Background: Improving the efficiency of office visits and associated work may improve patient and physician satisfaction, care quality, and reduce costs. Because older persons frequently have multiple chronic conditions and complex biopsychosocial problems, their visits often require more time.

Implementation of electronic medical records has been shown to further lengthen the visit or after hours work to document care.

Methods: The Physician Partners (P2) program pairs support staff with physicians to improve visit experience and efficiency for
A168 REDUCTION OF READMISSIONS AND LENGTH OF STAY WITH DAILY BEDSIDE INTERPROFESSIONAL ROUNDS DURING THE FIRST YEAR OF AN ACE UNIT

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Supported By: Cincinnati Next Steps in Physicians’ Training in Geriatrics, Donald W. Reynolds Foundation (JS funding)

“Geriatric Academic Career Award” Department of Health and Human Services, HRSA (JS funding).

Geriatric patients presenting with acute illness and chronic diseases often experience physical and mental decline during hospitalization. An acute care for the elderly (ACE) unit is designed to promote independence and prevent functional decline associated with hospital stays. Interdisciplinary team bedside rounds can be used as a tool to achieve higher quality care and safety.

Methods: The 10 bed ACE unit team functions as a consult service to admitting physicians. We target the frail, chronically ill, older adults. The interdisciplinary team is composed of a geriatrician, geriatric nurse practitioner (NP), social worker, and occupational and physical therapists. The NP is full-time, but the consulting ACE geriatricians are on the unit only 6 hrs/wk, making our ACE model cost overhead lower than usually described. Daily patient-centered team rounds are performed at the bedside to review the care plan, ensure safety, and address barriers to care. Average length of stay (LOS) and readmission rate are tracked and compared to the 2013 (prior to opening of ACE unit) hospital data on the inpatient population over age 70 on other medical wards as a control. The ACE first year of data will be presented. To better highlight two potentially heterogeneous groups, patients were divided according to discharge location (home vs. SNF). Results: LOS in the ACE unit for patients being discharged home (n=122) was 3.9 days compared to 4.4 days in this general hospital inpatient population (p=0.088). Similarly, LOS in the ACE unit for patients being discharged to SNF (n=118) was 5.2 days compared to 7.6 days in the general hospital inpatient population (p<.001). Reduced length of stay and readmission rate in patients discharged to home (9.2% vs. 12%) or to SNF (5.3% vs. 14.3%) are significantly lower than in the control group (p<.001).

Conclusions: The ACE unit focuses on preventing functional decline and early discharge planning during hospitalization, reducing length of stay and readmission rate. Interdisciplinary, checklist-driven, bedside safety rounds can prevent iatrogenic complications and enhance patient-centered communication, also potentially contributing to lowering LOS and readmission rate.
The majority of colorectal cancer patients are able to undergo curative surgery. In Memorial Sloan Kettering Cancer Center (MSKCC), there is an 18% 30-day post discharge readmission rate, which is known to be associated with poor overall survival. Currently, the Geriatrics Service does not follow discharged older colorectal cancer patients because of logistical issues (i.e. office space). We propose a new model of care by involving the Geriatrics Service in post-operative outpatient management through online videoconferencing. “SA-ICAN via WoW” could be a new model of care in which improved care coordination between surgeons, geriatricians and nurses may result in fewer readmissions.

Methods

The literature on models of collaboration between geriatricians and surgeons and interventions leading to improved postoperative outcomes of older patients with and without cancer was reviewed. In the SA-ICAN protocol, the Geriatric nurse does Symptom Assessment, Instructs patient to adhere to healthy behaviors and medications, Communicates with the geriatricians and surgeons about patient’s symptoms/concerns, Acts with recommendations from geriatricians and surgeons, and helps patient Navigate the healthcare system. SA-ICAN is delivered via wireless system (Without Wires; WoW).

Results

In order to implement the model, various challenges were faced: 1-Clinical: A-The nurse should be prepared for videoconferencing with the patients. Solution: Four pilot tests were done with the research study assistant playing a real patient role. B-Need for validated and streamlined symptom assessment checklist. Solution: Rotterdam Symptom Checklist was used and modified per nurse recommendation. C-Valid instructions for post-operative care. Solution: geriatric and colorectal nurses collaborated on developing the instructions. 2-Administrative: A-Secured videoconferencing system. Solution: we have used MSKCC secured videoconferencing system B-Teaching patients how to do videoconferencing. Solution: A simple instruction document has been developed by the team. 3-Providing access for those without internet and computer: secured tablets with internet connection have been prepared. Patients will be able to return the tablets via prepaid packages to the Institution.

Conclusion

SA-ICAN via WoW has the potential to provide healthcare for older patients with cancer without the need for real office space.

A171

Geriatrics Consults associated with improved mortality and disposition in hospitalized elders

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Supported By: No financial disclosures.

Background: Hospitalization places older adults at risk for developing typical geriatric syndromes such as functional decline, delirium, dementia and falls. Involving Geriatricians at admission by embedding the admitting service to make access more direct may help mitigate these syndromes resulting in improved outcomes. However, there is limited evidence that a geriatric consult service (GCS) alters outcomes.

Methods: Retrospective hospital electronic data from an integrated data repository was queried starting 1.7 years prior and 1.3 years following the start of a GCS. Outcomes included length of stay (LOS), in hospital mortality and discharge home. Patients receiving a consult were expected to have more severe conditions and complications making it impossible to have a direct comparison of patients with and without a consult. Therefore, outcomes were compared prior to and following starting the GCS overall, and restricted to the trauma and adult hospitalist medical (AHM) units where over 80% of patients who received a consult were admitted to in the hospital.

Results: Over 3 years, there were 21,615 patients 65+ years of age (74.8 ± 7.5 yrs, 51% female) treated at a level 1 trauma hospital. Patients who had a consult (N = 589) were older (78.1 ± 8.1 yrs), more likely to be female (56%) and had more severe illness as demonstrated with longer LOS (Consult: 10.1 vs. no consult: 5.3 days). Compared to prior years, the mean LOS reduced following the implementation of the GCS (6.1 ± 8.8 vs. 5.6 ± 7.2 days, p<0.01). However, there was no effect on the LOS (5.9 ± 6.0 vs. 6.2 ± 7.6 days, p=0.57) out of the 496 patients admitted to the trauma unit, among them 294 patients received a consult. Similar findings were noted in the AHM unit (5.2 ± 6.0 vs. 5.3 ± 5.7 days, p=0.43). In hospital mortality was reduced in the trauma (14.9 to 7.1%, p<0.01) and AHM units (13.4 to 5.7%, p<0.01). Additionally, more patients were discharged home in the AHM unit (48% to 52%, p=0.01), but not in the trauma unit (40 to 42%, p=0.35).

Conclusions: This retrospective study indicated a GCS could reduce LOS and in hospital mortality. These results suggest a prospective study is warranted to determine if implementing a GCS improves the outcome of hospitalized older adults.

A172

Connected Care Approach Reduced 30 Day All Cause Readmissions Rates among Three 5 Star Rated Skilled Nursing Facilities

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Introduction: 20% of hospitalized Medicare Beneficiaries were discharged to Skilled Nursing Facilities (SNFs) for post-acute care (PAC) in 2011.1 In 2014, the Office of Inspector General (OIG) reported that 33% of Medicare beneficiaries in SNFs experienced adverse events, and physician reviewers determined that 59% of these events were clearly or likely preventable.2,3 Cleveland Clinic started the Connected Care (CC) SNF program to ensure the quality of care in 2012. 7 SNFs near Cleveland Clinic have been active CC sites to improve the quality of PAC. We want to compare 30-day readmissions rates within a 5 star facility before and after implementation of the CC SNF Program.

Design/Methods: Retrospective cohort, Cleveland Clinic Main Campus patients who were discharged to 3 CC SNFs between 11/2013-4/2014 (N=214) and 11/2011-4/2012 (N=244). Data review. T-test and Chi-square test.

Results: 3 CC SNFs’ before and after CC program statistics were compared. Gender, dialysis status, length of stay of index hospitalization, number of scheduled medications on discharge, and MSDRG weight were not different. After joining CC, 3 SNFs had more African Americans (p=0.0053), an older population (p=0.0017), less elective admissions to acute care hospital (p=0.0274), less admissions within 1 year to prior index hospitalization (p=0.0357), more oncology service (p=0.0124), more medicine patients (p=0.0592) and less 30 day readmissions rates (p=0.0371).

Discussion/Conclusion: CC reduced 30 day all cause readmission rate in a 5 star facility (22.43% vs 29.41%, p=0.0371). In this study of 3 CMS 5 Star rated SNFs, 30 Day readmission was decreased after joining CC, without change in patients characteristics or acuity. Daily rounding of provider, higher nursing ratio and administration’s effort to deliver quality care may reduce 30-Day readmissions on tertiary academic center discharged patients to SNFs.

References


A173
Incorporating Patient-Centered Educational Interventions to Promote Advance Care Planning among Seriously Ill Elders
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Supported By: No financial disclosure to be made

Background: Early identification of advance care planning (ACP) preferences among older adults (OA) with advanced illness is critical to avoid the approximately 40% of all deaths which occur in acute care settings and 50% within intensive care units. The majority of OA do not have advanced directives and have never participated in advance care planning (ACP).

Objective: To evaluate ACP-focused clinical and education intervention to improve AD rates as demonstrated by future use of ADs during acute admissions, and compare its efficacy among older adults.

Methods: Intervention targeted OA’s with chronic illnesses at a tertiary VA hospital. Veterans and their families were seen by inter-professional teams while waiting for clinic appointments, using a case-based low-level literacy bilingual video to facilitate ACP discussion.

Results: N=249, 91±70 years vs. 158±70 years old with similar number of chronic diagnoses. 195 (78%) OA completed AD after intervention. OA completed AD in geriatric (32%), cardiology (29%), oncology clinics (17%), 79% subjects≥70 vs. 76% OA≥70 completed AD either medical power of attorney (MPOA) and/or living will (LW); P=NS. After prospective review of all subjects’ records, 59 AD completers were found to use their AD when hospitalized. 69% were used in the inpatient setting, 20% in surgery, 8% in the ICU and 2% in hospice. Of the AD used, 66% was used in subjects≥70 vs. 34% used in OA≥70. At admitted, 35% subjects≥70 changed code status during hospital stay from full code to DNR/DNI, while only 5% subjects<70 were less likely to change code status after admission to the hospital (p<0.005).

Conclusion: Patient-centered culturally sensitive educational interventions can improve ACP/AD completion rates, as demonstrated by high usage after completion, particularly in acute inpatient settings. AD completion also encouraged OA to clarify goals of care, causing a significant number to change code status. Educational interventions can promote AD usage in acute inpatient settings, where crisis and high healthcare expenses usually occur. Further prospective studies could look at impact on quality of life, cost-effectiveness and healthcare outcomes.

A174
Encore Presentation
Impact of a geriatric pharmacist conducted hospital discharge follow-up program
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Background
In 2011, at a tertiary care Veterans Affairs Medical Center, a pharmacist-run post-discharge medication review program was implemented for patients enrolled in the interdisciplinary geriatric clinic. The geriatric clinic pharmacist responsibilities included performing medication reconciliation, providing medication counseling, identifying medication related problems, and making recommendations. The purpose of this study was to assess the impact of the post-discharge follow-up performed by the geriatric clinic pharmacist.

Methods
This retrospective study was conducted between September 2011 and November 2013 and included geriatric clinic patients with a referral for the post-discharge medication program. Medication discrepancies identified by the geriatric clinic pharmacist along with the pharmacist’s recommendations were collected. A pharmacist panel reviewed the medication discrepancies and determined if the discrepancies were intentional or unintentional. Discrepancies classified as unintentional were defined as medication errors. The errors were classified by type and severity using the National Coordinating Counsel Medication Error and Prevention (NCC MERP) Index. The panel then reviewed the geriatric clinic pharmacist’s recommendations and classified the clinical outcomes of the recommendations.

Results
The geriatric pharmacist identified 147 medication discrepancies with 64% of the discrepancies categorized as medication errors. At least one error was identified by the pharmacist during 53 of the 91 (58.2%) patient visits, with an average of 0.55 medication errors identified per visit. Seventy-nine (84%) errors reached the patient but did not result in harm (NCC MERP Category C), 12 (12.8%) errors resulted in temporary patient harm (NCC MERP Category E), and 3 (3.2%) errors did not reach the patients (NCC MERP Category B). Seventy-three of the 99 recommendations were accepted by providers (73.7%). Of the accepted recommendations, 63 (86.3%) resulted in no change in clinical outcome, 7 (9.6%) improved outcomes, and 3 (4.1%) were unable to be evaluated.

Conclusion
The identification and management of medication errors in older adults was facilitated by a post-discharge geriatric clinic pharmacy program.

A175
Implementation of a New Model of Care of Geriatric Exercise in Four VA Medical Centers: Costs, Barriers and Promoters of Success
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Supported By: The Gerfit dissemination program was sponsored by the VA Office of Geriatrics and Extended Care Transformative 21st Non-Institutional Long Term Care Program and supported by participating VA Medical Centers and GRECCs.

Background
Reducing the need for institutional care is a priority in the Veterans Health Administration. Exercise specifically designed for older veterans is an area with few national initiatives, despite its potential for wide ranging positive outcomes. Gerfit is a veteran-centric outpatient exercise program based at Durham VA, which aims at reducing functional and mobility deficits. Published outcomes include improved gait, physical function, well-being, fitness, and survival. We piloted the dissemination of Gerfit as a new model of care and report costs, barriers and promoters of success.

Methods
Four of 13 facilities (Baltimore, Canandaigua, Los Angeles, and Miami VAMCs) met rapid implementation requirements. An initial site visit to Durham provided trained, followed by weekly telephonic implementation meetings throughout the year. Durham personnel visited each site within the first weeks of patient enrollment, and completed an interview to each site, modified from the Consolidation Framework for Implementation Research, to assess implementation costs, barriers and promoters of success.

Results
All sites successfully implemented the program. One-year implementation costs, $179,000/site, included costs for 1.5 providers of varied disciplines with backgrounds in exercise, $30,000 for equipment (non-recurring), and money for training, supplies, and
travel. Senior leadership supporting the programs donated effort. Administrative infrastructure such as purchasing equipment and personnel acquisition were the most challenging barriers, whereas readily available space and strong administrative support were promoters of success. Program sustainment varies by site and is heavily dependent upon administrative leadership support. A high level of functional impairment exists among enrollees who experience significant short-term improvements; long-term follow-up is needed to assess cost benefit.

Conclusions: Gerofit is a veteran-centric model of care which is empowering veterans to improve their health and well-being. Program implementation should be tailored to specific site infrastructure. This model of care meets primary strategic initiatives endorsed by VHA and should be considered for sustainment and additional expansion.

A176
Implementing a Team-Based Medication Management Model for Older Veterans: Translating Evidence into Clinical Practice
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Supported By: VA Office of Geriatrics and Extended Care

Background: Slow and uneven transfer of evidence into clinical practice is an ongoing and widely recognized problem. We describe innovative methods used to ensure acceptability and sustainability of Project IMPROVE (Integrated Management and Polypharmacy Review of Vulnerable Elders), an interdisciplinary team-based model of medication management ultimately shown to reduce harmful medication use in community-dwelling Veterans aged 85 and older.

Methods: Project IMPROVE employed principles of Participatory Action Research (PAR), a process that involves all stakeholders as experts and active partners in culture and system change, combined with evidence-based best practice models. We engaged patients, family caregivers, geriatricians and a clinical pharmacist as active collaborators in a medication management intervention implemented among older Veterans receiving care at the Atlanta VAMC. Pre- and post-pilot data reported here include qualitative findings from two focus groups (4 Veterans and 7 family caregivers) and 44 interviews with 11 providers (5 clinical pharmacists, 5 primary care physicians, and 1 nurse practitioner), 13 Veterans, and 15 family caregivers.

Results: A pre-intervention qualitative assessment was crucial to identifying and addressing several barriers that might have limited the success of the IMPROVE model, which has since been expanded to 4 rural Community-Based Outpatient Clinics (CBOCs) in Georgia and is currently being evaluated in these settings. Stakeholders’ misconceptions and conflicting opinions regarding the role of the clinical pharmacist were among key challenges identified and addressed prior to the intervention. Other barriers included healthcare providers’ lack of comfort addressing health literacy issues and high degrees of perceived self-efficacy among at-risk Veterans and their family caregivers. Post-pilot data showed high levels of satisfaction and acceptability with the intervention.

Conclusions: Findings suggest that PAR is a useful framework for identifying potential barriers to implementing team-based interventions that can empower stakeholders and improve ability to translate new care models into clinical practice.

A177
Diagnoses Associated with Death, Hospitalization and ER Visits: The Hospital at Home Program at the VA Pacific Islands Healthcare System
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Supported By: VA Pacific Islands Healthcare System; The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, University of Hawaii.

Background: The Hospital at Home (HaH) program was initially developed as an alternative approach to traditional acute inpatient care, especially for elderly patients at risk for iatrogenic illness and deconditioning in the hospital. We sought to identify diagnoses associated with the outcomes of death, hospitalization and ER visits.

Methods: We examined the HaH tracking database with 339 consecutive admissions to HaH between September 2010 and September 2014 at the VA Pacific Islands Healthcare System. Primary diagnoses included congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), pneumonia/bronchitis, skin and wound conditions, other infections and other diagnoses. Patients were followed for 90 days after HaH discharge for the outcomes of death, hospitalization and ER visits. We used multivariate logistic regression, adjusting for age and caregiver status to calculate the odds of each outcome by primary diagnosis categories.

Results: Of 339 admissions to HaH, the age range was 25-97 (mean=71.8 years) and 67.9% had at least one caregiver. The primary diagnosis was skin and wound conditions in 33.3%, CHF in 15.0%, pneumonia/bronchitis in 13.6%, COPD in 10.0%, other infections in 14.7%, and other diagnosis in 13.3%. We found the highest odds of mortality in those with a primary diagnosis of pneumonia/bronchitis (OR=2.5, 95%CI=1.1-5.5, p=0.02) and CHF (OR=2.1, 95%CI=0.9-4.6, p=0.05), compared to those with skin and wound conditions. We also found the highest odds of hospitalization in those with a primary diagnosis of COPD (OR=2.4, 95%CI=1.0-5.5, p=0.05) and other diagnoses (OR=2.3, 95%CI=1.0-4.8, p=0.04). There were no significant associations between diagnoses and ER visits.

Conclusions: We found that patients in the HaH program with pneumonia and CHF had the highest odds of mortality. Special attention may need to be paid to patients admitted to HaH with these diagnoses.

A178
Boost For The Frail Elderly: The Ideal Transitional Care Model In An Academic Unit In Singapore
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Background and objective: Singapore has one of the fastest aging population and it is well known that elderly are at high risk of readmissions and prolonged hospital stay. This in turn exposes them to hazards of hospitalization with an impact on quality of care and caregiver burden. Although there are many transitional care models, every country has different challenges and there is no one model that can be replicated elsewhere. A Geriatrician lead transitional care program called NUH to Home (NUH2H) was started at the National University Hospital (NUH) Singapore in March 2014 with the aim of enhancing safety, quality of care provided for frail elderly with eventual reduction of readmissions.

Methodology: A retrospective review of case notes of patients admitted under this program was conducted. Demographic, medical, functional, psychosocial data and types of medical interventions pro-
vided were collected. The outcomes measured were bed days and readmission rates before and after recruitment into the program.

Results: A total of 52 frail elderly patients were recruited into the program from March to June 2014. Mean age of patient was 85.2 years. 90% had Charlson’s Comorbidity Index > 5 and 85% had modified Barthel’s index of less than 60 indicating severe dependence. Average follow up for each patient under this program was 21.2 days. Each patient had an average of 2.5 home visits and 3.4 follow up phone calls by nursing staff. Common interventions included reinforcement of caregiver training, medication reconciliation and discontinuation of urinary catheters. More than half improved in their function and were followed up by Family Physicians or returned to the hospital for follow up. Readmission rates in these patients were reduced by 54.9% (p<0.001) and bed days used before and after enrolment dropped by 62.2% (p<0.001).

Conclusion: Transitional care targeted at high risk and vulnerable patients can lead to significant reduction in readmissions and for those readmitted under this program, reduction in overall length of stay. This model has definitively provided a boost for safe transition and overall quality of care for frail elderly.

A179
Physician Home Visits in Homebound
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Background: Physician home visits (HV) are an important model of care for the homebound. This is a descriptive pilot study of a physician HVs for the homebound older adults who have difficulties accessing healthcare services in Brunei.

Objective: To describe the complexity of homebound older adults.

Methods: Home healthcare nurses identified clients who required ambulance services to attend outpatient clinic for the physician HVs. Demographic and clinical data were collected prospectively from a standardized physician home visit notes from June 2009 to August 2012. Patients younger than 60 years old were excluded in this study. Statistical analysis was undertaken using Microsoft Excel and SPSS Version 16.0. Categorical data were presented as frequencies using percentages and continuous data as mean or median.

Results: There were 44 HVs made during the study period. Thirty-seven (84%) HVs were made to homebound older adults. Twenty-six (70%) were first time visits. Most patients were Malays race (86%), 51% were woman. Mean age was 78.6 ±7.6 years (Median 79 years). Each older adult had a median of 4 documented medical conditions, most suffered from cerebrovascular accident (65%) and hypertension (56%). They had a median of 6 medications. All were dependent on their ADLs and IADLs; 22 (59%) employed caregiver. Twenty-one (57%) patients were on artificial feeding, 13 using nasogastric tube and 8 had percutaneous endoscopic gastrostomy. These patients were mostly bedbound (84%), 18/36 (50%) have pressure ulcers. The physician reviewed and prescribed all medications, addressed an average of 5 care plans during each visit. The median duration of each visit was 40 minutes.

Discussion: Physician HVs is a supplanted but an essential healthcare for the homebound older adults. This pilot study described the complexity of homebound older adults, similar to nursing home residents, bedbound and dependent. They have multiple co-morbidities and psychosocial issues. The care of this cohort of older adults required an integrated care team approach similar to the Independence at Home Demonstration project. Even though HVs are time-consuming, this can be reduced with an efficient interdisciplinary team. We believe that physician HV model of care can provide high quality cost effective care to the homebound older adults.

A180
A New Model of Geriatric Primary Care: Iora Health

Supported By: None of the authors reported a potential, real, or perceived conflict of interest or financial disclosure. No sponsors participated in or funded this research.

Background: Comprehensive Geriatric Assessment predicts mortality and adverse outcomes in hospitalized older adults. T. J. Avelino-Silva, J. M. Farfel, J. A. Esper Curiati, J. R. das Gracas Amalar, F. Campora, W. Jacob-Filho. Geriatrics Division, University of Sao Paulo Medical School, Sao Paulo, SP, Brazil.

Supported By: None of the authors reported a potential, real, or perceived conflict of interest or financial disclosure. No sponsors participated in or funded this research.

Background: Comprehensive Geriatric Assessment (CGA) provides detailed information on clinical, functional and cognitive aspects of older patients. Although a large proportion of hospitalized older adults demonstrate high levels of clinical complexity and might benefit from such evaluations, CGA was not developed specifically for this setting. Our aim was to evaluate the application of a CGA model for the clinical characterization and prognostic prediction of hospitalized older adults.
Methods: Prospective cohort study including 746 patients aged 60 years and over who were admitted to a geriatric ward of a university hospital from 2009 to 2011, in Sao Paulo, Brazil. CGA was applied to evaluate all patients at admission. Primary outcome was in-hospital death, and secondary outcomes were delirium, nosocomial infections, functional decline and length of stay. Multivariate analysis was performed to assess independent factors associated with these outcomes, including socio-demographic, clinical, functional, cognitive, and laboratory variables. Impairment in ten CGA components was particularly investigated: polypharmacy, ADL dependency, IADL dependency, depression, dementia, delirium, urinary incontinence, falls, malnutrition, and poor social support.

Results: Patients were mostly women (67.4%), and mean age was 80.5 years. The following factors were independently associated with in-hospital death: IADL dependency (OR=4.0; p=0.005); ADL dependency (OR=2.4; p<0.001); malnutrition (OR=2.8; p<0.001); poor social support (OR=5.4; p<0.001); acute kidney injury (OR=3.1; p<0.001); and the presence of pressure ulcers (OR=2.3; p=0.041). ADL dependency was independently associated with delirium incidence and nosocomial infections (both with p<0.001). The number of impaired CGA components was also found to be associated with in-hospital death (p<0.001), delirium incidence (p<0.001) and nosocomial infections (p<0.005). Additionally, IADL dependency, malnutrition and history of falls predicted longer hospitalizations.

Conclusions: CGA identified patients at higher risk of in-hospital death and adverse outcomes, of which those with functional dependency, malnutrition and poor social support were foremost. The prognostic value of these factors suggests CGA may provide valuable information for therapeutic and resource utilization planning in this setting.

A182 Reliability and Validity of a New Behavioral Scale to Measure Behavioral and Psychological Symptoms in Dementias (BPSD): Luthra’s Behavioral Assessment and Intervention Response (LuBAIR) Scale

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Supported By: Seed money to the amount of $5000.00 was obtained from Regional Geriatric Program (central) (RGPC), Ontario, Canada. I would like thank Davis Jewell, Executive Director RGPC, for his support for the study. Funding to the amount of $3000.00 was obtained from the Community Division, Homewood Health Center. Balance of the funding for the study to the amount of $2000.00 was incurred by the author.

Background: There are twelve newly formed behavioral categories to classify behaviors in moderate to advanced dementia. These categories were used to develop a new behavioral assessment scale titled LuBAIR. The objective of this study is to establish the reliability and validity of LuBAIR Scale. It is hypothesized that the LuBAIR Scale will be less labor intensive, more comprehensive as well as offer improved categorization of behaviors into clinically meaningful categories.

Methods: Seven long term care Facilities in Ontario, Canada, were selected for the study. 120 residents with a diagnosis of dementia were recruited for the study. Sixty residents exhibiting BPSDs were included in the study group and sixty participants not displaying BPSDs in the control group. Pittsburgh Agitation Scale was used to screen for presence of BPSDs. Two registered nurses (RN) completed LuBAIR scale, BEHAVE-AD, and Cohen-Mansfield Agitation Inventory (CMAI) for each participant in the study group. This was done to establish inter-rater, Construct and Criteria Validity. Fourteen days later, the same RN completed LuBAIR Scale again for each participant for intra-rater reliability. A Clinical Utility Survey (CUS) was developed to evaluate the nurses’ viewpoints on the usefulness of LuBAIR on three variables: less labor intensive, more comprehensive and better categorization of behaviors in clinical meaningful categories.

Results: Intra-rater reliability was established for 8 of 12 and inter-rater reliability for 10 of 12 behavioral categories. LuBAIR Scale had comparable Construct and Criteria Validity. CUS findings showed 23% of nurses found LuBAIR less labor intensive, 77% found it more comprehensive and 98% agreed LuBAIR helps understand behaviors in clinically meaningful ways.

Conclusions: LuBAIR Scale has acceptable inter- and intra-rater reliability and Construct and Criteria Validity. It is more comprehensive and is better at categorizing behaviors in clinically meaningful categories.

A183 Clinical characteristics of late onset myasthenia gravis different from early onset myasthenia gravis in Korea


Supported By: We have no relevant financial or non-financial relationships to disclose.

Background & Objectives: Myasthenia gravis (MG) is an autoimmune disorder caused by autoantibody targeted to several structures of neuromuscular junction. In past, MG is considered as a disorder that predominantly occurs in young age, but as the knowledge accumulates, concern about late onset MG has increased gradually. We aimed to evaluate clinical characteristics and differences of late onset MG compared with those of early onset MG in Korean population.

Method: The study was a multi-center, retrospective study. Medical records of MG patients diagnosed between 2006 and 2010 were reviewed. Basic demographics, medical history, laboratory and imaging results of the patients were collected. The late onset MG was defined as onset after the age above 65. Independent-t test was used for comparing continuous variables and chi-square test was used for the categorical variables.

Results: Medical records of total 107 patients were reviewed. The number of late onset MG patient was 14, 13.1% of total reviewed patients. In late onset group, mean age was 78.93±4.86 years, mean age of MG onset was 72.5±4.70 years and 64.3% was female. Anti-acetylcholine receptor (anti-aChR) antibody were positive in 92.9% of late onset group, mean value of 7.6±4.42 nmol/L. Repetitive nerve stimulation test (RNST) showed significant decremental response (>10%) in 69.2% of late onset group. Thymic abnormality in chest CT was found in 14.3% of late onset group. At the point of onset, ocular MG was more frequent than generalized MG and no secondary generalization was found in late onset group. Thymic crisis and remission were observed in 42.9% of late onset group, respectively. Thymic abnormality in chest CT (late vs early: 14.3% vs 46.2%, p=0.024) and anti-aChR antibody titer (late vs early: 7.6±4.43 vs 6.67±6.19, p=0.025) were significantly different from those of early onset group. Conclusion: Late onset MG in Korean has different clinical characteristics compared with early onset MG. The comprehension about these differences would be crucial for adequate treatment of late onset MG patients.
Differential impact of disease pre-progression versus progression rates on one-year caregiver burden in Alzheimer’s dementia (AD)


Methods: We prospectively studied 101 family caregivers of predominantly Chinese ethnicity in mild-moderate AD. Rapid pre-progressors were defined by the upper percentile of Clinical Dementia Rating-Sum of Boxes (CDR-SB) score divided by duration of symptoms at presentation. Fast progressors were defined by a decline of CDR-SB score of ≥ 2 points during one-year follow-up. The four-factor ZBI comprised role strain (demands), role strain (control), personal strain and worry about performance (WaP). We compared baseline ZBI scores between non-rapid (n=81) and rapid (n=20) pre-progressors. We conducted 2-way ANCOVA to determine the relative impact of pre-progression and progression rate on 12-month ZBI total and factor scores, adjusted for baseline ZBI, Chinese Mini-Mental State examination, instrumental activities of daily living, and Neuropsychiatric Inventory Questionnaire scores.

Results:
94 (93%) completed one-year follow-up, comprising 74 slow and 20 fast progressors. There was an increase in total ZBI score at 12-month compared with baseline (Difference: 1.13±11.84, p=.36). At baseline, rapid pre-progressors had higher total ZBI scores (32.05±17.17 vs 23.77±13.55, p=.02) as well as personal strain and WaP (both p<.05) than non-rapid pre-progressors. At 12-months, fast progressors had higher total ZBI (40.10±14.91 vs 23.42±14.24, p<.01) than slow progressors. In 2-way ANCOVA, one-year progression but not pre-progression rates predicted 12-month total ZBI scores (adjusted p=.005 vs .913), with no interaction between the two terms. Among the four factor scores, fast progressors significantly predicted role strain (demands) and WaP, but not the other two factors.

Conclusion:
This is the first study to report the differential impact of disease progression as an independent risk factor for evolution of caregiver burden and its specific dimensions. Pre-progression rate impacts baseline but not 12-month ZBI. In contrast, observed fast progression affects 12-month total ZBI and specific domain scores.

Aging Kidney: How should we estimate renal function?

A. P. Sankar

line but not 12-month ZBI. In contrast, observed fast progression affects 12-month total ZBI and specific domain scores. Results: Data showed that renal function estimations differed significantly when using Cockcroft-Gault formula versus MDRD and CKD-EPI equations. Cockcroft-Gault estimated Creatinine Clearance was substantially lower than estimations of GFR using MDRD and CKD-EPI equations. This was more evident in 80 year old group and less so in the 90 year olds. Difference between the 2 different methods of eGFR however, was more pronounced in comparing the 70 year old versus the 90 year olds.

Discussion: All formulas calculating renal function are influenced by age. Cockcroft-Gault is biased by body weight while MDRD and CKD-EPI formulas are biased by GFR. It is important to get an accurate estimation of renal to aid drug dosing and reduce drug toxicities in the elderly population.

Insulinoma- A rare cause of dizzy spells in an elderly female


Introduction
Insulinoma is a rare entity occurring in around four cases per million per year. It is an unusual diagnosis in the elderly population as the median age of presentation is 50 yrs. We present a case of Insulinoma diagnosed after a patient was admitted for work up of dizziness and fall.

Case Presentation
A 90 year old African American female with Alzheimer’s Dementia and Raynaud’s disease presented to the hospital with a Fall. Patient was dancing at a party when she felt unsteady and fell backwards hitting her head. There was no loss of consciousness, no history of pro-dromal symptoms or seizure like activity. Patient had been experiencing generalized weakness with decreased oral intake over the years. As per PCP patient has had dizziness for years and was being treated as Vertigo. Exam was remarkable for a frail elderly female with a small bruise over right forehead. MMSE was 18. Labs showed a creatinine of 1.09 mg/dl and BUN of 22 mg/dl with serum glucose of 83 mg/dl. CT head was negative for a bleed. The hospital stay was complicated by another episode of near syncope while brushing her teeth. She was hypoglycemic next day with glucose of 49. Her blood glucose was persistently low and she was started on dextrose 5 percent with normal saline drip. She was later switched to a dextrose 10 percent drip. Her morning cortisol level was 19.72 ug/dl. Her TSH was 6.29 mIU/ml with free thyroxine level of 10.2 ng/dl. Endocrinology was consulted and the initial thought was patient had hypoglycemia secondary to low glycogen stores. Insulin level sent during hypoglycemic episodes while she was on D10 drip was 20.8 uIU/ml with a corresponding finger stick level of 84. C peptide was 2.2 ng/ml. Proinsulin level was 26 pmol/l. She had a CT abdomen and pelvis with IV contrast which showed mildly atrophic pancreas with two areas of focal enhancement in the pancreatic head and junction of pancreatic body and tail concerning for Insulinoma. Family opted conservative treatment and she was started on Octreotide 50 mcg q 8h SQ. Blood glucose levels were stable. She was switched to Diazoxide 3mg/kg/day upon discharge.
Discussion
Insulinoma is a rare diagnosis in a patient with chronic dizziness. Our case reflects the importance of checking glucose levels at frequent intervals in elderly patients who present with dizziness and falls.

A187
The prevalence and risk factors of osteopenia in Thai elderly women.
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BACKGROUND: Osteoporosis is one of the common conditions in the elderly which lead to numerous clinical and health related consequences. Decreased bone density associated with the disorder, which is a major risk factor for fracture. In Thailand, the prevalence of osteoporosis is increasing. However, there has been no study on the prevalence and risk factors of early stage of this disease, osteopenia.

OBJECTIVES: This study aims to estimate the prevalence and risk factors of osteopenia in the elderly women attending Geriatric Clinic, Bangkok Medical Center during January to June 2013.

METHODS: In this retrospective study, we reviewed medical records of all the elderly female women who visited the clinic and underwent BMD (Bone mineral density) measurement. The baseline characteristics included personal history, medications and laboratory tests. The BMD was measured by Dual-energy X-ray Absorptiometry at the hip and lumbar spine.

RESULTS: Of 116 patients included, the prevalence of osteopenia and osteoporosis were 50.9% and 12.9%, respectively. The prevalence of osteoporosis at hip was 44.3%, compared with 38.8% at lumbar spine region. Obese patients (69% vs. 36.1% in normal BMD and abnormal BMD groups respectively; p = 0.003) was associated with a lower risk of abnormal BMD (t-score < -1 S.D.). In logistic regression analysis, the protective factors of abnormal BMD were obese-group BMI (BMI ≥ 30), (OR 0.16; 95% CI 0.05 – 0.47; p = 0.001). Subgroup analysis of abnormal BMD at hip showed that the significant risk factor was advanced age (≥ 65 years) (OR 2.25; 95% CI 1.07 – 4.74; p = 0.033) while obese-group BMI was the protective factor (OR 0.22; 95% CI 0.09 – 0.55; p = 0.001). Subgroup analysis of abnormal BMD at spine showed that advanced age was also the significant risk factor (OR 2.32; 95% CI 1.1 – 4.87; p = 0.027).

CONCLUSIONS: The prevalence of osteopenosis and osteoporosis are high in the elderly women attending Geriatric Clinic. Obese group has the benefit over the bone mass density and the major risk factor for low bone density is advanced age. Early screening and detection of low bone density will promote development and testing of medical interventions focusing on at-risk adults and will bolster effective osteoporosis preventive behaviors.

A188
Atypical Hypertrophic Pulmonary Osteoarthropathy (HPO) with Abnormal Antinuclear Antibodies (ANA) & C reactive protein (CRP)
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Introduction: HPO, is defined by the presence of clubbing & periosteal proliferation of the tubular bones, polyarticular or oligoarticular manifestation associated with lung cancer (CA) in 80% of the cases or other intrathoracic malignancies. HPO presents clinically as symmetrical painful arthropathy that usually involves ankles, knees, wrists and elbows. The metacarpal, metatarsal & phalangeal bones may be involved.

A radiograph of the long bones shows periosteal new bone formation. Symptoms (Sx) may resolve after tumor resection. For non-surgical candidate, the treatment (Tx) is with nonsteroidal anti-inflammatory drugs (NSAIDs) or bisphosphonates.

Literatures show, 0.2%-17% of patients with lung CA develop HPO, ANA & CPR levels were associated with an increased risk of lung CA.

Clinical Case: 66 year-old male, no past medical history, former smoker, complained of progressively severe pain & swelling in elbows, knees & ankles for 3 months. On physical examination, there was bilateral swelling & pain on palpation of knees & ankles with synovitis. No digital clubbing, pulmonary Sx or skin changes. ANA was positive, CRP was elevated. Tx with high-dose steroids for 6 weeks failed but Sx improved with NSAIDs & physical therapy. X-rays of knees and ankles showed degenerative changes. Patient was referred to a rheumatologist, was started empirically on Methotrexate. A PET/CT scan showed a 1.8 cm right pulmonary nodule. Biopsy showed moderately differentiated lung adenocarcinoma. Patient had right pneumonectomy & adjuvant chemotherapy. His clinical condition after surgical Tx resolved completely.

Discussion: We are presenting an atypical case of HPO secondary to adenocarcinoma of the lung, characterized by the presence of positive ANA, elevated CRP, normal alkaline phosphate; no pulmonary or constitutional Sx, radiological studies with no bone changes of the disease.

The sudden onset of Sx, rapid disease progression & total resolution of patient’s Sx after CA treatment, demonstrates a relationship between the malignancy & the clinical case, which reinforces the diagnosis of paraneoplastic syndrome.

Considering the detrimental consequences when delaying this diagnosis, we must be more aggressive investigating underlying malignancies when the clinical picture suggests HPO.
months after the patient presented, he was asymptomatic without any neurological deficits.

DISCUSSION: The patient described in this case had a demonstrated PV vegetation with a PFO and a bicuspid AV. The etiology of the brain abscess might be related to the pulmonary valve vegetation and the PFO or a vegetation on the bicuspid AV that emboziled before the TEE was done. This case highlights the need for an MRI when a head CT is negative and also the contribution of a bubble study in the evaluation of someone with a brain abscess.

A190 Encore Presentation
Patient-Reported Tolerability of a Low-Volume Sodium Picosulfate/Magnesium Citrate Bowel Preparation in Patients Aged 65 Years or Older
G. Bertiger, A. Ullman Karp, R. Willey, M. Barocas. Supported By: This study was supported by funding from Ferring Pharmaceuticals Inc., Parsippany, NJ. Editorial support was provided by The Curry Rockefeller Group, LLC, Tarrytown, NY, and was funded by Ferring Pharmaceuticals Inc.

Background: Colonoscopy is an important diagnostic procedure for colorectal cancer screening and surveillance. Adequate cleansing and a positive bowel preparation experience are critical to maintain adenoma detection rates and promote patient adherence to screening recommendations. Elderly patients may experience difficulty with bowel preparation due to the large volume of solution required. We assessed the tolerability of sodium picosulfate and magnesium citrate (P/MC), a nonphosphate, low-volume, dual-action bowel preparation in patients aged ≥65 years using data from 2 previous phase 3, randomized, multicenter studies.

Methods: Two previously conducted studies investigated the efficacy, safety, and tolerability of split-dose or day-before administration of P/MC compared with conventional day-before dosing of 2L polyethylene glycol-3350 solution and two 5-mg bisacodyl tablets (2L PEG+bis). Both studies included men and women aged 18 to 80 years with ≥3 spontaneous bowel movements per week for 1 month before their scheduled colonoscopy. This post hoc analysis evaluated the tolerability of P/MC and 2L PEG+bis in patients aged ≥65 years. The tolerability of bowel preparation was assessed via a standardized questionnaire administered to patients on the day of colonoscopy, prior to receiving any sedation.

Results: A total of 112 patients aged ≥65 years were included in the P/MC treatment groups. In patients aged ≥65 years, a greater proportion in the split-dose P/MC group (86% vs 31%; P=0.0001) or day-before P/MC group (90% vs 38%; P=0.0001) rated their bowel preparation as “very easy”/“easy” to consume, compared with 2L PEG+bis patients. A greater number of patients aged ≥65 years in the P/MC group were able to consume the entire preparation, compared to 2L PEG+bis patients in the day-before study (98% vs 87%; P=0.03). The majority (≥80%) of P/MC patients aged ≥65 years rated the taste and overall experience as “excellent”/“good”, and nearly all (≥95%) indicated they would request the same preparation in the future. In comparison, less than 35% of 2L PEG+bis patients reported the taste of their bowel preparation as “excellent”/“good” and significantly fewer patients (≥65%) indicated they would request 2L PEG+bis in the future, compared to P/MC (P<0.0001).

Conclusions: Compared to 2L PEG+bis, P/MC was better tolerated in patients ≥65 years old.

A191
Physician Perspectives and Behaviors towards Oral Anticoagulants (OAC) in Older Adults with Atrial Fibrillation (AF)
A. Turkistani, L. D. Sinvani, R. Zeltser, A. N. Makaryus, M. Pisano, J. Beizer, A. Turkistani, K. Kwaschyn, C. Nouryan, G. Wolf-Klein. Supported By: This was an unfunded project.

Background
Though OAC are advised for AF patients over 75, only 30% are treated. The 2014 AHA/ACC/HRS guidelines recommend further investigation for new OAC “particularly in the elderly.” We investigated physician OAC practices in older AF patients.

Methods
An anonymous cross-sectional survey collected in 5 hospitals on physician OAC prescribing behaviors and patient OAC refusal. Associations between the OAC outcome variable and demographics were explored using Fisher’s exact test. Spearman correlations examined relationships between key variables and physician’s decision to initiate OAC.

Results
Of 103 respondents, 66% were internists or family medicine, with a median 2.5 years of practice (range: 1-35), mostly inpatient (70%); 65% reported an average patient age of ≥65, and >20% AF patients ≥75 had <40% of AF older patients on OAC and 69% initiated OAC in ≥20 years. With regard to OAC preferences, 62% chose Warfarin, 13% Rivaroxaban, 11% ASA, and 6% Dabigatran. Physicians were more likely to discontinue OAC for patients >85 compared to those >75 (65% vs 58%). Scores used for OAC decisions were CHADS2, 90%, CHA2DS2-VASc 71%, HAS-BLED 33%, and HEMORRH2(2)HAGES 6%. Patients most often refuse Warfarin (50%), due to concerns about: bleeding 80%, monitoring 62%, falls 50%, and costs 8%. Factors influencing OAC and new OAC prescribing were: GI bleed (86% & 73% respectively), intracranial bleed (82%, 73%), falls (76%, 64%), low BMI (73%, 20%), adherence (70%, 50%), age (55%, 58%), costs (22%, 62%), renal impairment (28%, 60%), and lack of reverse agent (19%, 55%). There was a significant positive correlation between years in practice and OAC initiation in AF patients >75 (r=0.25, p<0.01), whereas the greater the percent of elderly AF patients treated, the more likely physicians were to discontinue OAC, particularly in patients >85 (r=0.24, p=0.02).

Conclusion
This study demonstrates that physicians still select Warfarin as primary OAC, and are more likely to discontinue OAC in patients >85, though their decision process seems to be driven by fear of complications such as bleed and falls, rather than by patient age. Since experienced physicians appear more likely to appropriately initiate OAC, we believe that continued medical education of OAC risks and benefits need to be enforced.

A192
Trends in Hypertension Management in a Long Term Care Facility: Effects of the Eighth Joint National Committee (JNC8) 2014 Evidence-Based Guidelines
F. Mahmoud, A. Mirk. Supported By: This was an unfunded project.

Background
Persons living in long term care (LTC) facilities are not well represented in randomized trials that have shown benefit from treatment of hypertension. Our objective was to look at trends in hypertension management in LTC residents to determine if evidence-based guidelines for the management of hypertension released by JNC8 in February 2014 altered practice patterns in our LTC facil-
ity. These guidelines reduced the goal systolic blood pressure (SBP) for persons aged 60 and over from 140 to 150 mm Hg. For adults with chronic kidney disease (CKD) and Diabetes, goals are <140/90 mm Hg.

Methods: Retrospective chart review was conducted for all LTC residents residing for at least 13 months at a single VA Community Living Center with a diagnosis of hypertension. A 60 day period between 1 September and 31 October 2013 was compared with a 60 day period between 1 September and 31 October 2014 to determine systolic and diastolic blood pressure (BP) means and percent of time BP was above goal based on JNC7 or JNCS8 guidelines. Number and class of antihypertensive medications prescribed were calculated. Co-morbidity diagnoses including CKD and diabetes were determined for each resident.

Results: 28 residents met inclusion criteria. 27 of the 28 residents had a dx of diabetes, CKD or age <60 and 24 of these 27 were at goal of BP <140/90 over 75% of the time in the 2014 sample. Only one resident was aged >60 without diabetes or CKD and they had BP <150/90 over 75% of the time. Overall, 25 (89%) residents were at goal BP per JNCS8 guidelines in 2014 versus 21 (75%) residents per JNC7 guidelines in 2013. In 8 residents either number or dose of BP medications was decreased from 2013 to 2014. In 3 patients number of medication or dose was increased. 10 patients (35%) had SBP <120 mmHg over 75% of the time in 2014.

Conclusions: Overall BP control in our LTC facility was in line with JNCS8 guidelines. Episodes of hypotension and syncope were factors limiting BP control in residents who were not at goal. While JNCS8 does not suggest reducing medications in asymptomatic patients who are lower than goal BP, there may be room for medication reduction in a cohort of residents with SBP consistently <120. This would be in line with polypharmacy reduction and avoidance of hypotension in this frail population.

A193 Encore Presentation
Assessing rates of tobacco cessation within a multimodal group intervention in a Veterans Affairs Medical Center
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Supported By: All authors have nothing to disclose

Introduction: The acquisition and maintenance of nicotine-taking behavior, paired with the inevitable withdrawal symptoms upon cessation of nicotine intake are what make cessation so difficult; often requiring many attempts before a patient is successful. Person-to-person treatment delivered for four or more sessions appears especially effective in increasing abstinence rates. Additionally, the combination of medication and counseling are more effective at increasing cessation compared to either alone.

Methods: A retrospective chart review was conducted using a VA database to assess rates of tobacco cessation in a four-session multimodal group (counseling plus medication). Rates of cessation were assessed both in relation to the number of group visits completed and what medication(s) the patient was prescribed. Logistic regression was used to assess the association between variables and tobacco cessation. Mann-Whitney U test was used to assess differences in median time to cessation.

Results: One hundred and sixteen patients were evaluated with an average age of 57.6 years. The majority of patients were male and 94% smoked cigarettes. Of the patients who completed all four visits, a statistically significant difference was found where 53.7% quit tobacco compared to 17.7% who did not (p=0.001). Of the patients who were on combination therapy with the nicotine patch and bupropion SR, 44.8% quit using tobacco compared to 20.4% of patients who were not on the combination therapy (p=0.01).

Conclusion: Completing all four group visits and using the combination therapy of the nicotine patch and bupropion SR were both independently associated with increased rates of tobacco cessation.

A194 A Patient Centered Approach to Cancer Screening In Older Adults

Background: Recently, the ABIM joined forces with the AGS and the CPMC to develop guidelines for high value care for the elderly with the “Choosing Wisely” initiative, focusing on personalized cancer medicine. The objective of this study was to examine associations between acceptance of screening recommendations for colorectal cancer, breast cancer and prostate cancer, and personal cancer history, family history, physician recommendations and age.

Methods: This was a cross-sectional survey of non-demented adult community residents and sub-acute residents about choices for accepting cancer screening procedures, namely colonoscopy, mammography and PSA testing, in four NY academic sites. Preferences for screening were compared between groups of interest, using the Mann-Whitney test. Association between outcomes of interest, patient age and satisfaction with physician recommendations were examined using the Spearman correlation.

Results: There were 107 respondents, mean age 63, 67% female, 59% White, 19% Hispanic/Latino, 13% African American, 5% Asian. 55% had a high school diploma/some college, 25% bachelor’s degree, 12% graduate degree. Respondents rated their health as excellent (11%) good (52%) neutral (11%) fair (18%) poor (8%) and most reported driving a car (72%). Most (74%) were independent walkers (cane 15%, walker 8%, wheelchair 4%). Many reported never being screened for colon cancer (38%), breast cancer (14%) and prostate cancer (52%). Respondents who had friends with a history of colon cancer (34%) (P=0.0123), friends and family with a history of breast cancer (25% and 46%, respectively) (P=0.0266, P=0.0045, respectively) were more likely to have positive personal views of the usefulness of screening. There were significant positive correlations between satisfaction with physician recommendation and acceptance of screening: colonoscopy: (p=0.281, P=0.0106), mammography (p=0.358, P=0.0058), and prostate cancer (p=0.655, P<0.0005).

Conclusions: This study highlights older adults’ willingness to accept screening when their family or friends have a history of cancer, and when they feel comfortable with their physician’s recommendations for testing. Physicians should integrate these considerations into their approach to cancer screening with their older patients.

A195 Exercise Prescription Awareness and Use by Providers and Patients in an Outpatient Setting
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Objective: To determine physicians’ knowledge and use of exercise prescriptions for the management of obesity before and after an educational intervention and their frequency of charging for this service; To determine patients’ awareness and use of educational prescriptions after an educational intervention targeting physicians

Background: Although obesity is an epidemic, only 47% of primary care physicians use exercise prescriptions for obesity management. Only 13% of patients report physicians giving advice about exercise. We sought to determine the effect of an educational interven-
tion in a primary care teaching program on physicians’ and patients’ knowledge and use of exercise prescriptions.

Methodology:
Study Design- Pre and Post intervention survey of physicians and patients
Setting - A Family Medicine Residency Program in the southeastern U.S
Study Population- Faculty, Residents and Patients in the outpatient setting

Intervention- A one hour lecture on obesity epidemic, management of obesity and use of the FITT PRO exercise prevention approach for managing obesity and the provision of pre-printed exercise prescriptions that could be individualized for patients in the clinic.

Statistical Analysis-Frequency distributions and means (SD) to describe participants and Chi Square to assess changes in knowledge and use of exercise prescriptions post-intervention. SPSS used for data analysis.

Results:
Patients demonstrated a significant increase in post-intervention [p value <0.01] in knowledge of their BMI, and receipt of exercise prescriptions. Physicians knowledge and use of exercise prescriptions, counseling patients about exercise, and use of ICD9 codes for exercise counseling significantly increased [p value <0.01].

Conclusions:
A brief educational intervention on obesity management, and the use of exercise prescriptions increased physicians’ and patients’ knowledge and use of exercise prescriptions for obesity. The results demonstrated that such an intervention can effect change in obesity management in a primary care setting and potentially improve revenue by increased billing for the service. Next steps will be to determine the effect of using exercise prescriptions on the management of obesity.

A196
Benefit of Annual Wellness Visits in Internal Medicine vs. Geriatric Clinics
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Supported By: This research was supported by HRSA Grant # K01HP20458.

Background: With the passage of the Affordable Care Act in 2010, Medicare began covering Annual Wellness Visits (AWV’s). These visits are intended to focus on a review of the patient’s health risks through completion of a Health Risk Assessment (HRA), and to optimize use of preventive services through creation of a Personalized Prevention Plan for each patient. Many components of the HRA are similar to those completed during a comprehensive geriatric assessment, such as screening for cognitive impairment, depression, and functional status. We therefore postulated that AWV’s would prove most beneficial in identifying new health concerns to providers in our institution’s internal medicine (IM) clinic, as we expected most patients in our geriatric clinic would have already been screened for common geriatric syndromes.

Methods: In this retrospective chart review, we evaluated the records of 44 AWV’s conducted in August 2014 for established patients in our geriatrics and IM clinics to determine the following: number of health risks identified by the AWV HRA, number of new orders placed as a result of the AWV, and how many of these health risks had been previously addressed by the provider. We then compared results from the two clinics to determine if there was a significant difference with regard to assessment for geriatric syndromes and other services that are a part of the AWV.

Results: Patients seen in our geriatric and IM clinics had similar numbers of health risks identified by their AWV HRA, an average of 5.95 health risks in the IM clinic patients vs. 5.59 health risks in the geriatric clinic patients (p=0.67). More of the patients seen in the geriatric clinic had been previously assessed for geriatric syndromes and/or screened for depression and completion of advanced care directives, with an average of 3.91 previous assessments/screens per patient vs. 1.68 previous assessments/screens per patient in the IM clinic patients (p<0.001). There was no statistically significant difference in the number of new orders written as a result of the AWV between the two groups.

Conclusions: Based on our results, AWV’s may prove most beneficial to those patients followed by internists or other general practitioners, given that AWV’s conducted in this setting more often identified common geriatric syndromes previously not addressed by the provider. More research is needed to determine if AWV’s improve health outcomes for patients.
A198
Physical Activity Predicts Improved Function in Elders: The Osteoarthritis Initiative
J. A. Batis,1 C. M. Germain,2 E. Vasquez,3 A. J. Zbehlik,1 S. J. Bartels,1 1. Medicine, Geisel School of Medicine at Dartmouth, Lebanon, NH; 2. Duke University Medical Center, Durham, NC; 3. Epidemiology, SUNY Albany, Rensselaer, NY.
Supported By: Supported by the Department of Medicine and the Dartmouth Centers for Health & Aging

Background: Physical activity reduces the incidence of mobility impairments in older adults. We examined the impact of high levels of physical activity on risk of subjective and objective function in adults at risk for osteoarthritis.

Methods: Adults aged ≥60 years from the longitudinal Osteoarthritis Initiative Study were classified by sex-specific quartiles of Physical Activity Score for the Elderly (PASE) scores (lowest<25%=reference). Using linear mixed models, we assessed 6-year data on self-reported health after adjusting for age, education, race, predefined cohort type, Charlson score, osteoarthritis status, and smoking status. Late-Life Disability and Function Index (LLDI) was only available at 6-year follow-up.

Results: Of 2,252 subjects, age ranged from 66-70 years. Physical component score (PCS) of the Short Form-12 decreased from baseline to follow-up in both sexes within each tertile (all P<0.001). While self-reported health changed with time, the rates of change between PASE quartiles over time (time x PASE interaction) were no different in any of our outcome variables in either sex. LLDI scores at 6-years were not different in both sex by PASE score at baseline. See Table for details.

Conclusion: Higher physical activity is associated with maintained function. The importance of identifying and encouraging physical activity in those at risk for functional decline is of utmost importance.

Multivariable Regression Analysis of Primary Outcome Measures (n=2,210)

<table>
<thead>
<tr>
<th>Intercept</th>
<th>SF-12 PCS</th>
<th>MALES I.1.01 Frequency</th>
<th>MALES I.1.01 Limitations</th>
<th>SF-12 PCS</th>
<th>MALES I.1.01 Frequency</th>
<th>MALES I.1.01 Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low PASE</td>
<td>-0.90</td>
<td>0.35</td>
<td>0.03</td>
<td>2.54</td>
<td>1.75</td>
<td>2.35</td>
</tr>
<tr>
<td>25-50%tile</td>
<td>-0.45 (2.22)</td>
<td>0.61 (1.86)</td>
<td>0.18 (1.29)</td>
<td>-1.43 (1.62)</td>
<td>1.30 (1.17)</td>
<td>-1.56 (1.36)</td>
</tr>
<tr>
<td>50-75%tile</td>
<td>1.43</td>
<td>2.21</td>
<td>1.61</td>
<td>3.77</td>
<td>2.31</td>
<td>3.90</td>
</tr>
<tr>
<td>High PASE</td>
<td>3.56</td>
<td>2.75</td>
<td>1.01</td>
<td>4.07</td>
<td>3.10</td>
<td>5.22</td>
</tr>
<tr>
<td>Time</td>
<td>-0.28</td>
<td>-0.65 (0.40)</td>
<td>-0.36 (0.38)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Time x Low</td>
<td>-0.01</td>
<td>-0.11 (0.08)</td>
<td>-0.30 (0.02)</td>
<td>--</td>
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<td>--</td>
</tr>
</tbody>
</table>

Boldfaced indicates P<0.05. LLDI–Late-Life Function Index; MCS–Mental Component; PASE–Physical Activity Score for the Elderly; PCS–Physical Component; SF–Short Form

A199
Basic Needs Satisfaction and Psychological Outcomes in HIV+ Older Adults
Supported By: NIH / NIA sponsored K23, 1K23 AG043319-01A1
Hartford Center of Excellence Grant
University of Rochester CFAR, P30 A178498

Background: Self-determination theory promotes a patient-centered approach which focuses on three psychological needs for any given individual (relatedness, autonomy, and competence). Satisfaction in these basic needs has been shown to improve clinical outcomes However, these psychological needs have not been studied specific to HIV-infected older adults (HOA) and this is important because this cohort has a higher burden of psychosocial issues.

Objectives and Methods: This study attempts to evaluate basic needs satisfaction and its relationship with depression, resilience, affect and quality of life (QOL) in community dwelling HOA. This cross-sectional study was conducted at the Infectious Diseases Clinic of Strong Memorial Hospital, Rochester NY. Subjects were recruited during follow-up visits with their healthcare providers. Subjects were asked to complete several validated self-reported questionnaires. Basic psychological needs satisfaction was measured with a 24-item questionnaire for both needs satisfaction and needs thwarting. QOL, depression and resilience was measured using short-form health survey with 36 questions (SF-36), Beck Depression Inventory (BDI-II) and Connor-Davidson Resilience Scale (CD-RISC) respectively. HIV stigma, emotional stability and affect were also measured using validated questionnaires.

Results: We studied 57 HOA (mean±SD: age 55.07 (6.06) years, BMI 28.08 (6.50), duration since HIV diagnosis 16.92 (7.52) years; 63.2% male and 31.6% Caucasian). Needs satisfaction demonstrated statistically significant negative correlation with depression, and positive correlation with resilience and QOL (p<0.01). Whereas, needs thwarting demonstrated statistically significant positive correlation with depression, negative affect (p<0.01), stigma, and emotional stability (p<0.05). Needs thwarting also demonstrated significantly negative correlation with resilience, positive affect, and QOL (p<0.01).

Conclusion: HOA with high needs satisfaction have a greater ability to cope with stress, depression, stigma, and emotional insecurity. They also have greater quality of life and emotional stability as compared with subjects who experienced needs thwarting. These findings will aid in developing an intervention to improve psychological outcomes amongst this cohort.

A200 Encore Presentation
The Success of Vitamin D Awareness in Geriatric, 4 Years Follow-Up: A Step Closer But Not There Yet!
R. Khoury,1 A. Gandhi,1 B. P. Salmon,1 A. Massey,2 P. Gudaitis,1 D. Gudaitis.2 1. Aculabs, Inc, East Brunswick, NJ; 2. Montville High school, Montville, NJ.

Background: Vitamin D has been well known for its role in the bone metabolism; recently Vitamin D was linked to cancer, autoimmune disorders. The American Geriatrics Society has released in 2014 a new consensus statement to help physician to ensure that their geriatric patients are getting enough vitamin D because inadequate level of vitamin D can increase the risk of falling in older adults.

Methods: 14,142 specimens collected from resident in long-term care facilities in 2014 were tested for vitamin D using Roche Modular E. The results were separated into severe deficient (<10 ng/mL) defi-
cient (<20 ng/mL), insufficient (21-29 ng/mL), and sufficient (>30 ng/mL); patients were separated further by age. In addition, we compared the recent results to the results obtained from 9,979 specimens in 2010. Statistical analysis was done using Analyse-it.

Results: The number of vitamin D tests ordered increased 41.7% over 4 years. There was increase in vitamin D level across all ages in 2014 compared to 2010; there was a decrease in number of residents with vitamin D insufficiency; the most improvement in vitamin D was in residents 51-60 years old.

Conclusion: The majority of the geriatric population has a vitamin D level below the normal level and about one forth has vitamin D insufficiency. There was an improvement in the vitamin D sufficient population over the period tested which may be due to the increase of awareness of the importance of vitamin D in the Long-Term Care residents. More work needed to achieve the goal set by the American Geriatric Society to reach the recommended level in more than 92% of older adults, physicians should base the dosage of vitamin D and calcium for the patient on their activity, sun exposure, diet and other supplement.

<table>
<thead>
<tr>
<th>Vitamin D level</th>
<th>% Residents with vitamin D &lt;10 ng/mL</th>
<th>% Residents with vitamin D 10-24 ng/mL</th>
<th>% Residents with vitamin D 25-29 ng/mL</th>
<th>% Residents with vitamin D &gt;30 ng/mL</th>
</tr>
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<tr>
<td>&lt;50</td>
<td>323</td>
<td>12.4%</td>
<td>62%</td>
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<tr>
<td>51-60</td>
<td>501</td>
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<td>47%</td>
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<tr>
<td>61-70</td>
<td>706</td>
<td>8.8%</td>
<td>36%</td>
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<td>71-80</td>
<td>967</td>
<td>7.3%</td>
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<td>35%</td>
</tr>
<tr>
<td>81-90</td>
<td>324</td>
<td>8.6%</td>
<td>36%</td>
<td>37%</td>
</tr>
<tr>
<td>&gt;90</td>
<td>1502</td>
<td>8.6%</td>
<td>36%</td>
<td>40%</td>
</tr>
</tbody>
</table>

A201 Screening for Frailty in Thoracic Surgery Patients


Background: Frailty, a state of increased vulnerability to physiologic stressors, is a known surgical risk factor. As more patients with advanced age present for surgery, there is growing interest in using frailty to risk stratify surgical candidates and to prompt pre-surgical risk-reduction interventions. The objective of this analysis was to determine the proportion of frail and pre-frail patients presenting to a thoracic surgery pre-operative clinic who might benefit from such intervention. Results from this study will inform an intervention designed to reduce frailty in this population.

Methods: Patients at the University of Chicago Thoracic Surgery Clinic have been actively recruited to participate in frailty screening since October 1, 2014. Inclusion criteria were age ≥60, ability to consent, ability to participate in frailty screening, no obvious contraindication to surgery, and thoracic disease that may require major surgery. Once consented, patients were screened using a modified version of Fried’s phenotypic frailty criteria: (1) unintentional weight loss (≥10 lbs in past year) (2) weakness (decreased grip strength), (3) self-reported exhaustion, (4) low physical activity level (Physical Activity Scale for the Elderly score >1 SD below mean of community dwelling sample), and (5) slowness (slow gait speed). Presence of 1-2 criteria indicated pre-frailty; ≥3 criteria indicated frailty.

Results: Since October 2014, 12 patients met inclusion criteria, and 9 agreed to participate. The average age was 65.4 years, and 3/9 (33.3%) were men. Seven patients (77.8%) were pre-frail. None of the patients were frail.

Conclusions: In this pilot sample of pre-surgical patients, we found the majority of surgical candidates were pre-frail while none were frail. Our sample was relatively young and physically active suggesting that frail patients were less likely to be referred for surgery and possibly screened out by traditional pre-operative assessments. The large proportion of pre-frail patients suggests a frailty-reduction intervention could benefit many pre-surgical patients in this clinic. We plan to implement a preoperative intervention including a comprehensive geriatric assessment and a short strength-training program targeted at pre-frail thoracic surgery patients.

A202 Impact of Immediate Geriatric Assessment on Inpatient Postoperative Outcomes in Older Abdominal Cancer Patients

A. Shahrokni, S. Mahmoudzadeh Pournaki, B. Korc-Grodzicki. Medicine / Geriatrics, Memorial Sloan Kettering Cancer Center, New York City, NY.

Background: The number of older cancer patients is increasing. For the majority of these patients, surgical resection of the tumor is curative. The inpatient postoperative recovery period is of critical importance. Geriatric assessment may play a significant role in the immediate postoperative recovery. The aim of this study is to look at the impact of postop immediate geriatric assessment (IGA) vs. delayed geriatric assessment (DGA) on the post-operative hospital course of older patients with cancer.

Methods:
This is a retrospective study of patients (age >75) who had intra-abdominal cancer surgery performed at Memorial Sloan Kettering Cancer Center between 10/2010 and 12/2012. IGA and DGA were performed on postoperative day 1, or later respectively. Data on sociodemographic characteristics, preoperative geriatric assessment (ADL, iADL, MiniCog, social support, weight loss medication list, falls in the past 12 months), Charlson Comorbidity Index (CCI), operation time, Anesthesiology Severity Index (ASA), length of hospital stay (LOS), postoperative delirium and discharge planning were collected. Categorical and continuous variables were analyzed using Chi Square and t test respectively.

Results:
Out of 592 patients, 452 (76.4%) and 140 (23.6%) were in the IGA and DGA groups respectively. The two groups did not differ in age (80.2 vs. 79.4), gender (female, 56.4% vs. 56.4%), race (white, 89.8% vs. 92.9%), and marital status (married, 56.2% vs. 56.4%). They did not differ in geriatric assessment variables: ADL dependency (23.2% vs. 27.9%), iADL dependency (21.7% vs. 24.3%), MiniCog ≤3 (31.9% vs. 24.3%), falls in the past 12 months (18.8% vs. 21.3%), lack of social support (9.5% vs. 6.4%), weight loss (58.2% vs. 50.7%), and number of medications. They did not differ in CCI ≥6 (25.2% vs. 28.6%), operation time (194.5 vs. 191.3 minutes) and ASA categories. For IGA patients, there was a trend toward shorter LOS (7.2 vs. 9.7 days, P=0.054), and to home discharge without additional services (51.1% vs. 42.9%, P=0.088). The incidence of delirium was significantly lower in IGA compared to DGA patients (10.8% vs. 21.4%, P=0.01).

Conclusion: Assessment by geriatrician on day 1 after abdominal surgery in older cancer patients may lower the incidence of delirium, shorten the length of stay and lead to less skilled healthcare utilization after hospital discharge.

A203 Percutaneous Cholecystostomy in an Elderly Patient: An Alternative to Surgery in the Management of Acute Cholecystitis

D. E. Murphy, P. P. Coll. IM/Geriatrics, UConn Center on Aging, Farmington, CT.

Introduction:
Percutaneous Cholecystostomy (PC) is used primarily as an interventional alternative to managing acute cholecystitis (AC) in patients who are critically ill or resistant to surgery. This case illustrates the benefits of considering PC in frail older patients with significant comorbidities who have AC.

Case
A 96 year old female with significant medical comorbidities was admitted to a community hospital. Several days previously, she developed altered mental status (AMS) described as impulsivity, disorientation and insomnia. Physical exam confirmed the presence of moderate disorientation, but no other localizing findings were present. Laboratory data showed urinalysis consistent with a UTI, and WBC of 12.7. A chest xray and abdominal films were unremarkable. She was admitted for the treatment of a presumptive UTI and AMS. Antibiotics and supportive care were initiated. On hospital day 2, she remained confused; urine and blood cultures were negative. On day 3, her physical exam revealed tenderness to palpation in the right hypogastrum, prompting an abdominal CT. This demonstrated gallbladder distension, a 1-cm stone in the lumen, wall thickening and stranding of adjacent fat, consistent with AC.

A surgical consult was obtained; the patient was referred to interventional radiology. On day 4, a transhepatic cholecystostomy tube was introduced into the gallbladder with immediate return of dark cloudy bile via a pigtail catheter. This was left in place and connected to suction. On day 5 the patient was less confused. On day 7, her abdomen was soft, she was alert, requesting to eat and get out of bed. She was discharged to home on day 8. Her family was instructed on the long-term management of the tube. Two months later she returned for cholangiogram in which contrast was introduced through the tube. This study showed the cystic duct to be open and draining to the common bile duct. The gallbladder appeared normal and the previously visualized stone was still present. At this time the decision was made to remove the cholecystostomy tube. She returned home without further sequelae.

Discussion
This case illustrates an excellent outcome from the use of PC in an older patient who was at high risk for postoperative complications if either a laparoscopic or open cholecystectomy had been performed. Providers should consider PC as a treatment option in such cases.

A204
Skilled Care Utilization after Abdominal Cancer Surgery in Older Patients
K. Alexander, A. Shahrokni, S. Mahmoudzadeh Pournaki, B. Korch-Grodzicki. 1, 2, 3. Geriatrics, Memorial Sloan Kettering Cancer Center, New York, NY; 2. Weill Cornell Medical Center, New York, NY.

Background:
Older cancer patients are less likely to return home after surgery. The utilization of post acute skilled services in this setting is associated with an increase in mortality. Medicare payments for post acute care have grown faster than most other categories of healthcare spending. In 2012 it exceeded $62 billion. This study aims to identify factors associated with the utilization of post acute services at the time of hospital discharge after abdominal cancer surgery.

Methods:
This is a retrospective analysis of older cancer patients (age ≥75) who presented to the Geriatrics clinic at Memorial Sloan Kettering Cancer Center for preoperative evaluation between October 2010 and December 2012. Sociodemographic features, pre-operative geriatric assessment, hospitalization characteristics and discharge disposition data were collected and analyzed. For continuous and categorical variables, t-test and Chi-square test were applied respectively. Multivariate analyses were performed on significant variables.

Results:
Out of 592 patients (age ≥75), 291 (49.2%) were discharged home without services and 301 (50.8%) were discharged home with skilled services or to a skilled nursing facility. Factors that were associated with increased skill care utilization were older age (P=0.011), female gender (P=0.029), preoperative ADL and IADL dependency (P <0.001, P=0.032 respectively), longer operation time (P=0.001), development of postoperative delirium (P=0.001) and longer length of stay (P=0.002). History of weight loss showed a tendency towards significance (P=0.053). On multivariate analysis older age (OR 1.058, P=0.010), preoperative ADL dependency (OR 2.242, P=0.001), longer operation time (OR 1.004, P=0.001) and postoperative delirium (OR 2.213, P=0.004) were independently associated with skilled care utilization.

Conclusion:
Skilled care services utilization at discharge after intra-abdominal cancer surgery in elderly patients is associated with both patient characteristics and the hospitalization course. Addressing the modifiable variables by optimizing preoperative status, implementing protocols to prevent delirium and streamlining the hospital stay may impact the discharge disposition and may help control healthcare costs and achieve a better outcome for the older cancer patient.

A205
Clinicians’ Perspectives on Under- and Overtreated Pain In Older Postoperative Patients

Supported By: National Institute on Aging: P30AG022845 and PO1AG031720

Background: Research demonstrates that older postoperative patients can experience undertreated pain (UTP) and overtreated pain (OTP), yet little information exists regarding 1) how clinicians define UTP and OTP; 2) what methods they use to diagnose them; 3) how frequently they encounter UTP and OTP in this population; 4) what complications they observe as a consequence; and 5) whether reliable indicators of UTP and OTP could be helpful.

Methods: We surveyed nurses (n=26), physical therapists (n=19), non-surgeon physicians (n=20) and surgeons/anesthesiologists (n=10) from two New York City hospitals. All interviews were recorded, transcribed, and analyzed using standard qualitative methods.

Results: UTP was defined as any level of pain that led to undesirable outcomes, e.g., immobility, delirium, and inability to participate in physical therapy (PT) or as a failure to adequately assess or treat pain. Clinicians relied on patient report (e.g., unbearable pain), signs (grimacing), symptoms (confusion), and other information (nursing report) to diagnose it. Only 10 (13%) clinicians employed a pain score cut point to diagnose UTP. On a 5-item (1=never, 5=always) scale, the mean frequency with which clinicians encountered UTP was 3.3 (sd=0.9). Almost all clinicians reported observing associated complications, including longer lengths of stay, altered mental status, and sleep disturbance. In contrast, clinicians defined OTP as analgesic treatment that was poorly tolerated or led to undesirable side effects, and relied on signs (lalergy), symptoms (grogginess), and reports from other providers (nurses) to diagnose it. Frequency of encountering OTP was 2.7 (0.9). Almost all clinicians reported observing complications from OTP, including longer lengths of stay, altered mental status, and inability to participate with PT. Finally, 95% felt that having reliable indicators of UTP and OTP could be helpful.

Conclusions: Clinicians caring for older postoperative patients routinely encounter UTP and OTP along with associated complications, but use informal methods to identify affected patients. Participants perceived that access to reliable indicators of UTP and OTP could be highly valuable.
A206
Prevalence of Polypharmacy in Older Adults with Cancer who underwent Intra-abdominal Surgeries and its Relationship to Geriatric and Clinical Outcomes
M. K. Boparai,1 B. Kore-Grodzicki,2 S. Mahmoudzadeh Pournaki,2 A. Shahrokni.2 1. Pharmacy, Memorial Sloan Kettering, New York, NY; 2. Geriatrics, Memorial Sloan Kettering Cancer Center, New York, NY.

Background: Every year an increasing number of older patients are diagnosed with cancer and are able to undergo curative surgery. Pre-op evaluation, including geriatric assessment, plays an important role in older cancer patients’ outcome. Polypharmacy is one of the geriatric assessment domains. The aim of this study is 1) to assess prevalence of polypharmacy, and 2) to assess relationship of polypharmacy with other geriatric assessment domains and 3) to assess relationship of polypharmacy with clinical variables and outcomes in older patients with cancer.

Methods: Older (age > 75) cancer patients who have undergone intra-abdominal cancer surgeries at Memorial Sloan Kettering from 10/2010 to 12/2012 were included in this retrospective study. Data on sociodemographic characteristics, preoperative geriatric assessment (ADL, IADL, MiniCog, social support, medication list, falls in the past 12 months), Charlson Comorbidity Index (CCI), operation time, length of hospital stay (LOS), postoperative delirium and discharge planning were collected. Number of medications has been categorized to ≤ 4 (no polypharmacy, NP), 5-10 (polypharmacy, PP), and ≥11 (extreme polypharmacy, EPP). Categorical and continuous variables were analyzed using Chi-Square and t-test respectively.

Results: Out of the 592 patients, there were 144 (24%), 306 (52%) and 142 (24%) in the NP, PP, EPP groups respectively. More females were in EPP group than males (27.5% vs. 19.4%, P = 0.038). Those with marital status other than married were more likely to be in NP (27%) or EPP (27.8%) than those who were married (NP: 22.2%, EPP: 21%) with P = 0.019. In relationship to geriatric assessment, only those with ADL dependency were more likely to be in EPP group than those independent (30.6% vs. 21.9%, P = 0.039). Charlson comorbidity index was the same between groups. There was no difference in incidence of delirium, hospital length of stay and hospital discharge planning between NP and EPP groups.

Conclusions: More than 75% of older cancer patients are in PP or EPP groups. While there may not be relationship between PP and EPP with immediate patients’ outcome following surgery, further research is needed to assess the importance of potentially inappropriate medications or medications in BEERS list in this setting.

A207 Encore Presentation
Impact of a Geriatric Consultation in Decision-Making In Elderly Patients with Severe Aortic Stenosis Candidates for TAVI
M. Smietniansky,1 B. Agatiello,2 A. Shahrokni.1 1. Memorial Sloan Kettering Cancer Center, New York, NY; 2. Geriatrics, Memorial Sloan Kettering Cancer Center, New York, NY.

A comprehensive geriatric assessment (CGA) is needed to assess the importance of potentially inappropriate medications (EPP groups). While there may not be relationship between PP and EPP planning between NP and EPP groups.

Conclusions: More than 75% of older patients with severe symptomatic severe aortic stenosis at high risk with an initial indication for TAVI and who had a subsequent geriatric consultation were included. The information obtained from this comprehensive geriatric assessment finally was integrated with the presence of the geriatrician at the monthly meetings of the Heart Team (CCIGID - Cases Centered Interdisciplinary Group for Integrated Decision). Since prior to geriatric consultation the indication for all patients was TAVI, it could be assessed retrospectively by reviewing the centralized and computerized medical records and records of each meeting of the Heart Team, the impact of geriatric consultation on final decision

Results: 39 patients (56.1% female) had a geriatric consultation. The mean age was 83.7 years (SD 5.95), average Charlson score was 2.2 (SD 1.7) and Edmonton Frail Scale 6.7 (SD 2.8). In 82% of patients an intervention was performed in any of the geriatric domains assessed. In 13 patients (33%), based on geriatric consultation, initial TAVI indication was changed; of these, 9 patients (23%) continued on medical treatment, and in 4 patients (10%) a valvuloplasty procedure was chosen; palliative 5 % and bridge 5%

Conclusions: This study shows that the information provided by a comprehensive geriatric assessment when integrated into a CCIGID has a significant impact on decision making in elderly patients with severe symptomatic aortic stenosis at high risk with initial indication for TAVI

PRESIDENTIAL POSTER SESSION B
Friday, May 15
4:30 pm – 6:00 pm

B1
Normal Weight Central Obesity in Older Adults and Mortality: Data from the National Health and Nutrition Examination Survey III
J. A. Batsis,1 K. R. Sahakyan,2 V. K. Somers,2 S. J. Bartels,1 F. Lopez-Jimenez.2 1. Internal Medicine, Geisel School of Medicine at Dartmouth, Hanover, NH; 2. Medicine, Mayo Clinic, Rochester, MN; 3. Psychiatry, Geisel School of Medicine at Dartmouth, Hanover, NH.

Background: Current body mass index (BMI) strata likely misrepresent the accuracy of true adiposity in elders. Subjects with normal BMI with central obesity measured by waist-hip ratio (WHR) are likely at higher cardiovascular (CV) and overall mortality risk than previously suspected.

Methods: Subjects aged ≥60 years with a BMI 18.5-25kg/m² from National Health and Nutrition Examination Surveys III(1988-1994) and mortality data linked to the National Death Index were included. Subjects with a high WHR (men ≥ 0.90; women ≥ 0.85) and a normal BMI were classified as normal weight central obesity (NWCO). Six categories were created based on combinations of BMI (normal, overweight, obese) and WHR (high/normal). Baseline characteristics were assessed. We compared mortality rates with proportional hazard models, adjusting for age, gender, education, smoking status, hypertension, and diabetes.

Results: The final sample included 4,151 subjects (2117(57.3% female), age 70.1±0.3 years, median (IQR) follow-up was 12.6 years (7.4, 14.8) with 2,267 deaths (1,079 cardiovascular). Subjects with NWCO (26.1%) compared to those with a normal BMI/normal WHR, had prevalence rates of hypertension (55.7 vs. 33.3%; p<0.01), dyslipidemia (52.4 vs. 31.8%; p<0.01), and diabetes (11.1 vs. 2.1%; p<0.01). Overall and cardiovascular mortality were higher in subjects with NWCO as compared to normal BMI/normal WHR (HR 1.64 [1.24-2.18], HR 1.91 [1.40-2.61]), respectively. No differences were observed in overall or cardiac mortality in the other BMI/WHR
combinations other than high WHR/BMI compared to the referent (HR 1.58 [1.07-2.35]).

Conclusions: Normal weight central obesity in elders is associated with greater cardiometabolic dysregulation and higher mortality risk independent of BMI and central obesity. Our results stress the importance of stratifying elders with normal BMI according to WHR.

B2
25-hydroxyvitamin D levels with risk of incident hospitalized fractures: the ARIC Study
R. Takiar, P. Lutsey, D. Zhao, A. Schneider, M. Grams, L. Appel, E. Selvin, E. Michos. 1. Northeast Ohio Medical University, Strongsville, OH; 2. Univ. of Minnesota, Minneapolis, MN; 3. Johns Hopkins University, Baltimore, MD.

Supported By: Funding:
1. MSTAR program (AFAR, National Institute on Aging)
2. Dr. Michos was supported by NIH/NINDS grant R01NS072243. This research was also supported by grants from the NIH-NHLBI (R01HL103706 to Dr. Lutsey), the NIH Office of Dietary Supplements (R01HL103706-S1 to Dr. Lutsey) and the NIH-NIDDK (R01DK089174 to Dr. Selvin). Genotyping was supported through the NHLBI CARE (Candidate Gene Resource) grant N01HC65226. Dr. Schneider was supported by NIH/NHLBI training grant T32HL07024. The Atherosclerosis Risk in Communities Study is carried out as a collaborative study supported by National Heart, Lung, and Blood Institute contracts (HHSN268201100005C, HHSN268201100006C, HHSN268201100007C, HHSN268201100008C, HHSN268201100009C, HHSN268201100010C, HHSN268201100011C, and HHSN268201100012C).

Disclosures: None.

Background: Hip fractures in the elderly are a leading cause of morbidity and mortality. Deficient 25-hydroxyvitamin D [25(OH)D] status, i.e. serum 25(OH)D <20 ng/ml, is associated with increased fracture risk. Fracture risk varies by race, possibly due to racial differences in vitamin D binding protein (DBP) genetics. We examined the associations between 25(OH)D, age, and DBP SNPs with risk of incident hospitalized fractures among white and black participants in the Atherosclerosis Risk in Communities Study (ARIC) study.

Methods: We measured serum 25(OH)D levels in 12,781 participants [mean age 57 years, 25% black]. Incident hospitalized fractures were identified via active surveillance of hospitalizations (ICD-9 codes). Two DBP SNPs (rs4588 and rs7041) were genotyped. Adjusted Cox models were used. We tested interactions by race, age (<60 vs. ≥60 years), and DBP genotype.

Results: During a median follow-up of 20 years there were 1,122 incident fracture-related hospitalizations including 267 for hip fracture. Participants with deficient 25(OH)D (N=4,160) had a higher risk of any fracture (HR 1.21, 95%CI 1.05-1.39) and of hip fracture (HR 1.35, 1.02-1.79). There was no significant interaction by race (p-interaction=0.2 for any fracture; 0.7 for hip fracture). Compared to younger individuals with adequate 25(OH)D, older individuals and those with deficient 25(OH)D were at greater risk of fracture (Table). There was no independent association of DBP SNPs with fracture risk. For rs7041, there was a marginal interaction among whites with 25(OH)D deficiency (p-interaction=0.07).

Conclusions: Older age and deficient 25(OH)D levels are associated with higher incidence of hospitalized fractures. DBP genotype may modify this association, but results were inconclusive. Further investigation should evaluate whether treatment strategies for low 25(OH)D to prevent fractures should vary based on age and bioavailable vitamin D status.

B3
Let’s Catch up with Technology
B. J. Craven, M. Galicia-Castillo, B. Smith, R. Palmer. 1. IM, Eastern Virginia Medical School, Norfolk, VA; 2. EVMS, Norfolk, VA; 3. Geriatric Medicine, EVMS, Norfolk, VA.

Background: We have long-since entered into an era of advanced medical technology especially with cardiac support. New mechanical circulatory support devices (MCS) are improving patient morbidity and mortality where medical management has failed. Left ventricular assist devices (LVAD) are now considered destination therapy for advanced congestive heart failure. However, many patients receiving these therapies are older and often have significant co-morbidities that limit life expectancy. Therefore, these devices present a difficult issue with many patients at the end of life. We describe here a patient with a MCS and an unfortunate clinical outcome at the end of life.

Case: A 71-year-old male with severe CHF had an LVAD placed as destination therapy. He was admitted to the hospital four years later with pneumonia and recurrent LVAD infection. The patient failed several weeks of antibiotics for recurrent drive line infections. He developed liver failure, weakness, anorexia and ultimately failure to thrive. Focus then shifted to comfort as the primary goal of care. The LVAD was not turned off in the hospital in accordance with plans to discharge home with hospice bridge. Prior to discharge a discussion was held with medical personnel and patient’s wife on who to contact when time came to turn off his LVAD. Once home the patient’s wife struggled to care for the patient as he continued to decline, requiring around-the-clock care. Although private nursing gave the wife some assistance, the home health nurses and hospice bridge assistance offered at hospital discharge failed to show up during the first week. The patient’s wife was left to be guided over the phone by a cardiac coordinator on the step-by-step process to turn off the LVAD. Device alarms were firing as she struggled to allow her husband to die naturally.

Discussion: This situation is likely to become a more frequent reality. Compared to other cardiac devices, patients with LVADs are unlikely to survive long after discontinuation of the device. There should be a clear plan discussed from the time of device placement about the impact it will have at the end of life. Literature review has yielded little substantive data regarding end-of-life care in patients utilizing hospice and MCS. We have come a long way with medical technology, but our end-of-life management needs to catch up.

B4
Hospice diagnosis: iatrogenic decline
(Mis)management of neuropsychiatric symptoms (NPS) in dementia
C. Larson, H. Kao. UCSF, San Francisco, CA.

Introduction: Patients with dementia are vulnerable to accelerated decline from iatrogenesis, including mismanagement of NPS.

Case: An 86 F with vascular dementia fell and suffered a vertebral fracture. Prior to the fall she walked and socialized. After the fall, with escalating opioids for pain, she stopped walking and developed a pressure ulcer. She became withdrawn and repeatedly called out “help me!” She was started on diazepam and haloperidol but her vocalizations increased. When she developed dysphagia and weight loss, she was enrolled in hospice care.

<table>
<thead>
<tr>
<th>Adj usted* HRs (95% CIs)</th>
<th>Any fracture-related hospitalization</th>
<th>Hospitalized hip fracture</th>
</tr>
</thead>
<tbody>
<tr>
<td>25(OH)D status (ng/ml)</td>
<td>Adequate (≥20.0)</td>
<td>Deficient (&lt;20.0)</td>
</tr>
<tr>
<td>Age ≤ 60 years (N=8,196)</td>
<td>1 (reference)</td>
<td>1.09 (1.16-1.69)</td>
</tr>
<tr>
<td>Age ≥ 60 years (N=3,885)</td>
<td>2.01 (1.75, 2.42)</td>
<td>2.11 (1.70, 2.62)</td>
</tr>
</tbody>
</table>

*P for interaction

0.019
0.051

P for interaction

0.2 for any fracture; 0.7 for hip fracture.

1. MSTAR program (AFAR, National Institute on Aging)
2. Univ. of Minnesota, Minneapolis, MN; 3. Johns Hopkins University, Baltimore, MD.

Supported By: Funding:
1. MSTAR program (AFAR, National Institute on Aging)
2. Dr. Michos was supported by NIH/NINDS grant R01NS072243. This research was also supported by grants from the NIH-NHLBI (R01HL103706 to Dr. Lutsey), the NIH Office of Dietary Supplements (R01HL103706-S1 to Dr. Lutsey) and the NIH-NIDDK (R01DK089174 to Dr. Selvin). Genotyping was supported through the NHLBI CARE (Candidate Gene Resource) grant N01HC65226. Dr. Schneider was supported by NIH/NHLBI training grant T32HL07024. The Atherosclerosis Risk in Communities Study is carried out as a collaborative study supported by National Heart, Lung, and Blood Institute contracts (HHSN268201100005C, HHSN268201100006C, HHSN268201100007C, HHSN268201100008C, HHSN268201100009C, HHSN268201100010C, HHSN268201100011C, and HHSN268201100012C).

Disclosures: None.
A geriatrician evaluated her and suspected iatrogenesis. Hospice was discontinued. Haloperidol and opioids were stopped, and diazepam tapered off. Home care educated the caregivers to provide a daily routine and speak calmly. When she called for help, if her needs (eg, toileting or pain relief) had been addressed, she was redirected. She was started on citalopram for anxiety, melatonin for sleep, and acetaminophen for pain. Within 4 months, her repeated vocalizations stopped and she returned to her prior functional status.

**Discussion:** The course of dementia is not always linear, but impairment in ADLs and speech, plus a dementia-related comorbidity, was started on citalopram for anxiety, melatonin for sleep, and acetaminophen for pain. Within 4 months, her repeated vocalizations stopped and she returned to her prior functional status.

NPS, such as depression, disruptive vocalizations, and disordered sleep, affect 98% of dementia patients. Most clinicians lack knowledge or time to develop and implement behavioral interventions. Psychotropic drugs are often used as initial management, with significant risks. To treat NPS, caregivers and providers must characterize the behavior and investigate underlying causes. If nonpharmacologic strategies are insufficient, then medications can be used. Scheduled serotonin reuptake inhibitors may reduce anxiety or depression. If these symptoms are not present, then a cholinesterase inhibitor can be tried. Only after failing the above measures, should antipsychotics be considered.

This case highlights the risk of iatrogenic harm from excessive pharmacologic treatment of NPS, the complexity of prognostication in dementia, and the importance of a multifaceted approach to NPS including addressing triggers, providing behavioral interventions, and cautionary use of medications.

**B5**

**Thiamine Deficiency as a Cause of Persistent Hypotension in an Older Man**

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**Introduction**

Orthostatic hypotension is a very common development in the elderly. We present a patient with severe hypotension secondary to thiamine deficiency that is reversed with vitamin repletion.

**Case Presentation**

A 63 yr old man with history of excessive alcohol intake was admitted for lower extremity weakness and numbness, limiting his ability to ambulate. He had diminished sensation to light touch and pinprick from his toes up to the chest. Earlier, the patient had been admitted to another hospital for a near-syncopal episode; this occurred 5-10 times during the past year. In the ER, his BP was 86/53 with HR of 120 and received several liters of IV fluids, electrolytes, folic acid and thiamine. Despite the IV fluids and good oral intake, he remained profoundly orthostatic. He was unable to participate in PT because of lightheadedness. On day 4 of hospitalization, vital signs were: BP 110/72, P 106 (lying) and BP 85/59, P 130 (standing). Additional IV fluids were administered. Other causes of hypotension, including adrenal insufficiency, were excluded. MRI of the spine was normal. Lab values were notable for an elevated TSH, normal FT4 and a very low thiamine level at 47 nM/L (normal 87-280 nM/L). He received IV thiamine (100 mg/day) for 12 days, followed by 100 mg PO daily. He was also treated with levothyroxine. The anesthesia gradually resolved and the orthostasis improved. On the 25th hospital day, his BP was 122/81, P 89 (sitting), 126/82, P 100 (standing). Eventually with daily PT, he was able to regain ambulation with a walker.

**Discussion**

Thiamine deficiency can be associated with alcoholism, poor nutrition, cancer, bariatric surgery and hemodialysis. Alcohol can cause thiamine deficiency by inadequate intake, decreased hepatic storage and impairment of transport. The neurologic and cardiovascular are the primary systems affected. Common presentations include Wer-nicke-Korsakoff Syndrome or CHF in wet beriberi. There are a few case reports of thiamine deficiency causing resistant hypotension. This might be due to vasodilation, which is seen in the high-output failure of beriberi. Our case was striking in the severity and persistence of hypotension as well as remarkable response to thiamine repletion. This underscores the importance of considering thiamine deficiency in cases of refractory hypotension in the setting of malnutrition.

**B6**

**An Unusual Case of CO Intoxication Presenting as Rapidly Progressive Dementia**


A 79 yo retired male physician with DM, CHF, and CABG presented to the ER disheveled and confused. While his wife was traveling, the pt missed dinner with a friend, who found him at home disoriented. At baseline, he was believed to be fully functional and oriented. The pt had no complaints, vitals were stable, and exam was WNL. The EKG showed nonspecific ST depressions, head CT showed cerebral atrophy, and lab results were unremarkable except for a troponin of 0.71. An MRI/ MRA of the head/neck showed insignificant findings. Increasing troponin and EKG changes led to a diagnosis of presumed NSTEMI. Cardiac catheterization revealed patent bypass grafts, and the pt was discharged home.

At neurology f/u 6 weeks later, the family admitted he may have had 6 months of cognitive slowing prior to the event. He was now unable to drive or perform ADLs. Exam was WNL except Philadelphia Cognitive Exam score of 13/30. Suspecting cognitive impairment with acute insult from possible NSTEMI or rapidly progressive dementia, an outpatient workup was initiated. A repeat MRI showing symmetric punctate foci of restricted diffusion in periventricular and subcortical white matter resulted in readmission. The pt was alert and oriented x 2, had difficulty with calculation, short term memory, executive function and following a 2-step command. After much prompting, his wife recalled a crucial detail. When she returned from her trip, the car had the key in the ignition and was out of gas in the garage, which is adjacent to the bedroom. This correlated to a possible CO exposure. Hyperbaric tx was not pursued due to lack of data.

Fortunately at geriatric f/u 2 months later, the pt showed remarkable improvement in memory and performance of ADLs and IADLs. This progress continues daily. More often than not, pts with cognitive impairment have a single dx of degenerative dementia although other factors may be contributing. In this case, the pt likely did have dementia, as he left the car running in a closed garage and had 6 months of subtle memory issues. With his hx of continued improvement and objective data demonstrating dramatic changes in the repeat MRI consistent with CO intoxication, it seems clear that there were two distinct diagnoses. This is a rare occurrence of an acute reversible secondary cause that allows for some hope of functional and cognitive improvement over time.

**B7**

**What do you do when CHA2DS2-VASc score = HAS BLED score?**

H. Khangura, N. Davila Lourido, S. Berry. Geriatrics, Beth Israel Deaconess Medical Center, Boston, MA.

Atrial fibrillation (AF) is the most common arrhythmia and its prevalence increases with age. Multiple trials have shown that oral antithrombotic therapy with warfarin decrease the risk of ischemic
stroke in those with AF. Guidelines recommend treating patients with a CHA2DS2-VASc score of 2 or higher with warfarin or other anticoagulant. It is less clear how to manage frail elderly patients that also have an increased risk of bleeding as calculated by HAS BLED score.

We present an 87 year old male on warfarin for atrial fibrillation who fell face forward into the bathtub. CT scan of the face showed a right orbital fracture with a large hematoma. This was his fourth fall in the last 5 years, all resulting in fracture or injury.

Other medical history is significant for a recent hemorrhoid bleed requiring blood transfusion, chronic kidney disease, hypertension, hyperlipidemia, diabetes mellitus, abdominal aortic aneurysm, two transient ischemic attacks, osteoarthritis, right sided weakness secondary to polio, hypothyroidism, prostate cancer status post prostatectomy and colon cancer status post partial colectomy. His Barthel Index score is 14, and he is dependent in all instrumental activities of daily living. He uses a walker to ambulate, wears eyeglasses, uses hearing aids, and has upper dentures. He is on a total of 15 medications, including warfarin.

His physical exam was remarkable for multiple bruises and right eye proptosis with edema. He was unable to draw a clock and could recall two out of three words.

His wife, who is his health care proxy, asks for recommendations regarding re-starting warfarin. Initially we calculated his CHA2DS2-Vasc score (9.6% risk of embolic stroke per year without anticoagulation) and his HAS BLED score (9.9% risk of bleed per year with anticoagulation). Because the two scores were almost identical, they were not helpful informing management. Instead, a detailed goal of care discussion was held with the patient and his wife in which the patient expressed that he was fearful of having a major stroke given his prior history of TIAs, and that he would prefer to continue the anticoagulation. Because the two scores were almost identical, they were not helpful informing management. Instead, a detailed goal of care discussion was held with the patient and his wife in which the patient expressed that he was fearful of having a major stroke given his prior history of TIAs, and that he would prefer to continue the anticoagulation even if it results in a major bleed.

In summary, although we have many tools that help guide providers’ decision making including CHA2DS2-VASc and HAS BLED, clinical management of frail elderly patients with multiple comorbidities is often dictated by patient preferences and goals of care.

B8
Benzodiazepines, not always inappropriate
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Introduction: Catatonia is an under recognized and important reversible diagnosis in elderly patients who are admitted with a change in mental status. We present a patient that was on the verge of hospice prior to the diagnosis and treatment of catatonia.

Case: A 79 year-old male with a history of bipolar disorder and parkinsonian features was found at the long-term care facility slumped over in his wheelchair babbling and drooling. He was admitted for an acute change in mental status. At baseline, he was wheelchair bound, and able to communicate his needs and participate in group events at the facility. Neurology considered him to have parkinsonism and not Parkinson’s Disease. His bipolar disease had been controlled with Lithium.

No reversible causes for his change in mental status were found after a complete work-up. Geriatrics consultation was requested to navigate end of life care with the family.

On exam, vital signs were normal. He was stuporous, opening eyes to verbal and physical stimuli but was not communicating. He did grunt from time to time but sounded garbled. His blink reflex was intact. His tone was increased in all extremities equally. He held a passively induced posture, and he had a postural tremor in all extremities. We suspected catatonia so we collaborated with Psychiatry to rule out other syndromes that could mimic catatonia and to trial treatment with benzodiazepines. We administered a dose of 1 mg IV Ativan. He returned to baseline the next morning.

Discussion: The prevalence of catatonia in geriatric patients appears to be higher than younger patients. Complications associated with misdiagnosis of catatonia are pulmonary embolus, physical restraints, pneumonia, mislabeling as “advanced dementia.” Do Not Resuscitate orders, and death. Catatonia in the elderly is challenging to diagnose given the complex comorbidities associated with aging that can mask this diagnosis: Dementia, Parkinson’s Disease, Depression, and medications. However, in elderly patients who have mutism or rigidity, diagnostic criteria for catatonia should be reviewed. Complete resolution can be achieved in 60-80% of acute cases if treatment is prompt with benzodiazepines, and effectiveness diminishes with prolonged symptoms. Given the high success rate of prompt treatment and prevalence of disease, we suggest including catatonia in the differential diagnosis when evaluating elderly patients with a change in mental status.

B9
Post-Operative Personality Change Following Frontal Craniotomy
J. J. Yoon, P. Cavaluzzi. Geriatrics, Montefiore Medical Center, Brooklyn, NY.

Background: Abulia is a disorder of diminished motivation that falls in the middle of the spectrum between apathy and akinetic mutism. It is highly underrecognized and mistaken for depression. We present a case of post-operative personality change in a previously asymptomatic patient.

Case: A 78 year old female with a past medical history of hyperthyroidism, hyperlipidemia, and depression was seen for an initial home visit for overall decline in function. Two months earlier she underwent cerebral meningioma resection and was sent to subacute rehab where her clinical course was uncomplicated. She was then discharged home and was noted to have loss of interest in activities she previously enjoyed. She became withdrawn from her family, and had diminished food intake. She screened positive for dementia on the Montreal Cognitive Assessment (MoCA) and for depression on the Geriatric Depression Scale (GDS) and the Patient Health Questionnaire-9 (PHQ-9). Sertraline and mirtazapine were titrated upwards for a presumptive diagnosis of depression. She had multiple ER visits for progressive decline in function. Labs were normal and a non-contrast head CT showed an old right frontoparietal craniotomy and encephalomalia in the left frontal lobe of unknown duration. The patient eventually started aspirating and was hospitalized for 10 days before passing away. Further inpatient work-up for rapid cognitive deterioration was unrevealing. Neurology was consulted postmortem and diagnosed abulia after review of the clinical history and imaging.

Conclusions: This case highlights a presentation of abulia in a patient who had compromised function of both frontal lobes. Abulia has been most frequently associated with damage to the anterior cingulate cortex and has not shown improvement with selective serotonin reuptake inhibitors. Screening for abulia should be considered in a patient with cognitive and emotional problems with signs of disinterest, inactivity, lethargy, or poor food intake, especially following frontal craniotomy. More research is needed to distinguish abulia from depression and to increase awareness in the medical community.

B10
The Ironman In The Office
J. Leland, GEC, James A Haley VA, New Port Richey, FL.

Background: Failing to appreciate the level at which a patient participates in sports may result in over or under treatment. Much has been written about physiological changes with aging leading to declines in performance, with little attention to what remains possible. The American record for the fastest female marathon was won by the same woman at age 80 and at age 85. The only person in the world to run a marathon in less than 3 hours at age 70 broke another world mar-
athlet at age 82. Another athlete holds marathon world records at age 90 and 100. In 2014 there were 238 finishers in the 70 and over age groups in the Boston Marathon, 41 finishers in the Kona Ironman and 27 in the Half Ironman (70.3) world championship.

Mr. M is a 71 year old grandfather and grandmaster athlete. A Boston marathon veteran and competitor for over 30 years, he is ranked in the top 5% in USA Triathlon, World Ironman and Ironman 70.3. He has chronic left shoulder pain from rotator cuff injuries and left buttock pain which intensified during a recent Ironman competition. His goal is to compete in an ironman later in the month. His usual exercise routine consists of daily stretching and biweekly weight training as well as weekly swim, bike, and run distances of 5 miles, 220 miles, and 30 miles respectively. He eats a Mediterranean diet. Because he trains with athletes, he perceives his training and fitness as the norm, and does not volunteer this information in the office. He appears thin, with bright grey hair.

A new provider who did not assess his activity level ordered age appropriate care as well as an EKG, echo, and exercise stress test as part of a routine exam. Mr. M reports that he was “just getting warmed up” on the treadmill when they asked him to stop. An orthopedic surgeon cited his age as a reason to anticipate a very prolonged recovery if rotator cuff surgery was undertaken. Mr. M felt that the time away from competition would result in permanent deconditioning and refused. Both were unsatisfied with the encounter. He was later seen by a sports medicine physician who obtained a sports history, targeted exams and testing. He prescribed aggressive physical therapy and a brief medication course. He advised continued training and both patient and physician are optimistic about the upcoming competition.

Conclusion: Physicians risk over investigating and undertreating senior athletes when they apply “normal aging” stereotypes. They also miss an opportunity to learn about successful aging from the ironman in the office.

B11 You Left Me & Now I Won’t Eat Anymore: An Unexpected Cause of Anorexia & Weight Loss

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Introduction: Consistent assignment (CA) is being advocated as the current care standard for nursing home residents. We report an unusual cause of weight loss in a nursing home resident.

Case: The resident is a 64 year old male in our nursing home with CVA, left hemiparesis, seizures, aphasia, dementia, DM, HTN, and hyperlipidemia. After a year he began to refuse medications and food. Aphasia and cognitive deficits prevented a review of systems. Bowel movements were regular, vital signs stable and physical findings unchanged. CBC, CMP and TSH were normal; antibiotics were given after labs suggested a urinary tract infection. As symptoms persisted, medications including amiodipine, chlorthalidone, labetalol, lisinopril, spironolactone, insulin, metformin, simvastatin, loratadine and valproic acid were reviewed; metformin was stopped. Despite this anorexia and weight loss persisted, resulting in a 10 lb. (5%) weight loss in a month. His wife visited and was unable to identify a cause. During an interdisciplinary team conference staff noted that his symptoms developed when his primary CNA was reassigned to another team. When that CNA was returned to his care, the veteran resumed regular intake, gained 5 lbs., and stabilized thereafter.

Discussion: Unintentional weight loss and anorexia in the elderly can be a poor prognostic sign. No cause is identified in up to 28% of cases. CA is becoming the standard of care in nursing homes as it increases resident quality of life and contributes to stable frontline staff. CA is defined as the same caregivers (RN, LPN, CNA) for the same resident for 85% of duty shifts. With CA, as opposed to rotating assignments, residents build strong bonds with staff who become familiar with resident preferences, needs and routines. The meaningful relationships between residents and staff increase job satisfaction and decrease absenteeism. CA has also shown improvement in pressure ulcers, pain management, staff, resident and family satisfaction, and number of deficiencies on quality of life surveys. The cornerstone of individualized person care is relationships, and in the case of our resident, CA had resulted in a strong bond with his CNA. Reassignment of his former CNA resulted in this resident’s improved oral intake and weight, better quality of care and enhanced quality of life. Caregiver changes should be considered as possible causes of anorexia in nursing home residents.

B12 Falling from a rare diagnosis (XGI): Complexity in Geriatrics

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Background: Xanthogranulomatous inflammation (XGI) is seen in the kidney and gallbladder but few cases of XGI of the colon are reported. We present a case of incidental mass lesions in the colon, suspicious for malignancy, which led to total colectomy, cholecystectomy and ileosomy in an older nursing home resident. The lesions were later characterized as a benign presentation of Xanthogranulomatous colitis.

Case Report: An 87 year old male presented after a fall in his nursing home, which resulted in hip fracture. He had history of benign colon polyps, sick sinus syndrome with pacemaker, mild vascular dementia, and schizophrenia. He was hospitalized for surgical hip replacement. On hospital day two he became febrile and developed delirium. Physical exam of the abdomen was tender and he was somnolent. Delirium work up showed elevated liver function and WBC. Cultures were negative. Abdominal ultrasound revealed dilated common bile duct and gallstones. He had an ERCP for biliary stent placement and gallstone removal with diagnosis of chronic cholangitis. Subsequent ERCP and stent removal aided recovery in the months that followed. Abdominal CT was revisited as he improved. It revealed a 3cm X 2cm lesion at the cecum and a smaller lesion the descending colon. Due to concern forecal abscess or malignancy, the patient underwent diagnostic colonoscopy, which showed adenomatous polyps. Concern about underlying malignancy and potential for obstruction ultimately led the patient and surrogate to decide on colectomy. Surgical pathology showed XGI of the colon, a rare and benign diagnosis. The patient returned to the nursing home with a high-level function and quality of life after the colectomy.

Discussion: Xanthogranulomatous inflammation is a rare finding that is difficult to differentiate from infiltrative cancer because it mimics malignant pathology. It can occur throughout the body including gall bladder, kidney, skin, peritoneum, gastrointestinal tract, and genitalia. In retrospect, it is likely that indolent, chronic cholecystitis was related to this man’s initial fall. The cause of his biliary problems was likely XGI associated with prolonged gall stone obstruction. This may explain his colonic pathology. This case demonstrates the atypical presentation of disease among frail elders of advanced age, as well as an unusual presentation of an uncommon disorder.

B13 Massive Gastrointestinal Hemorrhage in a Patient with Dementia on a Cholinesterase Inhibitor

L. Zakko, L. Bakkali. Yale University, New Haven, CT.

Case: An 85 year old man with Alzheimer’s Dementia, coronary artery disease and atrial fibrillation on low dose aspirin (no anticoagulation) presented to the emergency department with melena. The patient resided in a long term care facility due to his functional dependence secondary to his dementia. Cognitive testing included a SLUMS
of 14/30. The patient was treated with donepezil due to his current cognitive status.

The patient rapidly developed hemorrhagic shock requiring ICU admission. An upper endoscopy revealed multiple erosions and cleaned based ulcers in the esophagus, stomach, and duodenum. He had a large duodenal ulcer that was the source of his significant bleed. Given the severity of his ulcer burden, testing for the etiology of his disease was pursued. A gastrin level was normal and H. pylori testing was negative. Given the possibility of cholinesterase inhibitors (ChEIs) increasing the risk of gastrointestinal bleeding, his donepezil was stopped. An upper endoscopy six weeks later showed complete resolution of his ulcer disease. The patient has had no episodes of bleeding since.

**Discussion:** ChEIs are the first line therapy for dementia in an attempt to preserve functional status. While the medications are meant to increase central nervous system acetylcholine, their most common side effects (nausea, diarrhea, weight loss) are likely a result of increasing levels of acetylcholine in the peripheral nervous system.

Higher levels of acetylcholine in the parasympathetic nervous system can lead to increased gastric acid secretion. This could lead to increased lesions in the upper gastrointestinal tract and increased incidence of gastrointestinal bleeding (GIB). A recent retrospective cohort study did not suggest an overall increase in GIB in patients on ChEIs.[1] However, this study did not look specifically at groups with higher risk for GIB.

In our patient, the anti-prostaglandin effect of aspirin, leading to reduced gastric wall healing, could allow for increased gastric acid secretion to cause significant ulcer disease. Consideration of this side effect from ChEIs should be made in patients at increased risk for GIB. Further research into the possibility of ChEIs causing GIB in high risk populations should be pursued.


**B14**

**Elder Orphans: Hiding in Plain Sight**

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Case: HB is a 76 year old man living by himself in an apartment in Queens, NY. He was admitted for multiple decubiti and wrist laceration wound care after a failed suicide attempt. Prior to admission he had several months of decline and lack of contact with a distant family member, who last visited him a year ago. HB was admitted for management of dehydration, malnutrition, depression, and wounds. His course was complicated by delirium, unclear decision-making capacity, lack of social support and information access. HB was discharged to a nursing facility for continued wound care and long term placement.

As individuals live longer and relationships change, older adults may find themselves aging alone and unsupported. This case exemplifies and reintroduces the term **elder orphan** as individuals who are aged, have no known family member or designated surrogate, may subjectively be lonely or isolated, and vulnerable to lose decision-making capacity. Elder orphans are at high risk for failure to thrive and loss of independence and safety. The authors seek to raise awareness of this under-represented and growing population by utilizing this term, highlighting the vulnerability of this population, and instigate further action to better prepare and care for these individuals.

According to the 2012 U.S. Census data, nearly 19 percent of women age 40 to 44 have no children, a significant increase from 10 percent in 1980. Furthermore, one third of Americans aged 45-63 are single, a 50 percent increase from 1980. Based on University of Michigan’s Health and Retirement Study (HRS) the percentage of the over 65 population who currently are, or at risk to become, elder orphans is around 22%. This increasing number is staggering and must be addressed. The elder orphan is associated with a wide range of negative outcomes, including functional decline, loss of independence in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), premature mortality, and development of mental health issues. Furthermore, many of the mechanisms that have been put in place to prevent those who do not have capacity for decision-making from losing their voice (e.g. healthcare proxies) may be difficult in the elder orphan. Thus, we encourage public health, medical and social organizations to work cooperatively to advocate, highlight and preemptively plan to adequately prevent these individuals from hiding in plain sight.

**B15**

**New Antivirals in Old Patients: A Case of Successful Viral Suppression in a Geriatric Patient with HCV Cirrhosis**

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**Objective:**

Demonstrate that a short course of oral therapy with novel agents can lead to eradication of Hepatitis C virus (HCV) in a geriatric patient with multiple comorbidities.

**Case:**

A 71-year-old male presented with a history of peptic ulcer disease, Graves’ disease, hypertension, and depression. He had a remote history of heroin and alcohol abuse and was incarcerated in the 1970s and 1980s. Exam showed an enlarged, coarse liver, with transaminases elevated to ALT 114 / AST 151. On viral assays, he was HCV antibody positive, with a viral load of 2.8 million. Abdominal CT showed a cirrhotic liver with upper esophageal varices suggestive of portal hypertension.

Given that the patient’s hepatocellular inflammation was significant and ongoing, he was at risk for decompensated cirrhosis and hepatocellular carcinoma. The traditional regimen of pegylated interferon and ribavirin is known to seriously exacerbate depression and can also worsen Graves disease. The team instead decided to trial all-oral, interferon-sparing HCV therapy with the antiviral agents sofosbuvir and simeprevir.

Over a 12-week course, the patient was monitored closely, and his exam and mood did not change. His post-treatment HCV viral load was undetectable by DNA real-time PCR, and liver function tests are now normal.

**Discussion:**

Changes in HCV diagnostics and therapy are poised to transform geriatric practice. Since 2012, CDC guidelines now recommend one-time testing for all persons born during 1945–1965, the age cohort with the highest prevalence of HCV. Interest is building about all-oral therapy regimens centered on polymerase and protease inhibitors, which require no interferon or ribavirin. Multiple trials have shown sustained viral response rates that approach 100%, even for patients who responded poorly to interferon, or whose comorbidities make interferon-based therapy hard to tolerate.

Universal testing and treatment of older Americans with HCV, however, present an economic challenge. A full 84-day course of sofosbuvir and simeprevir, for example, now costs $150,000, a significant sum when considering the estimated 3.2 million adults living with HCV in the US. These costs should be weighed, however, against the benefits of preventing cirrhosis, malignancy, liver transplants and early mortality.
B16
Goals of Care Related to PEG Tubes and the Role of Sub-Specialists in Decision-Making
M. Lembeck, A. M. Corcoran. Penn State Hershey Medical Center, Hummelstown, PA.

Case Description
Mr. K is a 77 year old man who was diagnosed with progressive supranuclear palsy in 1997. He also has hypertension, and is hospitalized for aspiration pneumonia. Mr. K is nonverbal, unable to follow commands, and cannot complete his own ADLs. He is cared for at home by his wife, who notes that he has recently lost his ability to swallow and is losing weight. His neurologist referred him to a surgeon, who agreed to place a PEG tube, scheduled in two days.

His family relays that they were told at diagnosis that his life expectancy would be 6-7 years. Now 17 years from diagnosis, they believe that he is able to “defy the odds,” but also recognize the progressive nature of the disease. They believe that the PEG tube meets all of his goals: it will improve his nutrition and functional status; help his ulcer heal; and will be temporary.

Upon further discussion of realistic expectations, his family decided that the PEG tube did not meet Mr. K’s goals. A decision was made that he would return home with hospice.

Discussion
We can take guidance from the AGS Choosing Wisely initiative that recommends against percutaneous feeding tubes in patients with advanced dementia. It is important to set realistic expectations that meet goals and improve quality of life. For instance, tube feeding can worsen pressure ulcers and studies indicate that PEG tubes may not result in significant improvement in nutritional or functional status.

An especially noteworthy aspect of this particular case to highlight is that sub-specialists are sometimes in a position to address goals of care, but often defer this discussion to the primary physician. However, specialists are equally important members of the care team, and are often looked to for guidance. In this case, for example, Mr. K’s neurologist might have elicited goals and discussed with the patient and family that a PEG tube would be lifelong in this case, as Mr. K is no longer able to swallow due to progression of his disease. His poor prognosis in the terminal stages could have been conveyed, and a decision to focus on comfort may have been reached without escalation of care.

Additionally, explicit communication between specialists could prompt better understanding of the whole picture. For example, the neurologist might have conveyed the poor prognosis to the surgeon. This may have expanded the conversation to include other treatment options, including that of no treatment.

B17
Life Threatening Varicose Vein Bleed in an Older Adult on Pradaxa
M. Davila, W. Horn. Geriatrics, Montefiore Medical Center, Bronx, NY; 2. Albert Einstein College of Medicine, Bronx, NY.

Introduction: Pradaxa is a novel oral anticoagulant (NOAC) used for thromboprophylaxis in patients with atrial fibrillation (AF). NOAC have gained wide acceptance since frequent laboratory testing is not required and there are few drug interactions. The side effects in the elderly have not been fully explored. We describe a case of severe varicose vein bleeding in the setting of pradaxa use.

Case: An 88 year old female with diabetes, hypertension, chronic kidney disease (CKD), chronic obstructive pulmonary disease, pulmonary hypertension, congestive heart failure, morbid obesity, chronic venous insufficiency, and AF on pradaxa presented to the emergency room with right lower extremity pain for two days. There was no history of trauma or pain with ambulation, but there was a hematoma in her right leg in the area of a varicosity. While transferring onto a stretcher she developed spontaneous bleeding from the hematoma. Di-rect compression was applied. She became hypotensive, tachycardic, and had multiple episodes of syncope. On exam the patient had bilateral chronic venous stasis changes, bilateral non-pitting edema and a 3cm x10cm open right leg wound with exposed subepidermal tissue. Labs revealed a drop in hemoglobin (11.1 to 8.6), INR 1.3, and APTT 36.9. Doppler was negative for deep vein thromboembolism and peripheral vascular resistance testing was normal. Intravenous fluids and blood transfusions were administered. She was discharged off pradaxa for which she had taken for 3 years.

Discussion: Studies addressing bleeding risk have shown no increase risk of major bleeds when using NOAC compared to vitamin K antagonists with exception of gastrointestinal bleeds in the elderly. This case highlights a patient with multiple comorbidities who had a hemodynamically significant bleed from a varicosity while on pradaxa. Clinicians should consider whether patients with varicose veins might benefit from a reversible anticoagulant instead of a NOAC.

B18
An Atypical Case of Neurocognitive Disorder with Predominant Biparietal Lobe Atrophy
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Introduction:
Cerebral changes associated with neurocognitive disorder are well described in the literature and can include fronto-temporal degeneration and posterior cortical atrophy (parietal/occipital). In this case report, we will discuss a patient with atypical neurocognitive deficits with predominant biparietal lobe atrophy.

Case:
A 72 year-old man presented with a one year history of progressive short-term memory impairment, disorientation, visuospatial deficits, acalculia and apraxia. He has a remote traumatic brain injury without residual deficits. He lives with his wife and remains physically active, able to lift weights and run on a treadmill. He is a retired entrepreneur presently working as a spiritual church counselor. He is no longer able to manage his finances and mixes up numbers when writing checks. He places his shirts on backwards. He is unable to drive due to becoming lost in familiar locations.

When seen in the geri-psych clinic, he was well groomed with coherent speech, and no observable abnormalities in mood, speech, or thought content. An MMSE was 24/30. Neuropsych evaluation found prominent deficiencies in visuospatial, perceptual and praxic function, along with broader deficits including memory and executive dysfunction seen more typically in early neurocognitive disorder.

At the time of initial presentation one year ago, an MRI was remarkable for moderate biparietal lobe gray matter atrophy. A PET/CT six months later showed symmetric hypometabolism involving bilateral parietal lobes, corresponding to the parenchymal volume loss seen on MRI. An MRI 2.5 years prior for a complaint of vertigo that has long resolved was only remarkable for mild chronic small vessel ischemic disease. Lab workup including TSH, RPR, CPK, and MMA was normal. EMG study was unremarkable. He is on donepezil and memantine which have reportedly helped with memory and mental sharpness.

Discussion:
This case supports the argument for a neurocognitive disorder due to biparietal lobe atrophy. The findings in our patient are similarly reported in a case series by Ross et al, where patients were noted to have early visuospatial problems, apraxia, and difficulty with bimanual tasks, all of which outweighed deficits in memory and language.

Reference:
B19 Lessons Learned From Three Home Based Primary Care Patients With Dysphagia And Advanced Parkinson's Disease
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Patients with Parkinson’s Disease (PD) are at risk for dysphagia, with complications of malnutrition, dehydration, and aspiration pneumonia. Patients seldom report dysphagia, but 50-80% have video-fluoroscopic evidence of some dysphagia, and 10% will develop severe dysphagia. Lessons learned from following three Home Based Primary Care (HBPC) veterans with Stage 5 Modified Hoehn and Yahr PD over a 2 to 3 year period are explored.

Cases: 1. 74yo bedridden male with PD since 1990 and dementia. Hospitalized with dehydration in 2011, while on a regular diet. Swallow evaluation showed moderate oropharyngeal dysphagia. Diet changed to nectar thick liquids per the National Dysphagia Diet (NDD). Admitted to HBPC and stable until 2013. His family chose to have a gastrostomy tube (G-tube) placed due to malnutrition, BMI 15.6. Upon starting G-tube feeds his tremors increased. Symptoms improved after adjusting the timing of his G-tube feeds to prevent a malabsorption interaction between Levodopa and protein. Levodopa is better absorbed taken 30-60 minutes prior to high protein meals. Weight improved 30 lbs.

2. 87yo wheelchair bound male with PD since 2003, Diastolic Heart Failure EF 55%, and dentures. He reports no dysphagia or drooling. Swallow evaluation in 2008 showed mild dysphagia. Regular soft modified oral diet with swallowing precautions started. He was on multiple medications that can contribute to dysphagia including: an opioid (CNS depression), a diuretic and ACE inhibitor (dry mouth), aspirin and ferrous sulfate (esophageal irritation). The opioid and iron were stopped in 2011 by HBPC.

3. 75yo wheelchair bound male with PD since 1984, s/p deep brain stimulation 2007. Hospitalized for aspiration pneumonia in 2011, and a swallow study confirmed oropharyngeal dysphagia. A modified puree soft diet with nectar thick liquids following the NDD was ordered. He desired to continue eating and avoid G-tubes. Weight was maintained for 2 years. He voiced that cold food triggers his dysphagia, an observation not yet found in PD literature. The frequency and severity of his aspirations improved. He died in 2014 with his care goals honored.

Discussion: Dopamine agonists may not improve swallowing performance in patients with PD. Monitoring for medication interactions and following the NDD guidelines have enhanced the safety, food tolerance, and satisfaction of HBPC patients with advanced PD and dysphagia.

B20 Arsenic poisoning from over-the-counter supplements
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Introduction: Arsenic is a heavy metal commonly found in marine animals, plants and well water. Arsenic has been used historically to treat syphilis, yaws, amoebiosis and recently, acute promyelocytic leukemia. It has not previously been used as an antioxidant or nutraceutical remedy. Arsenic exposure has been associated with endocrinologic, neurologic and cardiac pathology. Despite this, many over-the-counter (OTC) supplements contain variable levels of arsenic. These supplements are not government regulated.

Case Report: An 83 yo man presented with acute confusion and hallucinations after being found in a shopping cart at a local store having driven over 300 miles from home. He was living independently and was healthy except for hypertension and hypercholesterolemia. He preferred herbal supplements to prescription medications. After a thorough work-up and failure to improve with medical intervention at hospital day 14, a 24-hour urine heavy metal screen found an organic arsenic level of 94ug/L. No chelation was required. Psychosis was stabilized with quetiapine, risperidone and valproic acid. He was later discharged to a nursing facility where he began showing significant improvement.

Discussion: Arsenic toxicity can result in a variety of presentations including neurotoxicity with symptoms of behavioral disturbance, cognitive disturbance and memory loss. The pathogenesis of neurotoxicity is thought to be a complicated imbalance of neurochemicals involving hippocampal dysfunction, hypothalamus-pituitary-adrenal axis dysregulation, as well as glutamate and acetylcholine/choline. Toxicity can result in adult neurogenesis and increased Alzheimer’s-associated pathologies. Therapeutic options include eliminating the exposure and using chelators such as selenium, zinc and thiol. Anti-depressants and anti-psychotics have also been shown to be effective.

Conclusion: This case illustrates the importance of considering exposure, including OTC supplements, as a cause for acute confusion, cognitive dysfunction and psychosis. Unfortunately, the patient burned down his home just prior to hospitalization, so chemical analysis of his supplements was not possible. This patient’s lack of prior symptoms and sick contact as well as improvement over time allowing for withdrawal of antipsychotic medication support use of supplements resulting in arsenic toxicity as the cause for his presentation.

B21 Pelvic Exams in the Elderly: To do or not to do, that is the question.
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Introduction: Vulvar Melanoma, a rare disease with a poor prognosis, is most often diagnosed late in life. Unsatisfactory pelvic exams are frequently performed ignoring vulvar and vaginal areas. Pelvic exams in elderly women are done infrequently, if at all, by some providers who ignore the patient’s quality of life and focus instead on the patient’s age and perceived limited remaining lifespan.

Clinical Scenario: An 86-year-old female (G0 P0) presented to her PCP for a wellness examination after transferring care to the provider. She has a history of COPD, CAD, PMR, Breast CA (s/p left mastectomy), and smoking. Chief complaints were chest tightness across her mastectomy site for the last two years, exertional dyspnea and constipation.

Additional review of systems was positive for a sensation of incomplete voiding, but no dysuria, hematuria, significant nocturia, or incontinence. She requested a pelvic examination, saying “Nobody has looked down there in quite some time”. On exam, a painless, eczematous, non-blanching lesion on her right labia majora was noted. There was no bleeding. She was unaware of this lesion.

The patient was referred to Gynecology for further evaluation. That examiner described a 4cm flat black lesion with irregular margins and satellite areas within. Biopsy revealed malignant melanoma. She was referred to Gyn-Oncology for radical vulvectomy and bilateral sentinel inguinal lymph node (SLN) biopsy. PET/CT scan revealed no extension beyond the vulva.

Surgical pathology described a superficial spreading malignant melanoma, 0.95 cm thick, 3cm in greatest diameter with negative margins. SLNs were negative. No further treatment was recommended. She has been followed the last 18 months by her PCP with no recurrent issues related to the malignancy.

Discussion: Current ACOG and USPSTF guidelines for cervical cancer screening were meant to decrease the number of low-yield PAP tests in older females, not as a pass to avoid pelvic examinations altogether. Pelvic examinations can identify more common issues such as vaginal atrophy, lichen sclerosis, and bladder, uterine or rectal pro-
lapse. This case illustrates the importance of such examinations, which should include thorough examination of the external genitalia.

B22
A TUSSEL WITH POLYCYTHEMIA VERA AND ACUTE RENAL FAILURE
S. Tariq, H. Choudhry, E. Black, J. Smith, Bayonne Medical Center, Bayonne, NJ.

A recent systematic review and meta-analysis of recovery of kidney function after AKI in the elderly has shown that recovery after AKI is approximately 28% less likely to occur when the patient is older than 65 yrs. We describe a case of a polycythemic patient developing acute kidney injury requiring hemodialysis and then manifesting recovery in a unique manner.

A 79 years old male having multiple co-morbidities including polycythemia vera (PV), coronary artery disease, hypertension and dyslipidemia underwent femoral-popliteal bypass grafting for acute ischemia of his leg. During post-op recovery he developed acute kidney injury, as a result of post-op sepsis and eventually became dialysis dependent. Dialysis continued for 2 months at a sub-acute rehabilitation facility. Prior to his hospitalization, he was getting regular phlebotomy for PV. During a dialysis session, his dialysis catheter was found to be clotted requiring its change for adequate dialysis. Following the catheter change, the patient was to have dialysis but the catheter clotted again, despite receiving adequate doses of heparin. A third attempt with high doses of Heparin was also unsuccessful. It was felt that the PV may be causing the clotting issues and the patient may need phlebotomy for successful dialysis. Results of blood work indicated that the he had recovery of his renal function. There was a significant drop in creatinine from 5 to 2mg/dl along with a markedly elevated Hb level from 8 to 14mg/dl depicting a flare up of his PV, presenting as repeated clotting of the dialysis system.

Erythropoietin production by renal cortex and outer medulla is suppressed in patients with primary PV. Another feedback mechanism involving hypoxia-inducible factor (HIF), elevated during hypoxia, regulates transcription of the erythropoietin gene in the kidney. However, little is known about production of erythropoietin in kidneys recovering from acute renal failure. Since the patient had primary PV, even a slight increase in erythropoietin level produced from recovering kidneys rendered the patient prothrombotic, causing thrombosis and clotting of the dialysis catheter multiple times despite the generous use of heparin. The case represents recovery of kidney function that was not diagnosed by traditional factors but was done clinically as a flare up of his polycythemia vera.

B23
A Wandering Pacemaker: The Importance of Cognitive Screening
S. E. Rogers, L. Klein, C. Perissinotto, J. Geriatrics, University of California San Francisco, San Francisco, CA; 2. Division of Cardiology, University of California, San Francisco, San Francisco, CA.

Introduction:
The United States Preventive Services Task Force (USPSTF) states that the current evidence is insufficient to recommend routine cognitive screening in older adults. However, a missed diagnosis can lead to unintended harm or unexpected outcomes. This case illustrates the importance of screening older adults for cognitive impairment despite current guidelines.

Case:
A 76-year old male with heart failure presented after medical management failed to improve his symptoms. After discussing the risks and benefits with the patient and his family, a left ventricular assist device (LVAD) as destination therapy was offered. Although the family had noticed some subtle hints of changes in his memory such as repeating questions and losing things, these issues were not brought to the attention of the medical team, nor were they evident during multiple clinical encounters. The LVAD placement greatly improved the patient’s heart failure symptoms, however, his post-operative course was complicated by behavioral outbursts, wandering and getting lost, locking himself in rooms, and multiple attempts at pulling out his heart pump leads and disconnecting the batteries. Formal neuropsychiatry testing revealed a diagnosis of dementia. The family had difficulty caring for him at home and placement in a facility was difficult due to the reluctance of a facility to undertake the complex management of an LVAD especially in a patient who was uncooperative and confused.

Discussion:
Cognitive impairment is frequently undetectable during routine clinical interactions and often patients must be formally tested in order to detect these subtle changes. As a result of this case, the Montreal Cognitive Assessment (MOCA) test is routinely done as part of the pre-LVAD evaluation. If they score 21/30 or less, formal neuropsychiatric testing is done to further evaluate. After one year of implementation of this process, three previously undetected cases of cognitive impairment (likely to interfere with the patients’ ability to tolerate and use the LVAD) were detected. Routine testing for cognitive impairment and formal diagnosis helps families, patients and healthcare teams make better-informed decisions about the use of advanced life-sustaining treatments.

B24
Identifying Patients at High Risk for Hospitalization
B. Salzman, R. Knuth, E. Gardner, K. Collins-Fletcher, A. Cunningham, M. LaNoue, 1. Family and Community Medicine, Thomas Jefferson University, Philadelphia, PA; 2. Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, PA.

Supported By: Geriatric Academic Career Award, HRSA

Background: Hospitalizations are costly, potentially dangerous to the elderly, and preventable in some cases. With Medicare’s recent implementation of hospital penalties for 30-day readmissions on certain index conditions, healthcare organizations have prioritized the need to better understand and address the issues that lead to avoidable hospitalizations. In this study, the goal was to determine from a sample of 60 elderly patients whether the Probability of Repeat Admission (PRA) tool, the Vulnerable Elders Survey (VES-13), or a provider survey could identify patients at high risk for hospitalization in the next 12 months, while being feasible for administration in a primary care setting.

Methods: All patients age 65 and older were asked if they would be willing to complete a brief survey. If willing, study personnel administered the PRA and VES-13 during an office visit. The patient’s primary care provider, blinded to the results of the PRA and VES-13, was asked to fill out a survey indicating the likelihood that she believed her patient would be admitted to the hospital in 30 days, 6 months, and 1 year. Patients were called six months and one year later and asked whether they had been to the ED and/or hospital. The data was analyzed on SPSS to determine the comparative efficacy of the three tools. In addition, the data was analyzed to examine whether any association existed between ED visits/hospitalizations and specific chronic conditions, number of chronic conditions, and number of medications. This study was approved by the Institutional Review Board.

Results: The PRA was significant predictor of hospitalizations (p=0.009), in a logistic regression with high risk (PRA > 0.500) and low risk categories (PRA ≤ 0.499). If patients were categorized into the high-risk category, the odds of hospitalization in the last year were 6.6 times greater. The VES-13 was not a significant predictor of hospitalizations (p=0.300) at the one-year mark. Similarly, the physician survey was not a significant predictor for hospitalizations (p=0.079).

Conclusions: In this study comparing the efficacy of 3 tools at predicting hospitalization in older adults, the PRA was the only signifi-
icant predictor of hospitalizations. The PRA was easy and feasible to administer in a primary care setting.

**B25**

**Shorter Length of Hospital Stay Associated with Early Readmissions from Post-Acute Care**

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Supported By: Hartford/Jahnigen Center for Excellence in Geriatrics KL2 TR001080

**Background:** Discharge from the hospital to Post-Acute Care (PAC) is associated with an increased risk of hospital readmission. This study examines the relationship between patient characteristics, index hospital length of stay (LOS) and timing of hospital readmission from PAC.

**Methods:** The Healthcare Cost and Utilization Project State Inpatient Database contains all inpatient data from participating states. We analyzed hospital readmissions within 30 days of discharge to PAC for patients ≥ 65 years between January 1, 2011 and December 31, 2011 in California, Massachusetts and Florida. Comparison between readmission on PAC days 0-7 and PAC days 8-30 were completed for baseline characteristics and index hospital LOS. Multiple comorbidity was divided into 2 groups: 0-5 chronic diagnoses and ≥ 6 chronic diagnoses. All comparisons were performed using Chi-squared or Student’s t-test.

**Results:** During the 12-month study period, 38,932 patients were discharged to PAC and readmitted within 30 days (mean age 80 years, 57% women, 8% African American). 11,491 (30%) were readmitted within 7 days. Of those readmitted on days 0-7, 67% had ≥ 6 chronic illness, compared to 74% of those readmitted on days 8-30 (p<0.0001). Early readmission (days 0-7) was significantly associated with shorter index hospital LOS (0-3 days) when compared to readmission on days 8-30 (41% vs 31%, P<0.0001) (Table 1).

**Conclusions:** Short index hospital LOS (0-3 days) is significantly associated with 7-day readmission for patients discharged to PAC. High number of chronic conditions was not associated with hospital readmission within 7 days. Interventions designed to reduce hospital readmission from PAC should consider hospital length of stay.

### Table 1. Index hospital LOS and timing of readmission from PAC

<table>
<thead>
<tr>
<th>Index hospital LOS</th>
<th>Readmission on days 0-7 (N=17491)</th>
<th>Readmission on days 8-30 (N=27441)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 days</td>
<td>4710 (48.7)</td>
<td>8555 (31.2)</td>
<td>0.0001</td>
</tr>
<tr>
<td>4 days</td>
<td>6771 (58.9)</td>
<td>18886 (68.8)</td>
<td></td>
</tr>
</tbody>
</table>

**B26**

**Phase III randomized double-blind controlled trial of oral risperidone, haloperidol or placebo with rescue subcutaneous midazolam for delirium management in palliative care**


Supported By: Australian Government’s Department of Health and Ageing under the National Palliative Care Strategy

**Background:** Guidelines recommend targeted use of antipsychotics in delirium for specific symptoms however this approach has not been evaluated in randomized trials.

**Aim:** To compare the efficacy of risperidone relative to placebo in the control of specific delirium symptoms in palliative care patients ((communication, behavior and/or perceptual disturbances on Nursing Delirium Screening Scale) at 72 hours after study commencement. Secondary aims were to compare haloperidol and placebo; and risperidone and haloperidol.

**Methods:** Dose titration occurred twice daily to effect pre-defined increments to maximum 4mg (2mg if >65). All participants had delirium precipitants managed and non-pharmacological measures. Subcutaneous midazolam rescue was available. Improvement of delirium symptoms was assessed using linear regression (average of scores on day 4), adjusted for baseline score and group. Survival between groups was assessed using the log rank test, and midazolam use by Chi squared test.

**Results:** The trial recruited to its full sample (239 participants) - 80 risperidone; 79 haloperidol; and 80 placebo. For the primary intention-to-treat analysis (with 50 resamples drawn) between risperidone and placebo (n = 160) the risperidone group had significantly greater specific delirium symptoms on average at study end; 0.57 (95% CI 0.17, 0.98, p=0.006) than the placebo group. The haloperidol group also had significantly greater specific delirium symptoms at study end than the placebo group, 0.29 (95% CI 0.11, 0.48, p=0.002). In a pooled analysis, those on antipsychotics had a significant reduction in survival compared to placebo (p=0.026). Midazolam rescue use was markedly lower in placebo group vs antipsychotics on each study day, 18.2 vs. 31.3% (day 1), p=0.035, 15.9 vs. 29.0% (day 2), p=0.031 and 13.6 vs. 29.6% (day 3), p=0.016.

**Conclusions:** This adequately powered study has shown individualized management of delirium precipitants and non-pharmacological strategies results in better control of delirium symptoms without the need for midazolam rescue and better survival, than seen with the addition of risperidone or haloperidol. These results fundamentally challenge the pharmacological approach to manage delirium.

**B27 Encore Presentation**

**Pre-critical illness frailty and long-term clinical outcomes**


Supported By: National Institutes of Heath under awards (R01AG027472, R01AG035117, R01HL111111 and R03AG040549), Vanderbilt Clinical and Translational Scholars Program and the Department of Veterans Affairs Tennessee Valley Health Care System Geriatric Research, Education and Clinical Center (GRECC).

**Methods:** We measured pre-illness frailty with the Clinical Frailty Scale (CFS) in adult patients with respiratory failure or shock admitted to ICUs at five U.S. centers. The CFS ranges from 1 (very...
fit) to 7 (severely frail), with scores >4 indicating frailty. At 3 and 12 months after ICU discharge, we assessed mortality, ADL disability; IADL disability; cognition; and health-related quality of life. We then used multivariable regression to assess the relationship between pre-illness CFS score and the above outcomes, adjusting for potential confounders.

Results: We enrolled 1,081 patients who were 62 [53-71] years old with a median APACHE II score of 24 [18-30]. At ICU admission, 307 patients (28%) had clinical frailty. Results of the multivariable regression analyses are presented in the Table.

Conclusions: Severity of baseline frailty was an independent predictor of mortality and IADL disability, but it was inconsistently associated with other clinical outcomes. Further research into the importance of clinical frailty in critical illness is warranted.

Table

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-Critical Illness</th>
<th>Clinical Frailty Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality at 1-year</td>
<td>1.5</td>
<td>1.2 to 1.8 &lt;0.001</td>
</tr>
<tr>
<td>Disability in ADLs</td>
<td>3 months</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>1.9 to 1.3</td>
</tr>
<tr>
<td>Disability in IADLs</td>
<td>3 months</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>1.3</td>
</tr>
<tr>
<td>RBANS Global Score</td>
<td>3 months</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>-0.2</td>
</tr>
<tr>
<td>SF-36 Physical Component Score</td>
<td>3 months</td>
<td>-0.2</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>-0.3</td>
</tr>
<tr>
<td>SF-36 Mental Component Score</td>
<td>3 months</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

*Point estimate represent hazard ratio for death in 1st year after study enrollment.

B29

A Behavioral Slow-Paced Respiration Program To Treat Menopausal Hot Flashes: A Randomized Trial

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Supported By: The National Center for Complementary and Alternative Medicine, the National Institute on Aging, and the American Federation on Aging Research.

BACKGROUND: Over half of U.S. women experience hot flashes during menopause, yet pharmacologic treatments for hot flashes are associated with long-term health risks or side effects that limit safety and tolerability. Slow-paced respiration has been recommended as a behavioral treatment for hot flashes, but data supporting its benefits are limited. We evaluated the efficacy of device-guided slow-paced respiration for reducing the frequency and severity of hot flashes in peri- and postmenopausal women.

METHODS: We conducted a parallel group, randomized trial of slow-paced respiration using a portable guided-breathing device (RESPeRATE, Intercure, Ltd). Peri- or postmenopausal women reporting at least 4 hot flashes per day and not using pharmacologic treatments for hot flashes were recruited from 2012 to 2014. Women were randomly assigned in a 1:1 ratio to use a standard guided-breathing device to slow their resting breathing to <10 breaths/minute for at least 4 hot flashes/day on average compared to a decrease of 35% in the music control group (P=0.046). Paced respiration was also associated with a 19% decrease in moderate-to-severe hot flashes/day on average compared to a decrease of 44% associated with the music control (P=0.02).

RESULTS: Among the 123 participants, mean age was 53 (±3) years, and 42% were racial/ethnic minorities. Women reported an average of 8.5 (±3.5) hot flashes/day at baseline. After 12 weeks, women randomized to paced respiration reported an average reduction of 1.8 (95%CI:0.9-2.6) hot flashes/day (-21%), compared to a reduction of 3.0 (95%CI:2.1-3.8) hot flashes/day (-35%) in the music control group (P=0.046). Paced respiration was also associated with a 19% decrease in moderate-to-severe hot flashes/day on average compared to a decrease of 44% associated with the music control (P=0.02).

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CONCLUSIONS: Slow-paced respiration was less effective in reducing the frequency and severity of hot flashes compared to a music control. These findings suggest that paced respiration should not be recommended as treatment for menopausal hot flashes, at least when using a portable guided-breathing device. Additionally, other relaxing activities such as listening to relaxing music may offer modest benefits for control of hot flashes.

B30 Evaluation of Mental Status and Neuroimaging Use Among Adults Age 75 Years and Older Presenting to the Emergency Department
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Background: Altered mental status is a common and serious co-morbidity among older adults during emergency department (ED) visits. Few studies of neuroimaging use in the ED focus on older adults. The purpose of this study was to examine the epidemiology of mental status among adults age 75 years and older presenting to the ED and the associated use of neuroimaging.

Methods: The study is a prospective convenience sample. Adults age 75 years and older presenting to an urban ED were eligible for inclusion. Patients presenting with signs or symptoms of acute stroke, head trauma with loss of consciousness, or seizure were excluded. Participating patients were administered the Abbreviated Glasgow Coma Scale, Confusion Assessment Method, and the Six-Item Screener. Classification was into 4 mutually exclusive categories: impaired consciousness, delirium, cognitive impairment, or cognitively intact. Demographics, neuroimaging use, and findings were abstracted from patient electronic medical records. SPSS was used to generate descriptive statistics and Chi-square for differences in categorical variables.

Results: 329 patients were interviewed during a 7-week recruitment period in June and July 2014. Mean age (± SD) of patients was 84 (5.5) years old, 70.5% were female and 98.2% were white. Of these, 136 (41.3%) were classified as having altered mental status: cognitive impairment, 98 (29.8%); delirium, 30 (9.1%); or impaired consciousness, 8 (2.4%). A CT scan or MRI was performed on a total of 77 patients (23.4%). No acute intracranial pathology was identified in any patient. Neuroimaging use was significantly associated with being classified as having altered mental status compared to cognitively intact patients (p < 0.0001).

Conclusions: Neuroimaging was negative for acute findings among older adults in the ED who did not have signs or symptoms of acute stroke, seizure, or head trauma with loss of consciousness. Further research to develop clinical guidelines in this patient population could help improve care for older adults in the ED and optimize resource utilization.

B31 Expansion of EQUIPPED: Two-site results from an initiative to improve prescribing quality in the Emergent Department

Supported By: Initial funding was provided by an Emory University FAME grant to Dr. Stevens and the Department of Veterans Affairs Office of Geriatrics and Extended Care T-21 initiative (G508-1 & G521-5). Dr. Vaughan is supported by a Rehabilitation R&D CDA-2 award from the Department of Veterans Affairs 1 IK2 RX000747-01. Additional funding has been provided by a John A. Hartford Collaborative Pilot Award and the Department of Veterans Affairs Office of Rural Health.

Background: EQUIPPED is an ongoing multi-component, interdisciplinary quality improvement initiative in eight Veterans Affairs EDs. Results for EQUIPPED-trained staff at the first site have been described previously. This abstract describes results for all providers (including moonlighters) at the first and second VA implementation sites. Methods: EQUIPPED aims to decrease the use of PIMs, as identified by the Beers list, prescribed to Veterans aged 65 years and older at the time of ED discharge. Interventions include: 1) provider education; 2) clinical decision support with computerized order sets and links to online geriatric content; and 3) individual provider audit and feedback, and peer benchmarking. EQUIPPED staff at both sites received all three interventions. Moonlighting providers at both sites had access to clinical decision support tools, but did not receive education or individual feedback. Data were examined from April 2012 to Nov 2014. Poisson regression was used to compare the number of PIMs prescribed to Veterans aged 65 years and older discharged from the ED at both sites before and after EQUIPPED.

Results: At the first site EQUIPPED providers prescribed 43% of all meds compared to 57% by moonlighters. At the second site EQUIPPED providers prescribed 34%, and moonlighters 66%. The average monthly proportion of PIMs prescribed by all providers at the first site was 11.8% (SD 1.8) pre-intervention compared to 6.3% (SD 2.0) post intervention (p=0.0001); and 8.0% (SD 0.9) compared to 7.0% (SD 1.8) p=0.006 at the second site. Conclusions: EQUIPPED led to a significant and sustained reduction of PIMs prescribed to older Veterans at the first two implementation sites and suggests the program impacted all providers in the ED including those who did not receive all interventions.
sought to estimate the proportion of older ED patients willing and able to use a tablet computer to provide basic clinical information.

**Methods:** We performed a prospective study of patients aged 65 years and older seen in one of two academic EDs serving a socioeconomically diverse populations of older adults. Study participants were asked if they would be willing to use a tablet computer to answer 8 demographic and clinical questions. A custom user interface optimized for geriatric subjects was used that included simplified dialogs, high screen contrast, and a large font; duration of use was not restricted. Ability to use the tablet was assessed based on need for assistance and number of questions answered correctly.

**Results:** Of the 362 patients who were approached, 249 (69%) were willing to participate in the study; of these, 121 (49%) were willing to answer the questions using a tablet computer. Of those willing to use a tablet computer, 90 participants (74%) were able to answer at least 6 of 8 questions correctly, and 48 (40%) did not require assistance. Only 39 (32%) were able to answer all 8 questions correctly without assistance. Participants aged 65-74 years and those reporting use of a touch screen device at least once a week were more likely to be both willing and able to use the tablet computer.

**Conclusion:** In this sample of older ED patients, approximately half of participants were willing to provide clinical information using a tablet computer but less than half of these were able to correctly enter all information without assistance. Tablet computers may provide an efficient means of collecting clinical information from some older ED patients, but with current technology will be ineffective for most.

**B33**

**Effect of Reduced Physical Activity on the Development of Persistent Pain After Motor Vehicle Collision in Older Adults: a Propensity Score-Matched Analysis**

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Supported By: Research reported in this publication was supported by the National Institute on Aging of the National Institutes of Health under Award Number K23AG038548.

**Background:** Motor vehicle collisions (MVCs) are an increasingly common mechanism of injury among older adults and frequently result in persistent pain and functional decline. Targets for interventions to prevent these outcomes are needed. We sought to determine the impact of reduced physical activity during the first 6 weeks following MVC on persistent pain symptoms among older adults.

**Methods:** This was a multi-center prospective cohort study of adults aged 65 years or older presenting to the ED within 24 hours of MVC. Physical activity during the past week was assessed in the ED to represent pre-MVC activity and 6 weeks after MVC using the Physical Activity Scale for the Elderly. MVC-related pain was assessed on a 0-10 scale at 6 months and calculated for participants who decreased their physical activity level by 50% or more over the first 6 weeks vs. those who did not. Propensity score matching was used to identify participants similar in regard to likelihood of reduced physical activity based on age, sex, race, education, comorbidities, pre-MVC difficulty with activities of daily living, and ED pain.

**Results:** Within the cohort (N=152), 73% had moderate or severe pain in the ED and 32% had a 50% or more reduction in physical activity in the first 6 weeks. Patients with reduced physical activity had average pain scores at 6 months of 4.2 vs. 2.6 for those with less than a 50% reduction in activity, difference 1.6 (95% CI 0.3 to 2.9). Among propensity score matched participants (N=92), participants with reduced physical activity had average pain scores at 6 months of 4.2 compared to 2.3 for patients without reduced physical activity, difference 1.9 (95% CI 0.2 to 3.6).

**Conclusions:** In this sample of older adults experiencing MVC, a decrease in physical activity during the first six weeks was an independent determinant of persistent pain. Promoting early physical activity after MVC may improve long-term outcomes.

**B34**

**Injury Patterns in Physical Elder Abuse: Preliminary Findings from a Pilot Sample of Highly Adjudicated Cases**

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Supported By: This research and Tony Rosen’s participation has been supported by a GEMSSTARR (Grants for Early Medical and Surgical Subspecialists’ Transition to Aging Research) grant from the National Institute on Aging (R03 AG048109). He is also the recipient of a Jahnigen Career Development Award, supported by the John A. Hartford Foundation, the American Geriatrics Society, the Emergency Medicine Foundation, and the Society of Academic Emergency Medicine. Chris Reisig’s participation was supported by a MSTAR (Medical Student Training in Aging Research) grant from the American Federation of Aging Research. Mark Lachs is the recipient of a mentoring award in patient-oriented research from the National Institute on Aging (K24 AG022399).

**Background:** Elder abuse is common and has serious health consequences but is under-recognized by health care providers. Among the most important reasons for poor recognition is the difficulty in distinguishing between elder abuse and accidental trauma. Little systematic research exists examining injury patterns consistent with elder abuse. Our goal was to describe injuries in highly adjudicated cases of physical elder abuse.

**Methods:** Partnering with a large, urban district attorney’s office, we closely examined a pilot sample of 32 successfully prosecuted physical elder abuse cases from 2003-2014. We evaluated police, legal, and medical records from these highly adjudicated cases, focusing on descriptions and photographs of injuries.

**Results:** Victims were primarily female (66%) with a median age of 70 years (IQR 65-81), and the abuser was most commonly the victim’s son (44%) or spouse/companion (19%). 21 victims (66%) had injuries, with 49 total injuries identified. The body regions most commonly injured were the upper extremities (57% of victims) and maxillofacial area or neck (48%), with the forearm and peri-orbital area most commonly affected. Bruising was observed in 71% of victims, lacerations in 52%, and abrasions in 33%. 10% sustained fractures, most commonly of the ribs or zygoma. 62% sustained multiple injuries, and 43% had injuries on both sides of their body. Notably, 11 victims of legally confirmed physical elder abuse had no visible injuries on abuse detection, despite mechanisms including punching and striking with a stick.

**Conclusion:** Victims of physical abuse are likely to have injuries on their upper extremities, face, or neck. Victims may have multiple injuries, often on both sides of the body. Many victims, however, do not have any visible injuries, increasing challenges in detection. Future research comparing abuse-related injury patterns to those sustained by older adults after an accident such as a fall is critically needed to assist health care providers in identifying suspicious injuries and protecting vulnerable older adults.
B35
Emergency Department Femoral Nerve Blocks for Acute Hip Fracture Pain: A Randomized Controlled Trial
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Supported By: National Institute on Aging (R01 AG030141 Morrison)

Background: Hip fractures are a significant source of morbidity and mortality among older adults and poorly controlled pain is associated with poorer outcomes including delirium, delayed functional recovery, and increased healthcare costs. Methods: This was a multicenter, single-blind randomized controlled trial among older adults with acute hip fractures. Femoral nerve blocks (FNBs) performed by emergency physicians to usual care with conventional opioid therapy (COT) were compared, with pain intensity and relief as primary outcomes. All subjects were allowed intravenous opioids as needed. The study was conducted at 3 emergency department sites in New York City over a six-year period. Single injection FNBs were performed using 20 mL of 0.5% bupivacaine. Pain intensity was assessed using an 11-point numerical rating scale and pain relief by six-point ordinal scales at baseline and hours 2 and 3 after enrollment. Results: A total of 164 subjects were enrolled, 82 in each arm. Mean age was 83 years (range 62-93); 72% were female; 89% non-Hispanic white; and 82% Medicare insured. 55% had intracapsular fractures and 45% were extracapsular. Subjects assigned to FNB and COT reported similar average baseline pain intensity (6.43 vs. 6.57). Mean pain intensity scores at hours 2 and 3 were 3.9 [95% CI 3.2, 4.6] vs. 5.4 [95% CI 4.6, 6.1] and 3.6 [95% CI 2.9, 4.4] vs. 5.3 [95% CI 4.6, 6.1]. Intervention subjects reported greater pain relief at both time points (p=0.001 and p=0.0006, respectively). No complications were recorded in either group. Conclusion: Early regional anesthesia performed by emergency physicians is feasible and provides superior analgesic outcomes when compared to conventional opioid therapy.

B36
Statin Use is Not Associated with a Lower Rate of Major Cardiovascular Events in Older Men: the Physicians’ Health Study
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Background: Older individuals are often not included in randomized control trials, as such, there is no clear evidence of the cardiovascular (CV) benefit of statins in very old patients.

Methods: To determine whether regular statin use for primary prevention is effective in an older population, we conducted a retrospective cohort study of 7402 participants of the Physician’s Health Study, a completed randomized controlled trial (1982-1995) to examine the effect of aspirin and beta carotene on CV events. We used annual questionnaires to collect information on statin use, relevant covariates and outcomes. All major CV outcomes and death were validated by an Endpoint Committee. Statin use was queried on annual questionnaires between 1999 and 2012. Primary outcome was the composite of MI, stroke or revascularization. Those with a history of CV disease were excluded. Statin use was defined as self-reported use of statin for at least 120 days in a year. Poooled logistic regression was used to estimate the odds ratio (OR) and 95% confidence interval of having a major CV event, while updating statin use over time. We calculated a propensity score for statin use to help adjust for confounding by indication in this non-randomized study of drug effects.

Results: Median age was 76 years (min 70, max 102) at baseline statin questionnaire. At baseline 49.2% were former smokers, 3.4% were current smokers, 64.0% had hypertension, 9.7% diabetes, 3.0% peripheral vascular disease. 987 events occurred during an average of 6.1 years of follow up. Crude odds ratios for composite endpoint was 1.09 [0.94, 1.26] when comparing statin users to non-users. Adjustment for age, hypertension, diabetes, peripheral vascular disease, smoking status, and BMI did not alter the effect size (OR= 1.05 [0.90, 1.22]). Additional adjustment for propensity score (probability to receive statin prescription) led to further attenuation of the point estimate (OR=1.01 [0.86, 1.18]). When the analysis was limited to subjects over 80, the OR was 0.98 [0.69, 1.40].

Conclusion: In a cohort of older male physicians, statin use was not associated with the risk of major CV events. Ongoing work includes a propensity score-matched analysis to better adjust for confounding by indication.

B37
Are Indwelling Catheters Truly a Quality Problem in Long-term Care?
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Supported By: Agency for Healthcare Research and Quality

Background: Although indwelling urethral catheter (IUC) use in nursing home (NH) residents is a key quality metric, little is known about its epidemiology, which is important for devising strategies to decrease its prevalence and associated morbidity and infection. The purpose of our study was to describe IUC utilization, demographics, indications, and natural history in NH residents. Methods: We conducted prospective, on-site, quarterly review of IUC use in a convenience sample of 28 NHs in Connecticut (CT) over one year. Inclusion criteria were IUC in place and NH length of stay >30 days. Residents were enrolled when IUC use was found, and then reviewed quarterly. NHs were characterized by size, ownership, quality rating, and staff hours. Quarterly chart reviews of all facility residents with IUCs were done by trained nurse abstractors. Data included resident demographics, and IUC indication and utilization. Analysis was by descriptive statistics. Results: Of the 28 NHs, 71% were moderate size (100-199 beds, vs 50% for all CT NHs). Similar to all other CT NHs, 79% were for-profit; distribution of NH Compare Star Status was 14% 1-star, 21% 2, 11% 3, 32% 4, and 21% 5; and median hours per resident was 1.5 for licensed staff and 2.4 for CNAs. There were 293 identified residents with IUC; 53% were male and 84% were white; 63% had a Charlson comorbidity score ≥ 3, and 31.7% had a score ≥ 5. IUCs were more common in 1-star NHs (median 9.3/100 residents) vs. 2-5 star (5.7-6.6/100). IUCs were present at admission in 55%. Duration of IUC at enrollment was ≤1 day in 40%, 2-30 days in 10%, 1-<3 months in 5%, 3-<12 months in 14%, and ≥12 months in 29%. IUC indication was found for 85%; 71% had urinary retention, 17% stage ≥3 pressure ulcer, 7.5% hospice care, 4% intensive fluid monitoring, and 4% other (multiple reasons possible). Conclusions: IUCs in NH residents may be less common than previously thought. Half are short duration, and most are placed with appropriate indications. Opportunities to reduce IUC use may be limited, except possibly in lower quality NHs.
B38
Nitrate, Fractures and Change in Bone Density: In Postmenopausal Women: Results from the Women’s Health Initiative
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Supported By: The authors have no relevant financial interest in this article.

Background: Data from randomized controlled trials and observational studies suggest that nitrate medications may increase bone mineral density (BMD), although information on fracture outcomes is sparse. We examined the association of nitrate medications with bone outcomes (fractures and BMD) in the Women’s Health Initiative (WHI) Clinical Trial and Observational Study.

Method: A total of 160,972 postmenopausal women aged 50-79 years old, with no history of hip fracture were included in this cohort analysis. Medication use was ascertained directly from drug containers at baseline during in-person interviews. Exposure measures included use/non-use, type (short acting, long acting) and duration of use (<5 years, >5 years). Fracture outcomes (e.g., hip, forearm/wrist, total fractures) were analyzed by Cox proportional hazard models. Multivariable linear regression models were used to examine 3-year change in BMD (hip, spine and total body).

Results: At baseline, 1.2% women were using a nitrate. During the follow up, women experienced 1583 hip fractures, 5160 forearm/wrist fractures, and 22,604 total fractures. Any nitrate use was not related to risk for hip (hazard ratio [HR], 0.85; 95% confidence interval [CI], 0.59-1.23), forearm/wrist (HR, 0.98; 95% CI, 0.76-1.26), or total fractures (HR, 0.98; 95% CI, 0.87-1.1). The use of short acting nitrates was associated with a lower risk of total fractures (HR, 0.78; 95% CI, 0.63-0.96; but not with long acting nitrates (HR, 1.08; 95% CI, 0.94-1.23). Duration of use was not associated with fracture outcomes. Any nitrate use was not associated with 3-year change in BMD at spine, hip or total body.

Discussion: Any nitrate use was not associated with lower risk of fracture outcomes or higher BMD. Use of short acting nitrates was associated with lower risk of total fractures. This latter finding confirms other observational studies suggesting that intermittent, rather than daily use, may be associated with higher BMD.

B39
Incidence of Hip Fracture in U.S. Nursing Homes
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Supported By: This research was funded by grants from the NIH (1R01AG045441, 5P01AG027296-05)

Although hip fractures are associated with significant morbidity and mortality in the nursing home, estimates of the rate of fracture in the U.S. have not been derived using nationwide data. Our objective was to describe the incidence rate (IR) of hip fracture according to age, sex, and race in a large, nationwide sample of long-stay nursing home residents.

Using Medicare claims data linked with the Minimum Data Set, we identified 1,461,909 long-stay residents (≥100 days in the same nursing facility with no more than 10 consecutive days outside the facility) at any time in the year 2007. We excluded 226,726 residents without 6 months of Medicare Parts A and D enrollment, 108,549 residents aged <65 years, and 220,240 residents enrolled in Medicare Advantage or Hospice. Hip fractures were defined using Medicare Part A diagnostic codes (ICD-9). Age, sex, and race were ascertained using the Medicare enrollment file. Residents were followed from the date they became a long-stay resident until the first event of death, discharge, hip fracture, or the end of follow-up (12/31/2009). IR of hip fracture was calculated separately according to age, sex, and race.

Our sample included 906,394 long-stay residents. Mean age was 84 years (range 65-113 yrs) and 74.5% were female. 84.0% were white, 12.0% black, and 4.0% other race. During a mean follow-up of 1.8 yrs, 3.9% of residents experienced a hip fracture, whereas 51.3% died and 10.1% were discharged alive without a hip fracture. The overall IR of hip fracture was 2.2/100 person yrs (2.3/100 person yrs in whites and 1.0/100 person yrs in blacks). The age and sex specific IRs are shown in the Table.

In summary, the incidence of hip fracture is very high among long-stay nursing home residents. Rate of fracture increased with advancing age, and it was greater in whites as compared with blacks. Rate of fracture was similar in men and women. This is the largest study to provide sex and age specific estimates of the incidence of hip fracture among nursing home residents in the U.S., and it underscores the magnitude of the problem.

Age and sex specific incidence rates of hip fracture in U.S. nursing homes

<table>
<thead>
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<th>Age (yrs)</th>
<th>Women (IR per 100 person yrs)</th>
<th>Men (IR per 100 person yrs)</th>
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<tr>
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<td>65-74</td>
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B40
End-of-life Preference Discussions Between Elderly Japanese American Men and Their Families: The Honolulu-Asia Aging Study
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Supported By: National Institute on Aging; Kuakini Medical Center; The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii.

Background: Challenging cases in geriatrics often involve lack of communication regarding end-of-life preferences and cultural issues. There have been no previous population-based studies on acculturation and end-of-life preference discussions among older Japanese-Americans.

Methods: The Honolulu-Asia Aging Study is a continuation of the Honolulu Heart Program, a longitudinal cohort study in Japanese-American men in Hawaii that began in 1965. In the 2009-10 exam, participants identified a proxy informant who answered questions about their knowledge of the men’s end-of-life preferences. We studied the relationship between end-of-life preference discussions and completion of a written advance directive and actual preferences for end-of-life care, as well as associations between discussions and demographic and cultural factors. The Cultural Assimilation Scale (CAS) consisted of 8 questions assessing degree of Japanese identity and lifestyle.

Results: Among 350 participants aged 89-108 years, proxy informants were wives (29.4%), daughters (29.4%), sons (22.0%), other relatives (8.0%) and others (mostly paid caregivers, 11.1%). On proxy interview, 70.7% reported end-of-life preference discussions and 29.3% did not. Those who had end-of-life preference discussions were more likely to have completed a written advance directive compared to those without discussions (93.6% vs. 61.5%, p<0.0001). Even among those with discussions, many proxies were unsure about certain preferences, including tube feeding (27.4%), nursing home care (23.8%) and dementia care (20.2%). Factors associated with having end-of-
life preference discussions included Christian religion (vs. Buddhist/ Shinto, OR = 1.85, 95% CI = 1.00-3.41, p < 0.05) and daughter as proxy informant (vs. wife, OR = 2.34, 95% CI = 1.20-4.54, p = 0.01), but no associations with age, education, marital status or acculturation scores.

**Conclusion:** Among this oldest-old population, there were almost 30% who did not have end-of-life preference discussions. Among those who did have these discussions, almost a quarter did not know about preferences regarding tube feeding, nursing home care or dementia care. Religion was the only acculturation factor associated with end-of-life preference discussions. Participants with daughters as proxy informants had higher odds of end-of-life preference discussions.

**B41**

Diagnostic disagreements between emergency department admissions and hospital discharges among older adults.

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Supported By: Thiago J. Avelino-Silva is a visiting scholar at UCSF funded by the CAPES Foundation, Brazil.

**Background:** Older adults frequently present with nonspecific signs and symptoms of disease. Yet little is known about how often the admission diagnosis for hospitalized older patients turns out to be incorrect, leading to potential delays in proper diagnosis and treatment. We thus sought to determine the consistency between hospital admission diagnosis and discharge diagnosis in older adults.

**Methods:** We identified adults aged 65 years and over who were admitted from emergency department (ED) to hospital, using data from the 2005-2010 National Hospital Ambulatory Medical Survey (NHAMCS), an annual, nationally representative survey of ED visits in the United States. Three hospital admission diagnoses (one primary and two secondary) and the principal hospital discharge diagnoses were captured and categorized using the multi-level diagnoses of the Clinical Classifications Software (CCS) for ICD-9-CM. Disagreement was defined when the discharge diagnosis was a different disease process in the same organ system, or a different organ system altogether. Non-matches were then individually assessed and classified as closely related, distantly related or unrelated. Cases were excluded when diagnoses comprised symptoms, signs, or tests. Results were adjusted using standard procedures to generate nationally representative estimates.

**Results:** An average of 3.0 million older adults per year were hospitalized following an ED visit. Mean age was 78.6 years and 57.2% were women. In one eighth (12.0%) of the cases, the principal hospital discharge diagnosis was substantively different than any of the admitting diagnoses. Factors associated with diagnostic disagreements were: decreased level of consciousness at admission (13.9% of discrepancies for patients with impaired consciousness vs. 10.8% without; p = 0.02); hospital discharge within past 7 days (18.1 vs. 11.4%; p = 0.009); longer length of stay (7.8 vs. 6.2 days; p < 0.001); and in-hospital mortality (20.7 vs. 11.6%; p = 0.002).

**Conclusions:** In the United States, one in eight older adults hospitalized from ED was discharged with a different primary diagnosis when compared to hospital admission. Knowing that initial diagnoses may often be incorrect in this population, clinicians should be vigilant and consider other diagnostic possibilities early in the hospitalization.

**B42**

Court-appointed guardians for adults with impaired capacity

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Supported By: NLA (T32AG1934)

John A. Hartford Foundation

**Background:** For some adults who develop impaired capacity, health care decisions are made by a court-appointed guardian. Case reports have identified potential issues with decision-making by guardians in the clinical setting, including unavailability to health care providers and a reluctance to make difficult treatment decisions. Efforts to evaluate and address these issues have been limited, however, because few data are kept about guardianship and little is known about guardians or persons under guardianship.

**Methods:** We obtained access to the electronic charts as well as administrative data for veterans who obtained care at Veterans’ Health Administration (VHA) facilities in Connecticut and died between 2003 and 2013. We searched note titles and patient contact information for forms of the words “guardian” and “conservator” and identified persons likely to have a court-appointed guardian. We then conducted structured chart reviews to verify guardianship status and collect additional information, including the reason for incapacity and the relationship between patient and guardian.

**Results:** 273 of 29479 decedent veterans (0.9%) had a court-appointed guardian with authority to make health care decisions. The majority of veterans under guardianship were long-term nursing home residents (56%), with a mean age at death of 81.9 (± 12.3) years. The median length of guardianship was 2.3 years (IQR 0.9-4.6). For 179 veterans under guardianship (66%), the guardian was a family member or friend, known as a private guardian. For 94 veterans (34%), the guardian was a paid official, most often a lawyer, known as a professional guardian. The most common reasons for incapacity in both groups were dementia (51% overall), a psychotic disorder (21%), and substance abuse (5%), but a psychotic disorder and substance abuse were more common among veterans with professional guardians than veterans with private guardians (p = 0.03).

**Conclusions:** This is the first work, to our knowledge, to characterize guardianship among a large patient population. Professional guardians, who have no pre-existing relationship with the persons they represent and are often unable to exercise substituted judgment, were appointed for more than a third of decedent veterans under guardianship. Further work is needed to assess the challenges in decision-making for these vulnerable persons.

**B43**

Physician Orders for Life Sustaining Treatment Expansion: Lessons Learned from Stakeholders

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Supported By: The Retirement Research Foundation

**Background:** Numerous studies have documented that medical care at the end of life can be disjointed and discordant from a patient’s values. The Physician Orders for Life-Sustaining Treatment (POLST) program was developed as a tool to complement a patients’ existing advance directive and provide a vehicle for honoring patient preferences across health care environments. As of 2012, formal POLST programs have been endorsed in 15 states, with 28 more in various stages of development. To promote further expansion the Retirement Research Foundation (RRF), working with the Oregon Health & Sciences University (OHSU), developed a funding mechanism to promote growth in developing states. In order to better understand barriers to POLST expansion, we queried stakeholders from states who applied for funding.

**Methods:** As an exploratory case study, two one hour semi-structured telephone interviews were conducted in 2012 and then again in
2014 with stakeholder leadership in 14 states who applied for POLST program funding from the RRF and OHSU between April 2012 and March 2013. During interviews, respondents were asked to rate the complexity of barriers in their state to POLST expansion from a legislative/legal perspective and from a medical perspective (encompassing provider response, difficult with educational efforts, etc.). Respondents were further asked to elaborate on barriers to POLST expansion and lessons learned. Interviews were recorded, transcribed verbatim, and analyzed using qualitative methods.

Results: On a scale of 1 (no barriers) to 10 (insurmountable barriers), respondents felt that the perceived level of legal/regulatory barriers ranged from 1 to 10 (mean=3.1, median=3.0). Respondents rated medical barriers between 1 and 8.5 (mean=4.7, median=5.0). Representatives from all 14 states noted progress in implementing POLST but significant barriers including funding shortfalls to facilitate educational initiatives and infrastructure. Other common barriers included the lack of metrics to measure the expansion of POLST use in their state, and concerns about legislative undermining from religious and right to life groups.

Conclusions: Barriers to POLST expansion varied among states but several uniform barriers identified by all stakeholders included the lack of funding for training and infrastructure, lack of metrics, and concerns about legislative undermining.

B44 Encore Presentation

Does the Palliative Performance Score Correlate with Mortality in the Geriatric Trauma Population?

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Introduction: The Palliative Performance Scale (PPS) is a common tool used for predicting prognosis at the end of life. Although the PPS has been validated in predicting mortality in the cancer population, there has been little research on whether the PPS is an accurate prognostic tool in geriatric trauma patients. This study was conducted to assess whether the PPS correlates with 30-day, 60-day, 90-day and 1-year mortality in geriatric patients admitted to a Level 1 Trauma Center.

Methods: This study enrolls all geriatric trauma patients hospitalized at Allegheny General Hospital from January 1, 2010 to December 31, 2013 who were evaluated by a palliative care consult service. Only those with a PPS score were included. Data was collected from a retrospective review of the medical records of their hospitalization. Public death registries were accessed for deaths up to 1-year post follow-up.

Results: Of 447 subjects, 195 subjects met final inclusion criteria. After adjusting for age, sex, and medical diagnoses, results suggest that for every increase of 10 on the PPS patients are 48% more likely to survive the 30 day mark, with a 95% confidence interval of 37% to 57%. This decreases to 43% (34%, 52%) for 60 days, 43% (34%, 51%) for 90 days, and 40% (31%, 48%) for one year. Males in the sample were 2.09 times more likely to die compared to females with the same PPS score.

Conclusion: The use of PPS in the geriatric trauma population was associated with 30-day, 60-day, 90-day and 1-year. Results suggest that PPS correlates well with mortality and should be considered as a useful initial assessment tool to initiate the discussion of medical decision-making and end of life care between the patient, family, and healthcare provider. Further investigation is warranted with comparison of other Level 1 Trauma sites nationally to include a larger sample size in addition to comparison to other frailty indices.

B45

Preferences around dying among patients with ICDs


Background: Placement of implantable cardioverter-defibrillators (ICDs) is a mainstay in the treatment of heart failure. For patients, the decision to undergo placement is complex and requires balancing the established reduction in mortality with potential risks such as hospitalizations and suffering at the end of life. The objective of this study was to explore the values and preferences on modes of dying among patients with ICDs.

Methods: This was a cross-sectional analysis of 412 patients from a managed care organization with ICDs placed for primary or secondary prevention. A mailed survey was conducted exploring the value trade-off between dying of sudden cardiac death and dying of progressive illness in two ways: 1) by separately measuring these options using ratings from 1-10, and 2) by measuring the values together using a visual analog scale (VAS). Respondents were divided into two groups based on their preference along the nine-point VAS. Statistical analysis was performed using Pearson’s Chi-squared test of association for dichotomous outcomes and t-tests for continuous outcomes.

Results: A total of 295 patients responded to the survey (response rate 72%). When asked separately, respondents rated both dying quickly and living as long as possible very highly (8.0 and 7.6 out of 10, respectively). When asked together on a VAS, the majority of patients preferred to die quickly. Additional analysis revealed that 63% of patients preferring to die quickly were unaware it was possible to deactivate their ICD.

Conclusions: When offered individually, people understandably prefer to avoid all modes of death. When choosing on a VAS, respondents made this tradeoff in a way that suggests people do indeed have a preferred mode of dying. What’s more, a surprising number of patients who preferred to die quickly were unaware that their ICD could be deactivated. These findings underscore the importance of discussion between patients and their physicians both at the time of implantation and closer to the end of life.

B46

“Helpless,” “Frustrated and “Indignant”: Medical Student Language as an Indicator of Moral Distress in Caring for the Elderly

M. Gillis, A. Landa-Galindez, M. Armas, M. J. Mintzer.

Background: The purpose of this cross-sectional study is to determine the prevalence of moral distress in medical students experiencing ethical dilemmas. In a standardized assignment during an MS3 internal medicine clerkship, students reported ethical dilemmas they witnessed. We discovered and analyzed multiple occurrences of emotion-laden terms such as “helpless,” “frustrated,” and “indignant” within reports that are indicative of moral distress. We believe that this a novel methodology to identify moral distress among medical students caring for the elderly. Moral distress is a frequent cause of burnout, empathy fatigue, and empathy erosion and may decrease the quality and effectiveness of care. Since these negative consequences may progressively worsen, it is vital to identify moral distress early in medical training.
Methods: 112 assignments from two classes of students were de-identified; 45 involved the care of elderly patients (40%). Classification as elderly occurred if any of the following were present: age 65 and above, terms like “elderly” or “older,” or a diagnosis generally associated with the elderly. Assignments were analyzed by 5 faculty reviewers to determine the presence of moral distress as indicated by emotion-laden terms. Final determinations of moral distress were based on unanimous agreement. Samples of emotion-laden terms are included below.

Results: 73% of students experienced moral distress while caring for elderly patients as indicated by emotion-laden terms such as, “frustrated,” “helpless,” “upset,” and “confused.” Additional terms demonstrating extreme emotion included “exasperated,” “heartbreaking,” “disgusted” and “appalled.”

Conclusions: Attention to the language used by students while describing ethical dilemmas in written assignments is an effective way to identify moral distress of medical students caring for elderly patients. Many medical schools require assignments in which students address ethical dilemmas, therefore this method for detecting moral distress can be broadly implemented. Since we found a very high prevalence of moral distress, management plans (e.g. scheduled debriefing sessions) may be warranted after such assignments are submitted by students.

B47 Nursing Home Professionals’ Perceptions of Feeding Tubes
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Supported By: This work was supported by a Geriatric Research Fellow Award from the MGH Institute of Health Professions

Background: People with advanced dementia frequently experience eating difficulties. Despite the notion that percutaneous endoscopic gastrostomy (PEG) tubes prolong life, research fails to document benefits with this population. Nonetheless, several regions of the country continue to have high rates of PEG tubes. This study assessed perceptions of nursing home providers about the use of PEG tubes in a region of the country with a high rate of PEG use. Methods: A survey was distributed to nursing home professionals who attended a long-term care conference in Hawaii. Of 161 registrants, 119 returned attendance forms and 98 completed the survey (response rate 82.3%) which assessed 3 domains: perceived benefits (5 items), knowledge (5 items), and PEG as standard of care (5 items). A 4X3 mixed ANOVA was performed to determine if these domains differed by discipline. Results: Respondents were administrators (11.2%), nurses (27.6%), social workers (18.4%), physicians (30.6%); and missing (12.2%). Ages ranged from 24-77 (M=44.39, SD=11.59). The majority were female (76.7%), worked in an urban area (77%), and in not-for-profit facilities (52.6%). The majority reported agreement or strong agreement that PEG tubes made giving medication easier (76%), decreased time feeding (70%); and provided family comfort (74%). Knowledge about PEG tubes was limited. Respondents thought that PEG tubes reduced risk of aspiration (60%), promoted pressure ulcer healing (47%), and improved survival (52%). Forty-one percent (41%) believed PEG tubes in advanced dementia were the standard of care in their community and in the US, yet only 19% would want a feeding tube for themselves. Physicians agreed significantly less than nurses, social workers, or administrators with statements regarding perceived benefits, had greater knowledge, and were less likely to consider PEG the standard of care (p<.05). Conclusion: Most physicians in this region of the country were aware of the PEG’s limitations. However, nursing home professionals who spend the majority of time with patients and families were less knowledgeable and ascribe additional benefits to PEG tubes. Therefore, strategies to reduce unnecessary PEG tubes should include education and efforts to eliminate unnecessary medication burden, increase mealtime assistants, and supports for family members.

B48 Advance Directives in Older Adults in the Bronx: Patient’s Own Health Perception and Provider Discussions Influence Implementation
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Supported By: No financial disclosures; no funding was provided for the study.

Introduction
Advanced Directives (AD) are elective legal documents that allow people to convey decisions and choice for end-of-life care. Decision making is often difficult when healthy, and overwhelming when ill. This Performance Improvement (PI) project examined for factors that suggest the likelihood of AD implementation in a sample of older community Bronx patients.

Methods
Demographics, schooling, marital status, past hospital & critical care admissions, patient’s perception of health and comorbidity were collected from outpatients aged >59 years.

Results
Data from 570 outpatients were analyzed [79 ± 11 (sd) yrs; 71% female; 27% White, 50% African American, 20% Hispanic, 3% Asian; 90% had a PMD; 24% w/ AD pre-interview]. Logistic regression analysis determined that outpatients viewing themselves as not healthy were 13 times more likely to have implemented an AD pre-interview than healthy patients (P<.0005). Further, the likelihood of prior AD implementation increased by 6-fold if AD discussions had occurred with their PMD (P<.0005) and by 34% for every year schooling (P<.0005). Likelihood of prior AD decreased by 4% per 1-year increase in age (>59 yrs) (P=.031), by 70% in nursing home vs. community patients (P=.003). Gender, marital status, # of hosp/critical care admissions during last 5 yrs and race had no effect on prior AD implementation (all P>.05). Finally, only 15% of healthy patients arrived at clinic having prior AD implementation. However, following their clinic provider-patient interview, 39% of healthy patients without an AD did so (P<.0005).

Conclusions
Patient perception of being healthy or not strongly influenced having an AD at the time of the clinic visit. Prior to clinic visit, provider-patient discussions on Advance Care Planning increased overall AD implementation by 26%, emphasizing the importance of the process. Sex, race and recent hospitalizations were unrelated to likelihood of prior AD implementation.

Prior provider-patient discussions reinforced during clinic visits produced a dramatic increase in AD implementation in healthy subjects.

Reference

Supported By: This work was supported by a Geriatric Research Fellow Award from the MGH Institute of Health Professions
**B49**

**Aging oogonial stem cells**

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Supported By: Research reported was supported by the American Federation for Aging Research under award number number 5T35AG038027-04.

**Background**

The activity of spermatogonial stem cells promotes continued spermatogenesis in men. In women, however, folliculogenesis comes to an end upon the depletion of ovarian primordial follicles. For decades, ovaries of mammals were thought to lose self-renewing germ cells capable of generating new oocytes at birth. In 2004, however, the initial publication on the existence of oogonial stem cells (OSCs) challenged this belief.

In vitro work demonstrates that murine and human OSCs can be maintained in culture and undergo differentiation into oocyte-like cells. Transplantation studies show that fertilized OSC-derived oocytes produce viable offspring.

We hypothesize that OSC aging is associated with transcriptional changes. Our data suggest expression changes in genes involved in cell proliferation, stress response, and chromatin state change.

**Methods**

Ovaries were extracted from four C57BL/6 mice at each age (i.e. 3, 12, and 18 mo.) and Liberase digested. Cells were stained with rabbit α-Ddx4 1° (ab13840) and APC donkey α-rabbit 2°, incubated with Calcein-AM, and resuspended in DAPI. The viable OSC population was FACS sorted into TRIzol.

**Results**

Our data (Fig. 1) suggest expression changes in Egfr, Sirt1, and Stella.

**Conclusion**

Increased Egfr expression at 12 months may be associated with increased OSC proliferation at this time point. SIRT1 shifts the metabolic state towards oxidative phosphorylation. Stella expression decreases in primordial germ cells as they enter prophase I. The increase in Sirt1 and decrease in Stella expression after 12 months may represent a shift toward preparedness for differentiation into oocytes. Our results suggest that the OSC transcriptional profile does change with age.

**Fig. 1 | Gene expression panel.**

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**B50**

**Pulmonary Artery Changes with Age in Mice Reflect Left Ventricular Diastolic Dysfunction**

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Supported By: This work was supported by the Huffington Center on Aging.

**Background:** Age related changes in the left heart and systemic circulation are well known and occur in similar fashion in old mice and old people. Less is known about the pulmonary vasculature in aging people, but the ratio of the diameter of the pulmonary artery to aorta (PA/A) decreases with age. Little is known about the pulmonary artery in old mice.

**Methods:** We studied young (5 month) and old (24 month) C57Bl6 male mice with echocardiography under light isoflurane anesthesia focusing on ways to assess the proximal pulmonary arteries and then correlated these measurements with left atrial volume and more classic functional left ventricular measures.

**Results:** Pulmonary artery diameters were 20% larger in the old mice (young = 1.34 mm + 0.04; old = 1.70 mm + 0.06 p<0.05) and the increase was greater than that seen with age in the aorta (12%) (young = 1.43 mm + 0.04; old = 1.60 mm + 0.05 p<0.05). The pulmonary artery to aorta (PA/A) ratio increased with age and 88% of the old mice had criteria for pulmonary hypertension in humans (PA/A >1). This was seen in none of the young mice. The Left Atrial volumes were greater in the old mice than the young mice reflecting age-related diastolic dysfunction. The pulmonary artery diameters correlated strongly with the left atrial volumes (r² = 0.78) in the old mice suggesting that the same physiology driving the LA volume increase was causing the pulmonary artery dilation.

**Conclusions:** The elevated filling pressures that increase LA volume may increase PA diameter with age in mice. Unlike the change in the LA, the increase in PA/A ratio seen in old mice is not consistent with the trends in aging humans. This suggests extrapolation of mouse findings in models of pulmonary hypertension to humans needs may be unwise.

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**B51**

**Histopathology of the Superficial Zone in Human Articular Cartilage**

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**Background:** The surface and superficial zone (SZ) of human knee articular cartilage (hK-AC) exhibits variable patterns of deterioration with aging and osteoarthritis. A standardized grading system for such SZ cartilage, suitable for large digital datasets, would help elucidate the early stage pathogenesis of age-related cartilage degeneration.

**Objectives:** To establish such a grading system, the objectives were to (1) record key histological features from current grading systems, (2) introduce standards for digital histology images, (3) collect and evaluate images of hK-AC from a digital histology database, and (4) provide clear examples of each feature grade for a comprehensive atlas.

**Methods:** Key histological features for hK-AC were collected from the original reports of major grading systems for cartilage degeneration (Mankin, OARSI, ICRS). Properties (field of view, resolution) of traditional microscopy images were determined and guided an acquisition protocol for the images. Digital images with comparable properties were collected from a digital histology database on SlidePath (Leica Biosystems, IL, USA). Images of 1, 4, and 20X were collected from each of 15 donor knee cartilage across 4-6 sites on one medial femoral condyle. Samples were taken from n=6.
young (21-40yrs) grade 1 cartilage, and n=9 old (>61yrs) grade 1-3 cartilage. Images were assessed for clarity and further processed under standardized cropping and resizing to achieve representative images for an atlas.

Results: An hK-AC image atlas was created. It contains representative images of SZ features with a standardized FOV and resolution according to the magnification. A table listing each feature to be analyzed was included on every image.

Conclusion: With the creation of a standardized grading system for the SZ of hK-AC, local features of cartilage degradation can be assessed. The same approach can be used to extend the grading system into deeper zones of cartilage. Utilizing a standardized field of view and resolution, researchers are guaranteed a consistent image for grading that will ultimately help us better understand the early pathogenesis of cartilage degradation.


BS2

Association between serum follistatin level and gait speed on community-dwelling elderly adults in Taiwan
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Supported By: This study was conducted without external funding. The authors declare that they have no conflicts of interest.

Background
Low gait speed is known associated with chronic, low-grade inflammation. Follistatin, a glycosylated plasma protein, is associated with many inflammation diseases. We hypothesized that there is a negative correlation between serum follistatin level and gait speed in the aging community.

Methods
This cross-sectional study included a sample of 205 ambulatory older persons over 65 years at study initiation. Baseline measures included 15-foot walking time; a structured questionnaire; grip strength; and biomarkers, including follistatin, p16, telomere length, and myostatin. Multiple linear regression was used to determine the change in gait speed for each 1 µg/mL increase in serum follistatin level.

Results
In the linear regression model, the β coefficient, representing change in gait speed for each 1 µg/mL increase in serum follistatin level, was -0.319 (p < 0.001). After additional adjustment for relevant covariates, the β coefficient showed a little difference, but the negative correlation remained (all p ≤ 0.001). After controlling for multiple covariates, participants in the highest quartile of serum follistatin level had a significantly lower gait speed than those in the lowest quartile (all p for trend < 0.001).

Conclusions
A higher follistatin level was independently associated with lower gait speed in community-dwelling elderly individuals. Serum follistatin level may be an indicator of mobility in elderly persons and may especially represent lower extremity function.

Association between serum follistatin levels and gait speed

<table>
<thead>
<tr>
<th>Model</th>
<th>β (SE)</th>
<th>p-value</th>
</tr>
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<tbody>
<tr>
<td>Model 1</td>
<td>-0.319 (0.001)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Model 2</td>
<td>-0.312 (0.001)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Model 3</td>
<td>-0.309 (0.001)</td>
<td>&lt;0.001</td>
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<tr>
<td>Model 4</td>
<td>-0.306 (0.001)</td>
<td>&lt;0.001</td>
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a Adjusted covariates: Model 1= age, gender and health behaviors, Model 2= Model 1+ chronic diseases, Model 3= Model 2+ body mass index, WBC counts, hemoglobin, LDL, albumin, BSRS, AD-8 scores, Model 4= Model 3+ p16/36B4 mRNA ratio, T/S ratio and serum myostatin level

β coefficient was interpreted as change of gait speed for each 1 µg/mL increased in serum follistatin level

S.E., standard error; WBC, white blood cell; LDL, low density lipoprotein; BSRS, brief symptom rating scale; AD-8, Alzheimer dementia 8 questions; T/S ratio, relative ratio of telomere (T) repeat copy number to a single copy gene (S) copy number

BS3

Braden Score Can Predict Outcomes for Inpatients with Heart Failure
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Background: Braden score is a routine assessment of pressure ulcer risk which has been hypothesized to identify the frail phenotype. The objective of the study was to investigate the predictive utility of the Braden score on outcomes of inpatients with heart failure (HF).

Methods: We conducted a retrospective cohort study of inpatients with a primary diagnosis of HF (ICD-9 428) at the University of Colorado Hospital between January 1, 2012 and June 30, 2013. The primary predictor was the admission Braden score. Primary outcome was 30-day mortality determined from the Social Security Death Index. Additional outcomes included 30-day readmission, length of stay (LOS), and discharge destination. Multivariable methods were used to determine the association between the primary predictor and each outcome adjusted for patient demographics, and clinical variables.

Results: The study cohort included 642 patients (59.3% male, mean age 61.8±16.2). The mean admission Braden score was 19.5±2.3 (range=9-23). The 30-day readmission rate was 16.2%, the 30-day mortality rate was 4.4%, the mean LOS was 7.0 days (±8.7), and 78.2% were discharged home. After adjustment we found that higher admission Braden scores were predictive of decreased 30 day mortality (OR 0.75 (CI 0.75, 0.99)), and decreased average LOS (β -0.74 days (p<0.0001)). The interaction between admission Braden score and the change in Braden score over the hospitalization was significant (p=0.046) when assessing the relationship between Braden and discharge destination. Higher admission Braden score in combination with a positive change in Braden score from admission to discharge was predictive of discharge to home (OR 2.17 (95% CI 1.80, 2.61)); interaction OR 0.96 (95% CI 0.93, 0.99). Admission Braden score was not significantly associated with 30 day readmission (OR 0.95 (CI 0.85, 1.06)).

Conclusions: Braden score, a widely used assessment of pressure ulcer risk, is an independent predictor of mortality, LOS and discharge destination among inpatients with HF. Further exploration of the use of Braden scores to identify inpatients who might benefit from specialized intervention is warranted.
B54
Activated Platelet Integrin Alpha IIb Beta3 is Increased in Older Adults with Frailty But Not in Healthy Aging
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Supported By: NIA (AG040631 and AG048022 to MTR), NHLBI (HL112311 to AW), the AFAR (MSTAR Awardee: L. Shih), the University of Utah Study Design and Biostatistics Center and NIH (8UL1TR000105), and the University of Utah Center on Aging (Pilot Grant to MTR).

Background: Changes in platelet reactivity in healthy aging versus frail older adults are poorly understood. We hypothesized that compared to healthy aged adults, frail adults would have increased integrin alphaIIbbeta3 activation, which mediates fibrinogen binding and thrombosis. Methods: We prospectively studied 81 male and female subjects divided a priori into 3 cohorts: (1) Healthy young (n=45, mean age, 31±9 yrs); (2) Healthy older (n=14, mean age 79.9±9 yrs); and (3) Frail older (n=22, mean age 77.5±8 yrs), determined with the Fried criteria. Whole blood flow cytometry measured platelet integrin alphaIIbbeta3 activation, with the antibody PAC-1 and platelet-monocyte aggregate (PMA) formation, which promotes proinflammatory gene synthesis, in unstimulated and low-dose (1uM) ADP-stimulated conditions. Plasma RANTES levels, a platelet chemokine, were measured by ELISA. Results: In unstimulated conditions, PAC-1 binding, PMA formation, and RANTES levels did not differ significantly between cohorts (Fig 1 and RANTES not shown). When stimulated with ADP older frail subjects had significantly higher increases in PAC-1 binding and PMA formation compared to other cohorts (Fig 1). Conclusions: Activated platelet integrin alphaIIbbeta3 (and PMA formation) is increased in older frail but not healthy aging adults. Our findings provide new evidence suggesting that compared to frailty, healthy aged adults have lower platelet hyperreactivity. These data have implications in understanding the underpinnings of thrombo-inflammatory disorders in the elderly.

B55
Age-Related Alterations in Expression of Key Regulators of Hepatic Lipid Metabolism in a Non-Human Primate Model
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Supported By: VA Merit Award (1I01BX001744), American Heart Association Grant-in-Aid Award and CTSA grant (UL1RR025767) to A.K. and American Federation for Aging Research MSTAR program to Q.N.

Background: Aging in laboratory rodents and humans is associated with increased adiposity, insulin resistance and elevated incidence of hepatic steatosis. The molecular mechanisms underlying this age-dependent metabolic impairment remain elusive. Baboons have proven to be a valuable non-human primate model for studying the metabolic syndrome because they naturally manifest many of the same age-related diseases as humans, including diabetes, obesity, osteoporosis and arthritis. We have previously observed in baboons an age associated reduction in hepatic SIRT1-AMPK signaling which plays an essential role in hepatic lipid metabolism. The aim of the present study is to test whether aging in baboons is associated with changes in expression of PPARx, FGF21, CD36, CIDEA and CIDEc, key players previously shown in rodent studies to play an important role in hepatic lipid metabolism.

Methods: Liver tissues from young (~4 yr) and old (~20 yr) male baboons were collected. mRNA expression of various genes was measured using real-time PCR (Taqman probes, B2M as reference gene). Protein levels were determined using western blot analysis. Student t-test was used to determine statistical significance.

Results: In comparison to young adult baboons, aged animals exhibited diminished protein levels of PPARx (p<0.01), an essential transcription factor involved in fatty acid oxidation. Additionally expression of CD36, a transporter for fatty acid uptake, decreased with age (p<0.01). However mRNA expression of FGF21, a potential therapeutic target for metabolic syndrome, did not differ between young and old baboon liver tissues. No significant change in mRNA levels of CIDEa or CIDEc, important regulators of lipid droplets fusion, was also observed in the livers of the old versus young baboons.

Conclusion: Our results suggest that advanced age may decrease hepatic fatty acid oxidation through SIRT1-AMPK-PPARx signaling pathway in baboons. These changes suggest an underlying mechanism for aberrant hepatic lipid metabolism during aging which may contribute to the development of the metabolic syndrome.

B56
Interchange of Young, Aged and Tendinotic Tenocytes is determined by Differential RhoA and Rac1 Activity

Supported By: NIH/NIA R03 AG048118
AGS/Jahnigen Foundation

Background:
Occurring concurrently with aging, tendinosis comprises changes in tendon tissue that results in pain and disability. The cause of tendinosis, on a cellular and tissue level, remains unclear. The objective of this study was to: (1) characterize the molecular profile of young, aged and tendinotic human tendon cells (tenocytes), (2) evaluate the effect of steroids on the tenocyte molecular phenotype, and (3) determine the molecular mechanism responsible for interchange between young, aged and tendinotic tenocytes.

Methods:
Human tenocytes from young (34y), aged (81y), and tendinotic (49y) individuals were cultured in vitro and qRT-PCR performed for molecular markers collagen I, collagen II, aggrecan, tenomodulin, and 4.
scleraxis. Tenocytes were treated with steroids at empirically-determined concentrations. Activity of the Rho GTPases was activated or inhibited via adenosine transduction or pharmacologic inhibition.

Results:
Aged and tendinotic tenocytes display increased fibrochondrocyte markers (collagen II, aggrecan) in comparison to normal tenocytes. When tenocytes were treated with steroids however, all cells displayed increased tenomodulin and scleraxis expression, thus representing a younger tenocyte phenotype.

As other studies have demonstrated the importance of the Rho GTPases to tenocyte differentiation, tenocytes were subjected to pharmacologic inhibitors of this signaling cascade. Aged tenocytes treated with ROCK inhibitor (Y-27632) displayed a younger tenocyte phenotype, as seen by increased collagen I expression. Young tenocytes treated with Ral1 inhibitor (NSC23766) displayed an aged tenocyte phenotype, seen by increased collagen II and aggrecan expression.

Conclusions:
(1) Aging in tendon cells may represent a physiologic change in tenocyte differentiation to a fibrochondrocyte phenotype
(2) This change in phenotype may underlie the pathologic development of tendinosis in aged and non-aged individuals
(3) Application of steroids to aged and tendinotic cells reverses the phenotype to that of younger tenocytes
(4) The molecular mechanism of aging and tendinosis involves differential activity of the Rho GTPases
(5) Knowledge of those intracellular signals responsible for human tenocyte aging will inspire cellular and molecular therapies to treat tendinosis, and thus lessen pain and disability

B57
Treating the Metabolic Dysfunction of Rapamycin
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Background: Advances in medicine permitting greater numbers to reach old age have driven a parallel increase in the incidence of age-related diseases and means to prevent or delay these diseases are increasingly urgent. Inhibition of mTOR (mammalian target of rapamycin) signaling delays age-related diseases such as Alzheimer’s, cancer, and cardiovascular disease in mice. However, clinical targeting of this pathway using rapamycin is associated with increased incidence of type 2 diabetes mellitus (T2DM). Mitigation of this metabolic dysfunction is an essential step towards translating these findings and preventing age-related disease.

Methods: We tested if a common treatment for T2DM, metformin, could prevent metabolic dysfunctions caused by rapamycin using 4 groups of male and female genetically heterogeneous mice: control, rapamycin-treated, metformin-treated, and a group treated with both rapamycin and metformin. During and after 9 months of treatment, we assessed several markers of glucose metabolism within the serum and liver.

Results: Insulin, the primary glucose regulatory hormone, was not significantly affected by chronic rapamycin treatment. In contrast, adiponectin, an insulin sensitizer, was significantly decreased in both the male and female mice treated with rapamycin (p<.001, p=.001) with no effect of concurrent metformin treatment in either. Leptin, a hormone regulating body fat content and satiety, was also significantly reduced by rapamycin treatment (p<.001). However, concurrent metformin treatment in males, but not females, prevented this decline suggesting that metformin might normalize serum leptin levels. Levels of pyruvate, the primary substrate of liver gluconeogenesis, also demonstrated marked differences between sexes. Rapamycin treatment reduced pyruvate concentrations in the liver of males only (p <.006), suggesting exhaustion of this substrate due to increased gluconeogenesis.

Conclusion: These data show that endocrine disruption may be a partial mechanism by which rapamycin impairs glucose metabolism. In the case of leptin, this decrease could be alleviated by metformin, suggesting a potential utility in mitigating the metabolic alterations caused by rapamycin. In addition, our results highlight significant differences between male and female groups, suggesting that potential interactions between mTOR signaling and sex specific hormones may also need delineation prior to translation of these findings to clinical studies.

B58 Encore Presentation
Beers Run: An Interactive Workshop on Polypharmacy for Medical Students
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Background
Despite years of effort on the part of geriatricians, studies continue to demonstrate inappropriate prescribing practices for older adults in the United States. Medical students need higher quality training in geriatric medication management. In part, this is due to inadequate time in medical school curricula dedicated to geriatrics, as well as the national shortage of geriatrician educators. We therefore created a highly impactful, interactive workshop on polypharmacy that can be taught in 75 minutes to 200 students by one geriatrician.

Methods
Beers Run is a workshop in which first year medical students experience a mini-lecture on prescribing for older adults, followed by a game in which they race to revise a fictional patient’s medication list. Students must correctly recall information from the mini-lecture in order to “earn” data. They need to collect data from 5 different sources in order to know which medications to discontinue, which to change, and which to add. The data they must consider come from: (a) physical exam, (b) clinical practice guidelines, (c) the Beers list, (d) patient preferences, and (e) pharmacist. The first student group to arrive at the correct medication list wins the game. The workshop ends with a short debrief to summarize the key learning points: (1) polypharmacy and inappropriate prescribing are common problems in older adults; and (2) the Beers criteria can help guide decision making, but medication review is a complex process requiring input from multiple sources.

Results
Compared to previous small group sessions that were less interactive and required 15 geriatrician instructors, 82% of students felt they learned the same amount or more, and 63% of students found the large group workshop more enjoyable. Six months later, 36 students were asked to write out a “take-home message” that they learned from the workshop. 89% were able to generate at least one correct teaching point.

Conclusion
Beers Run is a 75 minute workshop for teaching rational prescribing to large groups of medical students that can be taught by one geriatrician, yet is equally or more impactful than small group discussion sessions.

B59
Teaching Geriatric Concepts in Internal Medicine (IM) Residency Continuity Practice does not Impact Clinical Practice

Background: A geriatric ambulatory curriculum on dementia, falls and urinary incontinence (UI) was developed to improve IM residents’ care of patients with these syndromes. Though IM residents reported acquired knowledge and enhanced evaluation and management skills of these 3 syndromes after the curriculum, the clinical practice outcomes are unknown. A chart review was conducted to assess for
evidence of “practice change” in geriatric patients seen by IM residents who completed the curriculum.

Methods: A retrospective chart reviews were performed to assess for incorporation of concepts and skills taught. Reviews recorded evidence of residents’ 1) ability to diagnose these 3 geriatric syndromes, 2) use of the recommended evaluation tools taught and 3) ability to initiate appropriate treatment for these diagnoses for geriatric patients seen by residents 6 month prior and 6 month after this ambulatory geriatric curriculum.

To ensure that the EHR-generated chart review for the 5 year resident cohort was accurate, a manual, validating chart review was performed on 10% of geriatric patients seen by the 2009-2010 IM residents cohort.

Results: From December 2005 to 2010, 188 second year IM residents completed the curriculum. Less diagnoses, screens and management decisions were made in geriatric patients seen 6 months after the curriculum.

Conclusion: Although this ambulatory geriatric curriculum was well received by IM residents, concepts taught may not improve clinical practice of these 3 syndromes for older patients. Future work to overcome barriers to clinical implementation of their knowledge should be undertaken.

Table 1: EHR-generated Chart Review of geriatrics patients seen by the IM residents 6 months before and after the ambulatory Geriatric Curriculum

<table>
<thead>
<tr>
<th>EHR Elements indicating concept uptake (%)</th>
<th>PRE 3025</th>
<th>POST 407</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dementia Dx</td>
<td>0.17</td>
<td>0.15</td>
<td>0.03</td>
</tr>
<tr>
<td>MINSE Questionnaire</td>
<td>0.04</td>
<td>0.01</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GCS Questionnaire</td>
<td>0.009</td>
<td>0.005</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Antidepressant/anticholinergic/Dopamine</td>
<td>0.09</td>
<td>0.06</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Dementia/anticholinergic/Gallamine/riantagonistamine</td>
<td>0.08</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>mania/anticholinergic</td>
<td>0.02</td>
<td>0.02</td>
<td>0.3</td>
</tr>
<tr>
<td>Fall / Gait Dx</td>
<td>0.17</td>
<td>0.17</td>
<td>0.3</td>
</tr>
<tr>
<td>PT Consol Order</td>
<td>0.35</td>
<td>0.22</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Urinary Incontinence Dx</td>
<td>0.20</td>
<td>0.16</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Urinary Antiparkinsons</td>
<td>0.10</td>
<td>0.07</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

B60
Geriatricizing Hospital- Based Specialties and Subspecialties
G. H. Manzi. Medical College of Wisconsin, Milwaukee, WI.

Authors (All authors from Medical College of Wisconsin)

Background
As the U.S. population ages, it is a challenge to prepare specialty and subspecialty physicians to effectively and compassionately care for older adults and meet ACGME requirements. An interdisciplinary needs-based approach to geriatric education has been utilized in >16 multiple specialties and subspecialties at the Medical College of Wisconsin to develop innovative, specialty-specific resident and fellowship training.

Methods
In 2014, Geriatric Educational Teams (GET) were created for the critical care, radiation-oncology and quality & safety residency and fellowship programs. These GETs included at least one faculty and fellow from each targeted specialty, a geriatrician, an educator and a medical student. Each subspecialty GET systematically identified geriatric training gaps/needs and designed sustainable curricular changes to optimize specialty-specific geriatrics training. Each team then implemented and evaluated the training congruent with their residency or fellowship formats, schedules and topic characteristics and then submitted 1-2 short, focused Geriatric Fast Facts [GFF (geriatric-fastfacts.com)] on their topics for peer review.

Results
All GETs completed all assignments. Curricular interventions ranged from an academic half-day including Grand Rounds by a visiting professor; creation of pocket cards to be used in clinical practice; case-based simulation; monthly safety plan orientation; and case-based morning conferences utilizing the GFF. Each team had ≥2 GFF accepted on the topics identified by the needs assessment, meeting scholarly requirement. The GFF topics reviewed included frailty syndrome in the ICU, assessment/management of delirium in the ICU, introduction to patient safety and quality improvement, and managing breast and prostate cancer in the elderly patient. Residency and fellowship leaders reported that focusing on their learner’s specific needs enhances participation and sustainability.

Conclusions
This interdisciplinary team need-based GET model can successfully address geriatric educational goals for specialty residencies and sub-specialty fellowships and yield scholarly products in form of GFF’s.

B61 Encore Presentation
Geriatrics for the Hospice and Palliative Care Provider

Supported By: HRSA

Background
Although geriatric medicine and palliative care have many areas of overlap, there are definite areas of expertise specific to each, and hospice and palliative care providers often lack knowledge of basic geriatric principles. Given that many of their patients are frail older adults, it imperative that hospice and palliative care providers understand basic principles of geriatric medicine.

Methods
We developed a curriculum for hospice and palliative care providers, with the goal of increasing knowledge, as well as improving confidence in implementing geriatric medicine principles in their practices. This curriculum was taught to palliative care fellows and local hospice teams, in a case-based, interactive, small-medium group format. Teaching focused on issues common in the geriatric population at or near end-of-life, including delirium, polypharmacy and dementia. Using simulated cases, learners identified risk factors for delirium and helped develop care plans for patients with delirium, polypharmacy, and other geriatric syndromes; learners applied the Confusion Assessment Method (CAM) to identify delirium and used the Beers criteria to identify potentially inappropriate medications for their older adult patients. A retrospective pre-post evaluation followed each teaching session.

Results
Seven training sessions were held during 2014 with 121 participants, the majority of whom were nurses (N=70), followed by physicians (N=20). The majority were non-Hispanic whites (N=91), aged 30-59 (N=90). There was significant improvement pre-post training for nine of ten knowledge questions (p<0.001), as well as improved attitudes and confidence about applying the new knowledge (p<0.001). At the onset of training, 24% of participants strongly agreed that they were confident in their “ability to assess older adults for confusion”; this improved to 54% of participants following the training sessions (p<0.001). Participants also noted that they had not previously heard of or used the CAM or Beers criteria, but indicated that they would now use these tools in their everyday practice.

Conclusions
This curriculum can help hospice and palliative care providers improve their knowledge, attitudes and confidence regarding principles of geriatric medicine, ideally improving care of older adults at end-of-life.
B62 Encore Presentation
Team-based Interprofessional Competency (TIC) Training in Dementia Screening and Management
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Supported By: Health Resources and Services Administration (HRSA)

Background: According to the Alzheimer’s Association, as many as 50% of people satisfying diagnostic criteria for dementia remain undiagnosed. The California Geriatric Education Center developed a team-based training program for dementia-related competencies of four professions (medicine, nursing, pharmacy and social work) whose scope of practice involves dementia care.

Methods: We identified the minimum profession-specific competencies for dementia screening and management and highlighted overlaps and opportunities for interprofessional collaboration. A multidisciplinary group of 10 faculty was trained to facilitate four interactive competency stations on: 1) Dementia screening; 2) Differential diagnosis; 3) Management/Team Care Planning; and 4) Caregiver Stress. Registrants were organized into teams of five to include at least one member of each profession. The teams rotated through all stations, completing assigned tasks through interprofessional collaboration. Post program, participants were provided access to the Workshop Toolkit Essentials in order to implement the program at their own institution.

Results: A total of 82 professionals (31 physicians; 18 nurses; 18 pharmacists; 11 social workers; 4 others) successfully completed the program. Change scores showed significant improvements in overall competence in dementia assessment and intervention (average change=1.24, p<0.0001), awareness of importance of dementia screening (average change=0.93, p<0.0001) and confidence in managing medication issues (average change=0.94, p<0.0001). Over 81% (n=54) of participants reported feeling “confident”/“very confident” using the dementia toolkit at their home institution.

Conclusion: The TIC is an innovative team teaching model can be used to enhance dementia screening and management competency in medical, nursing, pharmacy and social work practitioners.

B63

Title: Project ECHO™: Innovation in Professional Dementia Care Education and Improved Access to Expertise, Knowledge and Skills
J. Knoefel,1,2 C. Herman,1,2 1. University of New Mexico, Albuquerque, NM; 2. Project ECHO, Albuquerque, NM.

Supported By: Study Supported by Donald W. Reynolds Foundation

Objective: Demonstrate the feasibility of training primary care professionals in the delivery of dementia care in New Mexico using the Project ECHO™ model.

Background: Aging of the baby boom generation is creating an epidemic of dementia. Concern for adequate delivery of dementia care, including diagnosis, treatment and management, has prompted calls for more professionals, more training and more resources to handle this need. Project ECHO™ is a lifelong learning and guided practice model that revolutionizes medical education and exponentially increases workforce capacity to provide best-practice specialty care and reduce health disparities. The University of New Mexico applied this model of distance education to the scarcity of expert dementia care in our state.

Methods: Local experts in neurology, geriatrics, psychiatry, nursing, social work, pharmacy, rehabilitation therapies and community partner Alzheimer Association were recruited. A network of community primary care outpatient clinics, homecare agencies, extended care communities and other interested professionals were identified. Biweekly multi-point videoconference virtual clinics were held over two years. Clinics consist of case presentations with discussion and a didactic on dementia and dementia-related topics. No-cost CME/CUE served as an incentive.

Results: Two full curricular cycles are complete. Consultations were provided for 43 individuals. More than 450 hours of CME/CEU were granted. Professionals have participated from across the country and around the world. Members of 15 different professional disciplines have received CME/CUEs. Evaluation over the term averaged 4.8 on a 5 point scale. ECHO™ Dementia Care Clinic also serves as a platform for interprofessional education for 8 schools and programs at the University.

Conclusion: The Project ECHO™ model has proven to be an effective tool for dementia care education and training in the state of New Mexico. The next phase, certification of Centers of Excellence in Dementia Care, is in the planning stages.

B64

Title: Presentations and Hallway Huddles: Educational Strategies To Reduce Falls in Long Term Care
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Supported By: Johns Hopkins Geriatric Education Center Consortium

Background: Over half of long term care residents fall each year. This study sought to determine if educational sessions focused on fall prevention lead to increased staff knowledge, improved nursing documentation, and decreased fall rates.

Methods: Educational sessions focused on fall prevention were offered to nurses (RNs) and certified nursing assistants (CNAs) at two long-term care facilities in Baltimore, MD. We presented six 30 minute videos or presentations covering five topic areas: fall prevention, high-risk medications, calcium/vitamin D, orthostatic hypotension and gait/balance. For staff members who could not attend a presentation, 5 minute hallway huddles were done to provide quick educational tips. Participants completed pre- and post-knowledge assessments, satisfaction scores, and whether classroom presentations or hallway huddles were preferred.

Results: Chart reviews were conducted on new patient admissions from April - June 2014 to review the fall risk evaluation form, provider admission notes and MDS documentation. Data was compared to new patient admissions from August - October 2014 (post education session) to determine if there was a decrease in falls or change in nursing practices.

43 staff members (RNs and CNAs) participated. Participating staff had a 75% average on their pre-test assessment. Post-test assessment revealed an increase in knowledge with a post-test average of 89%. Satisfaction ratings were high, with average scores of 3.8/4. 24 out of 43 reported they would change practice as a result of these teaching sessions. 34 preferred classroom teaching and 9 preferred the hallway huddle. There was no change in nursing documentation of patient fall risk and nursing home fall rates were unchanged.

Conclusions: We found that our educational sessions did increase RN and CNA knowledge of fall prevention; however, this did not lead to a change in nursing documentation or a decrease in the fall rate. Education on fall prevention was highly valued by staff in long-term care facilities. Facilities are often understaffed, limiting the availability of CNAs and RNs to attend sessions, and determining the most convenient time to hold these sessions can be challenging. Our findings suggest that
education does increase staff knowledge, but additional strategies may be needed to impact nursing documentation and fall rates in long-term care facilities.

**B65**

**Clinician Perspectives on the Impact of Family Meeting Simulation Training**

Celeste Peay, Victoria Parker & Matthew Russell

1 Boston University Schools of Medicine and Public Health
2 Hebrew Senior Life

**J. C. Peay, Boston University School of Medicine, Boston, MA.**

**Background:** Essential among clinician responsibilities in older patient care in an ICU is effective communication with patients and their families, particularly near end of life. Prior research has shown that not only do ICU families rank communication equal in importance to clinical caregiving skills, but also that poor communication is associated with adverse outcomes. Yet most clinicians receive little training in communication skills for these challenging situations. Thus, there is a need for training programs that focus on learning and practicing communication techniques specific to communication with patient families.

**Methods:** We interviewed 10 physicians and 8 ICU nurses to assess the impact of a two-hour Family Meeting Simulation Training they had participated in during the past year. The semi-structured interviews focused on the training’s impact on communication style and techniques, language use, comfort in delivering bad news, interprofessional team interaction, and overall team dynamic. Using thematic coding, the interviews were coded independently by two researchers.

**Results:** We developed 29 distinct codes, which grouped into five overarching themes about family meetings and/or the training: attitudes and beliefs, communication, team processes, strategies and challenges. The attitudes and beliefs theme identified pre-existing opinions regarding family meetings in general. The communication theme focused on issues related to language use during the meetings, while team processes highlighted actions and behaviors of clinicians before, during, and after the meetings. Strategies addressed specific framing tools or devices clinicians used during meetings, and challenges discussed the various barriers to holding effective meetings. Across the latter four themes, clinicians reflected on how their practices had been changed and/or validated by the simulation training.

**Conclusions:** Our analysis identified areas where the family meeting simulation training had successfully changed clinician practices, especially in terms of employing effective strategies and team processes such as the use of pre-meeting huddles. However, the results also highlighted potential areas for improving the training, specifically identifying some of the more intractable barriers to the inclusion of all relevant clinical perspectives in the family meeting situation.

**B66**

**Assessment of Resident Patient-Centered Communication in Advance Care Planning**

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1 Medical Education, Icahn School of Medicine at Mount Sinai, New York, NY; 2 Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.

**Supported By:** John A. Hartford Foundation, Arnold P. Gold Foundation

**Background**

Patients with serious illness face difficult medical decisions yet often feel unprepared to make informed choices. Patient-centered approaches to communication have been shown to better align medical decisions with patient values. Although medical schools have introduced patient-centered communication to the curriculum, residents’ use of these techniques is largely unexplored. Our objective is to describe internal medicine (IM) residents’ use of patient-centered communication techniques.

**Methods**

IM residents at one academic training center were video-recorded during an advance care planning conversation with a standardized patient (SP). The SP played a patient with terminal illness facing a difficult medical decision and expressed emotion at least 3 times. Two trained evaluators measured how residents responded to emotion including the number and variety of NURSE statements (evidenced-based empathic responses). Evaluators also studied how residents asked about patient values and made treatment recommendations.

**Results**

Forty-two PGY1 residents completed the encounter and 93% reported prior communication training. Residents averaged less than 3 NURSE statements. Most residents (81%) used 2 or fewer types of NURSE statements, the majority of which were Understand and Explore statements. After a NURSE statement, 45% of residents did not pause for patient response and 19% followed the statement with a “but,” negating the prior empathetic statement.

Only 21% of residents asked about personal values directly. The majority of residents tried to elicit values either by asking for opinions on specific treatments or by asking the SP to choose between “aggressive” or “comfort” care. In addition, 57% of residents did not make a treatment recommendation and 12% made a recommendation that was not based on the patient’s values.

**Conclusions**

While 95% of residents used an empathic response, the majority still missed many opportunities to respond to emotion and lacked variety in response types. Most residents did not make a recommendation nor asked directly about patient’s values. Instead, many focused on treatments or misleadingly presented care options as a dichotomy of “aggressive” versus “comfort” care. This suggests that residents do not always apply patient-centered communication skills and require further training.

**B67**

**An interdisciplinary academic detailing approach to decrease inappropriate medication prescribing for older veterans treated in the Emergency Department**


1 Duke University, Durham, NC; 2 Durham VA, Durham, NC; 3 UNC, Chapel Hill, NC; 4 EQUIPPED Consortium, Durham, NC.

**Supported By:** VA Office of Geriatrics and Extended Care

**Background:** Older adult veterans discharged from the Emergency Department (ED) are at risk for suboptimal prescribing which causes poor patient outcomes. We sought to decrease Internal Medicine residents’ prescribing of potentially inappropriate medications (PIMs) for older adult veterans in a Veteran Affairs (VA) ED using a novel geriatrician and clinical pharmacist specialist (CPS) approach. This is part of Enhancing Quality of Prescribing Practices for Veterans Discharged from the Emergency Department (EQUIPPED), an ongoing multi-site QI study.

**Methods:** At the Durham VA ED, a geriatrician and CPS provided PIMs education via academic detailing to Internal Medicine residents on their ED rotation starting in Feb 2013. PIMs were defined by the AGS 2012 Beers Criteria Update. Education included geriatric pharmacokinetics; review of PIMs, emphasizing those commonly prescribed in the ED; strategies for PIMs avoidance; and demonstration of geriatrics ED order sets. Residents received personalized feedback and guidance based on their PIMs prescribing. Residents completed PIMs-focused questionnaires pre- and post detailing. Residents’ prescribing of PIMs was analyzed via EMR data abstraction and anal-
B68
Barriers to Holding End of Life Discussions Among Internal Medicine Residents
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Background: Effective communication about end of life (EOL) care is a critical skill for internal medicine (IM) residents. Research evaluating palliative care education in residency programs demonstrated traditional educational interventions improved residents’ confidence in EOL care. However, many residents lack experience in EOL counseling. This pilot study explores IM residents’ attitudes and experiences 1) in goals of care discussion, 2) in EOL counseling for medical patients admitted with severe chronic illness, and 3) with attending physicians’ supervision, role modeling, and feedback.

Methods: Participants were current IM residents at Wake Forest Baptist Medical Center. An anonymous 35-question survey was completed exploring residents’ attitudes and experiences with engaging in goals of care conversations for medical patients admitted with severe chronic illness.

Results: 90 out of 107 residents completed the survey (84% response rate). 92% answered they have “sometimes” or “often” observed an attending have an EOL care discussion. By contrast, 38% reported an attending observed them leading an EOL discussion “sometimes” or “often”. Furthermore, 33% received feedback from an attending on their EOL care discussions “sometimes” or “often”. Finally, residents identified time as a barrier to holding EOL care discussions (64% “agreed” or “strongly agreed”).

Conclusions: IM residents frequently observe both goals of care and EOL conversations, but report attending physicians less often observe them in these conversations to provide feedback. Prior research in teaching EOL discussions has focused on teaching content and technique. To our knowledge, this is the first exploration of residents’ experience with observation and feedback. These data suggest an opportunity to reframe the educational techniques around assessment of residents’ EOL care discussions. Future directions also include expanding this pilot to a multi-center study and assessing the impact of direct observation and feedback regarding EOL communication on quality of care, patient experience, and utilization of resources among seriously ill patients with chronic disease.

B69
Using Social Network Analysis to Evaluate Geriatric Interprofessional Virtual Teams
P. Boling, D. DiazGranados, J. Palesis, K. Lockeman, A. Dow. Virginia Commonwealth University, Richmond, VA.

Supported By: Donald W. Reynolds Foundation

Background: Two obstacles to implementing effective interprofessional education are logistics (e.g., scheduling and space) and assessment. To overcome logistical obstacles, we developed a Virtual Case System (VCS) that provides a web-based platform for teams of students from medicine, nursing, pharmacy, and social work to collaborate around managing a geriatric patient. Using the VCS message board students communicate and reach consensus on team responses to geriatric-based questions. Team answers generate a total team score and, automatically collected metrics such as logs and message posts, track students’ activity. Previously, we reported that activity measures positively correlate with team score. We now hypothesize that using Social Network Analysis (SNA), we can analyze message board activity to further define which team collaboration structures are correlated with better team performance.

Methods: Using message board data from the fall of 2013, we built 42 networks of 322 students and calculated key metrics that quantitatively define team collaboration patterns, including: number of posts, average geodesic distance (average distance separating points in the network), subgroupings (the number of point clusters in the network), and modularity inverse (the degree of connectivity across subgroupings). We correlated these metrics with team score.

Results: Team score is significantly correlated with number of posts, indicating that team performance is related to level of student participation ($r = 0.44$, $p < 0.002$); average geodesic distance (the opposite of closeness), suggesting teams whose members are more distant (i.e., less integrated and participate less broadly across discussion topics) are less effective ($r = -0.28$, $p = 0.034$); and modularity inverse, suggesting that teams which avoid cliquish behavior are more effective ($r = 0.35$, $p = 0.011$). Subgroupings were not associated with team score.

Conclusions: Data from SNA added insights about the characteristics of successful teams during the VCS learning experience. Specifically, participation and integration predicted higher score while the number of subgroupings did not impact team score. These results can shape the evaluation of this and other interprofessional learning experience. In addition, applying SNA techniques to the clinical environment may delineate the most successful patterns of team collaboration.

B70
Milestones for an Internal Medicine Residency Geriatrics Rotation

Supported By: HRSA Geriatric Academic Career Award

John A. Hartford Foundation

Background: We report on the development of specific curricular milestones for the geriatrics rotation in accordance with Accreditation Council for Graduate Medical Education (ACGME) Milestones Project required by our internal medicine residency program.

Methods: We aim to teach 26 geriatrics core competencies in a 4-week geriatrics rotation that exposes residents to a week each of inpatient care, outpatient clinic, long-term care, and working in other geriatric settings. By consensus, our division reviewed the content and learning experiences during the existing rotation and selected 10 observable skills that every resident would able perform on every rotation. We mapped these skills to geriatric competencies and the 22 ACGME internal medicine milestones to identify 10 geriatric narrative milestones. We then reduced the list. Milestones are scored by rating performance on a narrative-based, 5-point likert scale with an-
chorus ranging from “critical deficiencies” to “aspirational.” Faculty evaluate only the milestones they observe for each resident. Rotation coordinators collect milestones evaluations and submit a composite of each resident’s performance.

Results: We created 8 geriatrics rotation milestones based on observable abilities: to generate a differential diagnosis for changes in behavior and cognition; to monitor/modify a medication regimen; to assess mobility limitations in patients at risk of falling; to interpret geriatric assessment; to modify treatment during hospitalization to prevent complications that prolong stay or lead to the readmission; to function within a collaborative geriatric interprofessional team; to self-audit of prescribing to their own older patients; to demonstrate professional interactions with members of the geriatric interprofessional team. In 2014, the number of faculty evaluations completed per rotation improved by 200%. Eighty percent of faculty rated at least 3 milestones per resident; 80% of residents received scores on all 8 milestones. The average faculty score for overall milestones was 3.5.

Conclusion: We successfully changed from competency assessment of internal medicine residents by subjective criteria to assessment of observed skills performance using milestones. More faculty complete resident evaluations each month and appear to grade performance more stringently than when using competency-based evaluations.

B71 We CAM Do It! Hospital-based nursing teaching intervention to increase delirium documentation using the Confusion Assessment Method

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BACKGROUND: Delirium is a widely recognized but poorly documented complication during hospitalization. We examined the efficacy of a geriatrician-led delirium training intervention to increase nurses’ delirium documentation.

METHOD: Twenty-six nurses from a 30-bed orthopedic surgical unit participated in a geriatrician-led delirium training intervention. Each nurse received two 20-minute didactic sessions on delirium that included causes, prevention, and screening for delirium using the Confusion Assessment Method (CAM). Nurses completed a pre- and 3-month post-interventional survey to assess confidence and knowledge of delirium detection. We examined 2 months of nursing documentation for patients discharged pre- and post-intervention.

RESULTS: Among 26 nurses, mean age was 46 years, with an average of 17 years nursing experience. Nursing showed significant improvement in knowledge of delirium risk factors, presentation, and screening post-intervention (p<0.001). As compared to pre-intervention, nursing identified a significantly greater number of delirium risk factors (pre- 32% vs post- 71%, p<0.001), medications to avoid in the elderly (20% vs 70%, p<0.001), and correct management strategies for patients with delirium (52% vs 84%, p<0.001). Nurses also reported significantly greater confidence in ability to detect delirium in their patients post-intervention (p=0.021). We reviewed nursing records for 53 patients pre- and 75 patients post-intervention. Patient mean age was 74 years, 73% female, 6.9% with dementia, and 39% with hip fracture diagnosis. Delirium occurrence via the CAM and geriatrician documentation was 2.3% and did not differ significantly pre- and post-intervention. Mean length of hospital stay was 4.5 days. Nursing CAM documentation per shift increased significantly from 13 to 91% post-intervention (p<0.001).

CONCLUSION: Nursing documentation of delirium screening using the CAM significantly increased after formal geriatrician-led educational intervention. Such improvement of delirium screening by nursing staff is important for reducing hospital complications.

B72 Mental Status (MS) Vital Sign: A Pictorial Facial Scale as a Screening Tool for Delirium

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Background: The purpose of screening is to identify a problem early. Although screening is not equivalent to making a diagnosis, screening for abnormal mental status has the potential to improve identification of patients with delirium. This study attempted to validate a rapid screening tool (the “Mental Status (MS) vital sign”) based on pictures of patient faces of varying mental states connected to a numerical scale similar to the mRASS.

Methods: Prospective study of patients older than 65 years of age admitted to an Acute Care of the Elderly (ACE) unit. Patients were evaluated daily (between 7-9 AM) by nurses or nurse aids with the MS vital sign. Simultaneously, research assistants completed the MS vital sign (blinded to the nursing MS vital sign) in order to assess inter-rater reliability. Within the same morning, a geriatrician (blinded to both MS vital signs) evaluated the patient for delirium using the DSM IV criteria.

Results: Of 55 patients, 14 (25.5%) were delirious on admission according to DSM IV criteria (prevalence). Using any score other than 0 as abnormal, sensitivity and specificity were 86% and 67%, respectively. The negative and positive predictive values were 93% and 46% respectively. Development of delirium (incidence) was too low to accurately measure sensitivity/speciﬁcity of the tool (only 2/55 patients developed delirium after admission). The area under the curve (inter-rater reliability) was .758 (.617-899, 95% CI) with a Kappa of .405.

Conclusion: As with any screening instrument, this tool does not substitute for a clinical diagnosis. However, it can be done quickly (during other vital signs) and has good sensitivity and fair speciﬁcity for delirium on admission. Larger studies are needed to validate the tool for incident delirium during the hospitalization and to see if the MS vital sign affects physician practice or patient outcomes.

B73 Shared Risk Factors for Constipation, Fecal Incontinence, and Combined Bowel Symptoms in Older U.S. Adults

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Background: To estimate the prevalence of and identify shared factors associated with bowel symptoms in older U.S. men and women

Methods: We utilized data from the National Health and Nutrition Examination Surveys from 2005-06, 2007-08, and 2009-10 and evaluated a total of 6,329 women and men aged ≥ 50 years. Constipation was defined as hard stool consistency on the validated Bristol Stool Form Scale and/or a stool frequency of <3 bowel movements/week. FI was at least monthly loss of solid, liquid or mucus stool; and combined bowel symptoms was the presence of both. Appropriate sampling weights were utilized for statistical analyses, and multinomial logistic regression analyses were performed to assess variables
associated with bowel symptom types. Regression models were adjusted for age, race, gender, educational status, poverty, self-rated health, comorbidities, depression, and impairment with activities of daily living (ADL).

**Results:** Women were more likely than men to report constipation, FI, and combined bowel symptoms: constipation rates were 11.8% vs 4.7%; FI rates were 11.2% vs 8.6%; and combined bowel symptoms were 1.4% vs 0.4% in women and men, respectively \((p<0.01)\). The prevalence increased with age; in women and men aged 80+, constipation was 11.4%, FI was 16.0%, and combined symptoms were 1.6%. In adjusted models, shared factors associated with each type of bowel symptom included: female gender, self-rated health, and depression symptoms. Women had greater odds of having constipation \((OR\ 3.0,\ 95\%\ CI\ 2.3,\ 3.8)\), FI \((OR\ 1.4,\ 95\%\ CI\ 1.1,\ 1.7)\), and combined symptoms \((OR\ 4.7,\ 95\%\ CI\ 2.1,\ 10.2)\) than men. However, self-rated health and depression symptoms were significantly associated with constipation \((OR\ 1.8,\ 95\%\ CI\ 1.4,\ 2.4\ vs \ OR\ 1.8,\ 95\%\ CI\ 1.0,\ 3.2)\), FI \((OR\ 1.5,\ 95\%\ CI\ 1.1,\ 2.0\ vs \ OR\ 2.3\ 95\%\ CI\ 1.4,\ 3.5)\), and combined symptoms \((OR\ 2.7\ 95\%\ CI\ 1.5,\ 4.7\ vs \ OR\ 4.6,\ 95\%\ CI\ 1.3,\ 16.5)\) respectively \((p<0.05)\).

**Conclusions:** With the use of validated definitions, constipation and FI bowel symptoms are common conditions in older women and men. The association of bowel symptoms with depression and poor self-rated health suggests interventions to improve bowel symptoms may have far-reaching benefit for older men and women.

B74

**Body Mass Index Trajectory as a Predictor of Frailty**

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Supported By: A. Rock is supported by an award from the Behavioral Sciences, Duke University Medical Center, Durham, NC.

**Background:** Effective health promotion in later life requires identifying trajectories in mid-life indicative of heightened risk for geriatric syndromes such as frailty. The goal of this study was to examine the relationship between trajectories of body mass index (BMI) change and onset of frailty in later life.

**Methods:** Data come from the 2004-2012 waves of the Health and Retirement Study \((n = 10,827)\); participants with frailty at baseline were excluded. Latent growth mixture models (LGMM) were used to (1) empirically identify 8-year BMI trajectories, and (2) examine the relationship between BMI trajectories and onset of frailty. Frailty was defined by a modified version of the Rockwood Frailty Index (FI) \((FI>25)\). Models were adjusted for demographic characteristics and smoking status.

**Results:** The cumulative incidence of frailty over the follow-up period was 19.9%. LGMM identified four BMI trajectories: stable non-obese \((89.2%)\), stable obese \((7.2%)\), weight loss \((1.8%)\), and weight gain \((1.8%)\). After adjusting for covariates, the stable obese \((Odds\ Ratio\ (OR): 2.72,\ 95\%\ Confidence\ Interval\ (CI): 2.06-3.58)\), weight loss \((OR: 2.81,\ 95\%\ CI: 1.84-4.30)\), and weight gain \((OR: 3.61,\ 95\%\ CI: 2.39-5.46)\) classes had higher odds of frailty relative to the stable non-obese class.

**Conclusions:** Both weight gain and loss predict onset of frailty among older adults. Obesity in mid-life is also predictive of frailty. Assessing BMI is an inexpensive and readily available measure for guiding clinical practice and understanding health trajectories in later life.
B76
Geri-SAFE: Investigating the Efficacy of Clinical Novellas for Fall Risk Assessment
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Background: Falls are a prevalent issue amongst the elderly and often result in frequent hospitalizations and complications. It is estimated that falls account for 2/3 of accidental deaths among older adults. Understanding the risks factors and prevention of falls is a required component of medical student education per the AAMC and LCME. This study serves as a component of the Geri-SAFE program (Student learners Assessing Falls among Elders) and aims to assess learners’ knowledge and confidence toward fall prevention.

Methods: Between 2013-2014, third year medical students watched an instructional falls video depicting an elderly patient who suffers two separate falls (one trivial and one causing hip fracture) and highlights the factors contributing to each fall. In addition, it demonstrated the importance of interdisciplinary management in both prevention and recovery from a fall. Students completed a questionnaire focusing on identifying risk factors contributing to either fall. The data was analyzed based upon the student’s ability to identify both extrinsic and intrinsic risk factors that may have caused the falls.

Results: N=366. In regard to the first, minimally-traumatic fall, 99.2% (363) of students were able to identify 1 or more extrinsic risk factors (tripping hazards, poor lighting), but only 44.8% (164) noted any intrinsic risk factors (drowsiness, poor vision). For the more severe second fall causing permanent disability, 97.8% (358) of students identified extrinsic risk factors (tripping hazards, uneven terrain), but only 54.1% (198) described any intrinsic risk factors (previous fall, weakness), in spite of being exposed to the previous “trivial” fall video.

Conclusions: After video intervention, students gained knowledge and were able to successfully recognize extrinsic risk factors; however, the study indicated that further education is warranted in regard to identifying intrinsic factors leading to falls. As medical professionals, these are the areas that we will be targeting in our practice to prevent falls in our geriatric population in the hopes of avoiding significant complications. This suggests that further debriefing in addition to the Gerti-SAFE video may be necessary to better enforce these teaching points.

B77
Willingness of Community-dwelling Older Persons to Participate in Fall Prevention Interventions: A Belgian Survey Study
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Supported By: This study was funded by the Flemish Ministry of Welfare, Public Health and Family.

Background: Fall prevention can reduce falls in community-dwelling older people by 17 to 40%. Motivating people to participate in these interventions, however, remains difficult. We conducted a survey to assess the willingness to participate in fall prevention interventions as well as to describe characteristics related to higher participation willingness.

Methods: A validated questionnaire was sent to 3923 people from 11 general practices and evaluated participation willingness for the following measures: home/group exercise program, feet/footwear evaluation and advice, home modification and medical interventions (control sight, ophthalmology, monitoring and adjusting medication, checkup orthostatic hypotension). Data were analyzed using univariate and multivariate regressions.

Results: 1728 persons participated (response rate: 44%), of which 36% fell in the past year and 10% took part in prevention measures in the past. The majority was willing to consider medical interventions (88-97%), feet/footwear evaluation and advice (83%) and home modification (81%). Exercise programs were the least popular: 64% were willing to follow a home exercise program and 48% a group program. Believing that fall prevention was important led to a higher willingness for home modification (OR (CI) = 4.60 (3.43-6.19)) and participation in an exercise program at home (1.93 (1.50-2.49)) and in group (2.13 (1.64-2.76)). Wanting to discuss a fall with the general practitioner led to a higher willingness for home modification (1.39 (1.04-1.86)) and to follow a home exercise program (1.32 (1.05-1.67)). Younger (1.43 (1.08-1.88)) and female (0.68 (0.55-0.84)) persons were more willing to participate in a group exercise program.

Conclusions: Raising awareness for fall risk to convince people of the importance of prevention and good communication with the general practitioner could contribute to higher participation willingness.

B78
Geriatric Conditions and Living Environment among Older Homeless Adults
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Background: While geriatric conditions are common in homeless adults age 50 and older, little is known about potential influences from different types of homeless environments. Characterizing types of environments and their association with geriatric conditions in older homeless persons may help inform adaptations for these individuals.

Methods: We enrolled 350 homeless adults, age 50 and older, recruited via population-based sampling in Oakland, CA. Participants were interviewed about their living environment in the past 6 months and the presence of 8 geriatric conditions, assessed by validated measures. Conditions included falls, urinary incontinence, depression, and impairment in function, mobility, or cognition. We used cluster analysis to identify participants’ primary living environment and multivariate regression models to determine if environment was associated with the presence of each geriatric condition.

Results: The mean age was 58 years and 77% were male. Participants stayed in 4 environments: outdoors (n=162), homeless shelters (n=88), intermittently with family/friends (n=57), and rental housing (recently homeless; n=43). Overall, 34% reported any falls in the past 6 months, 48% screened positive for urinary incontinence, 38% screened positive for major depression (CES-D score >8), 39% reported difficulty performing 1 or more activities of daily living (ADLs), 27% reported difficulty walking, and 26% had cognitive impairment (3MS score <7th percentile). After adjustment for age, sex, and substance use, participants who were recently homeless had approximately half the odds of urinary incontinence, difficulty walking, and difficulty performing ADLs compared to those living in other environments; both recently homeless participants and those staying intermittently with others had about half the odds of having falls and cognitive impairment. These associations did not reach statistical significance. There were no differences in odds between those in homeless shelters or outdoors.

Conclusions: Geriatric conditions were common among older homeless adults across a range of environments, although those who were recently homeless or stayed intermittently with others had lower odds of several conditions. Efforts to prevent and end homelessness will be essential to managing geriatric conditions in this population.
B79

Characteristics of patients receiving a multicomponent delirium-prevention intervention in the nursing home setting


Supported By: Fox and Samuels Foundation, NIA P30AG028741, KO7AG041835

Aim: To describe patients who received a multicomponent delirium-prevention intervention in the nursing home, adapted from the Hospital Elder Life Program. Methods: Nursing home residents were referred to the program if they began treatment for an acute illness and could communicate and follow simple commands. A mobile CNA in collaboration with the unit team and a geriatrician provided interventions that targeted delirium risk factors including cognitive and physical impairment, dehydration and nutrition, and sensory and sleep problems. Delirium was ascertained during the acute illness by a research assistant using the Confusion Assessment Method and rated in severity with the Delirium Index (DI). Cognitive and physical function were ascertained with the Brief Interview for Mental Status (BIMS) and Activities of Daily Living (ADLs) scales, respectively, with higher scores reflecting better function. Hospital transfers and deaths were recorded. Results: 103 residents received the delirium-prevention intervention during 165 acute illness episodes. Residents were excluded who were nonverbal (n=13), on hospice care (8), refused (5), or when the CNA’s caseload was full (7). 62% of included residents were female, 42% were Spanish-speaking, and their mean age was 82 years. The most common illnesses precipitating referral to the program were infections of bladder (31%), skin (20%), and respiratory tract (17%). Delirium occurred during 15.4% of acute illnesses but was present at the end of illness in only 3.9%, for a remission rate of 75%. The mean peak DI was 3.9, indicating moderate delirium severity. From beginning to end of acute illness, the mean BIMS score increased from 9.3 (sd=4.5) to 11.0 (4.3) (p=0.004) and the mean ADL score increased from 19.6 (6.2) to 19.8 (6.4) (p=0.78). 13.7% of residents were transferred to the hospital and 8.1% died during or within 3 months after discharge from the program. Conclusion: Delirium remission and cognitive functional improvement were common among older adults who received a delirium prevention program in the long-term care setting, suggesting a beneficial impact. Our plan is to evaluate the program’s impact in a controlled trial.

B80

Impact of Sliding Scale Insulin Use on Hypoglycemia in Elderly Long-Term Care Patients

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Background: Sliding scale insulin (SSI) was added to the 2012 Beers Criteria for Potentially Inappropriate Medication Use in Older Adults because of the “higher risk of hypoglycemia.” The purpose of this retrospective chart review was to evaluate the impact of SSI use on hypoglycemic events in elderly veteran patients (≥65 years old) residing in a Community Living Center (CLC).

Methods: This study was a single center, retrospective chart review of 141 elderly (≥65 years old) veterans with diabetes who were admitted to the CLC between June 1, 2012 and October 31, 2013. Patients were included in the treatment group if they were prescribed SSI within 30 days of admission. Patients not prescribed SSI within 30 days of admission were included in the control group. The primary outcome was to assess the frequency of hypoglycemia with the use of SSI. Secondary outcomes included comparing the rates of hypoglycemia in patients prescribed aggressive versus conservative SSI, comparing the frequency of asymptomatic hypoglycemia to symptomatic hypoglycemia, and evaluating the rates of discontinuation or change in SSI parameters within 30 days after SSI initiation.

Results: Approximately 46% of patients in the SSI group experienced at least one or more episodes of hypoglycemia, compared with about 17% of patients in the control group (odds ratio 3.94 [95% CI 1.66-9.33] P=0.002). Patients prescribed the aggressive SSI algorithm were 1.24 times more likely to experience hypoglycemia compared to those receiving conservative SSI algorithm (odds ratio 1.24 [95% CI 1.08-1.42] P=0.002).

Conclusion: Patients prescribed SSI within 30 days of admission were almost 4 times more likely to experience hypoglycemia compared to patients not prescribed SSI. This data supports the recommendation made by the 2012 Beers Criteria that SSI use in elderly patients leads to a “higher risk of hypoglycemia.”

B81

Cognition Predicts Frailty Status: Results from the “Gait & Brain Study”

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Supported By: Funded by the Canadian Institute of Health and Research (CIHR)

Background: Gait control relies on cognition and dual-task gait studies suggest cognitive deficits play a role in age-related gait slowing and development of frailty. Gait variability measures brain gait regulation and high variability predicts mobility, cognitive decline, and falls. We have previously demonstrated that high gait variability is associated with frailty, suggesting a cognitive component in the frailty construct. However the role of cognitive dysfunction in predicting mobility decline and frailty status is not well understood.

Methods: One hundred twenty older adults without frailty or dementia at baseline from the “Gait & Brain Cohort Study” were included in this analysis. Bi-annual assessments of clinical and cognitive measures during a 2 y follow-up were performed. Mobility was evaluated by assessing gait velocity and stride time variability using the GaitRite®. Mobility decline was defined as a reduction of gait speed by ≥10 cm/s at 2 y of follow-up. Frailty status was evaluated using a modified frailty phenotype index composed of 4 original criteria without hand grip. Analysis by linear regression models, covariance and relative risk evaluated the association between cognition and development of mobility decline and frailty.

Results: Mean age was 77 (±6), 57.6% female. Univariate analysis showed that cognitive dysfunction at baseline predicts gait disturbances, mobility disability and pre-frailty status after 2 year follow-up. Specifically, cognitive impairment (MoCA<26) confers a risk for mobility decline, [RR=2.13 (1.5-4.0)] and pre-frailty [RR= 1.44 (0.5-2.4)]. From the different cognitive domains assessed, executive dysfunction and low performance on the Frontal Assessment Battery were associated with the development of mobility decline (p<0.02) and pre-frail status (p<0.003).

Conclusions: Cognitive dysfunction, specifically episodic memory impairment and executive dysfunction predicts mobility disability and pre-frail status in a cohort of non-disabled seniors. Cognition appears to be a component of the frailty construct and its dysfunction coexist with mobility decline which suggests that shared mechanisms mediate the development of frailty.
B82 Gait Speed is Associated with Cognitive Function in the Elderly With and Without Mobility Disability
Supported By: T32 AG021885, University of Pittsburgh Medical School Grant

Background: Measures of physical function such as gait speed and grip strength are associated with cognition in the elderly and have been shown to be predictors of cognitive decline. However, age and pre-existing mobility disability (MD) may attenuate these associations for some measures of physical function.

Methods: This two-group cross-sectional study included community-dwelling persons aged 65-75 with MD and aged 76 and above without limitations to mobility. MD was assessed via phone interview by inability to either walk for 15 minutes or climb a flight of stairs. We assessed gait speed, standing balance, and repeated chair rise via the Short Physical Performance Battery (SPPB); grip strength via dynamometer; global cognition via the Montreal Cognitive Assessment (MoCA) and cognitive processing speed via the Digit Symbol Substitution Test (DSST). We examined the association between physical and cognitive performance both with Pearson’s correlation and with multiple linear regression controlling for demographics and body composition.

Results: 158 subjects completed study visits: 70 young elderly with MD and 88 healthy elderly without. Subjects were 61% female and 87% white with mean age 78 years. The most common comorbidities associated with MD included osteoarthritis (61%) and back pain (60%). There were no significant differences in the mean MoCA and DSST scores between the 2 groups.

In those with MD, both standing balance and gait speed were associated with MoCA and DSST scores. In those without MD, gait speed was associated with MoCA score and weakly associated with DSST score, but standing balance was not associated with either cognitive test scores. Neither grip strength nor repeated chair rise time were associated with cognitive test scores in either group. In both groups, the observed associations remained after adjusting for age, sex, and body lean mass percentage.

Conclusions: Gait speed is positively associated with cognitive function in elderly persons both with and without MD. Future studies should examine changes in cognition with improvement in physical function and gait speed in both robust and less robust elderly.

Correlations of Cognitive and Physical Performance

<table>
<thead>
<tr>
<th>MD Positive (N=70)</th>
<th>MD Negative (N=88)</th>
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</thead>
<tbody>
<tr>
<td>MoCA</td>
<td>DSST</td>
</tr>
<tr>
<td>Gait speed (m/s)</td>
<td>0.34 (p=0.035)</td>
</tr>
<tr>
<td></td>
<td>0.23 (p=0.018)</td>
</tr>
<tr>
<td>Standing balance</td>
<td>0.78 (p&lt;0.001)</td>
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<tr>
<td></td>
<td>0.054 (p=0.675)</td>
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B83 Resting Metabolic Rate and Frailty in the Health, Aging, and Body Composition Study: Variation by Gender
Supported By: NIA Contracts N01-AG-6-2101; N01-AG-6-2103; N01-AG-6-2106; NIA grant R01-AG028050, NINR grant R01-NR012459; NIH Intramural Research Program; Hologic, Inc for DXA scans.

Background: Emerging evidence suggests that decreased as well as increased resting metabolic rate (RMR) may be associated with frailty. The study objective was to evaluate the relationship between RMR and frailty in the Health, Aging, and Body Composition study.

Methods: Using ordinal logistic regression, we examined the association between frailty and postabsorptive RMR while controlling for fat-free mass (FFM, Hologic 4500A DXA Scanner), age, and gender among 116 participants in the 2006-2007 data collection year. Interaction between RMR and gender was also assessed. RMR was assessed by indirect calorimetry (Deltratrac II). Frailty was identified using five criteria: 1) slow gait speed (slowest 20th percentile on 20 meter walk, adjusted for height and gender), 2) weakness (weakest 20th percentile on grip strength, adjusted for body mass index and gender), 3) self-reported exhaustion, 4) low physical activity (least active 20th percentile using hip accelerometry), and 5) weight loss (> 10% unintentional weight loss prior 2 years). Due to the small number of frail participants, frailty was collapsed into three categories: 0 criteria met, 1 criteria met, or 2+ criteria met.

Results: The mean age of the sample was 82.2 (SD = 3.1), 54 (46.6%) participants were female, and the average FFM was 46.1 kg (SD = 9.1). In this sample, 51 (44.0%) participants met 1 frailty criteria; 21 (18.1%) met 2 or 3. The mean RMR was 5.0 MJ/day (SD = 0.83). After controlling for FFM, age and gender, RMR was not a significant predictor of frailty in the total sample (OR = 1.5, p = 0.33). We found a significant interaction between RMR and gender (OR = 0.2, p = 0.03), however. Adjusting for the interaction, RMR was a significant predictor of frailty status among women (OR = 3.4, p = 0.04) but not men (OR = 0.8, p = 0.72; model R² = 0.04).

Conclusions: Higher RMR was significantly associated with worse frailty status among women but not men. This finding suggests a possible hypermetabolic state with frailty, specific to women. Future research should explore these relationships in a frailer sample.

B84 Characteristics and health of caregivers who are veterans and nonveterans
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Supported By: The Veterans Health Administration provides the funding for the Advanced Geriatric Fellowship

Background: Caregiving can lead to increased morbidity and mortality. The Veterans Health Administration provides several services for lay caregivers of veterans but most services are not available to veterans who are caregivers themselves. Little is known about the characteristics of this population of caregivers.

Methods: We analyzed data collected from the Center for Disease Control’s 2009 and 2010 Behavior Risk Factor Surveillance Survey, including a subset of data about caregiving, to evaluate differences between caregivers who are veterans and caregivers who are not veterans. The detailed caregiving questions were done in Connecticut, District of Columbia, Illinois, Louisiana, and New Hampshire. Group differences were analyzed using Chi-square and t-tests. We excluded respondents whose veteran status was missing or who were less than 18 years old. We also excluded answers when the answer was “unknown” or “refused.”

Results: There were 12,878 veterans who identified themselves as caregivers (12% of caregivers; 22% of veterans) and 97,346 caregivers were nonveterans. The caregiver module was completed by 629 veteran and 5380 nonveteran caregivers. Compared to nonveteran caregivers, veteran caregivers were older (average age 64 vs 54.5, p=0.00), more likely to be male (88% vs 22%, p=0.00), more likely to be retired (49% vs 22%, p=0.00), and more likely to be caring for a spouse (27% vs 12%, p=0.00). They also reported spending more hours per week caring for their loved one (23 hours vs 19 hours, p=0.01). Veterans were more likely to report “no difficulty” associated...
with caregiving (50% vs 43%, p=0.00) and being “very satisfied” with life (49% vs 45%, p=0.03), however they more often reported rarely or never receiving adequate emotional support (11% vs 7%, p=0.00). Veterans were more likely to report hypertension, diabetes, coronary heart disease, and history of stroke (p=0.00). Care recipient age, sex, health problem, and function were similar across the two groups.

Conclusions: Caregivers who are veterans are older, less healthy, and spend more time caregiving compared to caregivers who are not veterans. These characteristics have important implications for the health management of veterans who have the burden of caregiving. Policies that are targeted to provide additional support for this population of caregivers are needed.

### B85

**Clinical Frailty Scale: A Simple Tool That Predicts Length of Stay in An Acute Medicine Unit**

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Supported By: Funded by the Canadian Institute of Health and Research (CIHR) and by the Program of Experimental Medicine (POEM), the Department of Medicine, University of Western Ontario.

**Background:** When frail older adults are admitted to hospital, they are at an increased risk of adverse events including falls, delirium, and disability. However, simple clinical tools for assessing frailty in acute care hospitals are not widely available. The Clinical Frailty Scale (CFS) is a practical and efficient tool for assessing frailty; however, its ability to predict outcomes in the acute medical service is unknown. We aim to examine if the CFS can predict length of stay in elderly patients admitted to the acute medical ward.

**Methods:** Prospective cohort study set in an Acute Care of Elderly Unit at University Hospital, London, ON. Seventy-seven patients, over the age of 65, admitted to the general internal medicine clinical teaching units were included. Patient demographics were collected through chart review and CFS score were assigned to each patient after brief clinician assessment. The CFS ranges from 1 (very fit) to 9 (terminally ill) based on descriptors and pictographs of activity and functional status. The CFS was then collapsed into three categories: non frail (CFS 1-4), mild- moderately frail (CFS 5-6), and severely frail (CFS 7-8). Outcomes of length of stay and 90 day readmission were gathered through the electronic patient record.

**Results:** Severe frailty was associated with longer lengths of stay [Mean(SD): 12.0(12.5) days] compared to mild-moderate frailty [Mean(SD): 11.4 (10.8) days] and non- frailty [Mean(SD): 4.1 (2.1) days, p =0.015]. This finding remained significant after adjusting for age, gender, and number comorbidities and medications. There was a trend toward higher readmission rates in patients with higher CFS scores (19% for non-frail patients, 33% for mild-moderately frail patients, 35% for severely frail patients).

**Conclusion:** The Clinical Frailty Scale can help identify patients that are more likely to have prolonged hospital stays on the acute medical ward. The CFS is an easy to use tool which can detect older adults at high risk of complicated course and longer stay. Objective early identification of seniors with frailty at acute care units can help to target interventions to prevent complications and to implement effective discharge planning in high risk older adults.

### B86

**An Individualized Low-Intensity Walking Intervention Improves Physical Characteristics of Frailty in Older Veterans**


Supported By: Veterans Administration T21 Non-Institutional Long Term Care Initiative

**Background:** Frailty is characterized by generalized muscle weakness and slow gait speed. The purpose of this multi-GRECC clinical demonstration project between Little Rock and San Antonio VAMCs was to determine whether a walking clinic can improve these frailty characteristics in older veterans.

**Methods:** Veterans ≥60 years enrolled in primary care at South Texas VAMC were eligible for a 6-week walking program, delivered by a registered nurse and geriatrician. Patients received a pedometer at an initial face-to-face visit, were followed with weekly phone calls to monitor steps/day and provide motivation, and participated in a final face-to-face visit. Grip strength (handheld dynamometer), gait speed (10-ft walk), Timed Up and Go, and body mass index (BMI) were assessed at baseline and follow-up (FU). Differences in baseline and FU measurements were assessed by paired t-tests. Validated criteria were used to determine whether patients met standardized cut-points for the physical characteristics of frailty, weakness (grip strength) and slowness (10-foot walk). Chi-square test was used to determine differences in frailty classification in weakness and slowness from baseline to FU.

**Results:** 67 patients completed the program (mean age: 68.6 ± 8 years, 82.1% male, 54.6% Type II Diabetic). Improvements from baseline to FU were observed in: average steps/day (4451 ±2960 vs. 6317±3466, p <.0001); gait speed (2.68 ±0.4 vs. 2.46 ±0.5 seconds over 10 ft, p=.0001); Timed Up and Go (9.87±2.1 vs. 8.78±1.6 seconds, p <.0001), grip strength (27.6 ±9.8 vs. 28.7±10.3 kg, p=.048); and BMI (32.3 ±5.2 vs. 32.1 ±5.2, p=.049). Forty patients (62%) met criteria for weakness at baseline compared to 35 (54%) at FU (p=.001). Further, 8 patients who were weak (meeting frailty criteria for weakness) at baseline were free from weakness at FU (p<.001). However, the proportion of patients meeting frailty criteria for slowness did not change from baseline to FU (6% vs. 6%, p=.6).

**Conclusions:** Our initial findings demonstrate that a low-intensity walking intervention leads to improvements in continuous measures of grip strength and walking speed and improvement in frailty criteria for weakness. Future larger studies should be conducted to determine if this new clinical model is useful for the prevention or amelioration of frailty.

### B87

**The Epidemic of Immobility in Hospitalized Older Patients**

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Supported By: American Federation for Aging Research - Medical Student Training in Aging Research

**Purpose:** Low physical activity is a common occurrence during hospital stays and is a significant risk factor for mortality and complications, including delirium. The level of inpatient activity is suggested to predict quality of life a patient is able to regain after hospitalization. The Hospital Elder Life Program (HELP) is an effective, established care model to prevent delirium in older hospitalized patients. Its success is achieved through the implementation of standardized protocols directed at delirium risk factors including, low activity. We hypothesized that patients enrolled in HELP would demonstrate higher quantitative measures of daytime physical activity compared with patients receiving usual care.

**Methods:** We enrolled 53 patients (mean age = 79.8 yrs) admitted to the University of Utah Hospital who met the following HELP
eligibility criteria: age ≥ 70, enrolled within 48 hours of admission, expected LOS > 2 days, and ≥ 1 delirium risk factors. Subjects who received HELP intervention were evaluated and enrolled by program staff. The usual care control group was recruited from patients who otherwise met HELP eligibility but could not be enrolled for administrative reasons. Activity levels over 48 hours were quantified using ActivPal accelerometers, which detect movement frequency in 15 second intervals and differentiate between sitting/lying, standing, or stepping. These data are shown in the Table as the average of the two daytime (8 AM to midnight) periods.

Conclusions: Despite the volunteer interventions to promote increased activity, enrollment in HELP did not increase the proportion of time older hospitalized patients spend either standing or walking. These results demonstrate a severe lack of activity in both groups with patients spending on average only 48 active minutes during the daytime periods. Future work should be directed toward efforts to increase the activity levels of the older patient population during hospitalization.

Results

<table>
<thead>
<tr>
<th></th>
<th>HELP</th>
<th>Usual Care</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit/Lie</td>
<td>95.2 ± 4.6</td>
<td>94.7 ± 5.0</td>
<td>0.65</td>
</tr>
<tr>
<td>Stand</td>
<td>40.2 ± 3.8</td>
<td>45.2 ± 4.5</td>
<td>0.07</td>
</tr>
<tr>
<td>Step/Tim</td>
<td>0.8 ± 1.5</td>
<td>0.8 ± 0.9</td>
<td>0.95</td>
</tr>
<tr>
<td>Steps (a)</td>
<td>560 ± 1190</td>
<td>457 ± 999</td>
<td>0.06</td>
</tr>
</tbody>
</table>

means ±/ SD

B88
An outpatient quality improvement program increased advance directive discussions that identified a health care proxy or surrogate decision maker

S. Singh,1 C. Quinn,2 R. Tomskey,1 B. Han,1 S. Maheswaran.1 1. Medicine, New York University Medical Center, New York, NY; 2. VA NY Harbor Healthcare System, New York, NY.

Background: Barriers to completion of advance directives (AD) include a lack of education and knowledge regarding advance care planning and difficulties with completing forms. For patients who lose decision making capacity, having a documented health care proxy (HCP) or surrogate decision maker (SDM) in the electronic medical record (EMR) helps to ensure timely, appropriate care and limits delays in treatment decisions. A quality improvement project was undertaken to increase the number of AD discussions documented in the EMR with the goal of having more patients identify a HCP or SDM.

Methods: At the VA NY Harbor Healthcare System a three-part intervention for providers in all primary care clinics was implemented. The intervention beginning in December 2013 included: an AD EMR reminder alert, an AD discussion template providing decision support to ensure proper documentation of an AD, HCP or SDM, and a streamlined consult to social work. Baseline data was collected from January to September of 2012, and between January and September of 2014 after the implementation of the intervention. A sub-analysis of a convenience sample of 100 individual patient charts (randomly selected from 10 providers) from visits in 2012 and in 2014 was performed to also identify patients with a HCP or SDM, who may not have an AD.

Results: Prior to the intervention from January to September of 2012, of 25,946 total primary care visits, 7,978 of those visits included a newly completed AD discussion note (30.75%), and 817 (3.14%) visits documented a newly completed AD. After the intervention from January to September 2014, of 25,873 total primary care visits, 13,247 included a newly completed AD discussion note (51.2%), and 1,541 (5.95%) visits documented a newly completed AD. In the sub-analysis, in 2012, 30.6% patients had a HCP or SDM, while in 2014, 94.4% of patients had a documented HCP or SDM.

Conclusion: This study demonstrated one approach for increasing documentation of advance directive discussions as well as documenting AD, HCP or SDM. While the overall increase in advance directive completion rate was modest, further research is needed to identify other interventions that will further increase this rate. We believe that leadership support for a system-based intervention was the key to its success.

B89
Creating a frailty index to predict all-cause mortality in the Physicians’ Health Study

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Supported By: The Physicians’ Health Study is supported by grants CA-34944, CA-40360 and CA-097193 from the National Cancer Institute and grants HL-26490 and HL-34595 from the NHLBI, Bethesda, MD. Dr. Hsieh is supported by an NIH funded T32 Training Grant (AG000158). The funding sources had no role in the design, conduct or reporting of this study.

Background: Frailty has been described as an accumulation of deficits, leading to impaired response to external stressors and poor outcomes in the face of minor insults. Previous work by Rockwood and others suggests that existing data sets can be used to study and expand our understanding of frailty by using a validated method to create a Frailty Index.

Methods: Using the Physicians’ Health Study, a longitudinal cohort of male physicians, we sought to create a Frailty Index in this existing data set. We evaluated self-reported questionnaires and found 35 available variables that met previously defined criteria to be included in our Frailty Index; each variable represents a co-morbidity or functional deficit and was reweighted to a maximum of 1 point. All physicians 60 years and older were included. A frailty score was calculated for each individual by dividing the numbers of accumulated variables by 35, the total number of possible variables. We categorized the frailty scores as robust (0-0.2), pre-frail (0.2-0.35) and frail (>0.35) and completed survival analysis with Kaplan Meier curves and Cox regression/Odds Ratios. Results were adjusted for confounders such as alcohol use, smoking and marital status.

Results: Adequate data on 10,743 physicians were available for analysis. Baseline age was 60-102 years. 7719 (72%) physicians had calculated frailty index scores suggesting robustness, 2625 (24%) were pre-frail and 399 (4%) were frail; the median frailty index score was 0.16 (range 0.03-0.76). The Hazards Ratio (95% CI) for mortality was 2.38 (2.15-2.63) for subjects with pre-frail scores and 7.68 (6.60-8.93) for frail subjects. When adjusted for marital status, smoking status and alcohol consumption, marital status was found to have no significant effect on frailty’s association with mortality, whereas smoking (past or current) increased chances of mortality and frequent alcohol consumption was protective.

Conclusions: We were able to create a frailty index using the variables available in our existing dataset. Higher frailty index scores were associated with higher risk of mortality, consistent with previously published work.
B90
Antidepressant use and recurrent falls in community dwelling older adults
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Background: Although antidepressant use has been consistently shown to be associated with falls, few studies have examined the risk of recurrent falls across various antidepressant classes – using detailed dosage and duration data – in community-dwelling older adults.

Methods: Using longitudinal data from the Health, Aging, and Body Composition Study in years 1-7 (1997-2004) on 2,948 participants aged 70-79 years at year 1 collected via interview, likelihood of recurrent (≥2) falls in 12 months following medication use was examined with respect to antidepressant use at baseline and years 2, 3, 5, and 6 defined as: 1) any 2) selective serotonin reuptake inhibitors (SSRIs), 3) tricyclic antidepressants (TCAs), and 4) others (i.e., trazodone, buproprion, venlafaxine, mirtazapine, phenelzine). Class, duration (long-term=2+ years), and summatized standardized daily doses (SDD; 1=minimum recommended daily dose for an antidepressant) were examined. Multivariable GEE models were used for analysis.

Results: At baseline, 5.8% reported antidepressant use (increasing to 9.8% by year 6 with the most common class being SSRIs), 5.7% had evidence of serious depressive symptoms, and 37.0% had a history of falls/fractures. At least 7.5% of participants annually reported having ≥2 falls over the past 12 months. Controlling for important potential confounders (including depressive symptoms), antidepressant users had an increase in risk of recurrent falls (adjusted odds ratio [AOR]=1.48; 95% confidence interval [CI] 1.12-1.96). An increased risk was also seen among those taking SSRIs (AOR=1.62, 95% CI=1.15-2.28), with short duration of use (AOR=1.47, 95% CI=1.04-2.00), and taking moderate dosage (1-2 SDD, AOR=1.59, 95% CI=1.15-2.18). In sensitivity analysis, persons with a history of falls/fracture at baseline had increased falls risk for any antidepressant use (AOR=1.83, 95% CI=1.28-2.63).

Conclusions: Antidepressant use in general, SSRI use, short duration of use, and moderate dosage were associated with recurrent falls after adjusting for important confounders. Those with a history of falls/fracture at baseline had an even higher risk.

B91
Dementia Care Management in an Underserved Community: A Comparison of Two Different Approaches
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Supported By: Funded by the National Institute on Aging (NIA) #RC4AG038804

Objectives: To compare the effectiveness and costs of a telephone-only approach to an in-person plus telephone approach for delivering an evidence-based coordinated care management program for dementia.

Methods: We randomized 144 patient-caregiver dyads from an underserved predominantly Latino community to two arms sharing the same care management protocol but differing in implementation strategy: in-person visits at home and/or in the community plus telephone and mail (71 dyads), versus telephone and mail only (73 dyads). We compared between-arm follow-up differences (6 and 12 months) on primary outcomes of caregiver burden (Zarit Burden Interview) and care-recipient problem behaviors (Revised Memory and Behavior Problem Checklist). We also compared patient-caregiver dyad retention, care quality, healthcare utilization, and costs as secondary outcomes.

Results: Recruitment achieved 60% of the planned sample size. Care recipient age differed between groups (70.8 years for in-person versus 75.3 for telephone arm, p=0.038). Caregiver burden (overall baseline mean:30.5; SD:17.4; range 0-88), care-recipient problem behaviors (overall baseline number of problems:9.43; SD:5.08; out of 24 potential problems), retention, and healthcare utilization did not differ across arms. Retention was 61% at 6 months. Adherence to process measures of care quality improved substantially over time in both arms, and did not differ between arms: adherence to 11 out of 19 indicators more than doubled from baseline to follow-up. Average total program cost per case per month for the in-person arm intervention was $358 compared to $216 for the telephone arm, with no significant between-arm difference in healthcare utilization/costs over the follow-up period.

Discussion: Dementia care quality improved regardless of how care management was delivered; large differences in effectiveness or cost offsets were not detected. It remains unclear whether greater recruitment and higher retention would reveal moderate but meaningful differences across approaches.

B92
Prostate Cancer: Implications for Depression and Health-related Quality of Life: a Report from the Senior Oncology Outcomes Advocacy and Research (SOAR) Program
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Supported By: This work is supported by a grant from the National Cancer Institute: K01 CA134554-01 (J.M.M.). The sponsor or funding organization had no role in the design or conduct of this research.

Background: Depression among older cancer patients is of particular concern because of its potential impact on health-related quality of life (HRQOL). We examined the association between depression and HRQOL among Medicare managed care beneficiaries receiving prostate cancer treatment.

Methods: Data were collected from the 2003 Cohort VI Baseline Medicare Health Outcomes Survey. Among 43,765 male respondents, only those aged 65 and older who reported receiving treatment for prostate cancer and self completed the telephone survey were included. Depression was self-reported on three dichotomous questions covering different time periods of depressed mood and HRQOL was assessed using the SF-36. Multivariate regression analyses were conducted to examine their relationships. Results: Of the study sample (n=2,191), 88% were white, 75% were married, and 76% had at least a high school education. The prevalence of self-reported depressive symptoms ranged from 12% (depressed most days in the past 2+ years) to 21% (depressed for 2+ weeks and depressed much of the time the past year). Non-married respondents and those with less than a high school education reported feeling significantly more depressed than their counterparts (p < .001). Respondents who reported being depressed across three depression questions consistently had significantly lower SF-36 scale scores (i.e., poor HRQOL) than those who did not (p < .001), after controlling for other covariates.

Conclusions: Depression is prevalent among older men undergoing treatment for prostate cancer and is adversely associated with physical and mental health. The results highlight the need for clinical assessment and treatment of depression in this population.
B93

Does age matter? The relationship between race and hospice use in the young old to the oldest old

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Supported By: Beeson Career Development Award in Aging Research (K08AG028975)

Background: Rates of hospice use are higher with increasing age and lower among minorities, such as African Americans. While research has examined race and age as individual predictors of hospice use, little work has focused on variation in hospice use by age within different racial groups or variation by age in black-white differences in hospice use.

Objective: To examine within and between group differences in rates of hospice use among blacks and whites across age groups.

Methods: Cross-sectional analysis of 2008 Medicare Denominator and Hospice files. We included all black and white age-eligible (≥ age 65), fee-for service beneficiaries with residence in North and South Carolina who died between 1/1/2008 and 12/31/2008. We used chi-square analyses to examine the association between: (1) age and hospice use within each racial group; and (2) age and black-white differences in hospice use.

Results: Of the 79,489 Medicare beneficiaries included in the sample, 81% were white and 19% were black. Overall, 42.11% of whites and 32.34% of blacks were enrolled in hospice at the time of death (p<.0001). Rates of hospice use increased significantly with advancing age within both groups (p<.0001). See table below. Within each age group, whites used hospice at higher rates than blacks (p<.0001).

Conclusion: Rates of hospice use increased with increasing age among blacks and whites and racial disparities in hospice use were present in all groups from the young old to the oldest old. These findings indicate greater hospice enrollment with decreased life-expectancy within both racial groups and suggest that factors associated with black-white differences in hospice use are similar and persistent across age groups. Such factors may include differences in provider communication and referral patterns, cultural and spiritual beliefs, preferences for care, and knowledge of hospice.

Rates of hospice use by age and race for North and South Carolina Medicare Beneficiaries (2008)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Blacks (%)</th>
<th>Whites (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 to les than 70</td>
<td>26.30</td>
<td>37.27</td>
</tr>
<tr>
<td>70 to les than 75</td>
<td>28.51</td>
<td>39.23</td>
</tr>
<tr>
<td>75 to les than 80</td>
<td>32.04</td>
<td>41.28</td>
</tr>
<tr>
<td>80 to les than 85</td>
<td>33.96</td>
<td>42.69</td>
</tr>
<tr>
<td>85+</td>
<td>36.89</td>
<td>44.46</td>
</tr>
</tbody>
</table>

p<.0001 for white-black difference in hospice use within each age group

B94

Older Jail Inmates Experience Early Onset of Geriatric Conditions

M. Greene,1,2 J. Stijacic Cenzer,2,1 C. Ahalt,1 B. Williams.1,2 1. University of California San Francisco, San Francisco, CA; 2. San Francisco Veterans Affairs Medical Center, San Francisco, CA.

Supported By: NIA Research Supplements for Aging Research on Francisco Veterans Affairs Medical Center, San Francisco, CA; 2. San Francisco, CA; 2. San Francisco, CA.

Background: A growing number of older inmates is creating a healthcare crisis in jails. While jail inmates are considered to have early onset of geriatric conditions, studies have not formally compared rates of these conditions to non-inmates. We conducted an age-adjusted comparison of older jail inmates to a national sample of older adults to examine rates of chronic disease and geriatric conditions.

Methods: Cross-sectional comparison of 238 older male jail inmates age 55 or older in San Francisco to 8124 male participants in the Health and Retirement Study (HRS), a nationally representative sample of community-dwelling adults age 50 or older. We used an age adjusted analysis, accounting for the difference in age distributions between the two groups to compare sociodemographics, chronic conditions, and geriatric conditions (functional, sensory, and mobility impairment). A second age-adjusted analysis compared the jail inmates to HRS participants in the lowest quintile of wealth.

Results: Jail inmates had a mean (SD) age of 59.4 (4.0) and HRS participants had a mean (SD) age of 63.4 (9.8). Jail inmates were more likely to be non-white, have less than a high school education, and be active smokers compared to HRS participants (p<.05 for all comparisons). Older inmates had lower self-rated health (18% (jail) vs. 13% (HRS) reported poor health), and higher rates of hypertension (64% vs. 52%), chronic lung disease (16% vs. 7%), and depression (27% vs. 16%) but not diabetes (19% vs. 20%, p=0.4). Jail inmates also had higher frequencies of ADL impairment (34% vs. 11%), hearing impairment (14% vs. 4%) and mobility impairment (42% vs. 19%). When compared to HRS participants in the lowest quintile of wealth, jail inmates still had lower self-rated health, and higher rates of functional, mobility and hearing impairment. The rates of ADL and hearing impairment among older jail inmates were similar to that of HRS participants in the lowest quintile of wealth age 75 or older and age 85 or older, respectively.

Conclusions: Older jail inmates experience an early onset and significant burden of geriatric conditions. This finding supports the use of an earlier chronologic age cut-off for age-related healthcare policies and services in the criminal justice healthcare system.

B95

How Well do Older Adults Predict Their Long-Term Prognosis?


Supported By: The National Institute on Aging (Grant number: NIA 1K23AG040772) and the American Federation for Aging Research.

Background: The AGS Choosing Wisely initiative recommends considering long-term prognosis when discussing clinical options with patients, yet little is known about older adults’ perception of their own prognosis.

Methods: Longitudinal cohort study of subjects aged 64, 69, 74, 79, 84, & 89 enrolled in the Health & Retirement Study in 2000 who were asked the percent chance they would live 11 years or more (e.g. to age 75+ if 64 year old). We determined observed 11-year survival using data the 2010 National Death Index. Prognosis was overestimated if participants’ perceived likelihood of surviving 11 years was 66-100% but died, and underestimated if their perceived likelihood of surviving was 0-33% but lived. We calculated a c-statistic as a measure of discrimination and used chi-squared tests to identify predictors of over and underestimation.

Results: 2017 participants were included in the sample (42% men, 87% white). 11-year survival was 41% among those with perceived 0-33% chance of survival, 60% among those with 34-65%, & 70% among those with 66-100% chance. Overall, 13% overestimated & 10% underestimated survival. Among age groups, overestimation was more common in oldest subjects and underestimation was more common in subjects in their 70s (Figure). Discrimination was moderate (c-statistic = 0.63). Predictors of overestimation included age, male gender, perceived good memory, & perceived improvement in memory. Predictors of underestimation included age, female gender, non-white race/ethnicity, perceived poor health, & perceived poor memory.

Conclusions: Most older adults had a moderate sense of long-term prognosis. However, nearly a quarter over or underestimate prognosis. Clinicians caring for older adults should not fear that most patients have no sense of long term prognosis, & offer to discuss & reconcile differences in perceived prognosis.
CONCLUSIONS: Doctors struggle with conducting EOLC, especially with ethnic patients. It is vital to identify strategies to mitigate barriers doctors encounter in conducting effective EOLC with seriously ill older adults and their families.
METHODS: We conducted 8 mixed focus groups (n=40 participants) with resident families, NH nurses, NH physicians/nurse practitioners/physician assistants, NH administrators, ER nurses/physicians and hospitalists. Interviews were recorded and transcribed verbatim; transcripts/field notes were analyzed using a modified Grounded Theory approach.

FINDINGS: Participants described the role, function and capacity of both NHs and ERs as commonly misunderstood, often leading to inappropriate care transitions. All stakeholders (even those from NHs) described a lack of trust in NH care/capabilities, including questioning the quality of NH licensed nurse care; absence of physicians to provide timely clinical assessments and talk with families; and perceiving NH capacity and responses as inadequate (e.g., supplying analgesics, stat labs). Nurses commonly felt that their clinical assessment was “not heard” or “trusted” by families, doctors, and/or ER staff, and often did not feel empowered to keep a resident in the NH when it was believed to be the best option. Potential benefits of EHT included providing a “visual” virtual assessment for the off-site physician; validating nursing clinical assessment; providing ‘real time’ reassurance to residents/ families, and fostering opportunities for goals of care discussion with multiple parties in different locations.

CONCLUSION: Perceived lack of trust in NH care/capabilities is common. EHT may help provide a virtual infrastructure to improve timely access to care, communication and care coordination across care settings, as well as more meaningful engagement of residents and families in care decisions.

B99
An Automated Model Using Electronic Health Record Data to identify Delirium in Hospitalized Older Adults: A Pilot Project


Background

The electronic health record (EHR) may be a useful tool to assist in the identification of delirium. This study was performed to generate an automated delirium identification model using data from the EHR among hospitalized older adults.

Methods

Inpatients 65 years and older were included in this cross-sectional study. The researchers used “confusion assessment method” as the gold standard to identify delirium. Four categories of variables were obtained from the EHR on the day of and the day prior to the researchers’ assessment: 1) hypoactive delirium (nurses assessment of motor retardation, reduced level of consciousness or decline in function) 2) hyperactive delirium (use of restraints, antipsychotic medications, nurses’ assessment noting a change in mental status, altered attention, motor agitation, poor thought process, or anxiety) 3) patient factors (dementia, age, mean blood urea nitrogen or serum creatinine) and 4) health care associated factors (urinary catheter, surgery or brain imaging). Relationships were analyzed using Chi-square or Fisher’s test as appropriate.

Results

Ninety-two participants in 3 hospitals were included in the analysis. Of these, 54% were female with a mean age of 77 years (± 8.8). Delirium prevalence was 17%. In the univariate analysis, variables associated with delirium included abnormal mental status (94% vs. 41%; p < 0.0001); reduced level of consciousness (69% vs. 9%; p < 0.0001), motor retardation (50% vs. 13%; p < 0.0007), motor agitation (38% vs. 7%; p < 0.004) abnormal attention (81% vs. 12%; p < 0.0001), abnormal thought process (56% vs. 11%; p < 0.001), dementia (31% vs. 11%; p < 0.03), age (82 years vs. 76 years; p = 0.02), number of medications (10 vs. 12; p = 0.031), psychoactive medications (31% vs. 7%; p < 0.004), mean Braden score (15 vs. 18; p = 0.0038) and Morse fall score > 45 (94% vs 59%; p = 0.02). Based on multivariate analysis, two variables were associated with delirium: reduced level of consciousness and abnormal attention (AUC 0.92).

Conclusion: This pilot study demonstrates that variables present in the EHR may be used to develop an automated model to identify delirium in the hospitalized older adults. The findings need to be validated in a larger study to determine if the model performs well in predicting clinical outcomes.

B100
Identifying Risks to Older Adults’ Safety during Hospital to Skilled Home Health Care Transitions: A Human Factors Engineering Approach

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Supported By: Agency for Healthcare Research and Quality National Patient Safety Foundation

Johns Hopkins Clinical Research Scholars Program

Background: Older adults receiving skilled home health care (SHHC) after hospital discharge are at high risk for adverse outcomes. Human Factors and Ergonomics (HFE) – a scientific discipline that examines interactions among humans and the work system to optimize system design and human performance – can be used to identify novel risks to safe transitions.

Objective: Use a HFE approach to identify and categorize risks to older adults’ safety during hospital to SHHC transitions.

Methods: Qualitative ethnographic methods were used to observe and interview 15 SHHC providers and 22 patients and caregivers from 9 medical and surgical units, 1 skilled nursing facility, and 1 SHHC agency. Data collection took place during home visits, and during SHHC provider office work. The Systems Engineering Initiative for Patient Safety model (SEIPS) guided creation of themes and subthemes from the data. Each data point identified within a transcript was coded based on its categorization within the SEIPS model. We used ATLAS.ti software to facilitate data analysis.

Results: Across the six work system elements of SEIPS (person, technology/tools, tasks, organization, physical environment, and external environment), we identified 64 categories of system-level risks to safe transitions from the perspectives of patients (e.g., difficulty using durable medical equipment), caregivers (e.g., caregiver not able to take on care), providers coordinating the transition (e.g., high workload), and providers in the home (e.g., physician accountability ambiguity). Content analysis of the categories revealed two overarching themes: 1) patients and providers information needs are not being met, and 2) provider, informal caregiver and patient roles in care transitions are ambiguous and can be conflicting.

Conclusions: Identifying system-related risks to older adults’ transitions from multiple perspectives is a critical step in improving patient safety and the delivery of care to older adults. These results can inform the design of transitional care interventions and provide feedback to SHHC providers regarding older adults at risk for unsafe care transitions.

B101
Regional Trends in Long-Term Acute Care Hospital Use in Texas

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Supported By: This work was supported by a grant from the Agency for Healthcare Research and Quality (1R24HS022418-01) for the UT Southwestern Center for Patient-Centered Outcomes Research and the National Center for Advancing Translational Sciences of the National Institutes of Health (KL2TR001103).

Background: There is significant regional variation in the use of long-term acute care hospitals (LTCH), even within states such...
as Texas that have a relatively abundant supply. We sought to assess whether increased LTCH use is occurring in regions that already have a relatively high use to begin with, suggesting that further increases may result in potentially inappropriate use among individuals with lower acuity of illness who may be better served in alternative post-acute care sites.

**Methods:** We evaluated trends of LTCH use by the hospital referral regions (HRR) among beneficiaries with continuous enrollment in Medicare Parts A and B from 2002-2011 using 100% Texas Medicare data. Analyses for 23 HRRs were stratified by tertiles of baseline LTCH use. We estimated the interaction terms between year and tertile of baseline use in 2002 using linear regression.

**Results:** Overall, LTCH use increased in Texas from 689 patients per 100,000 beneficiaries in 2002 to 782 patients in 2011. From 2002-2011, HRRs in the lowest tertile of baseline LTCH use had increased LTCH utilization by 21% from 190 to 591 patients; whereas HRRs in the highest tertile had decreased LTCH use by 21% from 915 to 719 patients (p<.001; Figure). The absolute difference between the trends of the lowest and highest HRR tertiles during the 9-year period was 597 patients (95% CI, 289 to 904, p<.001).

**Conclusions:** LTCH utilization has increased in the HRRs in Texas with the least utilization at baseline, suggesting that the increase in use of LTCHs may be appropriate to care for an aging population recovering from prolonged and/or critical illnesses. Additional work examining trends and patterns in demographic and clinical characteristics of the patients with an LTCH hospitalization is needed.

**Background**
Inappropriate treatment of asymptomatic bacteriuria (ASB) is a leading cause of antibiotic overuse in long term care. The national “AHRQ Safety Program for Long-Term Care: Catheter Associated Urinary Tract Infection (CAUTI)” surveyed front-line healthcare professionals in nursing homes (NHs) to assess baseline knowledge concerning antimicrobial stewardship for bacteriuria.

**Methods**
We distributed the skills survey to 10 HCP in each of 69 facilities in 6 states within the United States. Respondents included infection preventionists, bedside nurses, nursing aides, physicians, and nurse managers. Domains addressed in the survey included ASB definitions and antibiotic stewardship. Survey items differed in complexity for licensed staff and clinical nurse assistants (CNAs).

**Results**
A total of 180 HCPs submitted survey results, representing 49 NHs. Of these, 124 were licensed staff, and 56 were CNA. Licensed staff correctly identified the definition of ASB in 98% of surveys, but 53% incorrectly believed that pyuria could distinguish ASB from CAUTI. 94% of licensed staff answered correctly that a resident with fever and positive urine culture should be treated with antibiotics. However, 37% answered incorrectly that all residents with a urinary catheter should have a urine culture sent upon admission. 70% of licensed staff identified the correct symptom (fever) that should trigger a urine culture when offered a choice of cloudy urine, foul smelling urine, temperature of 101°F, or change in urine color. This same question posed to CNAs elicited only 20% correct responses. 93% of CNAs answered correctly that treating bacteria in the urine of a resident who has no symptoms of UTI can lead to multi-drug resistant organisms.

**Conclusions**
Both licensed staff and CNAs had a baseline working knowledge of the definition of ASB and the concept of antimicrobial stewardship. However, pyuria, urine odor, urine color, or urine cloudiness were powerful triggers for unnecessary urine culturing. Since unnecessary urine cultures in residents with ASB can falsely elevate CAUTI rates and lead to unnecessary antibiotic use, the CAUTI prevention program will address these incorrect cognitive biases through case-based education.

**B103**
Omission of Physical Therapy Recommendations for High-Risk Patients Transitioning from the Hospital to Sub-Acute Care Facilities

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Supported By: This project was supported by the National Institute on Aging and American Federation for Aging Research Medical Student in Aging Research Scholar Program, by a National Institute on Aging Beeson Career Development Award (K23AG034551 [PI Kind]), National Institute on Aging, The American Federation for Aging Research, The John A. Hartford Foundation, The Atlantic Philanthropies and The Starr Foundation and by the Madison VA Geriatrics Research, Education and Clinical Center (GRECC-Manuscript #2014-25). Dr. Kind’s time was also partially supported by the University of Wisconsin School of Medicine and Public Health from the Wisconsin Partnership Program. Additional support was provided by the University of Wisconsin School Of Medicine and Public Health’s Health Innovation Program (HIP), and the Community-Academic Partnerships core of the University of Wisconsin Institute for Clinical and Translational Research (UW ICTR), grant 1UL1RR025011 from the Clinical and Translational Science Award (CTSA) program of the National Center for Research Resources, National Institutes of Health. Dr. Gilmore-Bykovskiy’s time during the preparation of this manuscript was supported by the William S. Middleton Veterans Affairs Hospital in Madison, WI and the National Hartford Centers of Gerontological Nursing Excellence.

**Background:** The discharge summary/orders is the primary form of hospital-to-sub-acute care communication following hospitalization. Sub-acute care nurses report that physical therapy (PT) recommendations are routinely omitted in the discharge summary/orders, yet are critical for high-risk patients including older adults, stroke and hip fracture patients who require intensive rehabilitation.
Our objective was to quantitatively assess the communication of PT recommendations in hospital discharge summaries/orders, targeting (1) patient safety restrictions or precautions (e.g., fall risk), (2) level of assistance with sitting to standing (e.g., up with two), and (3) medical assistive devices (e.g., walker).

Methods: Retrospective medical abstraction comparing discharge recommendations made by consulting inpatient physical therapists in the PT consultation note to orders included in hospital discharge summary/orders for all hospitalized adult patients (n=613, average age 71) with primary diagnoses of stroke or hip fracture who received a PT consultation and were discharged to a sub-acute care facility from 2006-2008 from one large academic hospital.

Results: Overall, PT recommendations were completely omitted in 53% (322/611) and partially omitted in 47% (286/611) of patients; less than 1% (3/611) of patients had no omissions. Recommendations for patient safety restrictions or precautions were completely omitted in 54% (316/584) of patients. Recommendations for level of assistance with sitting to standing were completely omitted in almost 100% (535/537) while recommendations for medical assistive devices were completely omitted in 77% (409/532) of patients.

Conclusions: PT recommendations made during a hospital stay for high-risk patients are routinely omitted from hospital discharge communications to sub-acute care facilities. Interventions to improve this communication are needed.

B104 Independence at Home (IAH) criteria Successfully Targets Frail, Costly Veterans

Supported By: Department of Veterans Affairs

Background: Recognition that 52% of VA costs are concentrated among 7% of veterans using VA and similar findings in Medicare have led to recognition that targeting such high cost patients may best reduce costs.

IAH is a Medicare demonstration testing the ability of home based primary care (HBPC) targeted to frail, multi-morbid elders to reduce costs. IAH criteria include hospitalization and post acute care in the prior year, 2 or more chronic conditions, and 2 or more ADL dependencies. How these criteria identify the most costly 7% and their distribution among VA Medical centers (VAMCs) may help guide HBPC program capacity.

Methods: We merged Medicare and VA cost files for 2011-2012, identified veterans using VA in 2011. We used 2011 claims to identify IAH qualifying utilization and chronic conditions, and JEN Frailty Index ≥7 for 2+ ADLs. We used all IAH qualifying (IAH-Q) veterans age 65+ at start of FY2012 to compute Medicare and VA costs, compare to VA spending for all veterans age 65+ and determine the share of the 65+ population meeting IAH criteria at each VAMC.

Results: IAH-Q veterans represented 5.6% (159,319/2.76M) of VA users aged 65+ accounting for 18.7% of VA spending ($4.1B/$22B). Only 9.2% of IAH-Q received HBPC, while 24% of HBPC users were IAH-Q. Among those meeting other IAH criteria, 19% have JEN≥7; 35% with JEN<6. Mortality was 29%, with 56% of IAH-Q VA users who died in 2012 receiving hospice services, compared to 32% of IAH-Q VA non-users. HBPC costs averaged $8600 among the 14,673 receiving HBPC, while total VA costs for IAH-Q veterans averaged $25,833. Medicare spending was 49% of total Federal spending. Prevalence of IAH-Q varied from 2.3%-4.9% (mean 3.4%) among age 65+ VA users among the 21 VISNs. IAH-Q prevalence varied from .95-10.9% among individual VAMCs, representing an additional 78,168 users, a 94% increase in average daily census. Using demonstrated VA cost impact of HBPC, reaching all IAH-Q with HBPC would result in a 2.8% reduction in cost for age 65+ VA users, or $617M annually.

Conclusion: IAH enrollment criteria using the JEN index identify frail, multimorbid, costly veterans representing 18% of VA costs. Alternative JEN threshold may identify frail IAH-Q veterans representing a greater share of total VA spending. Use of IAH criteria may provide guidance on sizing of HBPC programs at the VAMC level.
B106
Medicare Part D’s Impact on Pain Management among Nursing Home Residents with Cancer: An Interrupted Time-Series Study
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Supported By: Dr. Briesacher was supported by research scientist award K01AG031836 from the National Institute on Aging.

Background: Fentanyl patches are commonly employed to treat nursing home (NH) residents with intractable cancer pain. However, fentanyl patches may be costly due to optional coverage rules by Medicare Part D plans. We evaluated Medicare Part D’s impact on use of fentanyl patches and use of less costly or less effective opioid pain medications among NH residents with cancer.

Methods: We used nationwide data on NH resident health from the Minimum Data Set 2.0 linked to all-payer long-term care pharmacy dispensing records (January 2005–June 2007) to estimate changes in the receipt of fentanyl patches, other strong opioids, and weak opioids after implementation of Medicare Part D. For each drug category, we calculated monthly proportions of residents receiving at least 1 prescription and therapy days covered. Segmented Poisson regression estimated immediate and trend changes in medication use after Medicare Part D, adjusting for baseline trends.

Results: The study included 18,599 Medicare-eligible cancer patients admitted to 1,112 NHs. We observed increasing trends for all opioid drug categories prior to Medicare Part D. After Medicare Part D, receipt of fentanyl patches and other strong opioids abruptly decreased by 10% and 21%, respectively. Trend analyses indicate NH residents with cancer were less likely to receive fentanyl patches after Medicare Part D relative to historical trends (incidence-rate ratio [IRR], 0.98; P<.001), but more likely to receive other strong opioids (IRR, 1.01; P=.02). Trends among weak opioids remained unchanged.

Conclusions: We observed immediate and sustained disruptions in the receipt of fentanyl patches and other opioids among NH residents with cancer after implementation of Medicare Part D. Although the clinical impact of these disruptions is uncertain, this finding suggests cost-related barriers to treatment of cancer pain in NHs and may indicate the need for less optional coverage rules for opioids.

B107
From Hospital to Skilled Home Health Care: Identifying Physician Communication Challenges during Care Transitions of Older Adults
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Supported By: -AFAR - MSTAR program -Agency for Healthcare Research and Quality -National Patient Safety Foundation

Background: Skilled home healthcare professionals (SHHCP) communicate with physicians frequently while executing hospital-to-home care transitions for older adults, a population at risk for suboptimal outcomes and readmission. However, little is known about SHHCP-physician communications. Our research aims to (1) identify communication challenges between SHHCP and physicians during hospital/SHHC transitions, and to (2) describe critical SHHCP tasks affected by communication difficulties.

Methods: Qualitative ethnographic methods were used to observe and interview 15 SHHCP and 22 patients and caregivers. Participants came from 9 medical and surgical units, 1 skilled nursing facility, and 1 SHHC agency. Data collection took place at multi-disciplinary rounds, at the bedside, during home visits, and during SHHCP office work. The Systems Engineering Initiative for Patient Safety (SEIPS) guided content analysis. Audiotapes of interviews were transcribed, coded, and analyzed, and themes and subthemes were generated. Each data point identified within a transcript was given a code based on its categorization within the SEIPS model. We used ATLAS.ti software to facilitate data analysis.

Results: SHHCP-physician communication challenges occurred in three key areas: (1) identifying and accessing the physician supervising the patient’s home care plan; (2) physicians’ lack of information about the patient’s recent transition; and (3) physicians’ discomfort assuming responsibility for patient care in the setting of incomplete information. SHHCP tasks essential to providing patient care highly relied on communication with the patient’s physicians. Three tasks commonly affected by communication challenges were: (1) initiation of home care services in a timely manner (2) resolution of medication/equipment discrepancies, and (3) clarification of patient care plans.

Conclusion: Communication challenges between SHHCPs and physicians may result in suboptimal patient care during older adults’ hospital/SHHC transitions. Investigating communication challenges can guide the development of interventions to identify patients at risk for suboptimal hospital/SHHC transitions.

B108
Trends in Reporting of Abuse and Neglect to Long Term Care Ombudsmen: Data from the National Ombudsman Reporting System from 2006-2013
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Background: The Long-Term Care Ombudsman program is the largest and most established nationwide program that advocates for the health, safety, and welfare of long-term care residents. Despite their important role in abuse detection, little systematic research about elder abuse and neglect in nursing homes has been conducted using the National Ombudsman Reporting System (NORS). Our goal was to use NORS to describe national trends in reporting of abuse and neglect in nursing facilities to long term care ombudsmen from 2006-2013.

Methods: We utilized the NORS to examine abuse and neglect-related complaints in nursing facilities nationwide from 2006-2013. We included complaints made against facility staff or residents with the following codes: physical abuse, verbal/mental abuse, sexual abuse, financial exploitation, gross neglect, and resident to resident physical or sexual abuse. Abuse-related complaints are presented as complaints per 1000 beds.

Results: Nationally, long-term care ombudsmen received an average of 11,749 abuse and neglect-related complaints each year from 2006-2013. Abuse / neglect complaints trended down significantly during this period, from 7.5 to 5.6 reports per 1000 beds (P<0.0001). Physical abuse by a non-resident was the most common type of abuse / neglect reported each year, representing an average of 28% of total abuse / neglect complaints.

Conclusions: Abuse / neglect complaints are decreasing and are most commonly for physical abuse by a non-resident. Improved un-
index to identify IAH-Q beneficiaries with 2+ ADL dependencies. We identified controls with like demographic, geographic, and clinical characteristics as well as temporal utilization pattern before enrollment in HBPC. Initial receipt of a housecall was index date for pseudo-enrollment of the control group. We used the V21 HCC model with PACE frailty adjustment, valued using 2011 FFS country rates (the Standard Model), to project cost for IAH-Q controls.

Results Nearly 31% of new HBPC recipients were IAH-Q. IAH-Q controls have a 2.4-fold cost increase before index date. Resolution of the instability precipitating this rise, along with 28% post-eligibility mortality results in a 2-fold decline in cost over the subsequent 8 months.

The initial year, Standard Model under-estimated cost in both surviving (O:E 1.14) and terminal (O:E 2.37) controls. Subsequent years, the Standard Model continued to under-predict cost for terminal controls (O:E 1.7-1.8) while over-estimating cost for survivors (O:E .72-.9).

Conclusions IAH-Q beneficiaries cost depend on time from enrollment and mortality. This combination of time-dependent cost and mortality-dependent cost under-prediction raises concern that combinations of program growth and patient-mortality may not follow an actuarial model. Use of the Standard Model may require adjustments to account for clinical phenomena in IAH-qualified patients.

Medicare Historical Model Comparing Observed and Projected Total Cost by Terminal Year

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Terminated Year Observed</th>
<th>Expected</th>
<th>Non-Terminated Year Observed</th>
<th>Expected</th>
<th>O:E</th>
<th>Survive %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 2</td>
<td>$6977</td>
<td>$7619</td>
<td>$237</td>
<td>$237</td>
<td>0.9</td>
<td>1.14</td>
</tr>
<tr>
<td>Year 3</td>
<td>$5343</td>
<td>$5678</td>
<td>$184</td>
<td>$184</td>
<td>0.7</td>
<td>0.85</td>
</tr>
<tr>
<td>Year 4</td>
<td>$4403</td>
<td>$4878</td>
<td>$171</td>
<td>$171</td>
<td>0.7</td>
<td>0.75</td>
</tr>
<tr>
<td>Average</td>
<td>$5375</td>
<td>$5822</td>
<td>$190</td>
<td>$190</td>
<td>0.7</td>
<td>0.89</td>
</tr>
</tbody>
</table>


J. Chou, F. Loh, N. Brandt, B. Stuart. Lamy Center, University of Maryland School of Pharmacy, Baltimore, MD.

Background Despite its protected status in Medicare Part D, antipsychotics are affected by formulary utilization management restrictions (e.g. prior authorization, step therapy, quantity limits), controlling access and potentially increasing health care utilization. The study describes the type of restrictions and differences among antipsychotic users enrolled in Medicare Advantage Prescription Drug Plans (MAPDs) and Stand-Alone Prescription Drug Plans (PDPs).

Methods This retrospective study used the Chronic Condition Data Warehouse, comprising a random 5% sample of Medicare population from 2008. Medicare Part D beneficiaries on antipsychotics were stratified by plan type, MAPD or PDP. This study used a multivariate logistical regression to control for cohort characteristics. Interventions included the type of formulary restrictions and antipsychotic used (e.g. atypical, first generation). Outcomes measured included differences in formulary restrictions and antipsychotic use.

Results The dataset contained continuous Medicare Part D enrollees (N=1,346,978) stratified by plan type, MAPDs (N=435,591) and PDPs (N=911,387). According to the bivariate analysis, antipsychotic users enrolled in PDPs (39.8%) were more likely to encounter a formulary restriction, compared to MAPDs (30.3%). All antipsychotic users in MAPDs were less likely to face restriction (OR=0.75, 95% CI=0.72-0.78). Furthermore, atypical antipsychotics in MAPDs were less likely to face restriction (OR=0.76, 95% CI=0.73-0.79) while first generation antipsychotics users in MAPDs were more likely (OR=1.87, 95% CI= 1.32-2.63). Low-income subsidy (LIS) beneficiaries using antipsychotics were also more...
likely to face a restriction: prior authorization (OR= 3.59, 95% CI= 3.09-4.16), quantity limits (OR= 1.05, 95% CI= 1.01-1.08) or step therapy (OR= 1.24, 95% CI= 1.07-1.44)).

Conclusions
Medicare Part D PDP beneficiaries prescribed antipsychotics were more likely to face formulary utilization management techniques, as opposed to those in MAPDs. Moreover, many LIS beneficiaries are enrolled in PDPs, putting them at risk of no access to antipsychotics. These findings support that MAPDs consider the economic risk of not providing access to appropriate use of antipsychotics.

B112 Functional Measures Predict Discharge Destination But Not Readmissions
J. M. Pavon,1,2 R. Sloane,1,2 S. Hastings,1,3 1. Duke University, Durham, NC; 2. GRECC, Durham VA Medical Center, Durham, NC; 3. GRECC and HSR&D, Durham VA Medical Center, Durham, NC.

Background: Current readmission prediction models have limitations, and there is a widespread call to improve models by using functional status data. This study examines which physical performance measures can be used in the inpatient setting to predict discharge destination or readmissions.

Methods: The study population consisted of community-dwelling hospitalized Veterans aged 60 or older, admitted to general medicine at the Durham VA Medical Center between 2/1/2012 and 9/30/2013, and referred to the STRIDE supervised walking program. All study data were extracted from the VA Computerized Patient Record System. Primary outcomes were discharge destination either to home or skilled nursing facility (SNF), and readmission within 30 days to the Durham VAMC. Independent variables were inpatient physical performance measures: gait speed (meters/second) and Tinetti balance subscale of the Performance Oriented Mobility Assessment (POMA) (score range 0 – 16); and patient-reported functional status: difficulty walking 2-3 blocks, use of assistive device, and falls within the past 3 months. Relationships between functional measures and outcomes were examined with adjusted logistic regression models.

Results: Among the 349 patients; mean age was 73.5 years (SD 9.6), 98% were male, 62% were Caucasian. Mean length of stay was 8 days (SD 8.7). Readmission rate was 21% (n=74), and 85% were discharged to home (n=296). Mean gait speed was 0.5 m/s (SD 0.3), and mean POMA balance score was 11 (SD 4.0). In adjusted models controlling for age and race, faster gait speed (OR 7.6, 1.7-33.6) and higher POMA balance scores (OR 1.2, 1.1-1.3) were associated with a higher likelihood of discharge home, whereas patients reporting use of an assistive device had lower odds of being discharged home (OR 0.4, 0.2-0.8). Patient reported difficulty walking 2-3 blocks or falls were not associated with discharge destination. No association was detected between functional measures and readmissions.

Conclusions: Among hospitalized older adults inpatient physical performance measures and patient reported use of an assistive device predicted discharge destination but not readmissions. Transitions coordination to home or SNF is challenging, and use of functional measures for early recognition of likely discharge destination may help to target care resources earlier in the hospital course.

B113 Encore Presentation
Reduction of Antibiotic Starts for Asymptomatic Bacteriuria in Skilled Nursing Facilities
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Supported By: Optum

Background: Treatment of asymptomatic bacteriuria in long term care facilities is problematic and exposes residents unnecessarily to the complications of antibiotic use. Responding to abnormal results from urine laboratory studies may be a driver of inappropriate antibiotics for presumed urinary tract infections. Methods: To reduce the number of antibiotic starts for asymptomatic bacteriuria by 25% through use of evidenced based criteria for ordering of urinalysis in 4 skilled nursing facilities in Georgia Measurements: Antibiotic starts for suspected urinary tract infections were determined during a 3 month baseline period and a 4 month, post-intervention period at each facility. Intervention: Two practice algorithms were developed based on published guidance; one for clinical providers which addressed laboratory testing and treatment and one for nursing staff outlining signs and symptoms of urinary tract infections. Clinical providers only ordered urinalysis and treated for UTI based on the algorithm criteria. For individuals not meeting the UTI algorithm criteria, the nursing staff implemented monitoring and hydration for non-specific changes in resident behavior or character of urine. As part of implementing the intervention, a standardized in-person training session for nurse practitioners and nursing staff was provided at all participating facilities. Physicians received a packet of information on the intervention, including supporting evidence, and were invited to a Q&A session. Additional materials provided to facilities included educational resources for direct care providers, families and residents. Results: All facilities had a reduction in UTI antibiotic starts. Three facilities met the goal of greater than or equal to 25% reduction. One facility had a 9% reduction. The highest facility reduction was 33%. The range of antibiotic starts at baseline for the facilities was variable from 3.6 to 29.6 starts per month. Post intervention the range dropped to 2.75 – 17.5 starts per month.

Conclusions: A multifactorial intervention including facility, physician, patient and family education decreased antibiotic starts for asymptomatic bacteriuria by greater than or equal to 25% in the majority of pilot facilities. It was noted that all facilities had the greatest reduction at the start of the intervention. Continued education and support will be need with facilities to maintain and expand the intervention.

B114 Current State of Research on Palliative Care in Heart Failure as Evidenced by Published Literature, Conference Proceedings and NIH Funding
K. Xie,1 L. Gelman, J. Horton, N. Goldstein. 1. Icahn School of Medicine at Mount Sinai, New York, NY.

Supported By: Patricia S. Levinson Fellowship for Community Oriented Research and Service:

Offers students a chance to participate in interdisciplinary, hands-on clinical, and community-based projects that include patient contact. The goal of the program is to help the medical community better understand and address the needs of populations and communities served by Mount Sinai.

Background: Heart failure (HF) is the most common diagnosis among hospitalized older adults and is associated with multiple comorbidities, high mortality, and significantly decreased quality of life. Although this patient population would obviously benefit from palliative care intervention and management, less than 10% of HF patients ever receive palliative care. The reasons for this lack of referral are unclear, but may involve poor patient and physician education, lack of accessibility to palliative care and a limited evidence base of the benefits of palliative care in HF. This study aims to quantitatively determine the current state of palliative care research and education in cardiology as evidenced by trends in journal publications, conference proceedings, and research funding.

Methods: We looked at conference proceedings and journal publications from four major cardiology societies (the American Heart Association, American College of Cardiology, Heart Failure Society of America and the Heart Rhythm Society), as well as the relevant journal publications from these societies (n=9). We performed a quantitative analysis as to how often palliative care in HF was the topic of
abstracts, posters, oral sessions and published articles from 2009 to 2013. Search terms included “palliative care”, “goals of care”, “decision-making”, “hospice care”, “end of life care” and “preferences for treatment”. Titles were then reviewed for their relevance to palliative care by 2 reviewers. We also reviewed the NIH grants database to examine trends in research funding allotted to palliative care in HF.

**Results:** In the 9 journals reviewed over the 5 year span of the study, articles mentioning palliative care (n=17) made up 0.10% of HF publications (N=16,523). Conference proceedings related to palliative care (seminars n=51; posters n=32) composed less than 3% of all HF related proceedings (seminars N=1810; posters N=3820). NIH Funding showed that, of the $44.8 billion spent on HF research, 0.03% is allocated to PC ($13.6 million).

**Conclusions:** Our findings demonstrate that the current state of palliative care in HF treatment is falling far short of the needs for this population. While there have been many calls for improving research for palliative care in HF, there has not been an associated increasing trend in publications, conference education, or extramural funding.

**B115 Quality of Care Provided by Nurse Practitioner Dementia Care Managers**

L. Jennings, Z. Tan, N. Wenger, W. Han, H. McCreath, T. Zhao, K. Serrano, E. Leslie, M. Panlilio, K. Reeves, M. Kim, T. Moreno, C. Roth, D. Reuben. 1. Division of Geriatrics, UCLA, Los Angeles, CA; 2. Division of General Internal Medicine, UCLA, Los Angeles, CA; 3. RAND Health, Santa Monica, CA.

Supported By: This work was supported by Funding Opportunity CMS-1C1-12-0001 from Centers for Medicare and Medicaid Services (1C1CMS330982-01-00) Centers for Medicare and Medicaid Innovation (Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HHS or any of its agencies) and by the UCLA Claude Pepper Older Americans Independence Center funded by the National Institute on Aging (5P30AG028748) and the NIH/National Center for Advancing Translational Science (NCATS) UCLA CTSI Grant Number UL1TR000124.

**Background:** Multiple studies have shown that primary care physicians do not provide high quality care for dementia with adher-ence to dementia quality indicators (QIs) ranging from 19-41%. The UCLA Alzheimer’s and Dementia Care (ADC) Program is a quality improvement program that uses a co-management model with a nurse practitioner Dementia Care Manager (DCM) working with primary care physicians and community-based organizations to provide comprehensive dementia care.

**Objective:** To measure the quality of dementia care provided by DCMs using the Assessing Care of Vulnerable Elders (ACOVE-3) and Physician Consortium for Performance Improvement (PCPI) QIs.

**Methods:** For 797 community-dwelling adults with dementia referred to the UCLA ADC program over a two year period, we measured the percentage of recommended care received for 17 dementia QIs. QIs were abstracted from DCM notes over a 3 month period from date of initial assessment.

**Results:** Patients were eligible for 9895 QIs, of which 92% were passed. Overall pass-rates among DCMs were similar (range 90% to 96%). All counseling and assessment QIs had pass-rates >80% with most exceeding 90%. Wider variation in adherence was found among QIs addressing treatments for dementia, which were triggered by patient-specific criteria, ranging from 27% for discontinuation of medications associated with mental status changes to 86% for discussion about acetylcholinesterase inhibitors. Ninety-eight percent of enrollees received counseling regarding advance care planning, and 75% had preferences regarding resuscitation status, level of medical intervention or feeding tubes documented in the medical record.

**Conclusion:** Nurse practitioner co-management can result in very high quality of care for dementia, especially for assessment, screening and counseling. The effect on treatment QIs is more variable but higher than previous reports of physician-provided dementia care.

**Adherence to Selected Quality Indicators, N=797**

<table>
<thead>
<tr>
<th>Domain: Assessment and screening</th>
<th>N Passed/ N Eligible (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i.e., annual cognitive and functional assessment, depression screen)</td>
<td></td>
</tr>
<tr>
<td>129/1554 (83)</td>
<td></td>
</tr>
<tr>
<td>3084/3166 (97)</td>
<td></td>
</tr>
<tr>
<td>78079/79 (99)</td>
<td></td>
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<tr>
<td>70/795 (95)</td>
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<tr>
<td>76/795 (98)</td>
<td></td>
</tr>
<tr>
<td>71/797 (97)</td>
<td></td>
</tr>
<tr>
<td>596/797 (75)</td>
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</table>

**Domain: Treatment**

<table>
<thead>
<tr>
<th>Reassessed CVA prophylaxis</th>
<th>Non-anticoagulant use associated with minor status changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>73/1038 (73)</td>
<td>339/32 (77)</td>
</tr>
<tr>
<td>456/92 (96)</td>
<td>4066 (61)</td>
</tr>
</tbody>
</table>

**Overall QI pass rate:** 5146/6935 (92)

*Score includes adherence to all 17 dementia QIs

**B116 Patient-Centered Goals for Dementia Care**


Supported By: This project was supported by a grant from the Patient-Centered Outcomes Research Institute (ME-1303-5845).

Dr. Jennings was supported by the UCLA Claude Pepper Older Americans Independence Center funded by the National Institute on Aging (5P30AG028748) and the NIH/National Center for Advancing Translational Science (NCATS) UCLA CTSI Grant Number UL1TR000124.

**Background:** Current health outcome measures for chronic diseases, including dementia, focus on condition-specific indicators, including survival, but do not consider a patient’s individual health goals and may not be possible or desired for patients with incurable, life-limiting illness.

**Objective:** To develop a standardized set of patient-centered goals for dementia care encompassing a variety of dimensions, including symptom control, functional status, social and role functions, and end-of-life care.

**Methods:** We conducted 4 focus groups with 36 caregivers, 14 of whom were Spanish-speaking, 1 focus group with 6 patients with early dementia, and 1 semi-structured interview with a Spanish-speaking patient with early dementia. Verbatim transcriptions were independently analyzed line-by-line by two coders using grounded theory.

Identified themes and exemplary texts were discussed and developed into a goal inventory for dementia care.

**Results:** We identified 36 patient-centered goals for dementia care within 5 domains (Table). Ensuring the safety of the person with dementia was the top priority goal for most caregivers. Other goals commonly identified by caregivers included managing caregiving stress; maintaining social interactions; and limiting burdensome medical care. Patients with early stage dementia identified maintaining functional status; engaging in meaningful activity (e.g., work, family functions); living at home; and not being a burden on family, especially near the end-of-life, as very important goals. Goals were similar among English and Spanish-speaking participants. Spanish-speaking participants also identified receiving dementia care in the patient’s primary language as a goal.

**Conclusions:** Caregivers and patients with early stage disease were able to articulate goals for care that are different than commonly measured health outcomes for dementia. Future work should focus on...
using patient-centered goals as clinical outcome measures for dementia care.

**Selected Patient-Centered Goals for Dementia Care**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Goals</th>
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<tbody>
<tr>
<td>Medical Care</td>
<td>Avoid burdensome medical care</td>
</tr>
<tr>
<td></td>
<td>Avoid medications with side effects</td>
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<tr>
<td>Quality of Life—Physical</td>
<td>Stay out of the hospital</td>
</tr>
<tr>
<td></td>
<td>Do self-care and household activities</td>
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<tr>
<td>Quality of Life—Social and Emotional</td>
<td>Be physically safe</td>
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<tr>
<td></td>
<td>Get adequate sleep</td>
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<tr>
<td></td>
<td>Die peacefully</td>
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<tr>
<td></td>
<td>Socialize with family and friends</td>
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<tr>
<td></td>
<td>Able to work or volunteer</td>
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<tr>
<td></td>
<td>Keep mind stimulated</td>
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<td></td>
<td>Able to live at home</td>
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<td></td>
<td>Not be a burden to family</td>
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<tr>
<td>Accessing Services and Support</td>
<td>Have financial resources not be a barrier to care</td>
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<tr>
<td></td>
<td>Have legal issues in order</td>
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<td></td>
<td>Have providers who speak primary language</td>
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<td></td>
<td>Control caregiver’s frustration</td>
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<td></td>
<td>Feel confident in managing dementia-related problems</td>
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<tr>
<td>Caregiver Support</td>
<td>Have more free time for caregiver</td>
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<td></td>
<td>Minimize family conflict</td>
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<tr>
<td></td>
<td>Maintain caregiver’s health</td>
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</table>

**B117 Measuring Transitional Care Outcomes after Discharge from Skilled Nursing Facilities (SNF) to Home**


Supported By: Gordon H. DeFriese Career Development Research Award and the John A. Hartford Foundation

**Background:** Transitional care research has rarely included the nursing home population. The purpose of the study was to develop and test a measure of transitional care quality among older adults discharged from SNF post-acute care to home.

**Method:** Longitudinal study of patients and caregivers discharged from 4 SNFs. Data were collected via chart review, and surveys at discharge and 30 days after discharge to collect data on patient characteristics, transitional care process measures, and a new survey measure of patient outcomes 30 days after discharge. Survey items measured preparedness for discharge (5 items), unmet self-management needs (3 items), patient adverse events (5 items), primary care contact (1 item), obtaining medication (1 item) and acute care use (emergency services use and re-hospitalization). Using descriptive statistics, survey items were analyzed for feasibility, ceiling effects, discriminating ability and patient / caregiver agreement.

**Findings:** Of 112 eligible participants, we collected complete data for 37 patient and caregiver dyads and for 8 patients without caregivers [N=81 participants (72%)]. 9 patients (20%) reported acute care use within 30 days; 39 patients (88%) had primary care contact; and ratings of preparedness and unmet self-management needs were highly varied. Ceiling effects limited discrimination between patients and facilities for the item related to obtaining discharge medication and 2 items related to preparedness for discharge. 3 items related to preparedness for discharge permitted discrimination of outcomes between patients but not SNFs; items for unmet needs and adverse events discriminated well at both levels. Patients and caregivers had strong agreement on preparedness for discharge (93%) and acute care use (95%); they agreed less well on items for unmet self-management needs (43%) and adverse events (65%).

**Conclusion:** These findings suggest that 1) measuring transitional care quality after discharge from SNFs is feasible, and 2) measures of transitional care outcomes for medically complex elders should use both patient and caregiver reports.

**B118 Desire for predictive testing for Alzheimer’s disease and impact on advance care planning**


Supported By: National Institute on Aging and the American Federation on Aging Research (T32 AG000212-21, K23-AG030999, and RC1-AG036377).

**Background** Currently, much research is devoted to developing a test that would predict future Alzheimer’s disease. However, it is unknown who in the United States would want such a test, and how it would change subsequent behavior. Using a large national sample, we explored who would take a free and definitive test predictive of Alzheimer’s disease, and examined how use of such a test may impact advance care planning.

**Methods** In this cross-sectional study, we identified 874 adults age 65 or older in the Health and Retirement Study in 2012 who were asked the question: “If you could receive a test from your doctor, free of charge, that would definitely determine whether or not you would develop Alzheimer’s disease sometime in the future would you want to be tested?”

Subjects were then told to imagine they knew they would develop Alzheimer’s, and with this knowledge to rate the chance of completing advance care planning activities from 0-100. We classified >50 as being likely to complete that activity. We evaluated characteristics associated with willingness to take a test for Alzheimer’s, and how such a test would impact completing an advanced directive and discussing health plans with loved ones.

**Results** Among the 874 individuals, 861 (99%) answered the question. Mean age was 74 years and 56% were female. Overall, 75% (N=648) would take a free and definitive test predictive of Alzheimer’s disease. Older adults willing to take the test had similar race and educational levels as those that would not, but were more likely to be <=75 years old (63% vs 52%, p<0.01). There were no differences in willingness to take the test by level of self-perceived health or memory problems, self-perceived risk of Alzheimer’s, or number of comorbidities.

When subjects assumed they knew they would develop Alzheimer’s disease, 87% reported they would be likely to discuss health plans with loved ones. Most (81%) reported they would be likely to complete an advanced directive, though only 15% reported having done so already.

**Conclusion** In this nationally representative sample, 75% of older adults would take a free and definitive test predictive of future Alzheimer’s disease. Many expressed intent to increase activities of advance care planning with this knowledge. The potential for high demand and the opportunity to engage patients in advance care planning should be considered as tests predictive of Alzheimer’s disease become available.

**B119 Bringing Healthy Aging to Scale: Will quality improvement coaching facilitate the dissemination of evidence-based health promotion programs to rural communities?**

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Supported By: University of Wisconsin School of Medicine and Public Health, Wisconsin Partnership Program

**Background:** The Chronic Disease Self-Management Program (CDSMP) and Stepping On (SO) are evidence-based health promotion programs that improve health and prevent falls among older adults. Federal funding supports implementation of these workshops nationally, but dissemination to rural areas remains challenging. Our goal was to increase the ability of rural counties to implement CDSMP and
SO workshops. Methods: We enrolled 16 rural Wisconsin counties in a wait-list randomized controlled trial. These counties had not previously been effective at implementing CDSMP or SO. Eight counties were randomized to receive the intervention of coaching in Network for the Improvement of Addiction Treatment (NIATx) quality improvement methods. Primary outcomes were number of workshops implemented and number of participants served during the first intervention year, as assessed by nonparametric Mann-Whitney tests. Secondary outcomes were health behaviors (Falls Behavior Risk Scale, Communications with Physicians Scale), health status (falls, Social/Role Activities Limitations Scale), and health care utilization (hospitalizations, ED visits), as assessed by paired t-tests comparing baseline to 6-month post-workshop survey responses. Results: Intervention counties served an average of 11.1 (95% CI 0.75 to 21.5) more participants and held an average of 0.9 (95% CI -0.03 to 1.78) more workshops during the first year of implementation compared to control counties. CDSMP participants scored 0.27 (95% CI 0.01 to 0.53, n=80) points higher on the Communication with Physician Scale compared to their pre-workshop baselines. SO participants reported improvements in the Falls Behavior Risk Scale (0.16, 95% CI 0.09 to 0.23, n=88), fewer falls (-0.50, 95% CI -0.86 to -0.13, n=96), and reductions in ED visits (-0.04, 95% CI -0.08 to -0.001, n=97) in the 6 months post-participation compared to the 6 months prior to participation. Conclusions: Coaching community leaders to use the NIATx quality improvement methodology increased implementation of evidence-based health promotion programs in rural Wisconsin counties and can serve as a national dissemination model to rural communities. Programs were implemented with enough fidelity to improve measures of health behaviors, health status, and health care utilization for participants.

B120 Potentially Avoidable Emergency Department Visits Made by Nursing Home Residents: Refining Current Definitions
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Supported By: Research Manitoba

Background: The prevalence of potentially avoidable emergency department (ED) visits made by nursing home (NH) residents ranges from 3.8-67.0% due to varied definitions. This study compares the prevalence of these potentially avoidable ED visits using past and new definitions. Methods: This cohort study includes all NH residents in the Winnipeg Health Region of Manitoba, Canada with ≥1 ED visit during the 2012/2013 fiscal year. Person-level administrative health care use records (e.g. ED and NH files, hospital abstracts) were used to create various existing and new definitions of potentially avoidable ED visits. Existing definitions include visits where residents: a) did not arrive by ambulance; b) were triaged as less or non-urgent using the Canadian Triage and Acuity Scale; c) were discharged back to the NH following the visit; and, d) were discharged as less/non urgent and discharged back to the NH. Using linked records, we also identified ED visits where residents were discharged as less/non urgent, had no diagnostic imaging (i.e., x-ray, ultrasound, computed tomography scan, magnetic resonance imaging) or blood work performed, and were subsequently discharged back to the NH. Results: From our cohort (N=12,403), 25.0% of residents (N=3,159 people) made 5,991 ED visits during the year, meaning that amongst ED users, 45.0% had multiple visits. 38% of all visits resulted in resident death or admission to the hospital. From existing definitions, counts of potentially avoidable ED visits varied greatly, ranging from 2,918 (48.7% of all visits; residents returned to NH regardless of CTAS) to 1,063 visits (17.7% of total; residents were triaged as less/non urgent, then returned to NH). During these latter visits however, residents often had diagnostic imaging or blood work performed (N=619 visits), implying that only 7.4% of all ED visits (N=444) were potentially avoidable. These visits were made by 352 residents who most often arrived to them by ambulance. Conclusions: The prevalence of potentially avoidable ED visits made by NH residents may be lower than previously reported, highlighting the need for standard definitions. Reducing these visits has resident quality of care and healthcare system cost saving benefits.

B121 The impact of symptom burden on hospitalization, nursing home placement and death among homebound older adults.
N. Yang, K. Ornstein, J. Reckrey. Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.

Background: Symptom burden resulting from chronic medical illness and functional impairment is a serious problem among the growing homebound patient population. However, little is known about how symptom burden affects the healthcare outcomes of homebound patients. This study explores the patient characteristics associated with high symptom burden in an urban homebound patient population, and examines the associations between symptom burden, hospitalization, nursing home placement, and death.

Methods: This was a retrospective cohort study of newly enrolled patients in the Mount Sinai Visiting Doctors Program, an urban home-based primary care program. Patient sociodemographic characteristics, symptom burden (Edmonton Symptom Assessment Scale), and incidents of hospitalization, nursing home placement, and death were collected via chart review. Multivariate Cox proportional hazards models were used to analyze the effect of high symptom burden on hospitalization, nursing home placement, and death.

Results: 318 patients were included in this study. Forty-three percent had high symptom burden (had an ESAS score of ≥6 on at least one symptom). The patients with high symptom burden were younger (82.0 vs 85.5 years, p = 0.0093) and had more comorbid conditions (3.2 vs 2.5 Charlson score, p = 0.0018). They had a higher prevalence of depression (43.4% vs 12.0%, p < 0.0001), a lower prevalence of dementia (34.3% vs 60.6%, p < 0.0001), and utilized less hours of home health services per week (86.2 vs 110.4 hrs, p = 0.0018). Severe symptom burden was associated with an increased risk of hospitalization (hazards ratio, HR = 1.056, 95% CI = 1.057-2.145), but had no significant association with risk for nursing home placement (HR = 0.699, 95% CI = 0.329-1.485) or death (HR = 1.315, 95% CI = 0.946 – 1.829) in adjusted models.

Conclusion: Our research finds that the homebound elderly with high symptom burden represent a unique patient population; further research should seek to better describe this population and its utilization patterns. Severe symptom burden increases the risk of hospitalization in the homebound elderly but is not predictive of nursing home placement or death. Targeted, aggressive symptom management may help reduce unnecessary hospitalizations and improve health outcomes in this patient population.

B122 Use of Safety Net Clinics For Primary Care Among Insured Older Adults in the United States: NAMCS 2006-2010
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Supported By: This work was supported by a grant from the Agency for Healthcare Research and Quality (1R24HS022418-01) and the UT Southwestern Center for Patient-Centered Outcomes Research.

Background
Financing for U.S. health care safety net providers has been fraught and haphazard, resulting in a highly fragmented system. The potential harms of fragmented care are particularly salient among
older adults, given complex care and coordination needs. However, it is unknown the extent to which insured older adults nonetheless use the safety net for regular care. Thus, we sought to describe the prevalence and predictors of safety net use for primary care among insured older adults, and clinical characteristics of this population.

Methods
Cross-sectional analysis of all primary care visits by older adults (≥65 years) in the National Ambulatory Medical Care Survey (NAMCS) from 2006-2010, a probability sample of outpatient visits in the U.S. Our primary outcome was use of a safety net clinic, defined as community health centers and non-federal government clinics. Analyses were weighted to reflect national estimates. Predictors of safety net use were estimated from logistic regression models adjusted for demographic characteristics.

Results
Of 11,742 primary care visits among older adults, 1,840 (2.8%) were in safety net clinics, representing 3,025,000 visits per year. Most of these safety net clinic visits occurred among older adults who were insured (80.9% overall; 77.1% with Medicare).

B123
Treating Older Men with Locally Advanced Prostate Cancer – is it underuse or good clinical judgement?
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Supported by: Department of Defense, Patricia S. Levinson Fellowship

Background: Prostate cancer (PCa) predominantly affects older men age 65y, yet they are less likely to receive appropriate treatment than younger men <65y. Definitive treatment is recommended for all patients with locally advanced intermediate and high D’Amico risk PCa. We aimed to identify reasons older men may not receive definitive PCa treatment.

Methods: We reviewed medical records of 649 men diagnosed and treated for a new, locally advanced PCa (Gleason ≥7, stageIBA) from 2007-2012 at an inner-city tertiary referral and a municipal hospital. We compared demographics, PCa characteristics, comorbidities at time of diagnosis, and low or high 9 year overall mortality risk (≤16% or >16%), as predicted by the Schonberg ePrognostic Index, for men ≥65y (n=431) vs <65y (n=218). Evidence-based quality measures for PCa treatment defined underuse of definitive treatment as ADT monotherapy or no surgery, radiation or cryotherapy.

Results: Men’s average age was 61y (± 8.8), 56% were black, 44% white, 8% had Medicaid. Of older men, 57% had surgery and 26% radiation therapy, compared to 88% and 8%, respectively, of the younger men (p<.0001). Median overall 9y mortality risk was 16% in younger vs. 26% in older men (p<.0001). Older men were more likely than younger men to have intermediate D’Amico PCa risk, 24% vs 12% (p<.0001). 15% of older men compared to 4% of younger men experienced underuse (p<.0001). However, among older men, 6% of those with low 9y mortality risk experienced underuse compared to 18% of those with high mortality risk (p<.03). A greater proportion of men with high mortality risk had intermediate vs high D’Amico PCa risk (61% v 45%; p=.004). Multivariate modeling (c=.89; p<.0001) found that age was not associated with underuse; Intermediate D’Amico risk PCa (OR=9.81 among men with low mortality risk) and black race (OR=7.27; 95%CI: 2.2-24.5) was associated with greater underuse, while having commercial insurance was protective (OR=0.14; 9.07-0.3).

Conclusions: Age is not a risk factor for underuse. Rather, PCa risk affects treatment rate and life expectancy modifies this effect, suggesting that physicians utilize these factors in their treatment decisions regardless of patient age. Nonclinical factors such as patient access to treatment and race also affect underuse.

B124
Weekly “M&M” review reduced ED visits in a PACE program
U. S. Tadepalli, M. Batalden, A. Fabiny. 1. Medicine, Cambridge Health Alliance, Cambridge, MA; 2. Harvard Medical School, Boston, MA.

Background: Various integrated care team models have been developed with an aim of reducing inappropriate ED and hospital utilization. Comprehensive care processes are ill-described, and their effectiveness in reducing utilization is unclear. Formal root cause analysis of ED and hospital utilization has not been studied as a critical component of developing a care plan, or as a way to reduce ED and hospital utilization. The objective of this study was to evaluate a new process for care plan development that would reduce ED and hospital utilization.

Methods: At a single-center PACE in urban Massachusetts with a rolling panel of approximately 290 community-dwelling, nursing home eligible, Medicare/Medicaid patients aged 55 and older, we implemented a weekly interdisciplinary “Morbidity and Mortality” review of all ED visits and hospital admissions using a root cause analysis instrument, and developed care plans based on this review. We measured ED visits and hospital admissions per member per quarter for 1.5 years before and after implementation of “M&M”. We trended mean risk score of the rolling patient panel during this time as a measure of overall population complexity. We later conducted a focus group analysis to assess the mechanisms by which this intervention led to improvement.

Results: The mean ED visit rate decreased from 9.9% prior to the intervention to 6.0% after the intervention was begun; the mean hospital admission rate decreased from 7.1% to 5.0%. The mean risk score increased non-significantly. Focus group analysis suggested several mechanisms by which this intervention changed program culture: (1) illumination of the gap between the theory of the program and actual program operations, including ways in which patients and staff lacked basic understanding of care alternatives, (2) an expanded ability to identify novel ways to add value to patients’ care within the larger context of their lives, (3) increased confidence in improvement capacity of program staff, and (4) development of a shared mental model of the program through cultivation of relationships among interdisciplinary program staff.

Conclusions: Using formal root cause analysis to inform care plan development significantly reduced ED utilization in a complex patient population. Although developed within a PACE site, this method of review and intervention would apply to any primary care practice working to avoid avoidable care for complex patients.
B125
Agreement in spousal perceptions of daily caregiving is associated with health and marital outcomes
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Supported By: Medical Student Training in Aging Research (MSTAR) program as funded by the American Federation for Aging Research (AFAR).

Background: Despite performing multiple caregiving activities, many individuals do not self-identify as caregivers. Moreover, caregivers often assume their responsibilities incrementally, blurring the transition from non-caregiving to caregiving status. No study to date has examined how incongruent perceptions of care among caregiver dyads may impact couples’ emotional and relational health, especially among older adult emerging caregivers. The purpose of the current study is to examine caregiving congruence, the degree to which spousal caregivers report about the amount of care provided, and its association with depression, anxiety, and marital satisfaction.

Method: From 2011 to 2012 we recruited older couples (age range 60-64 years) from the longitudinal Life and Family Legacies study (Call et al., 1982) to report on daily life using diaries. Each spouse completed 14 daily surveys about their mood, marital outcomes, the amount of spousal support they gave, and the amount they received. Caregiving congruence was calculated as the daily ratio of practical support given by one spouse and received by the other as reported using 5-point scales. Primary outcomes included depression/anxiety and marital satisfaction, assessed using validated measures. We used generalized linear mixed effect modeling in SAS v9.4 to explore associations between caregiving congruence and the primary outcomes.

Results: At the end of the data collection period, analyzable data were obtained from 190 couples (5182 total surveys). On days where spouses reported giving some level of care, higher caregiving congruence was significantly associated with lower depression/anxiety and higher marital satisfaction (p<0.01), anxiety (p<0.01) and higher marital satisfaction (p=0.03). When care recipients reported receiving more support than their spouse reported giving, these positive associations did not persist.

Conclusion: This study suggests that spousal agreement about the amount of care given and received predicts lower depression/anxiety and higher marital satisfaction for caregivers. Importantly, these findings relate to the growing population of emerging caregivers. Daily diaries are well-suited to capturing the unique relationship dynamics as spousal roles change with age. Future research should test whether interventions designed to improve caregiving congruence can achieve these improved caregiver outcomes.

B126
SNF 2.0: INTERACT-ing Beyond 6 Months
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Supported By: California Health Care Foundation
Episcopal Senior Communities
Covenant Care, Inc.

Background: In 2011, the Interventions to Reduce Acute Care Transfers (INTERACT) II program showed a marked improvement in readmission rates over 6 months for engaged skilled nursing facilities (SNFs). However, results were poor for SNFs that were not engaged. The unengaged tended to have loss of champions, administrative turnover, and problems reporting data. In May 2014, we reported initial results from SNF 2.0, a Quality Improvement program to help unengaged INTERACT facilities become engaged facilities. Here, we report our results 18 months out.

Methods: As reported previously, we partnered with two SNFs that had previously attempted INTERACT implementation. Advanced practice nurses provided 1-on-1 mentorship and group training to nurses and aids. Mentors taught bedside moments with individual staff to help integrate INTERACT philosophy and tools into their daily workflow. Mentorship was augmented with a “gamified” dashboard program to incent speed, breadth and depth of INTERACT adoption. A 3-part “Train the Mentor” Curriculum was developed to assist champions with sustaining improvement. Our goals were: 1) a 20% reduction in 30-day SNF-to-Hospital readmission (30R) by Dec 31, 2014, compared to facility-specific data from 2012, and 2) reaching a “very good” or “excellent” patient satisfaction level of 90%.

Results: During the first 6 mo. of the program, 30R rates were reduced by 34% and admissions per 1000 patient-days (PTPD) were reduced by 37%. For SNF 1, during mos. 7-12 and 13-18, 30R rates were 4.6% below and 13.4% above 2012 rates, and admissions PTPD were 23% and 22% above 2012 rates. For SNF 2, during mos. 7-12 and 13-18, 30R rates were 69% and 52% below, and admissions PTPD were 54% and 49% below 2012 rates, respectively. For SNF 1, patient satisfaction scores were “very good” or “excellent” 60-64%, 75-96%, 50-81% of the time for each 6-mo. period. SNF 2 scores were 68-100%, 92-100%, and 93-100% for each 6-mo. period.

Conclusions: Mentorship plus gamified dashboard intervention may help SNFs engage in INTERACT, reduce readmissions, and improve patient satisfaction, but prolonged periods of turnover may stymie the intervention’s effect.

Nursing Home Characteristics and Results

<table>
<thead>
<tr>
<th>Results Characteristics</th>
<th>Ownership</th>
<th>Medicare Certified</th>
<th>% Patients Long Term</th>
<th>Turnover 14-mo.</th>
<th>% of Lost Champions</th>
<th>Turnover 14-mo.</th>
<th>% of Lost Champions</th>
<th>Turnover 13-mo.</th>
<th>% of Lost Champions</th>
<th>Turnover 13-mo.</th>
<th>% of Lost Champions</th>
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<tbody>
<tr>
<td>SNF 1</td>
<td>Private</td>
<td>66</td>
<td>40%</td>
<td>2</td>
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<td>0</td>
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<tr>
<td>SNF 2</td>
<td>Non-Profit</td>
<td>143</td>
<td>86%</td>
<td>2</td>
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<td>0</td>
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B127
VA Care-Coordination and eMpowerment of Patients in System-to-System Transitions (COMPASS): A New C-TraC Protocol for Hospital Patients Transitioning to Nursing Homes
A. Kind, 2 L. Jensen, 2 R. Rooland, 2 K. Kennelly, 2 J. Mirr, 2 M. Bazziinski, 2 M. Pawlowsky, 2 B. Kordahl 1 1. University of Wisconsin, Madison, WI; 2. GRECC, Madison VA, Madison, WI; 3. Madison VA, Madison, WI.
Supported By: This project was primarily supported by a VA Transformation-21 Initiative Grant Program “Patient-Centric Alternatives to Institutional Extended Care” (PI: Kind) and by funding from the VA Office of the Acting Deputy Undersecretary for Health for Quality, Safety & Value (PI: Kind). Dr. Kind’s time was also partially supported by a National Institute on Aging Beeson Career Development Award (K23AG034551, National Institute on Aging, The American Federation for Aging Research, The John A. Hartford Foundation, The Atlantic Philanthropies and The Starr Foundation). Additional support was provided by the University of Wisconsin School of Medicine and Public Health’s Community-Academic Partnerships core of the University of Wisconsin Institute for Clinical and Translational Research (UW ICTR), grant 1UL1RR025011 from the Clinical and Translational Science Award (CTSA) program of the National Center for Research Resources, National Institutes of Health.

Background: The low-cost, primarily phone-based VA Coordinated-Transitional Care (C-TraC) program has reduced 30-day rehospitalizations and cut costs in preliminary testing, but C-TraC protocols were not originally designed to support hospital-to-nursing home transitions. Our objective was to develop and pilot a new C-TraC module, the COMPASS protocol, to empower patients/caregivers to improve communication quality in system-to-system transitions.
Methods: The COMPASS protocol was developed over a 4 month period incorporating a multidisciplinary team of stakeholders and content experts, the existing C-TraC framework, and mixed-methods research-level data on hospital-to-nursing home communication. Protocols were piloted using rapid-cycle iterative phased protocol refinement with continuous feasibility and work-process monitoring. C-TraC nurses employing the COMPASS protocol coach patients/caregivers during and after hospitalization about what to expect in the nursing home, what condition-related red flags to watch for and how to respond. These nurses also perform a medication reconciliation with the nursing home staff 4-24 hours post-hospital discharge, confirm key information transfer, and are available via cell phone to the nursing home for any post-discharge questions/needs.

Results: In its first 12 months, C-TraC nurses employing the COMPASS protocol enrolled 231 veterans discharged to 78 unique nursing homes from one VA hospital (no refusals). 45% of veterans had at least one medication discrepancy detected/corrected during the 4-24 hour post-discharge phone call, averaging 2.3 discrepancies/veteran (range 0-15). The top 5 medication categories with discrepancies were analgesics, insulin, GI medications, psychiatric medications and anticoagulants. Qualitative data suggested high rates of veteran/caregiver and nursing home staff satisfaction with COMPASS.

Conclusions: COMPASS is highly feasible, achieves engagement of nursing home staff at a wide range of facilities and appears to be valued by patients/families. Additional rigorous testing of COMPASS’s impact on patient, caregiver and system outcomes is needed.

B128 Evaluating an Outpatient Geriatrics Consult Service in the Safety Net

A. H. Chodos,1 E. Pierluissi,1 A. K. Takane,2 J. Myers,3 C. Ritchie.1


Supported By: Dr. Chodos was supported by a training grant to the Division of Geriatrics at the University of California, San Francisco from the National Institute on Aging (T32AG000212-20) and a grant from Tideswell at University of California, San Francisco.

Background: We evaluated a pilot Geriatrics Consult Service for primary care in a safety net setting. For resource-efficiency, the service provides e-consults, care coordination services and in-clinic comprehensive evaluations. We describe its activities, patient population, user satisfaction, and impact on patients’ health care use.

Methods: We performed a chart review of patients referred to the service in the period from October 2012 to November 2013 and measured 1) patient characteristics, medical conditions, and health care utilization; 2) consult activities, questions and recommendations. We measured provider satisfaction with surveys. We compared pre and post health care utilization using paired t-tests.

Results: Of the 101 patients referred from providers, 5 were under 65 and excluded. Of the remaining 96, the mean age was 78.5 years (±6.9, range 65-95); 63.5% were women; and 11.5% were white, 13.5% black, 43.8% hispanic/latino, and 31.3% asian. The majority were foreign born (72.9%), poor (84.4%), and lived with family (58.3%). The mean number of chronic conditions was 5.4 (±2.2).

69 providers referred patients. The median number of consult questions was 3 (mean 3.7). The most common were: cognitive evaluation (63.5%), medications (38.5%), comprehensive evaluation (37.5%), falls (31.3%), and social service needs (26.0%).

Of submitted consults: 16.7% received e-consult, 20.8% received e-consult and care coordination activities, and 62.5% received comprehensive assessment. The mean number of recommendations was 7.2, median 10 (the max recorded). The most common related to medications (87.5%), cognitive evaluation (80.2%), falls (58.3%), social service needs (56.3%), and goals of care (55.2%).

Medications decreased post-consult from 9.5 (±4.0) to 8.8 (±4.6) (p=0.056). Primary care visits decreased 6 months post-consult, mean 3.0 to 2.4 (p=0.002), but urgent care use, emergency room use, and hospitalizations did not. Most providers, 94.5% reported that the consult addressed their concern to a satisfactory level.

Conclusions: A resource-efficient, Geriatrics Consult Clinic served safety net providers seeing vulnerable older adults and addressed undetected clinical geriatrics concerns, particularly cognitive impairment. Primary care visits decreased, but overall acute care utilization did not. Further development of this model and evaluation of its impact are needed.

B129 Encore Presentation

Geriatric Pharmacy Pilot’s Effect On Decreasing 30-Day Readmission Rates

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Background: The average patient on the UCLA-SM Geriatric Special Care Unit (GSCU) is on 14.7 different medications and is at high risk for adverse drug events potentially leading to quality and safety concerns, poor transitions of care and increased readmission rates. Given the complexities of the patient population, the workflow did not allow for proper medication reconciliation or education, which may have contributed to unfavorable readmission rates. We hypothesized the presence of a dedicated clinical pharmacist on the GSCU would decrease 30-day readmission rates.

Methods: We conducted a single center, prospective, cohort study of readmission rates for the 4 months prior to and 6 months after the initiation of the pharmacy pilot program. The program consisted of having a dedicated clinical pharmacist who performed medication reconciliation upon admission and discharge, daily clinical medication review during interdisciplinary rounds, medication counseling prior to discharge, and phone calls to patients at home post discharge for all patients admitted to the GSCU. The two primary outcome measures were: all-cause readmissions within 30 days and the proportion of readmission that were medication related.

Results: The average GSCU 30-Day readmission rate prior to the pilot was 23%, which decreased to 13% post-pilot. Pre-pilot, 20% of readmissions were medication related; post-pilot 2% were medication related.

Conclusion: The absolute reduction in 30-Day readmission rates was 10% and the relative reduction was 56%. Medication-related readmissions were reduced by 18%, with a 90% absolute reduction. This striking decrease in readmission rates strongly supports the efficacy of the pharmacy pilot intervention.
B130
Back to the Back Rub: An Interdisciplinary Inpatient Sleep Protocol for Older Adults
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Supported By: Geriatric Academic Career Award (Dr. Gary Blanchard).

BACKGROUND: Roughly 1 in 3 older medical inpatients will experience sleep difficulty - half of whom will receive a sedative-hypnotic drug. Many sleep medications prescribed for older adults are cited on the Beers criteria due to side effects such as sedation and falls. These medications can be easily accessed on electronic admission order sets.

PURPOSE: The objective was to evaluate select oral sleep medications that were prescribed in 2013 at a 329-bed community teaching hospital, and to then design and implement an inpatient sleep promotion protocol to reduce their usage.

METHODS: An interdisciplinary team, including a geriatrician, a pharmacist, and a pharmacy safety fellow, established and analyzed baseline prescribing patterns of sleep meds.

RESULTS:
• In 2013, there were 10,757 ordered sleep meds, including temazepam (3,872), zolpidem (2,867), lorazepam (693), and diphenhydramine (530).
• ∼55% of oral benzodiazepines (n=1,326, excluding temazepam) and >50% of diphenhydramine Rx were prescribed for patients ≥65.

An inpatient sleep promotion protocol was developed in collaboration with nursing - and added as a mandatory field to electronic nursing admission bundles (attached image). Core features included maximizing daytime activity level, reducing nighttime noise, and encouraging relaxing music. Within two months, there was a ∼75% order set adherence and a 48% reduction in zolpidem prescribing.

CONCLUSIONS: An inpatient sleep promotion protocol can lead to a significant reduction in potentially dangerous sleep medication prescribing for older inpatients.

B131
Optimizing Hospital to Skilled Nursing Facility Transitions
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Supported By: Duke Hartford Foundation Center of Excellence

Background: Transitional care has become a focal point for process improvement as providers have become more site-specific and hospital readmission rates for Medicare patients have been called out as excessive. Currently, Hospital Compare reports the national all cause readmission rate at 16%, down from the historical rate of 19%. At present rates specific to the discharge destination of skilled nursing are not readily available. In September 2013 Duke University Hospital formed a workgroup that spanned professions, departments, and institutions to apply best-evidence to reduce re-admission rates for patients discharged from Duke Hospital to local skilled nursing facilities (SNF).

Methods: This pilot program targets patients aged 65 years and older on 3 hospital care teams of the medical service who are being discharged to a SNF, the remaining seven care teams serve as a comparison group. Targeted patients receive geriatrics team consultation to: 1) address geriatric syndromes and prepare patients for succeed during rehabilitation, 2) improve discharge documentation and medication reconciliation, and 3) enhance communication among nurses and physicians at the hospital and the SNF. Concurrently, the workgroup identifies quality and process improvement opportunities and operationalizes them within the pilot. The selection process utilized nominal group technique, a process that encourages persons to contribute their thoughts about an issue and captures the group’s rank-order level of importance.

Results: As of September 2014, 73 patients have been included in the HOPE pilot with 52% female, 35% African American; 65% went to SNFs in Durham or surrounding counties. The year-to-date readmission rate is 13.6% compared to 18% for the comparison group. Example process enhancements include improvements of the discharge documentation, nurse to nurse communication, and patient and family readiness education.

Conclusion: Optimizing transitional care and reducing hospital readmissions rates for patients discharged to SNFs can be addressed effectively by an inter-organizational collaborative process utilizing quality improvement methodology. Although we have seen improvements, our work has highlighted the complexities of transitions. Challenges operate at the systems, process and patient levels, and therefore multifactorial solutions are needed.

B132
Gerofit: A Model of Care that Improves Lower Extremity Function and Mobility
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Supported By: The Gerofit dissemination program was sponsored by the VA Office of Geriatrics and Extended Care Transformative 21 Non-Institutional Long Term Care Program and supported by participating VA Medical Centers and GRECCs.

Background Reduced lower extremity function in older Veterans increases the risk of falls, dysmobility and death. Gerofit is a VA clinical program designed to improve functionality and mobility through structured physical activity. Gerofit is a facility-based exercise program for Veterans aged ≥65. We examined whether 3 months of Gerofit can improve Short Physical Performance Battery (SPPB) scores, an indicator of lower extremity function and mobility in older Veterans.

Methods Veterans 65 years and older were referred to Gerofit. Patients had to be independent in ADLs and able to exercise safely in a group setting. Veterans exercised up to 3 times per week. Physical performance, including the SPPB, was assessed at baseline and used to develop an individualized exercise prescription. The SPPB battery includes tests of gait speed, standing balance, and chair stands. Using published norms, Veterans were defined as functionally impaired if their SPPB score was ≤9 and as normal functional status if their score was ≥10. SPPB was repeated after 3 months of Gerofit participation.
Results Forty one Veterans mean age 70.3 years (65 to 92), 95% male, 74% African American, mean BMI 32.3 kg/m² completed 3 months of training. When stratified by baseline SPPB scores, 34% were functionally impaired with a SPPB ≤9. After 3 months of Gerofit, 79% improved their SPPB score. Mean improvement was 24% (from 7.1±1.8 to 8.8±1.6, mean ± SD). Of those who improved, 36% individuals increased their SPPB score to ≥10. By contrast there was no improvement in individuals with normal baseline functional status (11.4±0.8 to 11.5±0.8).

Conclusions Gerofit resulted in substantial improvement in lower extremity function as assessed by SPPB score in older Veterans who are functionally impaired. However, there was no improvement in those with higher baseline SPPB scores presumably due to ceiling effects of the SPPB. These patients will be followed longitudinally in Gerofit to see if they are able to maintain or further improve their functional status.

B133

Post-Discharge Medication Reconciliation Intervention in Elderly Veterans with CHF
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Supported By: Supported by a VA T21 Non-institutional Long Term Care Grant

Background
We have shown that a post-discharge medication reconciliation by a PILL pharmacist decreases readmission rates, discharges and death in an elderly population with cognitive impairment. We have expanded the PILL program to target elderly patients with congestive heart failure (CHF).

Methods
Patients admitted to the VA Boston inpatient service with a diagnosis of CHF and are discharged directly home received a phone call and medication review from the PILL pharmacist. The pharmacist reviews the medical record in detail prior to phone call and then identifies discrepancies, inappropriate medications, interactions, adverse drug reactions, complex regimens, and care-coordination issues. The pharmacist works with primary providers to clarify and resolve problems. To determine whether the intervention improved outcomes at 60 days post-discharge, we matched a control subject who had been hospitalized with a diagnosis of CHF by age and number of previous hospital admissions to each case who received the intervention. We used conditional logistic regression to calculate the odds of acute care utilization, re-hospitalization or death within 60 days of discharge.

Results
Thus far 38 patients in the CHF PILL program had post-discharge contact with the PILL pharmacist and have complete data for analysis. Median age of the group was 78.2 years. Morbidity was high; only 15% had a Charlson comorbidity score ≤ 2 and nearly half had three or more admissions in the prior year. Patients were taking an average of 13 medications. Over 70% had at least one medication discrepancy, 73% met criteria for polypharmacy, 76% were taking an inappropriate medication, 34% had a significant drug-drug interaction and 16% were experiencing an adverse drug reaction. The pharmacist contacted primary providers with recommendations in over 50% of cases. Cases had fewer acute care visits (16 vs. 20) and readmissions (14 vs. 17). There were three deaths in each group. The odds of having one of the three outcomes in cases vs. controls was 0.40 (95%CI 0.13-1.28).

Conclusions
This medication safety program demonstrates a high prevalence of medication discrepancies and significant pharmaceutical issues at the transition from discharge to home in older veterans with CHF. These interim results suggest that the intervention may be improving patient outcomes.

B134

Eyes and Ears on the Homebound Patient during an Emergency Response: Adding Video Technology to a Community Paramedicine Program
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Supported By: Verizon Foundation

Background:
Many older adults with multiple chronic conditions and functional impairment cannot access traditional outpatient services. As a result, they often forego care until the point of medical crisis when they call 911 and present to the emergency room (ER). To help older adults avoid unwanted ER visits and hospitalizations, we began our Community Paramedicine (CP) program in October 2013, leveraging the marginal capacity of critical care-trained paramedics to provide on-demand care in the home. In September 2014 we added secure wireless video capabilities.

Methods:
Participating patients were enrolled in our House Calls Program and were experiencing an acute illness. Once the paramedic was on scene and performed an initial evaluation, the physician, paramedic, and patient engaged in a secure video conference. Physician documentation in the medical record and direct-mail patient satisfaction surveys provided data for analysis.

Results:
Between September - December 2014, there were 72 CP responses that utilized video conferencing (of 109 total responses). Average patient age was 81.6 years. When video conferencing was used, 81% of physicians felt it enhanced patient evaluation. ER transport rate was 19% when video was used vs 27% when no video was used. Of the encounters in which physicians felt video conferencing enhanced patient evaluation, ER transport rate was 19%. Patient satisfaction survey return rate was 28% (30/106). Satisfaction scores were very high, with 100% of patients agreeing or strongly agreeing that they were satisfied with the overall CP experience, and 100% agreeing or strongly agreeing that they were satisfied with how the physician and paramedic worked together to manage their medical issues. 83% of respondents stated they would have either called 911 or gone to the ER if the CP Program had not been available.

Conclusions:
The CP Program helps keep patients safely at home, leading to significant savings when compared to the cost of ER visits and unwanted hospitalizations. The integration of video represents another strategy to extend a limited workforce expert in geriatric medicine, and make them accessible when and where patients need it. With new and increased opportunities for telemedicine reimbursement by Medicare, it may also be a tool for financial sustainability.

B135

Suggested Ways for Preventing Falls in Hospitalized Elderly: Data and Experiences from a Large Urban Academic Hospital
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Background: Falls are a leading cause of morbidity and mortality for the hospitalized elderly. High risk medications have been shown to contribute to falls. To help our hospital reduce falls, we studied the role of high risk medications in fall events.

Methods: We retrospectively reviewed fall events in patients ≥65 years at our institution in 2012 and the use of high risk medications (opiates, benzodiazepines, sleep medications, muscle relaxants, and antipsychotics) within 24 hours of the event. Dosages were compared to those published in “Geriatrics at Your Fingertips.” For
each medication ordered in EPIC, an initial preference list of doses is displayed. The lowest dose offered for each high risk drug in the EPIC preference list was recorded.

Results: 328 fall events were reviewed, yielding a fall rate of 3.3 per 1,000 patient-days. The patients’ average age was 78.6. Over 3/5 (n=203, 62%) of falls involved patients who were using one or more high risk medication. Patients were taking one high risk medication in 30% of fall events, two in 16% of events, and three or more in another 16% of events. Opiates were given within 24 hours in 32% of fall events, benzodiazepines in 15%, non-benzodiazepine sleep medications in 26%, muscle relaxants in 3%, and antipsychotics in 11%. In 57% (29 of 56) of falls where patients were taking benzodiazepines, the doses were higher than recommended for geriatric patients. Zolpidem was given in 23 fall events; 43% of those events involved doses higher than recommended for geriatric patients. Review of dosages in the EPIC preference list found that many high risk medications had default starting doses higher than recommended for geriatric patients.

Conclusions: The majority of older adults who fell during hospitalization were taking at least one high risk drug at the time of their fall, many at doses higher than recommended for older adults. In initial geriatric doses for many of these medications were not offered in the EPIC preference list, requiring prescribers to do additional work to order appropriate doses. In the spring of 2014, the EPIC preference lists for these drugs were changed to include geriatric dosages. Future work will evaluate the implementation of these changes and the effect on the association of falls with these high risk medications.

B136

Home Based Primary Care Significantly Reduces Costs for Frail Elders Using Independence at Home Criteria


Supported By: Commonwealth Foundation

Background: Home-based primary care (HBPC) uses interdisciplinary teams to support frail homebound elders. CMS is currently testing the effectiveness of HBPC in the Independence at Home (IAH) demonstration. Medstar Washington Health Center (WHC), a participant in the IAH demonstration recently completed a case-control study showing a 17% cost reduction with HBPC enrollees from 2004-2008. We examined whether their subset of IAH-qualified HBPC recipients would have significantly greater savings than the IAH-matched controls.

Methods: IAH eligibility for Medicare fee for service beneficiaries includes ≥ 2 chronic conditions, hospitalization and receipt of post acute services within the past year, and requiring assistance in ≥ 2 ADLs. These criteria were applied to both cases and controls in the WHC study, resulting in 218 (of 909) WHC enrollees and 474 (of 2161) controls. Controls were matched on several factors: demographics, chronic diseases, JEN frailty index, cognition, and baseline period service use. IAH-qualified WHC patients and controls were then compared on cost, utilization, and mortality.

Results: The annualized cost per beneficiary was $27,291 for WHC cases vs. $38,583 for controls, a 29% cost reduction. Adjusting for HCC risk and frailty (3.01±0.33 vs. 3.68±0.35) shows an 18% cost reduction. There was a 50% reduction in ER visits (0.47 vs 1.00), 32% reduction in acute care hospital payments ($11,529 vs. $16,967), 26% reduction in days spent in acute care hospitals (9.14 vs. 12.73) and a 48% reduction in SNF days (4.88 vs. 9.45). Hospitalization rates and mortality decreased each year of enrollment. Using the DC PACE rate, PACE HCC model, and PACE frailty adjuster, expected cost of the IAH-HBPC patients was $33,911, a 19.8% reduction compared to observed. Expected costs for the control group were 6% below observed.

Conclusion: IAH-qualified patients receiving HBPC are expensive yet obtained a significant cost reduction compared to matched, IAH-qualified controls. The similarity of the savings calculated using the PACE rate, PACE HCC model, and PACE frailty adjuster to the HCC-adjusted savings using a matched cohort approach suggests that with appropriate adjustment of factors in a HCC payment model, accurate savings predictions can be obtained.

B137

Knowledge Isn’t Everything: Emotion Contributes to Self-care Behaviors in Rural-living Adults with Uncontrolled Diabetes

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Supported By: Funding for this research was provided by a Department of Veterans Affairs Health Services Research and Development Grant IR 10-135. This research was was conducted in facilities funded by Department of Veteran’s Affairs grant # CIN 13-413.

Background: The Transactional Models of Stress and Coping postulates that affect will influence how one perceives his/her ability to cope with diabetes. We used this well-established conceptual model to examine the associations between positive and negative affect and general adaptive and maladaptive coping, and diet and exercise behaviors among adults with uncontrolled diabetes (HbA1c ≥ 7.5%) and elevated depressive symptoms (PHQ-9 ≥ 10).

Methods: Participants were 121 Veterans [M (SD) age: 61 (6.5) years; 87.6% Male; 65% Caucasian]. Positive and negative affect were assessed using the Positive and Negative Affect Schedule (PANAS), general adaptive and maladaptive coping was assessed using the Brief COPE, and diet and exercise were assessed using items adapted from existing questionnaires. Linear regression models were constructed to examine whether positive and negative affect predicted each of the coping behaviors.

Results: In our unique sample of rural Veterans, positive affect was significantly associated with exercise (β = .31, p < 0.001) and adaptive coping (β = .29, p < 0.001), while negative affect was significantly associated with all coping behaviors, including adaptive coping (β = .33, p < 0.001), maladaptive coping (β = .66, p < 0.001), diet (β = .23, p = 0.01), and exercise (β = .21, p = 0.02), even after adjusting for diabetes severity, illness intrusiveness, and diabetes knowledge.

Conclusions: The results of this study suggest that positive affect is associated with better health outcomes. Moreover, our results suggest that moderate levels of negative affect motivate engagement in healthy coping behaviors, while too low or too high levels of negative affect motivate engagement in maladaptive coping such as denial and self-blame.

B138

Screening for Delirium in Hospitalized Older General Medicine Patients: A comparison of 3D-CAM and CAM-ICU

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Supported By: National Institute of Aging grant, R01AG030618 and K24AG035075. The American Federation of Aging Research, Medical Student Training in Aging Research Program grant,T35AG038027-01.

Background: Delirium is a common, morbid, and costly condition in older hospitalized patients, yet only 12-35% of cases are detected. Thus, effective case finding tools are needed. We compared the performance of 2 brief Confusion Assessment Method (CAM) based diagnostic instruments, the newly validated 3-Minute Diagnostic As-
Methods: Eligible patients were aged ≥75 on the medical service of a large teaching hospital. Participants underwent a “reference standard” assessment for delirium and baseline cognitive status consisting of a 30-45 minute interview with cognitive testing, family interviews, and review of the medical record, all performed by experienced clinicians. Using these data, an expert panel determined the presence or absence of delirium and pre-hospital dementia or mild cognitive impairment. Within two hours, trained research assistants performed the 3D-CAM and CAM-ICU in random order and blinded to the results of the reference standard. We determined test characteristics for the two brief instruments compared to the reference standard delirium diagnosis.

Results: Among the 101 participants (mean age 84±5.5 years, 61% women, 55% with pre-hospital dementia or mild cognitive impairment), the detected rates of delirium were as follows: reference standard—19%, 3D-CAM—24%, and CAM-ICU—10%. Median evaluation time for the 3D-CAM and CAM-ICU was 3 and 4 minutes, respectively. The sensitivity [95% confidence interval (CI)] of delirium detection for the 3D-CAM was 95% [74%-100%], and for the CAM-ICU was 53% [29%-76%]. The specificity was >90% for both brief instruments. Subgroup analyses showed similar results regardless of pre-hospital cognitive status, and that the CAM-ICU had particularly low sensitivity in delirious patients with a normal level of consciousness (42% [15%-72%]).

Conclusion: We found that the 3D-CAM had much higher sensitivity for delirium and slightly shorter administration time than the CAM-ICU in hospitalized older general medicine patients. Given its sensitivity and brevity, 3D-CAM may be a superior tool for delirium case identification in this patient population.

B139 Characteristics Associated with Self-Neglect in Cognitively Intact Older Adults: Results from A Case-Control Study

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Supported By: Maria Pavlou’s participation and the initial data collection for this research was supported by the John A. Hartford Foundation and The Gruss Lipper Family Foundation. Mark Lachs is the recipient of a mentoring award in patient-oriented research from the National Institute on Aging (K24 AG022399).

Background: Self-neglect is a prevalent, complex, poorly-understood geriatric syndrome with significant medical consequences. Little is known about characteristics that may distinguish older adults who self-neglect from those who do not, and most previous research relies on second-hand reporting from health professionals. Our goal was to use comprehensive interviews to identify characteristics associated with self-neglect among cognitively intact older adults.

Methods: We conducted a case-control study comparing older adults who self-neglect to those who do not. We identified potential subjects through 11 non-profit urban community social service agencies. We developed a definition of self-neglect and a screening tool to identify it through a systematic literature review and expert panel. We identified and interviewed 71 cases and 61 controls, using a battery of 17 standardized, validated instruments.

Results: Self-neglecting older adults were more likely to have never married (44% vs 18%, P=0.002) and have more years of education (14.4 vs 12.7, P=0.008). They were at greater risk for malnutrition (Mini Nutritional Assessment Score: 22.2 vs 24.6, P=0.001). While not statistically significant, they also appeared to have worse gait and balance (Timetti Gait and Balance Score: 20.4 vs 22.6, P=0.06) and were more likely to be incontinent (40% vs 26%, P=0.10). Psychiatric illnesses were also more common in self-neglecting older adults: obsessive compulsive disorder (19% vs 0%, P<0.001), paranoia (8% vs 0% P=0.06), depression (36% vs 22%, P=0.07), and anxiety (21% vs 10%, P=0.09). ADL and IADL dependence, living alone, alcohol use, and other psychiatric conditions were not significantly different between the two groups.

Conclusions: Older adults who self-neglect significantly differ from other older adults in many ways, including worse nutrition and higher rates of depression. These differences suggest potential risk factors that may be used by health professionals to screen for self-neglect and areas where services could help these vulnerable individuals.

B141 Clinical Effectiveness of Assessments of Cognitive Ability for Severely Demented Patients

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Supported By: Supported by the Medical Student Training in Aging Research program and the American Federation for Aging Research

Background: The Mini Mental State Examination (MMSE) is a commonly used cognitive assessment in clinical practice; however, in severely demented patients, the MMSE has noted floor effects. Currently, the gold standard for cognitive assessment of severely demented patients is the Severe Impairment Battery (SIB), but an average administration time of 20 minutes prohibits use in clinical practice. To determine the validity and utility of shorter tests for clinical practice, 5 different cognitive assessments were examined: SIB, Severe Impairment Battery-8 (SIB-8), Brief Interview of Mental Status (BIMS), MMSE, and Severe Mini Mental State Examination (sMMSE).

Methods: Patients (N=52) were recruited from a subacute dementia unit at Johns Hopkins Bayview Medical Campus (age 62-97). The order of assessments was randomized for each patient and administered over 2-3 sessions, and the duration of each assessment was documented. Patient frustration, comprehension, fatigue, and ability to attend to task were assessed on a 4-point scale.

Results: Intercorrelations of all 5 assessments had Spearman’s rho >0.7 and were statistically significant (p<0.05). Greatest correlation was SIB-8 with SIB (r=0.90, p<0.001) and time of administration was 4.6 minutes. The weakest correlation was BIMS with SIB (r=0.75, p<0.001) with the shortest time of administration of 2.8 minutes. The sMMSE had a stronger correlation with the SIB (r=0.89, p<0.001) than the MMSE (r=0.88, p<0.001), and sMMSE had a shorter time of administration (5.5 min) compared to the MMSE (8.6 min). Overall, all 5 assessments were well tolerated by patients with the greatest barrier being patient comprehension.

Conclusions: In the clinical setting, the SIB-8 and sMMSE may be more effective assessments of cognitive ability for severely demented patients as compared to the MMSE with excellent validity when compared with the gold standard SIB. Thus, the SIB-8 and sMMSE appear to have clinical utility and validity for the assessment of severe cognitive impairment.
associated with increased mortality risk. In addition use of antipsychotics may lead to relevant drug interactions. The aim of the present study is to assess prevalence of drug interactions related to use of antipsychotics and mortality risk related to these interactions.

**Methods:** This study used data from the SHELTER project, a prospective cohort study carried out among nursing home residents in 8 countries (Czech Republic, England, Finland, France, Germany, Israel, Italy, Netherlands). The primary outcome of the study was mortality within 1 year of the first assessment. The prevalence of drug use was calculated and the study population was divided into two groups according to the presence of interactions between antipsychotics and other drugs.

**Results:** The mean age of the 657 participants was 82.6 ± 9.0 years, and 473 (72.0 %) were women. The most commonly used antipsychotics were risperidone (n=148, 22.5%), followed byquetiapine (n=122, 18.6%) and tiapride (n=105, 16.0%). Overall, interactions involving use of antipsychotics were observed in 317 participants (48.2%). The most common interactions were those leading to lower blood pressure and falls (n=221, 33.6%), sedation effect (n=75, 11.4%) and QT prolongation (n=48, 7.3%). The mortality rate was 20.5% (n=65/317) among residents with interactions and 14.1% (n=48/340) among those without interactions (p=0.03). After adjusting for potential confounders this association was confirmed (RR=1.72, 95% CI 1.18-2.51).

**Conclusions:** Drug interactions involving antipsychotics are common among NH residents. These interactions are associated with increased mortality.

**B142**

**Correspondence of clinical measures with atrophy and CSF biomarkers in MCI patients**

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Supported By: NINDS K02 NS067427

T35 AG026757/AG/NIA

**Background:** Alzheimer’s Disease (AD) is a progressive demntia commonly affecting memory, behavior and thinking while not present with delirium or trauma. Currently AD is only diagnosed as “probable AD” with confirmation through autopsy. Biomarkers found to be supportive of an AD diagnosis are p-tau, tau, Aβ, APOE4 gene, APP, PS-1, and PS-2. The disease is characterized by amyloid plaques (containing Aβ protein) and neurofibrillary tangles (containing tau protein). By looking at these biomarkers, we hope to identify people at risk for AD at the earliest stages of cognitive impairment. Using longitudinal data from the Alzheimer’s Disease Neuroimaging Initiative (ADNI), we examined biomarker results from patients with diagnoses of normal, MCI or dementia. MRI, PET scans and LP are performed across 56 US and 7 Canadian sites. This study focused on ADNI2 which has previous ADNI study patients and new participants. The objective was to elucidate the relationship of hippocampal volume, Aβ and neuropsychological testing.

**Methods:** Using baseline data from ADNI2, we used a novel measure of hippocampal atrophy termed “hippocampal occupancy” (HOC) to quantify evidence of ex-vacuo dilatation suggested by low hippocampal volume and dilation of the temporal horn. This measure was examined in relation to MMSE (Mini mental state exam), CDR (clinical dementia rating) and ADAS (Alzheimer’s Disease Assessment Score) scores. Patients were classified into 4 categories based on the relationship between Aβ levels and HOC scores (HOC-Aβ). The 4 categories were as follows: Healthy control (Aβ(-) CSF & “normal” HOC), Aβ positive (Aβ(+) CSF & “normal” HOC), HOC small (Aβ(-) CSF & HOC small) and AD-like (Aβ(+) CSF & HOC small).

Results: Upon F-test analysis, there was a significant (p<.001) relationship between cognitive and clinical scores and biomarker category (p<.001). Further, the biomarker classified groups differed in cognitive and clinical scores (all p<.05) assessed by MMSE, CDR and ADAS.

Conclusion: HOC and Aβ appear to mirror cognition deficits seen in neurocognitive tests (MMSE, CDR, and ADAS) and therefore show promise for using HOC and Aβ as indicators for recognizing AD early in the progression of the disease. The longitudinal and postmortem data needs to be collected prior to determining efficacy of this model.

**B143**

**Human α-Synuclein Overexpression in Aldehyde Dehydrogenase Deficient Mice Exacerbates Locomotor Deficits: Implications for Parkinson’s Disease**


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Supported By: AFAR-MSTAR/NIA

**Background:** Parkinson’s disease (PD) is a devastating neurodegenerative disease characterized by progressive loss of midbrain dopaminergic (DA) neurons, formation of intracytoplasmic inclusions (Lewy bodies) in surviving DA neurons, and extrapyramidal motor dysfunction. Previous studies have reported elevated biogenic aldehydes in postmortem brains of patients with PD. Biogenic aldehydes are neurotoxic metabolites that have been shown to promote protein cross-linking and oligomerization of α-synuclein (αSyn), a major constituent of Lewy bodies. In the brain, aldehydes are largely detoxified by aldehyde dehydrogenases (ALDH). Two ALDH isozymes have been localized to the midbrain: ALDH1 and ALDH2 (Aldh1a1 and Aldh2 in mice). Reduced ALDH1 expression is also reported in postmortem PD brains, and epidemiologic studies have demonstrated a link between ALDH2 polymorphisms and susceptibility to pesticide-induced forms of PD. Mouse models with reduced Aldh expression show increased levels of 3,4-dihydroxyphenylacetaldehyde (DOPAL) and 4-hydroxynonenal (4-HNE). We hypothesized that elevated biogenic aldehydes interact with αSyn to accelerate the behavioral, neurochemical and neuropathologic changes characteristic of PD.

**Methods:** To explore this hypothesis, mice null for Aldh1a1 and Aldh2 were crossed with mice overexpressing human αSyn (hαSyn). To assess motor function, wild-type (WT), Aldh1a1−/− × Aldh2−/− (DKO) and Aldh1a1−/− × Aldh2−/− × Thy1-hαSyn (DKO-TG) mice were subjected to analysis of grip strength and motor performance on an accelerating rotarod. hαSyn expression was verified in brain and muscle.

**Results:** Expression of hαSyn was seen across various different brain regions in DKO-TG mice. By 9 months of age, the mean weights of the DKO and DKO-TG mice were significantly below the WT group. Relative to DKO, DKO-TG mice exhibited an early, sustained reduction in forelimb grip strength and significant deficits in rotarod performance.

**Conclusions:** αSyn overexpression in the context of reduced Aldh expression in mice exacerbates motor deficits in this model of PD. Hence, this may be a useful model for investigating the pathophysiologic relationship between elevated biogenic aldehydes and αSyn in PD.
B144
Goal Attainment Scaling as a meaningful outcome measure in a cognitive stimulation and physical rehabilitation program for mild dementia

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Background: Goal Attainment Scaling (GAS) is an individualized approach to measuring clinical outcomes, where goals are set according to the needs of the patient and caregiver. The objective of this study is to evaluate the utility of GAS in an 8-week cognitive and physical rehabilitation program for mild-dementia patients.

Methods: 55 mild-dementia patients were included and goals were set at baseline, with post-GAS score calculated at the end of program. Patients were assessed using cognitive scale (Chinese Mini-Mental Status Examination (CMMSE)), function and behavioral scales modified Barthel Index (MBI), instrumental Activities of Daily Living (IADL), Neuropsychiatric Inventory-Questionnaire (NPI-Q), quality-of-life and caregiver burden using EuroQOL (EQ-5D) and Zarit Burden Interview (ZBI). Correlation statistics were performed for the measures and GAS score. Differences in median scores were subsequently obtained.

Results: 45.5% of program participants were female with mean age of (SD) age of 79.2 (6.3) years. Cognitive goals were set in only 20.6%, followed by goals to reduce caregiver stress, improvement in physical function, behavior and mood. Mean (SD) GAS score was 48.56 (6.50). 34 (61.8%) patients were assessed to have met their goals (GAS score ≥ 50). GAS correlated significantly with improvements in caregiver burden on the the ZBI (r = -0.352, p = 0.013), behaviour severity (r = -0.461, p = 0.001) and caregiver distress on NPI-Q (r = -0.325, p = 0.021). Median scores in the cognitive, functional, quality-of-life and caregiver burden did not differ significantly pre- and post-intervention.

Conclusions: GAS is a potentially meaningful outcome measure in a cognitive and physical rehabilitation program, beyond purely cognitive and functional goals in current dementia intervention outcomes. GAS was useful in the assessment of the impact of the intervention on caregiver burden and neuropsychiatric symptoms, as conventional scales were unable to detect the improvement in these domains post-intervention. GAS provides specific, descriptive information on treatment effects important to the individual, and its use should be considered in dementia intervention trials.

B145
Pilot study on resting state functional MRI in older patients with cancer anorexia-cachexia: A look at homeostatic and hedonic pathways

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Supported By: MFM received support from AFAR. JMG has received consulting or advisory role’s fees from Aeterna Zentaris and Helsinn Therapeutics (US).

Background: The mechanism of anorexia-cachexia in cancer patients is not well understood, making treatment and identification of patient risk difficult. Functional magnetic resonance imaging (fMRI) may provide insight.

Methods: Consenting adults (n=9) with cancer anorexia-cachexia were analyzed by brain fMRI at resting state for five minutes and compared with control subjects (n=9) matched for age, gender, weight, and body mass index. Resting state fMRI data was analyzed by CONN Matlab Toolbox to compare connectivity between different regions of interest that are known to regulate appetite, food intake, and the reward from food. The regions of interest were comprised of the homeostatic pathway, including the hypothalamus, the hedonic pathway including the striatum (globus pallidus (GP), putamen, and caudate) and nucleus accumbens, and the habenula serving as potential connection between homeostatic and hedonic pathways.

Results: Cachectic patients showed lower levels of connectivity within the striatum, including caudate and GP, putamen, and nucleus accumbens as compared with control group (p=0.035, p=0.082, p=0.069). We found no significant difference in the connectivity between the hypothalamus and striatum directly (p=0.99) but found lower levels of connectivity in cachectic subjects between the habenula and the hypothalamus (p=0.125), specifically the lateral hypothalamus (p=0.020), and between the habenula and striatum (p=0.046) as compared with control subjects.

Conclusions: The habenula serves as negative reward for the striatum, leading to lower levels of dopamine release as a result of punishment or absence of expected reward (PMID:17522629). Lower levels of connectivity between the habenula and the homeostatic pathway (specifically the lateral hypothalamus) in cachectic patients signifies less transmission of hunger signal in cachectic patients. Additionally, the lower levels of connectivity between the habenula and the hedonic pathway represent less negative reward transmission in cachectic subjects as compared with control subjects, thus signifying less motivation for food intake. These findings could be used in the future for identification of patients who are at risk or currently suffering from cachexia or for pharmaceutical developments targeted at these pertinent regions of interest.

B146
Mortality in mild cognitive impairment is modified by known risk factors. The Mayo Clinic Study of Aging

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Supported By: The study was supported by National Institutes of Health grants U01 AG006786, K01 AG028573, P50 AG016574, K01 MH068351; by the Robert H. and Clarice Smith and Abigail van Buren Alzheimer’s Disease Research Program and was made possible by the Rochester Epidemiology Project (R01 AG034676).

Background: Mild cognitive impairment (MCI) is a prodromal stage of dementia that has been associated with increased mortality. However, factors that impact MCI mortality are not established. The objective of the study was to assess the hazard of death in individuals with MCI in the population-based prospective Mayo Clinic Study of Aging.

Methods: Participants 70–89 years old at enrollment were evaluated by a study coordinator, a physician, and underwent neuropsychometric testing at baseline and at 15-monthly intervals to assess diagnoses of MCI and dementia. Mortality rate in MCI vs. cognitively normal (CN) individuals was estimated using Cox proportional hazards models.

Results: Mortality was elevated in MCI cases (hazard ratio [HR] = 1.79; 95% CI: 1.41 to 2.27) compared to CN. There was significant effect modification (interactions) of mortality in MCI by sex (p=0.047), education (p=0.019), history of heart disease (p=0.006) and participation in moderate physical exercise (p=0.004). When the joint effects of each potential modifier and MCI were investigated, mortality rates were higher in men with MCI (HR = 3.40; 95% CI: 2.61 to 4.42), and in participants with MCI who had higher education (HR = 2.55; 95% CI: 2.01 to 3.24), history of heart disease (HR = 3.91; 95% CI: 3.02 to 5.06), and who did not participate in moderate physical exercise (HR = 3.28; 95% CI: 2.47 to 4.35) at baseline compared to CN participants without these characteristics.
Conclusions: Findings suggest that MCI is associated with increased mortality and possibly managing comorbidities, and lifestyle interventions may reduce death rate.

**B147**
O-linked N-acetylglucosamine (O-GlcNAc) regulates mitophagy in Neuro2a cells
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**Background:**
Neurons are extensively polarized cells with high basal metabolic activity. Because of these characteristics, mitochondrial turnover and function are especially important for neuronal survival. Indeed, mitochondrial impairment has been noted in various neurological disorders, such as Alzheimer’s, Parkinson’s and Huntington’s diseases.

Recently, the O-GlcNAc posttranslational modification was linked to mitophagy, a process for removing dysfunctional mitochondria via the lysosome. Abnormal levels of O-GlcNAc have been reported in normal aging as well as age-related diseases like Alzheimer’s and diabetes. O-GlcNAc dysregulation, and subsequent mitochondrial dysfunction, may explain why neurons are particularly vulnerable in age-related neurodegenerative disease. Because this link has not been thoroughly investigated, we decided to study O-GlcNAc and mitophagy in a neuronal cell line.

**Methods:**
Neuro2a cells were cultured and treated with CCCP, a mitochondrial uncoupling agent used to induce mitophagy, for 0, 2, or 4 h. DMSO (control), PUGNAC (a compound which increases levels of O-GlcNAc), or ST (an inhibitor of O-GlcNAc transferase) were added at the same time as CCCP. Mitophagy was assessed by LC3II/I Western blot, normalized to actin.

**Results:**
The ratio of LC3II to LC3I increased approximately 4-fold following 4 h of CCCP treatment. In the presence of ST, 4 h CCCP treatment increased LC3II/I -2-fold (50% reduction). With PUGNAC, 4 h CCCP treatment increased LC3II/I -2.75-fold (30% reduction).

**Conclusions:**
Increasing or decreasing O-GlcNAc levels with pharmacological tools reduced mitophagy in CCCP-treated Neuro2a cells, as measured by LC3II/I ratios. These data suggest that changes in O-GlcNAc levels, such as those observed in aging or disease, may affect mitochondrial turnover in the nervous system. If that is the case, modulating O-GlcNAc levels may promote neuroprotection. Additional studies in primary neuronal cultures are currently under way.

**B148**
BAG-1 Provides Anatomical and Molecular Resilience to Stress in the Pre-Frontal Cortex
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**Background:** Stress is a major determinant of physical and mental health and significantly affects a range of neuropsychiatric conditions. Over the lifetime, the effects of stress can accumulate and sensitize individuals to future experiences; in older adults, chronic stress has been linked to neurocognitive disorders and dementia, immune dysregulation, depression, and anxiety. The present study characterizes the response to stress in the pre-frontal cortex (PFC), which is a key regulator of the neural emotional response and is the substratum of executive function. Chronic stress significantly disrupts the architecture of the PFC through dendritic retraction and myriad changes in gene expression, especially in the inflammatory NFkB pathway.

In mice, overexpression of Bcl-2 associated athanogene 1 (BAG-1) has previously been shown to cause behavioral resilience to stress but the molecular mechanism is unknown. Here, we use a mouse model to show that BAG-1 interacts with the NFkB transcription factor p50 to prevent stress-induced dendritic retraction and gene expression changes in the PFC.

**Methods:** BAG-1 overexpressing and strain-matched wild-type mice were subjected to 21 days of chronic restraint stress. PFC dissections were Golgi-stained for dendrite length analysis, and qRT-PCR, immunoprecipitation, and Western Blot were performed on tissue lysates.

**Results:** Mice overexpressing BAG-1 show significantly increased dendritic length in stained PFC sections both before and after subjection to chronic stress. In addition, RT-PCR analysis of PFC gene expression shows that BAG-1 prevents stress-induced alterations of the NFkB and GR signaling pathway that underlie dendritic retraction. Finally, using Western blot, we show for the first time that BAG-1 interacts with the NFkB factor p50 in the PFC, providing a molecular mechanism that can account for the behavioral, anatomical, and molecular resilience of these mice to chronic stress.

**Conclusion:** BAG-1 thus serves as a key mediator of the stress response in the PFC, and therapies targeting BAG-1 may offer a novel method of preventing the emotional, cognitive, and immunological deficits seen in older adults subjected to lifetime stress.

**B149**
Slow Reaction Time Predicts Increased Risk of Incident Dementia: The Honolulu-Asia Aging Study
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**Background:** Patients with early Alzheimer’s disease (AD) have slower motor function. No previous studies have investigated the association between reaction time and incident dementia.

**Methods:** The Honolulu-Asia Aging Study (HAAS) is a longitudinal cohort study of dementia in Japanese-American men in Hawaii, which began in 1991 among survivors of the Honolulu Heart Program, followed since 1965. At the 1994-96 exam, 2,705 men aged 74 to 95 years were administered simple reaction time (SRT) and choice reaction time (CRT) tests on a laptop computer. Subjects were divided into quartiles of SRT and CRT, and separate analyses were performed using the lowest (fastest) quartile of each as reference. Diagnosis of all-cause dementia, AD and vascular dementia (VaD) were based on standard criteria. Incident dementia data were available for 5 years of follow-up, and those with prevalent dementia were excluded from analysis.

**Results:** There were 134 cases of incident dementia, including 89 cases of AD and 20 cases of VaD during 5-year follow-up. Rates of incident dementia increased significantly by quartiles of SRT (5.5, 7.5, 12.0, 26.8 per 1,000 person years follow-up, p<0.0001) and CRT (5.3, 7.5, 9.7, 31.0 per 1,000 person years follow-up, p<0.0001). Using
Cox regression, adjusting for age, education, ApoE4, prevalent stroke, baseline CASI, RT error rate, handedness and handgrip strength, men in the slowest, compared to those in the fastest quartile of SRT were significantly more likely to develop incident dementia (RR=4.03, 95% CI=2.19-7.42, p<0.001), and AD (RR=3.09, 95% CI=1.57-6.08, p=0.001), with a borderline association for VaD (RR=8.38, 95% CI=0.94-74.9, p=0.057). Men in the slowest quartile of CRT were also more likely to develop incident dementia (RR=5.22, 95% CI=2.83-9.63, p<0.001), and AD (RR=3.20, 95% CI=1.64-6.25, p<0.001).

Conclusions: We found that slow gait speed was an independent predictor of 5-year incident dementia and AD in elderly Japanese-American men. Reaction time may be a subclinical marker of disease.

B150 The Cognition-Mobility Interface (COMBINE), Amyloid Deposition and Glucose Metabolism in Cognitively Intact Older Adults Without Mobility Problems.
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Supported By: Pittsburgh Pepper OAIC (P30AG024827)

Background: The COMBINE, defined as the ability to simultaneously perform cognitive tasks while walking, serves as a “stress-test” of impending functional decline and may relate to cerebral amyloidosis and neurodegeneration. The pilot-study objective was to assess if changes in gait speed while performing four cognitive tasks is related to amyloid deposition and synaptic function (measured by glucose metabolism) in older adults, 70 years and older, who were cognitively intact (normal performance on standardized neuropsychological tests) and without mobility problems (gait speed > 1.0 m/sec, normal performance on standardized tests of physical function, no prior falls or assistive device use).

Methods: Regular gait speed and gait speed while performing cognitive tasks was measured on a 4m automated walkway averaged over 8 traverses. Within 1 year of gait assessment, PET imaging was performed to quantify amyloid burden using the Pittsburgh Compound-B (PiB) and, glucose metabolism using fluoro-2-deoxy-glucose (FDG) ligands, which are widely accepted as valid biomarkers of cortical amyloidosis and synaptic activity respectively. The primary outcome was change in regular gait speed while performing four cognitive tasks: 1) motor-sequencing, 2) response-inhibition, 3) working memory functions and 4) dialing a phone.

Results: In 28 adults (age: 75 years; 50% female; 15 years education; gait speed= 1.16 m/sec; Montreal Cognitive Assessment score= 26; Short Physical Performance Battery score= 11), amyloid burden was significantly correlated with gait speed decline with the motor-sequencing and response-inhibition tasks (both r=0.4, p=0.04) and phone dialing tasks (r=0.39, p=0.04). Glucose metabolism was only significantly correlated with gait speed decline on the phone-dialing tasks (r=0.44, p=0.02). Neither amyloid burden or glucose metabolism correlated with regular gait speed.

Conclusions: The COMBINE is related to dynamic changes in the aging brain with amyloid burden adversely influencing gait speed during the majority of stress tests. The relationship between COMBINE and glucose metabolism remains unclear.

B151 Simple One Question (SOQ) Tool: To Decide MMSE or MoCA for Screening of the Cognitive Impairment
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Background: Folstein Mini Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA) are two commonly utilized memory screening tests, yet there is no established guideline to decide the most appropriate screening tool. It has been suggested that MMSE is better suited for moderate to advance cognitive impairment whereas MoCA is better test to identify Mild Cognitive Impairment (MCI) due to higher sensitivity. This study was conducted to develop a “Simple One Question” (SOQ) tool to determine the most appropriate test based on underlying cognitive impairment. It was hypothesized that a person who cannot recall current month or year (failed SOQ) will have significant cognitive impairment and can be easily identified by MMSE without administering MoCA.

Methodology: Nonrandomized, 171 MoCA screening test results were used for this study. An MMSE Equivalent Score (MES) was developed from extracted data in the following manner: one point was assigned for each correct month and year; a maximum of 3 points were counted for three or more delayed word recall; and a maximum of 3 points for three serial 7 subtractions; a maximum score of 8 was possible on this scale. It was also hypothesized that missing 4 points on this scale would be equivalent to missing 4 points (cut off point for normal) on MMSE due to commonalities of the questions.

Results: A total of 42 subjects were found to have failed the SOQ, of whom 93.8% also failed the MMSE Equivalent Score (MES). Average MES score for those who failed SOQ was 1.97 vs. 7.07 (p<0.001) those who passed SOQ. Average MoCA score among those who failed the SOQ was 13.5 vs. 25.87 (p<0.001) for those who passed the SOQ. The positive predictive value for failed SOQ to identify significant cognitive impairment was 93.8%. Similarly, negative predictive value was 93.79%.

Conclusion: SOQ tool, which only involves asking the current month and year before performing any quick memory screening test, can identify subjects with significant cognitive impairment. Subjects with abnormal SOQ can be assessed by MMSE, whereas people with normal SOQ should be screened by MoCA to maintain high sensitivity of MoCA for MCI.

Results

<table>
<thead>
<tr>
<th>Incorrect SOQ (n=42)</th>
<th>Correct SOQ (n=129)</th>
<th>Positive predictive value of failed SOQ to diagnose MCI=93.79</th>
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<tbody>
<tr>
<td>Failed on MMSE Score</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>Pass on MMSE Score</td>
<td>3</td>
<td>121</td>
</tr>
<tr>
<td>Average MMSE Score</td>
<td>1.97</td>
<td>7.07</td>
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<tr>
<td>Negative predictive value of SOQ = 93.79</td>
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Average MoCA Score  | 15.5 | 25.87 |
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<td>Positive predictive value of SOQ = 93.79</td>
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B152 CWP-1 inhibition enhances the protective effects of dietary restriction in a C. elegans model of Alzheimer’s Disease
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Supported By: Medical Student Training in Aging Research (MSTAR) grant sponsored by the John A. Hartford Foundation and the NIA and administered by the American Federation for Aging Research (AFAR)

Background: Dietary restriction (DR) increases lifespan and delays symptoms of Alzheimer’s Disease (AD) in a C. elegans model; however, the details of this mechanism are unclear. NAD+-dependent sirtuin family of proteins are directly linked to the metabolic state of cells, and have recently been implicated in playing a protective role in neurodegener-
ative diseases. We investigated 4 C. elegans genes with homology to human sirtuin genes of >40%: SIR-2.1, SIR 2.2, SIR 2.3, and CWP-1. CWP-1 has significant sequence homology to the serotonin receptor and has not previously been associated with sirtuins, but has a 41% homology to human sirtuins.

Methods
We inhibited C. elegans genes using RNAi from adult day 1-4, the effects of which have been shown to last throughout life. At day 4 the worms were transferred to plates supplying ad lib fed or DR conditions. Onset of paralysis was measured as an indicator of pathology due to the transgene implicated in Alzheimer’s disease. Results
Inhibition of SIR-2.1 and 2.2, but not SIR-2.3 and CWP-1, significantly accelerated paralysis, indicative of AD toxicity, in the ad lib fed state (p<0.0001). DR significantly delayed paralysis, as we have previously reported, but inhibition of sirtuin genes had no effect on this protective effect. Inhibition of CWP-1 in the ad lib fed state had no significant effect on paralysis; surprisingly, however, inhibition of CWP-1 actually enhanced the protective effect of DR to delay paralysis (p=0.0058).

Conclusions
These studies demonstrated that sirtuins are protective against toxicity caused by the genes that promote Alzheimer’s disease in the ad lib fed condition, since inhibition of these genes accelerate the pathology. Remarkably, inhibition of CWP-1 appears to enhance protective effects of DR, to our knowledge a phenomenon not previously reported. Thus inhibiting CWP-1 or similar targets may sensitize patients to the effects of DR thereby requiring less severe DR interventions without compromising benefit. Future studies will investigate mechanisms by which CWP-1 impacts the protective mechanisms of dietary restriction.

B153 MRI predictors of cognitive decline over 20 years
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Supported By: The Atherosclerosis Risk in Communities Study is carried out as a collaborative study supported by National Heart, Lung, and Blood Institute contracts (HHSN268201100005C, HHSN268201100006C, HHSN268201100007C, HHSN268201100008C, HHSN268201100009C, HHSN268201100010C, HHSN268201100011C, HHSN268201100012C, U01 HL096812, HL096814, HL096899, HL096902, HL096917). Ancillary studies: Brain MRI Study (R01-HL70825), Carotid MRI Study (U01HL075572).

Background: Subcortical cerebrovascular and neurodegenerative features on brain MRI are associated with cognitive status and dementia risk. We examined the effects of subclinical MRI features on decline in cognitive functioning in a population-based sample of predominantly middle-aged adults followed over 20 years, longer than any similar study.

Methods: A subset of 1835 participants of the Atherosclerosis Risk in Communities (ARIC) study (aged 50-73 yrs, mean=63; 40% men; 50% black) underwent brain MRI in 1993-95. MRI features were defined as high-grade white matter hyperintensities (hgWMH ≥3 on 0-9 scale), ventricular size (hgVS, ≥4), and sulcal size (hgSS, ≥3) and any infarct ≥3mm. Cognitive function was measured over 20 years across five visits by the Delayed Word Recall Test (memory), Digit Symbol Substitution (DSS; processing speed), and Word Fluency (WF; language). These scores were also used to create a global composite score. Linear mixed effects models with random intercepts were used to assess associations between MRI features and decline in standardized cognition scores over 0-10, 10-20 and 0-20 years adjusting for age, race, sex and education. Those with intervening clinical stroke were excluded.

Results: Cognition declined over 20 years in all groups. The 0-20 year decline in global cognition was faster in those with hgWMH (-1.31 sd/20yrs) vs without (-1.05 sd/20yrs), difference=-0.26 (95%CI: -0.50, -0.01), as well as the 0-20 year decline in WF for those with infarcts ≥3mm vs without (-0.48 vs -0.30), diff=-0.18 (-0.34, -0.01). From 0-10 years, faster declines in DSS were observed for those with hgVS vs without (-0.36 vs -0.23 sd/decade), diff=-0.13 (-0.23, -0.03). However, from 10-20 years, those with hgVS showed slower declines than those without (-0.48 vs -0.68 sd/dec), diff=0.19 (0.02,0.36). No other relationships were statistically significant.

Conclusions: Cerebrovascular features (WMH and infarcts ≥3mm) were related to steeper declines in cognitive functioning over 20 years. Relationships for markers of atrophy (VS & SS) were mixed, potentially due to floor effects or differential attrition.

B154 The Antidiabetic Drug Metformin Improves Learning and Memory in Streptozotocin-induced Diabetic CD1 Mice
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Supported By: This research was supported by the 2014 Medical Student Training in Aging Research (MSTAR) program administered by the American Federation for Aging Research (AFAR).

Background: As major causes of death and morbidity, Alzheimer’s disease (AD) and diabetes both represent significant social and financial burdens. Longitudinal population-based studies have found an increased risk of cognitive dysfunction and dementia in patients with diabetes. The pathologies of both diseases share many similar abnormalities, including increased oxidative stress and impaired insulin signaling. Metformin is a biguanide that has been a mainstay of diabetic treatment for many decades. Preclinical studies indicate metformin may play a neuroprotective role via protection against oxidative imbalance and attenuation of AD-like pathology. The objective of this study was to determine if metformin could attenuate cognitive deficits and muscle weakness in a mouse model of diabetes.

Methods: Four groups of 8 week old CD-1 mice were used to evaluate the effect of metformin treatment on learning and memory. Three groups were injected with streptozotocin (STZ) to induce insulin-deficient diabetes. Daily subcutaneous injections with 20 mg/kg metformin, 200 mg/kg metformin, and vehicle were given for a total of eight weeks. The fourth group was non-diabetic and given daily injections with vehicle. After four weeks, mice were tested in the Barnes maze, T-maze foot shock avoidance, novel object recognition task, and strength tests.

Results: Metformin improved T-maze acquisition at both doses and T-maze retention at 200 mg/kg compared to vehicle treated diabetic mice. The percent time spent exploring novel object was also significant for both doses of metformin in the object recognition task. In the acquisition phase of the Barnes maze, treatment with both doses of metformin showed significant improvement in time to target compared to vehicle treated diabetic mice. Treatment with either dose of metformin was not associated with any significant difference on the strength tests.

Conclusions: Treatment with metformin in STZ-induced diabetic mice was associated with improved learning and memory compared to the vehicle treated diabetic mice in the object recognition task, Barnes maze, and T-maze. These results suggest that metformin may play a neuroprotective role in insulin-deficient diabetes.
B155
The Effect of Hearing on Cognitive Evaluation in Patients with Age-related Macular Degeneration
A. Chandramohan, 3 J. Wright, 3 X. Duong Fernandez, 2 J. Zhuang, 2 E. Lad, 3 S. Cousins, 3 D. Madden, 4 E. Piker, 5 D. Tucci, 6 H. Whitson, 1, 3
1. Duke Aging Center, Durham, NC; 2. Brain Imaging Analysis Center, Durham, NC; 3. Duke School of Medicine, Durham, NC; 4. Duke Eye Center, Durham, NC; 5. Stony Brook Medical School, Stony Brook, NY; 6. Duke Otolaryngology, Durham, NC.
Supported By: AFAR MSTAR Award Program, NIH R01AG043438

Background: Cognitive assessment in older adults is often complicated by sensory deficits. These impairments often co-occur, and sensory impairment has been linked to cognitive decline. Our objective was to characterize the effects of hearing ability on test performance in a verbally administered cognitive battery designed for persons with age-related macular degeneration (AMD). Methods: We examined interim data from 26 AMD patients enrolled in a prospective cohort study. Cognitive tests included a Rapid Distinction Test (RDT), measuring response time and accuracy, Wechsler Logical Memory, Item Recall, Verbal Fluency (Phonemic and Semantic), and Full Object-Memory test. Pure-tone average (PTA) was calculated using decibel (db) thresholds at 500, 1000, 2000, and 4000 Hz collected with a diagnostic audiometer. Results: Average age was 75.2 years and all patients had Age-Related Eye Disease Study (AREDS) category IV AMD. Mean binocular visual acuity was 0.43 LogMAR (~20/55 Snellen) and average PTA was 35.6 db. Hearing was related to response time and error rate on the RDT but once erroneous responses were removed, the relationship between hearing and response time became non-significant. Performance on remaining tasks, apart from item recall, was unrelated to hearing. Conclusions: Hearing loss was not a marker for global cognitive dysfunction in this population. Low performance on tests using single word cues (RDT, item recall) is consistent with sensory disadvantage, not an underlying cognitive deficit. Hearing was modestly (though not significantly) related to semantic fluency, which does not rely on sensory ability but has also been linked to AMD and visual acuity. Ongoing brain imaging analysis may help elucidate whether this finding reflects underlying brain changes. Verbally administered cognitive testing appears reliable in visually impaired persons with moderate hearing loss, if tasks do not require recognition of single, spoken words.

B156
Nhr-49 inhibition eliminates the protective effects of dietary restriction in Caenorhabditis elegans model of Alzheimer’s Disease
B. Park, R. R. Litke, C. V. Mobbs. Icahn School of Medicine at Mount Sinai, New York, NY.
Supported By: American Federation For Aging Research

Introduction: Delaying the onset of Alzheimer’s disease (AD) has been a goal for many researchers studying neurodegenerative diseases. While dietary restriction (DR) has been shown to significantly delay the onset of AD and increase lifespan in animal models, the mechanism behind its protective effects are not yet fully understood. A hypothesis regarding the molecular basis of this protection is the switch from glucose metabolism to lipid metabolism mediated by peroxisome proliferator-activated receptor-α (PPAR-α). In C. elegans, one of the animal models in which DR not only increases lifespan but also delays on the onset of AD, nuclear hormone receptor-49 (nhr-49), an ortholog of PPAR-α, has been shown to be a key mediator in increasing lifespan; however, the role of nhr-49 in mediating the protective effects of DR has yet to be established. If nhr-49 is a key component of DR, eliminating its expression will eliminate the protection conferred by DR.

Methodology: Nhr-49 RNAi was used to inhibit the expression of nhr-49 in the AD model of C. elegans (contains human Aβ42 gene insertion). These worms were divided into DR and non-DR groups. A population of worms without nhr-49 RNAi treatment was also divided into DR and non-DR groups to serve as control. The worms were observed every day for paralysis—the manifestation of AD in C. elegans—for 17 days. The comparison of the worms’ days without paralysis, or “healthspan,” was analyzed with the Kaplan-Meier estimator.

Results: Our experiment showed that inhibition of nhr-49 eliminates the protective effects of DR in the AD42 model of AD in C. elegans. At the end of the 17 days under DR, 92.40% of the RNAi treatment group (n=73) were paralyzed compared to 40.77% of the control (n=86) (p<0.0001 HR=5.43 CI 3.38-8.71). Under no DR, 93.09% of the treatment group (n=82) were paralyzed compared to 85.30% of the control (n=81) (p=0.0069 HR=1.74 CI 1.17-2.61).

Conclusion: These results suggest that the protective effects of DR work through the expression of nhr-49. The implication of this result is that if nhr-49 expression can be manipulated without DR, protection against AD may be possible without needing DR. By better understanding the mechanism behind the protective effects of DR, we now have a starting point for drug development against AD.

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B158
Activation of the Mitochondrial Fragmentation Protein DRP1 Correlates With BRAF\textsuperscript{V600E} Nevi Progression to Melanoma

Supported By: Financial Disclosures: This work was supported by: NIH grant CA157740 (to J.E.C.), the JFR Foundation (to J.E.C.), the William A. Spivak Fund (to J.E.C.), the Fridolin Charitable Trust (to J.E.C.), an American Cancer Society Research Scholar Award (to J.E.C.), and an Irma T. Hirschl/Monique Weill-Caulier Trust Research Award (to J.E.C.). This work was also supported in part by two research grants (5-FY11-74 and 1-FY13-416) from the March of Dimes Foundation (to J.E.C.), an Einstein Research Fellowship (to S.Y.W.), an American Skin Association Medical Students Grant (to S.Y.W.), an American Federation for Aging Research MSTAR Grant (to J.C.S.), and the Developmental Research Pilot Project Program within the Department of Oncological Sciences at Mount Sinai (to E.B., J.T.C., and J.E.C.).

Background: Nevi containing BRAF\textsuperscript{V600E} are senescent for decades. Escape from this state, perhaps triggered by environmental factors, contributes to the onset of age-related melanoma. However, the steps leading to progression from nevus to melanoma are still unknown. We have determined that DRP1, a protein required for mitochondrial fission, is activated by phosphorylation at the S616 residue by ERK1. This phosphorylation of DRP1\textsuperscript{S616} (pDRP1\textsuperscript{S616}) is a critical component to maintaining rapid proliferation and resistance to apoptosis – phenotypes associated with cancer. Thus, we investigated whether the phosphorylation state of DRP1 can be used as a biomarker for progression from benign nevus to malignancy in BRAF\textsuperscript{V600E} melanoma.

Methods: We used immunohistochemistry to stain FFPE benign nevi, dysplastic nevi, and melanoma samples collected from patients in order to evaluate for an association between the BRAF\textsuperscript{V600E} mutation and pDRP1\textsuperscript{S616}. BRAF\textsuperscript{V600E} melanoma cell lines were treated with a DRP1 inhibitor (mDIVI-1) to study the effect on melanoma apoptosis.

Results: Among the benign nevi, pDRP1\textsuperscript{S616} was not significantly related to BRAF status. Within the melanoma samples, 95.6% of pDRP1\textsuperscript{S616} occurred in BRAF\textsuperscript{V600E} tumors while only 6.8% of BRAF\textsuperscript{Wt} tumors were positive for pDRP1\textsuperscript{S616}, which was significant by Fisher’s Exact (p<0.0001) and Chi-squared (p<0.0001). Among dysplastic nevi, 79.3% of tissues that contained pDRP1\textsuperscript{S616} were positive for BRAF\textsuperscript{V600E} and 92% of BRAF\textsuperscript{V600E} dysplastic nevi displayed pDRP1\textsuperscript{S616}, which was significant by Fisher’s Exact (p=0.0007) and Chi-squared (p=0.0004). Inhibition of DRP1 function by mDIVI-1 led to a dose-dependent apoptosis in BRAF\textsuperscript{V600E} melanoma cell lines.

Significance: Induction of pDRP1\textsuperscript{S616} in BRAF\textsuperscript{V600E} nevi could be a key contributor to the escape from senescence and towards melanomagenesis. Therefore, the status of pDRP1\textsuperscript{S616} with BRAF\textsuperscript{V600E} may be a useful biomarker in order to determine which skin lesions are most likely to develop into disease. In addition, inhibiting DRP1 through pharmaceutical therapies could lead to more effective BRAF\textsuperscript{V600E} melanoma treatment.

B159
In Patients with Confusion, Admission Renal Function Predicts Poor Discharge Outcomes
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BACKGROUND: Patients diagnosed with acute confusional states may actually have undiagnosed delirium. Delirium has been found to affect 10-20% of all hospitalized adults. Negative outcomes of delirium are decreased functional status, increased risk of falls, increased risk for longer length of stay, and increased use of physical and chemical restraints. Renal insufficiency has been suspected to contribute to risk of delirium. The purpose of this study was to explore the relationship of renal status on admission to discharge destination outcomes and length of stay (LOS).

METHODS: Administrative and clinical records were examined of all inpatients at a large tertiary medical center in the southwestern US, who had a diagnosis of confusion during 2011. Demographic information, creatinine, LOS, and discharge destination were collected. The relationship of GFR to discharge destination and LOS were examined.

RESULTS: 1291 admissions were found with at least 1 diagnosis codes representing an acute confusional state. Mean age was 64, SD 19.1, range 16-110 years. Mean LOS was 10.6 days, SD 8.9, range 1-31 days. Mean creatinine was 1.66, SD 1.98 and ranged from 0.2-33 mg/dL. Mean GFR was 62.5, SD 32.6 and ranged from 0-160mg/dL. The sample was 64% white, 26% black, and 6.5% Hispanic. Linear regression revealed increased age and lower GFR predicted worse discharge destination (r\textsuperscript{2}=.12, F=162.21, df=1, p<.001). Lower GFR, but not age, predicted greater LOS (r\textsuperscript{2}=.012, F=15.11, p<.001).

CONCLUSION: Elderly patients who had any diagnosis of confusion and lower GFR on hospital admission may be more likely to have poor discharge outcomes. Patients with any diagnosis of confusion with lower GFR may be more likely to have longer LOS.

Acute confusion diagnoses included

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B160
Clinical Value of Corneal Hysteresis in Glaucoma and Cataract Surgery

Supported By: Seth Sprague Educational & Charitable Foundation (Providence, New York, USA)
Research to Prevent Blindness (New York, New York, USA)
The American Glaucoma Society through the Mentoring for Advancement of Physician-Scientists award program (San Francisco, California, USA)

Background: Glaucoma and cataracts are highly prevalent conditions that disproportionately affect older adults. Cataract surgery is commonly performed on the geriatric population and can reduce intraocular pressure (IOP), a risk factor for glaucoma. Because glaucoma...
can be seen in as many as one in six patients undergoing cataract surgery, this relationship warrants examination. We sought to study the relationship between corneal hysteresis (CH), a biomechanical property of the eye, and IOP change before and after cataract extraction (CE).

Methods: We retrospectively analyzed charts from 230 consecutive patients without glaucoma who had undergone phacoemulsification CE with posterior chamber intraocular lens implantation at a private practice in New York City. To be eligible, patients had to undergo both pre- and post-operative measurements with the Ocular Response Analyzer (a device using non-contact tonometry) at 2-4 months and at 10-12 months post-surgery. Data collected included age, baseline CH, baseline central corneal thickness (CCT), and IOP. Uni- and multivariate analyses were conducted using STATA to assess for associations.

Results: Thirty-nine patients (65 eyes) met inclusion criteria. The mean patient age was 70.8 ± 8.6 years and baseline CH did not vary with age (p=0.91). Average pre-operative, 2-4 month and 10-12 month post-operative IOP values were 14.8 ± 3.5, 11.9 ± 3.4, and 12.6 ± 3.1 mm Hg respectively (p>0.05, in comparison to baseline IOP). Baseline CH was not predictive of IOP reduction at 2-4 months post-operatively (β = -0.3, 95% CI -0.7, 0.01, p=0.06). However, baseline CH was statistically associated with the magnitude of IOP reduction at 10-12 months following CE, when controlling for age (β = -0.5, 95% CI -0.8, -0.1, p<0.01). At 2-4 months, a trend indicated that older patients may have a larger IOP reduction despite similar baseline CH and IOP (-4.1 vs. -2.8 mm Hg, p=0.12).

Conclusion: Low baseline CH is associated with greater IOP reduction after CE, and thus, pre-operative CH may provide clinically relevant information about the expected dual-therapeutic value of cataract surgery for patients with both glaucoma and cataracts.

B161

Macrophage-secreted Factors that Rejuvenate Delayed Fracture Healing Characteristic of Aging

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Supported By: National Institutes of Health

Background: Aging is associated with delayed fracture healing and better understanding the pathophysiology of age-related delayed healing will aid in developing novel therapies. Preliminary data using heterochronic parabiosis, bone marrow transplantation, and conditioned media CFU assays in mice showed that a circulating factor secreted by juvenile macrophage lineage cells rejuvenates fracture healing in aged animals. By comparing the secretome of juvenile and aged macrophages, we identified a potential candidate factor: Apolipoprotein E (ApoE).

Methods: The Colony Forming Unit (CFU) assay was used to quantify the number of progenitor cells present, either CFU-Fibroblastic (CFU-F) representing MSCs or CFU-Osteoblastic (CFU-O) representing osteoblast progenitors. Bone marrow harvested from either aged (20 month) or juvenile (8 week) mice was cultured with either rhApoE, neutralizing antibody or recombinant human ApoE3. CFU-Fs were detected via staining with Crystal Violet, while CFU-Os were detected via staining with Silver Nitrate. Colonies were counted at a threshold of 20 cells/colony. Statistical analysis was performed using a Student’s Unpaired T-Test.

Results: Juvenile bone marrow cultured in the presence of neutralizing ApoE antibodies did not result in a significant change in either CFU-O colonies (Control: M=18.67, SD=4.04 versus rhApoE Ab: M=15.67, SD=0.58; t(4)=1.273, p=0.272) or CFU-F colonies (Control: M=47.67, SD=8.50 versus ApoE Ab: M=55.33, SD=9.07; t(4)=1.068, p=0.346). Addition of recombinant human ApoE3 to aged bone marrow cultures also did not result in a significant difference in either CFU-O colonies (Control: M=38.00, SD=7.07 versus rhApoE3: M=24.50, SD=4.95; t(2)=2.212, p=0.158) or CFU-F colonies (Control: M=48.00, SD=1.41 versus rhApoE3: M=45.00, SD=1.41; t(2)=2.121, p=0.168).

Conclusions: These preliminary results provide evidence against Apolipoprotein E modulating osteoblast differentiation and/or proliferation in vitro. However, further in vitro experiments, specifically conditioned media CFU assays using bone marrow from juvenile ApoE KO mice, should be performed to provide additional evidence. In addition, it is unclear what role modulation of ApoE will have on in vivo fracture repair in both adult and aged mice.

B162

Nurses’ and Older Adults’ Knowledge, Attitudes, and Behavior towards Antibiotic Prescribing

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Supported By: UNC-CH Summer Research in Aging for Medical Students, NIA 5-T35-AG038047-05

Lineberger Comprehensive Cancer Center, 6-34080

Background: Antibiotic overuse is a potential cause of antibiotic resistance in older adults. To better understand antibiotic overuse, we studied the knowledge, attitudes, and behavior of nursing staff and older adults towards antibiotic prescribing.

Methods: We conducted a mixed-method survey in 2 nursing homes and 1 primary care outpatient clinic. Participants were 31 English-speaking nursing staff from the 2 homes and 66 community-dwelling, cognitively intact adults aged ≥65 from the clinic. Study questions addressed knowledge, attitudes, and behavior toward antibiotic prescribing, including open-ended responses to 3 clinical vignettes about situations in which antibiotics are overused: asymptomatic bacteriuria, an upper respiratory illness, and a skin abrasion. Three investigators independently coded the open-ended responses and recorded the most common themes, resolving disagreements by consensus.

Results: Equal proportions (29%) of nursing home nurses and community-dwelling older adults failed to demonstrate awareness of any dangers of antibiotics use. While 94% of nurses disagreed with the statement that, “When I have a cold, I should take antibiotics to prevent getting a more serious illness”, only 71% of older adults felt this way (p<0.01). Conversely, more nurses (39%) than older adults (27%) agreed with the statement, “By the time I am sick enough to talk to or visit a doctor because of a cold, I usually expect a prescription for antibiotics” (p=0.07). Thirty-two percent of nurses and 29% of older adults expressed the need for antibiotics in any of the 3 over-use vignettes. Other themes commonly voiced by both groups included the need for further work-up and/or a medical provider’s evaluation, and non-pharmacologic management of symptoms. Additionally, nurses reported the theme of following protocols, and older adults reported uncertainty about whether an infection was present.

Conclusions: A substantial minority of both nurses and older adults had no knowledge of the dangers of antibiotic use, expressed inappropriately positive attitudes toward the use of antibiotics even when they are not indicated, and endorsed behavior consistent with antibiotic overuse.
**B163**

**Developing Neutralizing Antibodies Against Prostatic Acid Phosphatase for the Treatment of Prostate Cancer Bone Metastases**

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**Background:** Osteoblastic (OB) bone metastases in prostate cancer (PCa) frequently cause severe pain, fractures, spinal cord compression, bone marrow suppression, and death in 70% of cases. These metastases are characterized by disorganized bone formation and a destructive cross-talk between PCa and OB cells. Unfortunately, there are no effective interventions for OB metastases that reduce morbidity or mortality. Previous work demonstrated that prostatic acid phosphatase (PAP), secreted by prostate cancer cells in bone, promotes osteoblastic growth, differentiation, and mineralization. We hypothesize that inhibition of PAP using neutralizing antibodies will inhibit the osteoblastic phase of metastatic prostate cancer.

**Methods:** Five BALB/c mice were immunized with PAP prepared in Freund’s adjuvant to stimulate an immune response against the protein. Spleen cells from one mouse were fused to an immortalized B cell line to form hybridomas that secrete monoclonal antibodies. These antibodies were examined for the ability to bind PAP using ELISA and flow cytometry. The monoclonal antibodies that bind PAP were further evaluated for their capacity to inhibit PAP enzymatic activity using a fluorescent acid phosphatase assay.

**Results:** The fusion process generated over 1300 hybridoma clones. Screens of the monoclonal antibodies secreted by the hybridomas identified 41 clones that bind PAP (12 confirmed by ELISA, 19 by flow cytometry, and 10 by both techniques). Preliminary tests of those 41 candidates identified 13 clones that enhance PAP activity by 18-97%, 15 clones that neither increase nor decrease PAP activity, and 13 clones that inhibit PAP enzyme activity by 16-60%. These inhibitory antibodies are currently the subjects of continued research in our lab.

**Conclusion:** Our study has demonstrated that antibodies raised against PAP can inhibit its enzymatic activity in vitro. These findings are a step toward the development of therapeutic antibodies that block the osteoblast proliferation associated with prostate cancer bone metastases. Continuing work will examine the capacity of these antibodies to treat the OB lesions in vitro by examining their effects on markers of bone formation including pre-osteoblast proliferation, alkaline phosphatase secretion, and mineralization.

**B164**

**Pelvic examinations in older women: practices and beliefs of US obstetrician-gynecologists**


**Background:** Despite lack of evidence of benefit in older women, annual pelvic examinations continue to be recommended by clinicians. We describe obstetrician-gynecologists’ beliefs and clinical reasoning of when to perform routine external genitalia inspection and speculum examination in asymptomatic women.

**Methods:** In a national survey, from May 2010 to January 2011, obstetrician-gynecologists reported their examination practices and beliefs based on four clinical scenarios of asymptomatic women aged 18, 35, 55, and 70 years. Based on guidelines relevant at the time of the survey, none of these women would need screening for cervical cancer or sexually transmissible infections. Clinicians also rated the importance of various reasons for performing the examinations.

**Results:** The response rate was 62% (n=521). Nearly all (92-98%) obstetrician-gynecologists would perform external genitalia inspection in asymptomatic women across the lifespan and most (70-90%) would perform speculum examinations. For a 55-year-old woman with no cervix or ovaries, 90% would perform a speculum examination. For a 70-year-old woman who has not been sexually active for the last 10 years and has had normal Pap smears for 30 years, over 90% would perform external genitalia inspection, and over 80% would perform a speculum examination. Reasons rated as very important included identifying cancers and benign lesions, reassurance of patient health and adhering to standard of care.

**Conclusions:** Most obstetrician-gynecologists would perform external genitalia inspection and speculum examinations in asymptomatic older women despite guidelines suggesting that these examinations are unnecessary.

**B165**

**MDROs on Resident Hands: Should We Refrain From Shaking Hands?**

J. Cao, S. McNamara, B. Lansing, K. Gibson, E. Koo, M. Cassone, L. Mody, J. of Michigan, Ann Arbor, MI; 2. VA Ann Arbor Healthcare System, Ann Arbor, MI.

**Background:** A handshake is a traditional and crucial custom used in everyday clinical practice to establish rapport with our older patients. However, along with healthcare worker hands, patient hands may serve as vectors for transmission of pathogens, particularly multidrug resistant organisms (MDROs). Little attention has been paid to patient hands in any healthcare setting including nursing homes (NHs). The objective of our study was to determine the resident hand carriage levels of different MDROs and their duration of colonization in newly admitted NH residents.

**Methods:** We conducted a prospective observational study in 6 NHs in MI. We cultured resident hands at baseline, day 14, and monthly afterwards, up to 180 days. Methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant enterococcus (VRE), and resistant Gram-negative bacteria (RGNB) were identified using standard microbiological methods. Gram-negative bacteria resistant to at least one of ceftazidime, ciprofloxacin or imipenem were defined as RGNB.

**Results:** In order to achieve our aims, we screened 614 residents, 258 (42%) agreed to participate in the study and were enrolled. 187 residents (55% female, mean age 76.7), with 413 follow-up visits, have completed the study and are included in these analyses. 24.6% (46/187) had at least one MDRO on their hands at enrollment. Baseline hand carriage rates of MRSA, VRE and RGNB were 11.2%, 13.9% and 1.6%, respectively. During follow-up, 36% (67/187) of resident hands were colonized with any MDRO, with 11% (21/187) newly acquiring an MDRO, suggesting acquisition after admission to the NH. MRSA and VRE colonization were more likely to be persistent, with 34% (11/32) and 27% (10/37) of residents colonized at multiple visits, while RGNB carriage was transient.

**Conclusions:** Our study, for the first time, indicates that hand carriage of MDROs among newly admitted NH residents is high. Handshakes are crucial to establish trust and respect with our residents, however we show the need to explore programs that improve resident hand hygiene and begs considerations of alternative means of greeting.

B166

Home-Based Activity Promotion for Rural Older Veterans via Telehealth: Geriatric Tele-Walking Clinic

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Supported By: VA Office of Rural Health

Background: Physical inactivity is a major public health problem in rural older veterans. The objective of this clinical demonstration project was to improve physical activity among rural older veterans via telehealth.

Methods: We exported a successful Walking Clinic to four Community-Based Outpatient Clinics (CBOC) in rural Arkansas via telehealth. A registered nurse and a geriatrician at the VA Medical Center, GRECC coordinated with a trained telehealth champion at each CBOC. Sedentary veterans aged ≥60 years were enrolled in the program. At the initial visit, the telehealth champion at the remote site performed physical function tests, set up the pedometer and connected via tele-video link with the host site. The RN and MD at the host site assessed the participant for safety, provided educational and motivational counseling and developed an individualized walking prescription based on perceived barriers, current physical function, and negotiated realistic goals. The initial visit was followed with weekly phone calls from the RN at the host site to monitor step counts and improve motivation of veterans. Veterans were seen for follow-up visit at 6 weeks and 12 months at the remote site. Physical function measures included a 6-Minute Walk Test (6MWT), gait speed and Timed Up and Go (TUG). Differences in baseline and 6-week measurements were assessed by paired t-tests.

Results: Of the 62 veterans who enrolled in the clinic, 52 (83.9%) completed the 6-week follow-up visit. Their mean age was 68.0 (±7.5) years and 95.3% were male. These veterans showed significant improvement in the 6-Minute Walk Test (907 ±338 vs. 969 ±303 feet, p=0.02), gait speed (0.77 ±0.28 vs. 0.82 ±0.25 m/sec, p=0.02) and Timed Up and Go test (13.6 ±4.7 vs. 12.6 ±4.1 seconds, p=0.04).

Conclusions: These findings indicate that the telehealth Walking Clinic program was implemented successfully. Majority of the veterans remained in the program. They significantly improved their physical performance. Long-term follow-up will be needed to determine impact of clinic enrollment on other health-related outcomes.

B167 Encore Presentation

Transmission of MRSA to healthcare personnel gowns and gloves during care of nursing home residents

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Supported By: Agency for Healthcare Research and Quality

Background: MRSA is an opportunistic pathogen which causes healthcare associated infections. MRSA is transmitted through direct or indirect contact in the healthcare setting. Colonized nursing home residents can be a source of transmission to others.

Patients with MRSA colonization are typically placed in Contact Precautions when hospitalized. The optimal infection control precautions for MRSA colonized residents in nursing homes are unknown. Our objective was to estimate the frequency of and risk factors for MRSA transmission to gowns and gloves worn by healthcare personnel caring for MRSA colonized long term care residents in order to inform infection control policies in this setting.

Methods: Residents from 14 community-based nursing homes (NH) in Maryland and Michigan were enrolled. Each resident was cultured for MRSA at the anterior nares and perianal skin. Pertinent medical history was collected. We then asked healthcare personnel to wear gowns and gloves during a usual care activity (e.g. wound dressing). A research coordinator observed and recorded the type of care delivered with each activity. At the end of the care activity, the research coordinator swabbed the healthcare personnel’s gown and gloves.

Results: We identified 113 residents colonized with MRSA from 401 enrolled residents. Overall, gowns were contaminated with MRSA during 14% of 954 interactions; gloves were contaminated during 24% of 954 interactions (p<0.01). Transmission varied by type of care from 0% to 24% for gowns and 8% to 37% for gloves. We identified dressing the resident, transferring the resident, providing hygiene (brushing teeth, combing hair), changing linens and diapering the resident as high risk (OR >1.0, p<0.05) activities. We identified giving medications and performing glucose monitoring as low risk (OR <1.0, p<0.05) activities. Residents with chronic skin breakdown had higher rates of gown and glove contamination.

Conclusions: Glove contamination occurs more often than gown contamination emphasizing the importance of hand hygiene in preventing the transmission of MRSA. The risk of gown contamination varied greatly by type of care and by whether the resident had skin breakdown highlighting when gowns should be worn to prevent healthcare personnel clothing contamination.

B168

Adverse drug reaction-related hospitalization in the elderly: five year trends from 2007-2011

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Background: Hospital admissions related to adverse drug reactions (ADRs) in older adults has increased significantly in the past few decades. Potentially preventable risk factors for ADRs including medication mismanagement and polypharmacy have been reported in the literature. Although efforts to reduce risks have been made by health care professionals, studies regarding ADR-related hospitalizations are limited.

Our aim is to analyze trends in ADR-related hospitalizations in older adults and to compare these trends by patient sex, age, and year from New Jersey hospital discharge data between 2007 and 2011.

Methods: We requested New Jersey hospital discharge data from 2007 to 2011 from the New Jersey Department of Health. We calculated the number of ADR-related hospitalizations categorized by year, age group, and gender from cases with external code (ICD-9 E9300-E9499). Census population data from CDC Wonder was used to estimate the number of patients at different age groups as the denominator to calculate the primary measure of hospitalization rate, defined as ADR-related admissions per 1,000 person-years (py). Trends of ADR-related hospitalization were analyzed for each age group: 65-74 years, 75-79 years, 80-84 years; ≥85 years. Data was analyzed with SAS.

Results: Hospital admissions related to ADRs increased by 22.9% from 9,851 in 2007 to 12,107 in 2011 for men; 21.1% from 13,927 in 2007 to 16,861 in 2011 for women. Admission rates increased by 14.3% from 2.07 per 1000 py in 2007 to 2.37 in 2011 for men; and 13.5% from 2.00 per 1000 py in 2007 to 2.27 in 2011 for women. The highest increase of the hospitalization rate was 18.0% for age group >84 years old, from 3.00 per 1,000 py in 2007 to 3.53 in 2011. The rate of ADR-associated hospitalization increased with age, from 1.34 per 1,000 py for age group 65-69, and 3.53 to age group older than 84 years old in 2011.

Conclusion: Our study suggests the rate of ADR-related admissions has increased from 2007 to 2011 and the hospitalization rate rose significantly with age. With the aging population, adverse drug reactions are becoming a major public health issue. It is unclear whether the increasing ADR-associated hospitalization rate is confounded by improved diagnostic coding. Our findings should prompt further investigation for ADR prevention as well as implement measures to decrease ADR-related hospitalizations in the elderly.
**B169 Encore Presentation**

**The Effects of Age, Education, and Treatment on Physical, Sexual and Body Concern Symptoms among Multimorbid, Colorectal Cancer Survivors**

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Supported By: Funding for this project was provided by the Department of Veterans Affairs Rehabilitation Research and Development Service #S101RX000104. This material is also the result of work supported with resources and the use of facilities at the Boston VA Medical Center and the Houston VA HSR&D Center for Innovations in Quality, Effectiveness, and Safety (CIN13-413) at the Michael E DeBakey VA Medical Center.

**Background:**
To describe patterns and predictors of longitudinal changes in colorectal cancer-specific quality of life and differences in change among physical and sexual symptoms and body concerns.

**Methods:**
A sample of 68 multimorbid adults with colorectal cancer was recruited from two regional Veterans Administration medical centers. Comprehensive assessments of quality of life and treatment side-effects were conducted 6, 12, and 18 months after diagnosis, using the European Organization for Research and Treatment for Cancer Colorectal module. Descriptive statistics characterized treatment side-effects and changes in quality-of-life domains longitudinally. Multivariate Analysis of Variance identified sociodemographic and clinical effects and changes in quality-of-life domains longitudinally. Multivariate Analysis of Variance identified sociodemographic and clinical variables associated with quality of life changes.

**Results:**
Physical symptoms were highly prevalent, including urinary frequency, unintentional gas, frequent bowel movements or new need for ostomy bag changes and oral symptoms, including dry mouth. Many physical symptoms improved from 6 to 18 months following diagnosis, while some remained stable. Sexual symptoms worsened, attributable to increasing rates of dysfunction in older patients. Low education attainment was predictive of worse physical symptoms (F=5.59, P =.023) and associated with body concerns (F =5.7, P =.005) over time. Advanced cancer stage (F=4.94, P<.04) and receipt of chemotherapy (F=4.21, P=.05) independently predicted body concerns in multivariate analyses.

**Conclusions:**
Endorsement of physical and sexual symptoms and body concerns occurs in different patterns over time among multimorbid colorectal cancer survivors. Low education attainment is consistently associated with physical symptoms and body concerns. Cancer stage and chemotherapy are predictive of body concerns, but not physical or sexual symptoms.

**B170 Why Do Home Hospice Patients Return to the Hospital? Hospice Provider Perspectives**

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Supported By: Benjamin Scherban’s contribution to this work was supported by the Medical Student Training in Aging Research program from the American Federation for Aging Research.

**Background:** Home hospice care has been shown to increase quality of life for enrolled patients and their families. However, up to 25% of hospice patients disenroll for a variety of reasons, including presenting to the Emergency Department and being admitted to an acute care hospital. These home hospice patients who return to the hospital are thus at an increased risk for poor quality of care and multiple care transitions at the end of life. This qualitative study sought to understand the various reasons that specifically drive home hospice patients to return to the hospital.

**Methods:** Seven focus groups were conducted with members of the clinical staff of a large, urban, not-for-profit home hospice provider. Based on their experiences, participants were asked to discuss the reasons that led home hospice patients to return to the hospital.

**Results:** A total of 102 subjects participated in 7 different focus groups: 9 team managers, 4 physicians, 27 nurses, 21 social workers, 17 spiritual care counselors, 8 home health aides, and 16 others. Analysis of the transcripts yielded 9 main themes and 46 sub themes. Some key focus group themes underlying return to the hospital included: Lack of understanding and acceptance of hospice care (n=38), home hospice structure (n=32), religion and culture (n=30), patient symptoms (n=24), and caregiver inability or reluctance to provide care (n=20).

**Conclusions:** This study documents a variety of reasons that often intersect and precipitate a home hospice patient returning to the hospital. Further study is warranted to better understand this phenomenon, with the eventual goal of creating interventions, and/or changing the structure of home hospice care, as a means of improving the quality of life of both patients and families.

**B171 Encore Presentation**

**Myths, Beliefs and Their Effect on Pain Control on the Elderly**

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**Background:** Literature on pain management has described several pain myths that are present regarding the elderly in the population. One of these myths, for example, is the notion that pain is an expected part of aging and, even, that pain may be caused by aging and not a pathological process. Another pain myth is that the elderly should not be taking opioids since they are easily addicted to opioids.

**Objective:** To explore pain-related myths and beliefs among older adults and their caregiver, considering how they may be impacting pain control in the elderly in the community.

**Methods:** This is a cross sectional study. Subjects (>60 years old) were recruited from five senior community centers in the San Antonio area (three predominantly Spanish-speaking). Participants and their caregivers filled out surveys anonymously regarding pain control and opioid usage.

**Results:** N=106; 73% female, 27% male, mean age=75 (50-95). Overall, 79% of study participants believed their pain was well controlled and trusted their prescribing healthcare provider, p=0.0034. Participants with higher socioeconomic status were more likely to recognize they suffer from pain (p=0.02) but felt their pain was managed appropriately by their healthcare provider (p=0.03). Additionally, study participants with lower socioeconomic status felt more criticized by clinicians for taking pain medications (p=0.038). When discussing opioids, 43% subjects felt “uneasy” about taking opioids and 50% reported opioid-related family concerns/judgments.

**Conclusion:** Elderly in the study population community almost universally experience pain and take pain medication as prescribed by clinicians, in spite some concerns and beliefs that are not congruent with pain control. In addition, higher socioeconomic status correlates with increased recognition of pain and their need for treatment, as well as favorable perceptions related to clinician’s judgment. Implications for this research indicate that increased culturally-sensitive education for older adults, caregivers and healthcare providers may decrease erroneous myths which may improve pain control in the elderly.
B172
Do Ask-Do Tell: Variation in Patient Goals Across the Chronic Illness Trajectory
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Background
The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT) calls for patient and caregiver preferences to be recorded during a transition of care. There is a lack of research regarding the differences in the types of goals patients have earlier and later in the course of a chronic illness.

Methods
A retrospective chart review of goals of care from two chronic illness care management randomized pilot studies was conducted. The two populations were at different stages in the chronic disease trajectory. The two studies included: 1.) care management of dual-eligible elderly patients with functional impairment and one of five chronic illnesses, and 2.) care management of working-age poor with diabetes attending a free clinic. Patient goals were elicited in each study and were classified as focusing on either 1.) quality of life (e.g. – ability to travel), 2.) disease management (e.g. – lowering HbA1c) or 3.) health behaviors that could affect quality of life but are not disease-specific (e.g. – weight loss). Chi-square tests were used to determine differences in proportions.

Results
The mean age of chronically ill dual-eligible patients (study 1, n=31) was 69.5 years compared to 53.6 years in the diabetes management trial (study 2, n=34),(p=0.000). 76% of the dual eligible patients had diabetes. There was a statistically and clinically significant difference in the proportion of the types of goals given in each study. Patients in study 1 had significantly more quality of life related goals (82%), fewer health behavior goals (18%) and no disease specific goals. Study 2 patients had no quality of life related goals, but significantly more health behavior (53%) and disease-specific goals (47%) (p<0.001)

Conclusions
Older patients who are further along in chronic illness and closer to end of life are more likely to express goals related to quality of life rather than disease management compared to younger patients earlier in the chronic disease process. Providers caring for chronically ill patients need to be aware that patients in different stages of a chronic illness may have different goals of care; therefore, they need to be prepared for patient goals that improve quality of life, but may not directly support disease management. These findings underline the importance eliciting patient goals in order to truly deliver patient-centered care.

B173
The quality of pain treatment in community-dwelling persons with dementia
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Supported By: Medical Student Training in Aging Research program of the American Federation for Aging Research
VA HSR&D Center
Baylor College of Medicine

Background: Addressing pain in persons with dementia is challenging and important. This study aimed to assess the quality of pain care for community-dwelling elderly patients with dementia.

Methods: Through phone interview we collected information on demographics and pain self-assessment from 203 community-dwelling Veterans Affairs outpatient primary care clinic patients with dementia and pain. Medical-record reviews on charts 6 months before and after the interview, from September 2011 to January 2014, were used to score 15 quality indicators of pain assessment and management. Incorporation of nonpharmacological pain interventions and modified pain-assessment tools for cognitively impaired individuals was also examined.

Results: Assessment of pain was documented for 98% (199/203), and a standardized pain scale was used for 94% (191/203). Modified pain scales were rarely used. Though 70% self-reported pain of “quite bad” or worse, charts documented no pain in 64%. When pain was identified, treatment was offered to 80% (121/151); but only 59% (71/151) received follow-up assessment within 6 months. A targeted physical was offered within 1 month to 58% (87/151), a history was taken from 54% (82/151), and 77% treated for osteoarthritis received acetaminophen as first-line treatment (49/64). Nonpharmacological interventions were underused.

Conclusion: Elderly persons with dementia risk underdiagnosis and undertreatment for pain. The community-dwelling subpopulation face additional barriers, largely stemming from lack of pain recognition, underuse of appropriate assessment tools, discrepancies in following medication best practices, and low use of nonpharmacological pain interventions. Clinical practices must ensure assessment is accurate and treatment is appropriate, and be mindful of patients’ long-term well-being.

B174
Clinicians’ conceptions about prognostication for the elderly: qualitative, goal-oriented projections are more relevant than quantitative ones
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Background: Little is known about how clinicians prognosticate in practice and the types of guidance they prefer in terms of prognostic data. Methods: Focus groups comprising 30 primary care clinicians (physicians, nurse practitioners, physician assistants) were conducted in community, academic-affiliated, and VA settings. Participants were asked how they make projections about the future health of their patients, and how this informs the approach to care. They were also asked whether and how they use research data, including risk indices, to assist in prognostication. Clinicians’ responses were analyzed qualitatively into a coding structure, which was then assessed to identify emerging themes. Results: Clinicians described projections about their patients’ future health more in terms of goal-oriented outcomes and anticipation of clinical decline rather than direct estimates of life expectancy. When asked what they believe patients value most about their future health status, clinicians cited quality of life, maintaining independence, being present for family, and life expectancy in terminal illness. They cited the main challenge in anticipating future health as being the inherent uncertainty. While clinicians were open to applying prognostic tools in practice, they had reservations about limited time to utilize these tools, limited applicability of prognostic data to individuals, and concerns that prognostic data will not be well-received by patients. When presented with sample risk indices, clinicians struggled to identify specific clinical applications. They spoke favorably about prognostic assessments generated by electronic medical record systems that identify patients with increased care needs or declining health trajectories. They identified conditions that would make them more willing to use research data to aid in prognostication, including improved generalizability, and tools oriented towards specific clinical questions. Conclusions: Clinicians conceptualize prognostication for their patients more in qualitative, goal-oriented terms rather than in terms of life expectancy, believing that this is aligned with patients’ values. While clinicians cited many limitations to applying available research data in practice, they were optimistic about prognostic tools
designed to prompt a reassessment of the plan of care rather than tools that simply generate quantitative estimates.

B175
The Effect of Personal Factors on Cochlear Implant Outcomes
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Supported By: Medical Student Training in Aging Research (MSTAR) Administered by the American Federation for Aging Research and the National Institute on Aging; Johns Hopkins Department of Otolaryngology

Background:
Bliss has been associated with dementia, social isolation, and functional decline. Cochlear implants (CI) in patients with bilateral hearing loss have been shown to increase speech perception and quality of life. However, some patients have more gains than others. Emotional intelligence has been positively correlated with quality of life and this study aims to determine the role that it and other individual factors may play in determining CI outcomes.

Methods:
Adults with bilateral, severe to profound sensorineural hearing loss who are 65 years and older and received a single cochlear implant at the Johns Hopkins Hospital were recruited to participate. Patients with congenital deafness, bilateral CI, and who do not speak English were excluded. Emotional Intelligence (EI) was measured using the TEIQue-SF survey. Outcomes included the AZBio open-set speech perception test, hearing specific quality of life measured using the Glasgow Benefit Inventory, and overall health score determined by the EQ-VAS. Survey outcomes were collected between 4 and 13 months after surgery. Correlation coefficients and linear regressions were performed.

Results:
46 eligible patients were identified. 30 patients (average age: 74.8) have 6 months post-operative AZBio audiological measurements. Age at time of surgery is negatively correlated with the post-operative AZBio measurements (r = -0.605). Linear regression shows that age has an inverse relationship to AZBio (B = -0.032; 95% CI: -0.049 to -0.016; p < 0.01). To date, 33 patients have been approached about the survey portion of the study and 21 have returned completed surveys (response rate: 63.6%; female: 28.6%, average age: 74.3). EI is positively correlated with age at the time of surgery (r = -0.440, p = 0.046) and the self-reported overall health score (r = -0.641, p = 0.002).

Conclusion:
Older patients tend to have higher EI, but worse objective audiological outcomes. This finding suggests that the greater optimism and motivation of older patients do not necessarily translate into better auditory outcomes within the first year after CI surgery. Structured rehabilitation and other interventions are needed and may generate improved outcomes at later time points.

B176
Loneliness is Associated with Functional Impairment and Health-Related Quality of Life in Older HIV-Positive Adults
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Supported By: California HIV/AIDS Research Program

Background: Studies suggest that both social isolation and loneliness are common among older HIV-positive adults. In the general population, loneliness is associated with functional decline, lower quality of life, and mortality. Less is known about factors associated with loneliness in HIV-positive adults. We examined the association of loneliness with functional impairment and health-related quality of life in a cohort of older HIV-positive patients in San Francisco.

Methods: We conducted a cross-sectional study of 359 HIV-positive adults age 50 or older within two UCSF-affiliated HIV clinics. Measures included loneliness (UCLA 8 item Loneliness Scale), sociodemographics, and the Veterans Aging Cohort Study (VACS) Index, a prognostic index including comorbidity and HIV severity. Functional impairment was measured by self-report of instrumental activities of daily living (IADLs) and analyzed as dependence with at least one IADL. Health-related quality of life was measured by a single item self-report of health and analyzed as poor/fair or good/very good/excellent. Logistic regression models estimated the odds ratio (OR) and 95% confidence intervals (CI) for higher degrees of loneliness with both functional impairment and health-related quality of life, adjusted for sociodemographics and the VACS index.

Results: Participants were predominately male (85%); 57% were white; the median age was 56 (interquartile range [IQR] 53-61); and the median VACS index was 28 (IQR 18-43). A quarter of the participants reported mild loneliness, 22% reported moderate and 12% reported severe loneliness. In adjusted analyses, every five point increase in loneliness score (range 8-32) was associated with an increased odds of dependence with at least one IADL (OR 1.3, 95% CI 1.0-1.7). Increasing loneliness was independently associated with poor or fair health-related quality of life (OR 1.6 95% CI 1.2-2.0) in multivariable analyses.

Conclusions: Loneliness was reported in more than half of older HIV-positive adults and was associated with both functional impairment and poor health-related quality of life. Interventions to address loneliness among older HIV-positive adults are indicated.

B177
The Predictors of Quality of Life Over Time in Maryland Assisted Living Facilities
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Supported By: The American Federation for Aging Research Medical Student Training in Aging Research Program (MSTAR). Supported by Grant R01MH060626 and K01MH085142 from the National Institute of Mental Health and the National Institute on Aging.

Background: Older adults are increasingly choosing assisted living (AL) as a residential care alternative to nursing homes. Although maximizing quality of life (QOL) is a core principal of AL care philosophy, there are few data on the trajectory and predictors of AL resident QOL over time. Of the studies available, few are longitudinal and most have focused exclusively on resident-level predictors. In this study, we sought to identify key resident, facility, and staff-level predictors of QOL in AL and evaluate their impact over time, with particular emphasis on the impact of dementia. Identification of these predictors would likely inform quality improvement initiatives.

Methods: Two year, prospective cohort study of a stratified random sample of 267 AL residents living in 27 AL facilities in Maryland. QOL was measured at 6-month intervals using the Alzheimer Disease Related Quality of Life (ADRLQ) for up to 24 months. Predictors were measured at baseline and included (1) resident clinical characteristics including dementia status and social support and engagement; (2) facility demographics and environmental characteristics; and (3) staff demographics and work experience. Mixed effects models were used to assess whether the baseline predictors were associated with change in QOL scores.

Results: In mixed effects models adjusted for resident demographics, only resident baseline depressive scores were associated with change in QOL over time, but the effect size was small. We found no other statistically significant predictors of change in QOL over time. However, having dementia and cognitive impairment, more psychiatric and depressive symptoms, and greater functional impairment...
were strongly associated with lower QOL scores at any given period of time, as were facility characteristics such as a for-profit status and living in smaller capacity.

Conclusions: Despite examining multi-level factors hypothesized to influence QOL in AL over time, we found few statistically significant baseline predictors. However, potentially modifiable factors including resident mental and physical health were strongly associated with QOL at a given time.

B178
SymTrak: Focus Group Findings for Brief Multi-domain Tracker of Primary Care Symptoms
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Supported By: Funded by National Institute on Aging (1R01AG043465-01A).

Background: We aimed to develop a clinically practical, multi-domain tool for measuring and monitoring self-reported and caregiver-reported symptoms of older patients. Most existing tools are disease specific, single-domain, or too lengthy for clinical practice. SymTrak was developed to be brief, clinically actionable, sensitive to change, broadly applicable to multiple chronic conditions, culturally sensitive, and easily understood.

Methods: SymTrak was developed from multidisciplinary expert panels, existing data, extant instruments, and focus groups.

Results: Items tapped psychological, functional, cognitive, pain, sleep, fatigue, and other physical symptoms. Focus groups preferred 3 to 5 item response options, but were neutral regarding frequency versus severity format. Four frequency options (never, sometimes, often, always) were chosen for all items to balance clinical brevity with sensitivity to change. Physician and nurse practitioner focus groups highly valued instrument performance: administrable within 5 minutes; easily retrievable visual graphics from medical records; viewable at item, domain, and total-score levels. SymTrak was perceived as more useful for tracking than screening. Clinicians preferred a single brief physical symptom domain instead of multi-item pain, sleep, and fatigue domains. Patient and caregiver focus groups valued item wording: simple language; and applicability regardless of roles. They provided numerous helpful item revisions during “think aloud” interviewing, held subsequent to focus group sessions. They also rated SymTrak highly useful on an 8-item usability scale and were enthusiastic about its use as a communication aid with providers. Version 1.0 (25 items) was finalized and is currently being psychometrically tested.

Conclusions: Focus groups of clinicians, patients, and caregivers were helpful in developing Version 1.0 of SymTrak and evaluated it to be useful for tracking symptoms in primary care.

B179
Rates of Falls and Serious Injuries After Removal of Bed-Alarms at Hebrew SeniorLife
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Supported By: There are no relevant financial disclosures to submit.

Background: There is evidence that removing bed alarms in nursing homes creates a more comfortable environment for residents and does not necessarily lead to increased fall rates. There is also evidence that the implementation of “purposeful rounding” decreases fall rates.

Methods: In March 2014 Hebrew SeniorLife stopped the routine use of bed-alarm alarms. A program of purposeful rounding was instituted, in which staff check in with residents on an individualized schedule. We collected data on fall rates, as well as rates of serious injuries from falls, for 17 months before and 8 months after the elimination of bed alarms to measure whether their removal negatively impacted falls or fall-related serious injuries. These data were then compared using independent sample T tests. A staff survey was also conducted to assess the impact on the environment on the floors.

Results: There was a statistically significant increase in the number of falls per 1,000 patient days following removal of bed alarms (mean = 5.80 ± 0.67 falls per 1000 patient days before versus 6.70 ± 0.62 after, t(14) = 2.83, p < .05). With the exception of two months, however, this increase was within the upper control limit (+2 SD) of the pre-removal rate. The rate of serious injuries resulting from falls did not significantly increase (0.20 ± 0.12 serious injuries per 1000 patient days before versus 0.25 ± 0.10 after, t(14) = 0.95, p = .35). Staff surveys conducted after removal of bed alarms indicated the floors were quieter and less chaotic.

Conclusions: Removing bed-alarms led to a slight increase in falls but no significant increase in fall-related serious injuries. This slight increase may be an acceptable trade-off for patients’ increased independence and greater mobility, as well as improved overall quality of life. Further research at this institution will help clarify the extent to which these benefits outweigh the risks of bed-alarm removal.

B180
What Older Adults with Restricting Back Pain Worry About: Deteriorating Function, Reliance on Others, Distrust of Medications
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Supported By: NIH, Rheumatology Research Foundation

Background: Although back pain is the most common type of pain disorder reported by older adults, its impact on the daily life of older adults remains poorly understood, particularly among racial/ethnic minorities. In this qualitative study, we explored older adults’ beliefs and attitudes regarding restricting back pain (RBP- back pain severe enough to restrict activity).

Methods: We conducted in-depth, one-on-one interviews and focus groups with older adults (ages ≥65 years) who reported RBP within the past 3 months. We recruited participants from 3 different sources (interviews and focus groups in Connecticut and focus groups in New York City) to ensure a racially diverse sample; recruitment efforts ended once thematic saturation was achieved. A semi-structured discussion guide was used to prompt participants to discuss their
beliefs, attitudes, and experiences regarding RBP. Audio recordings were transcribed and analyzed (using NVivo) in an iterative process to develop thematic categories.

Results: We conducted 23 interviews and 16 focus groups (n=70 participants), for a total of 93 participants. Participants were mostly female (68%). The median age was 83; over one-half lived alone, and 46% belonged to a minority group. We identified 3 themes related to worry and fear about RBP (Table 1): (1) worry and preoccupation with deteriorating function [and need for mobility aids], (2) concerns about loss of independence and reliance on others, (3) fear of medication. Themes did not vary by race/ethnicity.

Conclusions: This study suggests that older adults with RBP worry about future physical deterioration, reliance on mobility aids, and dependence on others. Older adults described a common distrust of medications. A better understanding of the attitudes and beliefs, including worries and fears, of older adults with RBP, will enable clinicians and researchers to gain insight to potential barriers and facilitators to engaging in or adhering to RBP management.

Table: Illustrative Quotes of Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Worry and preoccupation with deteriorating function including reliance on mobility aids</td>
<td>I have finally succumbed to a walker aid in a case I never thought I would. I had to.</td>
</tr>
<tr>
<td>2. Participant fear about loss of independence and reliance on others</td>
<td>It makes me sad and makes me feel helpless. I don’t want to get my medication anymore.</td>
</tr>
<tr>
<td>3. Distress of medication</td>
<td>It is the last thing I want to do</td>
</tr>
</tbody>
</table>
B183
Functional Outcomes of Sub-Acute Rehabilitation in Older Adults with Advanced Cancer

Background
As the number of long term cancer survivors increases, the role of rehabilitation becomes more intriguing. Few published reports have explored the effectiveness of rehabilitation for advanced cancer patients, particularly in older adults, which is the study’s objective.

Methods
A retrospective chart review was conducted on all hospitalized patients, 65 and over, with advanced cancer, transferred to subacute care from 6/2013 to 6/2014. Demographics, cancer diagnoses, Charlson comorbidity index, functional status and lengths of stay (LOS) were collected. Wilcoxon signed rank test for matched pairs was used to assess differences in function from subacute admission to discharge. Either Fisher’s exact tests or Wilcoxon rank sum tests were used to assess associations between demographic and clinical factors with each functional outcome.

Results
Of the 97 subjects, 67 had complete function data, and 58 had LOS ≥ 7 days. Among the 58 subjects, mean age was 77, 40% were male, 50% married, 66% had documented metastatic disease and mean Charlson score was 8.4. 78% were discharged home after an average sub-acute LOS of 22.8 days and 2% were referred to hospice. Though 82% reported being ADL independent prior to hospitalization, at time of sub-acute admission, subjects did require moderate to total assistance for bed mobility (BM), transfers, lower extremity dressing, ambulation assist (AA) and ambulation distance (AD) <50 feet (40%, 35%, 74%, 43%, 88% respectively). Among these patients, the majority showed improvement in function: 87% improved in BM, 80% in transfers, 81% in lower dressing, 68% in AA and 86% in AD. All improvements were highly significant (p<0.0001). Results also showed significant associations between: presence of metastatic status and AA (p=0.0233), BMI and AD (p=0.029), and Charlson score and AA (p=0.014). Specifically, presence of metastatic status yielded lower proportion of functional improvement for AA, those with improved AD had higher BMI, and those with improved AA had lower Charlson scores. Albumin level, age and cancer prognostic groups were each not associated with any outcome.

Conclusion
In this study, rehabilitation was beneficial to the majority of cancer patients admitted to subacute care. Further studies should be conducted to help physicians and physical therapists to more accurately predict expected outcomes for older cancer patients and their families.

B184
Frailty Index as Predictor of Outcomes in Low Intensity, Long Duration Rehabilitation
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Supported By: Ontario Ministry of Health and Long Term Care, AHSC AFP Innovation Fund

BACKGROUND: Frail elderly patients can benefit from low intensity, long duration inpatient rehabilitation programs after acute hospitalization, by improving their functioning and mobility, and allowing them to return to the community. There is a need for an assessment tool which can identify the subgroup of frail elderly patients who may benefit most from this type of rehabilitation.

OBJECTIVES: To identify the accuracy of the Comprehensive Geriatric Assessment-Frailty Index (CGA-FI) in predicting outcomes in patients admitted to low intensity, long duration rehabilitation.

DESIGN: Prospective cohort study with assessments conducted on admission and discharge.

SETTING: Baycrest’s low intensity, long duration rehabilitation unit in Toronto, Ontario.

PARTICIPANTS: 104 patients above age 60 admitted between September 2011 and December 2012.

MEASUREMENTS: The CGA-FI was completed within ten business days of admission to the low intensity, long duration rehabilitation unit. Discharge outcomes included discharge total Functional Independence Measure (FIM) score and discharge residential status.

RESULTS: The areas under the receiver operating characteristic (ROC) curves were 0.79 (95% confidence interval [CI] = 0.71, 0.88) for a discharge total FIM score of 78 or greater and 0.75 (95% CI = 0.64, 0.86) for a discharge destination to previous home in the community. A CGA-FI score equal to 0.39 or lower had the best accuracy in predicting both a discharge total FIM score of 78 or greater and discharge destination to previous home. The CGA-FI score equal to 0.39 or lower had a positive predictive value (PPV) of 0.75 and negative predictive value (NPV) of 0.75 for patients achieving a discharge total FIM score of 78 or greater, and a PPV of 0.91 and NPV of 0.50 for patients discharged to their previous home in the community, respectively.

CONCLUSION: The CGA-FI is an assessment tool which may be helpful in determining the subgroup of frail elderly patients who may benefit most from low intensity, long duration inpatient rehabilitation, allowing them to return to the community.

B185
Improvements in Cardiorespiratory Fitness measured with 6 Minute Walk Distance in older Veterans participating in the Geroit exercise program at four VA sites

Supported By: The Geroit dissemination and implementation program was sponsored by the VA Office Of Geriatrics and Extended Care Transformative 21 Non-Institutional Long Term Care Program and supported by participating VA Medical Centers and GRECC’s.

BACKGROUND: Older adults often present with decreased physical activity levels, accompanied or followed by functional decline, especially in the setting of multiple comorbidities, increasing the risk for falls, frailty syndrome, disability and death. Exercise programs may counter this process by enhancing cardiorespiratory fitness (CRF). However, the gold-standard measurement of this parameter can be limited to the research setting. We used the 6 minute walk distance test (6MWD) as a clinical marker to address CRF changes in participants of Geroit, the only nationwide exercise program focused on community-dwelling older Veterans.

METHODS: We identified Geroit participants from Baltimore, Canandaignia, Greater Los Angeles, and Miami VAMC’s, assessed their demographics, anthropometrics, and compared (dependent t-test) their 6MWD at baseline and after 3 months of Geroit intervention. The measurement of 6MWD was standardized across the four sites.

RESULTS: Seventy-five Veterans, mean age 71.7 ± 11.5 years, 97% male, 56% white non-hispanic, 43% black non-hispanic, Body Mass Index of 32.1 ± 6.8 kg/m2, were included. Baseline 6MWD was 400.5 ± 133.5 meters, the 3-month follow up was 433.4 ± 140.8 meters (p<0.01), an improvement of 32.5 ± 57.7 meters.
Conclusions: We found significantly below-than-average CRF in older Veterans, which improved after intervention. There was significant variability in the observed changes, indicating different baseline CRF and functional reserve (pre-frailty versus normal function, or frailty in some cases), leading to variable responses to exercise. Furthermore, while the mean increase of 33 meters is greater than the described small meaningful change (20 meters), the resulting 3-month value falls short of desirable targets (600 meter) to maintain independence throughout the lifespan. Further studies are needed to confirm and better understand CRF in older Veterans, and in whom greater improvements might be expected. Exercise is the only effective intervention to prevent or delay the frailty syndrome. Long-term access to exercise programs such as GeroKit may be needed to fuel continued CRF progress over time, and support to these models of care is warranted.

B186 Outcomes for Multiple Fractures in a Geriatrics Fracture Center
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Background: Hip fractures are a leading cause of nursing home admission and injury-related death in older adults in the US. The minimal research on multiple fractures suggests they have worse outcomes than isolated fractures, but little is known about this population. This study compares characteristics and outcomes of patients presenting with multiple low-energy fractures versus an isolated hip fracture.

Methods: This is a retrospective analysis of the Highland Hospital Geriatric Fracture Center registry. Subjects include patients ≥60 years old admitted from 4/1/05-4/20/13 with a proximal, native, low energy hip fracture. Patients with a hip fracture were compared to patients with a hip plus another fracture. Demographics, comorbidities, in-hospital and post-hospital outcomes were recorded. Descriptive statistics categorized the overall population, and bivariate analyses using chi square and independent t-tests analyzed differences between the groups.

Results: 1353 patients were included in the study; 60 (5.1%) presented with a simultaneous second fracture. 96% were Caucasian and 76% were female, with mean age of 85.2 ± 7.9 years. No significant differences were seen between the two groups regarding comorbidities, mobility or function upon admission, although there was a trend toward women having a higher likelihood of multiple fractures than men (5.7 vs. 3.3%; p=0.09). There was no difference in time to surgery or length of stay. Overall complications (59.4 vs. 45.5%; p=0.02), renal insufficiency (30.4 vs. 19.9%; p=0.04), pneumonia (7.2 vs. 3.1%; p=0.08) and in-hospital death (7.2 vs. 2.3%; p=0.03) were more common in patients with multiple fractures. Patients with multiple fractures were more likely to reside in a skilled nursing facility at 1 month (44.9 vs. 32.4%; p=0.03) and 3 months post-op (30.4 vs. 20.7%; p=0.05), but not at 12 months (18.8 vs. 15.1%; p=0.4).

Conclusions: Patients with multiple fractures represent a small but high-risk subset. Although they have no significant differences in baseline health and receive similar care, they experience significantly more complications, in-hospital death rates and longer skilled nursing facility lengths of stay. To improve outcomes, a focus on early mobility may help to reduce complications such as pneumonia and renal insufficiency, leading to shorter skilled nursing home stays.

B187 The Cost of Pre-injury Warfarin for Elderly Americans with Isolated Hip Fractures

Background
Isolated hip fractures are associated with high 1-year mortality (10-26%) exacerbated by delays in surgical fixation. With >20 million Americans on warfarin older patients commonly present with elevated INR at the time of hip fracture which may delay repair.

Methods
We queried a 5% random sample of Medicare beneficiaries (2009-2011; n = 864,604) for patients hospitalized with isolated hip fracture (ICD-9 diagnosis code [820.00-820.03, 820.09, 820.10-820.13, 820.19, 820.20-820.22, 820.30-820.32, 820.8x, 820.9x] + procedure code for surgical fixation [79.35, 81.51-81.53]). Pre-injury warfarin use was determined using Part D claims. We compared patient demographics, co-morbidities, time to surgery, hospital length of stay (LOS), 30 day mortality, cost of index hospitalization, and overall survival utilizing univariate tests of association, multivariable models, and survival functions.

Results
Of 9,465 patients with isolated hip fractures 492 (4.5%) were on warfarin when injured. Age and sex distribution were similar between cohorts. Warfarin patients had more comorbidities (mean Elixhauser Score 5.6 vs. 4.2, P<0.0001). In univariate analyses warfarin patients had increased time to surgical repair (mean 1.9 vs. 1.2 days, P<0.0001), longer LOS (median 6 vs. 5 days, P=0.0001), higher 30-day mortality (8.9% vs. 5.0%, P<0.001), and ~10.8% excess costs for index hospitalization (mean charges $55,565 vs. $49,955, P=0.002) compared to non-users. In multivariable analyses controlling for Elixhauser Score, age, and gender, pre-injury warfarin use delayed surgical repair (0.61 day, 95% CI 0.48, 0.73) and increased LOS (1.04 day, 95% CI 0.73, 1.36) and total charges ($4,195, 95%CI 787, 7,603). Unadjusted 1-year mortality was 30% for warfarin users and 20% for non-users.

Conclusions
Patients on warfarin at the time of hip fracture experience delays in definitive repair with excess LOS, charges, and mortality. This is possibly due to surgeons allowing INR to drift down rather than risk volume overload with plasma reversal or incur added costs with factor-based reversal. The risk benefit ratio of chronic anticoagulation must be carefully considered in patients who are considered high risk for hip fracture (e.g., gait instability, osteoporosis). Given the costs of treatment delays, the expense of factor-based reversal may be warranted in patients on warfarin at the time of hip fracture.

B188 Surgical outcomes in patients ≥ 65 years following redo hemodialysis access
J. Ouanes, F. Sieber, J. Reifsnyder, F. Sieber. 1. Anesthesiology, Johns Hopkins Bayview Medical Center, Baltimore, MD; 2. Surgery, Johns Hopkins Bayview Medical Center, Baltimore, MD.

Introduction:
Nearly 50% of renal dialysis patients in the U.S. are geriatric (1). The most appropriate surgical procedure for dialysis access in the elderly is controversial because these procedures are associated with a number of complications (2,3). This report documents the surgical outcomes in a high-risk elderly population with end-stage renal disease undergoing redo hemodialysis access.

Methods:
This single surgeon (TR) retrospective case series (n= 57) included all patients aged 65 years and older undergoing redo dialysis access surgery in a major medical center from 2006-2014. Data collection used an American College of Surgeons National Surgical Quality Improvement Program template with modification appropriate for dialysis access procedures. Data was reported by percentage and/or mean with standard deviations (SD).

Results:
The population included 52% males with mean age (±SD) 73±6 years. BUN and creatinine levels were 50±32 mg/dl and 5.9±3.7 mg/dl, respectively. Mean Charlson score was 8±2, with 78% ASA 3 and 14% ASA 4. 54%, 30%, 12% and 4% of patients had undergone 0, 1, 2, and 4 previous dialysis access attempts prior to age 65, respectively.

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97% cases were elective, and 93% of patients were discharged home on the day of surgery.

There was no 30-day morality. A third of the patients had a complication within 30 days of operation: 6 (10.5%) with Steal Syndrome, 7 (12.3%) fistula failure, 2 (3.5%) hematomas, and 1 (1.8%) wound infection. Of the 16 patients with a complication, 7 required additional therapy to treat the complication. Unplanned readmission to the hospital within 30 days following surgery for steal syndrome or severe hemorrhage at the surgical site was seen in 2 (3.5%). Redo dialysis access was required in 25 (43.9%) patients and occurred around 8.7 months (1 day to 32 months). A second redo surgery, was performed in 9 (15.8%) within a mean period of 6.3 months (1 day to 21 months) from the initial surgical procedure studied.

Discussion:
Redo dialysis access can be safely performed in a high risk geriatric population on an outpatient basis. This study documents that the rate of complications by 30 days post-operatively is within the expected range and the reported complications are non-life-threatening.

Citations

B189 Encore Presentation
Functional Decline in Liver Transplant Candidates: Results from the Functional Assessment in Liver Transplantation (FrAILT) Study
Supported By: NIH/NIA (GEMSSTAR)
American College of Gastroenterology
American Federation on Aging Research
T. Franklin Williams Scholars Program
John A. Hartford Foundation

Background: Cirrhosis is characterized by sarcopenia, malnutrition, and progressive functional decline. Whether the changes in physical performance that predict outcomes in older persons also predicts outcomes in those awaiting liver transplantation (LT) is unknown.

Methods: Consecutive adult outpatients (pts) listed for LT with laboratory Model for End-Stage Liver Disease (MELD)≥12 underwent functional status assessments at baseline and every clinic visit using the Short Physical Performance Battery (SPPB; range: 0–impaired to 12=robust) consisting of walk speed, timed chair stands, and balance. ΔSPPB/month(mo)=last minus baseline assessment / time in mos. Competing risks models associated ΔSPPB/mo with death/delisting for being too sick for LT, treating deceased donor LT (DDLT) as the competing risk.

Results: Included were 241 listed LT pts with MELD≥12, median age 59y. At a median follow-up of 8.4 mos, 12% died/were delisted, 23% had DDLT. Pts who died/were delisted vs. underwent DDLT vs. still waiting differed by median MELD at baseline (17 vs. 16 vs. 14), last visit (17 vs. 18 vs. 15), and MELD/mo (0.1 vs. 0.2 vs. 0.0) [p<0.01 for each]. In pts who died/were delisted vs. DDLT vs. still waiting, median SPPB was 10 vs. 11 vs. 11 at first visit (p=0.4) and 8.5 vs. 10 vs. 11 at last visit (p=0.01). 61% vs. 43% vs. 32% experienced decline in SPPB (p=0.02) with a median ΔSPPB/mo of -0.2 vs. 0.0 vs. 0.0 (p<0.01). In univariable competing risks analysis, ΔSPPB/mo was associated with a 2.7-fold increased risk of death/delisting (95% CI = 1.5–5.1; p<0.01), which remained significant after adjustment for ΔMELD/mo and baseline assessment score (hazard ratio = 6.2; 95% CI = 3.0–12.7; p<0.01).

Conclusions: LT candidates experience significant functional decline on the wait-list, despite modest wait-time and low baseline MELD. Decline in physical function as measured by SPPB is associated with an increased risk of death/delisting, independent of MELD score. Exercise-based interventions aimed at maintaining physical function may reduce wait-list mortality.

B190 Short Physical Performance Battery Score Predicts Mortality in Older Liver Transplant Candidates: From the Functional Assessment in Liver Transplantation (FrAILT) Study
Supported By: American College of Gastroenterology
National Institute on Aging

Background: The emerging epidemic of older patients (pts) with cirrhosis has led to a sharp increase in the % of ≥65y olds considering liver transplantation (LT). Modifiable factors associated with adverse outcomes in older LT candidates are not well described.

Methods: Consecutive outpts listed for LT with laboratory Model for End-Stage Liver Disease (MELD)≥12 at a single LT center underwent physical functional assessment using the Short Physical Performance Battery (SPPB; range: 0–impaired to 12=robust) consisting of gait speed, chair stands, and balance. Pts were grouped by clinically relevant cut-offs for age < or ≥65y and SPPB ≤ or >9. Logistic regression assessed odds of waitlist death/delisting adjusted for MELD. Area under receiver operating characteristic (AUROC) curves assessed the prognostic ability of SPPB≥9 by age group.

Results: Of 480 enrolled LT pts, 98 (20%) were ≥65y. Pts ≥65y vs. <65y were more likely to have hepatocellular carcinoma (37 vs. 18%), hypertension (57 vs. 39%), and coronary artery disease (12 vs. 3%) [p<0.01 for each], but were similar by median laboratory MELD (15 vs. 16). LT candidates ≥65y had slower gait speed (1.1 vs. 1.3 m/sec; p<0.01), a trend of slower chair stands (12.7 vs. 12.0 sec; p=0.09), but similar balance time (30 vs. 30 sec); SPPB was lower in pts ≥65y vs. <65y (10 vs. 11; p=0.02). At a median follow up of 16 months, rates of death/delisting was higher in age ≥65y vs. <65y (24% vs. 15%; p=0.03) and SPPB≥9 vs. ≤9 (25% vs. 13%; p=0.01). Age ≥65y was associated with a 2.0x increased odds of death/delisting (95%CI, 1.2–3.5; p=0.01). Compared to younger candidates with SPPB≥9, odds of death/delisting were 1.5 (95%CI, 0.8–2.7) for pts <65y with SPPB≥9, 1.2 (0.6–2.7) for pts ≥65y with SPPB≥9, and 4.9 (2.3–10.4) for pts ≥65y with SPPB<9 (p=0.01 test for equality). The MELD-adjusted AUROC for SPPB≥9 to predict death/delisting in pts ≥65y vs. <65y was 0.77 and 0.60 (p=0.02).

Conclusions: Functional impairment, defined as SPPB≥9, predicts death/delisting for all LT candidates, particularly in those ≥65y. These data, evaluating a modifiable risk factor, have important implications for activity-based interventions to reduce waitlist mortality in older LT candidates, who are particularly vulnerable to adverse transplant outcomes.

B191 Adverse Events After Elective Surgery in Older Adults: Impact of Delirium and Other Major Complications
Supported By: NIA: P01AG031720 K07AG041835 K24AG035075; HRSA: D01HP08794

Background: Major postoperative complications and delirium are known to contribute separately to adverse events following surgery in older patients; however, their inter-relationship is not well examined.
Our objectives were to evaluate both the separate and combined association of major complications and delirium with adverse events after surgery.

Methods: We prospectively studied 566 patients age ≥ 70 years without dementia or prior delirium who underwent major elective non-cardiac surgery requiring a minimum 3-day hospital stay. Major postoperative complications, defined as life-threatening events (e.g., unstable arrhythmias, stroke, respiratory failure, sepsis), were adjudicated by an expert panel. Delirium was measured daily using the Confusion Assessment Method and a validated chart review method. Adverse events included prolonged length of stay (LOS) > 5 days, post-acute placement, and 30-day readmission measured by a follow-up interview and chart review.

Results: Of 566 patients, 47 (8%) developed major complications and 135 (24%) developed delirium. The association of the study subgroups with adverse events is shown in the Table. Major complications alone contributed significantly only to prolonged LOS (relative risk, RR=2.8). Delirium alone significantly increased the risk of all adverse events: prolonged LOS (RR=1.9), post-acute placement (RR=1.5), and 30-day readmission (RR=2.3). The highest relative risks for all adverse events were present in the subgroup with both complications and delirium. Delirium exerts the highest attributable risk at a population level (5.8%) for any adverse event.

Conclusions: Major postoperative complications and delirium are separately associated with adverse events and also demonstrate a strong combined effect. Delirium occurs three times more frequently and contributes more to the risk of adverse events at the population level than other major complications.

B192
Combining Preoperative Optimization of Senior Health (POSH) with Enhanced Recovery After Surgery (ERAS) Protocols to Improve Outcomes and Reduce Cost in Colorectal Surgery
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Supported By: There are no financial disclosures relevant to this research.

Background:
Enhanced Recovery After Surgery (ERAS) protocols have been shown to improve outcomes in colorectal surgery; however, questions were raised regarding its utility in the elderly population. Recently, we implemented a multidisciplinary Preoperative Optimization of Senior Health (POSH) program at our institution. We hypothesized that ERAS is beneficial for elderly patients undergoing colorectal surgery, and that combining ERAS/POSH provides additional improvements in outcomes and cost saving.

Methods:
Patients undergoing ERAS colorectal surgery with or without POSH were identified from a prospectively collected institutional database (2/2010-5/2013). Outcomes and costs were compared between patients <65 vs. ≥65 years. The effect of POSH was examined among patients ≥65 years by comparing outcomes and costs between those undergoing surgery under ERAS only vs. ERAS/POSH.

Results:
In total, 676 patients were included; 407 were <65 years and 269 were ≥65 years. Compared to younger patients, those ≥65 years were more often to have a higher ASA score (2.7 vs. 2.5), a malignant diagnosis, and to undergo a segmental colectomy (all p<0.01); but had similar overall complication rates (45% vs. 42%, p=0.53), length of stay (LOS) (6 vs. 6 days, p=0.39), and overall hospital costs ($10,439 vs. $11,367, p=0.20). After adjustment, overall complication rates were similar between younger and older patients (OR 1.10, p=0.59).

Among patients ≥65 years, 233 ERAS-only protocol and 36 were cared for under ERAS/POSH protocols. Compared to ERAS only, ERAS/POSH patients were older (76 vs.72, p=0.001), but had similar race, BMI, ASA scores (2.7 vs. 2.7), diagnosis, and type of surgery. ERAS/POSH vs. ERAS-only was associated with reduction in opioid use (35 vs. 133 mg, p=0.007) and non-significant reductions in overall complications (31% vs. 44%, p=0.15), LOS (5 vs. 7 days, p=0.51), and total hospital costs ($9874 vs. $11599, p=0.62).

Conclusions:
ERAS is feasible and safe in elderly colorectal surgery population, with similar overall complications, LOS, and costs as seen in the younger cohort. While not statistically significant, the addition of POSH to ERAS protocols may be beneficial in providing improvement in outcomes and costs; however, larger studies will need to be undertaken.

B193
Creation of a tool for ascertaining futility of care in the geriatric trauma patient
Z. F. Zhao,1 S. E. Wolf,1 P. A. Nakonezny,2 A. Minhaljuddin,2 R. Rhodes,1 E. Paulk,3 H. A. Phelan,1 1. Surgery, UT Southwestern, Dallas, TX; 2. Biostatistics, UT Southwestern, Dallas, TX; 3. Geriatrics, UT Southwestern, Dallas, TX.

BACKGROUND: We sought to create an easily calculated geriatric trauma scoring system based on three parameters available at the bedside which would aid in determining futility of care.

METHODS: All patients ≥65 yrs were identified from our trauma registry between 1/1/2000 and 12/31/2013. Age, injury severity score (ISS), and units of packed red blood cells (PRBCs) transfused in the first 24 hrs were tabulated. Logistic regression model was used to estimate the odds of mortality from age, ISS, and PRBC after dichotomizing PRBC as yes/no. We then constructed a Geriatric Trauma Futility (GTF) Score that became the sole predictor in the re-specified logistic regression model.

RESULTS: The sample was 3,841 subjects with a mean age of 76.5 years (SD ± 8.1) and mean ISS of 12.4 (SD ± 9.8). In-hospital mortality was 10.8%, and 11.9% received a PRBC transfusion within the first 24 hours of admission. Based on the model, the equation with the highest discriminatory ability to estimate probability of mortality was [age + (2.5 x ISS) + 22(if given PRBCs)]. AUC for the model was 0.82. Selected GTF scores and their probability of dying were: 70=1.5%, 177=50%, 205=75%, 233=90%, 252=95%, 310=99%. The range of observed GTF scores was 67.5 (survivor) to 275.1 (died).

CONCLUSION: The GTF model estimates the probability of dying for injured geriatric patients with a high degree of accuracy. It has the potential to objectively inform discussions of futility.
POSTER SESSION C

Saturday, May 16
12:00 pm – 1:00 pm

C1 The Importance of Spiritual Care: How the Spiritual Assessment ‘Saved’ an Elderly Woman with Delirium
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Background: Delirium is under-recognized by health care providers despite being quite prevalent in hospitalized older adults, can be reversible in nearly half of cases, and is known to be associated with increased mortality. Delirium affects ability to function, quality of life, capacity to care for oneself and make decisions, and ability to communicate with others. Patients sometimes remember the episode after resolution and this can be upsetting. From another perspective, delirium can be very distressing to loved ones as well.

Case Description: Mrs. M. is a 94 year old woman residing in an assisted living community with a past medical history of moderate dementia who suffered a mechanical fall resulting in a left femur fracture. During her admission to the hospital, the primary team, patient, and family struggled with her peri-operative hyperactive delirium. Recognizing predisposing factors for delirium along with precipitating factors can guide treatment for postoperative treatment for delirium. Mrs. M. was at high risk for delirium since admission. A preoperative assessment revealed several risk factors including preexisting dementia, limited functional status with a palliative performance scale of 60%, comorbidities such as dementia and advanced age. Precipitating factors included intraoperative medications, uncontrolled pain, and the ICU setting. The entire health care team worked closely to treat her pain and address all potentially reversible medical issues. As we worked on non-pharmacological interventions, we discovered from a spiritual assessment how meaningful her faith was to her. Based on her spiritual assessment how meaningful her faith was to her. Based on her spiritual needs were addressed.

Conclusion: Many health care providers struggle with managing hyperactive delirium in older adults. Our case highlights the important role of the spiritual assessment in creating a management strategy in caring for older adults with perioperative delirium.

C2 Success made SIMPLE: easier diabetic regimen prevents Hypoglycemia
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Older adults with diabetes, on complex multi-drug regimens and polypharmacy are known to be at greater risk for dangerous sequelae of hypoglycemia, including complications such as falls that may result in hip fracture or even death. It is very important to avoid hypoglycemia in the elderly population.

Case: We present the case of a 79-year-old female with a 13-year history of type 2 diabetes mellitus, complicated by neuropathy and retinopathy, and a history of cerebrovascular disease, hypertension and hyperlipidemia. She was treated with Insulin Aspart 20 units three times a day, Insulin Lantus 100 units at bedtime & Glimiperide 4mg daily. Her blood sugars were noted to be very variable, and difficult to control with Hba1c of 9. She was noted to have repeated episodes in which she reported feeling weak, lightheaded, shaky and was afraid of falling. During these episodes her blood sugars were noted to drop to the 40 - 60 range. She regularly monitored her blood glucose values, which ranged between 61 - 160 before breakfast and 160 - 400 after meals. Patient underwent continuous glucose monitoring (CGM) which measures interstitial glucose levels every 5 minutes for 5 days. At that point she was switched to a simpler regimen of once daily glargine in the morning & Glimipiride daily. She was closely monitored by subcutaneous CGM (continuous glucose monitoring) for 7 days by a small device which measured the interstitial blood glucose. We evaluated the effect of simplifying the insulin regimen on hypoglycemia in regard to frequency (number of episodes <70) and duration (total time spent with BS <70) as well as overall glycemic control as measured by HgA1C. After being on simpler regimen for 5 months her blood sugars were in the range of 78 – 380. However, repeat CGM at this time showed that the excursions of glucose levels <70 and >250 mg/dl were significantly reduced. Her HgA1C decreased from 8.7 to 7.4 on this “Simple” regimen. Finally, her previous periods of hypoglycemia, were completely eliminated (no episodes of glucose<70 on CGM) and she did not have any further episodes of shakiness or lightheadedness.

Conclusion: We conclude: the “Simple” regimen was found to have significantly contributed to this patient’s safety and improved the quality of life.

Our case supports, that in elderly patients, simplification of complex insulin regimen is possible & can improve risk of hypoglycemia with maintained or improving glycemic control.

C3 Slicing multifactorial disease with Occam’s Razor
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Introduction: Behavioral disturbances commonly co-exist with multimorbidity, and as a rule are approached as multifactorial. We present a rare case of behavioral problems where the principle of Occam’s Razor is more appropriate.

Case: An 80 year-old woman with developmental delay, no psychiatric history, hypertension, hypothyroidism, and remote craniotomy for left frontal meningoia presented with abdominal pain in June 2011. CT showed bilateral ovarian masses; on MRI they were complex, cystic, with nodular enhancement. Her family declined further testing. In 12/2013 she was admitted with new auditory hallucinations, which she was aware were abnormal. Head CT was negative and olanzapine was started. In 3/2014, she was hospitalized with increased hallucinations and severe hypothermia (91.1). EEG had no epileptiform activity. She was treated for a urinary tract infection, and valproic acid (VPA) was started. In 9/2014, she was re-admitted for hypothermia and hyponatremia (90 80s) unresponsive to fluids, and tachy-brady arrhythmia with pauses. Neurologic exam was non-focal. Infectious and metabolic workups were normal. Blood pressure and hypothermia improved after 3 days of hydrocortisone 150mg daily. Given the ovarian masses, dysautonomia, new seizure disorder, and improvement on steroids, anti-NMDA receptor encephalitis was the most likely diagnosis. Family declined surgery. She has not been re-hospitalized and remains seizure free.

Discussion: Anti-NMDA receptor encephalitis is an increasingly recognized paraneoplastic syndrome, most common in children and young adults, and often associated with ovarian teratoma. Although only 5% of cases are in patients >45 yrs old, it has been reported in the elderly. Symptoms include early flu-like illness, cognitive and behavioral disturbance, seizure, autonomic dysfunction, and movement disorders. Treatment is immunosuppression and most importantly tumor removal. In the setting of new neuropsychiatric symptoms, seizures, dysautonomia, and ovarian masses, paraneoplastic NMDA receptor encephalitis is important to consider as a possible unifying explanation.
Natural history of iliac artery aneurysms (IAA) presenting as deep venous thrombosis (DVT) in an 88 year old man.

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Case: 88 year old man came to the emergency department with left leg swelling of one week duration. Physical examination: In addition to 2+ pitting edema of the left leg and intact pedal pulses there was left lower quadrant abdominal tenderness with a palpable pulsatile mass. Doppler venous imaging identified incompletely occlusive DVT extending from left proximal femoral vein to popliteal vein. Abdominal CT identified bilateral common IAA’s, left 5.7 cm, right 3.8 cm in diameter and a 2.9 cm diameter right internal IAA. The left common IAA was compressing the left iliac vein. Aortic aneurysm was not present. Anticoagulation with enoxaparin was begun as treatment for the venous thrombus. Staged endovascular repair was recommended. He underwent bilateral internal iliac artery embolization in preparation for endovascular grafting, though later declined definitive treatment. The risks of rupture and death associated with symptomatic large IAA were carefully explained. His MMSE was 29/30. He was independent in basic and IADL’s. He was thought to have capacity to decide this specific health related concern. Repeat abdominal ultrasound 10 months later revealed enlargement of the left IAA to 7.6 cm (from 5.7 cm) and right IAA to 5.7 cm (from 3.8 cm). Despite the increased size of the aneurysms and extensive discussion of the potential for rupture he declined to consider endovascular repair. 26 months after the initial presentation he died from hypovolemic shock after iliac artery aneurysm rupture.

Discussion: In contrast to May-Thurner Syndrome in which the right iliac artery compresses the left iliac vein predisposing to DVT, this case presents compression of the left iliac vein by a large symptomatic left IAA and subsequent aneurysmal rupture. Surgical or endovascular repair to prevent rupture is recommended for asymptomatic IAA’s > 3cms and symptomatic IAA’s. This patient was made aware of the risks of rupture through ongoing dialogue with his geriatrician. After being fully informed, he clearly had capacity to decide and did not wish to proceed with proposed interventions. We calculated his Lee Index 4 year mortality at 44%. As an unusual cause of DVT and subsequent cause of death, we illustrate the natural history of symptomatic and enlarging IAA’s and individualized treatment planning by actualizing principles of respect for autonomy, informed consent and informed refusal.

Ceftriaxone-Induced Immune Hemolytic Anemia (CIIHA) in a Nonagenarian Identified at a Skilled Nursing Facility.

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INTRODUCTION: Drug-induced immune hemolytic anemia is a rare phenomenon with incidence estimated around 1 in 1 million of the population. Most of the drugs historically implicated have been antibiotics, with incidence estimated around 1 in 1 million of the population. Ceftriaxone is one of the most commonly prescribed medications that is used to treat a variety of infections. The first case of immune hemolytic anemia associated with ceftriaxone was first seen in November 1987. We describe a case of ceftriaxone-induced immune hemolytic anemia (CIIHA) discovered in an unlikely setting, a skilled nursing facility (SNF), in an elderly patient.

CASE PRESENTATION: A 90-year-old high-functioning female presented to the emergency department (ED) for complaints of worsening lower back pain. Of note, she had recently received an epidural corticosteroid injection for chronic lumbar spinal stenosis. During her workup, she was found to have vertebral osteomyelitis. The patient was started on intravenous ceftriaxone for treatment and eventually was discharged to a skilled nursing facility for rehabilitation. During routine monitoring of the patient’s laboratory results, her hemoglobin and hematocrit were found to be dropping precipitously. With no clinical evidence of bleeding, a low haptoglobin level, and an increased reticulocyte count, the diagnosis of drug-induced hemolytic anemia was entertained. The peripheral blood smear revealed spherocytosis. The patient was transfused with packed red blood cells (PRBC) and her antibiotic was switched. A direct anti-globulin test (DAT) was ordered, which revealed anti-C3 positivity, thus confirming the diagnosis of ceftriaxone induced hemolytic anemia. Her hematologic profile eventually improved and the patient ultimately did well.

DISCUSSION: Prompt recognition of this phenomenon is extremely important to avoid further complications and even death. To our knowledge, this is the oldest recorded patient to have this reaction and the first report of ceftriaxone-induced hemolytic anemia diagnosed in a skilled nursing facility. We believe that this case is valuable as it should increase awareness of this rare, often fatal adverse effect of a common medication in an unlikely age group in a non-hospital setting.
C7  Not Just Another Case of Dry Eyes and Conjunctivitis
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BACKGROUND: Ocular rosacea is a chronic disorder involving inflammatory, vascular, and glandular changes of the eyelids and ocular tissue. Symptoms include ocular irritation, itching, burning, pain, tearing, dry eyes, or photophobia. There is a connection between cutaneous rosacea and ocular rosacea. Up to 50% of patients with cutaneous rosacea will develop ocular rosacea.

CASE: An 86 year old female with diabetes mellitus, atrial fibrillation, osteoarthritis, acne rosacea and dry eye syndrome developed worsening vision with difficulty reading, blurring, “redness”, and crusty discharge. She was seen by an ophthalmologist three weeks after onset of symptoms, diagnosed with viral conjunctivitis, and treated with topical erythromycin and artificial tears. Visual acuity was count fingers at five feet in the right eye and 20/200 in the left eye. Over the course of the next 8 weeks, she was seen several times by the ophthalmologist for keratoconjunctivitis sicca treated with erythromycin ointment and 8 times daily artificial tears with minimal improvement in symptoms. She continued to complain of inability to open her eyes due to burning and inability to read. Eye exam revealed injected conjunctivae with palpebral edema, watery discharge, and meibomian gland plugging consistent with ocular rosacea blepharitis. Skin exam revealed erythematous papules on her cheeks, nose, and forehead. Systemic doxycycline was prescribed to treat ocular and facial rosacea. Ophthalmologic exam revealed corneal epithelial defects and limbal neovascularization, which was treated with topical steroids and antibiotics. Symptoms resolved within one week; blepharitis cleared. Visual acuity improved over 8 weeks to 20/50 right eye and 20/60 left eye. Maintenance therapy consists of warm compresses and natural tears daily and metronidazole gel to facial rosacea.

DISCUSSION: This case demonstrates the importance of screening patients who have cutaneous rosacea for ocular symptoms. Treatment for ocular rosacea depends on the severity of symptoms and ranges from local treatments including lid hygiene, lid massage, warm compresses, ocular lubricants to topical antimicrobial and corticosteroids. In more severe cases systemic therapy with a tetracycline is indicated.

CONCLUSION: Patients with cutaneous rosacea should be assessed for symptoms and signs of ocular rosacea since early treatment can prevent complications including severe corneal damage and vision loss.

C8  The Curious Case of the Blue Man
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Background: Cognitive impairment can be due to a wide range of causative factors. While there are the common organic causes that are well documented including but not limited to thyroid disease and vitamin deficiencies, there are several less studied agents that could contribute to cognitive impairment like ingestion of colloidal silver and 2,3,7,8-tetrachloro-dibenzo-paradioxin (Agent Orange) that require further investigation.

Case Report: Mr. S is a 66 year old community dwelling male who presented for recent cognitive decline. The patient had suffered multiple episodes of confusion with bizarre behavior in the months prior to his evaluation; his wife found him sitting in the garage making hundreds of phone calls to random phone numbers and also placed a call to the operator and asked to speak to Facebook. The patient had a very noticeable blue/silver discoloration of his skin. When dissecting his history he admitted to ingestion of a highly concentrated colloidal silver solution for at least 2 years daily for what he perceived as potential medicinal purposes. Also, he was a Vietnam War Veteran and had high levels of exposure to Agent Orange during his service. Additionally he had a history of alcohol intake. His initial Montreal Cognitive Assessment (MoCA) score was 20 with a MoCA-MIS score of 5. Basic blood work and imaging were obtained, including a heavy metals screen, which all came back negative. Given his unusual presentation, neuropsychological testing was obtained and showed executive function impairment, non-annestic learning/memory disturbance, motor/psychomotor slowing, and reduced visuospatial functions. His presentation and testing were not consistent with Alzheimer’s disease given he had intact naming and recognition. In his follow-up appointment he was given the diagnosis of mild cognitive impairment with recommendations to stop his alcohol use, increase physical and mental activity, and stop consumption of colloidal silver.

Discussion: For patients with unusual presentations of cognitive impairment, an extensive history and physical remain key to diagnosis. There has been some evidence that Agent Orange is a risk factor for dementia in exposed war veterans (1). For a patient like this with a mixed etiology, removing all offending agents and monitoring for signs of decline are important for making the correct diagnosis.

Resources

C9  Amyloid deposition as cause of ischemic ileitis leading to small bowel perforation in an elderly male

Introduction:
Amyloidosis is a systemic disease resulting in the deposition of amyloid in various organs. Amyloidosis can also be limited to the gastrentestinal tract and its accumulation can lead to severe complications with poor outcomes. We report a case showing segmental perforation of the ileum caused by amyloidosis.

Case description:
Patient is an 86 year-old male presenting with abdominal pain, non-bloody diarrhea and vomiting. He had a past medical history of hypertension, congestive heart failure, diabetes mellitus, coronary artery disease, prostate hypertrophy, peripheral vascular disease, and prior ischemic colitis status post surgical repair. Physical examination was pertinent for high grade fever, hypotension, altered mental status and abdominal distention with tenderness to palpation. Labs were significant for anemia, elevated troponin levels, acute kidney injury and lactate acidosis. Clinical diagnosis of sepsis secondary to ischemic colitis was made and he was started on antibiotics. Initial imaging findings suggestive of colitis versus superior mesenteric artery stenosis. Multidisciplinary teams were involved including surgery, gastroenterology and cardiology. He was started on anticoagulation as second line treatment. Despite this, he continued to worsen and he expired 10 days after admission. Autopsy revealed segmental ischemic ileitis with amyloid deposition with complete perforation with fecal peritonitis. In addition, he also had extensive amyloid deposition in his heart, blood vessels and kidneys.

Discussion:
Gastrointestinal Amyloidosis can occur with or without systemic amyloidosis. The distribution of clinically apparent gastrointestinal involvement varies with the type of amyloidosis. Senile type is found in 10 to 36 percent of patients over 80 years old and mainly involves the heart, but can also be seen throughout the gastrointestinal tract. Gastrointestinal disease in amyloidosis results from either mucosal infiltration or neuromuscular infiltration and usually presents with malabsorption, protein losing enteropathy, GI bleeding or GI dysmotility. Diagnosis is usually made by colonoscopy and mucosal biopsy showing amyloid deposition. Ischemia is rare complication of GI amyloidosis.
C10
I Do Not Have Flu, I Got My Vaccine
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A 73 year old male patient with past medical history of lymphoma, prostate cancer was brought to Emergency Department with a change in mental status and fall. He reported having a fever, muscle aches, sore throat and fatigue for the 1 day. Patient received seasonal flu vaccine 1 month prior to his hospitalization. His temperature was 99.5 F and rest of the physical examination was unremarkable.

Laboratory data demonstrated normal BMP, mild elevation in WBC, elevation of liver enzymes (AST 300, ALT 100 ). Creatinine kinase was 3000 and continued to rise to as high as 12000 which was thought to be out of proportion to the duration of fall (30 minutes).

Influenza A subtype H3 positive, Mycoplasma IgM antibody positive; PCR negative. His EEG, Chest Radiograph were unremarkable.

He had aggressive intravenous fluids and was treated with Azithromycin and Tamiflu, His renal function stayed stable and patient improved remarkably within 3 days. His CK did trend down.

Discussion:

Influenza is an acute and usually self-limited febrile respiratory illness that can cause significant mortality in the elderly. Influenza viral characterization data indicates that 48% of the influenza A (H3N2) viruses collected and analyzed in the United States from October 1 through November 22, 2014 were antigenically “like” the 2014-2015 influenza A (H3N2) vaccine component, but that 52% were antigenically different (drifted) from the H3N2 vaccine virus. Decreased vaccine effectiveness has been observed with antigenic drift in past seasons. Vaccine effectiveness in patients over 65 years of age is with time, in preventing laboratory-confirmed influenza infection was 61 percent (95% CI 5 to 84 percent) during the first 100 days after vaccination. Influenza vaccine prevents the severity of illness in patients over 65 years of age. The extrapulmonary complications including rhabdomyolysis, myocarditis and acute kidney injury are uncommon. Heparin involvement is rare. Elevation of hepatic enzyme levels has been reported in 2.7% of individuals during an outbreak of influenza A.

Conclusion:

Due to drifted influenza A (H3N2) viruses, CDC has recommended Influenza vaccine will protect against non-drifted circulating vaccine viruses and also it offers cross protection. Prescribing neuraminidase inhibitor antiviral medications for treatment and chemoprophylaxis as an adjunct to vaccination improve outcomes.

Ref:

C11
Atypical Shingles, When the Clinical Picture is Not All There
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Supported By: None, no financial conflicts

Varicella zoster virus is the common agent for varicella (chicken pox) most commonly presenting during childhood. After years of dormancy, the virus may reactivate presenting as “herpes zoster,” commonly known as shingles, which occur with increased frequency in elderly patients. The most common clinical picture is identified by the characteristic appearance of a very painful, herpetiform rash. The appearance of the characteristic herpetiform rash give the clinicians the clue to a prompt diagnosis and initiation of treatment. In a less common presentation, the clinical picture does not involve the skin signs and/or pain which can pose a challenging diagnosis. In recent years we have seen an increase in atypical presentation of shingles, confirmed by serologic studies. We present three cases of elderly patients who were seen in our clinic with atypical constellations of symptoms, the challenge in diagnosing and timing of treatment. The three patients were in their late-eighties at the time of onset of symptoms and all had received the herpes zoster vaccine at least 4 years earlier. In case #1 Mrs. ED presented with 1 weeks of sudden onset pain on right hemithorax which extended in a half belt fashion from below the lower portion of the scapula radiating forward about the right costal margin to the RUQ, there were no skin findings. Was seen twice in one week at the ER but work up failed to reveal an etioloogy for pain, after 9 days with pain, a PCR-HZ serology was done which was positive with increased titers. Case #2 Mr. HK presented with sudden onset headache and anodynia of left parietal area of his scalp. There were no rashes or other visible skin abnormalities. Admitted to the ER for evaluation, lumbar puncture was done reported positive PCR-HZ titers. Case #3 Mr. WB presented with a painless, palpable skin rash on the arch of the left foot, punch biopsy was reported as positive Tzanks smear, PCR-HZ serology dose was positive with increased titers. They all received antiviral therapy inspite of the delay in diagnosis. Vaccination is the single most important strategy for the prevention of complications, but recent reports suggest that the immunity conferred by the vaccine is not as long lasting as initially expected. We reviewed the literature and present the available information on atypical shingles presentations and the latest reports on the vaccine conferred immunity.

C12
Rapid progression of dementia of Lewy bodies in a patient with concurrent Alzheimer’s dementia
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Introduction:

Dementia with Lewy bodies (DLB) is characterized by the presence of Lewy bodies on postmortem brain pathology. Symptoms include cognitive decline, visual hallucinations, REM sleep disorder, Parkinsonism, and fluctuating levels of attention. Presentation of DLB overlaps with Alzheimer’s dementia, often making them indistinguishable in the initial stages.

Case Presentation:

We describe a case of a 65 year old female with history of anxiety who initially presented with memory problems 4 years ago when she noted trouble following directions and remembering conversations. She was nearly functionally independent at that time, and had no history of sleep disorder.

MRI of the brain was unremarkable. Neuropsychological testing showed impairment in multiple cognitive domains. She scored 21/30 on MMSE, and neurologic exam at that time was normal. Lab results were also normal, including Vitamin B12, TSH, H1V, and RPR. Amyvid PET scan was positive for beta amyloid plaques.

Steady decline in cognition and functioning continued, with a more recent rapid change over less than nine months. She began having visual hallucinations, with a waxing and waning level of cognition and attention. Physical exam findings also included cogwheeling in bilateral upper extremities, bradykinesia, bradyphrenia, masked facies, and increased tone throughout.

The patient was started on treatment with donepezil to help with her hallucinations and perhaps improve attention. Levodopa was avoided given that it would likely worsen her cognitive status and hallucinations. Quetiapine was also approved as needed for behavioral issues; however other antipsychotics were avoided in this patient as they could cause significant adverse effects, including neuroleptic malignant syndrome.

Conclusion:
Early detection and diagnosis of DLB is difficult but critical, and can aid in directed pharmacotherapy. Initial symptoms can precede onset of dementia by decades, and early cognitive decline can be gradual and reminiscent of Alzheimer’s dementia. Those with DLB later develop Parkinsonian symptoms; however, by that time progression of cognitive symptoms is already quite significant. DLB progresses much more rapidly than Alzheimer’s dementia, although both may be present simultaneously, as illustrated by our case.

Sexually Inappropriate Behavior in older adults with Dementia

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Background: Although inappropriate sexual behavior in older adults with dementia is uncommon, and it can be problematic for healthcare providers, patients, and caregivers. Treating these behaviors is a challenge, especially in long-term care settings. We report a case of sexually inappropriate behavior in an elderly with dementia.

Method: Case report.

Results: 89-year-old white male was seen in clinic with his daughter. She reports that the patient removed his clothes and frequently touched his genital area. He has been sexually inactive prior to his wife of 50 years demise 2-months ago and now lives with caregivers. Past medical history was significant for peripheral arterial disease, hypertension, and Alzheimer’s disease. Since his prior visit the sexual behavior symptoms have worsened with increased frequency as he verbalized inappropriate sexual comments directed to his female caregiver. This was initially treated with an SSRI citalopram. However, a month later as symptoms worsened citalopram was discontinued and another SSRI paroxetine was started with interval increases in dose as symptoms did not abate. Subsequently due to persistence of symptoms, divalproex was added but later changed to carbamazepine as symptoms did not abate. Subsequently due to persistence of symptoms, divalproex was added but later changed to carbamazepine as patient developed increased confusion and diarrhea. On intermediate follow-up at 6 months after initial symptoms, and with the continuation of non-pharmacologic approaches which included, redirecting, caregiver support group therapy, modifying clothing to prevent easy removal, trial of a same sex caregiver, his family noted persistence of sexually inappropriate talk, however per their observation, he made no physical attempts to engage in sexual behavior.

Conclusions: We report sexually inappropriate behavior in older adults with dementia. These cases are difficult to manage, and therapy includes both pharmacologic and non-pharmacologic approaches.

Persistent pulmonary infiltrates in a febrile neutropenic patient

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Background: Invasive aspergillosis (IA) is a major cause of morbidity in patients with hematologic malignancies. We present, herein, a patient with acute myeloid leukemia (AML) who developed IA to highlight the current challenges in this entity’s microbiological diagnosis and discuss salvage therapy for patients with refractory IA.

Case: A 65 year-old female with AML develops post-induction febrile neutropenia and respiratory failure. She was empirically treated with voriconazole, acyclovir, and cefepime. Chest computed tomography revealed multiple dense pulmonary nodules bilaterally. Diffuse airway hyperemia was noted on bronchoscopy, with persistence of pulmonary densities in chest radiographs despite negative fungal and bacterial cultures on several bronchoalveolar lavage (BAL). Serial serum galactomannan antigen levels were all negative. Cardiothoracic surgery was consulted for tracheostomy placement and lung biopsy. Addition of caspofungin resolved the fever. Lung biopsy revealed perivascular necrotizing microabscesses with fungal stains highlight- ing acutely branched filamentous septate hyphae consistent with azo-ginvasive aspergillosis. Tissue cultures grew Aspergillus fumigatus. Follow up chest radiographs showed initial stabilization, and then gradual resolution of pulmonary infiltrates.

Discussion: The criteria for the diagnosis of invasive aspergillosis require the presence of a susceptible host that display clinical signs and symptoms of this infection. Most patients, however, are treated prior to proven diagnosis, given the limited sensitivity of cultures and risks associated with lung biopsy. Non-culture based procedures include galactomannan and (1→3)-β-D-glucan detection assays for serum and BAL samples, but are known to have low sensitivities in patients on antifungal therapy. Polymerase chain reaction-based assays used in the diagnosis of invasive aspergillosis are promising but currently lack standardization. It is recommended that voriconazole be included in the antifungal regimen in nearly all patients with invasive aspergillosis. However, in the present case, the echinocandin caspofungin was used as a salvage therapy, and is the only echinocandin that is FDA-approved for this indication.
C16 Encore Presentation
Dementia Manifesting as Schizophrenia
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Dementia is a common condition of the elderly, but there are different types and a wide spectrum from mild cognitive impairment to advanced dementia. It may manifest in various ways, including odd behaviors, which make it difficult to differentiate from psychiatric conditions.

An 80 year old female was referred by orthopedic surgery to the medicine clinic for preoperative evaluation for a back surgery. The husband reported progressively increasing odd behaviors as well as impaired memory for the past two years. The patient was talking to photographs of public officials and mailing checks to random organizations claiming to help the government. A psychiatrist diagnosed her with late onset schizophrenia, and the husband was struggling to sneak risperidone into her food, which has only exacerbated her suspicion of him. She was increasingly more dependent on her husband for her IADLs (Instrumental Activities of Daily Living), and her husband was becoming more distressed by her behaviors.

When the patient presented to the clinic, she had an overall normal physical exam and no neurological deficits. Most notable was how she was very neatly groomed, wearing bright makeup and very well dressed. She had a talkative personality and was appropriate during the visit. However, she had very poor insight into her condition. Her CASI (Cognitive Abilities Screening Instrument) score was 82 out of 100, which showed deficits in concentration, processing speed, verbal fluency and executive functions. Laboratory data showed a borderline low vitamin B12 level and an elevated hemoglobin A1c of 10.6, but no other electrolyte abnormalities, thyroid imbalance, or vitamin deficiencies.

The patient was diagnosed with dementia, possibly fronto-temporal dementia, given her symptoms of personality change and behavioral disturbances and performance on the CASI. The patient and husband returned for discussion of these findings, and resources were provided to both the patient and especially the husband to help in his understanding and coping with the condition.

This case illustrates how dementia can initially present as a psychiatric diagnosis due to its symptoms. It is important to seek a more thorough evaluation of cognition prior to attributing odd behavior to a psychiatric condition, especially given the fact that late onset schizophrenia is a rare diagnosis. In addition, it is imperative to inquire further regarding the progression of disease and the associated symptoms, including memory loss and difficulty with IADLs or ADLs.

C17 Encore Presentation
Role of Novel Anticoagulants in a Frail Elderly Patient with Multiple Medical co-morbidity: A Case Study
J. Veeramachaneni, A. Khan, M. Malone, K. Singh. Aurora health care, Milwaukee, WI.

There is limited research in the use of novel anticoagulants (Rivaroxaban) in the oldest old. They may have advantages over warfarin and parenteral anticoagulants. Alternatively, there maybe serious side effects in frail older adults with multiple co-morbidities and polypharmacy.

We describe a case of use of novel anticoagulants in a frail older patient causing severe gastro-intestinal bleed after transitioning to a skilled nursing facility with new primary care physician. Case report: 91-year old female was admitted to the hospital for a pulmonary embolism and was discharged to a new skilled nursing facility with INR of 1.6 on both enoxaparin and warfarin, plan was to discontinue enoxaparin when INR was therapeutic. She had no prior history of gastro-intestinal bleed. Her past medical history included hypertension, congestive heart failure, peripheral arterial disease, chronic obstructive pulmonary disease, hyperparathyroidism, anemia, osteoporosis, cognitive impairment & debility.

In the skilled nursing facility, patient was transitioned to a new primary care physician. A few days after discharge her INR was noted to be supratherapeutic at 5.9. Subsequently warfarin and enoxaparin were discontinued. She was started immediately on rivaroxaban. Two days later the patient presented to our emergency room with gastrointestinal bleeding with dark stools, abdominal pain, emesis & fatigue. Her hemoglobin 5.1 and INR was 2.6. She also had acute kidney injury and ischemic colitis due to hypovolemia requiring admission to the intensive care unit. Her hospital course was complicated by delirium. She received an inferior vena cava filter.

Discussion:
We learned from this case that transitions are a vulnerable time for frail older adults. Her therapeutic window was tight & complicated by a new health care team who may not be aware of the complete medical history. Transition from warfarin to Rivaroxaban is recommended to be done when INR is less than 3. Communication at the time of transition from warfarin to Rivaroxaban between the pharmacy and skilled nursing facility is crucial. Monitoring INR is important every time and when there is initiation of the Beers medications.

Newer oral anticoagulants have very limited studies in the oldest old, combined with lack of physician’s knowledge and communication when patients transition to another facility can lead to major complications. Extra vigilance is needed in these circumstances.

C18 Merkel Cell Carcinoma in a Nursing Home Resident in a Continuing Care Retirement community

Merkel Cell Carcinoma (MCC) is a rare, very aggressive skin cancer which invades subcutaneous fat and muscle and metastasizes easily to skin, lungs, bone, and brain. ME is a cognitively intact 94 year old female with hypertension, spinal stenosis, congenital shortening of right lower leg, scoliosis, osteoporosis, venous insufficiency, bilateral hand weakness, chronic pain from osteoarthritis and ambulation dysfunction who presented with 1 cm pink raised nodule on the right anterior forearm. In February 2014, a shave biopsy revealed MCC. A surgical oncologist at large cancer center recommended wide excision of tumor, possible sentinel node biopsy, PET/CT scan to evaluate for distant metastases, and post-operative radiation therapy. Because of advanced age and debility, ME declined surgery. The nodule continued to increase in size. In September 2014, ME agreed to be evaluated by a local surgical oncologist. The nodule progressed to a large exophytic soft tissue mass 3x5 cm. No axillary or supraclavicular lymphadenopathy was noted. Chest x-ray showed clear lungs. ME underwent successful excision of the mass. Because MCC is very aggressive, the chance of recurrence locally was high without radiation therapy. Because of difficult with transfers and chronic pain, ME declined radiation therapy. At this point in time, there has not been a local recurrence. The philosophy of the health care team at the retirement community is to treat nursing home residents conservatively and to respect the resident’s right to decline treatment. However, because of the highly aggressive nature of MCC, the health care team highly recommended that the resident proceed with surgery. Without excision, the tumor could lead to a chronic painful wound. Sometimes a more conservative treatment approach is detrimental. When treating palliatively, sometimes an aggressive treatment can lead to a better overall quality of life.
C19 Encore Presentation
I can not dance anymore.......Is this fatigue normal part of aging or a disease in old age??

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Supported By: No financial disclosures.

Abstract:

We report on an atypical manifestation of disease in elderly, namely Sleep Related Breathing Disorder. Our case report involves a 94 year old man with a past medical history of systolic hypertension, hyperlipidemia, osteoarthritis, chronic kidney disease III, and late effects of an old CVA with minimal L. sided hemiparesis. A new physical complaint was revealed of feeling more tired with low energy to complete regular daily activities of living (ADLs). This fatigability was noticed about 6 months ago, but most importantly he expressed concern that his quality of life was declining as reported by his dismay on no longer being able to enjoy dancing with a friend once a week.

Clinical history and Review of Symptoms did not reveal any signs of symptoms of typical Obstructive Sleep Apnea either from the patient or his primary caregiver. He also denied concentration, cognition or mood problems. There was no cough, dyspnea, PND, palpitations, night sweats or fever. He visited an emergency room 1 month prior to seeing his geriatrician due to increased fatigue. Blood tests, including a CBC, were unremarkable and he was dismissed with “results normal for his age”. In follow up, the patient’s geriatrician requested a sleep study. The results showed Severe Sleep Apnea with 72% oxygen saturation. CPAP was ordered and after 4 weeks patient stated he feels less tired, was almost back to his daily activities, and once again was dancing weekly with his friend.

This case illustrate that fatigability alone may be an indicator of OSA in the absence of other somatognathology with elderly. Due to the patient’s advanced age, most physicians do not think about sleep studies for a nonagenierians and this case shows the importance of a full differential diagnosis in dealing with new onset of symptoms reported by older adults, especially those with high functional status.

C20 Primary Hyperparathyroidism from an Ectopic Retrosternal Parathyroid Adenoma

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Supported By: Nothing to Disclose

Abstract:

Primary hyperparathyroidism (PHPT) is one of the common endocrine abnormalities and in 0.3-8% of cases it is due to ectopic parathyroid adenomas. Various ectopic locations of parathyroid adenomas (PTA) include the mediastinum, tracheoesophageal groove, thyroid, retrosternal, submandibular triangle, retropharyngeal space. We report a case of PTA in the retrosternal region behind the brachiocephalic vein, a very unusual location.

Case presentation

A 66 year old with PMH of T2DM, HTN and COPD presented with COPD exacerbation requiring intubation. Initial labs revealed hypercalcemia of 12.3 mg/dL, and further work up lead to a diagnosis of PHPT with elevated intact PTH of 376 pg/ml (15-65 pg/ml) and low vitamin D of 12 ng/mL. SPECT showed a 2.3 x 1.3 x 0.9 cm PTA in the retrosternal region behind the brachiocephalic vein. In spite of treatment with isonicotinic acid hydrazide and calcitonin, serum calcium remained high. Patient developed multiple complications including perforated duodenal ulcer, fluctuating mental status attributable to hypercalcemia. Having failed conservative medical management, parathyroidectomy was done. PTA was confirmed by frozen section. The intra-operative PTH level dropped to 40.8 pg/ml. The calcium level normalized within 48 hours. Patient’s neuropsychological symptoms improved significantly.

Discussion

Surgical intervention is necessary in symptomatic PTA’S refractory to medical management. In such cases, precise localization of abnormal parathyroid glands preoperatively is of utmost importance to plan optimal surgical approach. This can be achieved by 99mTc-sestamibi scintigraphy which has sensitivity and specificity of 84.4% and 95.9% respectively. In this case, guided by scintigraphy findings transthoracic approach was successfully used instead of a standard cervical approach for resection of the retrosternal PTA without any complications.

Conclusion

Marked clinical improvement is usually noted after surgical intervention in patients with symptomatic PHPT. The surgical approach is determined by the location of the ectopic parathyroid gland. A transthoracic dissection may be necessary if the adenoma is in complex anatomical locations. 99mTc-sestamibi scintigraphy can be used to localize adenomas preoperatively with high sensitivity and specificity.

C21 Sepsis Missed: Not One Hat Fits All

L. Pang, S. Baharlou, N. Javier. Mount Sinai, New York, NY.

Early detection and management of sepsis saves lives. Hospitals in the state of New York are mandated to implement sepsis screening and early management protocols to prevent morbidity and mortality. As these protocols continue to be a work in progress, gaps need to be identified to ensure proper identification of sepsis triggers particularly among older adults.

A female nonagenarian with atrial fibrillation, polymyalgia rheumatica on chronic steroids, and osteoarthritis presented to the hospital for elective left total hip arthroplasty. Postoperatively she experienced an episode of unresponsiveness and hypotension refractory to intravenous fluids and requiring temporary intubation, vasopressor support and steroids necessitating intensive care unit monitoring. Immediate infectious work-up was unrevealing. The patient improved and was subsequently transferred to the stepdown unit. She continued to exhibit vital sign abnormalities and altered mentation, however the primary team felt these were not necessarily related to sepsis. She failed to meet the minimum sepsis trigger criteria by hospital protocol which did not result in escalation of care to the hospital sepsis team. She was ultimately diagnosed with severe urosepsis. Her hospitalization was prolonged for three weeks with subsequent lengthy subacute rehabilitation upon discharge.

Early detection of sepsis is a requirement to goal-directed therapy which has been shown to improve outcomes. Hospitals often use the 1992 American College of Chest Physicians/Society of Critical Care Medicine Consensus Conference criteria of systemic inflammatory response syndrome (SIRS) as an aide for early sepsis detection. However, studies show SIRS in the geriatric population have poorer sensitivity for identifying severe infection. These patients may not present with classic manifestations, and early warning signs of sepsis are often missed. This case highlights the need to reassess the efficacy and reliability of classic SIRS as trigger criteria for sepsis in the older adult.

C22 When Constipation Kills - A Case of Stercoral Colitis

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Case Presentation: An 87 year-old bed-bound woman with a history of severe dementia and constipation presented to the emergency
department with profuse vomiting, incontinence of liquid stool, and severe abdominal pain in the setting of 4 days of constipation. On exam she was hypotensive to 50/30 and had an acute abdomen. Labs were notable for a lactate of 3.5. She was bolused saline and her blood pressure increased to 100/70. A CT scan demonstrated severe inflammation of the large bowel wall distal to the splenic flexure and dilatation worst in the rectum with stool impaction consistent with stercoral colitis. General surgery performed disimpaction. She was admitted and was treated with gentle per rectum suppositories and IV fluids given fear of perforation. Her abdominal exam improved however her constipation persisted. Gastroenterology recommended tap water enemas, which resulted in successful bowel movements. Given her poor prognosis she was discharged home to hospice.

Discussion: Stercoral colitis is an inflammatory process by which impacted stool leads to pressure necrosis of the large bowel wall and can lead to perforation. It is thought to be more common than previously thought. Advanced age, immobility, and chronic constipation are risk factors. Patients commonly present with signs of focal peritonitis. It can mimic diverticulitis as the site of impaction is frequently the sigmoid or rectum where stool is most dehydrated. Management recommendations are not uniform and differ on aggressive bowel cleansing methods. Perforation occurs not uncommonly and is highly fatal. Given the high morbidity and mortality related to this condition with inconclusive to possibly high risk treatment options and high level of patient suffering, increased awareness of the dangers of chronic constipation and prevention should play a key role in approaching this disease.

C23
An Unusual Mucocutaneous Manifestation of Crohn’s Disease
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Introduction: Crohn’s disease is a chronic inflammatory bowel disease that is characterized by transmural inflammation of the gastrointestinal tract and the formation of granuloma-type tissue with the appearance of cobblestone. Crohn’s may have many extraintestinal features, such as arthritis, iritis, and mucocutaneous manifestations. More often the mucocutaneous manifestations seen are of perianal and peristomal involvement, and in rare cases one may find these manifestations elsewhere. We report the case of an unusual presentation of a mucocutaneous manifestation of this inflammatory bowel disease in a patient that was diagnosed at the age of 62.

Case Presentation: A 67 year old Caucasian male diagnosed with severe Crohn’s disease was evaluated for new skin lesions on his abdomen. He is a patient at an institutional long term care unit. After his initial diagnosis, he had experienced complications including anorectal fistulas. His treatment included the tumor necrosis factor alpha inhibitors (TNF-alpha) adalimumab, certolizumab and infliximab, with poor response. He also failed to respond to oral glucocorticoid agents. After worsening of the anorectal fistulas, he underwent surgery with the creation of an ileostomy in an effort to relieve the anorectal area. It is in the ileostomy area where the initially described lesions were evaluated. Multiple, exuberant, beefy red cobblestone-like lesions were found at the ileostomy mucocutaneous junction, threatening to narrow the ostomy. A biopsy was conducted and pathology revealed “acanthotic skin with underlying reactive fibrosis, chronic inflammation, focal granulation tissue and ectatic blood vessels”.

Discussion: Crohn’s Disease can be a severe and debilitating disease. It is diagnosed more commonly before the age of 30, with a smaller group of patients being diagnosed after the age of 60. This latter group is mostly composed of women. The case we are discussing is also very unusual in the sense that he presented with severe cutaneous/mucocutaneous lesions having the appearance of intestinal cobblestoning. This case illustrates the fact that Crohn’s disease can present later in life and with very severe and unusual satellite lesions outside the gastrointestinal tract.

C24
Weighing the risk of blindness versus cardiac death: A Geriatric Conundrum
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Introduction: Temporal arteritis, or giant cell arteritis (GCA), is the most common vasculitis in adults, classically affecting the temporal artery and other extracranial vessels of the head and neck. Typical presentation includes polymyalgia rheumatica, headache, jaw claudication, and visual symptoms. Coronary involvement complicated by myocardial infarction (MI) is an infrequently seen complication of giant cell arteritis. First line therapy for GCA involves treatment with corticosteroids. Untreated GCA can result in rapid progression to blindness. However, 2013 ACCF/AHA ST-elevation myocardial infarction (STEMI) guidelines indicate that corticosteroids are potentially harmful in the post-MI healing period (class B level of evidence), reporting increased risk of ventricular wall rupture. A meta-analysis from 2003 which encompassed 186 studies previously suggested that steroids may confer a possible mortality benefit. Complicating this picture, more recent literature regarding MI in the setting of GCA reports higher death rates and thromboembolic complications associated with steroid treatment in these scenarios.

Case description: This report highlights a case of a 78-year old woman with a history of hypertension, anemia, anxiety, rotator cuff disease, and a normal left heart catheterization 3 years prior to presentation who was admitted to the coronary care unit with an anterior STEMI in the midst of a workup for temporal arteritis. Patient underwent left heart catheterization with placement of 3 drug-eluting stents. A bilateral temporal artery biopsy was performed which revealed involvement of bilateral arteries. After extensive discussion with the patient and family, the patient was started on corticosteroids. There were no complications reported at 1 month follow-up.

Discussion: This clinical vignette discusses the unusual dilemma involving the use of steroids to treat GCA in the setting of a myocardial infarction in light of the current ACCF/AHA STEMI guidelines recommending against steroid use.

C25
Physicians’ responsibility for deaths occurring at home
M. Yang, M. McNabney. Johns Hopkins Bayview Medical Center, Baltimore, MD.

We present two cases: The first involves the expected death of a 78yo male with multiple comorbidities including dementia and peripheral vascular disease, whose overall health had been declining steadily until he had a seizure followed shortly by his death at home. The sec-
The case highlights importance of dental work-up in diabetics because they are prone to periodontal disease, a major contributor to endothelial inflammation.

C27
A Success Story of Post-stroke Rehabilitation and Functional Recovery
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Intro: Rehabilitation after stroke can be challenging and with uncertain outcomes especially in frail older patients
Case: An 82 year old male presented with a 5 day history of worsening dysarthria and dysphagia, imbalance and falls. He had a prior history of atrial fibrillation on Coumadin, a prior stroke with residual left-sided weakness and mild dysphagia. Physical exam showed mild dysarthria, mild left facial and left sided weakness. MRI revealed subacute ischemia in the left and central pons and old infarcts of the right pons. He was evaluated by speech therapy and was found to have a moderate dysphagia with delayed initiation of the swallow resulting in aspiration of thin and nectar thick liquids. Patient was able to swallow honey consistency liquids, purées and solids and was sent home on this diet. After discharge however, the patient failed quickly due to recurrent falls and leg weakness. A home health nurse who also worked at an inpatient rehabilitation facility thought he was qualified to be admitted for rehabilitation. Initially we did not think this was an option because the patient was discharged after 2 days and did not meet the 3-day inpatient hospital stay requirement for SNF coverage. While in rehab, the patient’s dysphagia continued to worsen which led to dehydration, aspiration pneumonia and subsequent PEG tube placement. The patient received intensive speech and swallow therapy with a combination of Neuromuscular electrical stimulation (NMES) and standard dysphagia treatment for about three months. The patient’s swallowing dramatically improved and his PEG tube was removed. He was also able to restore his previous functional status, walking steadily with a cane, independent in all ADLs and was able to travel to Florida for the winter.

Discussion: This case is a good example of a geriatric syndrome that was addressed with the appropriate treatment, follow-up and venue. There are three things that can be learned from this case. 1) The 3-day inpatient hospital stay requirement for SNF coverage is not required for admission to an acute rehabilitation hospital. This should allow patients that need rehab and are failing in the community to receive appropriate therapy. 2) A PEG tube may be indicated in cases of potentially reversible dysphagia. 3) NMES, although results of trials have been variable, might be an effective treatment modality in appropriate patients.

C28
A Reversible Dementia
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Supported By: PRESENTATION TYPE: Poster
CATEGORY: Case Studies
SUB-CATEGORY: None
KEYWORDS: SSRI, Memory Loss, Dementia

A 79yo man presented with a history of labile mood, lack of energy, trouble with interpersonal relationships, & mild memory loss. TSH and B12 were normal. MRI of the brain revealed ischemic white matter changes. He was diagnosed with depression. Prior to starting citalopram, he scored at the 80th percentile on the Trail Making Test (TMT) B, but dropped to the 45th after 15 months, and the 35th after 18 months on citalopram 10mg daily. Mood improved but was still labile with worsening memory per family. To treat possible pseudo-

C26
Octogenarian with complete, pupil-sparing, 3rd nerve palsy secondary to 4th tooth abscess.
M. Beurlot, A. Rotkiewicz-Piorun, M. Raji. Geriatrics, UTMB, Galveston, TX.

83 yo male with PMH of HTN, NIDDM, HLD, Migrants, Bells Palsy, B cataract surgery, h/o PE/DVT and TIA presented to ER with 5 days of Clindamycin and within 24 hr of 4th tooth extraction, 3rd nerve palsy subsided.

The case highlights importance of dental work-up in diabetics because they are prone to periodontal disease, a major contributor to endothelial inflammation.
mentia, citalopram was increased to 20 mg, but after 4 months, TMT B score was 30th percentile. Other mental status testing was normal & remained stable. The patient never complained of somnolence or adverse effects. PET scan showed no evidence of reduced metabolism. Due to decline in executive function, citalopram was discontinued. After 1 month, TMT B score increased to the 70th percentile & memory returned to baseline. The patient agreed to attend psychotherapy. He has remained stable with no recurrence of executive dysfunction.

Symptoms of depression & dementia often overlap. Studies suggest that depression increases the risk for developing dementia & may be a prodromal phase of dementia. It has also been suggested that antidepressants may decrease the risk of developing dementia. Memory loss & impaired concentration have been reported in ≥1% of patients on citalopram, but SSRIs are thought to have less risk of causing cognitive impairment than tricyclic antidepressants. Although impaired cognition due to a SSRI is not completely surprising, the marked decline in executive function seen in this case, not associated with sedation or a decline in other mental status testing, & present at low doses in a high functioning older adult was unexpected. Cognitive effects of antidepressants in the elderly may be underrecognized, especially if they are attributed to pseudodementia/depression. This case demonstrates the importance of assessing executive function in depressed older adults, & of close monitoring after antidepressant initiation; this includes treatment with SSRIs and patients without complaints of adverse effects. After evaluating risks and benefits, consider SSRI discontinuation and use of nonpharmacologic alternatives such as psychotherapy and exercise in patients with worsened cognition after antidepressant use. Further research is needed about the cognitive effects of depression and SSRI antidepressants.

C29
QUETIAPINE RELATED SYNCOPE: THE IMPORTANCE OF MEDICATION REVIEW
P. Dibba, P. Murakonda, T. S. Dharmarajan. Department of Medicine, Montefiore Medical Center, Bronx, NY.

Background
Syncope results from several etiologies. Identifying a reversible cause is vital in management in long term care. We present a case, where medication reconciliation and discontinuing quetiapine were key to diagnosis and outcome.

Case
90 year old male resident of a nursing home presented with intermittent episodes of syncope. History included dementia, hypertension, coronary artery disease, atrial fibrillation, hyperlipidemia, CKD stage III, and prior stroke. The first syncope occurred while sitting in the dining area, with unresponsiveness for 20 seconds. Vital signs were normal; there was no hypoglycemia. Orthostatic vitals were 124/72 sitting and 122/78 lying. EKG: normal sinus rhythm, 77/min, with rare premature atrial contractions. CBC and basic labs were normal. Resident had an electroencephalogram and holter monitor conducted, which did not yield specific pathology. Medication review: mirtazapine 7.5mg QHS; quetiapine 25 mg BID and 50mg QHS. Since the resident was on quetiapine multiple times, and he was more drowsy during the day, we decided to taper the dose of quetiapine over days. Days later, he had syncope again, late morning. His quetiapine was now discontinued; since then there was no recurrence of syncope.

Discussion
Quetiapine is a second generation or atypical antipsychotic, often prescribed for dementia with mood disturbances. The drug antagonizes D2 dopamine receptors in the post synapses by binding to dopamine receptors. Quetiapine and other atypical antipsychotics were considered more favorable than conventional or typical antipsychotics, with lower likelihood of extra pyramidal symptoms; this view is now debated. Quetiapine, however, has antihistaminic, anticholinergic and anti-alpha-1-adrenergic characteristics. Due to multiple mechanisms of action, sedation is a major adverse drug event, besides the metabolic syndrome and other side effects. Syncope may be a result of postural hypotension or arrhythmia, with sedation adding to the confusions. The value of considering medications as an etiology is readily apparent.

Conclusions
A diagnosis of syncope warrants medication review and reconciliation, before a laborious work-up. Quetiapine is a rare, but reversible cause of syncope, especially in patients with dementia and mood disorders.

Reference
Hasnain M et al. Quetiapine and the need for a thorough QTc study. J Clin Psychopharmacol. 2014; 34: 3-6

C30
Not a Glutton for Gluten! Celiac Disease in Elders.
P. Durairaj, R. Starr. Geriatrics and Acute Care Medicine, Baystate Medical Center, Springfield, MA.

Background
Celiac disease (CD), a chronic autoimmune enteropathy, occurs with ingestion of gluten. Traditionally common in younger adults, this paradigm has shifted recently with a higher incidence in elders. Fifty years ago, only 4% of the patients newly diagnosed with CD were above 60. Per recent studies, 19-34% of cases are now seen in this age group. Although CD is reported to be the most common cause of steatorrhea in patients above 50, many present with atypical symptoms as below.

Case Description
RM is an 86 y/o female treated for a recent Clostridium difficile colitis and doing well. A week later, she developed poor appetite with weight loss and fatigue. She couldn’t recall recent events or names of family members; she required assistance with her ADLs and IADLs. Her symptoms persisted for several months before she presented to the ED with a pre-syncopal episode. On arrival, she was anemic with a hemoglobin of 8.6 g/dL (previously 12.2 g/dL). Gastroenterology was consulted; a diagnostic colonoscopy revealed normal colonic mucosa. Further work up revealed iron deficiency anemia, osteopenia, and hypalbuminemia of 2.8 g/dL. Biopsies showed mild villous blunting of the small bowel mucosa, chronic inflammatory infiltrate in the lamina propria and patchy intraepithelial lymphocytosis. These findings were consistent with CD. Levels of transglutaminase antibody (TTG IgA) and deamidated gliadin antibody were normal. With a gluten-free diet, her symptoms, fatigue and nutritional state improved. Slowly, her iron deficiency anemia and vitamin D levels also improved with supplementation.

Discussion
In elders with CD, symptoms are due to nutritional deficiencies of iron and vitamin D as their intestinal absorption is impaired. Limited mucosal involvement of the proximal duodenum and jejunum minimizes diarrhea. Serologic tests are frequently used for diagnosis and follow up of CD. Diagnosis is confirmed by histologic evaluation of small intestinal biopsy. TTG IgA, with a sensitivity of 90% and specificity of 95%, is the initial screening test. In our patient, despite histologic confirmation of CD, she was seronegative because of the milder degree of enteropathy and partial villous atrophy on biopsy. A high index of suspicion for CD in elders is crucial because they often present atypically. Simple intervention with gluten-free diet corrects symptoms and long term consequences of intestinal malabsorption; thus, improving one’s overall well-being.

C31
Gamma Knife ablation of Brain Lesion
P. Mendiratta, J. A. Brathwaite. Geriatrics, University of Arkansas Medical Sciences-COM, Little Rock, AR.

Background:
Traditional Neurosurgical methods for intracranial lesions is associated with morbidity especially amongst the older adults. Newer technologies like Gamma knife ablation can decrease morbidity among the older adults with rapid recovery due to low post operative complications.

Method Case Report

Results:
A 66-year-old female presented with right sided hearing loss and facial numbness which had started shortly after she developed an abscess of her right upper first molar tooth. She had been treated by her primary care physician with oral antibiotics and analgesics with complete resolution of abscess but partial improvement of facial numbness. Past medical history was significant for depression, COPD, OSA on CPAP therapy, and basal cell carcinoma. Social history was significant for her being full time employed as a fair clerk, a caregiver for her autistic grand daughter and active with all her activities including instrumental activities of daily living. Her physical exam was unremarkable. An MRI of her brain showed a circumscribed mass measuring 1.8 x 1.3 cm extends from the right internal auditory canal through the porous acousticus into the cerebellopontine angle cistern, identified as a new lesion since her last imaging 4 years ago. Further Neurosurgery and ENT referrals confirmed it to be a shwanomma.

Though neurosurgery recommended surgical intervention, the patient decided to pursue gamma knife radiosurgical ablation, to minimize the risk for hearing loss. She successfully underwent partial ablation of the mass with gamma knife and was discharged the same day with full recovery to her baseline functioning in 48 hours. At 3-month follow-up a repeat MRI showed lesion was stable in post ablation size and her hearing loss resolved completely with minimal facial numbness.

Conclusion: Gamma knife radiosurgical ablation is a safe procedure for an older adult for lesions like shwanomma with rapid recovery to baseline level of function.

C32 When is Alzheimer’s dementia a terminal diagnosis?
R. E. Liporaci, J. Fogel. 1,2 Mount Sinai Beth Israel, New York, NY; 2. Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.

Background: At times health care providers and HCPs differ in perception of disease and treatment of co-morbidities. This case illustrates one such dilemma.

Case: 76 y/o female with PMH of DM2, Alzheimer’s dementia FAST 5, HTN, and hypothyroidism admitted with confusion. She attended a day program and lived with a friend. 3 days prior to admission she began experiencing polydipsia, polyuria, increased fatigue, decreased appetite and elevated glucose. In the ED she was diagnosed with DKA, admitted to MICU for treatment with subsequent improvement of glucose, normalization of anion gap and change to SQ insulin. While in MICU she was found to have new onset A.fib, hospital acquired pneumonia and new left leg edema. Doppler US revealed bilateral DVT, a bedside TTE showed a right atrial clot and chest CT confirmed bilateral pulmonary embolism with resolution of atrial mass. HCP was notified of new findings and a plan of treatment was presented which included IVC filter placement, anticoagulation and treatment of DM. HCP stated that she would not want the patient to receive treatment based on her understanding that patient had a terminal illness in her dementia. Risks and consequences of delaying or deciding against treatment were explained including expediting death. The HCP’s perception based on interpretation of patient’s Living Will was that the patient would not want to be treated based on advanced dementia, loss of quality of life and reliance on medications. The medical team was uncomfortable with decision to forgo anticoagulation and DM treatment. Patient was made DNR and DNI. Ethics and palliative care were consulted; anticoagulation and diabetes treatment were continued as decision to withdraw and withhold treatment was deferred. Multiple interdisciplinary meetings were arranged, which included critical care, geriatrics, palliative care and ethics. HCP was made aware of the patient’s pre-hospitalization status, use and compliance to medications, level of function, and proposed use of anticoagulation and diabetic treatments. After being educated and involving other friends and family, HCP decided for continued care. Patient has returned to her baseline 2 months later.

Discussion: The concept of a terminal illness may be interpreted differently by HCP and medical team. This illustrates the importance of interdisciplinary collaborations as well education of families and surrogates.

C33 Lithium Induced Nephrogenic Diabetes Insipidus in an older adult
R. Jaber, M. Ferrera. Geriatric Medicine, Baystate Medical Center, Springfield, MA.

Case summary:
A 76 y/o woman with history of bipolar disorder on chronic lithium therapy was transferred from skilled nursing facility (SNF) to the hospital for an altered mental status. While at SNF, she developed ongoing weakness, gait imbalance and diarrhea. Laboratory data at SNF showed hypernatremia, and work up for diarrhea has been negative for infectious causes. She became delirious and less responsive which prompted transfer to the hospital for further evaluation. Admission vital signs were normal but she was noted to be lethargic and drowsy, otherwise normal physical examination. Head CT scan was negative for acute pathology; laboratory data showed leukocytosis 24.3 with 82.2% neutrophils, Na 151mEq/l, Ca 10.6 mg/dl, BUN 24 and Cr 0.8 mg/dl. Lithium level was 0.2mEq/L and has been ranging 0.4-0.5 mEq/L while at rehab. Septic work up was negative. IV fluid D5W was started to correct for hypernatremia. On hospital day 2, her mental status improved but was noted to have significant polyuria > 5 liters per 24 hours with urine osmolality of 200 mOsm/kg. The diagnosis of lithium induced nephrogenic diabetes insipidus was made NDI, lithium was discontinued, hydrochlorothiazide and amiloride were started, IV fluid continued and DDAVP given with partial response. Recommendation was made to consider alternative mood stabilizer and avoid lithium therapy.

Discussion:
Lithium pharmacokinetic is influenced by age. Older adults require lower dose of lithium to achieve same therapeutic levels to younger adults. This is due to reduced volume of distribution and renal clearance in older adults. Unexplained hypernatremia can be a sign of lithium toxicity. Older adult on chronic lithium may experience side effects from lithium even at therapeutic levels. Management is symptomatic with discontinuation of the offending drug. If urine output exceeds 4 l/day, treatment with thiazides and amiloride has been advocated. Lithium induced NDI can be irreversible and only partially respond to discontinuation of lithium. An acute illness associated with dehydration can potentiate lithium toxicity.

Conclusion:
Clinicians should have a high suspicion for lithium induced NDI when evaluating hypernatremia in chronic lithium users even with therapeutic lithium levels.

C34 Watch and wait or operate? Acute neurologic decline following chronic subdural hematoma evacuation procedure: a case report.
R. Balbino, M. Drickamer, G. Winzelberg. Geriatric Medicine, University of North Carolina, Morrisville, NC.

The risks and benefits of operating on a subdural hematoma are often unclear and the decision whether to operate seems at times arbitrary. This case is of a 77 year old female presenting to the ED with acute neurologic symptoms and sub-acute headaches, who was diag-
nosed with a subdural hematoma with a 1.2 cm midline shift and underwent an operation within 4 hours of arrival. The surgery started as Burr Hole drainage but was intra-operatively converted to an open craniotomy and was completed successfully per the operative report. She acutely declined neurologically 26 hours post-operatively developing left hemiplegia. While the patient regained partial function of her left lower extremity in the weeks following surgery, the plegia of the left upper extremity persists. In this case, we conclude that the subdural evacuation was complicated by post-operative pneumocephalus and edema, both of which led to an acute neurologic decline in the patient. The patient had met consensus guidelines criteria which supports an operative approach for patients who have acute neurologic symptoms with a subdural thickness of ≥10 mm and/or a midline shift of ≥5 mm. The rate of post-evacuation pneumocephalus has been noted to occur in 44% of patients in a recent small case series, while a review of the literature reported it to be around 8% of surgical cases. Lessons drawn from this case are that the decision to operate on a sub-acute or chronic subdural needs well-informed and thoughtful involvement of the physicians; they should consider observing patients in a monitored setting with serial neurologic examinations instead of pursuing operative intervention provided there are no signs of herniation; and they should be aware that, despite their infrequency, complications do occur from surgical evacuation procedures, some of which may be worse than the original presentation. As the incidence of this clinical entity continues to increase, more research needs to be done to guide physicians and surgeons in their selection of the right patients for aggressive surgical intervention.

**Timeline of key events:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
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<tbody>
<tr>
<td>Day 1</td>
<td>Closed head trauma, local sources only</td>
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<tr>
<td>Day 35</td>
<td>Unilateral upper extremity pain and inability to bear weight two days prior to planned hip arthroplasty.</td>
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<tr>
<td>Day 36</td>
<td>Neurologic symptoms, CT scan shows SDH</td>
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<tr>
<td>Day 37</td>
<td>Surgical intervention performed</td>
</tr>
<tr>
<td>Day 28</td>
<td>Worsening left-sided hemiplegia, CT scan shows acute stroke</td>
</tr>
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**C35 Joint Decisions: Perioperative Comanagement of a High-Risk Patient**


Background: Older adults with complex orthopedic issues are often at high risk for perioperative complications. Shared decision making between Geriatrics and Orthopedics optimizes outcomes for these adults, as this case illustrates.

Case Report: An 88-year-old woman with aortic valve replacement, atrial fibrillation, diastolic heart failure (NYHA class III), and bilateral carotid stenosis was admitted for intractable right hip pain and inability to bear weight two days prior to planned hip arthroplasty. She had failed intra-articular injections and medical management. On admission, exam revealed rales and 4+ lower extremity edema. Her comorbidities increased her risk for cardio- and neurovascular complications. However, given accelerating pain and worsening function, Geriatrics and Orthopedics, in consultation with the patient and family, opted to proceed with arthroplasty on an urgent basis to quickly restore optimal functional status in an acutely declining patient. The two services comanaged the patient using published protocols for geriatric fracture management to guide shared decisions on fluid management, delirium prevention, analgesia, and early mobilization. The patient had an uncomplicated course and was discharged to rehabilitation, and subsequently to home, with significant improvements in her pain, function, and quality of life.

Discussion: This case highlights optimal collaboration between Geriatrics and Orthopedics in the care of an older adult undergoing arthroplasty. Frail elders commonly have conditions for which surgery may relieve symptoms, improve function, and enhance quality of life. Unfortunately, they are also at high risk for postoperative events such as myocardial infarction, stroke, delirium, and infection. Because geriatricians are adept in the management of these conditions and of complex patients, coordination of care between orthopedists and geriatricians has been shown to yield better patient-centered outcomes – including fewer complications, shorter lengths of stay, and decreased mortality – following arthroplasty. This effect is greater when geriatricians provide true comanagement with surgeons rather than only providing recommendations. The resulting decrease in perioperative risk may expand the availability of surgery to frail elders, thus offering more patients optimal symptom management, functional status, and quality of life.

**C36 Unremitting Pain and Weakness Following Elective Total Hip Arthroplasty**

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Authors: Reena Navuluri, MD and Michael Leiding, MD

Institution: Rush University Medical Center

Background: Guillain-Barré Syndrome (GBS) is an immune-mediated polyneuropathy presenting as an acute paralyzing illness provoked by a preceding infection. It affects about 1 to 2 per 100,000 annually, occurring days to weeks after developing a respiratory or GI viral infection. The first symptoms of GBS commonly include ascending symmetrical weakness and tingling sensations, which can progress to paralysis if left untreated. GBS can be a very emotionally and physically devastating disorder because of its sudden onset and frightening complications. The purpose of this poster is to report an uncommon presentation of GBS, describe our patient’s course, and its management.

Methods: Case report

Results: Our patient is an 80 year old African American female with a history of HTN and osteoarthritis s/p elective right hip replacement on 8/7/14, who presented with intractable back, hip and bilateral leg pain.

The patient was doing well in rehab until 2 weeks post-surgery when she developed a new pain in her upper back, radiating down to her hips and legs with no clear precipitating event. The pain gradually intensified, making weight bearing intolerable. She was readmitted to the hospital. Her pain was presumed related to the recent hip surgery. Imaging was unremarkable except for DJD. ESR and CRP were elevated at 65 and 29, respectively. CK, ANA, and ANCA were negative. Over the following week, various medications were tried but failed to mitigate her pain.

The patient was transferred to our institution for a second opinion. Aside from complaints of extreme pain, her presentation was only remarkable for asymmetric lower extremity proximal muscle weakness. Neurology recommended a lumbar puncture and EMG. The LP was significant for elevated CSF protein. The EMG confirmed a diagnosis of GBS.

CONCLUSION: This case illustrates an uncommon presentation of an uncommon disease: Guillain-Barre Syndrome. Our patient’s diagnosis eluded multiple specialists for more than a week because of the focus on treating her pain. It was not until treatment for her immune-mediated polyneuropathy was initiated did her pain improve sufficiently to resume physical therapy. 30% of patients have residual weakness after 3 yrs and may suffer a relapse years after the initial attack. It is important not only to treat but also to educate the patient about possible long-term sequelae that may arise from the disease.

**C37 What Lies Beneath: Unsuspicious but Inauspicious Ear Rubor**

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Introduction: With age, the incidence of skin-related disorders increases, especially photo damage in sun exposed areas, which can lead to lesions both benign and malignant. We present an atypical presentation of a common consequence of photo-aging.
Case: 75 yr old female, nursing home resident, with advanced dementia was noted to have warmth, redness and a smooth swelling of the helix of right ear, with mild tenderness. There was no known trauma or insect bite. Antibiotic treatment for presumed cellulitis did not change the lesion. ENT consult diagnosed old hematoma at the concha and suggested monitoring. As she always slept on her right side with a hand under her head, pressure relief was tried without success. She was then evaluated by dermatology, whose differential for the pinkish nodular enlargement was chondrodermatitis nodularis helicis, skin cancer, or keratoacanthoma. Patient had distant history of basal cell carcinoma (BCC) on upper arm and neck. Punch biopsy revealed basal cell carcinoma, nodular, micronodular and infiltrative types, located in deep underlying cartilage. ENT and Plastic surgery are reviewing multiple treatment options including partial auriculectomy, given the extent of tumor involvement.

Discussion: BCC is the most common type of nonmelanoma skin cancer. It is slow-growing and can be locally invasive. They occur mostly on the head (60-80%), the ear being the fifth most common site. BCC commonly presents as pearl-like lesions with overlying telangiectasia and rolled border, but can mimic other skin conditions, including benign (eczema and psoriasis) and premalignant lesions (actinic keratosis), and malignant melanoma. Ear BCCs are more common in males, tend to be aggressive, often presenting with greater subclinical extent, possibly because they are missed early due to atypical appearance: here, the smooth surface and color led to initial diagnoses of infection and hematoma. As with this case, prior BCC increases the risk of recurrence. Treatment involves multidisciplinary approach (ENT/dermatology/plastic surgery) to ensure cure and avoid loss of cosmetically important tissue. Ears should not be forgotten as sun-exposed areas and sites for atypical presentations of BCC, and patients reminded to apply sunscreen to them.

C38
The valproic acid gait
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Introduction:
Valproic acid has been used in demented patients to control agitation. Here, we discuss a case where valproic acid resulted in an abnormal gait and increased fall frequency in an elderly demented patient.

Case:
Mr. LB is a 65 year old male with Alzheimer’s disease with behavioral and emotional disturbance being treated with risperidone, mirtazapine and as needed haloperidol. The patient’s behavioral problems persisted so he was started on valproic acid. Prior to the initiation of this, he walked with upright with some widening of the base. The initial dose of 250 mg po daily was later up titrated to 250 mg po bid with serum levels varying between 11.3 and 58.2 mcg/l. A few days after starting valproic acid, he began constantly leaning to the right when he walked. In addition, his fall frequency doubled. CT scan of the head revealed no hemorrhage or infarct. Later, his serum AST and ALT increased and valproic acid along with simvastatin was discontinued. Within 3 days, his gait returned to normal. Later attempts to reintroduce valproic acid to his treatment regimen resulted in the same abnormal gait which resolved within days of discontinuation. Thus, it was concluded that valproic acid resulted in abnormal gait and increased falls in this patient.

Discussion:
Porsteinsson et al showed that valproic acid in doses ranging from 250 mg to 1500 mg po daily improved agitation in 9 out of 12 patients with dementia. Two of these patients also had gait disturbance. Analysis of the prescribing information for valproic acid reveals that an abnormal gait is an adverse event in 1 to 5% of patients. Our patient exhibited tilting of his body to the right. Barter et al found that GABAergic and dopaminergic pathways were involved in correcting left and right tilting movements in mice. If this is extrapolated to our patient, then it is thought that valproic acid affected these pathways thus leading to an uncorrected right tilt. This change is reversible as exemplified by the correction of his posture once the drug was discontinued. Our patient had an abnormal gait despite being on a small dose of valproic acid thus leading us to speculate that this is not a dose dependent response.

Conclusion:
Valproic acid may lead to a reversible abnormal gait. This is an important adverse event in elderly patients as it may lead to increased frequency of falls.

C39
An Unexpected AIDS diagnosis in an Older Adult Considered to be at Low Risk for HIV
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Background: The Centers for Disease Control and Prevention recommends routine HIV screening until age 64; screening beyond age 65 is reserved for those considered at high risk for HIV.

Case Report: A 74 y/o Dominican woman with osteoporosis presented to the primary care clinic to establish care 3 months after immigrating to the US. Social history was negative for tobacco, alcohol, or illicit drug use. She reported being single with no current sexual partners. Physical exam was unremarkable. She was offered screening labs and studies including HIV screening as she had not previously been screened for HIV. The HIV screening test and confirmatory testing were positive for HIV. Subsequent detailed discussion regarding the patient’s risk factors for HIV acquisition revealed that she was last sexually active 20 years prior with her second husband, from whom she was separated. He had an alcohol use disorder and had multiple female sexual partners but no known HIV. He died in 1998 secondary to liver cancer. The patient’s CD4 count at diagnosis was 78 cells/μL, giving her a diagnosis of AIDS, and her HIV viral load was 254,034 copies/μL. Further studies also indicated likely late latent syphilis, for which the patient was treated. She was started on antiretroviral therapy (ART) and is followed closely in the HIV clinic. After 2 years of excellent adherence to therapy, her CD4 count has increased three-fold to 245 cells/μL, and her viral load has become undetectable. She has remained in good health without development of any opportunistic infections.

Discussion: Initial clinical suspicion for HIV in this patient was low given that she was not sexually active and had no known risk factors for HIV. Although ART can be less effective in older populations, this patient’s diagnosis facilitated treatment for HIV before she developed opportunistic infections.

Conclusion: This case demonstrates that there may be a role for increasing the upper age at which initial HIV screening is conducted. It also illuminates the importance of obtaining a detailed prior sexual history in the geriatric population, even in the absence of current sexual risk factors. Additional research is needed to determine the cost-effectiveness of routine screening for HIV in adults older than 65.

C40
Failure to Thrive Related to Polypharmacy in the Elderly Patient: A Case of Reversible Cachexia
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Background:
Polypharmacy is the use of a number of different drugs, possibly prescribed by different doctors and filled at different pharmacies, by
a patient who may have one or several health problems. The elderly population are most vulnerable. Some possible medication related problems are: confusion, incontinence, agitation, insomnia, decrease in appetite and thirst and depression. Failure to thrive in elderly persons is defined by weight loss of more than 5%, decreased appetite, poor nutrition, and physical inactivity, which can be associated with dehydration and depression.

Methods:
Mrs. G is a 98 y/o female patient admitted to a Nursing Home (NH) after a progressive functional decline and weight loss over the prior 9 months while at home under the care of her son. Upon admission she weighed 68 pounds, BMI:12.1). Her decline correlated with failing cognition and poor oral intake, ending up bedbound and oxygen dependant. At her arrival to the nursing home, Mrs.G was unable to sit up in bed unsupported, hypoactive (respond to verbal and touch stimuli), and required hand feeding. She repeatedly mentioned her wish to die. Mrs. G’s list of prescribed medications included 14 different medications including hormonal replacement therapy, antihypertensive, diuretics, 2 different pain medication and anxiolytic drugs around the clock. A gradual tapering down and discontinuation of medication was started. Due to her poor physical condition and advanced dementia, she was enrolled in hospice.

Results:
Upon evaluation of Mrs. G’s physical condition, current failure to thrive, and functional limitations, a progressive tapering of the medications was initiated. The list quickly was reduced to just 7 different medications with 3 of them on “as needed” basis. Four months later, she was able to feed herself at the NH dining room on a regular diet and her weight had increased 12.5 pounds. She no longer mentioned her desire to die. Mrs. G’s list of prescribed medications included 14 different medications including hormonal replacement therapy, antihypertensive, diuretics, 2 different pain medication and anxiolytic drugs around the clock. A gradual tapering down and discontinuation of medication was started. Due to her poor physical condition and advanced dementia, she was enrolled in hospice.

Conclusions:
Mrs. G. presents an example of multiple co-morbidities leading to polypharmacy eventually leading to failure to thrive. Healthcare professionals should be aware of the side effects of drugs and fully evaluate all medications to prevent polypharmacy and its complications. By preventing polypharmacy we can improve quality of life and functionality and decrease the medication induced morbidity and mortality.

C41
Abducens (CN VI) Nerve Palsy: Initial manifestation of Early Disseminated Lyme Disease
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Background: Early disseminated Lyme disease may present with involvement of abducens nerve as an initial manifestation and can be difficult to diagnose due to atypical symptoms and physical findings.

Case Description: A 78 year old woman with a PMH of hyperlipidemia and glaucoma who lives in a house in rural Pennsylvania was seen by her PCP in early October due to 10 days of low grade fevers and myalgias. Her review of system was otherwise negative in particular for a tick bite, joint pain or rash. She was diagnosed with a viral illness by her PCP who advised symptomatic treatment. However a week later, she presented to the ER with a sudden onset of horizontal diplopia while driving. She was admitted for two nights and her work up included CT and MRI of the brain which were negative for CVA. Following her discharge the next day, she was seen at a walk-in ophthalmology clinic, where she was found to have normal IOP pressures and inability to abduct left eye: she was diagnosed with a new sixth cranial nerve (CN VI) palsy. Steroids and biopsy were deferred due to low suspicion for giant cell arteritis and she was sent for serologic testing including ESR, CRP and Lyme titers. Patient tested positive for Lyme antibodies and confirmatory western blot, and she was immediately sent to ID clinic for further evaluation and treatment.

Given her age and unusual new CN VI findings, ID clinic had her directly admitted to the hospital for a lumbar puncture (LP) and IV ceftriaxone over oral doxycycline. During the admission, an LP was performed which showed 30 WBCs with 80 % lymphocytes, elevated protein and positive CSF Lyme PCR. She was then confirmed to have early disseminated Lyme disease. A PICC was placed for administration of IV Ceftriaxone 2 gm daily for a total of 21 days. Patient showed improvement in her symptoms with IV antibiotics and eye patching with no signs of neuroretinitis. Patient was then discharged from hospital with orders for weekly CBC and follow up with ID and neuro-ophthalmology.

Conclusions: Lyme disease should be considered in elderly patients from endemic regions for Lyme disease who have viral-like symptoms and uncommon neurological findings. IV ceftriaxone is preferred over oral doxycycline if the patient presents with neurological symptoms other than an isolated facial palsy with a possible diagnosis of early disseminated Lyme disease.

C42
Inflammatory Thinking: A Case of Cerebral Amyloid Angiopathy in a Patient with High Cognitive Reserve
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Background: Cerebral amyloid angiopathy (CAA) can cause intracranial hemorrhage in elderly patients and is strongly associated with cognitive decline. Rarely, an inflammatory subtype with distinct MRI findings may cause seizures.

Case: An 82 year old woman was seen for rehabilitation after hospitalization for a stroke-like syndrome. She had a history of cognitive problems, which started 12 years before the current encounter. She had noticed subtle changes in her memory, and neuropsychological testing at that time showed mild cognitive impairment. Before having children, she had attended college where her IQ was measured to be greater than 130 points. The patient was told that she most likely had Alzheimer’s Disease (AD), and a cholinesterase inhibitor was started. Six years later, she suffered an acute attack of confusion and was hospitalized suspected TIA. MRI revealed multiple small foci of chronic hemorrhage. She was diagnosed with CAA and started on namenda. Over the next 6 years, she had multiple hospitalizations for stroke-like symptoms, along with confusion and transient seizures. Her symptoms resolved between episodes. Repeated MRI scans showed innumerable small foci of old and new hemorrhage in both hemispheres sparing the posterior circulation. In rehab, she demonstrated severe impairment in executive function and scored 12/30 on MOCA examination. She suffered from falls and spells of decreased responsiveness, which required transfer back to hospital. MRI study revealed evolution of the known findings, along with abnormal areas of enhancement in the white and gray matter bilaterally, suggesting an inflammatory subtype of amyloid angiopathy. The patient recovered to move to assisted living, demonstrating an improved modified MOCA exam of 20/26. Her AD medications were stopped, and she is being considered corticosteroid therapy.

Discussion: This patient suffers from CAA with a reactive inflammation that suggests a CNS vasculitis on MRI. First described in 1974, the condition includes a spectrum of reactions to beta amyloid deposition ranging from peri-vascular inflammation to true vasculitis. It merits diagnosis because it is potentially treatable with immunosuppression. This case is notable for the waxing and waning clinical effect of the disease, and the immense cognitive reserve of the patient which allowed her to make a recovery despite a significant burden of pathology (Figure).
C43
Left Ventricular Assist Device (LVAD) Withdrawal in a Skilled Nursing Facility: The role for Palliative Care in Optimal Practice

Purpose: Patients requiring intensive palliative care management are becoming increasingly common in the long term care setting. Withdrawal of high-technology therapies in end stage disease is challenging and requires expertise in symptom management as well as coordination of care.

Case: A 57 year old female with history of a myocardial infarction with cardiogenic shock and an implantable cardiac defibrillator (ICD) and LVAD placement for destination therapy was admitted to a rehabilitation unit at a local nursing home after a hospital stay for an LVAD drive line infection. She continued to decline during her rehab stay with no significant improvement in her mobility and function. Goals of care discussions were initiated with her and her husband. She decided to deactivate her LVAD while on the rehab unit with no further hospitalization. Her cardiothoracic surgery team was notified and agreed with the plan of care. She was started on low dose continuous intravenous (IV) morphine about 8 hours prior to withdrawal to ensure adequate sedation and treatment of dyspnea. IV morphine as needed was available for worsening dyspnea. Lorazepam 2 mg IV was given 30 minutes prior to withdrawal and 1 mg IV every 15 minutes was available as needed. Instructions to deactivate the LVAD were received from the cardiothoracic surgery team. The LVAD deactivation was done by the rehab physician and nurse practitioner. She died peacefully about 20 minutes after deactivation of the device.

Conclusion: This has led to the development of a model of care for patients with complex life sustaining therapies that involves frequent discussions regarding the patient’s goals and intense symptom management in the rehab as well as long term care setting. Advanced life support technologies (invasive and non-invasive ventilation, hemodialysis and cardiac assistive devices) may become more common in traditional long term care settings. Withdrawal of these technologies can be safely and appropriately performed in post-acute facilities, but requires intensive palliative strategies traditionally performed in acute medical facilities. Multispecialty care coordination, inter-professional education and a mixture of patient specific care planning and protocols are key tools in providing end of life care for these patients.

C44
Dry Lotion Syndrome
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Background: Elderly patients may present with physical exam findings that can be mistaken for pathology. It is important to be aware of these findings to avoid unnecessary workup.

Case Presentation: A 92 year old woman was admitted after she was found unconscious by EMS at her home. She was unresponsive, hypotensive, emaciated, and unkempt. She was admitted to the ICU after being intubated and found to have an anterior wall STEMI with new onset afib and sepsis. She was not deemed to be a candidate for percutaneous coronary intervention, and medical management was undertaken. She was stabilized, extubated, and eventually transferred to the floor, where she became delirious and agitated.

A thorough physical exam revealed patchy areas of pruritic, large, yellow and brown scales adherent to the patient’s lower extremities. The etiology of these lesions was unclear, and an investigation of its cause was initiated. Differentials included severe dermatitis venosa, elephantiasis nostras verrucosa, lipodermatosclerosis, and dried serum, among others. A dermatology consult as well as skin biopsy were contemplated to ascertain whether this represented an underlying pathology. Geriatrics and Palliative care consultations were also placed to optimally manage the patient’s delirium and address goals of care. Upon seeing the patient the Geriatrician determined that no biopsy or further analyses of the skin lesions were to be sought, as the scaly lesions were determined to be thickened and dessicated lotion from repeated applications by the patient’s home health aide without proper cleansing after. Gentle cleansing and manual removal of the scales revealed intact skin underneath.

Physical exam findings that can mimic pathology are rarely published in the medical literature. Dried lotion is not widely known as a cause of pseudo dermatologic pathology, but it is important to keep this entity in a clinician’s differentials in order to avoid unnecessary workup, consultations, and to effectively use resources.

Conclusion: A thorough physical exam and an awareness of findings that mimic pathology is important in ensuring cost-effective, balanced, and competent care.

C45
Barriers To Pain Management In The Elderly
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Introduction: Elderly often suffer severe chronic pain. WHO analgesic ladder guides management, but geriatricians fear opioid use due to inadequate knowledge and experience with opioid titration.

Methods: We report a successful pain control with fentanyl Patient Controlled Analgesia (fentanyl-PCA) in elderly woman with exacerbated chronic neuropathy.

Results: An 86 year old independent African American woman with DM, CKD (GFR 43), Multiple Myeloma, diabetic and post chemotherapy neuropathy, and lymphedema was admitted with sudden onset of severe (8-10/10) leg pain and weakness. Pain increased disproportionately to feet with numbness and ambulation loss. On exam: low grade fever, pale conjunctivae, non-pitting bilateral leg edema with severe pain to light touch. H&H 8.9/27.2, MCV 92, WBC 8.2, GFR<30, ALT121, AST 126, ALP 261-565. MRI spine found degenerative disease. Home tramadol 50 mg 2-3 times a day (q3D) and gabapentin 300 mg qD increased to 600 mg qD provided inadequate relief. Oxycodone 5 mg q4h, pregabalain 50 mg qD, 4% Lidocaine cream started. Oxycodone increased drowsiness with minimal pain relief. Fentanyl-PCA was started due to fentanyl safety in liver and kidney dysfunction. A lower demand dose (10 mcg) with longer (15 min) lock out periods were used. Pain decreased from 8 to 3-4/10 on PCA D3 -5, sedation improved. Patient self-administered fentanyl via PCA (160-220 mcg fentanyl/24h used; 26-29 demands - 25-28 delivered doses/24h), no clinician boluses required. Urinary infection was treated with piperacillin-tazobactam. Leg pain, kidney and liver failure improved. Discharged to SNF on tramadol as needed as she declined oral opioids.

Conclusions: Tramadol is widely used for severe chronic pain in older people. It has a ceiling effect and drug-drug interactions. In our 86 yo woman with renal and liver impairment fentanyl-PCA improved neuropathic pain without sedation. Opioid pharmacokinetics in elderly include: A) Increased half-life due to lower GFR, which is even more prolonged in kidney injury. B) Morphine, hydromorphone and oxycodone bioavailability increases in hepatic dysfunction. C) Fentanyl is safe in liver and kidney impairment, but standard doses cause neurotoxicity due to higher body fat vs. body water with aging. Opioids at reduced doses and careful monitoring can be successfully self-titrated via PCA by selected elderly, even in the setting of renal and hepatic impairment.
C46
Effects of exergames on cognitive performance and functional fitness in older adults: a pilot study
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Background: Participating in regular physical exercise is important for the motor and cognitive performance. There has been a rapid growth in popularity, among older adults, of “exergames”- video gaming with remote controls and motion sensors that incorporates physical activity into game play. The aim of this study was to assess the effects of exergames training program on cognitive performance and functional fitness in older adults without cognitive impairment.

Methods: In this pilot study (pretest-training-posttest design) sixteen active subjects (69.4 ± 6.1 years) were divided into two groups: intervention group (IG; n=8) and control group (CG; n=8). The Xbox 360 Kinect™ was used for intervention: sportive games, two 1-hr sessions per week over a period of 8 weeks. Participants completed 4 functional fitness tests and a brief computerized battery of cognitive tests (Cogstate Battery) at baseline and after intervention. The cognitive battery evaluated the velocity and accuracy in the following domains: psychomotor function, attention, learning and working memory.

Results: The Student “t” test showed: a) the trainees improved (p=0.043) the accuracy (number of correct answers) in the domain of attention, between pre and post intervention; b) significant improvement for the IG in the time-up-and-go (seconds) and 6-min walk (meters) tests. There were a significantly (p<0.05) improvement (“Wilcoxon” test) in arm curl test (no. of reps.) and 30 s chair stand (no. of reps.) tests for the IG, comparing pre and post intervention.

Conclusion: “Exergames” that simulate sports games may benefit cognitive performance and functional fitness in older adults. The short period of intervention may not be sufficient to cause significant changes in all cognitive domains assessed.

C47
The Effect of Vitamin D Supplementation on Falls in Community-Dwelling Older Adults
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Background: Current guidelines from the American Geriatrics Society and US Preventive Services Task Force recommend daily vitamin D supplementation of at least 800IU in order to reduce the risk of fall. A 2012 meta-analysis (Gillespie, 2012) did not show a positive association between vitamin D supplementation and risk of fall; whereas a 2010 meta-analysis (Michael, 2010) did. The aim of this study is to further assess the association of vitamin D supplementation on fall risk in community-dwelling older adults.

Methods: Data from 965 individuals participating in the Longevity Study at the Banner Sun Health Research Institute were used for this analysis. The sample was grouped by vitamin D intake status (yes/no) and whether or not individuals reported having at least 1 fall in the least year (yes/no). Physical activity level was assessed using the Rapid Assessment of Physical Activity (RAPA) questionnaire. Logistic regression analyses were used to assess the association between vitamin D intake and the occurrence of falls; and also to assess the association between physical activity level and fall occurrence.

Results: Gender breakdown for the sample was 31% (297) male and 69% (668) female. The mean age of the sample was 81±11 years. There was no significant association between vitamin D supplementation and risk of fall, even after adjusting for age and gender [OR = 0.97 (0.73, 1.30), p = 0.85]. There was a significant association between physical activity and risk of fall [OR = 0.91 (0.84, 0.97), p = 0.01]. However, this association was negated when age and gender were accounted for [OR = 0.96 (0.88, 1.03), p = 0.25].

Conclusions: This study showed no significant association between vitamin D supplementation and risk of fall in community-dwelling older adults. Increased physical activity appeared to provide some benefit in terms of reducing fall-risk, although this association was not significant after adjusting for age and gender. The results of this study may differ from others that found a positive association due to its cross-sectional design and because vitamin D dose levels were not quantified.

C48
The SNF-Connect Trial of Heart Failure Disease Management: Unexpected Challenges in Recruitment
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Supported By: NIH5R01HL113387-02

Background: Heart failure (HF) is the most common Medicare DRG and many hospital-based programs aim to reduce HF related hospitalizations. Similar work is needed in skilled nursing facilities (SNF). Recruitment of patients in SNF can be difficult due to limited handoff information regarding hospital diagnoses. Previous studies have found facilities miss the diagnosis of HF(1). This study describes our experience recruiting older adults for a trial of HF disease management in SNF.

Methods: The SNF-Connect Study is an ongoing randomized controlled-trial of a HF disease management. In order to find the best recruitment strategy and learn how many patients would be missed if hospital discharge documentation alone were used to identify a HF diagnosis, we screened every patient admitted to 14 facilities from 7/1/2014 -12/3/2014. For patients without a HF diagnosis on their discharge summary, an additional screening protocol was used. First, if the chart confirmed either: 1. any cardiac diagnoses or 2. any HF medications, then patients would be eligible if they: 1. had signs/symptoms of HF or 2. a self-reported history of HF. Descriptive data were collected on screening and recruitment.

Results: During the first 5 months of the study, 762 patients were screened and 60 patients were eligible based on hospital discharge diagnoses alone. No additional patients were identified using the screening tool above. Of the 60 eligible patients, 20(33%) were unaware that they had a diagnosis of HF. Lack of knowledge of a HF diagnosis resulted in refusal of study participation in 6(10%). Patient education regarding their HF diagnosis resulted in study enrollment in 14(23%). A total of 39(65%) patients were enrolled. All the patients who were unaware of a HF diagnosis had HF with preserved ejection fraction (HF-pEF).

Conclusion: When recruiting for a HF study in the SNF population, hospital discharge summaries are adequate to identify eligible patients. Many older adults in SNFs were unaware of their HF, especially those with HF-pEF. Patient awareness of a HF diagnosis was unexpected and adversely affected recruitment. In the SNF setting, education as to the diagnosis of HF may also be clinically important as patients transition home.

References
Microbiota differences in hospitalized patients with *Clostridium difficile* infection and delirium

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Supported By: NIH/NIADDK K23AI074681, UVA General Medicine Research Taskforce, TechLab, Inc.

Background: Hospitalized patients with *Clostridium difficile* infection (CDI) have poor outcomes. Our previous studies have shown that patients with CDI and delirium have higher mortality. Recent literature shows a connection between the intestinal microbiota and cognitive impairment. In this pilot study, we compared the intestinal microbiota of hospitalized patients with CDI and delirium to those with CDI, but no delirium.

**Methods** Total stool DNA was isolated from hospitalized patients 50 with CDI and delirium; 50 with CDI and no delirium. DNA was amplified across the V1-V3 regions of the 16S rRNA gene using barcoded primers and sequenced using an Illumina platform. 52 samples yielded PCR products that were submitted for sequencing. 35 samples met the cutoff of ≥15 reads used for rarefaction (14 with delirium; 21 without delirium). Cohort demographics and stool samples had been obtained and frozen from previous studies. On average, stool samples were analyzed 2 years. SPSS was used for student’s t-test, significant p ≤ 0.10.

**Results** At the family level of bacteria, patients with CDI and delirium had a higher relative abundance of Enterococaceae (p = 0.07), unclassified Bacilli (p = 0.08), and unclassified Firmicutes (p = 0.09); and lower abundance of Clostridiaceae (p = 0.08). With more refined evaluation, patients with delirium had less Campylobacter (p = 0.06) and Escherichia/Shigella (p = 0.10) and more abundant levels of Enterococcus (p = 0.09) and unclassified Bacilli (p = 0.08).

**Conclusions** CDI typically occurs in patients with alterations in their intestinal microbiome. In this pilot, exploratory study, we have preliminary findings that suggest patients with CDI and delirium have further alterations in their microbiome with less Campylobacter and Shigella and more abundant Enterococcus. Further study is needed to further examine these findings to determine their clinical relevance.

C50

A Randomized Trial of the Adherence and Tolerability of Acetylcholinesterase Inhibitors

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Supported By: This study was funded by a grant from the Agency for Healthcare Research and Quality (R01HS019818-01). The funding agency had no role in the development of the study design, data collection, analysis, interpretation of the analysis, manuscript development, or the decision to submit this work for publication.

**Background:** Tolerance to the class of acetylcholinesterase inhibitors (AChEIs) is known to be poor. Our objective was to compare the tolerability and persistence of AChEIs among older adults with a diagnosis of possible or probable Alzheimer’s dementia.

**Methods:** We conducted a randomized comparative trial of AChEIs among older adults with a diagnosis of probable or possible dementia receiving care in one of four a memory care practice in central Indiana. Eligibility criteria consisted of the following: 1) provider planning to start treatment with acetylcholinesterase inhibitor; 2) agreement from caregiver to complete study outcome assessments by telephone; 3) ability to understand English. Exclusion criteria consisted of the current use of an acetylcholinesterase inhibitor or a history of intolerability to AChEI therapy such that a rechallenge was inappropriate. Randomization to one of three AChEIs was conducted by a computer-generated randomization scheme and stratified by study site. The primary outcome was caregiver-reported adherence and adverse events at 6, 12, and 18 weeks. The study was approved by the Institutional Review Board of the Indiana University Purdue University of Indianapolis as well as each healthcare system.

**Results:** 198 subjects were enrolled from the four memory care practices, with 168 completing at least one post-enrollment interview. The population had a mean age of 81 years, 74% were female and 32% were African American. Fifty-nine subjects were randomized to receive donepezil, 54 to galantamine, and 55 to rivastigmine. At the end of the 18 week follow-up period, 75% of the donepezil group, 50% of the galantamine group, and 51% of the rivastigmine group reported persistence with the original prescribed medication (p = 0.01 for groupwise comparison). Adverse events and cost were the most common reasons reported for switching or discontinuation of randomized medication, though no subjects reported cost as a reason for stopping or switching from donepezil.

**Conclusion:** Persistence with AChEIs differs within the class of medications and is significantly influenced by adverse events and cost. Future work should focus on identifying patient-specific factors that improve tolerability and adherence to AChEIs.
Conclusions: A booster dose of ZV administered ≥10 years after a previous dose of ZV was safe and immunogenic in vaccinees ≥70 yrs. Although Ab responses were similar in boosted (G1) and 1st time vaccinated subjects (G2) at entry, at peak response (Week 6) and at year 1, G1 had higher VZV CMI at entry, at peak response (Week 1) and after 1 year after ZV.

C52
Risk Factors for Re-presentation of Older Adults to the Emergency Department in the 30-days Following an Index Fall: A Pilot Study

Background: Falls are the leading cause of fatal and nonfatal injuries for adults aged ≥65 and a common reason older adults seek medical care. Our goal was to characterize geriatric patients who re-present to the emergency department (ED) within 30-days of an index visit for a fall.

Methods: We conducted a retrospective chart review on 195 patients aged ≥65 presenting to a large, urban, academic ED with a fall-related event during a 1-year period (4/11–3/12). We used a standardized data abstraction protocol for CDS documentation by physicians, nurses, physical therapists, and social workers. We assessed demographic characteristics and ED assessment and treatment.

Results: Of the 195 patients presenting with a fall, 40 (21%) had a repeat ED visit within 30 days. Of those, 10 (25%; 10% of all visits) had a repeat visit attributed to another fall. No differences were observed between patients discharged home and those admitted to the hospital during the index visit with respect to revisits for any reason (20% vs 22%; P=0.81) or for another fall (4% vs 6%; P=0.55). Among the 93 patients discharged home, those going home unaccompanied were more likely than those going with a friend/family/aide to have a revisit for any reason (28% vs 13%; P=0.08) or for a fall (9% vs 0%; P=0.06). Comparing those re-presenting (n=40) to those who did not (n=155), there was no statistically significant difference in mean (±SD) age (years: 81±9 vs 81±10; P=0.66), gender (female: 68% vs 74%; P=0.43), living alone (43% vs 34%; P=0.88), living in a building requiring use of stairs (7% vs 19%; P=0.44), nor lack of a home health aide (19% vs 23%; P=0.80). There was likewise no statistically significant difference between those with dementia (13% vs 16%; P=0.80) or suffering from depression and/or anxiety (56% vs 48%; P=0.71). Treatment with opiates was also similar between the groups (15% vs 19%; P=0.54).

Conclusion: Older adults re-presenting to the ED within 30-days of an index visit for a fall were more often discharged home alone. This pilot identifies areas for immediate improvement, and the need for a larger study to assess independent risk factors for a repeat visit. A future clinical decision rule for identifying high-risk fallers may improve patient-centered outcomes in this vulnerable population.

C53
Implementing EQUIPPED across five VA Emergency Departments
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Supported By: VA Office of Geriatrics and Extended Care and John A. Hartford Foundation

Background: Challenges inherent in implementing evidence-based practice change may be amplified when implementation occurs across multiple sites. EQUIPPED (Enhancing Quality of Prescribing Practices for Older Veterans Discharged from the ED) is an ongoing multi-component, interdisciplinary quality improvement initiative in five Veterans Affairs (VA) Emergency Department (ED) sites to decrease prescribing of potentially inappropriate medications (PIMs) for Veterans over the age of 65. As an integrated national healthcare system, the VA Medical Centers offer a relatively uniform platform for implementation while highlighting site-specific differences.

Methods: We conducted a thematic content analysis of field reports from EQUIPPED sites at team meetings occurring every two weeks from October, 2013, to November, 2014, to compare site implementation. Using an inductive to deductive evaluation process, we subsequently developed an implementation model for EQUIPPED.

Results: Differences in formularies and ED patient makeup resulted in local adaptations of clinical decision support (CDS) tools for avoiding prescription of PIMs. Presence of resident physicians at some EDs required monthly rather than one-time education sessions. Varying levels of staff availability and expertise resulted in CDS rollout times that ranged from 3 weeks to 12 months. Conclusions: EQUIPPED is an innovative geriatric prescribing practice intervention whose success is dependent on careful planning and site customization. Distilling factors that differed across VA sites resulted in a model intended for use by non-VA sites wanting to implement the EQUIPPED intervention.

C54
Stakeholder Perspectives on the Use of Emerging Health Technologies to Reduce Nursing Home Resident ER Transfers

Supported By: 8 KL2 TR000143-08

Background: Nursing home (NH) residents are frequently and often unnecessarily sent to the emergency room (ER), placing them at high risk for the hazards associated with care transitions. Little is known about stakeholder perspectives on the use of emerging health technologies (EHT) to improve communication and care coordination, and potentially reduce transfers.

Methods: We conducted 8 mixed stakeholder focus groups (n=40 participants) comprised of resident families, NH nurses, NH physicians/nurse practitioners/physician assistants, NH administrators, ER nurses/physicians and hospitalists. Prior to the start of the focus group, participants completed a brief online survey regarding their background and experience related to NH resident ER transfers and technology. Participants then described their experiences with NH...
resident transfers to the ER and potential EHT were described, demonstrated, and discussed. Focus group interviews were recorded and transcribed verbatim. Transcripts and field notes were analyzed using a modified Grounded Theory approach.

Results: Survey findings revealed 80% of participants were very extremely comfortable using technology. The overall focus group response to the use of EHT was positive, especially videoconferencing/telehealth. Many envisioned potential advantages in improving patient assessment, communication between different stakeholders, and working conditions for the nursing staff and primary care providers. The limitations discussed primarily focused on the perceived challenges in the implementation of these EHT.

Conclusions: The use of EHT may have important applications in the NH setting, specifically the potential to improve communication, thereby influencing care coordination, decisions and transfers. Focus groups are a valuable tool to elicit stakeholder perspectives on challenges and potential innovations in the NH setting.

C55 Complications among the Elderly on Extracorporeal Life Support: A Report from the International ELSO Registry

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Background: Extracorporeal Membrane Oxygenation (ECMO) is a form of partial cardiopulmonary bypass often used for long-term support of cardio-respiratory function in adults. However, its use among the elderly and the type of complications noted are not clearly defined. The objective of the study was to investigate complications while on ECMO support among the elderly.

Methods: The ELSO registry database was queried to identify all elderly patients (≥ 65 years age) supported on ECMO from 1991 - 2009. Complications among those on ECMO support were investigated. Univariate and multivariate logistic regression analyses were used to estimate odds ratios for the association between the variables and the in hospital mortality.

Results: 429 elderly patients supported on ECMO support were identified from the ELSO registry. Overall, survival at hospital discharge occurred in 123/429 (28.7%). The median age of the cohort was 70 years (range 65-93). The median admit to time on ECMO and time on ECMO were 38 (range 0-6210) hours and 74 (range 0-1007) hours. Complications while on ECMO included hyperglycemia (29%); Creatinine > 3 (21%); Dialysis (14.5%); Cardiac tamponade (7.2%); DIC (4.7%); CPR (6.3%); Arrhythmia (16.8%); CNS Infarct (3%); CNS seizures (1.6%); Hemolysis (10%); Pneumothorax (3%); Hypoglycemia (1.8%); Hyperbilirubinemia (10%); Metabolic acidosis (15%). Complications on ECMO on univariate analysis significantly associated with death prior to hospital discharge were: DIC (p=0.049), need for CPR on ECMO (p=0.046), Hemolysis on ECMO (p=0.008), Direct hyperbilirubinemia (p=0.008), pH < 7.2 (p=0.004). On multiple stepwise logistic regression, pH < 7.2 on ECMO (OR=2.5 p=0.022; 95% CI 1.14-5.27), and direct hyperbilirubinemia on ECMO (OR=3.4, p value=0.015, 95% CI 1.27-9.04) were independently associated with in-hospital mortality. The models Hosmer-Lemeshow p value was 0.98.

Conclusions: Complications among elderly while on ECMO support are common with hyperglycemia being the commonest complication. Unique complications as risk factors are associated with in-hospital mortality in the elderly supported on ECMO.
C57
Empowering Emergency Medical Services Personnel to Identify and Report Vulnerable Older Adults: EMS Provider Perspectives
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Supported By: This research and Tony Rosen’s participation has been supported by a GEMSSSTAR (Grants for Early Medical and Surgical Subspecialists’ Transition to Aging Research) grant from the National Institute on Aging (R03 AG048109). He is also the recipient of a Jahnigen Career Development Award, supported by the John A. Hartford Foundation, the American Geriatrics Society, the Emergency Medicine Foundation, and the Society of Academic Emergency Medicine. Mark Lachs is the recipient of a mentoring award in patient-oriented research from the National Institute on Aging (K24 AG022399).

Background: Emergency Medical Services (EMS) providers, who perform initial assessments of ill and injured patients, often in a patient’s home, are uniquely positioned to identify vulnerable older adults who may be victims of elder abuse, neglect, or self-neglect. Despite this, few programs exist to ensure that their concerns are communicated to and investigated by Emergency Department (ED) providers, social workers, or the authorities. Our goal was to explore attitudes and practices of EMS providers surrounding identification and reporting of vulnerable older adults.

Methods: We conducted 2 semi-structured focus groups with 16 experienced EMS providers at a large, urban, academic medical center. The focus groups were recorded and fully transcribed, and data were analyzed to identify themes.

Results: Participants reported frequently encountering vulnerable older adults, particularly victims of self-neglect and neglect. Many reported that they rarely discussed their concerns with ED providers or social workers or reported them to the authorities. Participants described barriers to reporting in 4 categories: lack of protocols or training specific to vulnerable elders, challenges in communication with ED providers and social workers, time limitations, and frustration with lack of follow-up when they do report. Many participants reported significant interest in adopting protocols to assist in protecting older adults. Additional strategies included the ability to photograph the home, improved direct communication with social workers, and a system to provide feedback to EMS providers on outcomes of the cases they identify. EMS providers also highlighted the importance of their role in ensuring the safety of older adults who refuse transport to the ED as well as their unique ability to informally intervene to improve safety in the home, such as by moving furniture that presents a hazard.

Conclusions: EMS providers frequently identify potentially vulnerable older adults, but significant barriers exist to reporting, including lack of existing protocols, communication issues, and time constraints. Strategies to empower EMS providers were identified, including protocol development, direct communication with social workers, and feedback.

C58
Bedside Frailty Assessment and Hospital Outcomes in Critically Ill Patients

Background: To determine the clinical utility of the Clinical Frailty Scale (CFS) for diagnosing frailty in the ICU, we aimed to describe the construct and predictive validity of the CFS when completed by ICU clinicians.

Methods: We administered questionnaires on demographics and frailty markers to critically ill adult patients (n=35) or their proxy respondents (n=49). ICU clinicians, blinded to baseline questionnaires, completed the CFS upon admission to the ICU.

Results: ICU clinicians identified 29/84 (34.9%) patients as frail (CFS>4). Frail patients were older, more likely to be female and more ill on presentation to the ICU. Patients identified as frail by ICU clinicians were also more likely to report other frailty markers such as decreased physical function, weakness, sensory and cognitive impairment: 5/6 (83.3%) of patients who were dependent on assistance for eating were identified as frail. 22/38 (57.9%) of patients who were unable to rise from a chair without using their arms for assistance were identified as frail by ICU Clinicians. In bivariate analyses, frail patients were more likely to have delirium/persistent coma (OR 6.81 (2.02 -23.0), p=0.002). Frail patients had higher hospital mortality (OR 5.9 (95% CI, 1.8 –19.2, p=0.004) in bivariate analysis with a similar effect estimate after multivariable adjustment (OR 3.54, p=0.08)

Conclusions: The Clinical Frailty Scale has construct and predictive validity when completed by ICU clinicians but may be insensitive in identifying patients with frailty markers. Future studies should investigate whether a phenotypic approach may complement the CFS in identifying critically ill patients at high risk for adverse outcomes.

C59
Prevalence and determinants of vitamin D deficiency among older adults in Ecuador
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Objectives: This study aimed to estimate the prevalence of 25-hydroxyvitamin D (25(OH)D) insufficiency (< 30 ng/ml) and deficiency (< 20 ng/ml) and its determinants among older adults in Ecuador.

Methods: The prevalence of 25(OH)D was based on data from participants in the first national survey of Health, Wellbeing, and Aging. Logistic regression models adjusted for age, sex, and body mass index were created to examine associations between the characteristics of participants and 25(OH)D deficiency.

Results: Of 2,374 participants with a mean age of 71.0 (8.3) years, 25(OH)D insufficiency and deficiency was present in 67.8% (95% CI, 65.3 - 70.2) and 21.6% (95% CI, 19.5 - 23.7) of older Ecuadorians, respectively. In general, the prevalence of 25(OH)D deficiency varied across the country. However, residents from provinces located in the Andes Mountains region had consistently higher 25(OH)D deficiency rates than those residents from provinces along the coastal region (Figure 1). Logistic regression models indicate that women (OR, 3.19; 95% CI, 3.15 - 3.22), Indigenous (OR, 2.75; 95% CI, 2.70 – 2.80), and subjects residing in rural (OR, 4.49; 95% CI, 4.40 - 4.58) and urban (OR, 2.74; 95% CI, 2.69 - 2.80) areas of the Andes Mountains region were variables significantly associated with greater prevalence of 25(OH)D deficiency.

Conclusions: Despite abundant sunlight throughout the year in Ecuador, 25(OH)D deficiency was particularly prevalent among older women, Indigenous, and subjects residing in the Andes Mountains region of the country. The present findings may assist public health
Statins Benefit Less in Populations with High Non-Cardiovascular Mortality Risk: Meta-Regression of Randomized Controlled Trials

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Supported By: Caroline Kim is funded by Ruth L. Kirschstein National Research Service Award Training Program in Cardiovascular Research (T32HL007374)

Dae Hyun Kim is funded by KL2 Medical Research Investigator Training Award from Harvard Catalyst (1KL2TR001100)

Background: Guidelines recommend statins mainly based on cardiovascular (CV) risk, but individuals with high risk of dying from non-CV causes may not benefit from statins. We aimed to examine whether the benefit of statins varied by CV and non-CV mortality of the treated population.

Methods: We conducted meta-analysis and meta-regression of 16 randomized placebo-controlled trials consisting of 59,671 statin- and 59,707 placebo-treated patients with and without CV disease (mean age: 55-75 years). We used meta-regression to model relative risks (RRs) of major CV events (myocardial infarction and stroke) and total mortality for statins vs placebo, as a function of CV and non-CV mortality risks of study population.

Results: Every 1% increase in the 5-year non-CV mortality risk was associated with 3.7% (95% confidence interval [CI]: 1.2-6.3) higher RR of major CV events and 4.4% (2.1-6.9) higher RR of total mortality (higher RRs indicate smaller benefits). CV mortality was not associated with statin effects (p>0.05). In stratified analysis by CV (≥5.3% vs <5.3%) and non-CV mortality (≥3.8% vs <3.8%), statins had little mortality benefit in populations with high non-CV mortality, regardless of CV mortality (random-effects pooled RR [95% CI]: 0.81 [0.72-0.91] for low CV and non-CV mortality; 0.90 [0.76-1.06] for low CV and high non-CV mortality; 0.79 [0.72-0.87] for high CV and low non-CV mortality; 0.94 [0.87-1.02] for high CV and non-CV mortality). The CV event reduction also attenuated in populations with high non-CV mortality (the corresponding RRs [95% CI]: 0.67 [0.60-0.75]; 0.73 [0.66-0.81]; 0.77 [0.69-0.87]; 0.83 [0.74-0.92]).

Conclusion: Our findings suggest that statin benefits may depend on non-CV mortality risk of the treated population. This should be confirmed using individual-level data.
C62
Re-examining the effect of antihypertensive medications on falls in old age
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Supported By: This study was supported by grants P01 AG04390 and R37 AG25037 from the National Institute on Aging, Bethesda, MD. Dr. Tchalla was supported by the Limoges University, University Hospital Center of Limoges (CHU de Limoges) and Regional Council of Limousin from France. Dr. Lipsitz holds the Irving and Edyth S. Usen and Family Chair in Geriatric Medicine at Hebrew SeniorLife.

Background: Conflicting data on the relationship between antihypertensive medications and falls in elderly people may lead to inappropriate under-treatment of hypertension in an effort to prevent falls. Therefore, we aimed to clarify the relationships between the chronic use of different classes of antihypertensive medications and different types of falls, determine the effect of medication dose, and assess whether falls risk is mediated by differences in cerebral blood flow.

Methods: We assessed demographics, clinical characteristics, and chronic antihypertensive medication use in 598 community-dwelling people with hypertension, aged 70 to 97. Falls were self-reported on monthly calendar postcards for one year and characterized by telephone interviews. Multivariable logistic regression models were fit to estimate the risk of falls, falls subtypes, and potential cerebrovascular mediators of the relationship between hypertension medication use and falls.

Results: Antihypertensive medication use was not associated with an increased risk of falls. Angiotensin Converting Enzyme (ACE) Inhibitors were associated with a lower risk of injuries (RR 0.62, 95% confidence interval = 0.39 - 0.96) and Calcium Channel Blockers with a lower risk of all falls (OR = 0.63, 95% CI = 0.43, 0.93) and indoor falls (OR = 0.57, 95% CI = 0.36, 0.91), compared to subjects not taking these drugs. Larger doses of these classes were associated with a lower risk of falls. Higher cerebral blood flow in subjects taking calcium channel blockers appeared to partially mediate the protective effect of these medications on falls risk.

Conclusions: Treatment of hypertension with calcium channel blockers or ACE inhibitors may reduce falls risk. Calcium Channel blockers may do so by improving blood flow to brain regions critically involved in the control of mobility.

C63
Contribution of potentially modifiable risk factors of slow gait in the Health & Retirement Study
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Supported By: The Health and Retirement Study is sponsored by the National Institute on Aging (NIA U01 AG009740) and is conducted by the University of Michigan.

Background: Slow gait speed is recommended as an important screening tool to assess risk of outcomes such as disability, dementia, frailty, falls and mortality in aging. It is essential to establish the contribution of potentially modifiable risk factors to slow gait to develop effective management plans and preventative multifactorial interventions.

Methods: 4,038 adults age 65 and older (56.2% women) received timed walks at the 2006 wave of the nationally representative Health & Retirement Study (HRS). The primary outcome, slow gait, was defined using a recommended cut score of 0.6 m/s or slower. 15 potentially modifiable risk factors (identified from literature review and expert opinion) were defined. Muscle weakness was defined as handgrip one standard deviation (SD) or more below age and sex means. Scores one SD or more below the mean on the Telephone Interview for Cognitive Status was considered cognitive impairment. Participants reported if their physician had ever diagnosed them with hypertension, diabetes, strokes, heart conditions, or arthritis. More than three depressive symptoms on the Center for Epidemiologic Studies Depression Scale was considered elevated. Poor sleep quality was defined as rarely or never waking up feeling rested. Current alcohol consumption and falls were noted. Physical inactivity was defined as doing vigorous or moderately energetic activities less than once weekly. Low vision was rated as fair or poor ability or inability to see objects at far or near distances. Body mass index of ≥30 was considered obese. Moderate or severe pain most of the time was significant. Associations of risk factors with slow gait was examined using multivariable logistic regression adjusted for age, sex, education and all other risk factors.

Results: 1,084 (26.5%) of the HRS sample had slow gait. Muscle weakness (adjusted relative risk (RR) 1.81), cognitive impairment (RR 2.43), physical inactivity (RR 1.82), pain (RR 1.47), falls (RR 1.31), stroke (RR 1.63), arthritis (RR 1.24) and obesity (RR 1.28) increased risk of slow gait, whereas alcohol consumption (RR 0.71) reduced risk.

Conclusions: Nine potentially modifiable risk factors are associated with slow gait in older adults. These findings provide a foundation for developing clinical management guidelines and preventative strategies for slow gait.

C64
Determinants of functional limitations in older adults
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Background
Functional limitations result in diminished capacity for independence in community dwelling adults. The goal of this study was to identify major determinants of functional limitations in non-institutionalized older adults.

Method
The National Health and Nutrition Evaluation Survey (NHANES) dataset (2003-2004 and 2005-2006 waves) containing results from 20470 participants was used for the analysis. Frailty was identified using previously validated criteria reflecting physical, psychological and social domains of frailty. Functional limitations were reflected by an ADL scale based on previously validated criteria which consisted of 16 items associated with locomotion and transfers, household productivity, social integration, and manipulation of surroundings from NHANES database. A multivariate logistic regression model was built to assess the independent association of higher ADL scale with demographics, poverty-to-income ratio (PIR), private insurance coverage, general health, health status compared to the last year, type of place for routine healthcare, number of healthcare encounters over past year, number of hospitalizations last year, mental health, co-morbidities, polypharmacy and frailty. Results were reported in terms of odds ratios with 95% confidence intervals, which were calculated from model parameter coefficients and standards errors, respectively. A p-value <0.05 was considered as statistically significant.

Results
Individuals with impaired ADL were older and had higher proportion of women, minorities, people with lower education, single, less income, public insurance, mental health issues, multiple health conditions, higher health care utilization, polypharmacy and frailty. After adjusting for covariates, the following significant determinants of functional limitations were identified expressed as odd ratio (confidence interval): female - 1.86(1.29-2.68); African American - 2.05(0.97-4.34); married - 0.60(0.38-0.92), self-reported good health.
and 11% at discharge. 18.4% of patients with SGH had poor outcomes. Delirium was present in half the patients at admission approaching statistical significance of poor outcome (25% vs 11%, p = 0.036). No patients developed osmotic demyelination. Patients with delirium at admission were at higher risk (adjusted odds ratio 2.87 with 95% confidence interval 1.63-2.30).

**Conclusion**

The strongest factors increasing probability of functional independence were frailty, race, and sex. Married older adults and those reporting that their health is stable or improving were significantly less likely to demonstrate functional limitations.

**Keyword:** ADL

### C65

**Causes and Outcomes of Severe Hyponatremia in Elderly Hospitalized Patients in a Large Tertiary Care Indian Teaching Hospital**

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Supported By: Fluid research grant from Christin Medical College Vellore

**Background**

Hyponatremia is a common problem in the hospitalized elderly with the prevalence ranging from 18 to 24%. Hyponatremia on admission has been shown to be an independent predictor of in-hospital mortality and of increased length of hospital stay. We aimed to study the demographic profile, etiology and types of SGH and clinical outcomes and cognitive status at discharge in the Indian setting.

**Methods**

This prospective observational study was carried out over a year in the general medical wards of a large tertiary care hospital in South India. 109 patients with SGH (age ≥ 60, serum Na ≤ 125 mmol/l) were recruited, evaluated and followed up by one of the authors. A detailed history including drug history and examination was carried out. Presence of delirium was assessed by the confusion assessment method (CAM). Appropriate investigations including urine spot sodium, serum and urine osmolality and imaging to determine the etiology and category of hyponatremia were carried out. Death and discharge against medical advice (DAMA) were counted as poor outcomes.

**Results**

The mean age was 69.9 years. 13% had serum Na <110 Mmol/l and delirium was significantly more prevalent in these (p = 0.036). SIADH was the commonest category of SGH seen in 35% (47%, 31% and 18% due to lung disease, nervous system disease and drugs respectively). Drugs were causative or contributory in 20% of SGH with thiazide diuretics responsible for 10% of all cases. 52% of patients were in delirium at admission (hyponatremia was the sole cause in one third of these) and 49% had a low score on the Glasgow coma scale. 11% were still in delirium at discharge (one had CNS disease) and 18.4% had poor outcomes (2.8% mortality, 15.6% DAMA). Patients with delirium at admission were at higher risk (approaching statistical significance) of poor outcome (25% vs 11%, p = 0.054). No patients developed osmotic demyelination.

**Conclusion**

SIADH was the commonest cause of SGH in this series. Thiazides were causative in 10% and may need to be used with caution in a tropical country. Delirium was present in half the patients at admission and 11% at discharge. 18.4% of patients with SGH had poor outcomes.

### C66

**Characteristics of Older and Younger Participants in a Teleophthalmology Enabled Primary Care Based Diabetic Retinopathy Surveillance Program**

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Supported By: Greater Rochester Health Foundation Grant -003646 - Number 50-066-11

**Background:** Remote imaging based diabetic retinopathy surveillance (DRS) programs have been established to improve these rates. The current study compares the characteristics of an older and younger cohort of diabetic patients receiving remote imaging based DRS program at hospital and neighborhood federally qualified primary care health centers (FQHC) in urban Rochester, NY.

**Methods:** An IRB approved nonrandomized prospective cohort study was conducted at three FQHCs between February 2013 and September 2014. Diabetic patients without a documented eye exam within the last year (standard of care) were asked to come for free screening sessions. 400 diabetic patients were screened (Median age =54.5 years). To determine if older adult patients had different characteristics than their younger counterparts who participated in our program, chi-square analysis was performed for patients 55 and older and those younger than 55 years to compare various demographic, operational, and clinical data recorded for each patient.

**Results:** Of the 400 patients study participants screened, 20% of patients had vision impairment, (~20/40 in better seeing eye). The majority (73%) had no significant retinal findings, 19% had non vision-threatening diabetic retinopathy and 4% had vision-threatening retinopathy. There was no difference between older and younger patients in terms of demographics or level of retinopathy. Older patients were more likely to have a HbA1c above 12 mg/dl (P<0.001), have vision 20/40 or better (73%) (p<0.005) and were more likely to follow up with the eye care provider (65%) as advised after having remote imaging (p<0.016).

**Conclusions:** Primary care based vision and retinopathy surveillance and education using non-mydriatic retinal cameras is an innovative method to delivery eye care for diabetic patients. Older patients adhered to recommended health care and had better vision than younger patients. Future studies should focus on the reasons for the differences between older and younger patients in this population to better understand factors associated with vision and adherence to recommended health care.

### C67

**Early-Onset Functional Difficulty and Its Relationship to Functional Dependence**


Supported By: National Institute on Aging

**Background:** The oldest old are the age group most likely to experience functional dependence, meaning the need for help performing basic daily activities. However, functional difficulty – i.e., experiencing difficulty performing a task, though still performing it without help – may precede dependence by decades. Little is known about how functional difficulties arise at younger ages and how these difficulties relate to the emergence of functional dependence.

**Methods:** We analyzed longitudinal data from 8680 participants in the nationally-representative Health and Retirement Study. Participants were age 50-56 at enrollment and free of impairment in activities of daily living (ADLs) and instrumental activities of daily living (IADLs). We analyzed data from these individuals at 2 year intervals
for up to 20 years for new-onset functional difficulty and dependence. We defined ADL difficulty as self-reported difficulty performing 1 or more ADLs and ADL dependence as self-reported need for help performing 1 or more ADLs. We defined difficulty and dependence in IADLs similarly. The incidence of new-onset ADL and IADL difficulty and dependence at different ages were evaluated using flexible parametric survival analysis. Reported values incorporate survey weights to account for the complex survey design.

**Results**: Overall, 54% of participants were male and 80% were white. The incidence of new-onset ADL difficulty increased rapidly as participants progressed from their early to mid-50s: at age 52, the incidence of new-onset ADL difficulty was 9 per 1000 person-years (PYs), rising to 17 per 1000 PYs at age 57. However, starting at age 58 the incidence rates rose much less steeply for each additional year of life, from 18 per 1000 PYs at age 58 to 21 per 1000 PYs at age 78. In contrast, the incidence of ADL dependence increased at a relatively constant rate with increasing age, from 1 per 1000 PYs at age 52 to 18 per 1000 PYs at age 78. The incidence of IADL difficulty and dependence by age showed a similar pattern.

**Conclusions**: While ADL and IADL difficulties begin developing relatively early in the life course, dependence develops later. This pattern suggests that intervening in late middle age, when functional difficulties first arise, may have the potential to prevent or slow the progression from functional difficulty to dependence.

C68

OLDER URBAN RESIDENTS’ VIEWS ON HOW TO IMPROVE THEIR TRANSPORTATION OPTIONS

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Background: Access to transportation services is central to older individuals’ ability to stay connected to their environment, as well as their ability to obtain health care, goods, services, paid/volunteer work, social interaction, and entertainment. A number of factors may influence their ability to use these services, as well as their satisfaction with them. The purpose of this study was to investigate how well available transportation options met the needs of older urban residents and how these options could be improved.

Methods: Sixteen focus groups with 162 participants were conducted in senior centers, sites of worship, and senior housing complexes in New Haven, CT. Sites were chosen to ensure neighborhood and racial/ethnic diversity. A questionnaire was administered at the outset to gather basic information and guide the subsequent discussion.

Results: The 162 participants had a mean age of 74.6 (SD=10.2) years, 81% were women, 24% were Hispanic, 58% African-American, 69% lived alone. The mean number of chronic conditions was 4 (range 0-15), 41% had an IADL impairment, 8% an ADL impairment, 30% had fallen in the past year, 48% were afraid of falling, 40% used a walking aid regularly, and 50% experienced pain on a daily basis. Participants’ primary concerns were accessibility, affordability, comfort, convenience, frequency, and punctuality. Specific suggestions included: more stops, more frequent buses, expanded weekend service, driver courtesy, lower cost, timeliness of pick up before/after appointments, access in inclement weather, and transportation to non-medical activities.

Conclusions: While most participants were satisfied with available transportation options, a considerable number had unmet needs. Participants offered a number of suggestions that could readily be incorporated into existing transportation options to enhance services provided and better meet the needs and desires of older persons.

C69

A Retrospective Descriptive Review Of Inpatient Hospice Facility Data from 2009 till 2013

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Background: The hospice philosophy with focus on the patient’s autonomy and the ideal of a good death are the overall objectives of palliative care. We performed a retrospective analysis of the patients admitted to Vidant Inpatient Hospice from 2009 till 2013. The primary objective of the study is to look at the outcomes of the admissions. We also looked at the mean age, admission diagnosis, ethnicity and average length of stay. Vidant inpatient hospice is an 8 bed facility serving Pitt and neighboring counties in Greenville NC and is unique in respect that it is staffed by a physician 7 days a week.

Methods: We undertook a retrospective descriptive chart review of 1692 admissions to the inpatient hospice over the period of 57 months (Jan 2009 till Sept 2013). The data was recorded by using the standardized forms, and was analyzed by using descriptive statistics.

Results: The total number of admissions was 1692 during the 57 months. The primary objective of our study is the outcome of the stay: 79% of the patients died during the admission, 14% were discharged home with hospice, 3% were discharged to a nursing home, 0.5% were sent to the ED and 0.6% revoked the decision to be on hospice. The mean age of the patients was 73.45 years. The mean length of stay was 6.69 days. There were 65% Caucasians and 33% African American patients with a small percentage of 0.8% of Hispanic patients. The most common primary diagnosis was malignancy (lung, breast and colon) with end stage Dementia a close second. The main reason for admission was found to be pain, shortness of breath, agitation, anxiety and terminal care. We also investigated the use of opioid medications (both iv and oral) and sedation in these end of life situations. Most of the patients were referred from the hospital, with a few being referred from home hospice and nursing homes.

Conclusions: The criteria as to which of the critically ill patients need inpatient hospice and which patients eventually do get admitted to the facility is still a grey zone. We realize that the hospice philosophy is increasingly being embraced by different patient populations and we need further studies and more data to establish trends of inpatient hospice utilization over the period of years.

C70

Antipsychotic Use in Hospitalized Patients: Rates, indications, and predictors

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Supported By: Dr. Herzig was funded by grant number K23AG042459 from the National Institute on Aging. Dr. Marcantonio was funded by grant numbers R01AG031720, R01AG030618, R03AG028189, and K24AG035075 from the National Institute on Aging.

Background: Although antipsychotics are used off-label for treatment of delirium and agitation in hospitalized patients, the scope of use has not been investigated. We aimed to investigate rates, indications, and predictors of antipsychotic use in hospitalized patients.

Methods: Observational cohort of patients ≥18 years old, admitted to an academic medical center from 8/2012-8/2013. We excluded patients admitted to psychiatry, and patients with a diagnosis of a psychotic disorder. Data were collected from hospital electronic medical information databases. We investigated predictors of new initiation and discharge on antipsychotic medication using multivariable Poisson regression models, controlling for demographics and Elixhauser comorbidities. We included a composite variable representing delirium, dementia, and amnestic and other cognitive disorders as defined by the Agency for Healthcare Research and Quality Clinical Clas-
sification Software. We performed a chart review of 100 randomly selected patients newly initiated on antipsychotics to determine documented indications for use.

**Results:** Our cohort included 17,775 admissions (median age = 64 years). Antipsychotics were used in 9% (3% typical, 7% atypical, 1% both). Among exposed, 58% were initiations. The 3 most common indications for initiation were delirium (54%), probable delirium (14%), and nausea (14%). Among antipsychotics initiated in the hospital, 11% of typicals, 29% of atypicals, and 26% overall, were continued at discharge. Significant predictors of initiation included: age ≥ 65 years (RR 1.3 [1.1-1.6]); admission to a medical service (vs. non-medical; 1.4 [1.2-1.6]); ICU stay (2.0 [1.7-2.4]); mechanical ventilation (2.8 [2.4-3.4]); and delirium, dementia, and amnestic and other cognitive disorders (4.5 [3.8-5.4]). Significant predictors of discharge on antipsychotic medications among new initiators included: discharge to any location other than home (2.4 [1.6-3.5]); and use of atypical vs. typical antipsychotics (1.7 [1.1-2.5]).

**Conclusions:** Antipsychotic use was common during hospitalization, and treatment of delirium was the most commonly documented indication for use. Among new users, discharge on these medications was also common. We identified several predictors of new initiation and discharge on these medications, suggesting potential targets for enhanced prescribing guidance and medication reconciliation practices.

### C71 Hospitalized older adults with palliative care recommendation: who are they?

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Supported By: None of the authors reported a potential, real, or perceived conflict of interest or financial disclosure. No sponsors participated in or funded this research.

**Background:** There is a steady increase in the prevalence of chronic and incurable medical conditions that parallels population aging. It is essential to understand how this reality affects the care of older adults, including how their prognosis is generally assessed and when providers recommend palliative care. We sought to identify clinical and laboratory factors that were associated with palliative care recommendation among hospitalized older adults, and to analyze their 12-month survival.

**Methods:** We revised data from comprehensive geriatric assessments (CGA) and medical records from 978 patients aged 60 years and older who were admitted to a geriatric ward of a tertiary university hospital from January 2009 to August 2013, in Sao Paulo, Brazil. The variables of interest were analyzed according to the introduction of palliative care (PC) during hospitalization, and included socio-demographic, clinical, functional, cognitive and laboratory factors. Data regarding in-hospital outcomes and 12-month survival were also collected.

**Results:** Mean age was 80.6±8.3 years and 64% were women. Median length of stay was 12 days and general in-hospital mortality was 16.6%. PC was indicated for 194 patients, in average 6 days after admission. 130 of these patients died during follow-up, 75.4% of them still while hospitalized. Patients with PC recommendation were more frequently dependent for ADLs (p<0.001) and for IADLs (p=0.001), and had lower levels of albumin upon admission (p=0.001). Major comorbidities that were associated with PC were advanced dementia (45.4%), cancer (38.1%), congestive heart failure (24.7%), chronic pulmonary obstructive disease (8.2%), and chronic kidney disease (6.2%). Other conditions that were specially associated with PC included delirium (66 vs. 19.1%); p=0.001) and infections (60.8 vs. 31.6%; p=0.001). Family meetings to discuss prognosis took place in 86% of the cases but only 14.3% of the cognitively intact patients were aware of their prognosis.

**Conclusions:** Hospitalized older adults with PC recommendation were more frequently dependent, malmourished, delirious and infected, while advanced dementia and cancer were the most often conditions underlying this therapeutic approach. High mortality immediately following PC recommendation and low patient prognostic awareness suggest advanced care planning needs to be introduced earlier in the course of illnesses.

### C72 Trends in hip fracture rates in Taiwan: a nationwide study from 1996 to 2010

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Supported By: This study is supported by the intramural project of Taipei City Hospital, Taiwan.

**Background:** Fractures of the proximal femur are an important diagnostic category in the emergency unit. Despite population aging, many countries reported decreasing hip fracture rates in recent years. There has been no recent study examining national trends in hip fractures in Taiwan. We aimed to report recent hip fracture rates among people aged 55 and over in Taiwan.

**Methods:** This is a retrospective time trends study. We used national data for 1996 to 2010 from the National Health Insurance Research database. Insurers aged 50 and over were included. Patients with an admission for hip fracture (100,202 admissions), the relevant length of hospital stay (LOS) and mortality were identified. Our main outcome, hip fractures, was classified as femoral neck, trochanteric and subtrochanteric fractures.

**Results:** Between 1996 and 2010, there was little change in hip fracture rates (386.4 to 390.0 fractures per 100,000 person-years), but LOS decreased by 46.5% (17.53 to 9.38 days). In-hospital mortality rate decreased by 16.5% (21.0 to 18.8 deaths per 100 hip fracture admissions)(Table). Women outnumbered men in all three types of hip fractures, but men had higher mortality rates of hip fractures as compared to women. LOS was similar between the two genders. During the study period, the turning point for changes of both hip fracture rates and mortality was year 2003.

**Conclusions:** Hip fracture rates have not decreased in Taiwan since 1998, although LOS and inpatient mortality rates have declined.

**Table. Incidence of hip fracture: numbers and rates per 10^5, mortality rates (%) during admission and length of hospital stay (LOS) in 16 consecutive years.**
**C73**

**Title:** A novel mechanism to track Physician Orders for Life Sustaining Treatment (POLST) Form between the community and clinical campus

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**Background:** The Physician Orders for Life Sustaining Treatment (POLST) Paradigm is a clinical process that facilitates communication between providers and patients with serious illness or frailty. When completed properly, it creates a portable, actionable set of orders, and they flow through a healthcare system. No studies have looked specifically at how the completed form flows through a health system and what barriers may exist preventing the form to make it to the appropriate practitioners.

**Methods:** A POLST form will be completed on appropriate patients at Einstein’s skilled nursing facility. We will include patients > 18 years old with serious illness or frailty in whom there is a reasonable likelihood that they could die within a year. Those who do not fit this criterion and/or are not interested in having a POLST form completed. These individuals will have their code status order changed in the electronic medical record (EMR) to “See POLST form.” Patient who will ultimately be discharged home or nursing home with orginal POLST form. An algorithm has been created within the electronic medical record that will now identify these patients (based on their admission to the SNF and the unique code status order) and so if the patient presents to the ED at any time after the POLST form is completed, the treatment team will be notified that the patient has completed a POLST form in the past. A representative will then check whether the POLST form has accompanied the patient to the ED. If no POLST has accompanied that patient, the reason will be solicited based on multiple choice pop options built into the EMR.

**Conclusions:** This project represents a unique process to track the flow of POLST forms between the community and a health care system. The unique loop between this community, the emergency room, hospital and on-site SNF, create an ideal environment to accomplish this. A novel algorithm has been created in the EMR to enable us to capture all patients with a POLST when they return back to the hospital from home. This will allow us to capture the percentage of forms that accompany the patients and if not, what specific factors contribute to this system failure.

**C74**

**Tube Feeding Use in Nursing Home Residents with Advanced Dementia**

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**Background:** Feeding tubes are not recommended for older adults with advanced dementia (American Geriatric Society Feeding Tubes in Advanced Dementia Position Statement 2014). Eating difficulties are a natural part at the end stage of dementia. Tube feeding use is associated with agitation, greater use of restraints, greater healthcare use due to tube related complications.

Providence Extended Care is a 96-bed LTC facility in Anchorage, AK and requires that every resident has a MOST (Medical Orders for Scope of Treatment) form completed by a medical provider prior to admission. MOST form addresses life-sustaining measures, antibiotic use and feeding tubes, it is not yet recognized by the state of Alaska. Objective of our study was to review feeding tube use and wishes regarding artificial nutrition in nursing home (NH) residents with advanced dementia.

**Methods:** Retrospective chart review of 96 nursing home residents. Residents age 65 years or older with a score on the Brief Interview for Mental Status (BIMS) 0-7 or classification as severely impaired cognitive skills on most recent Minimum Data Set assessment were included. MOST forms and choices regarding artificial nutrition (no artificial nutrition, time limited trial or long-term artificial nutrition) were reviewed.

**Results:** 21 nursing home residents (8 women, 13 men) were found to have advanced dementia. 14% of residents with advanced dementia (3 of 21, mean age 77.3 yrs) had a feeding tube. 52% (n=11) had an order for no artificial nutrition, 14% (n=3) time limited trial and 10% (n=2) long-term artificial nutrition if medically indicated. Mean age of 70.5 yrs of residents with a wish for long-term artificial nutrition versus mean age 84.4 yrs of residents with wish for no tube feedings.

**Conclusion:** We found a rather low rate of 14% (nationwide average is 34%) tube fed residents with advanced dementia in our nursing home, which is probably due to addressing artificial nutrition and end of life care through MOST form, geriatricians on staff, palliative care fellow, facility size and not for profit philosophy. Reviewing goals of care with the NH resident and their surrogate decision maker is an excellent opportunity to get to know the individual’s wishes and to provide education on the course of dementia. Eating problems should be addressed early in the course of dementia.

**C75**

**Documentation and Accessibility of Advance Care Planning Discussions for Home-Based Primary Care Veterans**

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**Background:** In clinical practice, advance care planning (ACP) remains largely unexplored and/or undocumented in the electronic health record (EHR). Our review aimed to evaluate the compliance with and content of a standard ACP discussion note in the EHR, known as the Computerized Patient Record System (CPRS), within a subset of Veterans of the Birmingham Veterans Affairs Medical Center (BVAMC).

**Methods:** As a quality improvement initiative, we performed a chart review of BVAMC Home-Based Primary Care (HBPC) Veterans and included the “Advance Directive Discussion” note, “DNR” note, scanned advance directives, and HBPC physician and nurse practitioner notes. We examined the notes for content and general patient demographics. Descriptive statistics were used to analyze the HBPC Veterans.

**Results:** Of the 160 Veterans enrolled in the BVAMC HBPC program, the mean age was 80 ± 12 years; 37% were non-whites and 98% were men. HBPC patients had a cumulative number of 17 ± 6 diagnoses and used an average of 16 ± 6 medications. ACP was documented for 97% of Veterans; 90% of charts contained ACP discussions or scanned documents appropriately filed within the Postings header of CPRS. Of the latter, 59% noted preferences for limitation of medical interventions, 38% commented on decisional capacity, and 78% identified a healthcare proxy. Scanned advance directives were found in 28% of charts, and the “Advance Directive Discussion” note was utilized in 86%.

**Conclusion:** In a representative VA HBPC population, we found a high rate of documentation of any component(s) of ACP. However, given the burden of comorbidities and homebound status of the HBPC Veterans, standardized and accessible EHR documentation inclusive of all of these individuals’ values, preferences, and health care goals is crucial. Our findings suggest the opportunity for interventions in provider education to achieve standardization of content of ACP discussions and EHR ACP documentation accessibility.
C76
A comparison of health care utilization at the end-of-life between older patients died from cancers and noncancerous causes at a university hospital in Thailand
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Supported By: Siriraj Research and Development Fund

Background
Cost of caring for individuals appears to be highest at the end of life. The high cost might be contributed to receiving futile invasive interventions toward end-of-life period. Studies with respect to health care cost and procedures provided comparing between cancerous and terminally-ill non-cancerous patients in Asian countries where concept of palliative care remains not popular is limited. This study aimed to compare 2 groups of older patients with terminal illnesses regarding quality and cost of care in a university hospital in Thailand.

Methods
We conduct a chart review of patients age > 60 year old who admitted to department of medicine and died during the year 2013. We categorized charts into deaths from cancerous and non-cancerous. Among non-cancerous individuals, we selected patients who had been suffered with terminal stage of their chronic illnesses who deemed appropriate for palliative care. The number of clinic attendance and admissions within 6 months and the data of the last admission were collected and compared.

Results
There were 278 cancerous and 385 non-cancerous patients. Median ages of cancerous and noncancerous patients were 74 and 79, respectively. The number of clinic attendances and admissions within 6 months were similar in both group. Lengths of stay for last admission were not significantly different. Endotracheal intubations were performed in 37% cancerous patients compared to 69% of non-cancerous patients (p<0.001). Cardiopulmonary resuscitations (CPR) were conducted in 9% of cancerous and 16% in another group (p=0.005). Central venous catheters were placed in 14% in cancerous and 28% in non-cancerous patients (p<0.001). The cost of treatment in cancerous and non-cancerous patients were 58,688 Bath (1,956 USD) and 76,489 Bath (2,550 USD) respectively (p=0.01).

Conclusions
Many terminally ill older patients received several invasive procedures including endotracheal intubation without CPR. The procedures might prolong patient’s suffering and produce unnecessary high cost of care. Implementing appropriate palliative care at optimal time for this group of patients, particularly for non-cancerous group might improve patient’s quality of life and diminish unnecessary procedures and cost of care.

C77
Working Together: Creating a Patient Family Stakeholder Advisory Group

Background: The IOM calls for patient and family-centered care. Jefferson’s Palliative Care Research Team (PCRT) is an Inter-professional group of clinicians and researchers whose mission is to improve patient and family-centered communication. We developed a unique advisory group (AG) of patients, families and stakeholders to move the research agenda forward.

Methods: Guided by a conceptual model, we developed the AG and integrated them into the research team. The AG was convened to review an intervention under development called “GO Care” (Goals of Care). This is currently a web-based app for running family meetings.

Four family members, one patient and two clinical stakeholders agreed to participate in our AG. We designed a series of three meetings of the AG. The first was for each family member to meet with the PCRT individually, in order to normalize the process for the family member and to allow for re-processing of the emotional elements of the family member’s recent family meeting. These first sessions provided basic information about end of life and patient and family-centered communication, to learn about their personal experiences with end of life communication. Sessions two and three had the AG and the PCRT working together, focused on content review of the App and feasibility of use through role-playing and round-table discussions. Notes and comments from the AG and our own reflections indicate to us that this is a valuable and generalizable process.

Results: The unique AG was successfully created and was a valuable addition to the PCRT. Collaboration with the AG helped shape the GO Care Intervention and this work led to several grant submissions. In addition, all AG members agreed to be contacted them for further work, demonstrating acceptability to members.

Conclusions: Convening an Advisory Group can be a valuable addition to research in palliative care, one which helps to ensure patient and family-centeredness. The PCRT felt the formation of the AG was successful and easily reproducible by other research teams. Patients, Families and Stakeholders were able to work together successfully using this conceptual model. Adequate time for patients and families to debrief from prior experience was key to our success.

C78
Foot Pain in Older Adults: Associations with Incident Falls, Frailty Syndrome and Sensor-Derived Gait, Balance, and Physical Activity

Background: Foot pain occurs in nearly 20 percent of older adults, and has been shown to more than double the risk of falling. Our aim was to characterize and examine the association of foot pain and incident falls, frailty syndrome, and body-worn sensor parameters including gait, balance, and physical activity in community-dwelling older adults.

Methods: Participants from the Arizona Frailty Cohort Study, community-dwelling adults 65 years and older, completed various questionnaires (tiredness performing mobility-related tasks [MOB-T], depression [CES-D], fear of falling [FES-I], Fried Frailty, Barthel activities of daily living, foot pain, and foot health), balance trials (dual support eyes open and eyes closed), gait trials (single-task, rapid gait, timed-up-and-go, and sit-to-stand), and physical activity measures (24 hours wearing activity monitor).

Results: Participants with high levels of foot pain were more likely to be Hispanic white, obese with high body fat percentage, use assistive devices, and have a foot deformity. Moderate to high foot pain was associated with increasing frailty status (p=0.04) and increasing number of incident falls (p=0.04). High foot pain was associated with higher fear of falling (OR 1.9 per 10 units on scale, 95% CI 1.3-2.8), slower gait speed (p=0.02), shorter stride length (p=0.02) and more time spent in the double support phase of the gait cycle (p=0.001).

Conclusions: Reported foot pain is associated with frailty level, incident falls, and gait characteristics. This association may be used for the evaluation and prediction of fall risk in older adults.
C79
Association between Metabolic Syndrome and Cognitive Impairment in the Oldest Old
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Supported By: FAPESP - Fundação de Apoio a Pesquisa do Estado de São Paulo

Background: The prevalence of cognitive impairment is expected to rise dramatically due to an aging population, becoming an important public health problem. Nowadays, there is no effective or disease-modifying treatment and the condition starts many years before the onset of cognitive symptoms. It is of great importance to identify risk factors that enable early diagnosis to allow its prevention and slow its progression. Some studies have shown that metabolic syndrome (MetS) may be a risk factor for cognitive impairment (CI) among elderly although others not shown this association. The aim of this study is to test the hypothesis of an association between MetS and CI among the oldest old population.

Methods: Cross-sectional analyses of Longeves Project, a cohort of community dwelling elderly aged 80 and over. MetS was defined by the presence of at least three of these criteria: a) history of hypertension; b) fasting plasma glucose ≥ 100mg/dL; c) high-density lipoprotein (HDL) ≥ 40mg/dL in men and ≥ 50mg/dL in women; d) waist circumference ≥ 102 cm in men and ≥ 88 cm in women; e) tryglycerides ≥ 150 mg/dL. CI was defined as the presence of at least two abnormal results of these tests: a) mini-mental state examination (MMSE); b) clock test (CT); c) verbal fluency (VF). The chi-square test was used to test the association between CI and MetS and the analysis of variance (ANOVA) was used to compare the cognitive tests scores in the groups with and without MetS. Results: 255 subjects were studied, their mean age was 85.4 years and 67% were female. Overall, the prevalence of MetS was 54.5% (139 elderly) and of CI was 30% (76 elderly). There was no association between the cognitive tests scores in the groups with and without MetS (MMSE: p = 0.804, CT: p = 0.759, VF: 0.499). Moreover, the association between MetS and CI was not statistically significant (p = 0.346). These results can be explained because the concept of MetS anf its cutoff values may be less valid in this age group of oldest old. Also, should be considered low blood flow can accelerate the process of brain atrophy and low cholesterol levels may be deleterious since they are essential for maintenance of the myelin sheath and for the synapses. Conclusion: MetS was not associated with cognitive impairment in this population.

C81
Circulating Levels of Neopterin are Associated with Soluble Tumor Necrosis Factor Receptor-1 (sTNFR-1) and Receptor-2 (sTNFR-2) Levels in a Cohort of HIV-Infected and At-Risk Injection Drug Users (IDUs)
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Supported By: RC1 AI086053, R21 AG043874

Background: Age-related chronic conditions have become the major health concern for the aging population living with HIV/AIDS. Chronic inflammation is a key contributing factor to these conditions, it’s important to understand the complex inflammatory processes and paradoxical immune activation in HIV infection. The objective of this study was to assess the relationships between circulating levels of neopterin and sTNFR-1, sTNFR-2, and CRP in a cohort of HIV+ and at-risk IDUs.

Methods: The AIDS Linked to the Intravenous Experience (ALIVE) study is a prospective cohort composed of HIV-infected and at-risk IDUs in Baltimore, MD. Excluding participants for incomplete data and those with highly influential residual values for inflammatory markers, participants with available data on neopterin, sTNFR-1, sTNFR-2 and CRP were included in this analysis (n=1481). Multiple regression analyses were used to assess relationships of neopterin with sTNFR-1, sTNFR-2, and CRP.

Results: 1481 subjects, 421 were HIV positive. The mean age was 46.8 years (range 21.2-78.1), 65.0% were male, and 87.5% were African American. Levels of neopterin were significantly associated with sTNFR-1 and sTNFR-2 in the total population (correlation coefficient 0.572 and 0.617, respectively, both p<.001), HIV+ subjects (0.573 and 0.541, respectively, both p<.001), and HIV- subjects (0.559 and 0.65, respectively, both p<.001), adjusting for age, race, number of comorbidities (0 or 1, 2, ≥3), and IDU. No significant associations were observed between neopterin and CRP levels (data not shown).

Conclusions: This study demonstrated significant positive associations of neopterin with both sTNFR-1 and sTNFR-2 in a cohort of HIV-infected and at-risk IDUs. The lack of associations between neopterin and CRP is because CRP is a most distal inflammatory marker produced by the liver and likely influenced by other co-infections such as hepatitis. These findings provide a biological basis for further investigations into potential molecular and immune mechanisms of chronic inflammation and immune activation and their clinical implications in this vulnerable aging population.
C82
Human cytomegalovirus (CMV) Infection: an in vitro model using THP-1 derived macrophages
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Supported By: NIH/NIAID R01 AI108907
NIH/NIA R21 AG043874
The Milstein Medical Asian American Partnership Foundation

Background: Substantial evidence suggests that chronic CMV infection contributes significantly to T-cell immunosenescence and chronic inflammation in older adults. Our recent studies indicate 1) that CMV-induced T-cell responses are far beyond commonly reported CMV pp65 and IE1-specific ones in HI+ and HIV- men [1]; and 2) that chronic CMV infection defined by monocyte CMV DNA is longitudinally linked to elevated IL-6 levels in older women [2]. While monocytes and macrophages are known host cell types for chronic/latent human CMV infection, these cells are non-permissive to CMV in cell culture. The objective of this study is to develop and optimize an in vitro model of human CMV infection.

Methods: THP-1(a human monocytic cell line) cells at 4x10^5/ml were incubated in the presence of phenolborhmyristate acetate (50 ng/ml) for 24 hours to differentiate. THP-1 derived macrophages were incubated in RPMI 1640 complete media (control), human CMV (Towne strain) at multiplicity of infection (MOI) of 2, or CMV (MOI=2) and chitosan (80 mcg/ml) for 24 hrs. CMV-containing media were removed and cell were culture in complete media for an additional 24 hrs. Cells were then detached by accutase, washed with PBS, stained with FITC-conjugated anti-CMV IE1 and IE2 monoclonal antibody (Millipore) using 90% methanol for permeabilization and staining at 37°C for 90 min, and analyzed using a Calibar flow cytometer and CellQuest software (BD Biosciences).

Results: THP-1 derived macrophages infected by human CMV were detected as discrete cell population in flowcytometric analyses. With CMV alone, about 17% cells were positive for CMV infection. With CMV plus chitosan, infection efficiency was increased up to 84.3%.

Conclusions and discussion: This cell culture model can monitor human CMV infection efficiency via flowcytometric analysis, and addition of chitosan can dramatically improve the infection efficiency. This in vitro model can serve as a useful tool for further mechanistic investigations into human CMV infection and its impact on health.

References:

C83
Using the 2009 National Patient Safety Goals to develop a program for Interdisciplinary team training on a VA (Veterans Affairs) Geriatric Evaluation and Management (GEM) Unit
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Supported By: VISN I Patient Safety Center of Inquiry

Background: Geriatricians need to be experts in providing Interdisciplinary team care and it is extremely important that Geriatric fellows master the skills needed to work collaboratively with a team during their training. This abstract describes an interdisciplinary team training program where Geriatric fellows worked with interdisciplinary team members to comply with a NPSG selected by the fellow.

Methods: 11 first year Geriatric fellows were given quality improvement projects while rotating through a VA GEM unit. The fellows were to select a National Patient Safety Goal and work with at least one member of the IDT team to comply with it, in order to improve patient safety on the unit. The experience was then evaluated by both the fellow and the team member.

Results: 11 first year Geriatric fellows from Harvard and Boston University working with 50 IDT members completed the project. NPSGs chosen included reducing the risk of health care associated infections, improving the safety of using medications, reducing harm associated with anticoagulation therapy and reducing the risk of patient harm resulting from falls. The interdisciplinary team members were extremely satisfied with and appreciative of the program and 865 of them (N=43) strongly agreed that working with the doctor in a small group enables the team to function more effectively. The fellows also considered the program to be a valuable experience with 63% (N=7) strongly agreeing that the program enhanced their ability to work with an interdisciplinary team.

Conclusion: There is a need to develop and implement training programs in order to ensure that Geriatricians and other healthcare professional master the skills needed to work effectively in teams. The program described above, provided the opportunity for Geriatric fellows to work closely with small groups of IDT team members on achieving common goals relevant to the care of mutual patients.

C84
Beyond Words: How well medical students used non-verbal cues to offer support
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Background: Effective nonverbal communication of empathy is often administered in subtherapeutic doses but is important for healthy therapeutic relationships. While the ability to offer support for emotionally distraught patients and families is an important skill for all physicians, we do not know how well Medical Students perform this skill. As a part of an end of life teaching exercise, we have Year 4 Medical Students (MS4) complete a standardized patient (SP) encounter centered on treating a dying patient and his wife. We wished to objectivly measure their performance on nonverbal communication.

Objective: To evaluate MS4s in their use of nonverbal communication in response to a crying patient.

Methods: MS4s are videotaped during a SP encounter during which they must care for a dying patient (SimMan) and his wife (actress). Recorded encounters were reviewed to evaluate the performance of nonverbal communication of empathy in response to wife’s crying. Data was analyzed for descriptive statistics. A survey tool adapted from published literature was used to evaluate the following 5 points of nonverbal communication: spatial placement, mimicking posture of crying wife, positioning of arms/hands, touch, and offering tissue.

Results: There were 108 recorded MS4 (46 females, 62 males) encounters from 2013 through 2014 at the University of Kansas School of Medicine that were reviewed. 94% (102/108) of the MS4s did touch in response to Mrs. Smith’s crying, only 13.8% (15/108) offered Mrs. Smith tissue within the first minute of crying. 68.5% (74/108) did not offer tissue, and 17.5% (19/108) displayed a delay in offering tissue. Within a minute, 79.6% (86/108) did close the distance and 75.9% (82/108) mimicked posture of crying SP.

Conclusion: Per our measurement and initial analysis, MS4s did a good job of displaying nonverbal communication in touch, spatial placement, and mimicking posture. There is place for improvement especially in offering tissue. Further educational process can be established and implemented to equip MS4s with techniques and tools to empower them to effectively communicate empathy and make this skill tangible to all.

C85 Assessing Translation of IPE and TBL Tools to the Practice Setting

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Background: Systematic reviews on interprofessional education (IPE) and team-based learning (TBL) have demonstrated the benefits of IPE and TBL, but few programs report outcomes related to behavior change on learning outcomes. The Geriatrics Champions Program (GCP) at the University of Kansas Medical Center (KUMC) is a 24 month, 6 profession curriculum designed to teach 30 geriatric competencies in 8 domains in an interprofessional manner using a TBL format. Our purpose is to investigate, 1) if learners are implementing the GCP tools in their practice settings, 2) which component of the GCP primarily impacted their translation from coursework to practice, and 3) the barriers learners faced in implementing these tools.

Methods: The GCP learners from 2011 to 2014 were invited to participate in a voluntary online Likert and open-ended 9 question survey. Data from surveys was analyzed for descriptive statistics.

Results: The survey was sent to 428 learners; 40 learners responded with some incomplete surveys. GCP learners were usually/always implementing the GCP tools to their practice setting (Table 1). Learners identified GCP modalities that were most influential for their current practice of GCP tools as the following: IPE (18/40, 45%), TBL (11/40, 27.5%), and course work (1/40, 2.5%). Learners identified barriers for practicing learned GCP tools being lack of opportunity (18/28, 64 %), time constraints (9/28, 32%), feeling uncomfortable (6/28, 21%), and inadequately trained (6/28, 21%).

Conclusion: The majority of the learners were able to apply learned GCP tools to their practice settings to some extent. Of the different GCP modalities, learners identified the interprofessional education as being the most influential. The most common barrier for implementation of learned GCP tools was lack of opportunity in the learners’ current practice setting.

C86 Encore Presentation

Student Attitudes Towards Interprofessional Team-Based Learning within an Innovative Practice Model

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Supported By: HRSA Grant number UD7HP26044 “Nurse Education, Practice, Quality, and Retention (NEPQR) Program - Interprofessional Collaborative Practice”.

BACKGROUND: The Richmond Health and Wellness Program (RHWP) is an innovative, interprofessional, student-led, care coordination clinic located in a Section-8 apartment building serving low-income older adults where interprofessional student teams provide care coordination and chronic illness education during visits.

METHODS: Student attitudes toward interprofessional learning were assessed prior to the experience with the 23-item Readiness for Interprofessional Learning Scale (RIPLS). Higher scores indicate a more positive attitude.

RESULTS: Fifty-nine students completed the questionnaire for Spring and Summer of 2014. The majority of students were under 30 years (70.7%), female (81.0%), and with at least some healthcare experience prior to starting their program (63.9%). Student disciplines included: nursing (BSN; n=18 (31.6%), NP: n=17 (29.8%), pharmacy (n=6 (10.5%)), medicine (n=7 (12.3%)), social work (n=4 (7.0%)), and other (n=5 (8.8%)) programs. Students had high mean values on the three RIPLS subscales indicating a readiness for interprofessional learning: teamwork and collaboration (M=4.4 (SD: 0.53); Cronbach’s alpha=0.93), patient-centeredness (M=4.7 (SD: 0.62); Cronbach’s alpha=0.94), and sense of professional identity (M=3.9 (SD: 0.72); Cronbach’s alpha=0.80). There were no significant differences in the three subscales based on gender, age, prior healthcare experience, or program of study.

CONCLUSIONS: Understanding students’ readiness for interprofessional learning is important for faculty program development to ensure discipline specific congruency in their interprofessional learning attitudes.

C87 Exploring Learners’ Perceptions of Biopsychosocial Dementia Care

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Background: Alzheimer disease and related disorders represent the 6th leading cause of death in the US, 5th among older adults. Pharmacologic management is limited while psychosocial impact is significant. To cope, patients and their caregivers often benefit from community-based services such as support groups provided by memory disorders clinics (MDC). Yet the rate of physician referral to these resources is suboptimal 1 and support group exposure during medical training is rare. To fill this gap and inform our geriatrics curricula for medical students (MS3s) and internal medicine residents (PGY1s), this study aimed to understand the extent to which learners recognize the need for a biopsychosocial care approach and how to provide it.

Methods: 72 learners (36 MS3s, 36 PGY1s) were administered an anonymous 17-item survey assessing their views about biopsychosocial aspects of dementia care. The survey was modified from one used elsewhere 2. Responses were given on a 5-point Likert scale measuring extent of perceived relevance of survey items, ranging from 1 (not at all) to 5 (completely). Items included clinical relevance of patient and caregiver dignity, inclusion of patients and caregivers in treatment planning, support group effectiveness and relevance to training.

Results: Highest responses were clinical relevance of preserving dignity (M = 4.72, SD = .54), treatment planning should include caregivers (M = 4.50, SD = .73) and patients (4.49, SD = .67), and support group effectiveness (M = 4.30, SD = .69). Lowest responses were effectiveness of current medications (M = 2.67, SD = 1.01) and whether physicians meet the needs of patients (M = 2.98, SD = .83) and their caregivers (M = 2.86, SD = .98).

Conclusions: Medical students and residents recognize the limited therapeutic efficacy of “anti-dementia” medication, the need for psychosocial intervention, and relevance and potential therapeutic benefit of support groups. In response, we recommend curricula include support group and MDC exposure to familiarize learners with their services and facilitate appropriate referral.

References:
C88
An Interprofessional Geriatric Clinical Skills Fair
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Background: The need to expand geriatric and interprofessional education (IPE) for health professionals at all levels of training has been well described. An Interprofessional Geriatric Clinical Skills Fair is an innovative educational format that serves as a fun and effective method for introducing both geriatric and IPE core competencies, and provides an ideal setting for collaborative learning among health professional students. The purpose of this study was to evaluate the changes in knowledge of first and second year students from medicine, nursing pharmacy, physical therapy (PT), and occupational therapy (OT) who participated in an Interprofessional Geriatric Clinical Skills Fair.

Methods: The objectives of the 90-minute skills fair were for learners to gain knowledge and skills pertaining to the care of older adults, roles of different health professionals, and interprofessional teamwork. Interprofessional temas of students engaged in four interactive stations addressing cognitive assessment, assistive devices, medication assessment, and older patient/caregiver simulation. Participants applied learned knowledge and skills to a case patient. Students completed pre and post-test evaluations, to test knowledge related to each of the four stations.

Results: 18 first and second-year students participated in the fair, including 7 medical, 3 nursing, 4 OT, 3 PT, and 1 pharmacy student/s. 18 students completed the pre-test and 17 completed the post-test. Comparison of pre and post-test averages showed a notable score improvement; the pre-test average was 68% and the post-test was 94%. In the post-test evaluation, 88% responded that they would like to see this activity incorporated as part of their mandatory training in IPE competencies.

Conclusions: The interprofessional geriatric clinical skills fair is an interactive format that serves as a fun and effective method for introducing 2nd geriatric and IPE core competencies.

C89
An Evidence-Based Physical Exam for the Evaluation of Urinary Incontinence in Older Women
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Supported By: This project was supported by a VINCI grant from the Université de Montréal.

Background: Of all the geriatric syndromes, urinary incontinence probably receives the least attention during geriatric fellowship training. This is unfortunate, as the prevalence of urinary incontinence is high in older women, and cures can be obtained at all ages. Competency in assessing urinary incontinence, determining the underlying cause, and choosing an appropriate treatment plan is a pre-requisite for appropriate management. An evidence-based physical examination is a critical component of the evaluation of urinary incontinence. We developed a video demonstrating an evidence-based physical examination for older women seeking care for urinary incontinence.

Methods: Components of the physical exam were selected from a systematic review of the literature performed by this author and three colleagues, published in the Rational Clinical Exam series of JAMA in 2008. We obtained consent from an older woman to film her physical examination, including an assessment of mobility, examination of the sacral nerves S2-S4, a urogynecologic exam for prolapse and vaginal atrophy, strength testing of her pelvic floor muscles, a stress test in the upright position, and determination of a post-void residual urine volume. Tips and tricks for eliciting pelvic floor muscle contractions and gauging the strength of the contraction are demonstrated.

Results: A 20-minute in-clinic video was produced. Privacy of the patient was maintained by concealing her face. The patient was found to have normal sacral sensation, grade II prolapse and mild vaginal atrophy, weak pelvic floor muscles, a normal post-void residual urine volume and a normal stress test in the upright position. These findings helped confirm the diagnosis of multifactorial urinary incontinence, based on history, and ruled out the presence of neurological deficits and urinary sphincter deficiency potentially contributing to urine leakage.

Conclusion: This teaching tool is a valuable addition to the armamentarium of visual aids currently being used to augment self-efficacy among geriatric fellows for screening, evaluating and managing incontinence in older women.

C90
Integration of Health Professional Students into a Public Health Falls Education Program
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Background: Students in the health professions receive minimal exposure to public health. Providing practical applications for engagement to contribute to public health initiatives are available through a number of programs, such as a province-wide falls educational program. The Canadian province of Alberta has a standardized falls education program, Finding Balance, delivered to seniors in the community and assisted living facilities. The objective of this project is to describe the process, successes, and challenges of implementing a public health program (falls prevention) with the integration of health professional students.

Methods: This descriptive study includes students enrolled from 2013/14 in the Finding Balance program. Students from Rehabilitation Medicine and Pharmacy (University of Alberta) were invited to participate in the Finding Balance presentations. Students partnered with a staff member from the Injury Prevention Centre to deliver the presentation, then receive feedback. Student feedback was obtained through meetings with students, and coded based on themes identified. The integration of the students was evaluated by the investigators and Centre staff, focusing on procedural challenges and successes.

Results: A total of 14 students (8 pharmacy, 4 OT, 2 PT) delivered 24 presentations. The students noted many positive aspects: networking with other students, development of skills (professional, teaching), new learning and engagement (opportunities with seniors and seniors’ centres that were otherwise not part of their curriculum), and meaningful contribution (engaging to improve health). The evaluation by the staff found: students learned to adapt, were stimulated and engaged with the interprofessional nature of the activity, developed a sensitivity to seniors (increased awareness), and discovered what resonated as important information for older adults. The challenges included frequent student turnover and consistency between students.

Conclusion: The integration of health professional students in the public health campaign, Finding Balance, was successful in engaging students across 3 health professions. The student learning extended beyond the educational focus on falls, increasing in the areas of public health, health system issues for older adults, and advocacy for seniors.
Patient Centered Medical Home

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Supported By: Donald W. Reynolds Foundation

BACKGROUND: The patient centered medical home (PCMH) is a practice model in which the provider is enabled to practice primary care in an ideal, comprehensive manner. It facilitates partnership between patients and their physician, emphasizing patient’s preferences and goals, enabling self-management and shared-decision making. The physician is the leader of a multi-disciplinary team that provides coordinated, quality care. This practice model is becoming increasingly important as complexity in healthcare continues to increase, necessitating changes in the way physicians practice. The goal of this project was to teach fourth year medical students, specifically those interested in primary care, about the PCMH concept. This seminar is presented using patient examples to illustrate improvements in care with the medical home model.

METHODS: 39 fourth year medical students chose to participate in this half day seminar. It was a component of their curriculum during which the students participated in a month of 18 seminars, some required by the school, others chosen by the student. Students evaluated the seminar based on self-rated knowledge of the PCMH mode, knowledge of Donabedian’s framework for safety, and role of the PCMH in patient safety pre and post seminar. A dependent samples t-test was run on the averages. Open ended comments regarding practice changes students planned to make were also elicited.

RESULTS: Students’ knowledge of principles of the PCMH improved from a self-rated average of 2.6 pre-seminar to 4.4 post-seminar (p<0.001). Students’ knowledge of Donabedian’s Structure-Process-Outcome Framework for quality assessment and improvement improved from 1.8 to 4.2 (p<0.001). Their knowledge of the role PCMH in supporting patient safety improved from 2.7 to 4.4 (p<0.001). 39/39 students agreed that using the principles of PCMH will improve safety and quality of care. 95% agreed that knowledge of Donabedian’s framework for safety, and role of the PCMH in patient safety pre and post seminar. A dependent samples t-test was run on the averages. Open ended comments regarding practice changes students planned to make were also elicited.

CONCLUSIONS: The PCMH model is an increasingly common concept being utilized in the practice of medicine. This seminar effectively teaches the major principles of the PCMH.

Interprofessional Education Collaborative Competency-Focused Workshops to Enhance Team Performance


Supported By: Health Resources and Services Administration Geriatrics Education Center Grant (UB4HP19203 - 0500)

We aimed to strengthen interprofessional (IP) teams’ competence in collaborative practice through a workshop series. Objectives included: 1) examine personal and professional values and roles and their impact on collaborative practice, 2) apply effective communication strategies to deliver patient-centered care 3) apply relationship building principles to perform effectively as a team, and 4) integrate quality improvement tools into work processes to aid team-based care.

RESULTS: Students’ knowledge of principles of the PCMH improved from a self-rated average of 2.6 pre-seminar to 4.4 post-seminar (p<0.001). Students’ knowledge of Donabedian’s Structure-Process-Outcome Framework for quality assessment and improvement improved from 1.8 to 4.2 (p<0.001). Their knowledge of the role PCMH in supporting patient safety improved from 2.7 to 4.4 (p<0.001). 39/39 students agreed that using the principles of PCMH will improve safety and quality of care. 95% agreed that knowledge of Donabedian’s framework for safety, and role of the PCMH in patient safety pre and post seminar. A dependent samples t-test was run on the averages. Open ended comments regarding practice changes students planned to make were also elicited.

CONCLUSIONS: The PCMH model is an increasingly common concept being utilized in the practice of medicine. This seminar effectively teaches the major principles of the PCMH.
C94
Reporting Learning Outcomes, Quality Assessment and Grading of Strength of Findings of Published Geriatrics Curriculum for Primary Care Residents: 2003-2014: A Systematic Review
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Background: As the expansion of our aging population, the elderly will rely on generalists for their care. Training primary care residents (IM and FM) residents is one of the most important steps in equipping future physicians to provide expert care for the elderly. My previous systematic review found there were small number geriatrics curricula for primary care residents. The aim of this systematic review is to address the following two questions: 1). What kind of the learning outcomes are measured in the geriatrics curricula? 2). What is the quality of the geriatrics curricula?
Methods: I search PubMed, Eric and Web of Science databases for curriculum published in English since 2003. Curriculum is defined as least three components i.e., the learning objectives or geriatrics competencies, educational strategies and evaluation by assessing the learning outcome assessment via comparative design. The curriculum must have geriatrics contents and was designed specifically for IM or FM residents. Combination of IM residency with other resident training such neurology is also eligible. The curriculum can be stand-alone as a geriatrics rotation or integrated within IM or FM residency program. Kirkpatrick hierarchy (1-4) was used to match the learning outcomes. The Medical Education Research Study Quality Instrument (MERSQI) was used to assess the quality of study. Strength of findings of the paper was graded on a scale of 1-5. Data analysis was performed with SPSS.
Results: 3556 citations were identified through PubMed. 248 and 28 citations were identified through Web of Science and ERIC respectively. Nine of 29 papers met the inclusion criteria. The reported learning outcomes limited to Kirkpatrick level 1 to 3, but no Kirkpatrick level 4a and 4b. The mean score of the MERSQI on scale of 6-18 is 11. The mean MERSQI subscale score are: data analysis (2.9), type of data (2.3), outcome (1.7), study design (1.7), sampling (1.4), and validity (1.1). Average strength of findings on a scale of 1-5 was 3.
Conclusion: The learning outcome in geriatrics curricula for primary care residents limited to Kirkpatrick 1-3. Kirkpatrick 4 were not reported. Methodological quality and strength of findings of geriatrics curricula were modest. It is urgently needed to develop curriculum with high quality and high level of learning outcomes.

C95
Targeted Needs Assessment for Perioperative Delirium
Consideration in Older Adults Undergoing Orthopedic Surgery
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Supported By: Sponsored by the Donald W. Reynolds Foundation
Consortium for Faculty Development to Advance Geriatric Education.
Background: Delirium occurs after surgery in up to 50% of adults 65 years and older and is one of the most common postoperative complication in this age group. Delirium is preventable in up to 40% of cases, a fact that makes it a prime candidate for prevention interventions targeted to improve outcomes in older adults. Even though delirium is common, it is often an underdiagnosed and improperly treated complication in older adults following surgery. Our goal was to perform a targeted needs assessment among orthopedic residents at the Johns Hopkins University to identify areas for improvement and to determine the best methods to achieve improved outcomes regarding perioperative delirium.
Methods: A survey was distributed to 24 orthopedic residents from Johns Hopkins University from PGY1-PGY5 year of residency.
Results: 18 out of 24 administered surveys were completed. 72% of respondents felt that perioperative delirium plays an important role in regard to surgical outcomes. 94% felt that perioperative delirium prevention, assessment, and management was a skill set that all orthopedic surgeons should possess with 67% feeling they need additional training. The areas identified as having the largest knowledge gap were regarding prevention and management of delirium. Only 55% felt they needed additional training regarding delirium assessment, though 72% of the residents never used or were not familiar with the Confusion Assessment Method (CAM) for delirium assessment; mostly using only their own clinical assessment or assessment from the nurse. 72% felt having an algorithm to guide perioperative management of older adults was needed. The preferred method of learning more about this topic was via electronic modules with most stating they were willing to devote up to 2 hours a year to further their knowledge about perioperative delirium.

C96
Geriatric Co-Management Units: Do they change attitudes towards aging?
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Introduction: Geriatric co-management (CM) units are a collaboration between geriatricians and other specialties such as orthopedics, trauma, general surgery and neurology. They focus on equal ownership and responsibility by geriatricians and other specialists of patient care. These units have shown promise in improving clinical outcomes, namely shorter time to surgery, shorter lengths of hospital stay, fewer cardiac complications and fewer incidences of delirium, infection and thromboembolism. Educational initiatives have been implemented in addition to CM units to provide geriatric education to healthcare professionals. Three CM units have been implemented with the Division of Geriatrics of the Warren Alpert Medical School of Brown University and the Orthopedics Departments of local hospitals in RI but the impact of geriatric CM units on education, namely attitude towards ageing, of healthcare professionals has not yet been evaluated.
Methodology: Attitude assessment of health care professionals working on a surgical unit with geriatric CM and education is done using the UCLA Attitude Scale. The case group are health professionals employed at the Joint center of Excellence at the Miriam Hospital, including physicians, learners, and nursing, and the comparison group are health care professionals employed by the Urology department at the same hospital, also including physicians, learners, and nursing. The Urology Department is a comparable surgical unit in the same teaching hospital where there is no co-management or geriatric education in place. Data is collected using online surveys.
Results: Survey analysis is done using comparative analysis methods; ANOVA and t-tests. Preliminary data show N=39 participants in the case group and N=25 in the comparison group. Data evaluation is ongoing but initial evaluation shows a more positive attitude towards ageing in the case group when compared to comparison group, with more participants citing that treatment of critically ill older adults is
not hopeless, supporting our hypothesis that CM units have an impact on attitude towards ageing.

Conclusions:
Our study shows that geriatric CM units may have a positive impact on attitude towards ageing of healthcare professionals and further research is needed to better evaluate the educational benefit of geriatric CM units.

C97 Delirium Recognition in Hospitalized Older Patients: A Quality Improvement Project

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Background
We noted a low reported prevalence of delirium (3%) in hospitalized older patients at Aspirus Wausau Hospital, a community teaching hospital in north central Wisconsin. This is a quality improvement project to report recognition of delirium by nurses before and after an educational intervention.

Methods:
This project was performed on one medical unit in our hospital. Quality improvement data was collected at baseline and after the educational intervention. Data collected included observation by a geriatrician attending weekly interdisciplinary rounds to note any mention by nurses of delirium or confusion. The patient’s electronic health record (EHR) was reviewed to note delirium assessment by “confusion assessment method-ICU (Vanderbilt)” (CAM-ICU) by the nurses for 2 days prior to the team meeting. The number of positive and total attempted CAM-ICU were recorded. Use of antipsychotics or benzodiazepines was reported as a “delirium marker.” Diagnosis of delirium and dementia was obtained from the problem list in the EHR. The educational intervention included “just in time” teaching during weekly ACE rounds during one month period.

Results:
In month 1, before intervention, CAM-ICU was performed 140 times in 2 days on 32 patients with an average CAM-ICU performed 2.2 times per patient/day. There were 3 concerning quotes for confusion during team rounds and 0 for delirium by nurses during team rounds. EHR review noted 7 patients had dementia, 2 had a positive CAM-ICU and 3 had a diagnosis of delirium. In month 2, after intervention, CAM-ICU was performed 163 times in 2 days on 35 patients with an average CAM-ICU performed 2.3 times per patient/day. There were 6 concerning quotes regarding confusion and 1 regarding delirium by nurses during team rounds. EHR review noted 1 patient had dementia, 0 had a positive CAM-ICU and 0 patients with delirium diagnosis.

Conclusion: This quality improvement project using “just-in-time” teaching by a geriatrician during weekly rounds resulted in a modest increase in number of times CAM-ICU was performed, increased discussion of delirium during rounds, but no increase in delirium recognition using CAM-ICU. Areas for improvement include involving more physician and nursing staff along with more structured delirium education.

C98 Called to Testify: Expert Witness Training for Geriatrics Fellows Using Simulation in the Courtroom

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Background: Familiarity with courtroom proceedings is essential for physicians prior to their first appearance as expert witnesses. Geriatricians may be called to testify in guardianship hearings and cases involving elder abuse and contested wills. Coverage of this topic is limited in geriatrics textbooks and on-line resources. To enhance this knowledge, the Division of Geriatric Medicine at Michigan State University piloted a courtroom educational experience in 2013 for its geriatrics fellows.

Methods: A trial attorney began the training with a four-hour interactive lecture to introduce principles of the trial process, evidence, records management, witness testimony, and court procedures. One week later, fellows participated in a mock trial conducted in a law school courtroom to apply what they had learned and gain real-world experience in providing testimony. The simulated cases involved actual, well-known, and de-identified demented patients of the fellows, who were the subjects of a hypothetical contested guardianship matter where their decisional capacity was at issue. Knowledge acquisition was measured using a ten-item pre-test/post-test written by the attorney. The fellows’ attitudes about the courtroom simulation were evaluated through an individualized, semi-structured, debriefing session.

Results: Two first-year fellows attended the lecture and participated in the mock trial. Fellows’ courtroom knowledge improved after participating in the modules (mean pre-test 5% v. post-test 95%). The fellows assessed the mock trial to be a valuable experience and both felt more informed and prepared for future service as witnesses. The most surprising facet of the mock trial was fellows’ perceptions that they were being led by the attorney to answer questions in a manner that distorted their clinical opinions.

Conclusions: This pilot study found that focused instruction in courtroom testimony followed by participation in a simulated trial was rated highly by fellows and led to measurable improvement in their knowledge of legal proceedings involving older adults and their role as expert witnesses. This training also provides a novel means to enhance fellows’ attainment of competency in professionalism.


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Background: In 2002, the American Society of Consultant Pharmacists (ASCP) developed a curriculum guide to assist student pharmacists and pharmacists with the tools needed to guide their professional development in senior care pharmacy. The last version of the Geriatric Pharmacy Curriculum Guide (GPCG), 2nd Edition was published in 2007. The objective was to revise and enhance the original GPCG.

Methods: A committee of academic, clinical, and research pharmacists specializing in geriatrics was convened to update ASCP’s current CPCG. The American Association of Colleges of Pharmacy CAPE Outcomes and the Accreditation Council for Pharmacy Education’s Accreditation Standards and Guidelines were used to map geriatric principles to specific outcomes required for schools of pharmacy.

Results: This 3rd edition delineates competencies for students graduating from pharmacy school and offers a Tool Kit with suggestions for learning opportunities across the spectrum of professional development. From the didactic coursework to residency training, the Tool Kit is designed to assist with topic discussions and pertinent activities to reinforce knowledge gained both inside and outside the classroom.
The Tool Kit can also assist residency program directors in the development of unique geriatric-specific experiences for both general residency learning and those seeking to specialize in senior care pharmacy. For the pharmacist in practice, the Tool Kit offers professional development guidance for those developing competencies in senior care pharmacy. Finally, a resource section provides important references for any senior care practitioner’s library.

Conclusions:
The GPCG was revised to reflect current clinical practice guidelines and outcome measures. The GPCG, 3rd Edition will be distributed in a web-based format for those educators that have pharmacy students and residents or those desiring to develop or strengthen competencies in senior care pharmacy.

C100
End the Silence: Developing an Educational Curriculum for Healthcare Professionals on Elder Abuse
L. Vognar, D. Dosa, G. Buhr, M. Helfin, C. Bales
1. Geriatric and Palliative Care Medicine, Brown University, Providence, RI; 2. Geriatric Medicine, Providence VAMC, Providence, RI; 3. Geriatric Medicine, Duke University, Durham, NC; 4. GERCC, Durham VAMC, Durham, NC.

Background: Elder abuse (EA) is an underrecognized problem which causes increased morbidity and mortality. EA is defined as a single or repeated act, or lack of appropriate action, occurring within any trust relationship, which causes harm or risk of harm to an older person. Despite mandatory reporting laws, physicians are believed to report only about 1% of all cases of EA. Studies show that lack of education is often cited as a primary cause of failure to identify and report EA.

Methodology: A 6 step methodology proposed by DKern was utilized to develop a curriculum for EA at the Durham VAMC using evidence based guidelines and best practice. Components of the educational curriculum included: definition, types, risk factors and the reporting process of EA. The curriculum was developed as a 60 minute, multimedia case based interactive lecture geared towards medical residents, physicians, and other healthcare providers who routinely care for elders. The curriculum was tested with a pre-and post-test assessment for a variety of different core competencies and post testing focus groups.

Results: There were a total of 86 participants, representing social work, physical/occupational therapy, nursing, geriatrics, and learners.

Pre-post testing revealed improvement in knowledge among respondents in a variety of areas. For example, there was a significant increase in participant ability to recognize all types of abuse, 7/86(8.1%) to 20/86(23.2%) as well as a significant increase in ability to identify sexual abuse as a type of EA, 15/86(17.4%) to 27/86(31.4%). Additional scores for questions regarding the reporting process and ability to identify reporting agencies also improved.

Focus group responses among participants suggested the curriculum was effective at increasing awareness of EA. Furthermore, respondents felt more comfortable with identifying, diagnosing and reporting EA.

Conclusion: We developed a one hour curriculum on EA that has since been reproduced in CD form and as an interactive webinar. We believe this curriculum, if implemented among health care professionals and staff with frequent exposure to elderly patients, has the potential to improve knowledge and recognition of this serious concern. Continued analysis of this curriculum is ongoing.

C101
Initiation of ACE Tracker on Teaching Rounds: Assessment of Reliability and Validity
L. A. Roberts, Medicine, SUNY at Stony Brook, Stony Brook, NY.
Supported By: Nothing to disclose (no funders)

Background: We are currently participating in a pilot program using a novel tool called ACE Tracker to improve geriatric care. Ultimately we would like to develop an objective assessment of the effectiveness of ACE Tracker as a teaching tool, but first we need to determine ACE Tracker’s reliability and validity. Purpose: To determine the reliability and validity of ACE Tracker geriatric risk assessment tool.

Method: Five providers performed the validation study at our institution for patients admitted to the medicine service on one general medicine unit for October 2013. They observed patients on the wards for catheters and restraints and they also reviewed each patient’s EMR. The reviewers compared their observed true data for each of the 74 patients with the respective patient data reported in ACE Tracker. Results (see table) The above table shows good inter-observer reliability among the five reviewers. Validity was less than optimal for Number of Scheduled Medications, and Beers List Medications Ordered and Administered which was due to the manner in which certain prescription medications and Beers medications were coded, specifically insulin, heparin, and aspirin. This problem has since been rectified. Significance: Since our study demonstrates that ACE Tracker tool results are reasonably reliable and valid, it can be used with residents and students as a valuable teaching tool as well as a tool to improve geriatric patient care both during the course of hospitalization and at the time of discharge.

Next Steps: Residents and Teaching faculty will complete a pre and post intervention questionnaire for evaluation of ACE Tracker effectiveness. Implications for other residency programs: improves discharge process and fosters team-building. Conclusion: This initial study demonstrates that ACE Tracker has acceptable reliability and validity for our institution.

Concordance Between ACE Tracker and Observed Data

C102
Medical Student Competency in Home Safety Assessment
M. van Zuijen, O. Rodriguez. 1. Div. of Geriatrics and Palliative Medicine, Univ. of Miami Miller School of Medicine, Miami, FL; 2. GRECC, Miami VAHCS, Miami, FL.
Supported By: This project was supported in part by an educational grant from the Donald W. Reynolds Foundation

Introduction: One of the core AAMC geriatric competencies is for medical students to be able to identify and assess safety risks in the home environment and make recommendation to mitigate these. We developed a blended learning curriculum that culminates in a focused online assessment targeting this competency. Our objective is to present the curriculum and results from cohorts who completed the competency assessment. Challenges in implementing a competency based curriculum and lessons learned will be discussed.

Methods: As part of a home visit curriculum in the first year of training, students complete a 30-minute online interactive home safety assessment module. Subsequently, student pairs visit an older community-residing volunteer and complete a home-safety assessment using a checklist that includes specific recommendations for improving
safety. They also submit a brief report on their findings. At the end of the academic year, students complete an online competency assessment in which they are shown images of four rooms in the house. For each room they are asked to identify the 4 biggest safety hazards and to make targeted recommendations to improve safety. The maximum score on the competency assessment is 16 and the performance standard was set at 12. Any student not achieving this standard is asked to review the module and checklist before undergoing reassessment.

**Results:** Since 2006, approximately 150 students per year have completed the competency assessment (total N=1390). In our pilot year 1, the average score on the competency assessment was 13.8, with 11.4% of students not achieving the performance standard. Across subsequent years, the average score was 14.1 with only 4.7% of students requiring remediation and reassessment. All students achieved the performance standard by their second attempt.

**Discussion:** Our curriculum clearly aligns the competency assessment with the instructional activities as students have two opportunities to practice their home safety assessment skills, one by completing the online module and the other during the home visit. Proctoring and grading the competency assessment require faculty and staff time. However, the initial instruction and remediation are done online reducing the burden on faculty time. 100% of our students achieve the AAMC competency. The training materials are exportable and can easily be incorporated by other medical schools into their curricula.

C103 Teaching medical students principles of care for multimorbid patients in a pilot longitudinal curriculum
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**Supported By:** The Academy of Distinguished Medical Educators, University of Chicago

**Background:** A large proportion of patients have multiple chronic medical conditions, however medical student education primarily focuses on management of individual disease states or organ systems. The American Geriatrics Society’s Guiding Principles for the Care of Older Adults with Multimorbidity outlines 5 principles (1. Elicit patient preferences, 2. Consider the evidence for treatment options, 3. Estimate prognosis, 4. Assess feasibility, and 5. Prioritize a plan) to guide care for multimorbid patients. Each of the individual components contains a crucial skill for future physicians, and taken together, they provide a useful framework for students preparing to care for complex patients.

**Methods:** We proposed a multifaceted curriculum to take place over medical school (MS) years 2-4. Each year consists of a didactic lecture, a case-based workshop, and an observed structured clinical exam (OSCE). MS2 year focuses on the introduction to the concept of multimorbidity and eliciting patient preferences. MS3 year focuses on assessing clinical feasibility and utilization of interprofessional providers to improve adherence. MS4 year focuses on prioritizing a plan by incorporating all of the 5 guiding principles.

**Results:** To date, the MS2 portion of the curriculum has been established and the MS3 portion has been piloted with a smaller subset of students. MS4 curricular module is in development. Student satisfaction with curriculum to date is high: of students attending the MS2 case-based workshop (n=59), 97% felt the clinical relevance was apparent, 87% felt more informed on this topic, and 90% felt that "overall this was a worthwhile experience". Of students attending the MS3 didactic (n=16), 94% felt it was important to know about interprofessional providers and 100% felt more knowledgeable about the topic. Students were able to demonstrate and practice new skills via OSCE experience. They were assessed by standardized patients and faculty preceptors and received feedback based on a standardized checklist of demonstrated behaviors.

**Conclusions:** Students are overwhelmed by caring for multimorbid patients and recognize the importance of learning skills to better manage these patients. Finding further opportunities to integrate principles of care for multimorbid patients in to clinical experiences will reinforce skills.

C104 Bone Health Assessments as Part of Interprofessional Older Adult Home Visits
M. O’Connell, R. Schad. Wayne State University, Detroit, MI.

**Background:** Many older adults (OA) do not know their osteoporosis fracture risk nor bone healthy lifestyles. Incorporating bone health assessments as part of interprofessional education (IPE) could benefit public health. The study purpose was to evaluate identification of poor bone nutrition and osteoporosis risk during IPE.

**Methods:** A team of three students (medical, pharmacy, and social worker or nursing) assessed an OA; each discipline with a different assessment. Second-year pharmacy students used the fracture risk assessment tool (FRAX) if not on osteoporosis medication and a National Osteoporosis Foundation (NOF) and program-developed calcium and vitamin D food and supplement use survey. Adequate intakes were defined as Institute of Medicine (IOM) recommendations (calcium 1000 mg men 65–70 years, 1200 mg men >70 and women >65 years; vitamin D 600 units 65–70 years and 800 units >70 years). Low calcium intake = < recommended, mid intake = recommended to 1500 mg (NOF defined max), and high intake = >1500 mg daily ingestion. Low vitamin D intake = < recommended, mid = recommended to 4000 units (IOM defined max), and high = >4000 units daily ingestion. Differences between consumption and recommended determined over/under amounts to create recommendations. Participants were encouraged to discuss findings with provider. FRAX major osteoporosis risk >9.3% (USPSTF guideline) was the criteria for provider referral.

**Results:** Ninety OAs with a mean age of 75.4±6.8 years (78% women) were assessed. 32 OAs ingested > 1200 mg dietary calcium daily, 62 and 58 OAs did not take a calcium supplement or multivitamin, respectively. OAs with low, mid, and high daily calcium intake were 32, 25, and 34, respectively. 29 OAs did not take a vitamin D supplement or multivitamin. OAs with low, mid, and high vitamin D intake were 31, 57, and 3, respectively. Positive osteoporosis risk factors were 15 previous fractures, 9 parent fractures, 2 glucocorticoid use, 7 rheumatoid arthritis, 6 secondary disease associated with osteoporosis, and 2 high alcohol use. 15 and 43 OAs have FRAX major osteoporosis fracture risk >20% and hip fracture risk >3%, respectively. 50 OAs were referred to provider for DXA consideration.

**Conclusions:** Assessing bone health as part of IPE activities was a good activity for students that resulted in identifying many older adults with suboptimal calcium and vitamin D intakes requiring recommendations and osteoporotic fracture risk requiring an osteoporosis referral.

C105 Aligning Geriatric Medicine Fellowships with the Program of All-Inclusive Care for the Elderly (PACE): Envisioning a significant “win-win”
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**Background:** PACE programs are comprehensive health care settings, offering the full continuum of care services to enrollees within a capitated, managed care financial structure and using an interdisciplinary team to provide care. As a result, PACE can offer many training opportunities to achieve curricular and reporting “milestones” for fellows in training, which are now required by the Accreditation Council of Graduate Medical Education (ACGME). Another significant advantage is that PACE offers abundant opportunity to “cross
train” with other health care disciplines. Conversely, fellows enrich the work environment at PACE by enhancing the educational atmosphere and are also outstanding potential recruits for employment and leadership within PACE. The objectives of this study were to assess current collaboration between fellowship and PACE programs and to identify interest in new or expanded collaboration.

Methods: Email survey to all fellowship directors in US (according to Association of Directors of Geriatric Academic Programs, ADGAP) to evaluate current involvement and accessibility to PACE. We also queried opinions on degree of value of PACE in helping fellowships to achieve success in the 23 reporting milestones which are required by ACGME.

Results: Thirty-four (30%) responded as of 11/30/14. The majority (59%) of programs were within 30 miles of a PACE program, although only 11 of those (46%) were currently utilizing PACE for training. Of those 11 programs, most were block-type rotations (not longitudinal). Among the 23 ACGME reporting milestones, “Works effectively with an interdisciplinary team” and “Having professional and respectful interaction” were the highest rated; for both of these milestones, PACE was described as “extremely valuable” by 76% of fellowship program directors.

Conclusion: Although most fellowship programs are geographically close to PACE programs, many do not currently use for training purposes. Value in achieving reporting milestones was acknowledged. Given the emerging importance of achieving key milestones, greater efforts to align these programs are appropriate for the potential of significant benefits to all.

C106
Interprofessional Communication of Critical Geropsychiatric Symptoms in the Nursing Home
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Supported by: University of Arkansas for Medical Sciences Intramural Grant

Gerontological Advanced Practice Nursing Association

Background The Symptom Background Assessment Recommendation (SBAR) protocol is a useful communication tool in the nursing home. However, the SBAR protocol does not address critical geropsychiatric symptoms (CGS) associated with dementia. A CGS is often misrepresented as agitation and inappropriately treated with antipsychotic medications which have serious side effects in persons with dementia. There are currently no tested protocols to accurately report CGS. ObjectivePilot study to investigate how well interprofessional team members identify and communicate CGS. Methods After approval from the University of Arkansas for Medical Science (UAMS) institutional Review Board, this quantitative survey study was conducted in three nursing facilities from August –September 2014. Nursing assistants (NA) and nurses completed the survey. Descriptive statistics on survey data was used to investigate whether participants correctly identified and communicated CGS. Results There were 76 nursing assistants (NA) and 21 nurses who completed the survey. Results showed that 68% of NA and 85% of nurses correctly identified causes of refusal of care; 32% of NA and 61% of nurses correctly identified symptoms of physical agitation; and 18% of NA compared with 71% of nurses correctly identified delusions. Fifty-six percent of NA reported communicating reliable information about CGS. Sixty-three percent of NAs compared with 90% of nurses reported effective interprofessional communication of CGS. Conclusion CGS are not well identified and communicated among the interprofessional team in the nursing home. Results support the need for education and interprofessional communication of CGS. The Psychiatric Background Assessment Recommendation Interprofessional Communication Tool (PBAR-ICT), developed by the principal investigator is the first interprofessional tool designed to communicate CGS. An intervention study will assess if this tool will improve interprofessional communication of CGS and antipsychotic medication reduction via performance improvement continued medical education program (PICME). The PICME will follow recommendations by the American Medical Association including self-assessment of clinical protocols for communicating CGS and antipsychotic medication reduction, implementation of the PBAR-ICT, and re-evaluation of clinical protocols after implementing the PBAR-ICT.

C107
Geriatrics Community-based Service Learning (CBSL): An Educational Experience for Internal Medical (IM) Residents
M. Jang, R. K. Miller, J. Johnson. Division of Geriatric Medicine, University of Pennsylvania, Philadelphia, PA.

Introduction: Clinical educators continuously search for effective and engaging ways to teach geriatric principles to trainees. We incorporated a new CBSL curriculum into the ambulatory medicine block and analyzed its impact on the participating PGY3 IM residents.

Methods: Three cohorts of PGY3 IM residents at a large academic medical center participated in this program from 2011-14. We allotted a half-day during an ambulatory block for an interactive talk on aging topics to seniors at local community and housing centers. All were given a facility tour by the site director and a talk on Area Agency of Aging-offered services. We prepared the residents by providing an information package on goals/objectives, materials to create a presentation on an aging topic, and community speaking techniques. A total of 90 IM residents participated, and 73 completed the IRB approved post-evaluation.

Results: We assessed the efficacy of this training via a post-exposure questionnaire. There were 6 Likert-scaled questions (see table) ranging from Strongly Disagree (1) to Strongly Agree (5), as well as open-ended questions targeting the resident’s experience and knowledge gained. Responses showed that this experience was helpful in honing communication skills, both with the elderly and community-speaking, and increasing awareness of obstacles facing the elderly and resources available to address those issues. The responses displayed common themes of enjoying the interaction with the seniors and greater appreciation towards sites of care and community resources. Many noted that earlier access to this knowledge would be beneficial.

Conclusions: This novel CBSL exercise was well received by the residents, who enjoyed interacting with the elderly and speaking in the community. They reported a greater awareness for sites of care, obstacles faced by the elderly, and knowledge of community resources.
C108 The Dementia Roundtable: An innovative community-based interprofessional education program on caring for persons with dementia
M. T. Heflin,1 C. Poer,1 L. Gwyther,1 L. Shock,2 L. Matters,2 E. Egerton,3 M. Burgess,1 D. Mann-Johnson,4 E. McConnell.1
1. Aging Center, Duke University, Durham, NC; 2. Physician Assistant Program, Duke University, Durham, NC; 3. School of Nursing, Duke University, Durham, NC; 4. Senior Community Care of NC, Durham, NC.

Supported By: This research was supported by the Duke Geriatric Education Center (GEC) (UB4HP19203).

Background: Effective recognition, diagnosis and management of dementia requires interprofessional (IP) teams working toward a shared goal of assuring preservation of function, safety and dignity for people affected. We developed interactive educational experiences for teams of health professionals caring for people with dementia and their families.

Methods: Our IP education team developed a series of sessions on dementia recognition and management. We utilized an anchored instruction format (the Dementia Roundtable) whereby faculty introduced a topic and shared a brief video clip or case to illustrate issues in dementia care. In small groups, participants then reflected on the video and responded to questions. Discussions facilitated by faculty experts allowed participants to share experiences, ask questions, and learn about evidence-based care resources. Senior Community Care of NC, our local PACE program, hosted the sessions and networked with the Triangle J Area Agency on Aging to extend invitations to community-based providers.

Results: This year, 57 participants from 15 different professions and 26 different community-based organizations or agencies attended Roundtables. Strong partnerships with our PACE program co-host and the local Area Agency on Aging enhanced our ability to reach health professionals in the community. Attendees highly valued sharing experiences with an IP group and directly applied what was learned most often in caregiver support and education. Many recommended extending the time and all planned to continue attending and to refer colleagues.

Conclusion: Our IP team successfully partnered with community agencies to offer a series of interactive educational sessions on dementia care.

C109 A Prescription for Prescribers: Prevention of Adverse Drug Events in the Elderly
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Background: Adverse drug events (ADEs) are common in older adults and affect quality of life and clinical outcomes. Many prevention approaches studied and implemented are better suited to the specialized inpatient environment, with less emphasis on outpatient treatment and prescribing skills. This study examines the effectiveness of a curriculum that provides medical residents with a systematic approach to evaluating medications in elderly outpatients to reduce polypharmacy and prevent ADEs.

Methods: 13 PGY-2 and PGY-3 internal medicine residents at Johns Hopkins Bayview Medical Center attended 2 hour educational sessions on ADE prevention. The session uses an interactive, case-based approach to introduce concepts of high risk patients and drugs. A geriatrician demonstrates a structured approach to medication evaluation facilitated by completion of a medication evaluation worksheet. Residents receive a pocketcard with salient information and the steps in critical medication evaluation. Residents then assess the medications of their own primary care patients and present their patients and medication plans to the group. Thus far, the effectiveness of the curriculum has been evaluated through a test case to assess knowledge and skills (n=11 test cases returned), identification of high risk medications and appropriate medication plans in their own patients during the workshop (n=14 patients), and surveys of perceived value of the session (n=10 surveys returned).

Results: 8 of 11 returned test cases correctly identified all high risk medications according to Beers and STOPP criteria and correctly identified medications to discontinue. Patients (n=14) identified and evaluated by residents were taking an average of 13.4 medications. Residents identified an average of 2.3 medications per patient for discontinuation. All 10 survey respondents agreed or strongly agreed that the curriculum improved their knowledge and will change their clinical practice.

Conclusions: A curriculum on ADE prevention for older outpatients promotes resident self-reflection on prescribing practices. It is well received by trainees and can be implemented in an interactive manner to increase knowledge and skills in appropriate medication management. Further evaluation will examine whether the curriculum reduces polypharmacy and high risk medication use in older patients seen by trainees before and after the curriculum was implemented.

C110 Encore Presentation
Effect of large-scale, low dose interactive training on students’ attitudes and knowledge surrounding inter-professional communication and teamwork
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Supported By: This project is supported by Health Resources and Services Administration, Bureau of Health Workforce award no. UB4HP19215 - Atlanta Regional Geriatric Education Center

Clinical educators have come to recognize the importance of interprofessional education (IPE) within health professions training programs. Existing models of IPE require further evaluation to determine effectiveness on improving knowledge and perceptions of interprofessional communication. Our study evaluates the effect of a two-hour, large-scale training on student attitudes toward IPE and knowledge of the Situation, Background, Assessment, and Recommendation (SBAR) communication tool. First year students from Emory University’s Nursing, Medicine, Physical Therapy, Anesthesiology Assistant, Physician Assistant, and Medical Imaging programs participated in the training in the fall of 2013 (n=470). Approximately 10% (n=45) completed pre- and post tests measuring knowledge of and attitudes toward communication and IPE. The intervention consisted of pre-reading on SBAR, lecture, panel discussion of interdisciplinary clinicians, and small-group collaboration with interprofessional student peers. The SBAR Knowledge Test (AZ toolkit) and the Interdisciplinary Education Perception Survey (IEPS) (Cameron et al, 2009) measured students’ knowledge and attitudes, respectively. Pre-training surveys indicated 45% of respondents having “never heard of” SBAR; rates dropped to 4% indicating “never heard of” following the training. Average knowledge test scores improved from 65% (pre-training) to 75% post-training. Respondents indicated minimal changes on IEPS: average scores increased from 5.06 to 5.13 (Likert 6-point scale) with many students declining in their perception.

The Geriatric Pharmacology QI Project

R. M. Wright, M. I. Rossi, Z. Marcum, GRECC, VA Pittsburgh Healthcare System, Pittsburgh, PA; Division of Geriatric Medicine, University of Pittsburgh, Pittsburgh, PA.

Background: Our geriatrics rotation requires internal medicine residents to perform a quality improvement (QI) assignment using a comprehensive medication review strategy to identify specific changes in their own prescribing that will improve the safety, simplicity, and cost of medication use in their older clinic patients.

Methods: Residents choose 2 medically complex older patients from their continuity clinic panels who take at least 8 medications. Using a worksheet, they list each patient’s medications and cost of a month’s supply given insurance coverage, apply an adherence tool, calculate creatinine clearance, identify potential adverse events for each medication, assess for side effects, and apply explicit criteria to look for potentially inappropriate medications. They use this data to commit to prescribing actions that will improve safety, simplicity, and cost of the medication regimen. They review their QI plans with a geriatric pharmacologist at the end of the rotation.

Results: Between December 2013 and September 2014, 24 second-year residents completed the rotation and reviewed the medications of 41 patients. Potentially inappropriate medications were identified in 25 patients and missed on 13 patients. To improve safety, residents suggested increased monitoring of 12 patients, discontinuing medications of 11, changing the dose or timing of medication administration for 5 patients, use of a pillbox for 4, and substituting safer medications in 2 patients. Strategies to simplify medications included verification of medication indication for 5 patients, use of a pillbox for 1, and reduced number of doses per day for 28 patients. To reduce costs, residents proposed using cheaper alternatives for 13 patients and reducing number or dose of medications for 14 patients. Eleven residents received an above average grade while 12 gave an average grade.

Conclusion: The geriatric pharmacology QI project is a unique teaching tool embraced by our residency program that uses applied learning and quality improvement principles to teach medical residents how to improve medication prescribing for their older patients.

Developing a Geriatrics Curriculum for Nursing Staff in a Skilled Nursing Facility

C. D. Parker, S. Chao, L. Caruso, GRECC, VA Pittsburgh Healthcare System, Pittsburgh, PA; Division of Geriatric Medicine, University of Pittsburgh, Pittsburgh, PA.

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C112

Developing a Geriatrics Curriculum for Nursing Staff in a Skilled Nursing Facility

R. P. Lau, V. Parker, S. Frazier, S. Chao, L. Caruso, GRECC, VA Pittsburgh Healthcare System, Pittsburgh, PA; Division of Geriatric Medicine, University of Pittsburgh, Pittsburgh, PA.

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C113 Encore Presentation

Seniors Assisting in Geriatric Education (SAGE): Reynolds Program addresses the lack of training in geriatrics and provides a model for interprofessional education

S. Marquez-Hall, Internal Medicine, University of North Texas Health Sciences Center, Fort Worth, TX.

Supported By: Funding support for this program was provided by: 1) The Donald W Reynolds Foundation, and, 2) The University of North Texas Health Science Center, Texas College of Osteopathic Medicine (TCOM).

Background: The purpose of the SAGE Program is to address the lack of geriatric skills training by implementing a senior mentor program for health professions students. SAGE helps health professions students develop competency with older adults by facilitating compassionate geriatric care, and, strengthening clinical applications through an interprofessional team experience.

Methods: Senior volunteers 60 years and older are mentors in the program. Students meet with the senior mentors in their homes for a series of home visits over the course of a two year period. SAGE curriculum guides program content and is delivered through an online learning system. Student teams participate in the eight home visits which include conducting environmental home safety and nutritional assessments; medical history, physiology of aging, bio-psycho-social interviews; medication reconciliation, review of community resources, and end of life issues.

Results: A quantitative survey using a five-point Likert Scale evaluates student perceptions of learning. Findings (n=332) revealed modest levels of student confidence and attitudes toward geriatric patients (3.6), and comfort in performing physical examinations (3.5). Higher levels were found in recognizing unique medical and psycho-social issues (3.8); competency in interviewing, physical assessment and examination skills (3.8); and practice using ADLs and IADLs (3.8). Highest overall scores were found in environmental home safety and falls risk (3.9); use of Mini-Mental Status Exam (3.9); and real world experience (4.0).

Conclusions: Education in geriatrics combined with experiential interprofessional team learning can provide improved confidence for health professions students in patient interaction. Exposure to the SAGE curriculum in an experiential interprofessional learning program showed a positive impact on student’s awareness and understanding of older adults.
C114
An Innovative Teaching Tool: The Aging Auction
S. Browning, S. Akpanudo, S. M. Neitch, Internal Medicine, Marshall University, Huntington, WV.

Supported By: The WV Higher Education Policy Commission and the MUJCESOM Rural Health Initiative sponsored the WV GRIT (Geriatrics Retreat/Immersion Training) program from which this tool was developed.

Background: Searching for interesting, engaging methods to introduce Geriatrics to learners is an ongoing task. As a grantee of ADGAP’s CRIT* program, we needed such a tool as an Opening Program for our 2013 presentation. (CRIT - Chief Residents’ Immersion Training, developed at Boston University and administered by ADGAP). One of our authors is very familiar with auctions, and knowing that they can be highly interactive, suggested that we could open our program (now called “GRIT”) with an auction of elder-care items. We expanded the concept into a teaching tool by assigning points to items and scoring participants on whether they purchased (with “play money”) items which are clearly beneficial for the elderly, such as nightlights or Advance Directives, vs those which are not so useful and may be detrimental, such as copper bracelets and cancer insurance. Feedback from the first presentation showed that the Auction was engaging and popular, and a pilot study was undertaken to see if educational benefits could be demonstrated.

Results: Four groups of third year medical students on their Internal Medicine rotations were included, 2 experienced the auction and 2 did not. Each group was surveyed before and after their rotation with a questionnaire inquiring about their general attitudes toward geriatrics and the elderly (“Attitude”), and about factual geriatric information conveyed during the auction (“Knowledge”).

- The no-auction group showed no change in either Knowledge (p=0.391) or Attitude (p=0.361) pre- to post-rotation.
- The auction group had a statistically significant increase in Knowledge (p=0.003) and no change in Attitude (p=0.588).
- Comparison of the auction vs no-auction groups’ post rotation results also supported that the auction groups had significant improvement in retained Knowledge (p=0.002) at the end of the rotation vs those who did not experience the auction.

Conclusions: This very small pilot study shows promising results in improvement of geriatric knowledge by use of this innovative and “fun” activity. Presentations of the Aging Auction to other groups may be maximally effective in interprofessional groups, and with larger groups than were in the clerkships.

C115
You can only find what you are looking for: Delirium and first line care providers in a skilled nursing facility
S. David, F. Sheikh, M. Bellantoni. Johns Hopkins University, School of Medicine, Baltimore, MD.

Supported By: Stefan David’s training is supported by a Health Resources and Services Administration grant (D01HP08789)

Background: Delirium is a challenging condition, with fluctuating course. Late detection and improper treatment increase morbidity, mortality, cognitive decline, length of inpatient hospital stays, readmission rates and healthcare costs. Delirium is a source of frustration for family and nursing personnel. Diagnosing and treating delirium in skilled nursing facilities (SNFs) is particularly challenging given patients’ frailty, recent transitions of care and the higher number of patients assigned to each care giver compared to acute hospitals. The current quality improvement project addresses the self-reported knowledge of delirium as a medical condition and comfort level of first line SNF clinical staff in providing care to SNF residents with delirium. It aims to identify what training should be provided to reduce delirium related suffering and costs.

Methods: We employed a questionnaire provided to first line SNF clinical staff including geriatric nurse assistants (GNAs), licensed nurses (LNs) and others. No identifying information was retained for the responders.

Results: Twenty-two questionnaires were answered by 10 GNA and 10 LNs, 1 dietician and a responder who did not identify his/her position. 59% of responders were somewhat confident in their ability to identify a delirious patient (7GNAs, 5 LNs and the dietician). 1 GNA and 1 LN did not feel confident in their ability to identify delirium. 55% use their own clinical judgment to detect delirium, while 13% reportedly use a standardized assessment tool and 13% just note the patient looks differently. Only 23% identified non-pharmacological means to treat delirium. 23% considered delirium very distressing, 45% somewhat distressing and 18% not distressing. All LNs and 7/10 GNAs responded that delirium was either very or somewhat distressing. The delirium related stress was attributed to treating the patient by 36%, to communication with the medical provider by 23% and to dealing with patient’s family by 18% of responders. One LN listed all the three as stress sources.

Conclusions: Delirium was not uniformly assessed by the first line SNF clinical staff surveyed in our quality improvement project. Implementation of a standardized delirium clinical assessment tool and training on non-pharmacological treatments for delirium are underway to improve delirium management.

C116
Geriatrics Training in Residency: Are We Prepared for an Aging Population?
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Background: With a scarcity of Geriatricians relative to a growing aging population, the Internist must be prepared to help take care of an older patient census. However, studies indicate that only 52% of Internal Medicine residents feel “very prepared” to care for older adults. A national survey found only 31% of residents felt “somewhat or very prepared” to care for nursing home patients. This study evaluated knowledge of common Geriatric competencies among Internal Medicine residents at Rutgers-NJMS. The study also looked at whether completing a Geriatrics rotation increased level of knowledge or promoted an interest in the field of Geriatrics.

Method: A 30 question survey was distributed to Internal Medicine residents. The survey was created using questions from the UCLA Geriatric survey, with the addition of questions testing knowledge of Medicare coverage, Transition of care, and Accountable Care Organizations. After completion of the survey, housestaff indicated their post-graduate training level, whether they had completed a Geriatrics Rotation, and whether they had ever considered a career in Geriatrics.

Result: The survey was completed by 40 residents, ranging from PGY 1 to PGY 4 (med-peds residents). One survey was discarded due to lack of demographic data. Residents in their final year of training made up 40% of the participants. The average score of the total group was 83%. The score for those who had completed a Geriatrics rotation was 87% vs. 83% for those who had not. A two sample t-test was performed, finding no statistically significant difference between the two groups. Further analysis revealed that only 18% of the participants had ever considered a career in Geriatrics. Of these residents, 57% had had some form of exposure to the field.

Conclusion: Though there was no significant difference in Geriatric knowledge among the participants, what was striking was the
lack of interest in Geriatrics as a career. Though the study was limited by a small sample size, results mirror the trend of Geriatrics as an unpopular specialty in the general population. This result is surprising considering the strong Geriatrics presence at one of the program’s principal training sites, Hackensack University Medical Center. Results indicate that earlier exposure to Geriatrics in training, as well as emphasis on the multitude of career opportunities, may serve to spark interest in this dynamic and growing field.

C117
Forming a Clinical Competency Committee for a Geriatric Fellowship
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**Background:** As part of the Next Accreditation System, the ACGME (Accreditation Council for Graduate Medical Education) requires all graduate medical education programs to form a Clinical Competency Committee (CCC) to evaluate fellows’ progress in meeting the milestones of their field. We describe the process that our CCC was created and implemented.

**Methods:** Our CCC was formed in May 2014. The committee is chaired by a core faculty member of the fellowship program, and includes the fellowship program director, a faculty member from the Veterans Affairs site where the fellows rotate, 2 other core faculty in Geriatrics, and the clinic social worker. We defined written roles and responsibilities. Meetings were monthly at first, to ensure prompt creation and organization of the evaluation tools. Each member was assigned between one and six evaluation tools to create for faculty, staff, learners, and patients to evaluate the fellow in longitudinal and monthly clinical rotations, and other clinical activities, including Journal Club, Grand Rounds, Evidence Based Medicine Course, Self Reflection, Mortality Conferences and multisource evaluations. We will meet semiannually to review each fellow’s progress.

**Results:** A total of 20 evaluations were created. The majority were in the form of the five-point competency scale (novice to expert) used in the reporting milestones, but also included mini-CEXs for a variety of observable competencies (i.e. falls, the get up and go, holding a family meeting, teaching learners, the MOCA, and the Mini-cog). There were also multisource evaluations created for patients and members of the interdisciplinary team to evaluate the fellow. The questions on all tools were then mapped to at least one of the 23 reporting milestones. We created a spreadsheet to ensure each reporting milestone was captured at least 2 times. A meeting was held in December to educate faculty who evaluate the fellows to explain the timing and content of the evaluation tools.

**Conclusions:** The requirement of a CCC is new and can be a cumbersome process. By sharing our process among faculty in a Geriatric fellowship program, we may initiate dialogue that will enable educators to streamline their process.

**References:**

C118
Objective Structured Clinical Examination in geriatric training: 6-year results and participant opinions.
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Supported By: None of the authors reported a potential, real, or perceived conflict of interest or financial disclosure. No sponsors participated in or funded this research.

**Background:** Use of the Objective Structured Clinical Examination (OSCE) has become widespread in medical education. Though advantageous for evaluating several aspects of competence, its implementation is a challenging process that requires theoretical and practical knowledge. After six years of experience, we sought to: (1) measure how OSCE assesses the clinical performance of geriatric fellows; (2) question participants on their opinions regarding its use as an educational strategy.

**Methods:** A total of 167 evaluations were performed in a 2-year geriatrics clinical fellowship program, in Sao Paulo, Brazil. OSCEs were organized yearly from 2009 to 2014, and consisted of six to eight 10-minute stations in which trained faculty members scored fellows according to predefined checklists. Checklist items were classified for analysis purposes in three domains: (K)nowledge; (S)kills; and (C)ommunication. Results were analyzed according to fellowship year and internal consistency was tested using Cronbach’s alpha coefficient. An online anonymous survey was sent to all those who participated as trainers, trainees, or both, asking their opinions on our model of OSCE.

**Results:** Mean scores in OSCE domains were: K=5.7±1.0; S=5.7±1.0; C=8.3±0.9. Second year fellows performed better than first year fellows in K (6.1 vs. 5.4; p<0.001), S (6.0 vs. 5.4; p<0.001) and C (8.5 vs. 8.1; p=0.006); we were also able to detect fellows’ improvement from their initial to later evaluation in all three domains. OSCE also showed good overall internal consistency throughout the years, with Cronbach’s alpha ranging from 0.68-0.86 (median=0.83). 126 participants answered the survey, of which 74 participated as trainees, 30 as trainers, and 22 as both, with a response rate above 80% in all three groups. We found that: 97.6% considered it appropriate for fellows to be assessed in their practical skills; 90.5% rated OSCE as a good or very good strategy; 89.6% of trainees and 98.1% of trainers believed OSCE helped identify learning points that needed improvement.

**Conclusions:** OSCE is an educational tool that can be used in geriatric training with good overall properties. It is also an overwhelmingly well-accepted strategy by both fellows and faculty, providing them with insight regarding clinical competences in need of improvement.

C119
“Un Café por el Alzheimer”: An Innovative Awareness Approach in Puerto Rico
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**Background:** In view of the lack of information in the community, a group of local healthcare professionals interested in Alzheimer’s Disease (AD) put together a project aimed at educating and raising awareness about AD in Puerto Rico. We sought to achieve this goal by providing accurate information to large audiences, stimulating frequent and commonplace talk about a subject that is usually viewed as unpleasant, undesirable, and even taboo.

**Methods:** The project was called “Un Café por el Alzheimer” (UCxALZ – A coffee break for AD) and took place the week of September 2127, 2014. Educational activities were offered as casual conversations about AD among experts on stage, with Q&A sessions with the experts immediately afterwards. In order to generate maximum interest and coverage we used mass media, social networks and our personal contacts. The international actor, movie director and Oscar nominee Jacobo Morales acted as campaign’s spokesmen.

**Results:** During the week of the event we held 10 activities in 8 municipalities across Puerto Rico, with total attendance estimated at about 1,000 people. In just four weeks we had 2,277 followers in Facebook, with a maximum reach of 8,524 persons. We received dozens of...
Questions about AD in our page. Both the public and the media gave this initiative a very positive and warm reception. Since then, we have received tens of requests to hold UCxALZ at other municipalities and university campuses all over the island.

Conclusion: UCxALZ has proven that a multisectoral educational initiative, where interested parties share human resources and their desire to teach can be successful even though the lack of funding and short time. The need of information about AD in the community was evident during our interventions. Thus, UCxALZ will continue as a permanent resource for AD patients, caregivers, health professionals and the general public.

C120 Encore Presentation
A new model of knowledge translation for physical therapy clinicians who work in skilled nursing facilities: a case study

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Supported By: Geriatric Academic Career Award K01HP20478

Background: Departmental inservices are one method physical therapy clinicians (PTCs) use to acquire new knowledge, but attendance does not guarantee knowledge translation (KT) into practice. Knowledge broker (KB) models have been proposed as a method to promote KT. The purpose of this case report is to 1.) Describe a new KT partnership between PTCs who work in skilled nursing facilities and the academic community and 2.) Describe the outcomes of an inservice-plus-consultation model on the PTCs’ use of gait speed (GS) as an outcome measure.

Methods: A KT intervention was undertaken with PTCs (n=4) at a skilled nursing facility where PT services are offered. Four PTCs attended an inservice about measuring and interpreting GS for the older adult. The inservice was given by an academic faculty member who served as a KB, and who provided two consultation visits with the PTCs at their facility to help promote KT. PTCs collaborated with the KB to design a reference tool for their use post-intervention. PTCs completed knowledge pre and post-tests, rated confidence in GS measurement skill and overall satisfaction using a 5-point likert scale. PTCs also completed a survey about the effectiveness of the KT intervention. Practice patterns for GS measurement were determined by chart review pre- and post-intervention.

Results: Pre-intervention, PTCs had moderate knowledge of GS measurement and interpretation (mean pre-test score = 75%). Confidence in GS measurement skills were moderate (mean = 2.3). GS was not measured on any patient pre-intervention (0/6 patients; 0%). In the post-intervention phase, knowledge post-test scores improved (mean = 96%). Confidence in measurement skill improved (mean = 5.0) and overall satisfaction with the educational intervention was high (mean = 5.0). Post-intervention, GS was measured at least once during the duration of physical therapy care in 6 of 7 patients (85%) and was measured at evaluation for 4 of 7 patients (57%).

Conclusion: Although PTCs had moderate knowledge of GS measurement before the educational intervention, it was not measured in practice. The KT intervention resulted in a collegial working relationship between the PTCs and the KB. An inservice-plus-consultation model of KT using an academic faculty member as KB was feasible, effective and well-received. The inservice-plus-consultation model resulted in an increase in the measurement of GS at this facility.

C121 Prevalence of undiagnosed cognitive dysfunction in hospitalised older people

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Background: Currently less than 50% of people with dementia in England have a formal diagnosis. An estimated 25% of hospital beds are occupied by patients with dementia.

Aim: To study the prevalence of cognitive dysfunction in hospitalized patients who do not have a formal diagnosis of dementia.

Methods: The study was conducted in a UK teaching hospital. AMT 4 (age, date of birth, year and place) was performed on all admitted patients 75 years and older, who did not have a formal diagnosis of dementia, had no delirium on admission, or if the patient (as noticed by patient/ relative /carer) had been more forgetful in the past 12 months to the extent that it had significantly affected his/her daily life.

AMT 10 was performed for patients who have a wrong answer for any of the AMT 4 questions. 4 nurses who had training in mental health did the AMT test. Results of consecutive patients over a 17-month period were retrospectively collected and downloaded on Excel sheet and correlation analysis was done. AMT of less than 8 was considered indicative of cognitive dysfunction.

Results: There were 1174 admitted patients who fulfilled the criteria, 67 patients were excluded because the AMT data were not complete, and 1107 patients were included; 675 female, 431 male, 1 not recorded. The mean age was 85.2 years.

42% of the patients who did not have a formal diagnosis of dementia (469/1107) had AMT less than 8. The older the patient the higher the prevalence; 48 – 49% of those between 85 and 95 years have AMT less than 8 compared to 67% of those who are 95 and older (Table).

Limitations: AMT cannot differentiate between dementia and delirium (but in the study selected patients had no delirium). Also there could be some subjectivity in scoring.

Conclusion:

42% of hospitalised older patients, 75 years and older, who did not have a formal diagnosis of dementia have dementia. Nearly half of those between 85 and 95 years and two thirds of those who are 95 and older have cognitive dysfunction.

Table

<table>
<thead>
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<th>Age group (y)</th>
<th>Total</th>
<th>Female</th>
<th>Male</th>
</tr>
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<td>70 - &lt; 80</td>
<td>49/92 (26%)</td>
<td>21/80 (26%)</td>
<td>28/11 (26%)</td>
</tr>
<tr>
<td>80 - &lt; 95</td>
<td>106/288 (36%)</td>
<td>79/17 (46%)</td>
<td>27/17 (26%)</td>
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<tr>
<td>85 - &lt; 95</td>
<td>178/369 (48%)</td>
<td>127/239 (35%)</td>
<td>51/30 (39%)</td>
</tr>
<tr>
<td>90 - &lt; 95</td>
<td>102/207 (49%)</td>
<td>71/143 (54%)</td>
<td>31/64 (39%)</td>
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<td>22/48 (67%)</td>
<td>26/19 (67%)</td>
<td>6/5 (67%)</td>
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<tr>
<td>100 - &lt; 105</td>
<td>2/3 (67%)</td>
<td>2/3 (67%)</td>
<td>No patients</td>
</tr>
</tbody>
</table>

C122 Challenges in the Pharmacologic Management of Nursing Home Residents with Overactive Bladder (OAB) and/or Urinary Incontinence (UI)

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Supported By: Astellas

Background: Nursing home residents (NHR) with OAB and or UI have comorbidity, functional disability, cognitive impairment (CI) and complex drug therapy regimens. The aim of this study was to determine the proportion of NHR with OAB and/or UI that have potential: 1) drug-disease contraindications to antimuscarinic treatment (ANTIM) due to concomitant anticholinergic medications (AM) and/
or acetylcholinesterase inhibitors (AChEIs), and 2) non-pharmacologic limitations to treatment with ANTIM.

**Methods:** We compared NHR with OAB and/or UI to an age range and gender frequency-matched cohort of NHR without OAB and/or UI, using a cross-sectional retrospective analysis of linked and de-identified Minimum Data Set and prescription claims data in U.S. skilled nursing facilities.

**Results:** Among NHR, 71.3% received at least 1 AM. Prescribed medications that can cause or worsen UI included: opioids (55.8%), sedative-hypnotics (38.6%), diuretics (36%), antipsychotics (25.5%), alpha blockers (11.5%), calcium channel blockers (7.9%) and digoxin (7.8%). NHR with OAB alone were more likely to receive ANTIM than those with UI only (78.3% vs. 8%). Among NHR with UI and OAB, 77.5% were treated with ANTIMUSC. AChEIs and ANTIM were prescribed concurrently in 24% of NHR with OAB and/or UI. NHR with OAB and/or UI were more likely to have concurrent moderate to severe CI (MSCI) than the comparison group (70.1% with MSCI, 29.9% without MSCI, P<0.001). NHR, with or without OAB and/or UI and with MSCI, were more likely to be treated with AM than those without MSCI (p<0.001). When NHR with MSCI, severe mobility impairment (SMI), AM and AChEI were excluded only a small proportion of NHR were identified as potential ANTIM candidates (6.6% of OAB and/or UI cohort, 6.2% of UI only cohort, and 16.7% of OAB only cohort). When NHR with MSCI and SMI were excluded, 20.4%, 20.7% and 53.3% of the OAB and/or UI, UI only and OAB only cohorts, respectively, were eligible for ANTIM.

**Conclusions:** Pharmacologic treatment of NHR with OAB and/or UI is fraught with challenges due to drug-drug and drug-disease interactions. Clinicians should select agents least likely to contribute to UI and/or impair cognition.

**C123**

Functional Decline among Hospitalized Elderly: The Joint Effect of Cognitive Impairment and Delirium

J. M. Ocampo Chaparro, C. A. Reyes-Ortiz, J. I. Mosquera.

**Introduction:** About one third of the elderly develop functional decline (FD) at hospital discharge. Our objective was to analyze the joint effect of delirium and cognitive impairment on functional status among elderly patients after hospitalization. Methods: Observational, prospective cohort study included 188 patients aged 60 or older admitted to the internal medicine ward June to August 2011. Baseline measures included demographic, Charlson comorbidity, functionality (BI = Barthel Index), depression, delirium, and cognitive impairment (Cog= MMSE <18/30). Two additional measures for BI, at discharge and at one month were conducted by telephone. Multivariate regression analyses (Proc Logistic and Glimmix) were conducted to explore predictive factors of FD at discharge and 1-month follow-up. Results: The median BI at admission was 95.0 points (IQR 55.0-100.0), at discharge 80.0 (IQR 30.0-100.0), and a month later 85.0 (IQR 45.0-100.0) (P<0.001). During hospitalization, 25% of patients have both delirium and CogI, 3.7% have only delirium and 19% have only CogI. The multiple logistic regression analyses predicting BI<75 at discharge and a month later showed (Table) that CogI (Model 1) and the joint effect of delirium and CogI (Model 2) predicted FD, respectively. In longitudinal analysis (repeated measures), patients with CogI alone (Estimate -0.49, SE=0.2, p=0.001), and the joint effect of delirium and CogI predicted significantly lower BI (Estimate -0.68, SE=0.2, p<0.001) compared to those without delirium/CogI.Conclusions: Delirium and cognitive impairment have a synergistic effect and predict the development of FD after hospitalization. Further studies are needed to explore in more detail this relationship in geriatric units.

**C124**

Post-Fall Emotional Responses, Functional Limitations and Actions Plans to Manage Falls Among Independent Residing Older Adults

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**Background:** Falls among older adults 65 years and older rank the #1 cause of injury related deaths in the United States. While the pathophysiology of fall-related injury is known, less understood are the emotional responses, functional limitation and action plans developed by individuals to manage day to day after encountering a fall they perceive “serious”.

**Methods:** A qualitative secondary content analysis was conducted from original research examining older adults lived experience of a “serious” fall and applied to World Health Organizations International Classification of Functioning (2001) framework to describe the connection between older adults emotional responses, functional limitations and action plans.

**Results:** 19 older adults residing in the independent living section of a Continuing Care Retirement Community with a mean age of 83.3 years (67-98 years) participated. Most were women (89.4%) and married (42.1%) and experienced a total of 60 falls. Most falls were outdoors (73.6%) while doing a customary activity (as opposed to a new high risk activity). Only 4 (21%) resulted in fracture injury while most experienced significant emotional responses, such as anger and frustration to feeling helpless and older. Functional limitations hindered activities of daily living and prompted role changes. Described were the individualized emotional accounts and concrete action plans used by older adults to manage falls.

**Conclusion:** Older adult’s accounts of their most serious fall reveal distressful emotional responses and functional limitations which impact daily living and result in concrete plans of action to reduce the risk of avoidance of future falls. Connecting subjective post-fall experiences along with their impact on physical and social role function is critical to uncover by the health care professional during the post-fall assessment period if we are to develop, test and reinforce effective patient centered strategies to reduce recurrent falls.

**C125**

Estimated Glomerular Filtration Rate and Sarcopenic Handgrip Strength


**Background:** Estimation of glomerular filtration rate (GFR) is important in older adults and chronic kidney disease (CKD) is a risk factor for sarcopenia. However, presence of sarcopenia may result in erroneous estimation of GFR. We aimed to compare the association between commonly used GFR estimations and handgrip strength (HS) in this study.

**Methods:** We enrolled subjects ≥ 60 years old in this study. We excluded subjects with a history of cancer or those with a GFR < 30 ml/min according to any of GFR estimations. We measured subjects’ weights
and heights. We analyzed blood urea nitrogen, creatinine, cystatin C (CC), and albumin levels. We used Cockcroft Gault (CG), short modification of diet in renal disease (MDRD) corrected for body surface area and CKD-EPI-CC formulas for GFR estimation. Subjects were grouped according to their GFR levels (decreased-GFR: <60 ml/min and preserved-GFR: ≥60 ml/min). We measured HS with a dynamometer. HS was compared in GFR groups. HS of 301 younger (18-39 years) healthy subjects was used to determine sarcopenic HS (more than 2 standard deviations below mean HS values).

Results
We enrolled 474 older adults (55.7% females) with a mean age 68±6. Frequency of decreased GFR was 12.6% and 11.5% according to CKD-EPI-CC and CG estimations, respectively. MDRD estimation resulted in a higher proportion of patients with decreased GFR (23.1%). HS of the patients with decreased GFR according to CG (24.7±9 vs. 27.2±9.8, p=0.015) and CKD-EPI-CC (24.9±9.3 vs. 27.9±9.9, p=0.013) estimations were lower compared with those with preserved GFR. On the contrary, patients with decreased GFR according to MDRD estimation had higher HS (31.8±10.3 vs. 24.9±8.6, p=0.001). The rate of sarcopenic HS was similar in decreased and preserved MDRD-GFR groups (66% vs. 66.3%) while it was higher in decreased GFR groups according to CG (80.3% vs. 63.5%, p=0.005) and CKD-EPI-CC (78.3% vs. 62.7%, p=0.006) estimations.

Conclusions
A GFR < 60 ml/min was a risk factor for sarcopenic HS according to CG and CKD-EPI-CC estimations. However, a decreased-GFR according to short MDRD estimation was associated with higher HS. These findings render a decreased GFR according to MDRD estimation an unreliable risk factor for sarcopenic muscle strength.

C126
Response to intra-articular corticosteroid therapy for osteoarthritis in a Midwestern VA patient population supports use of this therapeutic modality regardless of patient age
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Background: Older age is associated with greater co-morbidity and greater stage of osteoarthritis (OA). We evaluated in a Midwestern VA population whether response to injectable corticosteroid therapy for OA was influenced by BMI, Age or stage of OA.

Methods: We administered the Knee Injury and Osteoarthritis Outcome Score (KOOS) Questionnaire at weeks 0, 2, 4, 8, 12 and 24 after standard of care intra-articular triamcinolone acetonide (40 mg) injection in 20 consecutive subjects amenable to study participation attending the Cleveland VA Medical Center Arthritis clinic between September 2013 and May 2014. Stage of OA was determined by Kellgren-Lawrence classification. BMI was obtained at time of steroid injection.

Results: Age range of our cohort was 44-98 (70.5+/-11.6), BMI of our cohort was 21.9-47.7 (32.3+/-5.5), stage of OA was 1-4 (3.2+/-0.9) and number of prior injections subjects received was 0-20 (2.5+/-4.5). At baseline, age was correlated positively with better symptom score (r=0.49, p=0.03). After injection, we observed significant improvement in KOOS pain, symptom, quality of life, and activity of daily living subcategory scores at weeks 2, 4, 8, and 12 (p<0.05 for all comparisons to baseline score), and also at week 24 for pain, symptom and quality of life (p<0.05). Greater stage of OA and greater baseline KOOS symptom score negatively correlated with improvement in KOOS symptom score at week 8 (r=-0.59, p=0.02 and r=-0.78, p=0.001), and stage of OA negatively correlated with improvement in KOOS pain score at week 2 (r=-0.56 p=0.02). No response category was significantly associated with age, though age tended to negatively correlate with improvement in symptom score at week 8 (r= -0.43, p=0.097).

Conclusions: KOOS scores improve during standard of care injectable steroid therapy for OA in a Midwestern VA patient population across a wide age range. The observation that higher symptom score at baseline correlates with less improvement in symptom score at week 8 may represent a ceiling effect. These data support the conclusion that injectable steroid therapy for OA can benefit both older and younger OA patients.

C127
Comparative Study of Elder Abuse Reporting among Veterans at 2 Medical Centers
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Background: Elder abuse (EA) is an under-recognized problem which causes increased morbidity and mortality among those affected. EA is defined as a single or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust, which causes harm or risk of harm to an older person. Despite mandatory reporting laws, physicians are believed to report about 1% of all EA cases. Elderly Veterans are believed to be high risk for abuse due to multiple comorbidities and high rates of disability, psychiatric illness and substance abuse. Despite these known risk factors, the number of reported EA cases within the VA is largely unknown.

Methodology: Retrospective chart review of all cases of EA reported by the Providence and Durham VAMCs to their state’s respective Department of Elderly Affairs (DEA) and/or Adult Protective Services. All cases between 2006 and 2012 at each facility were tabulated and compared. Charts were reviewed for distinguishing characteristics that might predispose Veterans to a high risk of abuse including their cognitive status and comorbidities. Referrals to APS for guardianship as a result of psychiatric illness were excluded in our review.

Results: Between 2006 and 2012, a total of 30 cases of EA were reported at the Providence VAMC and 25 were reported at the Durham VAMC. Of the 55 cases at both institutions, only one chart in Providence had EA listed as a diagnosis. A dementia diagnosis was common among EA cases, present in 50% of cases in Providence and 72% in Durham. Fifty percent of referred cases in Providence had multiple types of abuse compared to only 24% in Durham. The majority (41/55) of referrals were made by the medical team; cases were also reported by caregivers and patients themselves. In nearly half of referred cases, the veteran was able to remain in the home environment with additional services.

Conclusion: This review suggests that very few cases of EA were reported at 2 major VAMCs between 2006 and 2012. Key predictors of EA included a diagnosis of dementia and most cases were reported by the medical team. Further investigation is required to determine why EA is likely underreported at the current time and to identify high risk predictors of abuse.

C128
Outcomes Following Percutaneous Endoscopic Gastrostomy Tube Placement in Two Tertiary Care Hospitals in New York City

Background: Gastrostomy tube placement has become an important means of delivering nutrition in patients with chronic condition. However, complications and potential morbidities have to be accounted for in
deciding whether to place it or not. Hence, we examined the morbidity and mortality of elderly patients after PEG was placed.

Methods:
We retrospectively identified all patients (mostly patients above 65 y/o) who needed PEG placement done at both inpatient and outpatient services at 2 New York City Hospitals, Mt. Sinai St Luke’s (MSSL) and Mt Sinai Roosevelt Hospitals (MSRH) from June 2013-May 2014. Data were obtained from medical records. In addition, we looked at number of palliative care referrals and outcomes.

Results:
187 patients were identified. The average age at MSSL was 79 and at MSRH was 66. MSSL male to female ratio was about 1:1 whereas in MSRH 2:1. It was found that the most common indication for placing PEG was CVA related dysphagia (25%). The total complication rate was 27% with the most common being PEG dislodgement (44%). The in hospital mortality was 8% with a 30-day mortality of 6.4%.69% of deaths were above 65 years of age. Furthermore, the 30 day readmission rate was 21% and 6% of the patients elected hospice.

Conclusion:
Our data showed that PEG placement has a substantial degree of complications (majority of which arise from PEG dislodgement). Even though the mortality rate was fairly low in relation to other studies that were done previously, our 30 day hospital readmission was fairly high. Hence, appropriate indications for placement and risks/benefits have to be thoroughly discussed. Early goals of care discussion and palliative care referral might help improve outcome, avoid unnecessary PEG placements and prevent readmissions.

C129
Doctor the music does not let me sleep
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76 y/o F with PMH A.fib, HTN, hypothyroidism and hearing loss, presented to the hospital complaining of constant throbbing headache for the last 3 days, associated with insomnia and states “I am hearing music in my head that has not let me sleep for the last 2 weeks.” The patient described hearing choir music. There was no evidence of psychosis, memory loss, or confusion.


Work up: Hb12.1, Hct38.1, BMP wnl, albumin 3.2, TSH 0.049, free T4 1.0, vitamin D 10.5, vitamin B12 257, folate947, homocysteine 8.1, Brain MRI: periventricular and subcortical white matter non-specific gliosis, consistent with chronic small vessel ischemic disease.

During a detailed review of systems the patient reported poor appetite, weight loss and depression in the last year. She denied constitutional symptoms and malignancy workup was negative. GDS was consistent with depression and treatment with Mirtazapine was started. On second day of Mirtazapine the patient reported improvement of auditory hallucinations and insomnia, as well as appetite and a better mood. She continued hearing music intermittently and before discharge just occasionally during the day. Relief of symptoms was also noticed while using a pocket talker and maximizing her hearing.

Discussion. Our case illustrates the presentation of musical hallucinations associated with hearing impairment in the elderly population and its relationship with depression. Occasionally there is an antecedent of tinnitus and in most of the cases patients usually report hearing choir music. Musical ear syndrome (MES) consists of auditory hallucination characterized by the perception of music in the absence of external stimuli. Musical hallucinations are rare, although they are more common in women, and their onset is often related particularly with hearing loss. The pathophysiolog of this unusual disorder remains unclear, but is likely caused by hypersensitivity in the auditory system due to sensory deprivation, secondary to deafness. Has been noticed that depression might be related with the occurrence of such hallucinations. Recognition of MES is crucial in the geriatric population to avoid confusion with psychotic symptoms.

C130
Symptomatic Falls and Fall Risk Among Older Adults in a Continuing Care Retirement Home
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Background/Purpose:
Falls effect 50% of the 1.3 million older adult long-term care residents. Unfortunately we know little about older adults symptoms occurring at the time of the fall because of limited inquiry and the limitations imposed by use of fall risk tools to capture these symptoms. This study sought to describe the symptoms of an entire sample of fallers and to determine if the standard risk tool categorized the subject as high risk to fall or not.

Methods: A cross-sectional one year prospective study was conducted of all older adult fallers residing in a CCRC located in the Northeastern US. Fall data was obtained by trained nurses using the Post Fall Index, a comprehensive post fall assessment and clinical decision support tool within 24 hours of each patient fall. Data were analyzed using SPSS version 17.0. Descriptive frequencies and chi-square tests were conducted.

Results: 77 older adults, mostly female and widowed with an average age of 90.7 years fell 193 times. An antecedent trip or slip with the fall occurred by 25.9% (n=50) of the sample especially by those deemed at greatest risk to fall (27.4% vs 19.4%; p=.326). Likewise, a need to urinate or visual impairment occurred among those at greatest risk (10.2% vs. 8.3%; p=.736; 26.1 vs. 5.6%; p=.008, respectively). Although 44.6% (n=86) experienced loss of balance, this symptom occurred more frequently by those deemed at high risk to fall (58.3% vs. 41.4%; p=.065).

Conclusions & Implications:
Patient experiences of urinary frequency, trips or slips or visual impairment are important modifiable antecedent symptoms to detect among those at high risk to fall. Other important modifiable symptoms such as loss of balance are also important to detect, irrespective of the patients risk to fall.

C131
Falls among older adults on anticoagulation: A quality improvement project
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Background: Falls are common events that threaten the independence and health of older adults. It is estimated that a third of older adults fall each year. Falls are of particular concern for patients on anticoagulation, as falls are often cited as a contraindication to anticoagulation. Anticoagulation clinics given their frequent interactions with patients to monitor international normalized ratio (INR) and adjust warfarin may be optimally positioned for implementing falls screening and prevention programs for this population. The aim of this study was to characterize patients on anticoagulation who fell more than once in the previous year, and to determine the feasibility of screening for falls in an anticoagulation clinic.

Methods: The study was done in an imbedded anticoagulation clinic within a geriatrics primary care clinic in a public safety net hospital in New York City. A questionnaire was designed to collect data regarding the frequency of falls, whether medical attention was sought
after the fall, if the patient’s primary care provider was notified, fear of falling, and difficulties with gait. The questionnaire was translated into Spanish and Chinese, and administered by nurses during routinely scheduled warfarin clinic visits to monitor INR.

Results: A total of 63 patients completed the questionnaire, the mean age was 73.0 year and 54.5% were female. Atrial fibrillation was the most common indication for anticoagulation (71.0%). 14.3% of patients reported more than one fall in the previous year, 44.0% of those falls were reported as a significant injury requiring hospitalization, 44.0% of fallers did not inform their primary care provider, 77.8% reported difficulties with gait, and 100% reported they are afraid they may fall again. Among non-fallers, 14.8% patients reported they have problem walking and 7.4% were afraid they might fall.

Conclusion: Our study found a lower than expected rate of falls among patients enrolled in an anticoagulation clinic, and further information regarding fall risk for this population is needed. However, screening patients on anticoagulation during scheduled visits for INR monitoring is feasible, and identifies patients who did not notify their primary care provider of their falls. Future studies implementing a falls screening and prevention program within anticoagulation clinics may decrease falls among older adults on anticoagulation.

C132
Proton Pump Inhibitor (PPI) Tapering – A Primary Care Difficulty
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Background: Polypharmacy is a geriatric syndrome associated with significant morbidity and mortality. Astute geriatricians conduct medication reconciliations to limit unnecessary medications with the purpose of avoiding Polypharmacy. This concept is supported by the Institute of Medicine in their “Preventing Medication Errors” report. A seemingly benign medication such as a PPI can appear on a medication list for many reasons, some appropriate and many not, for an indefinite period of time. We identified a cohort of VA patients who were on chronic PPI initiated by their PCP for more than 3 months, for a GERD diagnosis. We created a QI project with a goal of initiating a PPI taper in appropriate patients.

Methods: An email explaining the project was sent to 11 interested providers in the Division of Geriatrics. A list of eligible patients was sent to each provider, allotting 4 weeks for them to contact their patients. 400 patients were identified to have been started on a PPI by their PCP, and 95 were deemed taper suitable.

Results: At 4 weeks, no provider had contacted their patients despite a 2 week reminder. With an additional 3 week extension, we only had 1 provider make contact with their patients. We learned that the biggest hindrance was the sheer workload the providers had. Thus, the time burden of having individual phone discussions about PPI tapering was prohibitive. In addition, lack of diagnostic indication by provider addressing the GERD diagnosis and inability to reach patients via phone created more obstacles.

Conclusion: An accurate medication list is a strong geriatric tool but obsolete medications create potential hazards such drug-drug interactions and patient confusion. Initiation of a PPI taper for our QI project was affected by providers’ low response rate. Despite being in a teaching institution with a small office practice, providers were unable to play an active role due to work burden. As a result, medication reconciliation is suboptimal, impacting patient care. This highlights the barriers met in initiating a plan as seemingly simple as a PPI taper. Future directions include 1) medication reconciliation and education being done by embedded Pharm D’s, 2) reinforcing patients to bring all their medications and 3) providing updated medications list with their indication for review with the provider.

C133
A quality improvement project increased documentation of advance directives among an older population in a primary care setting
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Background: Advance care planning among older adults is an essential part of outpatient care. Advance directives (AD) help guarantee patient autonomy, improve the quality of care, decrease in-hospital death, and lower medical costs at the end of life. Currently, AD completion rates among US adults range from 5% to 15%. We conducted a prospective quality improvement (QI) study among older patients to improve AD completion rates.

Methods: Our QI project was developed and implemented in the geriatric clinic at Bellevue Hospital, which serves a diverse population of community-dwelling adults 65 and older. To determine baseline AD completion rates, we conducted a chart review of regularly scheduled patient appointments in June 2014. Primary care providers (faculty and geriatric fellows) were then surveyed and based on their feedback we developed a multimodal intervention aimed to facilitate discussion and improve documentation of AD. The intervention was implemented in July 2014 and included: 1) Educating medical assistants, nurses, and providers about the importance of AD and how to provide counseling and document AD; 2) Identifying patients without documented AD during registration, flagging patient record with a paper reminder to notify the provider, and giving patients a health care proxy form and educational information; 3) Making available a social worker to help complete AD paperwork; 4) Analyzing AD rates and providing feedback to providers for each subsequent month. A follow-up chart review was conducted for scheduled patient visits for the month of October 2014 to determine post-intervention AD completion rates.

Results: Two-thirds of providers reported a lack of the time and resources as the main barriers to discussing AD. Our intervention improved the completion rate of documented AD from a baseline of 13.8% (54 of 390 patients) in June 2014 to 19.8% (79 of 398 patients) in October 2014. The baseline AD completion rate was higher among faculty than fellows (14.2% versus 12.3%), as well as increases in AD documentation post-intervention in October 2014 (6.9% versus 4.6% increase).

Conclusion: Our intervention increased the completion rate of documented AD among older patients. These interventions are ongoing and present an opportunity for long-term improvement in rates of documented AD among a culturally diverse older population.

C134
Increased incidence and mortality of Renal Carcinoma in two senior populations in Louisiana: Missed opportunities
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Supported By: No funders provided support for this research

Background: There are some reports suggesting that there are increased incidence, mortality rates, and possibly less treatment options offered for renal cell carcinoma (RCC) for elderly patients in Louisiana compared to National counterparts.

Methods: Retrospective study using the linked Surveillance, Epidemiology and End Results (SEER) Medicare database. Study subjects consisted of persons in SEER-Medicare, aged 65-74 years and >75 years of age, with evidence of newly diagnosed RCC between January 1, 2000 and December 31, 2012.

Results: Compared to national average the prevalence of renal carcinoma in Louisiana is higher and statistically significant in both senior groups of senior patients (65-74 year group: 10.9 vs. 8.3 for
national elderly (>75 years, 76.0 vs. 60.9 for national counterparts) and senior elderly (>75 years of age). Caucasians had a higher prevalence in Louisiana compared to national average and this difference was statistically significant (77.0 vs. 60.1 for national average) and also had a higher prevalence compared to African Americans (78.8 vs. 73.6 for ages 65-74; and 75.0 vs. 72.0 for >75 years of age).

Regarding treatment, surgery was a definitive option more frequently used in both the 65-74 and >75 year of age group compared to national average (63 vs. 50.3); (47.1 vs. 35.9). These differences were statistically significant (p<0.05). Chemotherapy was offered in 35-40% of potential cases in patients with metastatic disease. Mortality rates were higher for the 65-74 years group in both Caucasians and African Americans compared to national average (19.4 vs. 16.8; for Caucasians, 18.1 vs. 15 for African Americans); and these mortality rates were also higher for both ethnic groups in the >75 year of age group (35.4 vs. 28.1) for Caucasians, and (32.7 vs. 26.2) for African Americans.

Conclusions: Elderly patients in Louisiana have a higher incidence and mortality of renal cell carcinoma compared to their national counterparts. Reasons for these differences could include differences in tumor biology presentation, access to care, and less offering of systemic chemotherapy to elderly patients. A change in prevention and management strategies, treatment protocols, and more inclusion of elderly patients in clinical trials is much needed.

C135
The Perceived Influence of Family on Nursing Home Resident ER Transfers and Potential Role for Palliative Care and Emerging Health Technologies

Supported By: Funding: 8 KL2 TR000143-08

BACKGROUND: Many frail nursing home (NH) residents who experience frequent transfers to and from the emergency room (ER) often have unmet palliative care needs. Little is known about the influence of family on these frequent ER transfers and potential role for palliative care and/or emerging health technologies (EHT) to address the needs of both residents and families.

METHODS: We convened 8 mixed stakeholder focus groups (n=40 participants) comprised of resident families, NH nurses, NH physicians/nurse practitioners/physician assistants, NH administrators, ER nurses/physicians and hospitalists. Participants described their experiences with NH resident transfers to the ER; potential EHT were described, demonstrated, and discussed. Focus group interviews were recorded and transcribed verbatim. Transcripts and field notes were analyzed using a modified Grounded Theory approach.

RESULTS: Families often reacted to a resident change of condition as a crisis which was driven by 4 main factors: 1) being unprepared for end of life/death; 2) insecurities with NH care; 3) lack of communication and agreement within families re: goals of care; and 4) lack of advance care planning. Stakeholders described the potential to video conference as particularly useful for: integrating palliative care conversations to help families come to consensus re: goals of care; alleviating feelings of anxiety/panic; facilitating the completion/revision of POLST (Physician’s Orders for Life-Sustaining Treatments) forms in ‘real time’; allowing families living far away to virtually connect with their loved one and care providers; and helping with family feelings of guilt/regret and to say goodbye.

CONCLUSIONS: Residents and families lack access to appropriate and timely palliative care support and expertise in the NH setting, contributing to frequent ER transfers. Emerging technologies that allow remote visits, consultations and assessments may be a potential part of the solution.

C136
Redesigning the Electronic Health Record to Improve Advance Care Planning
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BACKGROUND: Advanced Care Planning (ACP) is a core component of patient-centered care. In 2015, CMS will require mandatory reporting of this quality measure for patients 65 years and over. Based on multiple needs assessments, inservices and quality improvement intervention results, administration approved redesign of the EPIC Electronic Health Record (EHR) to improve patient-centered care and compliance with this CMS quality measure.

OBJECTIVES: To redesign the EPIC EHR to improve documentation and retrieval of patient’s advance care planning preferences and medical decisions across various setting within our institution.

METHODS: An interdisciplinary team of inpatient and outpatient medical providers and EHR engineers met on a bimonthly basis in AY 2013 to redesign the EPIC EHR. Stake holders reviewed inpatient, outpatient and emergency room work flow and documentation processes and developed EHR solutions to address barriers to ACP completion/retrieval and care coordination for inpatient, outpatient and emergency room providers. Champions from each discipline were identified for educating providers.

Results: The NEW- ACTIVITIES TAB: “Advance Care Planning” was developed for the EPIC EHR that houses the following ACP content across settings (ED, Inpatient and Outpatient): 1. Medical Decision Makers, 2. Code Status Orders, 3. Advance Care Notes, 4. ACP Scanned Documents. Clinical Decision-Support Tools such as ACP templates and comfort care order sets were developed to facilitate documentation of advance directives/family meeting discussions, and implement patient’s goals of care when hospitalized in acute care settings. This EHR product was made available to providers on March 4, 2014 with ongoing provider education about the ACP initiative. Since release, compliance with ACP documentation has increased 15% (from 51.3% to 60.3%, p=0.0001, Fisher exact test) in the geriatric primary care practice. Follow up survey of geriatric providers showed that 84% felt that the EHR product was easy to use even though only 48% received formal inservice about the product.

Conclusion: Standardizing documentation and retrieval of ACP in the EPIC EHR can help improve provider’s ability to document patient’s advance care plans and medical decisions and improve compliance with CMS quality measures.

C137
Integration of the electronic health record and a clinical decision support system for addressing high-risk medications in older adults
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Supported By: Donaghue Foundation

Yale Pepper Center

BACKGROUND:

Widespread support exists for electronic exchange of health information between electronic health records (EHRs) and computerized
clinical decision support systems (CDSS) to improve patient care. We set out to develop an integrated system to identify older adults at high risk of receiving potentially inappropriate medications (PIMs) and to provide patient-specific recommendations in order to improve medication management.

Methods: An interdisciplined team was assembled to design 2 elements of an integrated system. One element would extract data from the EHR in order to identify patients and to collect selected data for use in the 2nd element, a web-based CDSS. Our team included expertise in bioinformatics, web and systems design, and geriatric medicine and pharmacy. To inform development of the CDSS, we conducted systematic reviews of polypharmacy and multimorbidity. We also conducted a Delphi Panel to inform approaches to identifying and correcting problems with medication regimens.

Results: We developed a novel program to extract EHR data identifying Veterans with upcoming PCP appointments who have risk factors for receiving PIMs, including: age ≥ 65 years, multiple medications, and multiple comorbidities. The CDSS integrates two sets of inputs: one from the EHR and one from patient assessment obtained through telephone interview. The CDSS generates a PDF physician report that provides patient-specific recommendations from evidence and Delphi-based algorithms. The PDF report addresses: medication reconciliation discrepancies; problems with adherence, social support, and cognition; PIMs as identified using Beers and STOPP criteria; potential overtreatment of diabetes and hypertension; inappropriate dosing of renally excreted medications; and patient-reported side effects.

Conclusions: We have demonstrated the feasibility of identifying patients at high risk for PIMs coming into primary care and automating the merge of EHR data with patient assessment data to provide patient-specific medication recommendations to the PCP. Implementation of the CDSS is in the pilot phase to assess the effect of the tool on medication prescribing and shared decision making around medications.

C138 Encore Presentation
Support for Management of Multiple Comorbidities through a Performance Measure Clinical Dashboard for Primary Care
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Supported By: VA HSR&D

Background. Many older Veteran patients have multiple coexisting chronic conditions. Traditional performance measurement systems may not take account of multiple clinical characteristics of the patients. We address this problem by integrating a guideline-based clinical decision support (CDS) system that goes well beyond simple alerts and reminders into a performance measure (PM) clinical dashboard.

Methods. We created a novel CDS architecture by leveraging the computational results of the Dashboard, providing CDS in the context of panel management (reducing the demands on clinic visit time), and providing a succinct summary of goals, therapeutic options, and messages on a single screen for each disease, while taking account of important comorbidities that affect therapeutic choices. We analyzed the changes required to adapt a CDS within the context of a PM system rather than in the context of the panel visits.

Results. We have encoded guidelines for the management of hypertension, type 2 diabetes, heart failure and hyperlipidemia in the ATHENA CDS framework [1]. CDS is triggered when patients fail to satisfy PMs related to these disease domains. Clinicians can drill down from the dashboard to review guideline-based recommendations. Integrating the CDS into the dashboard to display when the PM is not met (a) allows the CDS to issue alerts based on data that are important for care but not related to PM (e.g., medication possession ratios, and indicator of adherence), and (b) requires the system to resolve discrepancies when the targets differ between PMs and clinical knowledge that the CDS implements (e.g., diabetes guidelines recommend setting individualized hemoglobin A1C target).

Conclusion. We adapted a CDS system to provide recommendations and displays consistent with a production PM Dashboard. The resulting architecture enriches simple PMs with detailed guideline-based recommendations, efficiently focuses on patients with the most need for interventions for their comorbidities.


C139
National Trends in Older Adults’ Primary Care Visits at Safety Net Sites, 2006-2010

Supported By: Dr. Chodos was supported by a training grant to the Division of Geriatrics at the University of California, San Francisco from the National Institute on Aging (T32AG000212-20) and a grant from Tideswell at the University of California, San Francisco.

Background: The number of socioeconomically disadvantaged older adults is growing and they often use safety net sites for health care. We describe recent trends in the use of primary care at safety net sites by older adults to understand the potential impact on health care demand in this sector.

Methods: Using nationally-representative annual survey data from the National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey for the most recent available years, 2006-2010, we examined number of primary care visits among adults seen at safety net sites: community health centers and safety net hospital outpatient departments. We defined primary care as ambulatory care visits to any physician or mid-level provider in general medicine, general practice, internal medicine, or family medicine. We looked at trends in utilization among older (65 and older), middle-aged (45-64), and younger adults (18-44). Survey data were analyzed with established survey weights.

Results: From 2006-2010, older adults’ visits accounted for 8.7% of all primary care visits (all ages) and 17.9% of adults (18 and older). For trends among adult age groups, see table showing primary care visits in safety net sites by year.

Conclusion: Primary care visits among adults at safety net sites, including those 65 and older, was stable from 2006-2010. Numbers of older adults with socioeconomic disadvantage are increasing, and more will likely seek care at safety net sites. Therefore, this trend should be monitored and further evaluated for shifts in sociodemographics and ill health burden to characterize these older adults and inform resource allocation.

Primary care visits at safety-net sites among adults, 2006-2010

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total</th>
<th>p-value for Linear trend*</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-44 years old, N (%)</td>
<td>17,539 (43.1%)</td>
<td>18,096 (43.8%)</td>
<td>22,768 (42.9%)</td>
<td>20,777 (43.9%)</td>
<td>18,106 (42.9%)</td>
<td>45,714 (42.4%)</td>
<td>p&lt;0.05</td>
</tr>
<tr>
<td>45-64 years old, N (%)</td>
<td>16,080 (40.5%)</td>
<td>17,493 (42.0%)</td>
<td>21,059 (42.5%)</td>
<td>19,362 (43.4%)</td>
<td>17,006 (42.8%)</td>
<td>44,849 (42.3%)</td>
<td>p&lt;0.05</td>
</tr>
<tr>
<td>65 years old, N (%)</td>
<td>10,802 (27.0%)</td>
<td>8,736 (20.5%)</td>
<td>8,908 (20.3%)</td>
<td>9,155 (20.0%)</td>
<td>8,939 (20.7%)</td>
<td>37,504 (20.6%)</td>
<td>p&lt;0.05</td>
</tr>
</tbody>
</table>

*Chi-square test for linear trend.
C140
The Medicare Annual Wellness Visit: An Opportunity for Geriatric Assessment
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Supported By: John A. Hartford Foundation
Stulman Foundation

Background:
The Medicare Annual Wellness Visit (AWV) includes questions regarding cognitive function, functional status, depression, cancer screening, immunization screening, medication use, and advance directives, and provides a structured opportunity for primary care providers to screen for geriatric syndromes, perform key areas of geriatric assessment, and develop a preventive health plan. To date, little is known about how providers are making clinical decisions based on AWV screenings. This study was designed to examine how providers respond to concerns identified during the AWV.

Methods:
We conducted a retrospective chart review study of patients seen at 3 community practices in Maryland during a time when practices were working to improve AWV workflow and encourage use. Patients were 65 or older and seen for an AWV between April 1, 2014 and June 30, 2014.

Results:
Of 120 charts reviewed, 46 (39%) patients were male and 74 (61%) were female. Average patient age was 76. 17% of the patients reported functional impairment (ADL or IADL impairment). 26 patients (22%) reported having tripped or fallen in the last year. 15 patients (12%) reported feeling down, depressed or hopeless. 14 patients (12%) reported that they or their families had a concern about the patient’s memory. 35 of 120 patients (29%) self-reported having an Advanced Directive, though only 3 patients (3%) had an advanced directive in the electronic medical record. 100% of the patients had medication reconciliation done during the visit. 66% of patients were taking 4 or more medications and 18% of patients were taking 10 or more medications, and 8% of patients had a discussion about polypharmacy. Patients had a history of receiving the following vaccines: Pneumovax (91%), Tetanus (62%), and Shingles (46%). Overall, 53 of the 120 patients (44%) answered “yes” for questions related to fall risk, memory concerns, or depression, and 16 records contained evidence that these issues were adequately addressed during the AWV or within 6 months of follow up.

Conclusions:
Based on these results, there is opportunity for improvement in the evaluation of problems raised during AWV screenings performed in community practices. Next steps include identification of barriers to addressing key areas of concern, and education focused on areas of geriatric assessment.

C141
Multimorbidity and Causes of Hospital Readmission at 30 days and One Year
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Supported By: Canadian Institutes for Health Research

Background: Rates of hospital readmission increase with the number of comorbid conditions and comorbidities are often responsible for potentially avoidable readmissions. Thirty day readmission rates reflect hospital care and care transitions, while one year readmission rates reflect chronic disease management in the community. A better understanding of the contribution of comorbid conditions to readmissions among patients with multimorbidity is needed to reduce readmission rates.

Methods: Using linked population-based administrative data from Ontario Canada from FY 2011 and 2012, a longitudinal cohort study of acute myocardial infarction (AMI), congestive heart failure (HF), chronic obstructive pulmonary disease (COPD) and hip fracture patients discharged after an index hospitalization determined disease-specific, concordant, and discordant causes of hospital readmissions in each cohort at 30 days and one year. Multivariable regression models were used to assess the contribution of patient complexity to readmissions for discordant comorbidities.

Results: Cohorts included 29,607 admissions for AMI; 22,089 for COPD; 20,095 for HF; and 12,857 for hip fracture. Age, sex, and readmission rates varied across cohorts. There was a high burden of readmissions at one year. For example, 18.5% of HF patients were re-admitted at 30 days and 57.5% at one year. Across all cohorts the proportion of readmissions attributable to discordant comorbidities was greater at one year than 30 days ranging from 44% for AMI to 91% for hip fracture. Geriatric conditions (i.e., dementia, decubitus) contributed to readmission rates. The independent contribution of patient complexity to discordant readmission rates will be presented.

Conclusions: In patients with multimorbidity, discordant comorbidities are responsible for a sizable proportion of hospital readmissions and the burden of discordant admissions increases over the course of a year. Attention to readmission rates beyond 30 days and patient-centered models of care to effectively manage multimorbidity will be needed to reduce rates of potentially avoidable hospitalizations among older patients with multimorbidity and complexity.

C142
Hospitalization Risk and Time of Enrollment in a Home Based Primary Care (HBPC) Shared Savings Program
Supported By: Mid-Atlantic consortium

Background: Home-limited seniors with multiple severe chronic conditions are one of the costliest groups of Medicare beneficiaries, representing up to 18% of total Fee for Service (FFS) spending. Independence at Home (IAH) is a CMS shared-savings demonstration testing whether HBPC targeted to home limited seniors with at least two chronic illnesses, two functional ADLs, and hospitalization and post-acute care use within the 12 months prior to enrollment can reduce costs and improve quality. To determine whether HBPC produces savings, control patients who have not received HBPC must be matched to enrollees. Clinical instability at the time of enrollment in HBPC may be predictive of greater hospitalization risk in the initial 6-9 months after enrollment. Whether patients who had their qualifying hospitalization while receiving HBPC are at even greater hospitalization risk is unknown. This study aims to determine whether receipt of home-based primary care prior to their qualifying hospitalization influences utilization patterns among patients enrolling in a shared savings program, such as IAH.

Methods: This cohort study examined data collected on HBPC patients meeting IAH criteria at three home-based primary care practices from December 2012 to August 2014. Patient status was defined as “existing” if they were receiving HBPC at the time their qualifying hospitalization, and “new” if their IAH qualifying events occurred before receiving HBPC. New patients were further divided into those who had their qualifying events more (stable) or less (unstable) than 9 months from receipt of HBPC. Hospitalization rates were calculated per 100 patient months. Results: Age, presence of CHF, COPD, and DM did not differ between groups. Average hospitalization rates did not differ between new (8.35/100; 1461 patient months) and existing (8.36/100; 1448 patient months) (p =
0.295), while among new stable patients hospitalization risk was lower (3.48/100; 201 patient months). **Conclusions:** Patients who qualify for a shared savings program while already enrolled in HBPC have same hospitalization risk as newly enrolled patients with recent qualifying clinical events. This suggests that controls can be selected for determining savings from patients with similar pre-qualifying hospitalization but not receiving HBPC.

**C143**

**Knowledge and Beliefs Regarding Calcium and Vitamin D and the Relationship with Health Behaviours**

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Background: Calcium and vitamin D play important roles in bone health. There is evidence that many older adults do not receive adequate intake of these nutrients. The objective of this study was to determine if knowledge and beliefs regarding these nutrients impact dietary intake or supplementation behavior.

Methods: Subjects were given a questionnaire containing measures of knowledge and beliefs about calcium and vitamin D as well as dietary intake and supplement use. Subjects were recruited by a research assistant as a convenience sample from a community hospital, the Seniors’ Association of Greater Edmonton, and several pharmacies in Edmonton, Alberta. Ethics approval was received from the University of Alberta Health Research Ethics Board.

Results: A sample (N = 366) of middle aged (35-64) and geriatric (>64) adults were administered a survey containing new measures of knowledge and beliefs about calcium and vitamin D as well as measures of their calcium and vitamin D dietary intake and supplement taking behavior. Knowledge and beliefs scales for calcium had reliability indexes of .64 and .80 respectively. For vitamin D, knowledge and belief scales had reliability indexes of .67 and .80 respectively. Multiple regression results reveal that after controlling for age, knowledge remains a significant predictor of dietary calcium intake ($B = .12, p < .05$). However, after controlling for age only beliefs remain a significant predictor of dietary vitamin D intake ($B = .12, p < .05$). Calcium supplement takers had more positive beliefs than non-supplement takers ($t = 3.1, p < .001$). Age did not change the nature of this relationship. Finally, vitamin D supplement takers had more positive beliefs and more knowledge about vitamin D than non-supplement takers ($t = 3.1, p < .001$; $t = 3.1, p < .001$).

Conclusion: The knowledge and beliefs regarding vitamin D and calcium impact behaviours related to dietary choices and supplement intake. Interventions to address intake need to consider the knowledge and the underlying beliefs of older adults.

**C144**

**Hospitalizations and Subsequent Hospital Readmissions within Residential Care Communities: Findings from the 2012 National Study of Long-Term Care Providers**

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Background: In 2012, 10% of residents living in residential care communities had been hospitalized, and 18% of these residents had a hospital readmission. Only a handful of studies have looked at predictors of hospitalizations or hospital readmissions among residents living in residential care communities, and most focus on resident characteristics. To build on existing knowledge this study uses nationally representative data from the 2012 National Study of Long-Term Care Providers conducted by the National Center for Health Statistics to examine residential care community operational characteristics as predictors of hospitalizations and hospital readmissions.

Methods: The sample for this study was 4,694 residential care communities. Dependent variables included whether a community had at least one resident discharged from an overnight hospital stay within the previous 90 days, and among these residential care communities, whether a community had at least one resident with a subsequent hospital readmission within 30 days of a hospital discharge. Independent variables included metropolitan status, Census region, bed size, ownership, chain affiliation, years in operation, and participation in Medicaid. SAS callable SUDAAN was used to conduct the analyses. Bivariate and logistic regression analyses were performed. This study did not control for resident case mix.

Results: At the community level, 60% of residential care communities had at least one hospitalization. Of those communities, 39% had at least one hospital readmission. Preliminary multivariate analyses show that residential care communities that participated in Medicaid or were located in the Northeast and Midwest were more likely to have any hospitalizations while communities that were smaller with 4-25 or 26-50 beds, located in a metropolitan area, or were owned by another type of organization such as a hospital or nursing home were less likely to have any hospitalizations. Among residential care communities that had any resident hospitalizations, communities were more likely to have any hospital readmissions if they were located in the Northeast and less likely if they were smaller with 4-25 or 26-50 beds.

Conclusions: These findings may be used to inform targeting efforts for interventions to minimize potentially preventable hospitalizations, by targeting communities that may benefit the most.

**C145**

**Using Quality Improvement Strategies to Improve Advance Care Planning at an Academic Geriatric Primary Care Clinic**

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Background: CMS requires medical practices to document advance care planning (ACP) in patients over 65 years of age. Our academic geriatric primary care clinic began monitoring compliance of this quality measure in 2009. Initial ACP documentation rate was 12.8%. As a result, we sought to improve ACP documentation using traditional quality improvement (QI) techniques.

Objectives: To describe the ongoing QI interventions that are being employed to improve advance care planning for patients at Mount Sinai Geriatric Practice.

Methods: INSERVICES on how to document ACP in EPIC Electronic Health Record (EHR) were completed in 7/2009, 1/2012, 1/2013, and 1/2014. Needs assessments and qualitative interviews conducted in 6/2010, 8/2011*, 12/2012, & 1/2014 identified the need to standardize the ACP documentation and retrieval process in EPIC EHR. During Ayr 2011, EHR products were developed and piloted in ambulatory Geriatrics and Palliative Medicine. Administration then approved further redesign of the EPIC EHR to address ED and inpatient reported cases of inappropriate patient care being given due to difficulties with accessing and communicating patient’s advance directives. In AY 2013, a hospital-wide EHR solution to address barriers to ACP completion/retrieval and care coordination was developed. In 3/2014, providers were educated about the NEW- ACTIVITIES TAB: “Advance Care Planning” that was developed for the EPIC EHR that houses the following ACP content across settings (ED, Inpatient and Outpatient): 1. Medical Decision Makers 2. Code Status Orders 3. Advance Care Notes 4. ACP Scanned Documents

Results: The use of yearly in-services helped to increase ACP documentation from 12.8% to 27.5% (12/2011). Introduction of the geriatric specific EPIC EHR products improved ACP documentation to 51.3% (3/2014). Introduction of the hospital-wide EPIC EHR products improved ACP documentation to 60.3% (p=0.0001, Fisher exact test).

Conclusion: QI strategies can be used to improve advance care planning for ambulatory geriatric patients in primary care. Standard-
izing documentation and retrieval of ACP in the EPIC EHR can help improve provider’s ability to honor patient’s advance care plans and medical decisions and improve compliance with CMS quality measures.

C146
Development of a person-centered, community-based, multifaceted, dementia care-coordination program: MIND at Home
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Supported By: The Associated Fund of Johns Hopkins University, Baltimore, MD.

Background: 1 in 9 older Americans have Alzheimer’s disease and related memory disorders. Most are cared for at home by informal caregivers. Therefore efficient, effective care models that identify and manage the illness in the community must be a public health priority. The objective is to provide a case example of the developmental path of one such model, MIND at Home, and discuss lessons learned from proof-of-concept pilot testing to implementation in a demonstration project.

Methods: Phase 1 was a cross-sectional observational pilot study that develop and tested a dementia case-finding method and in-home needs-assessment tool, identified prevalence and types of unmet needs, and facilitated the creation of a person-centered intervention protocol. Phase 2 was a pilot 18-month randomized controlled trial of the intervention to establish feasibility, acceptability, and preliminary efficacy. Phase 3 is ongoing and consists of 2 concurrent projects testing 2 different iterations of the MIND at Home program in different populations and with differing research designs.

Results: MIND has been developed and refined over time and is now a fully protocolized intervention including manual, training curriculum, a cloud-based custom care management software program, and assessment tools. In the pilot trial, participants receiving MIND had a significant delay in transition from home, unmet care needs were reduced and quality of life improved; caregivers had reduced burden of time spent providing care. These findings led to two currently underway projects, an RCT for definitive efficacy of a streamlined version of the program, and a CMMI Health Care Innovation-funded demonstration project to test large scale applicability and economic feasibility of an augmented version of this model of care in a Medicare/Medicaid dual-eligible population.

Conclusions: MIND arose from a unique community-academic partnership supported by local philanthropy. Lessons learned in its developmental phases include the importance of understanding community needs and shared vision for development of an intervention to meet those needs, attention to implementation and dissemination issues through hybrid trial design early in pilot testing, careful selection of outcomes important to multiple stakeholders, incorporation of theory, and considerations of a business model for sustainability.

C147
Impact of an Accountable Care Organization (ACO) on hospital admissions from nursing homes with long-term care facilities
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Background: Montefiore Medical Center (MMC) was awarded a Pioneer ACO by Center for Medicare and Medicaid Services in 2011. Montefiore’s ACO has led to the development of an increased collaborative relationship with several local long term care facilities, and the development and implementation of novel programs. Montefiore has an extensive electronic database which allows for analysis of performance data of nursing homes related to admissions.

Objectives: Identify the impact of the ACO on hospital admissions from nursing homes in 2010 (pre ACO development) to 2013 (post ACO development).

Methodology: Clinical Looking Glass (CLG) is a data repository which allows analysis of performance data. 10 of the top NH with the highest number of admissions to MMC are assessed for hospital admissions. Nursing home facilities were evaluated by facility-related variables that could impact hospitalizations: for-profit status; and presence of on-site dialysis units. Data was abstracted from CLG for the number of monthly admissions to Montefiore from each nursing home and average annual admissions were calculated. Monthly and annual admissions were adjusted for the size of the facility. Adjusted monthly admit/bed was calculated as number of admissions divided by the number of beds at each facility x 100. Adjusted annual admission/bed was calculated as sum of all monthly admissions to Montefiore divided by 12 and divided by the number of beds at each facility x 100.

Results: Overall there was a reduction in the number of average monthly admissions from all of the nursing homes to Montefiore: 216 ± 13 (in 2010) to 172 ± 18 (in 2013) though not significant (NS). When the admissions were adjusted by the number of beds at each facility this translated to average of 5 admissions/100 beds per month in year 2010 to 3.8 admissions/100 beds per month in year 2013 (NS). Facilities with an onsite dialysis center were twice as likely to send patients to the hospital then facilities without an onsite dialysis center (5.7 vs 2.9 p <0.09).

Conclusion: Preliminary data indicates close collaboration with an ACO has a favorable trend toward reduction of hospital admissions from nursing home facilities. Further analysis is also needed to understand why facilities with a dialysis center have high hospitalization rates.

C148
OptimaMed: an intervention to reduce inappropriate medication use among nursing home residents with advanced dementia
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Supported By: RQRV/FRQ-S, CEVQ, Fondation des hôpitaux Enfant-Jésus et St-Sacrement, D. B. Maimonides Research Foundation

Background: Nursing home (NH) residents with advanced dementia receive large numbers of medications. With disease progression care goals shift from curative or preventive care to comfort care and medications must be reviewed and adjusted or discontinued because of reduced life-expectancy or changes in the harm-benefit ratio. Evidence on interventions to optimise medications for these residents is scarce.

Objectives: To evaluate the feasibility of an interprofessional intervention to optimise medication use in these residents.

Methods: Based on a literature review and a multidisciplinary Delphi panel, lists of mostly, sometimes or rarely appropriate medications and elements of successful interventions were identified. The lists were then tailored for a NH pilot study. Between April and November 2014 a 4-months intervention was led in 3 NH in Quebec, Canada. The families of participating residents received an information leaflet on optimal medication use in advanced dementia and NH nurses, pharmacists and physicians participated in two 90 minutes continuous education (CE) sessions. For each participant the NH pharmacist performed a medication review using the lists and recommendations were discussed with nurses and physicians. A study nurse observed comfort
and agitation levels of participants using the Cohen-Mansfield and the PACSLAC-F scales during the study period.

**Results:** 93 residents were eligible and 48 participated; 7 residents died before or during the study and 41 were observed over 4 months. 38 health professionals participated in the CE sessions. The lists were well accepted and the study nurse assisted at the discussions about medication changes. Families’ and health professionals’ comments provide opportunities to improve information material and the tailored lists. Some changes in medication use were observed but levels of agitation and comfort did not change noticeably.

**Conclusions:** An interdisciplinary NH intervention to optimise medication use in residents with advanced dementia is feasible. NH are interested in opportunities and tools facilitating improved medication use. A cluster randomized trial will assess patient outcomes of this intervention.

**C149**
**Depressed but Happy with the Way I Live!**

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Supported By: - Centers for Medicare and Medicaid Services
- Connecticut Department of Social Services

**Background:** 54.4% of U.S. nursing home residents are diagnosed with depression during the first year of residence. Depression is also common among community-dwelling older adults particularly in those with female gender, low educational status, chronic disease, perceived economic inadequacy and functional dependence.

**Objective:** To determine the correlates of depressive symptoms in the older Money Follows the Person (MFP) population transitioning from nursing homes to community-based settings.

**MFP is a Federal demonstration program designed to create a system of long-term supports and services (LTSS) that assist individuals to transition from long-term institutions into the community and to rebalance the LTSS system.**

**Design:** Secondary data derived from Money-Follows the Person program in CT, longitudinal cohort

**Setting:** Nursing home residents transferring to community

**Participants:** 65 years or above, resided in an institution for at least 90 day, must have Medicaid as the institutional payer and must want to move to a community based setting (N=802)

**Measurement:** Data were collected via a Quality of Life survey administered before transition and at 6, 12, and 24 months after transition. The survey was divided into various domains included choice and control, quality of life, respect and dignity, health and well-being, satisfaction with services, function. Depressive symptoms were screened using a modified patient health questionnaire 2 (PHQ2).

**Results:** 55% reported depressed symptoms at baseline and 49% after transition. Surprisingly, 82% stated they were happy with the way they live their lives post-transition, an improvement from 62% at baseline. There were significant associations between post-transition depressive symptoms and both typical (i.e., ADLs and self-rated health) and novel or remediable factors including choice and control, social relations, satisfaction with services, transportation, and doing fun things.

**Conclusions:** Older adults receiving LTSS in an institutional setting reported depressive symptoms similar to previous studies. Symptoms remained high but improved with transition and they reported high levels of general happiness. Several factors unique to this population suggest points of intervention.

**C150**
**Outcomes of Elderly Patients After An Urgent Care Ambulatory Visit**

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**Background:** The primary care access crisis has forced the health care system to look for alternatives to increase availability of health care in short notice. Urgent Care Centers (UCC) have become an alternative to primary care-based urgent visits. Elderly patients pose unique challenges to urgent/acute care practitioners. Common diseases often present atypically in the elderly, laboratory values are not always reliable, comorbid conditions often complicate medical issues, and social support systems may not be present. These particular changes in presentations of common life-threatening syndromes along with the high number of comorbid conditions and poly-pharmacy make evaluations of the elderly patient on this high patient volume and fast-pace environment a significant challenge. Moreover, older adults discharged from the UCC may be at risk for adverse events due to suboptimal prescribing and inadequate medication monitoring.

**Methods:** A Cross-sectional retrospective study. We included all patients 65 years and older who visited the ambulatory urgent care center of our tertiary care facility from 11/1/2013 to 10/31/2014. We determined their need of subsequent visits the UCC, an emergency department (ED) visit, a hospitalization, or an outpatient clinic visit within 30 days.

**Results:** There were a total of 3439 patients over 65 years old who visited the ambulatory care center within the study period. The 30 day utilization rates were as follows: 10.8% (374 patients) required a second visit to an UCC, 9.54% (328 patients) required a visit to the ED and were sent home, 32.39% (1114 patients) were admitted to the hospital and 53.7% (1849 patients) followed up in the outpatient setting (22.4% of those had a follow up visit with primary care)

**Conclusions:** In our study population, there is high rate of post UCC visit utilization in the form of subsequent visits to different providers within different care settings. This study brings awareness of the necessity to further evaluate whether the UCC model is an appropriate point of care for our growing geriatric population in this time of access crisis. It also raises concern for the urge to create new treatment algorithms for geriatric patients that present to these centers.

**C151**
**Prevalence of Medication Discrepancies Post-Discharge by Community Pharmacy Type for Older Adult Patients**


Supported By: Support: This project was supported by the Agency for Healthcare Research and Quality (AHRQ) Health Services Research Dissertation Grant of the National Institutes of Health under award number R36HS021984. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Research reported was also supported by the UW School of Pharmacy Sonderegger Research Center Dissertation Grant.

**Background:** Medication discrepancies post-discharge jeopardize patient safety yet are common for older adult patients transitioning from hospital to community care. However, the role of community pharmacy type in this transition process is unclear. The purpose of this study was to examine 1) the prevalence of medication discrepancies...
between hospital and community pharmacies post-discharge, and 2) the prevalence of discrepancies by community pharmacy type.

**Methods:** Patients aged 65 years and older (n=75) who were hospitalized and then discharged back into the community were recruited from a large Midwest hospital’s transitional care program from March 2013 to March 2014. Medication records were abstracted from the patient’s community pharmacy and hospital medical records. Medication discrepancies were categorized as omissis, addition, frequency mismatch, discrepant dose, or duplication. Community pharmacy types were categorized as retail (>10 pharmacies under same ownership), independent (<10 pharmacies under same ownership), and clinic (part of hospital system).

**Results:** Medication records were collected from 24 different community pharmacies. Of the overall 690 prescription medications examined, 207 medications (30%) were discrepant. Of all the discrepant medications, cardiovascular medications (24%) were most frequently discrepant, and omissions (49%) were the most common discrepancy category. By community pharmacy type: retail community pharmacies (n=14 different pharmacies), 37% (171/462) of prescription medications were discrepant; independent community pharmacies (n=7 different pharmacies), 15% (19/124) of prescription medications were discrepant; and clinic pharmacies (n=3 different pharmacies), 16% (17/104) of prescription medications were discrepant.

**Conclusions:** Prevalence of medication discrepancies differed by community pharmacy type which may indicate different practice patterns regarding medication management post-discharge at the community pharmacy level. Future research is needed to understand the causes of these medication discrepancies.

C152

**Vampire Medicine: Do we need all those blood tests?**

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**Background:** The Choosing Wisely Campaign from the Society of Hospital Medicine recommends that physicians avoid performing repetitive complete blood count (CBC) and chemistry (Chem7) testing in the face of clinical and laboratory stability. We aimed to quantify the extent of excess blood testing and assess the impact of an educational and systemic intervention to reduce this excess.

**Methods:** In an academic medical center licensed for 719 beds and in collaboration with the Laboratory Department, we obtained laboratory ordering data for CBC and Chem7 tests for patients admitted for 3 days or more for the months of October 2012 (baseline n=878) and April 2014 (post-intervention n=851) among medicine inpatients. Unnecessary blood tests were defined as normal results, near normal results or abnormal but stable results consecutively for 3 days. Our intervention included sharing the baseline results throughout the Department of Medicine (including a grand round session), incorporating effective use of blood ordering in the evaluation of the teaching service, and implemented hospital-wide restriction of the ability to order repeat labs for more than 3 days.

**Results:** At baseline, 80% and 79% of medical patients had at least 3 consecutive days of repeated CBC or Chem7 performed, respectively which decreased to 57% and 59% respectively (29% and 26% decline). The decline was similar for hospitalist and teaching services. Critical care patients had minimal improvement. Unnecessary blood tests decreased from 29% to 13% for CBC (52% decline; p<0.01) and from 54% to 46% for Chem7 (14% decline; p<0.01). This represents 198 patients having fewer repetitive CBC and 172 patients having fewer repetitive Chem7. The number of physicians who ordered repeat labs on all their patients reduced from 30% to less than 2%.

**Conclusions:** We developed a simple method for determining excess repeated blood tests. Our educational and systemic intervention has led to a significant decline in repeated and unnecessary blood tests. The benefits include improving the quality of care, reducing the burden on patients and improving cost savings.
C155

Assocation of Emergency Room and Hospital Utilization with Cytochrome P450 2D6 Metabolizer Status


Supported By: Center of Individualized Medicine, Mayo Clinic

Background: Pharmacogenomics genes are not commonly used in hospital risk stratification instruments. However, Cytochrome P450 2D6 (CYP2D6) is one of the genes most commonly involved in drug metabolism, including some antidepressants, codeine and tramadol, drugs commonly used in the acute hospital setting.

Primary Aim: To determine the association between CYP2D6 metabolizer status and emergency room (ER) and hospital utilization in a community cohort.

Methods: We accessed 951 patients with existing CYP2D6 metabolizer status. The primary outcomes were hospitalization and ER visits which occurred between 1/1/2011 and 12/31/2011. The predictor of interest was CYP2D6 metabolizer status which was categorized as poor, poor to intermediate, intermediate, intermediate to extensive, extensive, extensive to ultra-rapid, and ultra-rapid. Logistic regression models were applied to test association of CYP2D6 metabolizer status with hospitalization and ER visits, adjusting for age and sex.

Results: Among 951 patients, the distribution of phenotype status was: 7.4% poor, 7.2% poor to intermediate, 21% intermediate, 19% intermediate to extensive, 21% extensive (normal), 16% extensive to ultra-rapid, and 8.2% ultra-rapid. Median age was 54 years (25th-75th: 51 – 75 years) with 46% males. There were 93 patients with ER visits and 48 hospital admissions. Among extensive metabolizers, 5.5% had at least one ER visit and 4.0% were hospitalized during 2011. Compared to extensive metabolizers, the rate of ER visits was greater for both poor (19%, P-value = 0.001) and ultra-rapid (15%, P-value = 0.015) metabolizers. A similar trend was observed for the risk of hospitalization (7.1% for poor, and 7.7% for ultra-rapid metabolizers), although it did not reach the statistical significance due to limited statistical power.

Discussion: In this study, we observed increased risk of ER visits and a trend for increased risk of hospitalization among patients whose CYP2D6 metabolizer status was either ultra-rapid or poor. Poor metabolism affects the clinical efficacy of codeine (a pro-drug) or may cause higher drug levels of antidepressants which can affect tolerance. Fast metabolism may reduce the efficacy of tramadol and antidepressants and may cause toxicity of codeine. Further research and work on integration of pharmacogenomics into clinical care may be warranted.

C156

Teaching the Impact of Health Policy on Practice through a Team Based Learning Intervention

Interprofessional Course in Geriatrics

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Supported By: HRSA Geriatric Academic Career Award

It is essential for health professions’ learners to appreciate the impact of health policy on their practice. Finding a curricular spot to teach policy can be challenging. Systematic reviews on interprofessional education (IPE) and Team Based Learning (TBL) reveal few reported outcomes related to behavior change and learning outcomes. This study concludes that the integration of health policy into a geriatric clinical course is an effective method for enhancing the appreciation of health policy content.

Aim: To understand if integrating health policy into an interprofessional (IP) geriatrics course would inform learners on health policy initiatives that affect practice.

Methods: The Geriatrics Champions Program (GCP) is a 5 year, 9 profession, 168-learner course teaching geriatric competencies using TBL. Learners were provided with background and resources on current health policy topics prior to each session. Topics included implications of the Affordable Care Act, transitions of care, hospital patient safety, pharmacotherapy, mental health, and palliative care. During the sessions, IP teams discussed how the policies would affect their geriatric patients, changes they would recommend and impact. They submitted online recommendations which were reviewed for themes, approaches, and feasibility of implementation once in practice.

Outcomes: Policy themes included funding for older adults population-based preventive health services, increased community-based services, integration of wellness programs for high risk older adults, increased home based primary care and accessibility to pharmacuticals, population based initiatives to increase patient safety, and increased education and application of palliative care.

Conclusions: The GCP was an effective way to assist learners to research and influence health policy decisions that would impact their geriatric populations. Narrative responses demonstrated knowledge of the issues, critical thinking, and analysis of how health policy drives practice.

Policy implications: This qualitative approach to determine the efficacy of integration of health policy into the study of geriatrics offers opportunities to understand how health professionals can and must influence future health policy initiatives. Incorporating health policy advocacy will be essential for engaged health professionals to improve population health.
C157
Exploring suitable health care models for community-dwelling disabled older adults in Beijing
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Supported By: Milstein Medical Asian American Partnership Foundation
Beijing Municipal Science and Technology Commission

Background: China is experiencing a rapid growth of older people with a serious situation to establish suitable health care models for the disabled. We began a program in 2013, to explore suitable “at home” health care models for the disabled seniors in urban area of Beijing, which was in accordance with the government’s “aging at home” policy.

Objective: To establish the geriatric care model for “home based” health care and daycare for the disabled or frail seniors in urban communities.

Methods: Two adjacent communities were chosen as intervention and two nearby communities as control. The seniors (65yrs or older) were screened and the disabled or frail seniors were selected. Some disabled seniors in other communities were also included as intervention group to further explore the possibility of at home service. Our geriatric team and community health care works are organized to provide health care services.

Results: 1152 participants were screened. 103 seniors who were frail or disabled were selected for intervention. The mean age was 78.8±28.3 and 42 subjects in the intervention communities were supposed to be managed through daycare, but only 9 of them could come to the free daycare room for health care consultation and rehab direction. Among them 5 subjects with limited function came with the help of their caregivers. The reasons for not coming to daycare were limited function without services to take them to (27/33, 81.8%); “too far” or “difficult” to come for the normal functioned (6/33, 18.2%), and 45.5% of them (15/33), lived in the apartment higher than the second floor without elevators.

Conclusions: Only health care services without the support of assist living and transportation may not be doable in daycare. Such kind of services which is managed by the Ministry of civil affair should combine with the service of health care, which is managed by the Ministry of health care. In the old communities of the urban area, the barrier free facilities are still needed for the mobility of the seniors. For the home bond seniors at present time, the in-door health care services might be more doable.

C158
Glycemic Control in Older Community and Nursing Home Diabetics in the Bronx:
Do We Meet the American Geriatrics Society (AGS) Guidelines?
A Quality Improvement (QI) Study
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Supported By: None to disclose; the study was not funded.

Background
Diabetes mellitus (DM) is common in older adults. AGS has released updated guidelines in 2013 for care of older diabetics. Our study examines the long term glycemic control in type 2 diabetics in a Bronx sample of older community (C) and nursing home (NH) adults in line with AGS guidelines.

Methods: Retrospective data from prior 4 years collected relating to age, gender, setting (C, NH) and Hemoglobin A1c (A1c) from medical records of adults ≥59 yrs with type 2 DM from geriatrics clinics and NHs, as part of a QI study.

Results:
Patients n= 328, age 81+/−9 (sd) yrs, (71% female, 65% NH, 34% C). Of the 139 (42%) with DM, 87 were in the NH and 52 C.

Overall Control
NH patients: A1c <7 in 36 (41%), 7-8 in 29 (33%), >8 in 22 (25%); C patients: A1c <7 in 31 (59%), 7-8 in 15 (28%) and >8 in 6 (12%) (p=.0057)

Age ranges, setting and A1c:
NH residents: age 60-75: A1c <7 in 9 (25%) 7-8 in 10 (34%) >8 in 9 (40%); age 75-90: A1c <7 in 17 (19%) 7-8 in 12 (41%) >8 in 9 (40%); age >90: A1c <7 in 12 (33%) 7-8 in 14 (48%) >8 in 4 (18%) (p=.0069)
C patients: age 60-75: A1c <7 in 6 (17%) 7-8 in 10 (66%) >8 in 1 (16%); age 75-90: A1c <7 in 7 (21%) 7-8 in 7 (46%) >8 in 2 (33%); age >90: A1c <7 in 4 (11%) 7-8 in 11 (73%) >8 in 1 (16%) (p=.0078)

Relationship of A1C to Overweight / Obese status using Body Mass index (BMI)
NH residents: 31 of 87 patients had a BMI > 25; In this group, A1c <7 in 10 (27%) 7-8 in 19 (65%), >8 in 2 (8%). (p=0.14) C patients: 14 of 52 had BMI >25, A1c <7 in 7 (23%) 7-8 in 4 (26%) >8 in 3 (50%) (p=0.0289)

Conclusions
Overall A1c control appears reasonable barring somewhat tighter control observed in the NH setting in those >90 years

Control appears similar across age ranges in both NH and C settings
Older diabetics are a heterogeneous population ranging from frail NH residents to active C adults with variable comorbidity and life expectancy; A1C targets must be tailored to individuals bearing AGS guidelines in mind

Reference
AGS Guidelines for Improving the Care of Older Adults with Diabetes: 2013 Update

C159
Care transitions program for high risk frail elderly – estimating the relative impact of risk factors and interventions.
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Background: Dedicated care transitions programs target patients after hospitalization to improve care and prevent complications and readmissions. Programs vary widely in the specific intervention, patient population, and implementation. A number of observational and quasi-experimental studies have demonstrated the effectiveness of programs on 30-day readmission rates. We sought to determine the effect of baseline characteristics and core interventions objectives on the primary outcome of 30 day readmission.

Methods: Retrospective cohort study of 474 patients discharged Jan 1, 2011 till Jun 30, 2013 in a primary care academic practice. Patients at high risk for hospital readmission, an elder risk assessment score over 16 and age (>60) were assigned to care transitions follow up by a multidisciplinary team. This included an initial home visit by a nurse practitioner who performed medication reconciliation, assessed functional and cognitive status and safety, identified community resources, created an action plan, discussed goals of care and surrogate decision maker. Further support was provided via phone and home visits as needed. The primary outcome was 30-day readmissions automatically abstracted from the electronic medical record. Predictors...
assessed were: demographics, baseline characteristics, comorbid illness, medications (number, changes and class), completion and timing of program process measures and healthcare utilization. We analyzed the predictors using time to event with censoring at death, palliative care, lost to follow up.

Results: In 474 eligible patients 83 had a readmission (17.5%). 72 had one readmission, 11 had 2 -3 readmissions. Medications were the only significant predictors at the .05 level:. number of medications at baseline (HR=1.04, p=.04) total changes in meds in the first seven days (HR=1.12, p=.0002), and narcotics use (HR=1.7, p=.02) Borderline line predictors (p=.05 to 0.1) included: younger age, number of home visits, previous specialty visits and COPD.

Conclusions: Medications were the only predictor in determining readmissions. Hyperselection of a high risk cohort and sample size may be a limiting factor. Further work and validation of these predictors are needed in different populations.

C160
Multiple medication changes during care transition for frail elderly patients highlight the importance of medication reconciliation.
Supported By: No external funding source

Background: Frail elderly patients are particularly vulnerable to medical errors during times of care transition. Miscommunication about changes made to patients’ medication regimen during hospitalization is common and can lead to serious complications. We sought to quantify the frequency and significance of medication changes in the first week after hospitalization for high risk frail elderly patients.

Methods: This was a prospectively identified, retrospective cohort study of 474 patients discharged from the hospital from January 1, 2011 till June 30, 2013 in a primary care academic practice. Patients at high risk for hospital readmission based on age and comorbid health conditions were assigned to care transitions follow up by a multidisciplinary team. Follow up included a home visit by a nurse practitioner where medication reconciliation was one of the prime objectives. Primary outcomes were percentage of medication reconciliation, number of discrepancies, and percentage of medication types. We also obtained number of medications the day before home visit, removal and additions of medications as well as dosage adjustment within the next 7 days.

Results: 336 (75%) of patients had medication reconciliation performed and noted in the medical record at the first home visit. We found discrepancies for 150 (45%) patients. The number of medications at baseline did not significantly influence the risk of discrepancies p=0.189 using a log rank test. Per the EMR, the median number of medications per person was 13 (CI 10-16) 122 (26%) were on narcotics, 52(17) on antipsychotics, 97(20) on antidiabetics and 63(13%) on anticoagulants. 214(45%) patients had between 1 and 15 medications discontinued, 191(40%) had between 1 and 11 medications added. 143(30%) had dosage adjustment.

Conclusions: Medication reconciliation for elderly patients after hospital discharge resulted in medication adjustment for almost half of the cohort. This study highlights the complexity of medical management in the transition between hospital and home and the importance of careful medication reconciliation. Evaluation of clinical management of medication use will continue.

C161
A Model for Prescribing and Monitoring Warfarin in Post-Acute Care
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Background: Warfarin use in a skilled nursing facility (SNF) involves significant risk. Many preventable adverse bleeding events are due to lapses in prescribing or monitoring. During transitions the potential for adverse warfarin events is especially high. A model of warfarin management to mirror an outpatient thrombosis clinic was developed with the goal of minimizing preventable adverse bleeding events and improving communication between SNF staff and practitioners.

Method: The “thrombosis clinic” consisted of one practitioner and one nurse manager in a 45-bed SNF. A standardized warfarin protocol was followed. The practitioner kept data on a HIPPAA-compliant shared drive on the university network. On discharge, a summary of patients’ warfarin dosing and INR result history was forwarded to practitioners assuming care via fax or electronically.

Results: All patients (n=112) on warfarin in an 18-month period at a 45-bed SNF in Salt Lake City were reviewed. There were 4 serious bleeding events (INR range 1.3 – 1.7) and 1 death due to hemorrhagic stroke (INR 2.3); however no adverse bleeding events were due to lapses in prescribing or monitoring. Patients on warfarin with length of stay (LOS) < 90 days (n=102), had an average time in therapeutic range (TTR) of 43% compared to 60% for patients with LOS > 90 days (n=10). Post-acute orthopedic patients (n=4) had a low TTR of 35%.

Conclusion
This SNF “thrombosis clinic” model using a specialized nurse/practitioner team was successful in both limiting preventable adverse events and encouraging effective communication. This process promoted efficient use of time and safe transitions. Warfarin data that are kept in an accessible electronic format can be easily communicated on discharge, decreasing the risk of errors at transition. The very low TTR results for patients with a short LOS indicate there is room for improvement in warfarin management particularly in the post-acute period. This patient population may be more difficult to manage due to factors such as acute illness, high antibiotic use, and changes in diet. For risk-management purposes having easily accessible data at the time of serious bleeding events was helpful to quickly determine the events were not due to lapses in prescribing or monitoring.

C162
There’s No Place Like Home: an Examination of Senior Villages in Washington DC
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Supported By: No disclosures.

Background: Over the past decade, “senior villages” have emerged as an increasingly prevalent way to connect volunteers with older residents who desire independence in their own homes. In the last seven years, Washington, DC has seen a proliferation of senior villages. We characterized the 8 existing villages in the District and explored their implications for providers in geriatric medicine.

Methods: Five geriatric medicine fellows surveyed the 8 senior villages in Washington, DC as well as the DC Office on Aging by phone, email, personal interview or website to identify business structure, eligibility, cost, services provided, membership, and history of incorporation.

Results: All senior villages in Washington were non-profit organizations sharing a common mission of helping seniors age in community. They provided similar core benefits to members, such as transportation, assistance with chores/errands, and social activities. None provided direct medical services, though a few offered services such
as medical note-taking and information management. Most, but not all, villages were administered by a small team of paid staff, all relied upon a sizable base of volunteers to administer services. Health status was not included in the membership criteria for any villages. Age criteria varied from no minimum age to minimum age of 50. Villages also varied in membership fees (from no membership fees to $600 per person annually), availability of financial aid, and the presence of tiered memberships.

Conclusions: Senior villages in Washington, DC vary in their resources and characteristics, but share a common mission of promoting aging in place and fostering connection with neighbors. Senior villages may contribute to delaying the need for institutional care for older persons. They are emerging as a viable adjunct to other well-established community based care programs. Knowledge of local senior villages may enhance geriatricians’ abilities to facilitate aging in place for seniors at risk. Formal research regarding the effect of villages on health outcomes is scant and is an area of future research.

C163
Implementing the INTERACT<sup>TM</sup> Quality Improvement Program (QIP) in a Skilled Nursing Facility: A Case Study Analysis Utilizing a New Model

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Supported By: This research was supported by INTERACT Training Education And Management Team Strategies, LLC.

Background: The costs of unnecessary hospitalizations are well documented. Fortunately, many hospitalizations of long-term care residents may be preventable. While the Interventions to Reduce Acute Care Hospitalizations (INTERACT<sup>TM</sup>) QIP is widely known, accepted and utilized to some degree within the long-term care industry, there is a paucity in the research regarding how the program is implemented and the effectiveness of such implementation in the long-term care facility. The primary objective of this study was to better understand the importance of effective and efficient implementation of the INTERACT<sup>TM</sup> QIP.

Purpose: This research was conducted as part of a facility-based on-site pilot test program and describes the in-depth experiences of the researchers that assisted in implementing the INTERACT<sup>TM</sup> QIP in one nursing home in North Carolina.

Method: On-site direct observation and education, monthly phone calls, INTERACT<sup>TM</sup> QIP tools analyses as well as interaction with various nursing home governance, leadership and staff personnel using a standardized model protocol.

Results: Aggregated qualitative data from a 6-month pilot test program revealed marked improvement in various areas including facility to hospital readmission rate, physician relations, hospital relations, facility culture, corporate/facility overall awareness of operations and staff resistance.

Conclusions: In spite of many challenges facing the subject facility, including but not limited to staff turnover, numerous mandated corporate initiatives and a high rate of patient turnover; the facility was able to successfully reduce their overall readmission rate implementing the STAFF model. Anecdotal evidence suggests the overall success of the pilot test program can be contributed to various factors including the Hawthorne Effect, leadership and governance support, creation of a facility task force whose sole responsibility was the successful implementation of the INTERACT<sup>TM</sup> QIP, slow introduction of the INTERACT<sup>TM</sup> QIP tools as well as researcher analysis and oversight of the program. The implications of this research suggest that facilities need to pay better attention to how the INTERACT<sup>TM</sup> QIP is implemented within their organization.

C164
A Pharmacist Based Transitional Care Project Leads to Safer Prescribing in Hospitalized Older Veterans

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BACKGROUND: We demonstrated that a pharmacist-based transitional care project for high risk older veterans reduces 30-day readmissions and healthcare costs at Audie Murphy VA Hospital. The purpose of this quality improvement project was to characterize the types of recommendations made by the clinical pharmacy specialist (CPS) and implemented by either the inpatient team during the hospital admission or primary provider (PCP) after discharge.

METHODS: Veterans admitted to the Medicine service May 2013-Oct 2014 were eligible if they met the following criteria: 1) 70+ years taking ≥12 medications; 65+ years with 2) diagnosis of dementia; 3) ≥2 inpatient admissions in the last year; or 4) ≥3 emergency department visits in the last year. The project included an inpatient face-to-face meeting with the CPS for medication reconciliation with recommendations to the inpatient medical team. After discharge, the CPS performed medication reconciliation by phone, with recommendations made to the PCP. Qualitative methods and descriptive statistics were used to classify the recommendations made after consensus review and agreement amongst the CPS and project physicians. Paired t-test was used to compare the number of medications from admission to discharge.

RESULTS: There were 128 subjects, 97% male, with average age of 74.1 ±7.7 years. The most common inpatient recommendations (total of 37), were to discontinue unnecessary medications (32%) and reconcile the medication list (22%). The most common outpatient recommendations (total of 17), were to improve communication between the inpatient team and the PCP regarding medication usage/monitoring (29%) and to ensure the patient received medications at discharge (23%). Although 83% were prescribed new medications upon discharge, the total number of outpatient medications did not differ from admission to discharge (15.4 ±6.1 vs. 15.7 ±6.2, p=0.32).

CONCLUSIONS: Our results suggest that a transitional care model utilizing a CPS who is focused on the unique needs of older adults leads to safer prescribing, reduction in polypharmacy, and increased communication between the inpatient team and the PCP.

C165
Preventing Institutionalization and Supporting Caregivers through Expanded Services (PISCES) program within a Veterans Affairs Geriatrics Clinic

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Background
Dementia significantly impacts both the patients and their families/caregivers. Since 1993, the Baltimore VA Alzheimer’s Disease Clinic has been providing comprehensive interdisciplinary evaluation to veterans. We hypothesized that case management for these patients by a dedicated multidisciplinary team would improve care and decrease caregiver burden. We established the Preventing Institutionalization and Supporting Caregivers through Expanded Services (PISCES) program in 2013 to care for patients with dementia patients characterized by behavioral problems and functional disabilities.

Methods
Patients underwent comprehensive medical and neuropsychological testing as well as medications, laboratory and imaging data review. Enhanced access to specialized care was provided via frequent telephone and clinic visits. A caregiver education and support group was also formed, augmented by a caregiver’s guide (with particular attention on local resources). A physical activity program, focused on balance and falls prevention, was also piloted in a subgroup of patients. Finally, this clinic served as a training site, further extending its reach. Data were collected to compare the following parameters at 6 months before and after enrollment: ER visits, hospitalizations, nursing home admissions, falls and the Neuropsychiatric Inventory (NPI) and Zarit Burden Interview Scores. There was also a caregiver satisfaction survey.

Results

Forty-six patients with a mean age of 81 ± 10 years with a mean MMSE score of 14.5 ± 7.9 participated in this program. They had significant neuropsychiatric symptoms (NPI severity 11.1 ± 6.2, 13.7 ± 10.0 distress) and their caregivers reported significant burden (Zarit 31.3 ± 18.5). Although there was no significant change in the NPI or Zarit scores, these services were highly rated by the caregivers with the overall satisfaction score of 4.6 (0-5 scale).

Conclusion

Given the frailty of patients with severe dementia, it is difficult to change the trajectory of their illness. Caregivers do experience a high degree of stress and they appreciate the attention and services of a dedicated staff.

C166

HIV Screening In the Metrohealth System Senior Health Outpatient Clinic QI Outcomes

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Supported By: This project was funded by the Metrohealth System.

Background: The HIV Screening Outcomes Quality Improvement Study was conducted to improve the rate of HIV screening in adults seen in the Senior Health Outpatient Clinic of the MetroHealth System in Cleveland, Ohio, to satisfy one of the five measures required to complete the quality improvement portion of The National Center for Quality Assurance Patient Centered Medical Home recognition process.

Methods: The Senior Health Outpatient Clinic within the MetroHealth System was asked to assemble a quality improvement team consisting of a receptionist, a medical assistant, a registered nurse, a nurse care coordinator, and a physician who serves as the site’s medical director. The team was delivered quality improvement training using the Plan-Do-Study-Act (PDSA) cycle method. The outcome of improved rate of HIV screening within the clinic was a prescribed aim, but the intervention was left to the design of the team. The PDSA cycle was designated as a four-month period, from July 1 of 2014 to October 31 of 2014. The clinic received quality improvement coaching throughout their PDSA. Patients included in the study were between the ages of 18-64 and counted as screened if they completed the HIV test. Known HIV positive patients were excluded from the measure. Site-specific baseline data was given to the clinic at the onset of the project. Monthly data updates were provided during the 4-month trial period.

Results: The first 4 months of data revealed significant improvement in the rate of HIV screening. The baseline data for the clinic (counting patients with at least one visit during the time period 1/1/14 to 4/30/14) was 53.7%. Patients with at least one visit between July 1, 2014 and October 31, 2014 had an improvement in the rate of screening to 76.95%.

Conclusions: These preliminary results demonstrate that a minimal amount of quality improvement training and coaching, in conjunction with the formation of multidisciplinary, primary care site-based QI teams, can produce significant improvements in the rate of HIV screening in the geriatric primary care clinic environment. It is anticipated that, with further study, these outcomes will prove to be translatable to other patient care measures relevant to geriatric primary care.

C167

Cognitive impairment in elderly hospitalized patients predicts higher 30-day readmissions

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Supported By: Practice Change Leaders for Aging and Health, supported by Atlantic Philanthropies and John A Hartford Foundation

Background: Readmission is a challenge for health systems and many programs are designed to improve transitions by enhancing medical self-management. However, studies on transitions of care and decreasing readmissions typically exclude patients with cognitive impairment (CI). CI may go unrecognized, so patients are assumed to have normal cognition and ability to manage complex plans. We hypothesized that elderly patients with CI are at higher risk of 30-day readmission and that CI is frequently unrecognized by the medical team. As part of a quality improvement project with an established Project BOOST transition program, we examined whether patients with CI (abnormal Mini-Cog) have higher readmission rates and if the CI was recognized.

Methods: This is a prospective observational cohort of consecutive patients discharged to home, age ≥70, and hospitalized in a cardiovascular unit at Houston Methodist Hospital between 01/2014-09/2014. Mini-Cog score ≤4 defined CI, score of 4-5 defined normal. Primary outcome measure was 30-day readmission rate, which was correlated with cognitive state of known (KCI) or unknown (UCI) determined by extensive chart review. Fisher exact test was used for statistical analysis.

Results: 300 patients were screened for inclusion. 52 patients were excluded because of delirium interventions. 248 patients were eligible for testing. Mini-Cog was missing/refused (n=68, 27.4% of eligible cohort). Of patients tested, Mini-Cog was abnormal (CI) for 111 (44.8% of eligible cohort) and normal for 69 (27.8% of eligible cohort). 89% of total patients categorized as CI by Mini-Cog were unrecognized. KCI (11%) was so low that UCI and KCI were pooled. 30-day readmission rate for CI patients was 25.2% (n=28), higher (p<0.05) than for cognitively intact group (11.6%,n=8). Notably, only 2 of the 28 readmitted CI patients were known CI.

Conclusions: We conclude CI predicts higher readmission rates for cardiovascular patients, even those getting aggressive transition of care interventions. CI recognition is poor, perhaps limiting the effectiveness of educational interventions focused on medical self-management. Pre-discharge screening for CI could identify elderly patients requiring modified transitions processes to reduce readmissions and health costs.

C168

Virtual ACE Intervention on an Orthopedic Surgery Unit: A Pilot Project

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Background: The aging population is consuming an increasing proportion of hospital days and is a key patient population for determining Value-Based Purchasing metrics. The UAB Acute Care for Elders (ACE) Unit delivers geriatric care processes with significantly reduced costs. However, this is only 1 of >50 units within an 1152-bed
C170 Encore Presentation
Patient-Centered Medical Neighborhood: CKD Population-Based Management Improves Guideline-Based Care

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Background: Patients with chronic kidney disease (CKD) are high risk, high cost, and high utilizers. We used CKD patients to pilot our patient-centered medical neighborhood (PCMN) model in our multispecialty practice. Our goals were to establish a PCMN model in CKD patients, ensure all CKD patients were getting guideline-based care, and eventually improve outcomes while reducing cost.

Methods: In a large multispecialty practice, the electronic medical record (EMR) identified all primary care patients (including the geriatrics practice) for 2 consecutive serum creatinine tests indicating CKD 3b and above. CKD 3a with certain comorbidities (hyperkalemia, admission for heart failure, uncontrolled blood pressure, diabetes, or proteinuria) were also included. We excluded 205 patients who were no longer in the practice, expired, demented, actively dying, or aged >85. A nurse care manager (NCM) screened each EMR to ensure adherence to CKD management guidelines (KDIGO), and if not, sent a note to the provider with a reminder. A referral to nephrology was highly recommended for any advanced CKD patients who had not yet seen a nephrologist. Care plans were developed and a model of co-management was incorporated. In collaboration with Blue Cross Blue Shield of Rhode Island (BCBS), we obtained claims and financial data.

Results: Out of 27,253 primary care patients, 731 (3%) had CKD 3b and above or 3A with comorbidities, and 330 (45%) required an intervention. Only 1/3 had a diagnosis of CKD listed in the record and <10% were seen by a nephrologist. NCM pre-consultation was needed in 64%, nephrologist pre-consultation in 240 and referral for nephrology co-management in only 26. The annual cost of care for 235 BCBS patients was $5.3 million ($1879 per patient per month) which was equally distributed among all ekd levels and involved increased costs in in-patient, out-patient, medications, and diagnostics. Primary care practitioners are very appreciative of the increased level of communication. High risk and advanced CKD patients are co-managed with shared inter-disciplinary care plans.

Conclusions: A population-based approach to PCMN using CKD as a model is effective at promoting improved adherence to KDIGO guidelines. This model can easily be replicated with other high risk, high cost populations.
C171
Substance abuse in an Aging HIV population
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Supported By: No funders provided support for this research.

Background: A segment of the HIV-infected population is growing old, resulting in increasing instances of comorbid conditions due to the aging process. Substance abuse including alcohol use has not been thoroughly evaluated in the Aging HIV population.

Methods: The study population was made up of 1,384 patients who visited Louisiana State University Interim Hospital’s HIV Outpatient Clinic between 06/01/2012 and 12/31/2013 and met inclusion criteria. Demographic and clinical information were included.

Results: Nearly 50% of the study sample (both young (<50 years) and elderly (>50 years) were diagnosed with a psychological comorbidity during the data extraction period. About 18% of the study (both young and elderly) population 15% of them were diagnosed with a substance abuse (drug or alcohol). About 41% of elderly patients (>50 years of age) were diagnosed with a psychological disorders. Approximately 41% of elderly HIV patients had their disease well controlled (HIV PCR RNA viral load <200/ copies/ml; OR 0.86). Finally, 12% of elderly patients in the study sample were diagnosed with both a psychological comorbidity and a substance use disorder (OR 1.8).

Conclusion: The elderly HIV population represents a new challenge in terms of management strategies. We found an association between diagnosis of a drug use disorder and diagnosis of a psychological comorbidity in the elderly population in this study, which is not surprising but further evaluation could help elucidate the nature of the association. The study found a surprising 15% of incidence in substance abuse may be an underrepresentation of the real problem in this population. The high incidence of psychological disorders is also a factor that needs to be further elucidated. This study was able to show that a significant association between these two variables however, it was not able to comment on the time component of the association. Understanding the time aspect of this association could have potential implications for substance use treatment and psychological disorder therapy for elderly HIV-positive population.

C172
Defining a Geriatric Trauma Model
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Background: Traumatic injury in older adults is increasing. Geriatric trauma patients suffer high mortality and complication rates. Our objective was to convene a Geriatric Trauma Delphi Conference to build on prior work, and engage in the development of evidence-based, expert panel recommendations to improve geriatric trauma care.

Methods: An expert national panel was convened for a ½ day session utilizing a modified Delphi model that asked, “What are the critical components of a level 1 ger- trauma service needed to create the safest, highest quality, and most cost-effective care in an aging-sensitive environment?” Categories were: (1) initial assessment/resuscitation; (2) management/complications; and (3) transitions/disposition; each had subtopics. Participants reviewed evidence before, and ranked subtopics individually at the start as to critical, desired or unneeded. Conference chairs led the group through small and large group structured discussion that systematically explored practices, knowledge gaps, research questions, and identified desired outcomes.

Following discussion, each table agreed upon a final ranking for each subtopic, and the quality of evidence.

Results: 38 of 41 invitees joined, including trauma surgeons, geriatricians, medical and surgical specialists, nursing, QI, and leadership. On final scoring, 11 of 27 components were identified as critical or desired with poor to moderate quality of evidence, indicating a need for further research. For category 1: defining gero-trauma; risk assessment for age, vital signs, shock index/perfusion, and trauma type; assessment/management of comorbidities and frailty. For category 2: permissive hypotension; pain management; medication management; anticoagulation. For category 3: early mobility; collaborative team management; palliative and end of life care; establishing goals of care.

Conclusions: Follow-up surveys to the group will confirm the initial findings. These findings will then under go continued refinement through educational dissemination, formal effectiveness evaluations, and cost-effectiveness studies. A white paper will provide a framework of essential geriatric trauma principles and guidelines for care. This comprehensive approach is similar to the structured process used to develop other geriatric-specialty models of care.

C173
Diabetes management during Ramadan: provider knowledge and practices
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Background: There are an estimated 3.5 million Muslims in North America. During Ramadan, healthy adult Muslims are to fast from pre-dawn to after sunset. While there are exemptions for older and sick adults, many older adults with diabetes fast during Ramadan. However there are risks associated with fasting and specific management considerations for patients with diabetes, particularly for older adults who are at increased risk for complications. This study evaluates provider practices and knowledge regarding management of patients with diabetes who fast during Ramadan.

Method: A 15-question survey based on a literature review was developed and offered to providers at the outpatient primary care clinics at Bellevue Hospital, which serves a culturally diverse population. The survey evaluated the comfort of physicians with diabetes management, knowledge of fasting dietary rules, and previous practices during the recent Ramadan in 2014.

Results: Of the 45 survey responses, 22 (48.9%) were by medicine faculty and 23 (51.1%) by medical residents and geriatric fellows. Questions regarding provider practices during Ramadan showed that only 46.9% asked their Muslim patients if they were fasting, 36.7% discussed risks of fasting, 10.0% discussed circumstances under which they were encouraged to break their fast, and 20.7% discussed lifestyle recommendations. In managing diabetes, 38.7% of providers made changes in oral diabetic medications and 39.3% made changes in insulin regimens of fasting patients. Questions regarding knowledge of fasting during Ramadan showed that 37.8% knew that Muslims are to abstain from taking oral medications from dawn to sunset, 57.8% knew there are no dietary restrictions between sunset and dawn, 62.2% knew that most people who are fasting consume two meals per day during Ramadan, and 93.3% accurately identified possible complications of fasting. Comfort level with managing fasting patients with diabetes was 11.1% (very uncomfortable), 51.1% (somewhat uncomfortable), 13.3% (unsure), 22.2% (somewhat comfortable), and 2.2% (very comfortable).

Conclusion: Our study shows that most providers did not follow recommendations and felt uncomfortable in the management of diabetes during Ramadan. There is room for improvement in educating providers about specific cultural and medical issues regarding fasting for patients with diabetes during Ramadan. In addition specific issues for older adults with diabetes who fast need to be explored.
C174
Medication Discrepancies in Elderly Veterans at Hospital Discharge

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Introduction: Post hospital medication discrepancies occur in 14% of discharges.1 The Veterans Administration (VA) has protocols to reduce medication errors during care transitions. Physicians and pharmacists review medications and printed instructions are further clarified by a nurse at discharge. Despite these efforts, many patients continue to be confused about their medications. Methods: A retrospective chart review was conducted on elderly patients enrolled in a Transitional Care (TC) program from June 2013 through October 2014. Patients identified for TC are at high risk for readmission due to comorbid status and social factors. Notes were reviewed to determine patients’ understanding and adherence with medication regimens. Medication issues were separated in various categories including non-adherence, dose or medication error, non-prescribed medication use and confusion about medication instructions. Results: One hundred and two patients were included in the retrospective chart review. Forty seven patients were found to have medication discrepancies of these 17 had multiple categories of error. Twenty six were non-adherent while 23 had discrepancies in their medication record. Eight patients were taking the wrong drug, 7 were taking the wrong dose and 5 were taking non-prescribed medications. Twenty five patients cited significant confusion with their medication instructions. Discussion: This study demonstrated a 46% incidence of medication discrepancies in elderly veterans at hospital discharge. Despite aggressive measures to prevent such issues, discrepancies still occur and pose detrimental effects for patients during care transitions. While this cohort may be at a higher risk than the general population based on selection bias from inclusion criteria, the high rate of discrepancies is very concerning. This study indicates a need for more thorough evaluation of transitional care protocols to ensure safe patient transitions. This should involve evaluations of patient specific needs including cognitive status as well as system based issues including provider fatigue, patient-provider education and inaccurate medication lists.


C175
Major Bleeding in Rivaroxaban Users with Non-Valvular Atrial Fibrillation in an Older Adult Population


Supported By: This study is funded by Janssen Scientific Affairs, LLC.

Background: The study objective was to evaluate major bleeding (MB) in patients treated with rivaroxaban, an approved oral direct factor Xa inhibitor for prevention of stroke for non-valvular atrial fibrillation (NVAF), in an ongoing five-year observational study.

Methods: Using a validated case-finding algorithm, nearly 10 million electronic medical records from the Department of Defense (DoD) healthcare system were queried to identify hospitalizations related to MB among rivaroxaban users with NVAF. Demographics, comorbidities, concomitant medications, bleed site, transfusions, and fatal outcomes were evaluated.

Results: In the first 18 months of the study, 622 patients out of 31,883 rivaroxaban users with NVAF experienced MB, overall incidence rate of 2.85 per 100 person-years (95% CI 2.63-3.08). Results by age are shown in Table 1.

Most MB events occurred among those ≥ 75 years (74.1% [461 of 622]). Gastrointestinal bleed was the most common subtype in all age groups, followed by intracranial hemorrhage (ICH). The proportion of ICH was higher in the older age groups; 61% (2 of 33) in those < 65, compared to 8.7% (40 of 461) in those ≥ 75, and 11.3% (15 of 133) in those ≥ 85. Mean (SD) age among those who died was 82.1 (6.2) years.

Comorbidities were more prevalent in MB than non-MB patients across all ages. Management of MB (e.g., length of stay, intensive care unit, and blood transfusion) showed no clear pattern of differences in relation to age.

Conclusion: In a large observational study, we note as with known stroke rates that the major bleeding and fatal outcome rates generally increased with age. Major bleeding incidence rates were similar to those reported in the NVAF registration trial of rivaroxaban.

Table 1. Major Bleeding and Fatal Outcome Rates among Rivaroxaban Users with NVAF, by Age (years)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>MB Incidence Rate* (95% CI)</th>
<th>Fatal Outcome Rate* (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;65</td>
<td>1.67 (1.19-2.35)</td>
<td>0.04 (0.00-0.20)</td>
</tr>
<tr>
<td>65-69</td>
<td>1.40 (1.01-1.91)</td>
<td>0.03 (0.00-0.10)</td>
</tr>
<tr>
<td>70-74</td>
<td>2.43 (1.98-2.99)</td>
<td>0.08 (0.03-0.18)</td>
</tr>
<tr>
<td>75-79</td>
<td>2.98 (2.54-3.49)</td>
<td>0.15 (0.08-0.27)</td>
</tr>
<tr>
<td>80-84</td>
<td>3.70 (3.27-4.19)</td>
<td>0.01 (0.00-0.04)</td>
</tr>
<tr>
<td>85+</td>
<td>3.56 (3.04-4.12)</td>
<td>0.00 (0.00-0.02)</td>
</tr>
</tbody>
</table>

*Rate per 100 person-years, based on overall study population

C176
Admissions and Readmissions of Patients Enrolled in a Program of All-Inclusive Care for the Elderly

S. David, M. McNabney. Johns Hopkins University School of Medicine, Baltimore, MD.

Supported By: Stefan David’s training is supported by a Health Resources and Services Administration grant (D01HP08789)

Background:
Hospitalizations are responsible for a significant proportions of health care expenditures for elderly patients. Readmissions within 30 days are used as care parameter. Programs of All-Inclusive Care for the Elderly (PACE) provide medical care and long term services across a continuum of care, with optimal access to medication and providers. Therefore, proper resource allocation to reduce hospitalization costs is possible once the diagnoses mainly responsible for admission/readmissions are identified.

Methods:
Retrospective study on admission data for patients enrolled in the Hopkins Elder Plus PACE program. We analyzed diseases or symptoms which were responsible for admissions and readmissions (within 30 days) for a period spanning 10/1/2013-9/31/2014. Length of stay (LOS) in the hospital and ICU were analyzed in relation to admission diagnosis and compared for admissions vs. readmissions. Statistical analysis was performed using Student’s t test.

Results:
There were 87 admissions during one year, out of which 11 were readmissions within 30 days. Infections were the leading cause for the 1st admission (18.4%), followed by CHF (16.1%) and chest pain (12.6%). CHF was the most common reason for readmission (27.3%). The average hospital LOS for the 1st admission for all admitted patients was 3.8 days, compared to 6.5 days for the 2nd admission (P<0.02). Of note, none of the readmitted patients had gone to the ICU during the first hospital stay, but 7/11 (63.6%) of readmitted patients stayed in the ICU for an average of 2.9 days. All 3 CHF readmissions stayed in the ICU for 3 days. The 2 COPD readmitted patients had the longest stays in the ICU for 8, respectively 9 days.

Conclusions:
Infections dominated the causes for first admission. Readmissions had longer inpatient stays and needed ICU level of care. CHF and COPD significantly drove healthcare costs through 2nd admission’s length of stay and need of ICU care level. Optimizing care for
these conditions may reduce costs incurred for the care of the elderly patients.

C177
Improved Gait Speed in Older Veterans Following Implementation of a New Model of Care of Geriatric Exercise In Four VA Medical Centers
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Background. VHA is promoting new models of care to reduce risk of institutionalization. Slow gait speed is a valid predictor of institutional risk. A successful geriatric exercise program, Geroit, promoting functional mobility was implemented at 4 VA Medical Centers (Canandaigua, Baltimore, Greater Los Angeles and Miami).

Methods: Geroit implementation was standardized and tailored for Veterans ages 65+. Facility based exercise programs met 3 days/week. The 10 meter walk was used to measure gait speed (m/sec) at baseline and 3 month follow-up.

Results: To date, 95 Veterans have completed 3 month testing across 4 sites. Mean baseline gait speed was 1.12±0.29 m/sec (range: 0.54-2.43 m/sec). Gait speed improved 6.33% to 1.19±0.28 m/sec. A change of 0.05 m/sec is considered a clinically meaningful change. 1.0 m/sec and 1.2 m/sec have been identified as meaningful clinical thresholds for functional decline/disability. At 3 months Veterans with a gait speed <1.0 m/sec dropped from 30.5% at baseline to 23.2%; and those with a gait speed ≥1.2 m/sec increased from 32.6% to 51.6% (Figure 1).

Conclusions: Veterans have high levels of impaired walking mobility which places them at risk for safely performing daily activities. The Geroit program successfully improved gait and mobility. Geroit is a promising model of care to reduce institutional risk.

C178
Smooth transitions from Skilled Nursing Facility to Home
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Background: Transitions of care between healthcare settings in older adults are important focus areas in preventing readmissions. Deficiencies in communication and medication changes during care transitions are important causes of adverse events leading to rehospitalizations. Our transition management model focuses on care transitions from the Skilled Nursing Facility (SNF) to home at the Palo Alto Medical Foundation (PAMF), a multi-specialty group of health care professionals, part of Sutter Health, California. Population is primarily elderly with 30-40% managed care and others Medicare Fee-for-service patients.

Methods: In this transitional care model, we focus on efficient transition from SNF to home. Our nursing staff contacts selected patients at higher risk of hospital readmission by phone to evaluate their care needs. A Geriatrician visits them at home or Assisted Living Facility (ALF) within two weeks of discharge. We perform medication reconciliation, review discharge instructions with the patient and/or caregiver and finally, we “close the loop” by contacting the Primary Care physician (PCP) through electronic messaging, highlighting the changes made during the hospitalization/SNF stay and follow up needs. We contact home health personnel as necessary. The billing codes we use are Transitional Care Medicine (TCM) codes 99495 or 99496.

Results: We have established a new transition management model between Skilled Nursing Facility and home, through home visits.

Conclusions: Follow up after hospitalizations in the office setting is an existing model of care. Transitional care between SNF and home with home visits is a newer practice model. In this area of care, there is need for establishment of criteria for patient selection and measurement of useful outcomes.

References:

C179
ECT as a Treatment for Refractory Aggressive Behaviors in Dementia
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Aggression is one of the most difficult behaviors to treat in the setting of advanced dementia. It can be especially difficult for caregivers, increasing risk of premature institutionalization. ECT is a safe and effective treatment in depression, but has not been as well studied for mood disorders in the setting of dementia. We present a clinical case illustrating the usefulness of this treatment modality.

A 67 year old male with a history of early onset Alzheimer’s dementia (MMSE 11/30) was admitted to the geriatric inpatient unit after being found by his wife wandering in the neighborhood, confused and combative. Symptoms included aggression, hallucinations, paranoid delusions, poor PO intake and insomnia. Medications prior to admission included sertraline and trazadone, resulting in increased agitation. Workup for secondary causes of acute change in mental status were negative.

Early in his stay, patient had violent, unpredictable behavior, requiring continuous restraints. Many pharmacologic strategies were attempted, including Valproic acid, Olanzapine at increasing doses, Melatonin and Trazadone at bedtime, Ativan and Fluphenazine. None of these pharmacologic interventions improved the patient’s symptoms and he continued to have disruptive behavior, kicking and biting caregivers. At that point, it was decided to start ECT. He received a total of 12 treatments with reduction in agitation. Behavioral interventions were started. He was placed in a low stimulus, quiet environment with dimmed lights and allowed to eat finger food independently. These interventions calmed the patient and improved sleep, PO intake, mood and behavior. He became more socially appropriate and began smiling. Given significant clinical improvement, he was deemed stable for discharge. Two months later, the patient remains in the long term care setting and has not required readmission.
This case is an example of ECT as a safe treatment option to reduce symptoms of aggression in patients with dementia whose behaviors are refractory to medication management. ECT in this patient allowed discharge to an environment where he could receive appropriate care without risking harm to himself and others. ECT should be considered in similar cases, although more studies are needed to compare effectiveness of ECT plus medication management to medication management alone.

C180
A case of Delirium triggered by Sub-Clinical Seizures
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Acute Delirium is a common Geriatric syndrome often a result of diverse causes. Our case highlights an unusual cause that would have been overlooked as the patient never exhibited Clinical seizures and the primary team initially blamed medications.

Mrs. WK was brought to the ER by her husband for two days of acute confusion. Her history is notable for a CABG in 2006, COPD, HTN, Dyslipidemia and Chronic back pain for which she takes Roxtanaol. She is cognitively intact at baseline and independent with ADL’s and IADL’s. The husband stated that after her CABG she had a series of Tonic Clonic seizures for which she has remained on Dilantin with no recurrence. For two days Mrs. WK has been acutely confused such as forgetting her way while driving, misplacing objects, asking for food and not touching it, showing frank disorientation and walking aimlessly around the house. These behaviors are new. She has not exhibited any fevers, cough, bowel or bladder symptoms, weakness, speech or swallowing issues. Her medications include Asa 81 mg PO daily,Lyrica 50 mg PO bid, Ramipril 2.5 mg PO bid, Lexapro 20 mg PO bid, Lasix 40 mg PO bid, Dilantin 100 mg PO tid, Plavix 75 mg PO daily, Isosorbide ER 30 mg PO daily, Labetalol 100 mg PO bid, Omeprazole 20 mg PO daily, Pravastatin 20 mg PO daily and Roxanaol 5 mg PO every 4 Hours PRN typically 3 times a day, the latter supervised by husband as advised by her pain management doctor. All these meds are chronic in nature with no recent change or inappropriate doses.

The patient was admitted with acute Delirium. Her vitals and exam was normal other than confusion. She met the CAM criteria. CT and MRI of brain were normal. Labs including CBC, CMP, Urinalysis, CXR, EKG, UDS (predictably showed Opiates) were un-revealing. Dilantin level was therapeutic. There was no sign of an infection on a second “Top to Toe”exam including teeth and skin other than mild stasis Dermatitis in her legs. An EEG was performed on HD two and showed Status Epilepticus which resolved with Ativan coinciding with improvement of her confusion clinically as well. She was loaded with Keppra and continued on Dilantin. She made a dramatic improvement in her mental status. By hospital day 3 she had returned to normal. Her husband then told us that she had often complained of a strong smell in the room likely Aiera in retrospect. She was discharged home with Keppra atop her previous Medications.

Outcome measures included agitation, recorded via the Agitation Behavioral Scale, and nursing assistant’s distress, rated via the Distress Thermometer. Thirty emotion-elicited images were selected from the International Affective Pictures System. The participant was initially presented with all images and their responses have been recorded. The images eliciting the most positive response from the participant are used in the experiment as the stimulus. A blank image is also been applied for the control purpose. The researchers observed the nursing assistants providing help to the participant completing daily activities. While the participant displayed agitated behavior, a blinded researcher recorded her/ his ABS while another researcher passed the images (positive images in the experimental session and a blank image in the control session) to the participant. The blinded researcher recorded the ABS score after the stimulus was presented to the participant. Upon completion of the task, the researchers asked the nursing assistant to rate their distress level via DT.

Results: Participants showed positive response to the positive images even while they were agitated. They smiled to the images while they looked at them and became calmed; the average decrease in ABS score from before to after exposure to the positive stimulus is 4. The control image produced no decrease in agitation. The nursing assistant reported less stress compared to the control session, the average difference being 3. The majority (70%) of the participants preferred the image of the smiling baby over all others.

Conclusion: Although this research is still in progress and the data reported here is only the preliminary results, the application of using positive images to ease agitated behavior in persons with dementia is very promising.

C182
Narratives of Self Neglect: Common Personal Experiences and Behavior Patterns in a Large Sample of Cognitively Intact Older Adults
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Supported By: Maria Pavlou’s participation and the initial data collection for this research was supported by the John A. Hartford Foundation and The Gruss Lipper Family Foundation. Mark Lachs is the recipient of a mentoring award in patient-oriented research from the National Institute on Aging (K24 AG022399).

Background: Self-neglect is a prevalent, complex, poorly understood public health problem associated with high morbidity and mortality. Previous research is limited to small samples and second-hand reports, with a dearth of data analyzing perspectives of self-neglecters themselves. Our goal was to identify common personal experiences and behavior patterns in self-neglect by exploring narratives from in-depth interviews.

Methods: We used qualitative data initially gathered as part of large comparative study of characteristics of self-neglect. For our analysis, we evaluated interviews with 69 cognitively intact self-neglecters. Subjects were recruited from 11 community-based senior services agencies and interviewed in person. The interview included an unstructured opportunity for the subject to describe important elements of their life story and the Structured Clinical Interview for DSM-IV Axis-I Disorders (SCID-I). All interviews were fully transcribed. We used grounded theory to identify common personal experiences and behavior patterns in self-neglect by exploring narratives from in-depth interviews.

Results: We identified 5 personal experiences and 4 behavior patterns commonly expressed by self-neglecters as important in their life story. Personal experiences included: victimization through violence or sexual abuse (20% of subjects), traumatic loss or abandon-
ment (20%), disabling financial instability (17%), and complicated grief (13%). Behavior patterns included: severe lifelong mental illness (22%), pervasive mistrust of others and/or paranoia (14%), distrust and avoidance of the medical establishment (14%), pervasive sense of low self-worth (13%), and substance use, abuse, or dependence (9%).

Conclusions: Common personal experiences and behavior patterns among self-neglecters may be identified. These include trauma and challenges coping with life stressors. Improved understanding of these experiences and patterns may identify potential risk factors and areas for future targeted intervention.

C183 Mild cognitive impairment predominates in an outpatient memory department in Germany

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Background: The Center for Medicine in the Elderly is an university affiliated clinic in Hannover (Germany) with a large geriatric inpatient unit with day clinic, which, since 1995, has an outpatient memory department. For diagnosis of Alzheimer’s disease the institution has been rated from 2012 to 2014 as second best in Lower Saxony and among the best 50 on a national scale.

The purpose of the study was to analyze the organization as well as the patient structure of the outpatient memory department.

Methods: The file notes of 203 randomly selected patients from 2013 were analyzed with respect to age, sex, diagnosis and cognitive tests. According to clinical impression and testing the diagnosis was divided into “normal”, “mild cognitive impairment” and “dementia”. A test battery with nine cognitive tests was used.

Results: Their mean age was 66.2 ± 14.3 years (min. 20.0, max. 88.3). A normal cognition was stated with 14 (6.9%), mild cognitive impairment with 149 (73.4%) as well as a dementia syndrome with 40 (19.7%) of the patients. The results of all cognitive tests decreased from “normal cognition” to “dementia”.

Conclusions: Due to the outpatient setting the patients were mostly younger and had mild cognitive impairment. Due to the referral by neurologists and psychiatrists, who selected the patients, the main task was to differentiate between normal cognition and initial cognitive decline, to advise further diagnostics (biomarkers) and to advise a specific therapy.

The construction of the memory department exerts an important influence on the patient structure. In order to be able to differentiate between normal aging and relevant cognitive decline the testing had to be adapted using a more complex test battery and tests with age-matched control groups (e.g. CERAD plus). Biomarkers, especially lumbar puncture, had to be used.

C184 Does depressive symptoms predict dementia in older people with mild cognitive impairment?


Supported By: Hospital Italiano de Buenos Aires

Depression and mild cognitive impairment (MCI) are frequent comorbid conditions in elderly people. Depression in individuals with MCI could be associated with risk of conversion to dementia and serious consequences for individuals, including impairment in activities of daily living, rapid cognitive decline, worsening quality of life, and institutionalization. But recent studies could not find evidence to support this hypothesis. There aren’t data about the coexistence of depressive symptoms (DS) and MCI in lower-middle-income countries such as Argentina. Thus, the goal of this study was to evaluate associations between depression and MCI in ambulatory older adults and its conversion to dementia.

Methods: Retrospective study. Neuropsychological battery and clinical criteria for cognitive impairments were applied in clinical visits, and cognitive compound measures were made based on neuropsychological results. MRI was performed at baseline. Severity of DS was assessed using the 15 item Geriatric Depression Scale (GDS). Subjects were evaluated annually over a 7 year period with a comprehensive geriatric evaluation.

Results: 362 subjects were included (78 ±5 years old, 75% women, 7±4 years of schooling). 182 subjects with MCI and DS, and 180 MCI, without DS. 41 subjects in the group with MCI and DS progressed to dementia (22.5%) and 51 subjects in the group with MCI without DS progressed to dementia (28.3%) (p=0.1). In 19 subjects older than 80 years with MCI and GDS> 8, 3 subject progressed to dementia (15.8%). In 136 subjects over 80 with MCI and GDS <8, 46 subjects progressed to dementia (33.8%). P = 0.05.

Conclusion: In our setting MCI and DS are not associated with an increase risk of cognitive decline. In over 80, DS perhaps not represent a subtle ongoing organic dysfunction.

C185 Clock Drawing Test and Cognitive Impairment in Hispanic Elderly: Association with Sociodemographic Status and Functionality

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Supported By: No financial support.

Background: Early and accurate diagnosis of neurocognitive disorders helps patients and families plan for the future and offers the best opportunity to treat symptoms and slow disease progression. It allows time for care options to be discussed, while the patient can participate in the decision making process. According to the Alzheimer’s Association, more than 5 million people have Alzheimer’s Disease (AD) in the US. In Puerto Rico, AD is the 5th leading cause of death. Adjusted mortality rate increased from 24 to 46/100,000 from years 2000 to 2010. Studies focusing on the use of easy to perform screening tests are needed in order to encourage physicians for early screening. The objective of our study was to evaluate whether there is an association between performance in the Clock drawing test (CDT), sociodemographic status and functionality.

Methods: Retrospective record review of 73 subjects, aged 60 years and older was done using data obtained from A Study of Risk Factors for AD and Related Neurological Disorders in the Caribbean Hispanic Population in Puerto Rico, conducted from Jan/08 to July/10. Sociodemographic variables, functionality (Schwab & England Activities of Daily Living Scale), and score on the CDT (Shua-Haim method) were analyzed.

Results: Average age was 71 years, with 55% female predominance. Most subjects lived at home (96%), with their spouse or partner (65%), with only 4% living in retirement or nursing homes. Educational status was almost equally distributed in 3 groups: primary school, high school, and college. There was a positive significant correlation between CDT and functionality (p<0.001). There was a low, but statistically significant negative correlation between age and CDT score (p=0.037). There was no significant difference between CDT score and other sociodemographic factors such as living arrangements, marital status, occupation, or education.

Conclusions: We observed that greater functionality was related with better results on CDT, while older age was related with lower results. Screening tools such as the CDT are commonly used, and knowing which factors influence their results might be key to early diagnosis and treatment, as well as avoiding misdiagnoses.

References:


C186
Electroconvulsive Therapy in the Treatment of Depression in a Patient with Dementia, a Case Report
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Background:
Major depression afflicts 20-25% of patients with dementia. It is associated with a poorer quality of life, faster cognitive decline, higher caregiver burden, and higher mortality. We present a case of electroconvulsive therapy (ECT) in a patient with dementia.

Case report:
Our 80 year old female patient presented with worsening depressive symptoms with refusal to walk, participate in meals, or perform personal hygiene. She denied active suicidal ideation, intent, or plan. She had a long-standing history of depression without psychiatric hospitalizations or suicide attempts. She took sertraline 75 mg daily, trazodone 100 mg daily, and bupropion XL 300 mg daily. She tried multiple other antidepressants without much efficacy. Her past history included a previous stroke, hypertension and well managed hypothyroidism. Socially, she lives in assisted living with her husband who is her primary caregiver. She does not drink or smoke. On cognitive examination, she was awake, alert, and oriented. Her mood was depressed and affect was tearful. Thought process was goal directed. On a short test of mental status, she scored 3/8 on orientation, 2/4 on immediate recall, 5/7 on attention, 0 on construction, and 1/4 on delayed recall. Her treatment course over the next several months showed deterioration despite an increase in sertraline to 100 mg. She was admitted to inpatient psychiatric service and started on ECT with 7 treatments over 2 weeks. This resulted in significant improvement of her condition. There was clear improvement in her mood, motivation and energy levels. There was no obvious decline in her cognitive function.

Discussion:
Depressed patients with dementia often have sub-optimal response to antidepressant medications. There are relatively small numbers of controlled studies comparing the effectiveness of ECT in patients with dementia. The efficacy is reported to be in the range of 80-85% with improvements in mood, neurovegetative signs, and behavioral symptoms. There are risks including delirium, nausea and potential cardiovascular risks. There may be cognitive decline after ECT treatment; however, this is usually transient. Clinically, ECT may be an option in patients with dementia with increased efficacy; however, the risks and benefits of therapy should be discussed with the family.

C187
Reducing the Symptom Burden of Cognitive Impairment through a Clinic-Delivered Hearing Care Intervention
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Supported By: Accelerated Translational Incubator Pilot (ATIP) Program

Background
Hearing loss is the third most prevalent chronic condition among older adults in the United States and is independently associated with accelerated cognitive decline and poorer physical and mental functioning. This pilot study will examine the feasibility of a hearing intervention that provides an affordable amplification device and aural rehabilitation to cognitively impaired older adults with untreated, age-related hearing loss. The purpose of the intervention is to improve overall communication, social engagement, and reduce neuropsychiatric symptoms and caregiver burden.

Methods
Participants were recruited from the Johns Hopkins Memory and Alzheimer Treatment Center and affiliated institutions. The intervention entails provision of a low-cost amplification device and a two-hour, interactive training session for cognitively impaired older adults and their caregivers. The training session covers device orientation and use, education on age-related hearing loss, and abbreviated aural rehabilitation. Baseline and one-month outcome measures evaluate effects of the intervention using validated assessment tools for a range of domains, including cognition, depression, communication, and caregiver burden.

Results
To date, three participants and their caregivers have completed the intervention and recruitment is ongoing. Participants vary in degree of cognitive impairment as measured by the MMSE (mean=18.3; range:14-22). Average degree of hearing loss is consistent with a moderate hearing loss across the test frequencies important for speech communication. Preliminary results demonstrate feasibility and acceptability of completing a hearing care intervention for cognitively impaired older adults in an outpatient setting.

Conclusions
The provision of a basic hearing amplification device and aural rehabilitation is well tolerated by cognitively impaired older adults and their caregivers. This pilot study demonstrates the feasibility of delivering a hearing care intervention in an outpatient memory disorder clinic.

C188 Encore Presentation
Emotions and Alzheimer’s Disease: Preliminary Efforts to Develop Emotional Staging for Alzheimer’s Disease
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Supported By: This project was supported by the Atlanta Regional Geriatric Education Center-Alzheimer’s Disease Training Supplement, Health Resources and Services Administration Award #UB4HP19215

Background: The emotional reactions to the progression of Alzheimer’s disease (AD) oftentimes present as cognitive or behavioral changes, leading to misguided interventions by caregivers. Yet, despite a rich body of literature identifying cognitive and behavioral staging of AD, the emotional changes that accompany AD have been largely ignored. Here we present preliminary findings of a study which seeks to fill this gap.

Methods: Through one hour, unstructured interviews, with seventeen caregiver–patient dyads; patients were in various stages of mild cognitive impairment and AD. An interdisciplinary team employed grounded theory methods to detect emotional characteristics of the participants with AD.

Results: Emotional experiences were classified into depression/sadness, apathy, concern/fear, anger/frustration, and acceptance. However, the experiences did not necessarily present linearly, and instead were entwined within a set of binary (positive/negative) categories including: relationship with the informal caregiver (e.g., teamwork versus infantilization), relationship with the formal caregiver (e.g., pa-
tient versus disengaged), coping (e.g., adaptive versus non-adaptive), and perceived control (e.g., internal versus external locus of control). An example is a person who has poor caregiver support and external locus of control may become depressed, a condition which is known to negatively affect cognitive status.

**Conclusion:** Future work will further explore the emotional experiences as they relate to demographic characteristics and to the currently established cognitive and behavioral Functional Assessment Staging Tool (FAST). Understanding the emotional reactions of individuals diagnosed with AD will provide clinicians with the information needed to develop treatment modalities best suited to the emotional needs and stage of the patient.

### C189 Encore Presentation

**Caregiver Treatment Preference/Satisfaction and Efficacy Among Patients in the OPTIMizing Transdermal Exelon In Mild-to-Moderate Alzheimer’s Disease (OPTIMA) Study**

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Supported By: The OPTIMA study was funded by Novartis Pharmaceuticals AG, Basel, Switzerland. Medical writing in the development of this abstract was provided by Christina Mackins-Crabtree, Fishawack Communications Ltd., Oxon, UK, editorial assistance by Alan Murphy, Novartis Ireland Ltd, and these services were supported by Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA.

**Background:** Caregivers of patients with Alzheimer’s disease (AD) are often responsible for medication administration and management. Treatment preference/satisfaction could ease associated stress, which may favorably impact patient outcomes. This study assessed whether caregiver preference for rivastigmine transdermal patch and treatment satisfaction predict efficacy in patients with mild-to-moderate AD who previously received oral cholinesterase inhibitor treatment.

**Methods:** Patients meeting prespecified decline criteria during a 24–48-week initial open-label phase (IOL) with 9.5 mg/24 h patch enrolled in a 48-week, randomized, double-blind phase (13.3 vs 9.5 mg/24 h patch). Co-primary outcomes were change from double-blind baseline to Week 48 on the Instrumental domain of the AD Cooperative Study–Activities of Daily Living (ADCS-IADL) scale and the AD Assessment Scale–cognitive subscale (ADAS-cog). Caregivers of patients previously taking pills completed the Caregiver Medication Questionnaire at the beginning and end of the IOL, focused on medication administration, perceived compliance/satisfaction, and at the end of the IOL only, treatment preference (pills or patch). Primary efficacy variables were analyzed based on caregiver treatment preference.

**Results:** Of 882 caregivers of patients on prior AD treatment, 642 (72.8%); 95%CI: 69.7, 75.7) preferred patch; 77.2% (285/369) who preferred patch experienced significantly less cognitive decline on ADAS-cog at Week 24 in the 13.3 vs 9.5 mg/24 h patch group (p=0.009); no significant difference was observed in patients of caregivers who preferred pills (p=0.541). Similarly, reduced functional decline on the ADCS-IADL in the 13.3 versus 9.5 mg/24 h patch group was more evident at Weeks 24, 32 and 48 in patients of caregivers who preferred patch versus pills (p=0.044, 0.032 and 0.037 versus 0.783, 0.345 and 0.298, respectively).

**Conclusions:** Caregiver treatment preference/satisfaction is associated with positive functional and cognitive outcomes in mild-to-moderate AD; this highlights the importance of easy-to-use therapies that aid effective AD management.

### C190 Exploring the stigma of depression among older adults: results from a community survey

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Supported By: This project was in part supported by the Charles R. Mathews Geriatrics Education and Research Scholarship fund.

**Background:** The National Alliance on Mental Illness estimates that depression affects more than 6.5 million of the 35 million Americans aged 65 and over. Depression in older adults is associated with increased disability and morbidity and yet often goes undiagnosed and untreated. This may be because of a misconception that depression is a normal response to the aging process or its symptoms can be mistaken as signs of other medical conditions such as dementia, stroke, or heart disease. Stigma may also play an important role in how likely older adults are to seek mental health treatment and be diagnosed and treated for depression in comparison to their younger counterparts. This study aimed to better understand depression among older adults to identify barriers to diagnosis and treatment.

**Methods:** Community-dwelling adults age 60 and older were surveyed across 6 sites in a moderately sized metropolitan area. The survey contained items and scales measuring demographics, stigma about depression, treatment seeking attitudes, and subjects’ current depressive symptoms.

**Results:** Ninety-seven adults completed the survey. Of these, 86% were female and the average age was 76 years. Subjects overwhelming indicated that depression was not a condition to be ashamed about nor was it the result of personal weakness. In regards to treatment seeking attitudes, subjects indicated that if they were to suffer from depression they would be most likely to seek treatment from a doctor (53%) or mental health professional (47%) or make lifestyle changes (48%). Subjects would be least likely to seek help through medications (57%) or their clergy or spiritual leaders (51%). Although current depressive symptoms were unrelated to stigma (r=−.02), there was a trend for subjects with higher scores on the Geriatric Depression Scale to be less likely to endorse seeking treatment if they were to become depressed (r=−.22, p=.06), controlling for age and sex.

**Conclusions:** These findings indicate that subjects did not endorse negative or stigma-inducing beliefs about depression, thus stigma may not be a major barrier for older adults when talking about or diagnosing them with depression. Older adults experiencing some depressed mood, however, may be less willing to seek treatment if depressed, which suggests that attitudes toward treatment may differ depending on the emotional state of the older adult.

### C191 The linguistic problems exhibited in the written MMSE phrases of elderly patients with and without dementia

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The Mini-Mental State Examination (MMSE) is the most commonly used instrument worldwide for the screening of dementia. In this test, written language is evaluated by asking the patient to write a spontaneous phrase. The aim of this study was to evaluate linguistically the problems exhibited in the written MMSE phrases of patients with and without dementia. A retrospective cross-sectional study was conducted, in which the MMSE phrases from medical records of patients at a geriatric outpatient clinic at a Brazilian university were collected and evaluated linguistically from two different points of view. First, linguistic *errors* were identified in the writing from the perspective of Normative Grammar, that is, the prescriptive rules of good speaking and writing. Second, *ungrammaticalities* were identified from the perspective of Generative Grammar, that is, intuitive knowledge of the operating rules of natural language. A descriptive statis-
tical data analysis was performed on 50 patient writings: 36 written MMSE phrases of patients without dementia and 14 of patients with dementia. A total of 154 errors were observed: 86 errors in 33 written MMSE phrases of patients without dementia and 68 errors in 13 written MMSE phrases of dementia patients. The most common errors found were in the realms of punctuation (29.9%), uppercase/lowercase letters (23.4%), diacritics (13.6%), phoneme–grapheme conversion (9.7%), and phonetic transcription (7.1%). There was no difference ($p = 1.00$) between the frequency of errors in the written MMSE phrases of dementia patients (92.9%) and in those of patients without dementia (91.7%). From the perspective of Generative Grammar, we observed a total of 5 ungrammaticalities (semantic: 18.2%, syntactic-semantic: 18.2%, and syntactic: 9.1%), all of them were found in written MMSE phrases of patients with dementia (45.5%). Since the prevalence of errors in the written MMSE phrases of patients with and without dementia did not differ, the presence of ungrammaticalities only in patients with dementia could indicate the loss of linguistic competence resulting from the cognitive impairment related to dementia.

C192
Progressive weakening of endothelium/epithelium barrier integrity predisposes to extracellular matrix changes in aged lungs
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Supported By: Ron Carroll and Elizabeth Galic Research Fund (CILS), Janey Briscoe Center of Excellence in Cardiovascular Research (CILS), UL 1RR025767 from the National Center for Research Resource (AR), and U01 HL111016 (EW)

Age-associated decline in organ function governs lifespan. Herein, we undertook to understand how aging alters function and cellular and molecular pathways in the lungs using C57B6/j male mice of 8, 24, 32, and 36 months by measuring lung mechanics (Scireq Flexivent) and by evaluating changes in the extracellular matrix deposition, expression of tight junctions proteins (Claudin-5 and -18) specific to endothelial/epithelial barrier, cellular senescence. In addition, we evaluated if rapamycin given in the diet could alter the progression of the tissue impairment observed with age.

Respiratory mechanics of mouse lungs such as compliance and airway resistance were augmented significantly in aged mice. These changes were consistent with the alterations of the extracellular matrix proteins expression such as the increased of collagen deposition. Aged lungs were characterized by progressive weakening of the endothelial/epithelial barrier and increased cellular senescence evidenced with increased levels of p53, p21, and AKT/mTOR pathways. Lungs of twenty-month old mice fed with rapamycin (14 and 42 ppm) daily for 3 months have reduced expression of markers of senescence. However twenty-month old mice fed with rapamycin (14 and 42 ppm) daily for 3 months have reduced expression of markers of senescence. However

Our data suggested that 1) the progressive accumulation of collagen in the aged lungs is associated with vascular leakage but not with senescence, and 2) Rapamycin can protect through mTOR inhibition of the diminution of expression of tight junction proteins crucial to maintain endothelial/epithelial barrier.

C193
Comparative analysis of formulas for estimation of glomerular filtration rates among hospitalized older adults.
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Supported By: No sponsors participated in or funded this research.

Background: Most equations currently employed to estimate glomerular filtration rates (GFR) are not validated for use in older adults and may misclassify their kidney function. We thus sought to evaluate the ability of creatinine clearance (Ccr) formulas to estimate GFR when compared to measured urinary Ccr (Ccr) among hospitalized older patients.

Methods: This was a cross-sectional study which included 98 subjects aged 60 years and over who were admitted to a geriatric ward of a tertiary university hospital from December 2013 to June 2014, in Sao Paulo, Brazil. Measured GFR (mGFR) using Ccr was considered gold standard; urinary creatinine was collected in a period of 4 hours with possible extension for up to 8 hours when the minimum urine volume of 0.5mL/Kg/h was not reached. Anthropometric measurements and necessary laboratory tests were performed within 48 hours of admission. mGFR was compared to corresponding estimates from the following equations: Cockcroft-Gault (CG); Modification of Diet in Renal Disease (MDRD); Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI); Mayo Clinic Quadratic Equation (MCQ).

Results: Patients were mostly women (55.1%) with a mean age of 78±8.5 years. A total of 106 subjects were excluded from the study, advanced dementia, Alzheimer and urinary incontinence being foremost among reasons. Additional patient characteristics were as follows: 49% were white; 73.1%, hypertensive; 15.4%, diabetic; mean Charlson Comorbidity Index was 4.1±2.4; mean serum creatinine, 1.2±0.7mg/dl.; mean mGFR, 67.8±41.9ml/min. CKD-EPI had the best agreement with mGFR (0.62/p=0.001), while MCQ had the worst result (0.36/p=0.15). CKD-EPI also stood out from the other formulas in its ability to classify cases in accordance to mGFR. Still, all formulas except MCQ showed good ability to distinguish patients with Ccr greater or less than 30ml/min.

Conclusions: GFR formulas have moderate agreement with measured Ccr among hospitalized older adults, with better performance of CKD-EPI. Added to the frequent impossibility of direct measures, it indicates the need for new adapted estimates in this population.

C194
IVC filter thrombosis: A diagnostic challenge
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The incidence of IVC thrombosis attributable to filter placement ranges from 5-30% based on published literature (1, 2). The anatomic location of the thrombus and degree of occlusion often guides the clinical presentation. This leads to a lack of symptom uniformity thus posing a diagnostic challenge to even the most experienced clinician. This point is illustrated by the following case.

A 65yo man presented to the ED with a day’s history of back and lower abdominal pain. Review of systems was positive for urinary urgency and stranguria, but without dysuria, frequency, hematuria, or penile discharge. His history was significant for cervical degenerative joint disease status post cervical spinal fusion; the post-op course of which was complicated by venous thromboembolism and IVC filter placement with oral anticoagulation for one year. His vital signs were normal and exam unremarkable. Labs revealed mild thrombocytopenia and microscopic hematuria. A contrasted abdominopelvic CT revealed no acute radiologic abnormalities. He was prescribed tamsu
Cystatin C and Systolic Blood Pressure are Independent Risk factors of left ventricular hypertrophy in cardiovascular patients above 60 years old

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Supported By: This work was supported by grants from National Basic Research Program of China (973 Program #2007CB507405 and #2013CB530804)

Objective Recent studies have shown that heart remodeling was a critical change in pathological process of cardiovascular diseases such as hypertension, coronary disease, and diabetes mellitus. The aim of this study was to explore the risk factors of left ventricular hypertrophy in middle age and elder population.

Methods In this cross-sectional study, 444 cardiovascular patients were enrolled in and divided into middle-aged group (age<60 years, 184 patients) and elderly group (age ≥ 60-year-old, 260 patients). Estimated glomerular filtration rate was assessed by MDRD formula. Serum cystatin C concentration was measured by immuno-turbidimetry. Cardiac structure and function were measured by echocardiography. Multivariate analysis was performed with multiple regression equation, P < 0.05 was considered statistically significant.

Results There is no significant difference of LVM between middle age and elderly group. However, percentage of hypertrophy patient of elderly group was higher (20.1% vs 28.1%, p=0.001). After adjustment of age and other confounding variables, we found that systolic blood pressure (B=0.006, 95%CI: 0.002 – 0.010, p=0.001) and hypertension (B=0.0170, 95%CI: 0.0030 – 0.0310, p=0.018) were positively correlated with ventricular hypertrophy in middle age group. In the elderly group, cystatin C (B=0.317, 95%CI: 0.071 – 0.563, p=0.012) and systolic blood pressure (B=0.004, 95%CI: 0.001 – 0.008, p=0.027) were positively correlated with left ventricular hypertrophy.

Conclusions The risk factors of left ventricular hypertrophy were different between middle age and elderly patients. Systolic blood pressure was the common risk factor for both groups. High serum cystatin C level was only independently correlated with left ventricular hypertrophy in elderly group.
review the medication list prior to transfer, with only 1 of the 8 patients having a medication error. Most medication errors were noted of those transferred from a surgical specialty (46.43% error rate on medical transfers versus 64.29% error rate on surgical transfers). The most common error was no dose (65.63%), 18.75% of patients had the wrong dose of the medication entered, and 31.25% of patients had more than one error with their medication reconciliation. Data analysis for date and time of creation of the medication reconciliation sheet and adverse events is still ongoing.

Conclusion: As this is an ongoing study, it is too early to state a formal conclusion. However, we have preliminarily noted a high rate of medication errors being made, especially concerning missing dosages. Reconciliations reviewed by a pharmacist prior to transfer had fewer errors. Our data will be expanded upon in the coming months. Further research into acceptable tools or measures to decrease medication errors will need to be undertaken.

C198

Gender Differences in Perspectives and Beliefs on Osteoporosis


Background: Though osteoporosis affects primarily women, 1 to 2 million men in the US carry this diagnosis and 8 to 13 million have osteopenia. Furthermore, both osteoporosis-related mortality and morbidity are higher in men than in women. The primary objective of this study is to explore and compare male and female patients’ beliefs, perceptions and behaviors regarding osteoporosis.

Methods: An anonymous cross-sectional survey was distributed to outpatients over the age of 50, over a 4-month study period. Data collected included demographics, patient rating of their health, behaviors linked to osteoporosis, knowledge of osteoporosis risk factors, and perceptions, behavioral intentions and barriers to osteoporosis screening.

Results: Among the 146 respondents, 37.7% were males (mean age: 72.1) and 62.3% were females (mean age: 69.7). Most were white (70.3%) with 16.6% Black and 8.3% Hispanic. With regards to risk factors: smoking (69.2% vs. 30.9%; p<0.0001), sun exposure (67.8% vs. 29.6%; p<0.0001) and family history of osteoporosis (22.0% vs. 3.6%; p=0.0033) were all more common in men. Diagnosis of osteopenia/ osteoporosis was more common in women (35.6% vs. 7.3%; p<0.001). Female gender was significantly associated with perceived benefit of osteoporosis screening in women after age 65 (p=0.0035). There was a higher proportion of females who believed that being female gender is a risk for osteoporosis/osteopenia (78.0% vs. 56.4%; p=0.0057) and females more often viewed osteoporosis screening as ‘useful/very useful’ than males (84.4% vs. 49.1%; p<0.0001).

Physicians recommended more often osteoporosis screening for women than men (43.8% vs. 9.1%; p<0.0001) and women were screened significantly more frequently (52.8% vs. 9.1%; p=0.0001). Women were also more likely to accept screening tests (76.7% vs. 41.8%). Finally, women were significantly more likely to supplement with calcium (68.1% vs. 20.0%; p<0.0001) and vitamin D (76.9% vs. 30.9%; p<0.0001).

Conclusion: Our data highlights striking gender differences in perspectives and beliefs on osteoporosis, both in patients and in physicians. These findings support the pressing need for osteoporosis learning initiatives geared to community residing adults and to their physicians.

C199

The Presence of Cognitively Enriching Environments in Nursing Homes

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Background: In animal models, the construction of enriched living environments has been shown to mitigate the effects of Alzheimer’s disease and to improve cognitive function following brain injury. This preliminary research suggests that the construction of enriched environments may have a similarly beneficial impact among cognitively impaired older adults. The purpose of this research is to describe and evaluate the care environment of cognitively impaired nursing home residents.

Methods: Qualitative data were collected in the form of field notes from 44 nursing home residents in three Connecticut nursing homes. Field notes were independently coded, then validated among members of the research team. Differences in data codes were then compared and reconciled. Themes emerging from field notes centered on two main topics a) the types of memory cueing items present in resident rooms and b) efforts to make the facility more “home-like”.

Results: Based upon descriptions from field note data, the level of enrichment in resident rooms could be classified as rich (n=15, 34%), moderate (n=18, 40%), or poor (n=11, 25%). There was significant variation in the level of enrichment among the three nursing homes. Rooms described as enriched generally contained numerous photos of family and friends, provide orientation to the day, date, and season, depict scenes from several different time periods throughout a resident’s life (e.g., a wedding, a birth of a child, a retirement party), and would stimulate the resident to recall life events that were personally meaningful. On the other hand, poorly enriched environments were typically described as bare or empty. While some contained objects, they did not reference specific life events that could have a broader stimulating effect on memory. Examples of items in such rooms include flowers, stuffed animals, figurines, and tissue boxes.

Conclusions: While some of the rooms of memory-impaired residents were enriched, nearly a quarter residents lived in environments containing almost no memory enhancing stimuli. Additional research is needed to determine the optimal construction of cognitively enriched environments for residents living with dementia, which may help mitigate cognitive decline among nursing home residents.

C200

Functional improvement at one year after treatment of osteoporosis with zoledronic acid infusion

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Supported By: None to declare.

Background

Pharmacologic therapy of osteoporosis has been shown to improve quality of life measures in addition to reducing the risk of fractures. Bisphosphonates are the first line treatment options in the treatment of most elderly patients with osteoporosis. The aim of the present study was to determine the level of functionality in elderly woman and men after treatment with a first ever bisphosphonate.

Methods

In this prospective and observational study, non-demented elderly subjects with newly diagnosed osteoporosis who received Zoledronic acid infusion along with calcium plus vitamin D supplements were followed-up for 52 weeks. Basic activities of daily living (BADLs) and instrumental activities of daily living (IADLs) were assessed using Barthel Index and Lawton Scale, respectively. Mini mental state examination (MMSE) score, geriatric depression scale...
(GDS) and other clinical and laboratory parameters were also recorded at baseline and study completion.

Results
A total of 139 patients were enrolled (mean age=75.09±6.06, female: 75.9%, mean body mass index-BMI: 28.37±4.71). Compared to baseline, Barthel score increased significantly (91.06±8.71 to 92.80±8.41, p=0.001) at study completion, along with a non-significant increase in Lawton scale score (13.99±3.28 to 14.18±3.31, p=0.169). MMSE and GDS scores both remained unaltered. In simple correlation analyses, mean increase in Barthel index score correlated to the change in IADLs score (r=0.537, p=0.000) but not to the changes in MMSE (r=-0.036, p=0.680) or GDS scores (r=-0.023, p=0.795). Logistic regression analysis showed baseline BMI (OR:0.91, 95%CI: 0.82-0.99, p=0.046) at entry, and presence of diabetes mellitus (OR:2.92, 95%CI: 1.08-7.9, p=0.035) and anemia (OR:0.048, 95%CI: 0.005-0.449, p=0.008) at baseline as independent predictors of a stable or improved Barthel score at one year after Zoledronic acid infusion. Benefits of treatment on BADLs were not dependent on baseline cognitive status, presence of depression, polypharmacy or medications with anticholinergic properties.

Conclusion
In this study, Zoledronic acid infusion was associated with a more favorable functional status at one year compared to baseline. Moreover, the improvements detected in BADLs were not affected by frequently encountered comorbidities in the elderly, except for presence of anemia and higher BMI values.

C201
End-of-Life Care for Dementia Patients in the Program of All-inclusive Care for the Elderly (PACE) - A Quality of Care Assessment.
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Supported By: Sponsored by the Donald W. Reynolds Foundation Consortium for Faculty Development to Advance Geriatric Education.

Background: The majority of Americans want to die at home, but this occurs <40% of the time. This is particularly challenging for patients with dementia and as our population continues to age, this will become increasingly problematic. The mission of PACE is to allow patients to remain at home until death and therefore offer more support at the end of life allowing a greater percentage to die at home. The National Quality Forum (NQF) has developed quality measures to evaluate care for dementia patients at the end-of-life. The goal of this project is to assess these measures during the last 6 months of life for patients with the diagnosis of dementia while enrolled in PACE.

Methods: Retrospective study starting at 6 months prior to death for patients admitted to the Baltimore PACE with the diagnosis of dementia between years of 2010-2014.

Results: Thirty charts were reviewed. Average age was 84.93 (15% M, 85% F), 80% of patients had advance directives but only 30% of patients had documentation about preferences regarding hospitalization. None had documentation that spiritual, existential, nor bereavement concerns were addressed. Only 10% had documentation that caregiver burden was assessed. Average number of total medications was nine. Sixty-three percent of patients were screened for pain but for only 13% was a pain tool used or severity of pain documented. Of the patients who had pain, 58% were treated with Tylenol alone and 41% were treated with narcotics (and only 50% of those were on a bowel regiment). 66% were screened for constipation. 53% were screened for shortness of breath, 55% screened positive, and only 14% of those were on morphine or any additional medication beyond bronchodilators. 80% had documentation of agitation and behavior problems, no behavioral interventions documented, with 50% treated with an antipsychotic. The average length of stay (since enrollment in PACE) was 19.5 months, with 0.9 admissions in the last 6 months of life along with only 15% of patients dying in the hospital.

Conclusion: This PACE program allowed most patients with dementia to die outside of a hospital (85%). However, there needs to be more standardization in quality metrics, similar to those used in hospice, to ensure high quality of life for dementia patients while dying on PACE.

C202
Elder Abuse and Neglect in an Urban House Call Program
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Supported By: No disclosures

Background: Elder abuse or neglect is an under-recognized problem in vulnerable adults, associated with significant increases in morbidity and all-cause mortality (1, 2). Types of problems include physical, emotional, financial, or sexual abuse and neglect of daily care needs (3). The prevalence of reports to Adult Protective Services (APS) has increased, but there is little literature about the reasons for APS referral or interventions.

Objective: To evaluate the causes for APS referrals in one urban house call practice, summarize the type of intervention and responsiveness of APS, and identify areas for improvement.

Methods: Quality improvement project that used retrospective analysis of 23 adults referred to Adult Protective Services by a house call program in the District of Columbia. Data regarding causes of APS referrals was obtained by chart review, as well as through interviews of involved health care providers. Data elements included the cause for APS referral, the response time of APS (when available), and the interventions taken. Charts were also reviewed for the presence or absence of written communication from APS back to the referring provider.

Results: The leading cause of a referral to APS was neglect, occurring in 15 of 23 cases, followed by both emotional and financial abuse, each resulting in 5 cases. Physical abuse was the concern in 3 cases and 1 case involved sexual abuse. 74% of all cases involved only one type of abuse or neglect, and the remaining 26% included 2 or more types. In only 1 of 23 cases was a written response received from Adult Protective Services.

Conclusion: Neglect is the most common cause for a referral to Adult Protective Services from an urban house call program, which is consistent with current data (3). The referring providers rarely received any written communication from the APS team, which offers an opportunity for improved follow-up care.


C203
In The Patient’s Own Words: Focusing Goals Of Care On Quality Of Life
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Background: Patient specific values regarding quality of life often aren’t elicited from older adults until the need arises to focus goals-of-care discussions on resuscitation. To avoid this, each patient’s definition of quality of life could be recorded in their own words. The
definition would launch a focused goals of care conversation in the context of cognitive/functional status. For example, patient reports quality of life is unacceptably compromised by frequent INR checks. A focused goals-of-care discussion would be upon risks/benefits of anticoagulation. We sought to outline this specific type of discussion in a form. The form would prevent providers from neglecting to address quality of life with their patients.

Methods: We developed a standardized goals-of-care form based on discussion with a 20 member focus group of geriatrics providers. The form includes 1) whether caregiver/health care proxy was present 2) cognitive/functional status 3) patient’s quality of life goals in their own words (ex. To be free of pain) 4) patient’s measures for quality of life (ex. Doesn’t want painful blood draws for INR) and 5) preferences for life sustaining treatment. Goals-of-care in this example would be either stopping anticoagulation or switching to another agent. During the first phase of the study, we collected pre-test feedback from 20 geriatric providers. The second phase pilots the form in a geriatrics clinic with 8 providers and 30 patients for post-intervention data. We will measure outcomes by determining frequency form is used and providers’ satisfaction with the form. Form will be then be inserted under a specific tab already created in the electronic record.

Results: The first phase of the study provided feedback from the 20 member focus group. 95% indicated that the form will be useful. When asked whether the form will save time 80% agreed with 85% indicating they will use the form regularly while 10% would use it intermittently and 5% would not use it. The majority (95%) agreed that the form will be useful.

Conclusion: Based on focus group feedback, a standardized form to elicit patient values regarding quality of life appears to be useful in goals of care discussions. We are currently piloting the form to determine the effectiveness/feasibility in 30 patients over 3 months.

C204 The Relationship between Resilience and Cardiovascular Disease R. Rai, S. Golshan, A. S. Martin. 1. Geriatric Medicine, UCSD, La Jolla, CA; 2. Psychiatry, UCSD, La Jolla, CA; 3. Stein Institute for Research on Aging, La Jolla, CA.

Background:
Studies on aging are vastly defined by disease, yet there is limited data to ascertain the relationship between disease and qualities of successful aging such as resilience. Resilience promotes wellness and may be useful in primary disease prevention. Our aims are to evaluate the relationship between resilience and cardiovascular disease and its risk factors, and the relationship between resilience and quality of life.

Methods:
Data from the Successful AGing Evaluation study was used for this report. This study examined 1,549 community-dwelling adults in San Diego County with age range of 21-99. All subjects with age 65 and older are selected for this report. Variables of interest are resilience (CDRS-10 items), quality of life (SF-36 physical and mental composite scales), and 6 binary (Y/N) indices of cardiovascular disease and included questions examining mentors’ overall experiences in the SMP.

Results:
Participants included 101, mostly female (64.4%) older adults (Mage= 77; range= 64 to 99). While mentors had no change in the amount of perceived ageism they experienced following the program (p=0.386) or their expectation over experiencing ageism (p=0.137), their concern/anxiety over ageism significantly decreased from pre (M= 22.12, SD= 9.52) to post-test (M= 19.47, SD= 8.84; t(99)=2.842, p=0.005), representing a 6.6% decrease. Qualitative thematic analysis indicated Meaningfulness of Program (positive) and Scheduling Difficulties (negative) as the most prevalent themes. Mentors with higher rates of vulnerability through social isolation and those who experienced more ageism were especially apt to have decreased concern/anxiety over ageism following the program.

Conclusion: The significant drop in concern/anxiety over ageism paired with positive feedback regarding Meaningfulness highlights possible benefits of mentor service for older adults, particularly for individuals who are socially isolated.
Physical exercise reported to improve both physical and cognitive function.\(^2\) The LACE index was developed to quantify risk of death or unplanned readmission within 30 days.\(^3\) The FIM (Functional Independence Measure) estimates the level of assistance needed for patients to complete basic activities of daily living (ADL).\(^4\) The study was done to determine the effects of Physical Therapy (PT) on patients with dementia.

**METHOD**

With IRB approval, a retrospective record review was completed on all patients discharged from Kaiser Permanente Fontana Medical Centers to SNF for rehabilitation over a six months period. Exclusion criteria included age <65 years, advanced / end-stage dementia and patients under hospice or palliative care. Using a secure method patients’ age, sex, comorbidities, Skilled Nursing Facility (SNF) length of stay (LOS) on PT, change in FIM score, hospital readmissions and death records were collected. Analysis was done determining the Spearman Correlation Coefficient.

**RESULT**

A total of 375 patient records were reviewed: 216 female (57.6%) and 159 male (42.4%). Subjects in No Dementia Group (NG) were 312 vs in Dementia Group (DG) were 63. FIM gain in NG was 12.6±9.43 vs in DG was 9.1±7.37 (p-value, 0.2289). LACE score in NG was 11.9±3.04 vs in DG was 12.4±2.70 (p-value, 0.2350). There was no statistically significant difference in number of readmissions between the groups (p-value, 0.4630). LOS in NG was 16.6±12.50 vs in DG was 25.9±23.52 (p-value, 0.0395).

**CONCLUSION**

There was a significantly longer LOS in SNF for PT for patients with dementia compared to those who did not have dementia. No significant difference in LACE score noted in study groups, but the FIM gain was significantly lower in those who had dementia. In regards to readmission to hospital from SNF, there were no significant differences in dementia who were readmitted and those who were not. Further research needed to determine effectiveness of PT in patients with dementia.

**REFERENCES**

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**C207**

Serum Albumin and Functional Independence Measure (FIM) Scores in Geriatric Patients who completed In-patient Rehabilitation after Hip Surgery

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Supported By: Nothing to disclose

**Background:** Treatment of hip fracture, commonly, involves surgical intervention followed by 6 weeks of rehabilitation. It is vital to get patients close to their pre-fracture functional level because post-rehabilitation morbidity and mortality are associated with the level of regained function. In most centers, rehabilitative functional outcomes have been widely assessed by the FIM score. Factors that affect outcome include age, pre-fracture function, mental status, residual deficits and nutritional deficiency, among others. Serum albumin has been a well-known surrogate for short-term nutritional status and can be potentially modified. Thus, we hypothesize that a higher albumin level translates to a better functional outcome. It is hoped that by improving nutritional status, rehabilitation outcomes will also improve.

**Objective:** To determine the association between serum albumin level and FIM scores in geriatric patients who have completed in-patient rehabilitation after hip surgery.

**Methods:** This retrospective cohort study involves a sample of 150 patients ≥65 years, admitted to a university-affiliated tertiary center for hip surgery due to a non-traumatic hip fracture and completed in-patient rehabilitation from 2008 to 2013. Data collection is through a standardized, pre-tested abstraction form to capture admission/discharge FIM scores, albumin levels and other pertinent demographic data. Chi-square test will be done to evaluate association of confounding variables with FIM scores. Sample t-test and logistic regression analysis to evaluate albumin levels and association with FIM scores after adjusting for confounding variables.

**Results:** Analysis of partial data of 50 subjects showed that mean age is 75 years. Majority of patients being non-Hispanic white, married, females. Pre-fracture status revealed most subjects were ambulatory, ADL-independent, with inter-trochanter fracture treated with an open reduction and internal fixation. By means of univariate analysis, presence of diabetes was significantly associated with low albumin levels.

**Conclusion:** Preliminary data using independent sample t-test showed that subjects with admission albumin level ≤3 mg/dL had statistically-significant lower discharge FIM scores.

**C208**

Causes of death in acute geriatric care and geriatric rehabilitation

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**Background:** In the Center for Medicine of the Elderly in Hannover (Germany) between 2010 and 2013 6,524 in-patients were treated, 3,514 in acute geriatric care, 3,010 in geriatric rehabilitation. Even in acute geriatric care rehabilitation is, beside the treatment of the acute diseases, a most important treatment goal. Patients are referred from emergency departments, other hospitals and, to a lesser extent, from general practitioners. The percentage of the patients who died as well as the causes of death should be analyzed in order to increase awareness on the side of the therapeutic team.

**Methods:** The patients who died were extracted from the clinic information system, were they are clearly marked. The causes of death were looked up in the patient files.

**Results:** As a whole 127 of the patients died (1.95%), in acute geriatric care the percentage was 3.61% and higher than in the rehabilitation setting. Pneumonia was the leading cause of death (n=34, 26.8%), heart failure and sudden heart death were the following causes with 24 patients each (18.9%). Malignant diseases (n=14, 11.0%) and acute renal failure (n=10, 7.9%) were less frequent.

**Conclusions:** In this old patient population the death rate was surprisingly low. This was probably due to a preselection for the rehabilitation patients. In acute geriatric care the death rate was slightly higher but still below 5%. Here too a selection bias may be the cause, assuming, that the emergency department did not send patients to the acute geriatric ward, who were already in the process of dying and only sent those with a least a potential to recover. Not surprisingly pneumonia and heart diseases were the leading causes of death. The clinic is accustomed to these complications and can offer an appropriate treatment. Prevention of death in this setting is mostly a prevention of pneumonia and acute heart disease. Special attention should be attributed to first clinical signs of these diseases.
Dementia is Not a Barrier to Functional Improvement in Geriatric Rehabilitation

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Supported By: Funded by the Canadian Institute of Health and Research (CIHR) and by the Program of Experimental Medicine (POEM), the Department of Medicine, University of Western Ontario.

Background:
Among risk factors that are associated with functional decline in older adults, cognitive impairment is particularly important and extremely prevalent in geriatric rehabilitation wards with a 64% prevalence among patients in inpatient rehabilitation services. We aimed to quantify if functional recovery in older adults would differ based on dementia status in a sample of inpatients from a geriatric rehabilitation unit.

Methods:
A retrospective analysis of inpatients admitted for geriatric rehabilitation in a university hospital between January 2011 and March 2012. Admission and discharge information was obtained from the National Rehabilitation Database and chart audit on cognitive and functional status. Functional Independence Measure (FIM), MMSE, Berg Balance Scale (BBS), Timed Up & Go (TUB), 2 minute (2MWT) and maximum walk distance (MWT) and length of stay. The main exposure variable was dementia diagnosis (yes/no). Multivariable linear regression evaluated the effect of dementia status on change in the measures of physical function.

Results:
Sample size was 205 (mean age 82.7 ± 7.0, 59.0% female, 86.9% living in their own homes prior to hospitalization, 22.0% dementia diagnosis). Dementia status was not associated with change in FIM, BBS, TUG, and maximum walk test (p>0.05) scores, but was associated with lower gains on the 2MWT (p=0.043) after discharge. Absolute scores on the FIM (total and sub-scores) were statistically significantly different between the groups at baseline and discharge. Length of stay was not associated with dementia status (33.80 ± 16.0 days, p<0.05).

Conclusions:
Patients with dementia are capable of making the same magnitude of functional gains as cognitively normal older adults within the same length of stay, but have a lower functional level at the start of rehabilitation. A diagnosis of dementia should not be an absolute contraindication for access to inpatient rehabilitation.

Whole Body Vibration Increases Cartilage Thickness and Cancellous Bone Strength, But Not Femoral Neck Strength or Bone Mineral Density

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Supported By: AFAR: MSTAR grant

Whole body vibration has been proposed as a non-pharmacological intervention for osteoporosis, but the effectiveness of this therapy and its optimal parameters are a topic of ongoing investigation. This study assessed the femoral mineral density, bone mineral density, and cancellous cancellous cartilage thickness in 80 adult rats (5 groups of 16 animals each) exposed to a range of WBV amplitudes (0, 0.15, 0.3, 0.6, 1.2g) at 45 Hz for 15 minutes a day, 5 days a week. Our hypothesis was that higher magnitude WBV up to 1g would improve bone strength and cartilage thickness.

Biomechanical testing included indentation of the distal femoral cancellous bone and cantilever bending of the femoral neck. Cartilage thickness was assessed on 5-μm thick coronal sections of the medial condyle. Densitometry was conducted on a Hologic QDR Discovery A DXA machine, using the Small Animal – Regional High Resolution mode, and BMD was calculated for the “global” view, a 4.6mm-long section of the shaft, and the proximal femur.

Indentation of the cancellous bone showed no difference between individual treatment groups, but a statistically significant difference (P<0.01) between the vibrated animals as a group (27.2±15.0 N) compared to the control (15.3±11.6 N). Femoral neck testing showed no statistically significant difference between individual groups or the combined vibration groups versus control. BMD did not show a statistically significant difference in any of the treatment groups versus control, nor in the combined vibration groups versus control. There was a statistically significant difference (P=0.049) in cartilage thickness between the vibration groups combined (315±78μm) and the control group (240±42μm).

Exposure to brief periods of whole body vibration over a range of acceleration amplitudes led to a modest increase in cartilage thickness in the normal knee, a large improvement (70%) in the distal femur.
cancellous bone strength, but no changes in bone mineral density or bending strength of the femoral neck. Our data suggests that there is no clearly optimal acceleration amplitude for achieving these changes.

C212 Encore Presentation
Frailty Assessment Predicts Long-Term Mortality After Cardiac Surgery: A Systematic Review
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Supported By: Caroline Kim is funded by Ruth L. Kirschstein National Research Service Award Training Program in Cardiovascular Research (T32HL007374).
Dae Hyun Kim is funded by KL2 Medical Research Investigator Training Award from Harvard Catalyst (1KL2TR001100).

Background: Frailty is highly prevalent in patients with cardiovascular disease, ranging from 25% to 50%. With rapidly expanding aging population and advancements in cardiovascular treatments, more number of older patients are referred for cardiac interventions than ever before. Current preoperative risk scores for cardiac surgery estimate short-term mortality and major complications but perform poorly in predicting long-term mortality. Frailty has emerged as a potential predictor of long-term outcome in older adults undergoing cardiac surgery.

Methods: We conducted a systematic search of Medline and EMBASE, from inception to 4/2014, to identify prospective studies that evaluated preoperative measurements of frailty in relation to long-term mortality (≥6 months) in populations (mean age ≥60 years) undergoing coronary artery bypass graft or valve surgery.

Results: Of the 12 measures of frailty evaluated, 11 were associated with mortality beyond 6 months (relative risk [RR] range: 1.2-3.6 in populations [mean age ≥60 years) undergoing coronary artery bypass graft or valve surgery. Presence of preoperative frailty was a strong predictor of long-term mortality after cardiac surgery, independent of comorbid conditions. Although the choice of measurements will depend on resources available, a mobility assessment is a simple, standardized, most widely studied test of frailty. The comparative performance of each frailty measurement and the optimal index of frailty remain to be established. With approximately 25% of the cardiac surgery patients being ≥75 years of age, geriatricians could play a valuable role by addressing frailty preoperatively to assist cardiologists and cardiothoracic surgeons in risk stratification and decision-making process.

Conclusion: Presence of preoperative frailty is a strong predictor of long-term mortality after cardiac surgery, independent of comorbid conditions. Although the choice of measurements will depend on resources available, a mobility assessment is a simple, standardized, most widely studied test of frailty. The comparative performance of each frailty measurement and the optimal index of frailty remain to be established. With approximately 25% of the cardiac surgery patients being ≥75 years of age, geriatricians could play a valuable role by addressing frailty preoperatively to assist cardiologists and cardiothoracic surgeons in risk stratification and decision-making process.

C214 Impact of a new geriatrician-led co-managed orthogeriatric model of care on short-term hip fracture outcomes
M. Álvarez-Nebroda,1 E. Sánchez-García1 B. Montero-Erasquin,1 C. Sánchez-Castellano,1 B. De la Torre-Escuredo,1 A. Cruz-Jeniot,1 1. Geriatrics, Hospital Universitario Ramón y Cajal, Madrid, Spain; 2. Orthopedics, Hospital Ramón y Cajal, Madrid, Spain.
Supported By: No financial disclosure.

Background: The collaboration of geriatricians and orthopedic surgeons in the care of elderly hip fracture patients has a long history and several models of care have been described in the last decades. It has been suggested that the orthopedic-geriatric comanagement could offer the best results but the evidence is still inconclusive. The aim of this study is to assess the impact of a specifically designed model, co-managed by both specialties and led by the geriatrician, on short-term hip fracture outcomes.

Methods: Prospective observational study with an historical control, in a tertiary teaching hospital. In the new model the geriatrician is responsible for the whole process of care, applying an evidence-based protocol, with the surgeon as a daily consultant. In the old model the person in charge was the surgeon and the geriatrician worked as a daily consultant. Data on 383 consecutive patients older than 79 years with a hip fracture were analyzed: 178 from years 2011-2013 (before the implementation) and 205 from 2014 (after it). The effect of the new model of care was measured by its impact on the following outcome measurements: postoperative medical complications, rate of non-weight-authorized patients, length of stay, new nursing home placement after discharge and mortality.

Results: 87±5 years. 76% female. 15% from nursing home. Barthel 76±28. FAC 4.2±1.6. Per/persubtrochanteric fractures 59%. Dementia 31%. After the implementation of the new model of care a significant reduction in length of stay (22.5 to 16 days, p<0.001) was seen, not only in the time from admission to surgery but also in the postoperative period. The decrease in mortality (5.6 to 3.9%) didn’t reach statistically significance. There were no effect on postoperative medical complications (although the registers improved), the
rate of non-weight-authorized patients or the institutionalization after discharge.

Conclusions: the new geriatrician-led comanaged orthogeriatric model of care was associated with significant reductions in length of stay with no impact on the others short-term hip fracture outcomes.

C215
Perioperative anemia in elderly patients with hip fracture: effect on in-hospital outcomes

Supported By: No financial disclosure

Background: Anemia in elderly patients admitted with a hip fracture is frequent and has been associated with increased short-term morbidity and mortality. The aim of this study is to describe the epidemiology of perioperative anemia in patients with hip fracture and assess its effect on in-hospital outcomes.

Methods: Observational retrospective study, including 242 patients older than 79 years with a hip fracture from 2011-2014. Hemoglobin (Hb) was measured on admission and the day before and after the surgery. According to the World Health Organization, anemia was defined as Hb <12 g/dl in women and <13 g/dl in men. Descriptive variables analyzed were: clinical and surgical characteristics, length of stay, postsurgical complications and in-hospital mortality. The evolu- tion of the Hb figures along time as well as its relationship with cardiovascular complications, length of stay and in-hospital mortality were determined.

Results: 87±5 years. 75% female. 15% from nursing home. Bar- thel 78±28. FAC 4.2±1.3. Per/persubtrochanteric fractures 60%. De- mentia 27%. CKD 64%. HTA 72%. DM 28%. Heart failure 14%. Isch- emic heart disease 12%. Stroke 21%. On aspirin 28%, clopidogrel 6% and acenocumarol 17%. Anemia was present in 39.2% of patients on admission (35.4% in women;50.8% in men), 63.6% the day before and 92.3% the day after the surgery. Hb dropped to 8-9 the day before the surgery in 20% of basal anemic patients and in 5% of basal non-anemic patients. The mean drop in Hb after surgery was 1.9 ± 1.3 g/dl. Patients who had anemia on admission (compared with those non-anemic) were significantly in more percent men (32vs20%,p=0.03), with per/persubtrochanteric fractures (68vs55%,p=0.05), with ischemic heart disease (17vs8%,p=0.04), on clopidogrel (10vs3%,p=0.047), diabetic (32vs22%,p=0.09). There were no statistically significant differ- ences between groups when comparing cardiovascular complications, length of stay or mortality.

Conclusions: Anemia at admission in elderly patients with hip fracture is as frequent as 40%. Although elderly male patients with per/persubtrochanteric fractures and with antecedents of ischemic heart disease or on clopidogrel are more likely to present with anemia on admission and also develop more perioperative anemia, this study has not found a statistically significant impact of perioperative anemia on clinical outcomes.

C216
Which Came First; Confusion or Consolidation?
S. Emami, E. Franco. Geriatrics, Massachusetts General Hospital, Boston, MA.

Authors: Sara Emami, M.D, Esteban Franco, M.D. Massachusetts General Hospital, Boston, MA

Introduction: Delirium is an acquired, transient mental status change, seen in up to 40% of elder patients following hip surgery. It is under-recognized by clinicians, results in significant morbidity and mortality. The Confusion Assessment Method (CAM) is a useful bedside tool to assess delirium.

Case: 91-year-old female with past medical history of osteoporo-sis, hearing impairment, hypertension and previous falls. She had a mechanical fall and was brought to hospital where imaging showed a right inter-trochanteric hip fracture. She underwent an open reduction and internal fixation (ORIF) and immediate post-operative course was uneventful.

On Post operative day three, she was noted to be confused and dorsoiented: CAM positive. She was noted to have new cough, oxygen requirement, leukocytosis and low grade fever. Chest x-ray showed a right middle lobe infiltrate consistent with aspiration pneumonia. Treatment was initiated with Unasyn IV, aspiration precautions, pul- monary toilet to clear secretions and non-pharmacologic measures to mange delirium. Within 24 hours of treatment, her mental status improved significantly, and she was alert and oriented to person, place and time and was able to participate in physical therapy. Her fever, dyspnea and leukocytosis improved. She was discharged to rehab after 9 days of admission.

Discussion: Although it is unclear what came first, this case il- lustrates the relationship between delirium and aspiration pneumonia and how it affects the hospitalized older adult. Post-operative patients are at particularly high risk given anesthesia, use of narcotics, pain and infections. Delirium is associated with a high morbidity and mor- tality, and is under-recognized and undertreated. The CAM is an excel- lent bedside tool that helps clinicians with early detection, so that it can be treated in a timely fashion to prevent morbidity, mortality and save healthcare costs by minimizing hospital stay. The orthopedic and geriatric co-management service at our hospital; Geriatric inpatient Fracture Service (GIFTS) has shown decreased complication rates and shorter hospital stays (average of 5.1 days) as geriatricians have a high index of suspicion for post-operative complications such as delirium. Although preventative strategies were in place, early recognition helped treat the patient’s delirium and aspiration.

C217
Impact of Weight Loss on Surgical Outcomes in Older Abdominal Cancer Patients
S. McMillan, B. Koro-Grodzicki, A. Shahrooki. Geriatrics, Memorial Sloan Kettering Cancer Center, Jamaica, NY.

Background

For the majority of intra-abdominal cancer patients, surgical re- section is considered to be the best option for a cure. Abdominal cancer patients are at risk of malnutrition due to multiple factors such as poor intake, excessive losses or impaired absorption. Older adults with geriatric syndromes are at an even higher risk of malnutrition. Preop- erative geriatric assessment (GA) which includes nutritional evalua- tion may play a significant role in predicting postoperative recovery. The aim of this study is to look at the impact of weight loss on surgical outcomes in older cancer patients undergoing intra-abdominal surgery.

Methods

This is a retrospective study of patients (age≥75) who had intra-abdominal cancer surgery at Memorial Sloan Kettering Cancer Center between 10/2010 and 12/2012. All patients underwent preoperative GA. Data on sociodemographic characteristics, basic and in- strumental activities of daily living (ADLs and iADLs), Mini-Cog test, social support, weight loss, albumin and hemoglobin level, medication list, falls in the past 12 months, Charlson Comorbidity Index (CCI), operation time, American Society of Anesthesiologists (ASA) score, length of stay (LOS), postoperative delirium and discharge plan were collected. Categorical and continuous variables were analyzed using Chi Square and t test.

Results

Out of 592 patients, 258 (43.6%) and 334 (56.4%) were in the weight loss (WL) and non-WL (NW) groups, respectively. The groups did not differ in age, gender, race, and marital status. There were no differences in the following GA variables: ADL dependency (24.8% vs. 24.0%), Mini-Cog ≤3 (34.1% vs. 28.1%), falls in the past 12 months (19.4% vs.18.6%), presence of social support (90.7% vs. 91.6%), or number of medications. They did not differ in number of
comorbidities (CCI≥6 26.7% vs 25.4%), operation time, ASA score, and post-op delirium occurrence. The WL and NWL groups were significantly different in preoperative albumin level (3.95 vs. 4.12, P<.001), hemoglobin level (11.91 vs. 12.31, P=.004), and iADL dependence (26% vs. 19.5%, P=.05). One year mortality was higher in the WL group (18.2% vs 9%, P<.001). Less of the WL group of patients were discharged home compared to those of the NWL group (44.6% vs. 52.7%, P=.05).

Conclusion
Identifying the presence of weight loss in the preoperative setting may help geriatricians get a better understanding of postoperative outcomes of intra-abdominal surgeries.

POSTER SESSION D (STUDENTS & RESIDENTS)
Saturday, May 16
3:15 pm – 4:15 pm

D1
Effects of polypharmacy-induced orthostatic hypotension on mobility and cognitive function
A. M. Ciccone,1,2 J. Angus,2 M. Kovacevic,2 C. A. Vaz Fragoso,1,3 S. M. Jeffery.1,3 1. Veterans Affairs Connecticut Healthcare System, West Haven, CT; 2. School of Pharmacy, University of Connecticut, Storrs, CT; 3. Department of Medicine, Yale School of Medicine, New Haven, CT.

Background:
Cerebral hypoperfusion due to orthostatic hypotension (OH) may precipitate injurious falls and cognitive dysfunction, especially among older adults. In this case, polypharmacy led to falls and fluctuating cognitive function that was temporally related to changes in OH.

Case Description:
A 74 year-old white male was admitted for management of OH after experiencing a fall in the setting of lightheadedness and dizziness. Medical history was significant for hypertension, OH, atherosclerosis, type 2 diabetes, depression, metastatic prostate cancer, and mild cognitive impairment. On physical examination, patient was orthostatic with blood pressures (BP) of 144/77 mmHg supine, 115/65 mmHg sitting, and 88/52 mmHg standing. Head and cervical spine imaging revealed a right fronto and periorbital contusion without fracture. Laboratory findings were within normal limits. Regarding polypharmacy, patient was prescribed 15 outpatient medications including: midodrine 5 mg three times daily, fludrocortisone 0.1 mg once daily, carvedilol 3.125 mg twice daily, and losartan 25 mg once daily. On admission, patient scored 12/30 on an Executive Interview (EXIT-15) and 24/30 on a Saint Louis University Mental Status (SLUMS) examination, showing moderate executive dysfunction. Inpatient stay was notable for symptomatic OH limiting ability to participate in physical therapy; highly variable blood pressures in both the hypotensive and hypertensive range; morning cortisol 11.3 μg/dL; TSH 4.94 μIU/mL; and EF 40-45% on echocardiogram. After initiating hold parameters for cardiac medications, discontinuing carvedilol, and decreasing losartan, orthostatic BP changed to 111/75 mmHg supine, 109/71 mmHg sitting, and 124/57 mmHg standing. Scoring 6/30 on a repeat EXIT-15 prior to discharge indicated a substantial improvement in executive function since admission. The patient was discharged to a short-term rehabilitation facility.

Conclusion:
Polypharmacy-induced OH can impair function and cognition. Addressing modifiable factors for OH, such as antagonistic pharmacology, could prevent iatrogenic illness.

D2
Ischemic Colitis: The body’s quick cure for polycythemia vera
B. S. Marcus, S. R. Holt. Yale School of Medicine, New Haven, CT.

Introduction:
Comorbidities in the elderly often interact in complex ways. We present a case in which ischemic colitis is both a consequence of, and a remedy for, polycythemia vera (PCV).

Case:
An 85 year old man with rectal cancer in remission with end colostomy, peptic ulcer disease, JAK2-negative PCV, and atrial fibrillation presented with one day of vomiting, abdominal pain, and blood in his colostomy bag. One day prior to admission he began to feel cramping pain accompanied by nausea and light headedness. Pain increased throughout the day to 9/10 in a ‘tight belt’ across the abdomen. On the evening of admission, pain had decreased to 1/10, but patient had multiple bouts of emesis, non-bloody/non-bilious, and noted bright red blood in his colostomy bag, which precipitated his visit to the ED. The patient takes warfarin for A-fib and undergoes phlebotomy several times a year with a goal HCT of <54 for otherwise controlled PCV. One month pre-admission INR and HCT were 2.2 and 54.4; two days pre-admission INR had increased to 3.1. On exam patient was found to have marked palmar erythema; tenderness to palpation in lower quadrants of the abdomen; and otherwise normal abdominal and CV exam. CT of the abdomen revealed colonic wall thickening of the transverse colon associated with pericolonic fat stranding, most consistent with colitis. Lab values demonstrated a supratherapeutic INR of 3.9 and Hematocrit of 57. On admission warfarin was stopped, patient was made NPO, and IV fluids were started. Upon cessation of pain and bleeding, in two days, diet was restarted and tolerated well. At discharge, the patient had an INR of 2.6 and HCT of 45. A work-up for infectious causes of colitis was unrevealing. Warfarin was restarted after two weeks with no interceding thromboembolic events.

Conclusion:
Owing to the fact of supratherapeutic INR and increased HCT above target even after bleeding, we believe PCV to be causative for our patient’s ischemic colitis; however with JAK2 mutation missing in our patient, our patient’s PCV diagnosis and the mechanism for thrombotic formation remains unclear. Elderly patients typically present with more difficult cases due to comorbidities, yet we have presented a situation where one disease modifying aspect, increased HCT, is protective against possible complications. This case highlights the need to treat the patient as a whole and fully understand comorbidities in order to provide optimal clinical care.

D3
Failed Gun-inflicted Suicide Attempt in the Older Adult
C. Bergman, M. Galicia-Castillo. Internal Medicine, Eastern Virginia Medical School, Norfolk, VA.

Background: Suicide in the older adult remains a top mental health concern. Studies are limited but data suggests high suicide completion rates with white men over the age of 75. The method of suicide can vary greatly from firearms to hanging to intentional overdose. We present a suicide attempt with a gun resulting in a complicated hospitalization with tragic consequences.

Case Study: An 80 year old white male with a history of diabetes, hypertension, and persistent pain presented to the trauma service following a self-inflicted gunshot wound. Following a quick assessment, the patient was found to have an entry wound at his left temple and an exit wound at the right temple with a ruptured left globe. He was combative and complaining of a headache with neck pain and severely reduced vision. Remarkably, his neurological exam was normal except for disturbances related to his ocular injuries. His head CT was equally impressive for the lack of brain injury. Due to the severity of damage to his intraocular muscles, ophthalmology completed a left eye globe enucleation but was unable to complete facial reconstruction.
Denosumab: Friend or Foe?
D. Rayeguru, UPMC Mercy, Pittsburgh, PA.

**Introduction:** Denosumab is approved for the treatment of postmenopausal women with osteoporosis who have failed or are intolerant of other osteoporosis treatments. We report a case of atypical femoral fracture caused by denosumab.

**Case description:** A 78-year-old female with past medical history of osteoporosis, rheumatoid arthritis, vertebral compression fractures presented with sudden onset of right thigh pain, which developed when she bent over to pick an object. Physical examination revealed large deformity over right proximal thigh with tenderness and restriction of active and passive range of motions in right hip region. Imaging showed a displaced transverse fracture of the right proximal femoral shaft. The patient had received a variety of treatments for her osteoporosis. She was initially treated with alendronate, but was unable to tolerate it due to gastrointestinal upset. Subsequently she was started on denosumab and received the treatment for a period of three and half years. Based on history and characteristic radiographic features she was diagnosed with atypical femoral fracture caused by denosumab.

**Discussion:** The American Society for Bone and Mineral Research task force has described major and minor defining features of atypical femoral fractures. Our case had all of the major features: the location was subtrochanteric region, the fracture was transverse and noncomminuted, there was no trauma and there was a medial spike. Regarding the minor features, there was prodromal pain, presence of a comorbid condition (Rheumatoid Arthritis) and concurrent use of agents such as glucocorticoids and proton pump inhibitors. Interestingly, more than half of patients reported with atypical femoral fracture have had a prodrôme of thigh or groin pain before suffering an overt break. Thus it is important to educate physicians and patients about this symptom and for physicians to ask patients on antiresorptive agents about thigh or groin pain. Complains of thigh or groin pain in a patient on denosumab or bisphosphonates require urgent radiographic evaluation of both femurs. In conclusion, atypical femoral fracture remain of concern in patients receiving denosumab and more information is needed, both to assist in identifying patient at particular risk and to guide decision-making about duration of denosumab.

**D5 Encore Presentation**

**The Challenges of Diagnosing Late-Onset Huntington’s Disease**
E. Attardo, S. Dattani. Christiana Care Health System, Wilmington, DE.

**Introduction:** Huntington’s Disease is a progressive, neurodegenerative disorder characterized by choreiform movements, cognitive decline and behavioral disturbances. The diagnosis can be challenging when elderly patients present with late-onset disease.

Case: Mr. HS is an 80-year-old man with Huntington’s disease who presented with his wife to the memory center. Over the previous six months, his symptoms had worsened. Cognitive difficulties limited his speech. He became dependent with activities of daily living as his choreiform movements became more pronounced. His wife was most concerned about his agitation and irritability, tearfully describing him as “mean.” At the age of 65, he developed symptoms of cognitive impairment and memory loss. These symptoms progressed very slowly and he was given the diagnoses of Alzheimer’s Disease, having seven siblings with Alzheimer’s Disease. It was not until the past few years that he developed intermittent involuntary movements of his extremities. At age 76, Mr. HS was diagnosed with Huntington’s Disease by molecular genetic testing after his brother was confirmed to have Huntington’s Disease. HS’s occupation was a chemical engineer. His medications included alprazolam and quetiapine at the time of his visit to the memory center.

His exam at the memory center revealed an alert man in no acute distress. He had an unsteady gait, choreiform movements of the upper extremities and trunk, limited speech, followed commands intermittently, no tremor exhibited, had a flat affect, and was unable to complete a MMSE. CBC and CMP were within normal limits. An MRI revealed cerebral and cerebellar volume loss, small areas of old hemorrhage in the right cerebral hemisphere, and was without acute brain infarction.

Follow-up: We suspect that Mr. HS has both Alzheimer’s Disease and Huntington’s Disease. His symptoms of agitation are now controlled with risperidone and haloperidol. He is still living at his home with his wife. Mr. HS is not close with his five children and their health is unknown.

Conclusion: This case illustrates how late-onset Huntington’s Disease can be challenging to diagnose in the elderly population. First, the differential diagnosis is extensive and there is considerable overlap in clinical features. Patients may also have more than one disease pathology, like Mr. HS. In addition, clinicians may under-diagnose Huntington’s Disease in older patients because of misconceptions about the occurrence in the elderly population.

**D6**

**The Importance of Using the Teach-back Method to Prevent Adverse Patient Outcomes**
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**Introduction:** Ineffective physician-patient communication may lead to adverse patient outcomes.

**Case:** A 74-year-old man with CHF and CKD stage 4 presented to an urgent care clinic with dysuria. He was diagnosed with a UTI, prescribed a course of ciprofloxacin, and instructed to “increase fluids.” He presented to the emergency department 5 days later with worsening dyspnea, orthopnea, paroxysmal nocturnal dyspnea, fatigue, and lower extremity edema, and was admitted to the medicine service. On exam, he had a jugular venous pressure of 12 cm, faint bibasilar rales, and trace pitting edema to mid-shins. He was alert, but oriented only to person and place. His serum Na was 115 mEq/L, serum osmolality was 252 mOsm/kg, urinary osmolality was 308 mOsm/kg, and NT-proBNP was 17,881 pg/mL. His chest radiograph was consistent with mild pulmonary edema. Upon further inquiry, he proudly reported that he had been drinking 4 L of water per day in an effort to “increase fluids,” as instructed. His hyponatremia and CHF exacerbation resolved with fluid restriction alone. He was discharged 2 days later with clear instructions to limit his fluid intake to 1-2 L per day, unless acutely ill, using the teach-back method. He followed up in clinic 10 days after discharge and was doing well with a serum Na of 139.
Discussion: Given the patient’s history of excessive fluid intake and response to fluid restriction, the etiology of his CHF exacerbation and hyponatremia was iatrogenic primary polydipsia. The instructions to “increase fluids,” while appropriate for the management of a UTI, lacked specificity regarding the amount to drink and how long to sustain the increased intake, leaving the patient to his own interpretation. This was especially detrimental because of his increased susceptibility to volume overload and hyponatremia due to CHF and CKD. His hospitalization may have been avoided by using the teach-back method, which has been demonstrated to improve patient comprehension as well as patient outcomes in a variety of settings. It involves three steps: 1) delivering information clearly; 2) asking the patient what they understood; and 3) clarifying any misunderstandings. Steps 2 and 3 are repeated as many times as needed to ensure patient comprehension.

Conclusions: The teach-back method assesses patient comprehension and may improve patient outcomes by avoiding complications due to miscommunication.

D7
Where are the Brakes? Assessing driving safety in Dementia
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Introduction
Those with dementia are at higher risk for motor vehicle collisions (MVC). The need for evaluation of driving safety in this population is under-recognized and is made more challenging by the fact that no validated tool sets exist.

Case description
An 85-year-old male was brought in by ambulance after driving his truck straight through a stranger’s home after his “accelerator became stuck”, killing a family dog inside. At the scene of the accident, the patient was mobile and alert and denied any loss of consciousness.

His medical history included non-ischemic cardiomyopathy, bradycardia with a pacemaker, and COPD. Hospital workup showed normal labs, while imaging noted three rib fractures and chronic small vessel ischemia on head CT. His pacemaker interrogation did not show any cardiac events around the time of the crash. His hospital course was complicated by intermittent night-time agitation and confusion which seemed consistent with sundowning. He was noted to have deficits in immediate recall and short-term memory but refused further cognitive testing. On discharge he was sent to a skilled nursing facility with instructions to no longer drive.

On further review, the patient lived alone. He had some assistance in taking his medications and preparing his meals. Six months prior to his accident, he became lost when driving to his primary care physician’s (PCP) office which prompted a Mini-Mental State Exam (MMSE) where he scored 21/30. He was started on donepezil. Out-of-state family assured the PCP that they would keep him updated on the patient’s cognitive state. The PCP did not hear back from the family and the patient failed to return for follow-up.

Discussion
As patients get older it is important to address driving ability, especially in those with cognitive impairment. MMSE scores are not designed to assess driving risk, and scores <24 do not correlate with higher rates of MVC. Though less recognized, the Clinical Dementia Rating (CDR) scale has shown to have better correlation with driving safety and may be a useful measure in those who have MMSE scores <24. Additionally, the Assessment of Driving-Related Skills (ADReS) is another tool to evaluate for safe driving through testing of cognition, vision and motor function. This case illustrates the importance of recognizing the risks associated with dementia and driving, and highlights tools available to physicians to identify high crash risk patients.
ectomy with ileostomy in 1957. Smoking: none; alcohol: occasional wine. She lives alone in a 2-story house with a shower on the 2nd floor. She has been living on main floor and using 1/2 bath. A friend has been assisting her with sponge bath, dressing, transportation, shopping, meals. Family history is negative for osteoporosis, fractures. She has a sister with asthma.

Medications: Although currently not taking, she received oral bisphosphonate for about 6 years.

Guaifenesin, Methotrexate 7.5 mg once a week, Hydrocodone 5 mg/ Acetaminophen 325 mg QID, Zolpidem 5 mg HS prn insomnia, Calcium with Vit D BID

PE: She moans in pain with any movement of her legs or back. Ht 5’4”, Wt 108 lbs, BMI: 18 BP 100/70, P 90, RR 18 Lungs: normal respiratory mechanics, bilarial rales Abd: ileostomy RLQ, tender in LLQ Back: loss of normal curvature, tender over sacrum Ext: no pain with gently flexing and extending knees, any movement of her hips causes pain

Lab: Hgb 11, Hct 33, Vit D 28, Ca 8.7

CT Pelvis: multiple fractures: bilateral sacrum, right pelvis extending into right superior and inferior pubic rami and involving pubic symphysis and large hematoma of the right obturator ext. muscle. She underwent ORIF of her fractures, osteoporosis evaluation, rehab.

Impression: This is an unusual scenario of an elderly woman with severe osteoporosis resulting in multiple atraumatic pelvic fractures with instability of her pelvis and putting her at risk for spino pelvic dissociation. These injuries usually result from high impact trauma, with deaths reported from hemorrhage.

D11
A Patient’s Last Wish at End-of-Life
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Background: Patients who have transitioned to end-of-life (EOL) care are at an increased risk for polypharmacy as they face new symptoms requiring the initiation of palliative care medications. Routine continuation of maintenance medications may represent a major obstacle for family members and caregivers and impact the patient’s quality of life.

Case: MGD was a 96 year, 6 foot 2 inch, 125-pound male patient who was brought into the outpatient geriatric faculty practice by his devoted daughter, with whom he had been living all his life. The patient had no pain, but severe dysphagia. Both daughter and patient were fully aware that death was imminent, as the patient had lost 60 pounds in the past three to four months, due to a gastrointestinal cancer. The daughter asked if she could stop any of his medications, which she had been dutifully struggling to provide her bed-bound, anorectic father, at that point, the geriatrician called for a pharmacy consult, specifically to address the issue of unnecessary medications.

The patient was taking ASA 81mg qd, finasteride 5mg qd, fosfomycin 25mg qd, levothyroxine 25mcg qd, simvastatin 40mg qd, and terazosin 2mg qd. The pharmacist recommended discontinuing all maintenance medications except for levothyroxine, to the great relief of the daughter.

Discussion: According to the National Hospice and Palliative Care Organization, an estimated 1.5 to 1.6 million patients received hospice care, and two-thirds of these patients die at home. There is little evidence or guidance in reducing or discontinuing medications for chronic illnesses during EOL care. Indeed, evidence shows that family and caregivers feel inadequately prepared to manage medication administration. While it is understandable that the number of symptomatic medications will increase, patient comfort can be helped by reducing maintenance medications that have little to no short-term benefit.

Conclusion: As EOL approaches, patient’s last wishes must be respected, including timely changes to their medication regimen. Pharmacists are an essential asset to the geriatric inter-disciplinary team as they can provide extensive medication counseling and reassurance to the patient, family, and caregiver, that discontinuing most maintenance medications will not hasten death.

D10
I Can See Clearly Now: The Charles Bonnet Syndrome
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Supported By: No financial discloses to report.

Background: Visual hallucinations (VH) are a well described occurrence in older persons with dementia and psychotic disorders. Their occurrence in older patients without cognitive disorders is less appreciated.

Case 1: An 87 year old male, retired mechanic was seen for follow-up of diabetes, hypertension, dyslipidemia, and hypothryoidism. He had a history of chronic kidney disease and age related macular degeneration. He reported recent episodes of seeing people outside his kitchen window in his backyard. He suspected the people were not there which was confirmed by his wife. There was no history of dementia or psychiatric disorder. His physical exam, including mental status, was normal.

Case 2: An 80 year old female was referred for evaluation because of episodes of hallucinations. She reported seeing a little dog and children. She was aware that the objects were not really there. She had a history of diabetes and vitamin D deficiency, both well controlled. There was no history of dementia or psychiatric disorder. Her physical exam, including mental status, was normal. A subsequent ophthalmic examination revealed cataracts.

Discussion: VH may occur in a number of conditions, including dementia, delirium, schizophrenia, epilepsy, stroke and from medications. VH in these cases are often well recognized. However, VH in older persons without a history of dementia or psychosis are not often recognized. The Charles Bonnet Syndrome (CBS) typically occurs in an older patient with underlying visual abnormality. The mean age is usually between 70 and 85 years and one of the most common visual disorders is age related macular degeneration. Patients usually have good insight and realize that the hallucinations are not real which is also typical. The two cases described are typical of CBS in that they involved older patients who had a visual defect resulting in VH. Unlike hallucinations in other disorders such as dementia or schizophrenia patients with CBS retain insight about the hallucinations and understand that they are not real. Treatment of the condition consists of reassurance to patient and family and correction of underlying visual disturbance. Pharmacologic treatment is rarely necessary. Physicians involved in the care of older patients need to be aware of this syndrome and should not immediately resort to pharmacologic treatment for these patients.
was taken to the emergency department where he was evaluated and sent home on previously prescribed hydrochlorothiazide, lisinopril and glipizide. At his initial visit in our primary care clinic, his BP was 164/110. Physical exam was normal and HbA1c was 10.2. He was followed closely given labile blood pressures and non-adherence to medications due to side effects, which included dizziness, syncope and erectile dysfunction. His syncope was thought to be neurocardiogenic in nature given an extensive negative cardiac work-up and his BP regimen was adjusted many times to address his symptom complaints.

To help with adherence, pill boxes were filled for him by clinic staff. Despite upward titration of glipizide and addition of glucophage, the patient's HbA1c remained greater than 10 for a year. On his labs, his blood sugars were mostly between 140-300. In following months, the patient lost 12 pounds unintentionally and had another syncopal episode. Fifteen months after the initiation of glipizide, his HbA1c suddenly dropped from 11.0 to 6.1. This raised suspicion that hypoglycemia was the culprit for his syncope. Glipizide was discontinued and one month later the patient felt better, was without dizziness or syncope and had regained 4 pounds.

**Discussion:** According to the American Diabetes Association, the goal HbA1c for the elderly is <8.0. This case illustrates the need to closely monitor blood sugars in geriatric patients taking short-acting sulfonylureas, such as glipizide, even if the patient has been tolerating it and continues to have a high HbA1c. Glipizide should be started at low doses and titrated up slowly, especially in patients where frequent home monitoring is not possible to avoid unexpected and precipitous drops in blood sugar. Symptoms of dizziness, syncope or weight loss should prompt more frequent blood sugar checks, which in this case could have been done by staff when he was picking up his pill boxes. Early recognition of these symptoms can prevent severe or possibly fatal hypoglycemia in the elderly.

**D13**

**An inspiring case: Pneumonia, or is it?**

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Adults 65+ account for >50% of all pneumonia & comprise most of the hospitalizations due to pneumonia. Discerning the etiology of pneumonia in the older adult requires knowledge of their past exposures and assessment of their cognitive & functional state.

Patient is a 77 year old non-English speaking man emigrated from the Philippines 2 years ago with history of hypertension, admitted with complaints of new generalized weakness & difficulty walking. He had no complaints of fever, chills, cough, night sweats, weight loss or shortness of breath. Exam was without focal neurological deficits but with decreased alertness. Admission labs significant for sodium 126, glucose 553, albumin 2.5, WBC 11 & GFR of 58, HbA1c 12.4. Chest x-ray revealed a nodular airspace abnormality throughout the right & left lung. Chest CT showed a cavitary lung abscess in the right upper & lower lobes with nodular airspace disease bilateral & mediastinal lymphadenopathy. Bedside swallow evaluation on day 1 of hospitalization showed no evidence of aspiration. Serum quantiferon TB gold assay was negative. On day 4, bronchoscopy with BAL demonstrated no gag reflex upon scope insertion. Samples sent for AFB smear, fungal stain & culture, gram stain & culture, cytology & pathology were negative. On hospital day 11, patient had a choking event, & modified barium swallow revealed moderate oral phase dysphagia & severe pharyngeal phase dysphagia. Throughout hospitalization, we learned of chronic urinary/bowel incontinence that led to further cognitive testing revealing advanced dementia. It was decided that pneumonia was secondary to aspiration, & family decided against a feeding tube. Patient was discharged with comfort feeds & clindamycin for 3 weeks. 10 days after hospital discharge, AFB culture grew mycobacterium tuberculosis complex, & treatment regimen was altered accordingly.

This vignette highlights important decision making factors. Though the patient was progressively deteriorating at home, the family did not seek medical attention promptly because they assumed this was the normal aging process & noted that the patient is stoic. Identification of his advanced dementia led to the consideration of aspiration pneumonia, while keeping TB in the differential given recent immigration & imaging results. His presentation allowed us to identify his dementia, discuss prognosis & expectations with the family, & establish his goals of care.

**D14**

**Dementia Related Behavioral Problems:**

When less can do more in managing a difficult patient.

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**INTRODUCTION**

Behavioral problems related to dementia are common in a nursing home setting and may be difficult to manage. They are distressing to the patient, the caregivers as well as the medical staff. If not treated, they may cause a significant impairment in the patients' quality of life. Based on our patient’s story, we explore an evidence-based approach in managing a patient with dementia and concomitant behavioral problems.

**CASE REPORT**

This is a 90 year-old woman who is a long term nursing home resident suffering from severe Alzheimer's dementia. She is usually pleasant and cooperative until there was a sudden change in her behavior. She became agitated in the mornings during medication distribution, was spitting out her pills, and became physically aggressive towards nursing staff and co-residents. Attempts to resolve the problem using re-directions and other non-pharmacological approaches were unsuccessful. Multiple treatment trials with haloperidol, risperidone and antidepressant did not help. Lorazepam worsened her agitation. She has a history of seizure disorder treated with valproate and levetiracetam which was recently added. Physical examination revealed a frail, wheelchair bound patient in stage 7C dementia. There were no focal motor deficits. Laboratory values including CBC, CMP, TSH, vitamin B12 and valproate level were normal. Geriatric evaluation suggested a violent behavior attributable to an adverse effect of levetiracetam. Discontinuing the offending medication and empirically addressing her pain, resolved her behavioral problems. Her current medication regimen includes valproate, fentanyl patch and mirtazapine. She remains seizure-free, pleasant and cooperative.

**DISCUSSION**

The behavioral problems seen in non-verbal patients with severe dementia may simply represent the patients’ way of communicating their distress. In managing behavioral problems related to dementia, non-pharmacological approaches are preferred over pharmacological approaches and should be tried first. Careful geriatric evaluation usually discovers the triggers of behavioral changes and should be given utmost importance.

**CONCLUSION**

Addressing pain, sleep problems and discontinuation of inappropriate medications may significantly help in managing demented patients with behavioral problems.

**D15**

**Change of heart – assessing decisional capacity in discharges against medical advice**

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**Introduction:**
Assessing decisional capacity can pose significant challenges to clinicians when there are conflicting opinions among different consultants.

**Case:**
A 81-year old man with a history of atrial fibrillation, anxiety, depression and cardiomyopathy, was admitted for the second time in a year with atrial fibrillation in rapid ventricular response after reportedly running out of medications. He lived alone in a motel, after being discharged from a Soldier’s Home for using marijuana and encouraging others to do so. At previous admissions, he expressed disbelief in allopathic medicine and there was concern for medication non-compliance. The family inferred self-neglect; psychiatry and geriatrics were consulted to assess decisional capacity. MMSE score was 29/30. MOCA was 21/30 with poor visuospatial, executive function and abstraction. Psychiatry, to whom the patient was known, declared judgement was not impaired - the patient was consistent with previously stated values and verbalized understanding of risks associated with medication non-compliance. Geriatrics suspected early dementia with possible limited capacity based on his inability to demonstrate understanding of his medical condition, grasp responsibility in events leading to admission and express rationale for refusal of medications.

The patient grew angry and left AMA despite several newly adjusted medications with ongoing work-up for bradycardia. Specialists were not able to reevaluate him prior to depart. He died of cardiac arrest the next day.

**Discussion:**
In high-risk situations, repeated assessments of capacity may be required. Consultation of appropriate services is necessary and, if continuity in providers is not feasible, ongoing communication is essential. In order to improve AMA discharge outcomes in the face of legal and ethical considerations, response lists have been developed: assess, investigate, mitigate, explain and document. Medications may be prescribed upon discharge, implying balancing patient autonomy, non-maleficence and health promotion based on risk-benefit analyses.

**Conclusion:**
Clinicians should be vigilant in identifying high-risk cases in which assessing decisional capacity may be a challenge. Involvement of multi-disciplinary teams, repeated assessment and communication among different consultants is mandatory to avoid devastating outcomes.

**D16 Octogenarian from India with dry cough**
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83yo woman with history of HTN and DM2 seen in clinic with complaint of dry cough for at least 10 months. She reports “coughing fits” that happen randomly throughout the day. She also experiences transient upper abdominal discomfort with no clear triggers or associations. There is no accompanying phlegm production, hemoptyis, shortness of breath, chest pain, or fever. No history of smoking, sick contacts, allergies, or use of ACE-inhibitors. She also did not corroborate symptoms of weight loss, night sweats, nausea, vomiting, skin rash, or diarrhea. About 3 weeks earlier, she had been evaluated in the ED for dry cough. A chest X-Ray was unrevealing. A CBC revealed borderline eosinophilia at 6.8%. Her BMP was within normal. She was given Robitussin and Tessalon Perles with short-term relief. In the office, she was afebrile with a 98% O2 saturation. She appeared well and spoke in full sentences despite her chronic open mouth breathing. Lungs were clear to auscultation bilaterally and without any wheezing, crackles or rhonchi. Cardiac, abdominal and skin exams were within normal. The differential diagnosis for her persistent dry cough included GERD, postnasal drip, undiagnosed lung disease, or infectious etiology. By the end of the visit, the plan was to try non-pharmacological interventions to address potential GERD symptoms. She had already tried empiric treatment for postnasal drip. Pulmonary function testing was ordered to evaluate for lung disease. While the infectious rate of strongyloides in India is reported as low at 11.2%, it must be recognized that this may be an underestimation given the low number of available studies and scarce data information. When manifest, strongyloidiasis symptoms are often expressed as intermittent GI, skin, or pulmonary complaints. Based on her borderline eosinophilia, chronic dry cough, vague abdominal discomfort, and potential exposure, strongyloidiasis serology was sent for this patient and yielded positive results. Another reason for checking parasitic antibody titers on patients from potentially endemic areas and to treat if positive is to prevent hyperinfection syndrome that may manifest in the setting of corticosteroid therapy for other medical conditions. This patient was treated with Ivermectin. Monitoring for reduction of antibody titers and her borderline eosinophilia would have been done, however, the patient returned to India shortly after anthelmintic treatment and it is unknown whether her symptoms have improved or resolved.

**D17 Encore Presentation**
Epstein Barr Virus positive diffuse large B cell lymphoma of the elderly
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Diffuse large B cell lymphoma is the most common type of lymphoma. Epstein Barr virus (EBV) has commonly been implicated in the pathogenesis of nasopharyngeal carcinoma and Burkitt’s lymphoma. It has also been implicated in the pathogenesis of diffuse large B cell lymphoma (DLBCL). Lymphomas presenting with paraneoplastic antibodies account for less than 1% of cases associated with malignancies. The propensity of Epstein Barr virus to affect elderly non-immunocompromised patients makes this affliction unique. It is also associated with a worse prognosis.

A 75 year old African American female presented to the ED for evaluation of altered mental status. A few days prior she was found by her neighbour in a dishevelled state. He sat her up on a chair and left her place. He returned 2 days later to find her in the same position and subsequently called EMS. On physical examination, the patient was a well built and moderately nourished female who appeared to be in no apparent distress. The patient was drowsy but arousable. She was disoriented to time, place or person and inattentive. She had severe dysarthria but no focal weakness and no neck rigidity was noted. Multiple sub-mandibular, cervical and axillary lymph nodes were palpable. Rest of the systemic examination was essentially benign.

All labs were within normal limits except significant hypercalcaemia which gradually was managed with hydration and calcitriol administration. Although the serum calcium improved to 10.4 on day 6, there was no improvement in her mental status. A CT scan and MRI of her brain were unrevealing. Lumbar puncture with CSF analysis was positive for EBV cell count of 372 copies/ml and negative for other bacteria and viruses. Also serum paraneoplastic antibody work-up revealed Neuronal ACHR ganglionic (Alpha 3) antibodies elevated at 0.17 (N<0.02).

The patient was started on high dose steroids in view of the possibility of paraneoplastic encephalitis. Her mental status improved considerably after treatment with steroids and she was subsequently transferred to a rehabilitation center. Our patient’s response to the steroids makes paraneoplastic syndrome and lymphoma the likely underlying cause of her encephalopathy.

In conclusion, this patient’s presentation deviates from previous literature on the typical manifestations of lymphoma and multiple factors including metabolic, oncologic and infectious etiologies possibly contributed to her presentation.
Case description: An 80 year-old Haitian Creole-speaking patient with history of multiple myeloma and a recent small bowel obstruction in the setting of magnetic resonance cholangiopancreatography-confirmed choledochoduodenal fistula 2 months prior to admission presented to the hospital with 3 weeks of decreased appetite, generalized malaise, and productive cough. On day of admission the patient was febrile to 102.5°F with leukocytosis of 16.3 K/μL with 73% PMN’s, absent gastrointestinal symptoms, and normal abdominal exam. A respiratory viral panel was positive for RSV. Over the next 2 days, the patient’s cough resolved with supportive care alone yet she remained febrile with persistent leukocytosis. Given concern for abscess formation at the known fistula site, CT of the abdomen and pelvis with IV contrast was performed. Imaging revealed an 8.9 x 9.3 x 8.2cm right lower quadrant collection consistent with an abscess related to complicated appendicitis or perforated diverticulitis. CT-guided drainage with pigtail catheter placement was performed and the patient was started on IV antibiotics.

Discussion: This case illustrates the atypical presentation of an intra-abdominal abscess formation secondary to complicated appendicitis in an elderly patient. The classic symptoms of abdominal pain, anorexia, and leukocytosis occur in only 20% of appendicitis cases in the elderly. Providers should maintain increased suspicion for intra-abdominal abscess formation in elderly patients with known risk factors who present with persistent fever or leukocytosis even in the absence of abdominal pain or gastrointestinal symptoms. These patients may benefit from a lower threshold for CT of the abdomen.

Statin-induced liver injury in a frail homebound patient

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Statins are commonly prescribed medications in the US and are considered life-preserving for many. Age increases the risk for cardiovascular disease; and although the elderly may benefit from statins, there are no randomized clinical trials in patients above 80 years. In frail young patients with multiple comorbidities chronologic age can differ significantly from functional age. There are also no trials considering functional age rather than chronologic age for recommendations on statin therapy. Statins come with adverse effects, and frailty increases the risk. Drug-induced liver injury from statins is rare, effecting up to only 3% of patients. Frailty may increase this risk.

An extremely frail 56-year-old African-American woman with a history of CVA and residual neurologic deficit presented to our clinic for evaluation of frequent falls. In the preceding months, routine outpatient care consisted of secondary prevention of cerebrovascular disease, tobacco cessation counseling, and evaluation of persistent weight loss. At this appointment, she had fallen five times in the last month, feeling that her legs were weak and “gave out on her,” and had lost ten pounds in three months. She was admitted to our inpatient service for further evaluation of falls. Evaluation for acute infection, metabolic derangement, and cerebrovascular disease revealed acute hepatitis, with transaminases of 1000 and alkaline phosphatase greater than 2000. She underwent an extensive workup for cancer and autoimmune pathology, including CT-scan imaging and gastroenterology consultation. A liver biopsy ultimately showed drug-induced liver toxicity.

During her routine primary care appointment four months prior to her hospitalization, her statin therapy was escalated. According to the new ACC/AHA guidelines, her ASCVD risk score was very high, and recommendation was high-intensity statin therapy. Her pravastatin was changed to high-dose atorvastatin. This was her only medication with hepatotoxic effects and after her liver enzymes returned to normal with cessation of atorvastatin, a statin-induced liver injury was diagnosed.

Her case is significant for illustrating the rare, but harmful drug-induced liver injury from statins. Her case also brings discussion about difficult issues for primary care physicians, including whether the new ACC/AHA guidelines should be applied based on patient’s chronological age or physiologic function and whether muscle mass should be considered in dosing statins.
**D21 Encore Presentation**

**Thick Serum Can Clog The Brain**  
S. Ibrahim, E. Erdogan, W. Colon Cartagena, A. Verma. *Internal Medicine, Baystate Medical Center/Tufts Univ. School of Medicine, Springfield, MA.*

**Case:** An 86-year-old man with mild dementia presented with an acute onset delirium. Vital signs were normal. He was able to follow simple commands and did not have any focal neurological deficits. Laboratory work up showed anemia, thrombocytopenia, acute kidney injury and an elevated calcium level. CT scan of brain was non-revealing. CXR showed an infiltrate in the left lung base. Management for a suspected pneumonia and of hypercalcemia was initiated with no improvement in mental status within the first 24 hours. Patient’s serum was noted to be very viscous by our laboratory and required several dilutions prior to processing in the automated analyzers. This was communicated to the medical provider who initiated work up for high total protein/high immunoglobulin states. Serum protein electrophoresis showed a sharp spike in the beta/gamma region consistent with a monoclonal gammopathy; subsequently serum and urine immunofixation studies detected an IgM kappa monoclonal protein with serum levels quantified at above 6000mg/dL. Patient underwent urgent plasmapheresis with a notable rapid improvement in mental status and a drop in IgM level by 50% after the first session. He received 3 sessions and was started on chlorambucil before discharge.

**Discussion:** Waldenstrom’s Macroglobulinemia (WM) is a rare clinical disorder in which unregulated clonal expansion of B-cells leads to overproduction of Immunoglobulin M (IgM). Although a bone marrow biopsy was not obtained to confirm the diagnosis, our patient’s clinical picture was very consistent with WM and his confusion was most likely related to hyperviscosity syndrome in the setting of significant elevation in IgM levels. This is supported by the immediate improvement of his symptoms after 1 session of plasmapheresis. Hyperviscosity syndrome is a clinical emergency and is an indication for urgent plasmapheresis. Plasmapheresis causes a rapid decrease in IgM level and plasma viscosity which increases capillary blood flow. Elevated IgM levels can interfere with laboratory tests and cause false elevations in serum creatinine and calcium both of which improved rapidly in our patient with initiation of plasmapheresis.

**Conclusion:** Early recognition of hyperviscosity syndrome and initiation of urgent plasmapheresis is important to prevent irreversible brain changes. This case also shows the importance of laboratory-provider communication in guiding the diagnostic and treatment process.

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**D22**

**Atypical Presentation of GBS**  
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**Introduction**

GBS is an acute immune-mediated peripheral nerve disorder defined by weakness of limbs or cranial nerve-innervated muscles. The most common precursor is an upper respiratory infection or diarrhea. Pathogenesis involves molecular mimicry (between peripheral nerves and bacterial components) which elicits auto-antibodies.

**Case Report**

A 78-year-old Russian male with a history of hypertension, dyslipidemia, Parkinson’s disease and alcohol abuse was sent from a sub-acute rehabilitation facility because of change in mental status. He presented with generalized weakness, dysphagia, and slurred speech, suspicious of a stroke (NIHSS 9). Two weeks prior, he fell from a 12-foot ladder sustaining a left sided subdural hematoma, intracranial hemorrhage and left side parietal occipital nondisplaced skull fracture. Physical exam was significant for decreased strength 2/5 in both legs and 3/5 in both arms. He was awake and alert without any sensory deficits. Gait was unable to be assessed secondary to weakness. CT head showed no acute pathology and a sequelae of recent hemorrhagic contusion was present.

On day 2 of admission, the patient’s neurologic status deteriorated to quadriplepsis and increased oral secretions. Guillain-Barre syndrome (GBS) was suspected. A lumbar puncture revealed xanthochromia, lymphocytic predominance of 92% lymphocytes, and a protein of 946. An EMG confirmed the diagnosis of GBS. He was started on intravenous immunoglobulin (IVIG) for 5 days. He eventually required intubation on day 4. Our patient had a prolonged course with improvement and extubation on day 11.

**Discussion**

Our patient did not have any typical preceding infection, although he was at risk due to recent hospitalization and residence in a rehabilitation facility. Elevated protein in CSF is typical for GBS; however, the striking feature in this case is the degree of elevation nearing 1 g/mL. It can likely that the elevation is in part due to auto-antibodies and partly due to absorption of recent intracranial bleeding. With the rising incidence of GBS, the need for high clinical suspicion and prompt management is imperative. In the future more studies are needed to correlate degree of CSF protein and response to therapy.

**Reference**


**D23**

**End of Life Goals in Clinical Practice**  
S. hossain, M. Ismail. *Internal medicine, Saint Joseph Regional Medical Center, Paramus, NJ.*

**INTRODUCTION**

With the longer life expectancy, the average elderly patients live with multiple chronic debilitating diseases and an increasing cohort reside in skilled nursing facilities (SNF). Many of these facilities default to a full code status and many times patient’s wishes are not fulfilled due to inadequate documentation or documents that do not carry over from one facility to another.

**CASE REPORT**

An 80-year-old Caucasian female with an extensive past medical history including cardiopulmonary disease and recent hospitalization for pneumonia was found unresponsive by her daughter, called EMS. Patient wasn’t pulseless but was unarousable. The daughter made the decision to allow EMS to intubate her mother. The patient had a health care proxy, and her wishes were do no intubate and do no resuscitate, but that was not documented. She was extubated but had a tumultuous hospital course with multiple complications.

She was discharged to SNF, but returned a few days later for respiratory distress. The patient’s code status was always documented as full code; however, when discussions occurred regarding code status the daughters and patient did not want CPR but were hesitant to make it official. On day 7, patient went into asystole requiring CPR and intubation. After 20 minutes there was ROSC, and complications included hemorrhagic shock and tamponade. After multiple discussions regarding end of life goals, code status changed to DNR without intubation. The following morning, she became more tachypneic, increasing in distress so the decision was made to pursue comfort measures only and patient died on day 13.

**DISCUSSION**

End of life and quality of life discussions are always difficult. In this case, the patient’s goals from the beginning were do not resuscitate and do not intubate. However, the patient only had a health care proxy and no formal documentation. The discussions with the patient’s family during the hospital course resonated with hesitancy to change the code status from full code even though it conflicted with the patient’s actual wishes that were expressed when she recovered during the her previous hospital stay.
A call for a more systematic approach to end of life (EOL) goals discussion, and possibly a more universal adoption of the national POLST paradigm may allow for patients’ EOL goals to become a reality.

D24
Sextuplets at 67
S. K. Ramdas,1,2 R. Starr,1,2 J. Tufts University School of Medicine, Boston, MA; 2. Baystate Medical Center, Springfield, MA.

A 67 year old woman with history of hypertension and hysterectomy presented to ED, accompanied by concerned relatives, with worsening delusions and cognitive decline. She believed she was pregnant with six fetuses and her estranged sister was trying to harm them. She also believed her deceased husband was alive. She was formerly a highly functional and educated woman; collateral history revealed she was now relying on extensive lists and calendar reminders as compensatory strategies for memory impairment which worsened following her husband’s death. There was no family history of dementia or psychiatric disorders. She was independent in ADLs; however needed assistance with IADLS. She scored 19/30 on a MoCA; points deducted for STM, calculation and abstraction. Mental state exam revealed circumstantial thought process with delusions, low grade paranoia, euthymic mood and guarded affect. Physical examination and laboratory tests were unremarkable. MRI brain showed multiple areas of hemosiderin deposition in both cerebral hemispheres with suspicion for amyloidosis. Subsequent vasculitis screen was negative. She was diagnosed with cerebral amyloid angiopathy (CAA) manifesting as dementia with psychotic features, started on risperidone and discharged to a Geripsychiatric unit.

CAA is characterized by deposition of amyloid in the cerebral cortex arterial walls1 which weakens the vessels predisposing to vasculopathies. CAA is classified by the involved protein; sporadic CAA with amyloid β-protein (Aβ) is mostly found in elders and patients with Alzheimer’s disease (AD)2. Definite diagnosis relies on autopsy findings with a series reporting prevalence of 2.3% in patients aged 65-74 increasing to 12% in those ≥853. Advances in neuroimaging however have enabled clinical diagnosis based on MRI findings of ≥2 hemorrhages or micro hemorrhages restricted to typical CAA regions. The Aβ protein is similar to those seen in senile plaques in AD3 and leads to hemorrhages; CAA is hence associated with dementia, usually mixed AD/vascular type, stroke and encephalopathies. Few cases of vasculitis associated CAA have been reported4-6, though no consensus exists as to whether this is causal or reactive to CAA induced angiopathic changes.

This case highlights an atypical presentation of CAA with progressing debilitating symptoms in a previously functional elderly with treatment options limited to symptomatic management.

D26
Transcatheter Aortic Valve Replacement in nonagenarian patients with Symptomatic Severe Aortic Stenosis
V. R. Solar, Z. Shenjun, M. Mendoza de la Garza, V. Shankar. Medicine, MetroWest Medical Center, Framingham, MA.

INTRODUCTION
As the geriatric population grows, the incidence of symptomatic severe aortic stenosis (SSAS) is also on the rise. Many of these patients are not considered candidates for surgical aortic valve replacement (SAVR), due to advanced age. Transcatheter Aortic Valve Replacement (TAVR) has emerged as an alternative option in response to this clinical problem.

CASE PRESENTATION
We present two nonagenarian patients followed in the community after TAVR. Patient A is a 90 year old active female with SSAS who presented with angina and dyspnea on exertion. She underwent TAVR successfully and was discharged to rehab after 5 days of hospital stay. She returned home and was able to perform all the household chores and take care of her son with chronic illness. Patient B is a 92 year old active male diagnosed with SSAS, who presented with dyspnea on exertion limiting his daily activities. He underwent TAVR and was discharged to rehab after 6 days of hospital stay. Mr. B now lives at home independently and plans to go golfing next summer.

LITERATURE REVIEW
We reviewed 3 studies that have examined the risks and benefits of TAVR in the elderly population. Leon et al reported that in elderly inoperable SSAS patients, TAVR had a lower one-year mortality (30.7%), when compared to the standard medical management (50.7%). TAVR also significantly reduced symptoms and hospitalizations, despite the higher incidence of major strokes and major vascular events. The 2011 PARTNER trial found that TAVR and SAVR had similar one-year mortality, but patients that underwent TAVR had improvement in their symptoms and experienced less adverse events, such as major bleeding and new-onset atrial fibrillation at 30 days; though the rates of major strokes were slightly high in TAVR group A recent study in 59 nonagenarians showed that TAVR was associated with increased risks of vascular injury and greater prevalence of significant paravalvular aortic regurgitation, when compared with SAVR.
DISCUSSION

Advanced age patients with SSAS had no viable options for survival in the past. TAVR has since emerged as a less invasive option for these patients and has been shown to improve the clinical outcomes with fewer complications. While further studies are warranted regarding long term benefits and survival, advanced aged patients with SSAS now have an option of quicker recovery and improved quality of life with TAVR.

D27
Validation of an LC/MS method for pharmacokinetic study of AZD0530 (Sarcatinib) in human plasma for its application in phase IIa clinical trial
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Supported By: University of Hawaii, John A. Burns School of Medicine; UCSD School of Medicine, Alzheimer’s Disease Cooperative Study Laboratory; National Institute on Aging – MSTAR Program; American Federation for Aging Research; The John A. Hartford Foundation; MetLife Foundation

Background: The steady increase in the older American population and the current lack of effective Alzheimer’s disease treatment underscores the need for pharmacologic solutions for disease-modifying treatment. Using plasma specimens collected from our human safety trials, this study aimed to establish an analytical method for detection of AZD0530 (Sarcatinib) by liquid chromatography electrospray ionization-tandem mass spectrometry (LC-MS) to verify compliance and brain penetrance of drug treatment for an upcoming phase IIa clinical trial.

Methods: Eight human plasma samples from mild-moderate Alzheimer’s disease patients, six with varying drug concentrations and two placebo samples, were run in duplicate studies against aliquots of internal standard, AZD0530, and quality controls. The liquid chromatography system used an XBridge BEH C18 column, 2.1 mm x 50 mm (2.5 μm particle size) with a binary flow of acetonitrile with 0.1% formic acid and water (HPLC grade) at a flow rate of 0.6 mL/min. Propanolol was used as an internal standard. The mass transition pairs of m/z 541.9 —> 127.3 for the drug analyte, AZD0530, and m/z 260.078 —> 56.075 for the internal standard were used. The retention times for the analyte and internal standard were 0.937-0.963 min and 1.01 -1.02 min, respectively. The analyte and internal standard were detected using an AB Sciex QTRAP 5500 triple quadrupole LC-MS/MS system.

Results: Six of the eight human plasma samples contained varying concentrations of the drug, AZD0530. The calculated mean drug concentration for each of the samples was 133 ng/mL, 187 ng/mL, 98 ng/mL, 248 ng/mL, 257 ng/mL, and 88 ng/mL, respectively. Two of the eight were below the level of detection for AZD0530, indicating these samples contained the placebo. The calibration standard and quality controls all passed.

Conclusion: An LC-MS/MS method for the determination of AZD0530 concentrations in human plasma with K,EDTA has been successfully validated. The calibration range of the method is 1 to 1000 ng/mL for AZD0530 using a 50 μL sample aliquot. The method is reproducible between runs.

D28
Moving Beyond Risk: Investigating the relationship between health behaviors and patient outcomes in older Stage 0-3 breast cancer patients
B. E. Gordon, S. Alston, T. Jolly, G. Williams, J. West. 1. UNC Lineberger Comprehensive Cancer Ctr, Chapel Hill, NC; 2. UNC School of Medicine, Chapel Hill, NC.
Supported By: Breast Cancer Research Foundation, New York, NY University Cancer Research Fund, UNC-Chapel Hill

Background: Cancer therapies are frequent causes of disability and morbidity in older adults. Exploring health behaviors that improve patient outcomes and preserve independence is essential to maintaining patients’ quality of life post-treatment. This study investigates how alcohol consumption (AC), tobacco use (TU) and physical activity (PA) influence patient outcomes in older breast cancer patients.

Methods: From 2010 to 2014, 151 women aged ≥65 years with curable stage 0-3 breast cancer were recruited on to clinical trials. Their AC, TU and PA were assessed using a health behaviors questionnaire adapted from the NIH National Health Interview Survey. Patient outcomes including cognition, functional status, mental health and social support were assessed using the Geriatric Assessment (Huria & al Cancer 2005). Cancer and treatment stage were determined through chart review. Comparisons between health behaviors and patient outcomes were completed using one-way ANOVAs.

Results: Participants were primarily white (89%) and married (63%), with at minimum, a high school diploma (97%). Mean age was 72.5 years. Participants self-identified as nonsmokers (48%), former (46%) and current smokers (4%), averaging 16.4 pack years. Sixty percent drank alcohol and 52% exercised at least once per week. No prior TU was associated with higher physical function (Timed up and Go, p=0.03), greater independence (instrumental activity of daily living (IADL), p=0.24) and better social support (p=0.03). Weekly PA was associated with improved cognition (Blessed Orientation Memory and Cognition (BOMC), p=0.02), higher physical function and independence (IADL, p=0.01; ADL, p=0.01) and less comorbidities (p=0.02). Lastly, consuming 7 drinks or less per week was linked to higher Karnofsky Performance Status (KPS, p=0.23), and functional status (ADL, p=0.21). Tobacco usage, PA and AC were not significantly associated with mental health status, falls or nutritional status.

Conclusion: Preserving patient quality of life and independence is principal concern of oncologists and patients alike. Engaging in positive health behaviors throughout cancer therapy may limit cognitive impairment, prevent loss of physical function, and help maintain independence and overall health.

D29
Estrogen and Cognition in Women: Potential Vascular Mechanisms
E. Royer, K. Moreau, W. Kohrt, K. Hildreth. University of Colorado Denver, School of Medicine, Denver, CO.
Supported By: 1) Specialized Center of Research (SCORE) Grant NIH P50 HD073063 (PI Kohrt)
Bioenergetic and Metabolic Consequences of the Loss of Gonadal Function
2) Colorado CTSA Grant UL1 TR001082 from NCATS/NIH
3) NIH/NIA Grant K23 AG045201 (PI Hildreth)
4) Medical Student Trainee in Aging Research (MSTAR) through the University of California, Los Angeles

Background: Traditional cardiovascular risk factors increase the risk of Alzheimer’s disease (AD). The loss of estrogen (E2) with menopause appears to augment the age-associated increase in these risk factors, which may help explain the additional increased risk of AD in aging women. E2 helps maintain neuronal integrity, particularly
in the prefrontal cortex (PFC) which supports executive function and working memory, and is vulnerable in AD. E2 is also vasoprotective. E2-deficient postmenopausal women show arterial stiffening and impaired endothelial function compared to age-matched premenopausal women; these impairments are attenuated with E2-based hormonal therapy. Arterial stiffening and endothelial dysfunction have been linked to small-vessel cerebrovascular disease and cognitive impairment. Mechanisms for the effects of E2 on cognition are not known, but acute changes in both vascular function and brain activation occur with surgical or pharmacologic ovarian suppression. This study is investigating whether vascular dysfunction mediates the negative effects of E2 on brain activation.

**Methods:** 34 healthy, premenopausal women (40-60y) randomized to 6-months of gonadotropin releasing hormone agonist (Gn-RHag) or placebo as part of an ongoing study will be enrolled. Measures of 1) vascular function ([carotid artery compliance-ultrasound] and endothelial function [brachial artery flow-mediated dilation]); and 2) PFC activation (fMRI during a working memory task) are obtained at baseline and 6-months. To isolate the effects of E2 participants randomized to Gn-RHag (n=17) receive 3 additional months of Gn-RHag with E2, add-back, with outcomes assessed at 9-months.

**Expected Results:** Gn-RHag treatment will decrease arterial compliance and endothelial function, and these changes will be correlated with decreased PFC activation. Changes observed with Gn-RHag will be reversed with E2 add-back.

**Conclusion:** This study is a novel investigation of vascular dysfunction as a possible mechanism underlying the negative effects of E2-deficiency on cognition. Use of a controlled experimental model of ovarian suppression and incorporation of an E2 add-back condition will examine the effects of E2, independent of age or other ovarian hormones. Results will inform future studies investigating new sex-specific therapeutic or lifestyle interventions to prevent cognitive decline in aging women.

**D30 Vision and Ability To Use and Learn Inhaler Technique Among Older Inpatients**


1. University of Chicago, Chicago, IL; 2. University of Illinois at Chicago, Chicago, IL; 3. University of Michigan, Ann Arbor, MI.

**Supported By:** —AFAR’s Medical Student Training in Aging Research Award 2014. Grantee: Kristin Constantine Trela.

—University of Chicago Center on the Demography and Economics of Aging (CoA) Pilot Award. Pt: V.G. Press. Title: Vision in Senior Inpatients: Outcomes and Needs (VISION)


—K23 (1K23HL188151-01) Awardee: VG Press

**Introduction:** We have found that over 80% of inpatients with asthma or chronic obstructive pulmonary disease (COPD) misuse their inhalers. Our Teach-to-Goal (TTG) method has been associated with improved inhaler technique, but older patients with poor vision may not benefit from this strategy because it relies on visual aids. Therefore, we aimed to 1) assess if inpatients’ ability to use and learn to use their inhalers worsened with increasing age and 2) ascertain if insufficient vision is a barrier to learning inhaler technique for older inpatients.

**Methods:** We analyzed data from three clinical studies evaluating inhaler technique among inpatients with asthma or COPD. Demographic data was self-reported; vision was screened with a Snellen card; metered-dose inhaler (MDI) use was assessed with a 12-step checklist. MDI misuse was defined as <75% of steps correct (<10/12 steps). Data were collected on ability to learn inhaler technique in two of the studies. Participants were randomized to either TTG or simple verbal educational strategy (Brief Instruction, BI). Chi-squared and Fisher exact tests were used for categorical comparisons.

**Results:** Most participants were female (145/198, 73%) and African American (171/198, 86.3%). Almost 11% were ≥65 years (22/198) and 26% (70/268) had insufficient vision. Older participants (≥65 years) had higher prevalence of insufficient vision than younger (<65 years) ones (58% ≥65 vs 19% <65 p=0.001). Most participants misused MDIs (236/268, 88%) at baseline; there was no difference by age group (85% ≥65 vs 89% <65, p=0.4). There was no difference overall by age group in the rate of post-education inhaler misuse (57% ≥65 vs 44% <65, p=0.2). Of participants receiving TTG, post-education misuse was higher in older than younger participants (47% ≥65 vs 22% <65, p=0.04). However, visual acuity did not explain the disparity (17.39% v 30.2%, p=0.28).

**Conclusions:** Nearly 90% of patients misused their MDIs at baseline, regardless of age. Older adults were less likely than younger patients to correctly use inhalers when taught with TTG. In contrast, there were no differences in ability to learn by age when patients were taught with BI. Surprisingly, visual acuity did not explain the differing benefit. Future work should explore other risk factors for geriatric inhaler misuse, such as health literacy.

**D31 Encore Presentation**

**Oral Health Care Needs Assessment in Patients with Movement Disorders**


1. General Practice and Dental Public Health, The University of Texas School of Dentistry at Houston, Houston, TX; 2. Neurology, The University of Texas Medical School at Houston, Houston, TX.

**Supported By:**

**Funding:** UTHealth Consortium on Aging, Albert and Ethel Herzstein Charitable Foundation Geriatric Studies for Junior Faculty

**Background:** By 2030, 1 in 5 Americans will be sixty-five years of age or older. As the aging population increases, so does the prevalence of individuals diagnosed with movement disorders such as Parkinson’s and Huntington’s. Difficulties with eating, salivation, and performing regular oral hygiene place many of these patients at an increased oral health risk. The purpose of this study was to conduct an oral health care needs assessment of patients with movement disorders.

**Methods:** Thirty-seven patients took part in this study. Twenty-one of the subjects were male and sixteen female, the ages ranging from fifty to eighty-seven and the average age being sixty-nine. Data on the oral health of the research participants were collected using an oral hygiene questionnaire (OH), dietary habits questionnaire (DH), the Kayser-Jones Brief Oral Health Status Examination (BOHSE), and a Debris Index (DI).

**Results:** Averages (and maximum scale values) for OH was 20.1 (35), DH 15.4 (30), and BOHSE 4.2 (20). The DI (3) measures biofilm indices, with the mean score before and after tooth brushing was 1.8 and 0.6 respectively. Average number of meals (5) versus snacks (5) consumed per day was 3.5 versus 3.4, respectively.

**Conclusion:** Data calculations indicated patients had adequate oral hygiene and dietary habits, fair oral health, and a sub-standard debris index. Oral health scores can be used to collect important oral health data on patient populations, especially populations with limiting disorders such as participants of this research. There are a paucity of studies focused on oral health in patients with movement disorders. Oral healthcare is significant on overall health and quality of life. This study’s data illustrates the need for comprehensive care, including dental education and preventive services, for this population using an effective interdisclinary team approach is important.
D32 Post-Traumatic Stress Disorder among Elderly Motor Vehicle Collision Victims Receiving Care in the Emergency Department B. C. Nebolisa,1 E. E. Isenberg,1 R. M. Domeier,1 R. Swor,1 P. L. Hendry,4 D. A. Peak,7 N. K. Rathlev,6 J. S. Jones,3 D. C. Lee,8 S. A. McLean,1,9 T. F. Platts-Mills.1 1. Emergency Medicine, University of North Carolina Chapel Hill, Chapel Hill, NC; 2. Emergency Medicine, Saint Joseph Mercy Health System, Ypsilanti, MI; 3. Emergency Medicine, William Beaumont Hospital, Royal Oak, MI; 4. Emergency Medicine, University of Florida College of Medicine, Jacksonville, FL; 5. Emergency Medicine, Massachusetts General Hospital, Boston, MA; 6. Emergency Medicine, Baystate Medical Center, Springfield, MA; 7. Emergency Medicine, Spectrum Health - Butterworth Campus, Grand Rapids, MI; 8. Emergency Medicine, North Shore University Hospital, Manhasset, NY; 9. Anesthesiology, University of North Carolina, Chapel Hill, NC; 10. School of Medicine, University of North Carolina, Chapel Hill, NC; 11. School of Public Health, University of North Carolina, Chapel Hill, NC.

Supported By: This work is supported by Career Development Award K23AG038548 from the National Institute on Aging (Platts-Mills)

Introduction: Post-traumatic stress disorder (PTSD) is a common and preventable cause of disability. We sought to characterize risk factors for and consequences of PTSD among older adults following MVC.

Methods: We conducted a longitudinal study of adults aged 65 years or older presenting to 1 of 8 US EDs following MVC and discharged home. PTSD symptoms were assessed at 6 months using the Impact of Event Scale – Revised (IES-R).

Results: Of 136 participants, 40% (95% CI, 31%-47%) had an IES-R score of 33 or more, indicating significant PTSD symptoms. Individuals reporting severe pain or a perception that the MVC was life-threatening at time of ED evaluation were at increased risk for PTSD symptoms. Participants with PTSD symptoms were at higher risk for functional decline, persistent pain, and subsequent hospitalization (Table).

Conclusion: Among older patients discharged home following MVC, PTSD symptoms were common and associated with adverse health outcomes.

Outcomes 6 months after motor vehicle collision, adjusted for age, gender, and race.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Unadjusted</th>
<th>% (95% CI)</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PTSD (N=54)</td>
<td>No PTSD (N=82)</td>
<td>PTSD (N=54)</td>
</tr>
<tr>
<td>Functional decline3</td>
<td>41 (29-54)</td>
<td>24 (16-34)</td>
<td>50 (35-64)</td>
</tr>
<tr>
<td>New disability2</td>
<td>41 (29-54)</td>
<td>31 (22-43)</td>
<td>57 (46-68)</td>
</tr>
<tr>
<td>Moderate or severe pain</td>
<td>49 (36-62)</td>
<td>22 (14-32)</td>
<td>51 (38-66)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>30 (19-43)</td>
<td>13 (6-27)</td>
<td>25 (12-37)</td>
</tr>
</tbody>
</table>

1. Decreased ability to walk, climb stairs, or carry.
2. New difficulty or inability in an activity of daily living.


Supported By: MSTAR Program

Background: More than 25% of nursing home (NH) residents visit the emergency department (ED) at least once annually. Significant barriers to providing high quality care to NH patients in the ED include lack of access to important and relevant medical information, and ineffective communication between NH, EMS and ED providers. To address these barriers, SAEM and ACEP’s 2009 Geriatric Task Force created 11 quality indicators (QIs) for care transitions between NHs and EDs. This study sought to determine how well providers caring for NH residents fulfilled the 9 QIs that are applicable to the immediate ED transfer process.

Methods: We conducted a retrospective chart review of a randomized sample of 1,500 older (ages ≥ 65) patients presenting to one ED by ambulance (April 2011-March 2012) to identify those transitioned from a NH. Data pertinent to the quality indicators were captured for each patient. Patients’ NH paperwork was assessed for adherence with QIs 1-5 and ED provider notes were assessed for concordance with QIs 6-9. Data were analyzed using proportions in Stata.

Results: Of the 1,500 patients screened, 171 (11.5%) were transferred from a NH. 85% percent of NH paperwork contained a reason for transfer (QI1); 85% listed medication allergies (QI3); 52% noted advanced directives (QI2); and 46% contained contact information for the NH provider should urgent communication be required (QI4). 70% of NH paperwork included a medication list (QI5). NHs requested a specific test to be done upon transfer in 4% of cases (all CT scans), and ED providers documented acknowledgement of this request 100% of the time (QI6). 12% of ED providers documented communication with the NH prior to patient discharge (QI7). Our EMR requires an ED diagnosis to be both assigned prior to discharge and included in ED discharge paperwork (QI8). Finally, ED providers’ documentation included ED tests performed with results 2% of the time in discharge paperwork (QI9).

Conclusions: Our results suggest that NH and ED providers are not fulfilling the 9 QIs for immediate transitions of care between NHs and EDs for older adults. Whether this is due to a lack of awareness, education, or resources remains unclear. However, systematic improvements are needed. Identifying and addressing gaps in this process is important for ensuring the best possible medical care for this vulnerable population.

D34 The Effect of Surgical Consult in the Treatment of Abdominal Pain in Older Adults in the Emergency Department E. Roberts, L. Belland, L. Rivera-Reyes, U. Hwang. Icahn School of Medicine at Mt. Sinai, New York, NY.

Supported By: Icahn School of Medicine at Mount Sinai Medical Student Research Office Summer Research Grant

Background: In the Mount Sinai (MS) ED, abdominal pain is the most common pain complaint among older adults. If poorly controlled, this may lead to development of chronic pain, longer hospital stays, and delirium. The need for surgical consult may contribute to delayed or reduced analgesic administration due to a lingering, though discredited, belief that analgesics can interfere with diagnosis.

Methods: This is a retrospective observational cohort study consisting of adults ≥ 65 years in age who present to the MS ED with a chief complaint of abdominal pain from 11/2012 to 10/2014. We completed chi-square and t-test comparisons, with multivariable adjusted analyses using logistic and linear regression. Two comparisons were made, with the primary predictor being all consults or surgical consults, while outcomes include: administration of analgesia, time to administration, type/dose/route given, and pain score reduction. Covariates include age, gender, race/ethnicity, and ESI (Emergency Severity Index).

Results: Results during the study period included 3,522 patients, of which 281 (8.7%) received consults while in the ED. Consult patients were significantly less likely to receive any analgesic medication (149/281, 53.0%) compared to non-consult patients (2026/3241, 62.5%), p<0.0017. However, among those patients who received analgesic medications, there was no differences in likelihood of receiving an opioid (61.0% vs 59.7%, p=0.74), time to analgesic administration (191 min vs 171 min, p=0.49), or in final pain score reduction (3.58 vs 3.57, p=0.68). When comparing patients who received a surgical consult (n=154, 4.4%) versus those who did not, these associations were notably stronger. Surgical consult patients had an even lower rate
of analgesic medication administration (72/154, 46.8%) compared to non-consult patients (2103/3368, 62.4%), p=0.0001. Again, no difference was found in likelihood of receiving any opioid (64.5% vs 59.6%, p=0.39), time to analgesic administration (204 min vs 171 min, p=0.30), or pain score reduction (3.43 vs 3.48, p=0.88).

Conclusion: Need for abdominal surgical consult is significantly associated with decreased likelihood of receiving analgesics, possibly indicating a continued need to improve abdominal pain management in the setting of surgical consults. This difference in pain care, however, did not appear to impact pain score reductions.

D35
Hurricane Sandy: Impact on Emergency Department and Hospital Utilization by Older Adults in Lower Manhattan
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Background: On October 29th, 2012, Hurricane Sandy caused a storm surge interrupting electricity with disruption of Manhattan’s healthcare infrastructure. Beth Israel Medical Center (BIMC) was the only fully functioning major hospital in lower Manhattan during and after Hurricane Sandy. We studied the storm’s impact on Emergency Department (ED) and hospital use by geriatric patients.

Methods: We extracted data from ED and hospital databases analyzing the reasons for ED visits and admissions at baseline (October 15-22, 2012) and immediate post-Sandy phase or IPS (October 29- November 4, 2012). Based on the chief complaint and principal ED discharge diagnosis (ICD-9), each visit was categorized into a diagnostic group. Data were analyzed across three age groups: 18-64, 65-79, and 80+ years old.

Results: The four complaints medication, dialysis, respiratory device, and social in ED visit significantly increased from baseline to IPS in all three age groups (p<0.05) except medication in the 80+ group (p=0.11). In the analysis of admission, the three complaints dialysis, respiratory device, and social significantly increased in all three age groups (p<0.05) except social in the 65-79 group (p=0.21). These categories represented two-thirds of absolute increase in both ED visits and admissions for the 65-79 group, and half of the absolute increase in ED visits for the 80+ group. The proportions of the categories dialysis, respiratory device, social, and syncope in geriatric patients in ED visits were significantly higher than younger patients (p<0.01). The same analysis in admissions showed that the proportion of syncope in the 80+ group was significantly higher than the rest age groups (p<0.05). The categories social and respiratory device peaked one day after the disaster, dialysis peaked two days after, and medication peaked three days after in ED visit analysis.

Conclusions: There was a disproportionate impact on ED visits and hospitalizations by the geriatric population compared to younger population during IPS, especially in diagnostic categories of dialysis, respiratory device, social, and syncope. More detailed chart review analysis may provide further information that could assist with disaster preparedness.

D36
Diagnostic Radiologists’ Knowledge, Attitudes, Training, and Practice in Elder Abuse Detection

Supported By: Jasmin Harpe’s participation was supported by a MSTAR (Medical Student Training in Aging Research) grant from the American Federation of Aging Research. Tony Rosen’s participation has been supported by a GEAMSTAR (Grants for Early Medical and Surgical Subspecialists’ Transition to Aging Research) grant from the National Institute on Aging (R03 AG048190). He is also the recipient of a Jahniin Career Development Award, supported by the John A. Hartford Foundation, the American Geriatrics Society, the Emergency Medicine Foundation, and the Society of Academic Emergency Medicine. Mark Lachs is the recipient of a mentoring award in patient-oriented research from the National Institute on Aging (K24 AG02399).

BACKGROUND: Elder abuse is under-recognized, and identification of subtle cases requires a high index of suspicion among all health care providers. As many geriatric injury victims receive radiographic imaging, diagnostic radiologists may be well-positioned to identify injury patterns suggestive of abuse. Little is known about radiologists’ experience with elder abuse. Our goal was to describe knowledge, attitudes, formal and informal training, and practice experience in elder abuse detection among diagnostic radiologists.

METHODS: We conducted a pilot study among 10 diagnostic radiologists at a large, urban, academic medical center. Three subjects were attending emergency department radiologists, 3 were neuroradiologists, and 4 were senior diagnostic radiology residents. Semi-structured interviews ranged in duration from 9-18 minutes. The sessions were recorded, fully transcribed, and data were coded and analyzed to identify themes.

RESULTS: Only one radiologist reported receiving any formal or informal training in elder abuse detection. All subjects believed that they had missed cases of elder abuse. Even experienced radiologists reported never having received a request from a referring physician to assess images for evidence suggestive of elder abuse. All subjects reported a desire for additional training about elder abuse. Additionally, subjects identified radiographic findings and patterns potentially suggestive of elder abuse, including high energy injuries such as upper rib fractures, multiple subdural hematomas, injuries in multiple stages of healing, and injuries inconsistent with mechanism.

CONCLUSION: Radiologists are uniquely positioned to identify elder abuse. Though training in detection is currently lacking, providers expressed a desire for increased knowledge about elder abuse. Additionally, radiologists were able to identify radiographic findings that may be suggestive of elder abuse. Based on these findings, we plan to conduct additional studies to define pathognomonic injury patterns and to explore how to empower diagnostic radiologists to incorporate detection into their practice.

D37
Advanced Directives among Older Adults in the Emergency Department
J. R. Oulton, S. D'souza, D. Davidson, M. Fain, M. J. Mohler, M. Rhodes, 1. University of Arizona College of Medicine, Tucson, AZ; 2. Geriatrics, University of Arizona, Tucson, AZ; 3. Emergency Medicine, University of Arizona, Tucson, AZ.

Background: The Emergency Department (ED) is a common location for recitative therapies, often involving patients who cannot
RESULTS: Of 53 patients meeting eligibility criteria, 46 were enrolled in the study and completed all assessments. Of these, 25 (54%) were prescribed opioids. The emergency provider made some effort to prevent constipation for 7 of these 25 patients (28%): 2 were prescribed a medication; 3 received a medication recommendation; and 2 indicated the provider “discussed constipation, but nothing was prescribed or recommended.” Among those for whom measures to prevent constipation were taken (n=7), the mean change in constipation severity at one week was 0. In the group for whom measures were not taken (n=18), the mean change in constipation severity was a 1.3 point increase. This difference was not statistically significant.

CONCLUSIONS: Among this sample of older adults with acute musculoskeletal pain receiving an opioid prescription, emergency providers did not routinely address constipation. Recommendations to prevent opioid-induced constipation may reduce the frequency of this common side effect and improve the quality of pain management for this population.

**D39** Feasibility of a Triage Instrument to Guide Case Manager Care for Older Adults in the Emergency Department: the Patient Vulnerability Assessment


**Background:** Case managers are an important resource in the ED care of older adults and may help reduce unnecessary hospital admissions and readmissions. The objective of the current study is to determine the feasibility of incorporating a triage instrument, the “Patient Vulnerability Assessment” tool, to triage case manager evaluations of older ED patients.

**Methods:** The Patient Vulnerability Assessment (PVA) tool, a 16-item assessment of the needs of older adults, was developed and applied by research assistants to patients age 65 years and older in a large academic ED. PVA findings were distributed to ED case managers who used the information to help determine the level of case management intervention needed to facilitate transitions of care. Qualitative data was collected from case managers on the utility of the tool in triaging older adults.

**Results:** For the 51 older adult patients that were assessed using the PVA, 17 patients were seen by a case manager. Among patients for whom the case manager saw the patient after reviewing the PVA (N=12), the PVA helped case managers decide to see the patient in 83% of cases. Of the 34 patients not seen by a case manager, the PVA helped case manager decide not to see the patient in more than half of the cases. Case managers positively received the PVA as a viable way to identify at-risk older adult patients in the ED.

**Conclusion:** The Patient Vulnerability Assessment tool informed case manager decision making regarding when to evaluate older ED patients, and has the potential to triage and expedite case manager evaluations in the ED. A randomized control trial is needed to assess the impact of this tool on ED length of stay, admission rates, and the quality of the ED experience for older adults.
D40 GEDI WISE: Feasibility of tablet-based advanced care planning education for older adults in the Emergency Department

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Supported By: Center for Medicare & Medicaid Innovation

Background

Little research has been conducted on how older adults interact with computers, tablets, and smart phones in the Emergency Department (ED). PREPARE is an on-line advanced care planning educational tool designed for older adults verified as easy to use by diverse, older adults on computers in senior centers. How older patients may interact with PREPARE on tablets in the ED would offer insight about the use of tablets (iPads) as a tool with geriatric patients in the ED.

Method

This prospective, observational pilot study is part the CMMI GEDI WISE (Geriatric ED Innovations in care through Workforce, Informatics and Structural Enhancement) program in NY. Patients included were English speaking and 65 + years of age. Patients were excluded if deaf, blind, had acute disease (e.g., trauma, MI) or required advanced support. In the ED, patients were offered PREPARE on an iPad and asked questions about its use (e.g., steps completed out of 5, ease-of-use on a 10-point scale with 10 being the easiest) and demographics.

Results

In this pilot, the mean age of the 26 patients surveyed was 73 years; 54% were female; 35% were white, 19% Hispanic/Latino, and 15% other race/ethnicity. Fifteen agreed to use PREPARE. Patients viewed a mean of 1.3 modules (sd 1.0) and the mean ease of use was 9.3 (sd 1.6). The mean age of those interested vs. not was 73 and 74, respectively (p=0.61). There were no gender or race differences (p=0.46 and p=0.51) and 60% of those with some college or more were willing to participate vs. 55% of those with high school or less (p=0.78). Of the 11 patients not interested in PREPARE 7 reported fatigue (“feeling too tired”).

Conclusion

In this pilot study, the majority of older adults in the ED were willing to use iPads to view PREPARE. Patients reported that the PREPARE module, designed with older adults in mind, was easy to use in the ED setting. iPads appear to be a feasible method for communication with diverse older adults regardless of age, gender, race/ethnicity, or education. A larger study is currently underway.

D41 Cognition and activities of daily living of elderly people affected by the Great East Japan Earthquake: A three-year cohort study

Department of Geriatrics and Gerontology, Institute of Development, Aging and Cancer Tohoku University, Sendai, Japan.

Supported By: Health Labour Sciences Research Grant and Grant-in-Aid for Scientific Research (KAKENHI).

In 2011, a magnitude 9.0 earthquake hit the northeast part of Japan, followed by enormous tsunamis. This tsunami destroyed coastal cities and killed nearly 20,000 people. Many people who lost their houses in the disaster are still forced to live in temporary apartments. Many health hazards, such as increased frequency of pneumonia, cardiopulmonary diseases, stroke, and gastrointestinal ulcer, have been reported. We recruited 686 elderly people who lived in the temporary apartments in Kesennuma, Japan, and examined cognitive functions at 1, 2, and 3 years after the disaster. The program included a touch-panel computer comprising 15 questions that evaluate memory, orientation, and pattern recognition. The highest (best) score is 15, and scores of <13 are considered to be indicative of cognitive impairment. According to the results, 33% of the elderly people were suspected to have cognitive impairment at 1 year after the disaster. This was the first report that epidemiologically investigated the prevalence of cognitive impairment in elderly people living in temporary apartments. After the first report, we performed consecutive second and third examinations in the following years. There was no statistically significant increase in the percentage of elderly people with cognitive impairment (33% to 36%). In addition, their mental status in the following years was better than that in the first year, i.e., the scores on the Athens Insomnia Scale and Kessler Psychological Distress Scale, which evaluate insomnia and psychological distress, respectively, significantly improved. However, there are concerns about the progression of frailty, because their grip (kg) significantly weakened during the subsequent 2 years (23.8 to 23.3, p < 0.001). Three years have already passed since the disaster occurred and a high prevalence of dementia and progression of frailty is suspected. Thus, further research and studies are warranted to establish activity programs to prevent these negative impacts on elderly people.

D42 Feasibility and Validity of Life Space Mobility Assessment in Critically Ill Adults


Background: Pre-hospital function and interaction with society may have prognostic value in ICU outcomes. Our objective was to test the feasibility and validity of Life Space Mobility Assessment (LSA) in a population of critically ill adults.

Methods: Life-space mobility during the 4 weeks prior to hospital admission was assessed from adult patients (n=35) or their proxy respondents (n=49) at ICU admission. The LSA measures mobility distance (5 levels), frequency, and level of assistance needed; all three components were summarized in a composite score (CS, range 0-120, higher=lower mobility). The maximal life space (LS-M) was defined as the farthest distance level of travel achieved. Patients who were unable to travel out of town without assistance were defined as having restricted life space (RLS).

Results: In our cohort (n=84), patients admitted from skilled nursing facilities (n=13) had lower life space mobility compared to those admitted from home (n=71) (CS median (interquartile range) 20 [12-32] vs 64 [40-100], p=0.0001). Of 71 patients admitted from home, lower maximal life space was associated with institutionalization: 100% of patients with LS-M Conclusion: Life Space Assessment is feasible in critically ill patients and may have construct validity as a patient-centered measure of mobility. Larger studies should explore changes in life space after ICU treatment and whether restricted life space prior to hospitalization decreases the chances of being discharged home after hospitalization.
**Baseline Correlates of Restricted Life Space**

<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>Restricted Life Space</th>
<th>Unrestricted Life Space</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean years (standard deviation)</td>
<td>61.6 (9.4)</td>
<td>18.40 (9.0)</td>
<td>0.022</td>
</tr>
<tr>
<td>APACHE-II, mean (standard deviation)</td>
<td>64 (23.6)</td>
<td>55.8 (19.9)</td>
<td>0.088</td>
</tr>
<tr>
<td>Education &gt; High School, n (%)</td>
<td>13 (34.1)</td>
<td>25 (62.5)</td>
<td>0.009</td>
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<tr>
<td>English as primary language</td>
<td>34 (77.5)</td>
<td>38 (95.0)</td>
<td>0.020</td>
</tr>
</tbody>
</table>

aDefined as Clinical Frailty Score >4
bDefined as Memory Impairment Screen

### D43

**Describing Injuries in Geriatric Patients: Development of a Comprehensive Taxonomy for Research and Practice**


Supported By: American Federation for Aging Research

**BACKGROUND:** Little literature exists that describes classification and description of accidental and non-accidental injuries in older adults. A comprehensive classification system for geriatric injuries would be valuable for research and practice. In preparation for a study of injury patterns in elder abuse, our goal was to develop a comprehensive taxonomy of relevant types and characteristics of injuries in geriatric patents.

**METHODS:** We conducted an exhaustive review of the medical and forensic literature in MEDLINE and Scopus that concentrated in child abuse and intimate partner violence and that focused on injury types, description, patterns, and analysis. We then prepared iteratively, through consensus with a multi-disciplinary, national panel of elder abuse experts, a comprehensive classification system to describe these injuries.

**RESULTS:** We identified 12 unique injury types, e.g. bruise, abrasion and skin tear, in 166 precise locations within 6 body regions. For each injury type, we established 8-12 critical descriptive characteristics, such as size, shape and cleanliness. Innovative features of the taxonomy include the description of “non-visible” injuries resulting from assault or trauma and the inclusion of injury types previously described only in highly specialized forensic literature, such as traumatic alopecia. Additionally, we included the mechanism and circumstances surrounding an injury as described by patients and other source(s).

**CONCLUSION:** Our comprehensive geriatric injury taxonomy systematically integrates and expands on existing forensic and clinical research. This new classification system may help standardize the description of geriatric injuries and patterns among clinicians and researchers, with the long-term benefit of increased confidence in physical elder abuse identification. Next steps include evaluating the efficacy of this taxonomy.

### D44

**A Snapshot of Our Palliative Care Program: A Community Hospital in Suburban St Louis, Missouri**

E. Leung, P. Kurlandski, J. Oberle. Internal Medicine, St Luke’s Hospital, Ballwin, MO.

According to the World Health Organization, palliative care improves the quality of life for patients and their families when faced with a life-threatening illness; done with prevention and relief of suffering. We are a community hospital located in St Louis, Missouri with an established Palliative Care program and our goal is increase awareness of palliative care and to prompt greater use of the palliative care services. Palliative care offers a support system for patient as they cope with their chronic illnesses, it can enhance the quality of life for the patient and provides great relief from pain and distress. We present data from our program which as been collected since January 2012 (Table 1). Data includes information on the types of palliative care Consults we receive and the patients’ discharge.

The hospital has achieved multiple goals in the last three years. Some of the goals that have been achieved in the last three years include opening three hospitals rooms particularly dedicated to palliative care, increasing and continued teaching to particular divisions and increasing transfers from patients in the hospital to in-house hospice.

Our future goals include moving forward to further increasing use of the palliative care program, initiating palliative care discussions earlier, and increasing the education for palliative care by targeting residents and attending staff.

We believe that our program in Palliative Care has been doing well and many goals have been achieved. However there still lies room for improvement and future goals to better ameliorate the current palliative care program.

### D45

**Osteoporosis and fractures: the inattention of non geriatricians with the screening and treatment.**

F. G. Martin, E. Papa, J. Borges, A. Frisoli. Cardiology, Federal University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil.

Supported By: No financial support.

Osteoporosis (OP) and fragility fractures are very prevalent among elderly people and they are associated with disability, hospitalization and mortality. However, the screening for osteoporosis is not usually done by medical doctors for elderly people. Aim: To evaluate the prevalence of OP with and without previous fractures in elderly patients, which were not diagnosed by cardiologists. Secondly, we assessed the perception of the cardiologists of in to treat osteoporosis, if previously diagnosed.

**METHODS:** Cross-sectional analysis of Longitudinal study of Sar-copenia and Osteoporosis in Heart Failure Older adults outpatients. Exclusion criteria: dementia, cancer, neurodegenerative diseases, assistant advises. Variables: personal data, medications, osteoporosis was diagnosed by WHO criteria. All patients were undergone by DXA analysis: lumbar spine, proximal femur and distal radio. Previous fractures were evaluated at baseline. All medical doctors were questioned about the importance of diagnosis and to treat OP. Results: Until this moment 91 patients were randomized with mean age of 79(±3.2), 41% were men. 59% of the sample presented osteoporosis. Previous fractures occurred in 27.7% of women and 32.3% of men. 78.6% of men and 53.1% women were diagnosed at study analyses. Only 8.2% (p<0.001) of women and none men with previous diagnosis of OP were taking antiresorptive medications. 100% (p<0.001) of cardiologist did not feel the need to diagnose and treat OP at the moment of cardiovascular evaluation, even, if the patient presented previous fracture.
Conclusions: elderly outpatients presented higher prevalence of osteoporosis and the non geriatricians did not feel the need to screen it. Elderly patients evaluated to specific disease don't receive attention to others diseases treatments.

D46
Identifying Patients at High Risk for Mortality in the Program of All-Inclusive Care for the Elderly
H. Noah, P. D. Sloane, J. Hollingsworth, D. Reed. University of North Carolina at Chapel Hill, Carrboro, NC.

Background: Estimating a patient's prognosis can inform goals of care. The Program of All-Inclusive Care for the Elderly (PACE) serves a unique population – nursing home eligible persons who live in the community. In our clinical experience, community-derived and nursing home-derived prognostic tools tended to give divergent estimates. Therefore, we sought on a preliminary basis to identify factors that predict mortality risk in the PACE population.

Methods: Data were abstracted from medical records of participants in a 5-year-old PACE program. Based on the prognosis literature, 23 variables were selected and abstracted for study: age; sex; body mass index (BMI); blood pressure; unintentional weight loss; dependency in bathing, dressing, toileting, transferring, feeding; incontinence; metastatic cancer; congestive heart failure (CHF); COPD; diabetes; HbA1c>8; chronic kidney disease; arthritis; depression; cognitive status; 6-minute walk; timed up-and-go; and grip strength. Bivariate analyses were used to identify variables associated with 2-year mortality at p<0.10. These were used to create a summary index, and its statistical properties studied.

Results: Of 119 participants for whom two years of data were available, 32 had died within two years. Eight measures were associated with increased mortality at a p<0.10: dependence in bathing (p=0.066), congestive heart failure (p=0.078), a history of falls (p=0.011), chronic hyperglycemia (p=0.064), dementia (p=0.032), age over 85 (p=0.004), timed up-and-go impairment (p=0.033), and BMI under 30 (p=0.009). These eight measures were combined into a summative index, with the results shown in Table 1.

Each increase of one point in the index was associated with an increase of 2.7 in the odds of dying (p<0.001), and the Hosmer-Lemeshow test for goodness of fit (x²=22.5, p=0.52) indicated good ability to predict mortality.

Conclusions: Results suggest that the eight aforementioned variables are most strongly associated with 2-year mortality, and that they can be used to create a summary index, which in this preliminary work performs well. Further study with a larger sample size is needed to increase or decrease support for the prognostic value of these variables.

Table 1

<table>
<thead>
<tr>
<th>Index score</th>
<th>0-2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
<td>subjects with score</td>
<td>30</td>
<td>31</td>
<td>16</td>
<td>14</td>
<td>8</td>
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</tbody>
</table>

D47 Encore Presentation
Life Satisfaction Predicts Dementia in Community-Living Older Adults
L. Peitsch,1 S. Tyas,2 V. Menec,3 P. St John.1 1. University of Manitoba, Winnipeg, MB, Canada; 2. University of Waterloo, Waterloo, ON, Canada.

Supported By: Manitoba Health; the Seniors Independence Research Program (NHRDP), Grant Number: 6606-3954-MC(S); CIHR New Emerging Team Grant Number: HAS-63179

Background: A rural residence may be associated with a higher risk of dementia. Objectives: To determine if living in a rural (vs urban) region is associated with: 1. A higher risk of dementia at baseline; and 2. A higher risk of developing dementia over a five-year period in those with normal baseline cognition. Methods: Secondary analysis of an existing prospective cohort study. Setting: The Canadian prairie province of Manitoba, which has a large rural population and a clear demarcation between rural and urban settings. Population: 1751 adults age 65+ and residing in the community were sampled from a representative population-based registry, which included the entire province. The initial assessment was in 1991 with follow-up five years later. Measures: Age, gender and education were self-reported. Rurality was determined by the population of the Census subdivision, with a population of >19 999 considered urban (comparable to US Beale code of <6) and the remainder of the province considered rural. Cognition was assessed using the modified Mini-mental State Examination (3MS) with those scoring <78 followed up with a clinical examination for dementia using DSM-III-R criteria. Cognitive status was categorized as intact, dementia or Cognitive Impairment, No Dementia (CIND). Analyses were adjusted for age, gender and education. Results: There were few cognitively intact people at time 1 with low LS. Overall LS predicted death, dementia, and CIND five years later (Figure). In logistic regression models, the unadjusted Odds Ratio (OR; 95% confidence interval) for dementia at time 2 was 0.72 (0.55, 0.95) per point on the LS scale, with the adjusted OR 0.68 (0.50, 0.93). However, no individual domain of LS predicted dementia, although the competing risk from mortality was high for some items. Conclusions: A basic global measure of LS predicts dementia over a five-year period in older adults without cognitive impairment. No individual aspect of LS predicted dementia, but there was considerable competing risk from mortality.

D48 Encore Presentation
Is a rural residence associated with dementia?
J. Seary,1 S. Tyas,2 V. Menec,3 P. St John.1 1. University of Manitoba, Winnipeg, MB, Canada; 2. University of Waterloo, Waterloo, ON, Canada.

Supported By: Manitoba Health; the Seniors Independence Research Program (NHRDP), Grant Number: 6606-3954-MC(S); CIHR New Emerging Team Grant Number: HAS-63179

Background: A rural residence may be associated with a higher risk of dementia. Objectives: To determine if living in a rural (vs urban) region is associated with: 1. A higher risk of dementia at baseline; and 2. A higher risk of developing dementia over a five-year period in those with normal baseline cognition. Methods: Secondary analysis of an existing prospective cohort study. Setting: The Canadian prairie province of Manitoba, which has a large rural population and a clear demarcation between rural and urban settings. Population: 1751 adults age 65+ and residing in the community were sampled from a representative population-based registry, which included the entire province. The initial assessment was in 1991 with follow-up five years later. Measures: Age, gender and education were self-reported. Rurality was determined by the population of the Census subdivision, with a population of >19 999 considered urban (comparable to US Beale code of <6) and the remainder of the province considered rural. Cognition was assessed using the modified Mini-mental State Examination (3MS) with those scoring <78 followed up with a clinical examination for dementia using DSM-III-R criteria. Cognitive status was categorized as intact, dementia or Cognitive Impairment, No Dementia (CIND). Analyses were adjusted for age, gender and education. Results: There were few cognitively intact people at time 1 with low LS. Overall LS predicted death, dementia, and CIND five years later (Figure). In logistic regression models, the unadjusted Odds Ratio (OR; 95% confidence interval) for dementia at time 2 was 0.72 (0.55, 0.95) per point on the LS scale, with the adjusted OR 0.68 (0.50, 0.93). However, no individual domain of LS predicted dementia, although the competing risk from mortality was high for some items. Conclusions: A basic global measure of LS predicts dementia over a five-year period in older adults without cognitive impairment. No individual aspect of LS predicted dementia, but there was considerable competing risk from mortality.
spective analyses were conducted on those with no dementia at time 1 and who had complete data and survived until time 2 (N=1073). Logistic regression models were constructed for the outcome of dementia at time 1 and time 2, adjusted for age, gender and education. Results: Those living in rural regions were more likely to be male, and to have lower education levels. Living in a rural region was not associated with dementia in cross-sectional analyses: 4.5% of those living in rural regions were diagnosed with dementia vs 3.6% in urban regions (p=0.38, chi-square test). The adjusted Odds Ratio (AOR; 95% confidence interval) for dementia was 1.03 (0.59, 1.81). Living in a rural region was also not associated with dementia in prospective analyses: 10.7% of the rural population was diagnosed with dementia at time 2 vs 11.5% of the urban population (p=0.71); the AOR was 0.78 (0.50, 1.21). Conclusions: We did not note any rural-urban differences in the risk of dementia.

D49 Alcohol Use and Social Networks in Older Adults
S. Spilman,1 D. Liao,1 P. Sacco,1 A. Moore.1 1. Oakland University William Beaumont School of Medicine, Rochester Hills, MI; 2. MSTAR Program, David Geffen School of Medicine at UCLA, Los Angeles, CA; 3. Division of Geriatric Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA; 4. University of Maryland School of Social Work, Baltimore, MD.
Supported By: MSTAR Program Summer 2014 (Administered by AFAR and National Institute on Aging)

Background: Bigger social networks and more social support are associated with alcohol consumption compared to abstinence. However, individuals with alcohol dependence have smaller and less diverse social networks compared to those with alcohol abuse disorder or no alcohol use. Because few studies have examined this issue in middle-aged and older adults, we asked whether social network diversity and perceived social support vary among different groups of drinkers.

Methods: We used the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Wave2 2004-2005 data for 15,580 people ages 50 and above to examine social network diversity (using Social Network Index-SNI) and perceived social support (using Interpersonal Support Evaluation List-12) among current drinkers, former drinkers and lifetime abstainers and again among infrequent, light, moderate and heavy drinkers.

Results: Drinkers had significantly more diverse social networks (SNI range from 0-12 groups including children, neighbors, etc) (mean 5.59) compared to former drinkers (mean 5.01) and lifetime abstainers (mean 5.00). Among current drinkers, heavy drinkers had lower social network diversity (mean 5.59) compared to other drinkers (range 5.45 to 5.86). Adjusted regression analyses showed that drinkers had significantly more diverse networks compared to lifetime abstainers; odds ratio 1.08 (95% CI 1.03-1.13) but not former drinkers. Compared to light drinkers, heavy drinkers and infrequent drinkers had significantly less diverse social networks. Odds ratio 0.90 (95% CI 0.85-0.98) for heavy drinkers and odds ratio of 0.95 (95% CI 0.90-1.00) for infrequent drinkers. Social network diversity did not differ between light and moderate drinkers. No significant differences were found between any of the drinking groups in perceived social support.

Conclusion: Current drinkers have more diverse social networks compared to nondrinkers and light drinkers have more diverse social networks compared to heavy or infrequent drinkers. These findings provide evidence of the positive associations of measures of social health to light drinking in middle aged and older populations.

D50 Encore Presentation
Non-melanoma skin cancer: an analysis of risk factors and clinical characteristics of malignancies common to geriatric populations, with a focus on minority ethnic groups

Background: Non-melanoma skin cancers (NMSCs) comprise the majority of cancer diagnoses in the United States (US), affecting approximately 3.5 million people annually. Historically, most NMSCs have occurred in Caucasians, with infrequent presentation in minority ethnic groups. However, in recent years, the incidence of NMSCs, particularly in Hispanics and Asians, has reportedly been increasing in the US. As Hispanics and Asians are two of the most rapidly expanding ethnic groups in the US, the rise in NMSCs in these populations is of particular concern. Currently, data on clinical characteristics of NMSCs in Hispanics and Asians is still very limited, and a thorough analysis of NMSC risk differences among Hispanic, Asian, and Caucasian patients is lacking.

Objective: To evaluate the incidence, risk factors, and clinical presentation of NMSCs in Hispanic and Asian populations within a single academic institution.

Methods: We conducted a 5-year retrospective chart review of all Mohs micrographic surgery (MMS) cases presenting between March 2007 and February 2012 at UCSD Dermatologic and MMS Center. We then assessed the differences in disease characteristics in Hispanic and Asian patients, in comparison to Caucasian subjects.

Results: Within a 5-year study time period, 4029 cases of NMSCs were seen. Of these, 3881 (96.3%) were in Caucasians, 115 (2.9%) were in Hispanics, and 33 (0.8%) were in Asians. The average presenting age was 66.6 (Caucasians), 62.1 (Hispanics), and 70.3 (Asians). Hispanic patients were significantly younger than Caucasians and Asians (p=0.003, 0.023 respectively). The majority of NMSCs in Caucasians occurred in men, while this gender ratio was reversed for both Hispanics and Asians. There were significantly more cases of NMSCs occurring in the central facial areas in Hispanics. Race was not a significant predictor for specific NMSC type.

Conclusions: Unlike other skin cancers, NMSCs do not appear to present with more severe lesions in Hispanics and Asians, when compared to Caucasians. However, Hispanic and Asians are the fastest growing ethnic populations in the US, and women from these groups appear to be at a higher risk of developing NMSCs. Given this increased risk, it is important to emphasize the recommendations for ultraviolet light exposure prevention and protection to these populations.

D51 Cross-cultural adaptation of the POLST form to Brazil
V. F. Mayoral,1 F. B. Fukushima,1 A. Ferrari Jacinto,1 P. J. Villas Boas,1 R. Carvalho,1 A. Rodrigues,1 L. Carvalho,1 B. Polegato,1 M. Minicucci,1 L. Pinheiro,1 E. I. Vidal,1 1. Universidade Estadual Paulista - UNESP, Botucatu, São Paulo, Brazil; 2. Fundacao Camargo Correia, Sao Paulo, SP, Brazil.
Supported By: FAPESP (Sao Paulo Research Foundation)

Background: In Brazil most health care professionals and institutions still have not included discussions about preferences of care at the end of life with patients with decreased life expectancy as part of their daily routine. This represents a major gap for the care at the close of life that is frequently associated with avoidable suffering of patients and their loved ones. In 1991 the Physician Orders for Life-Sustaining Treatment (POLST) program was started in the USA. It embodies a coordinated system to elicit, record and communicate patients’ and families’ preferences about life-prolonging treatments for individuals with decreased life expectancy across a variety of health care settings.
Because of its objectivity and portability the POLST paradigm has spread across the USA and currently represents one of the most successful strategies to elicit and record preferences of care at the end of life in that country. Since there are not any similar instruments in Brazil, we conducted the cross-cultural adaptation of the POLST form to the Brazilian context.

Methods:
Three native-speakers of Brazilian Portuguese fluent in English conducted independent forward translations of the 2014 version of the Oregon POLST form. Two of them were physicians and the third translator was a lay English teacher. In a second step a panel composed by palliative care specialists, geriatricians, internists, medical students and a patient performed the reconciliation of the 3 translations into a single preliminary version. Subsequently 2 native-speakers of American English fluent in Brazilian Portuguese performed independent backward translations of the reconciled Brazilian Portuguese version. The backward translations were further compared to the original English version and the first reconciled version was revised further. Finally we conducted a test of the last version with 10 patients and 10 physicians.

Results:
We arrived at a cross-culturally adapted version of the POLST form to Brazilian Portuguese

Conclusion:
The Brazilian adaptation of POLST may become instrumental for the improvement of communication and documentation practices about preferences of care at the end of life in Brazil. Since this is the first adaptation of POLST for use outside the USA, it may also encourage the adaptation and use of POLST in other countries.

DS52
End of Life Care in a Case of Metastatic Axillary Synovial Sarcoma
I.C. Neel, S. Hsu. Internal Medicine Residency, University of California, San Diego, San Diego, CA.

Introduction: Metastatic synovial sarcoma is a disorder with a 25% 2-year survival rate. The discussion of cure versus palliation is one that commonly arises when dealing with a metastatic cancer, and is always difficult. This is made more so with younger patients, however, when such a discussion is not held, it can result in a more difficult discussion at the end of life, and has higher risk of complicated bereavement amongst family members.

Case: A 27 year old female with metastatic axillary synovial sarcoma presented to the emergency department for shortness of breath. She had previously undergone seven cycles of ifosfamide, as well as nodule resection from her lungs. She declined further chemotherapy. CT chest performed in the ER demonstrated a large right atrial mass with extensive thrombotic disease. Bland thrombus versus tumor thrombus could not be excluded. CT surgery requested an MRI be obtained for better determination of the nature of the thrombus. Despite increasing oxygen delivery, the treating team could not maintain saturations above 80%. Discussion of futility was had by the consulting ICU team but the patient wished to pursue intubation to try to obtain the MRI. The patient was intubated without improvement in her oxygenation, and became progressively more hypotensive. Despite maximal critical care support the patient’s hypotension and hypoxia resulted in cardiac arrest, and she was pronounced dead after thirty minutes of resuscitative efforts.

Discussion: Throughout this patient’s clinical course, from time of diagnosis to death, there were numerous opportunities for patient education on the severity of her disease and inability to achieve cure. Each point of contact resulted in discussion of further treatment options, instilling a sense of false hope in the patient and her family. This ultimately made the family unable to bear the decision of making the patient DNAR. Studies in palliative medicine have found that complicated bereavement in family members can be offset in situations such as these via a palliative paternalism model at the end of life. The optimal timing for advanced care planning, though, is not when the patient undergoes a terminal event such as massive pulmonary embolus, but rather in the outpatient setting when the grief of pending loss is not eminent.
**D54**

**Advance Care Planning in Early Dementia: Are Health Care Proxy and Living Will Enough?**

K. M. Makino, A. P. Porsteinsson. University of Rochester School of Medicine & Dentistry, Rochester, NY.

Supported By: The project was supported by the University of Rochester CTSA award number UL1 RR024160 from the National Center for Research Resources and the National Center for Advancing Translational Sciences of the National Institutes of Health and was partially supported by the National Institutes of Health, Grant R25 MH071544/MH/NIMH (PI: Dilip V. Jeste, M.D.) and the University of California, San Diego, Stein Institute for Research on Aging. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

**Background:** Patients with mild cognitive impairment (MCI) and early dementia are unique in that decision-making capacity may be lost due to their progressive disease. Early Advance Care Planning (ACP) is thus essential. Following a prior literature review that found room for improvement in ACP for patients with dementia, we designed a pilot study to investigate ACP in patients with MCI or early dementia. Present objectives are to report the prevalence of advance directives (ADs) completion in our sample and to evaluate ACP communication and barriers.

**Methods:** We used mixed quantitative/qualitative methods in an exploratory interview study of patients aged ≥50 with MCI or early dementia and their study partners (SPs). Subjects were recruited from memory clinics and a dementia research program, and were eligible if they scored ≥18 on the MoCA and <3 on the PHQ-2, and had a SP who knew them well. The first author interviewed each pair to collect the subject’s background information and status of ADs completion, including Health Care Proxy (HCP), Living Will (LW), and Medical Orders for Life Sustaining Treatment (MOLST). The SP also separately answered a written survey addressing the subject’s previous consideration of and conversations about ACP as well as barriers to ACP.

**Results:** The total target sample is 30 subjects; 17 have been interviewed to date (6F, 11M). Twelve have MCI and five have mild dementia. SPs are primarily subjects’ spouses. All subjects had completed a HCP at one time, although one HCP was not currently active. Twelve had a LW and one had a MOLST.

From SP survey responses, eight subjects had indicated they thought about ACP/ADs previously and 11 had prior meaningful discussions about ACP/ADs with at least one other person; four did both of these and 15 did at least one. Most subjects had spoken with the SP about ACP/ADs (15), and some spoke with family member(s) other than the SP (9), health care providers (7), and other friends/peers (4). Formal qualitative analyses of open-ended responses are pending. Barriers listed by the SPs included inertia, procrastination, hesitation to discuss, and denial of possible future needs.

**Conclusions:** In this limited sample of patients with MCI and early dementia, HCP and LW completion was actually high. However based on SP report, even when ADs are documented making sure that all significant stakeholders are aware of care preferences could be improved upon.

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**D55**

'The Double Effect' of Capacity Assessment on Care Goals for a Neglected Elder with Advanced Dementia Superimposed by Delirium

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Assessing capacity in patients with delirium and advanced dementia is difficult. This case highlights the impact of capacity assessment on the outcome of patient care goals.

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**D56**

**Toxicity of amyloid beta proteins on SH-SY5Y cells and determination of an optimal dose of methylene blue that is nontoxic to the SH-SY5Y cells**

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There are many theories that explain the etiology of Alzheimer’s disease but the exact mechanism and pathophysiology of this disease remains unclear. The hallmark of the disease is the identification of amyloid beta plaques in the brains of Alzheimer’s patients during autopsy and tangles of hyper phosphorylated Tau proteins but why and how these compounds mediate their neurotoxicity is still a matter of debate. Knowing the exact mechanisms and the biochemical pathways through which these compounds mediate their neurotoxicity could open a whole new area of research for targeted medical therapy. There’ve been some studies establishing the neurotoxicity of amyloid beta proteins in different cell lines but there are also studies establishing other factors of neurodegeneration including the tau protein, glutamate toxicity, oxidative stress which makes drawing a conclusion for amyloid beta as the instigator of the disease challenging but there is a general consensus that amyloid beta plays a role in the pathophysiology of Alzheimer’s disease. I investigated the toxicity of amyloid beta proteins on SH-SY5Y cells and also determined an optimal dose of methylene blue that is nontoxic to the SH-SY5Y cells. SH-SY5Y is a human derived cell line used in most labs for scientific research and my decision to use these cells was based on the fact that few studies have been done using these cells to establish amyloid beta toxicity. SH-SY5Y cells were plated on a 96 well plate and allowed to grow to confluency, after which the amyloid beta protein was added to the cell culture and incubated for two days. A cell viability assay was performed upon the outcome of patient care goals.
then performed on the cell cultures. My findings showed amyloid beta protein is toxic to SH-SY5Y cells and the toxicity is dose dependent. I was also able to find an optimal dose of methylene blue that is non-toxic to SH-SY5Y cells. Methylene blue has been in clinical use for a long time and some in vivo studies have shown that it can improve cognitive function in rats by increasing the activity of cytochrome c oxidase by up to 25%. With these findings, further investigation into the mechanism through which the amyloid beta protein mediates its toxicity on SH-SY5Y cells can be carried out. Also, using the optimal dose of methylene blue, I intend to further investigate if methylene blue can reverse the neurotoxic effects of the amyloid beta protein on SH-SY5Y cells.

D57

Pre-clerkship Observerships to Increase Early Exposure to Geriatric Medicine

Queen’s University, Kingston, ON, Canada.

Supported By: No financial support was provided for this project.

Background: To foster interest in geriatric care, the Queen’s Geriatrics Interest Group (QGG) collaborated with the Division of Geriatric Medicine to arrange a Geriatrics Pre-Clerkship Observership Program.

Methods: Forty-two pre-clerkship medical students participated in the program between October 2013 and May 2014. Participants were paired with a resident and/or attending physician for a four-hour weekend observership on an inpatient geriatric rehabilitation unit. The program was assessed using: (1) internally-developed Likert scales assessing student’s experiences and interest in geriatric medicine before and after the observership; (2) University of California Los Angeles - Geriatric Attitudes Scale (UCLA-GAS); and (3) narrative feedback.

Results: All participants found the process of setting up the observership easy. 72.7% described the observership experience as leading to positive changes in their attitude toward geriatric medicine and 54.5% felt that it stimulated their interest in the specialty. No statistically significant change in UCLA-GAS scores was detected (mean score pre- versus post-observership: 3.5 ± 0.5 versus 3.7 ± 0.4; p=0.35). All participants agreed that the program should continue, and 90% stated that they would participate again.

Conclusions: The observership program was positively received by students. Structured pre-clerkship observerships may be a feasible method for increasing exposure to geriatric medicine.

D58

Do Fourth-Year (M4) Medical Students Recognize Potentially Dangerous Medications for the Elderly?

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Background: As the population of 65+ grows, medical training must be able yield physicians capable of caring for geriatric patients. This study sought to identify whether M4 medical students can identify potentially harmful medications according to the AGS Beers Criteria and show clinical reasoning for discontinuation.

Methods: Twenty-two graduates (approximately one fifth of the class) of FSU COM’s required M4 Geriatrics Clerkship consented to a systematic evaluation of their medication review (MR) assignments. Students on the clerkship were asked to write up one patient encounter in which the student performed a complete MR according to criteria in the clerkship objectives. Patient ages ranged from 55 to 97. We looked at the number of medications the patients were initially prescribed and compared it to the number of medications the patient had after the MR. We used the AGS Beers Criteria to identify potentially dangerous medications. Likewise, we compared the number of medications listed in the Beers Criteria before and after the MR based upon student recommendations. We performed a search for the words “Beer” and “Beer’s” to identify whether the students discussed Beers Criteria medications. We also examined the justification given by the students of their choice to continue, discontinue, or adjust a Beers medication.

Results: The mean number of medications per patient decreased from 11 (range 5-25) prior to the MR to 9 (range 4-19) after the MR. We also found a decrease in the mean number of medications per patient meeting Beers Criteria from 2 (range 0-3 medications) medications to 1 (range 0-3). We found that 15 students referenced Beers Criteria in their discussion of the assignment and that 11 students chose to adjust the medications listed in the Beers Criteria. We also found that 4 out of the 22 total patients were not prescribed any medications listed in Beers Criteria prior to the MR. There were 40 instances of Beers’s list drugs across patients. In 14 instances the student recommended to discontinue the drug, 26 instances to continue, 3 with a dose adjustment.

Conclusion: Our M4 medical students are capable of identifying potentially harmful medications and weighing risks and benefits to adjust/discontinue their patients’ medications when given clear objectives on a written MR assignment.

D59

Increasing Performance of Geriatric Functional Assessments: Educating Residents in Prevention

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Background: Geriatric functional assessments (GFA) identify modifiable risk factors, and so are crucial in preventing hospitalizations among the elderly. Studies have shown the utility of GFAs in rehab and hospital settings. However, few have analyzed the effects of educating residents re how to perform, as well as the importance of performing GFAs in outpatient settings. Goal of this study: to analyze whether GFAs were being routinely performed on adults aged 60+ in our Family Medicine Center (FMC), and if not, whether education alone or education with instructional handout would increase frequency of GFAs. Methods: Needs assessment survey was performed among FM residents. Chart review was performed on 100 randomly selected adults 60+ seen at FMC during prior year. Resident notes were reviewed for the 11 criteria of GFA: vision, hearing, arm function, leg function, mental function, depression, home environment, ADLs, incontinence, nutrition level, and social support. Score of 5/11 was considered a complete geriatric assessment. Following initial chart review, residents were divided into 2 groups: Lake Team listened to a GFA lecture, and was given a handout for each geriatric visit; Garden Team only listened to a lecture. Subsequent chart review was performed to assess criteria met among resident notes over a 2 month period following the lecture. Results: 75% of residents didn’t know how to perform a GFA and 94% didn’t perform them in FMC. Of the resident notes for the selected patients, 55% scored 0/11, 20% scored 1/11, 17% scored 2/11, 5% scored 3/11, 1% scored 4/11, 1% scored 5/11,and 1% scored 6/11. 2% met criteria of 5/11. 2 months post-lecture, 59% scored 0/11, 21% 1/11, 10% 2/11, 4% 3/11, 3% 4/11, 2% 5/11, and 1% 6/11. 3% met criteria of 5/11, 2%from Lake Team and 1% from Garden Team. There was no clinically significant difference between the 2 chart reviews or the 2 teams. Conclusion: Education via lecture with or without a handout doesn’t increase the number of GFAs in the short term. Possible explanations: busy clinic schedules, lack of yearly physicals, large amount of pathology seen, short patient visits, and lack of staff help. Further research is needed to effectively implement GFA screening at FMC.
D60

Medicine Resident–Family Communication in the MICU: Exploring the Spectrum of Communication Events

Background: Communication about end-of-life care is one of the most challenging aspects of ICU care. The importance of the family meeting led by an intensivist is well-accepted. However, the family meeting does not stand in isolation, and many communication events precede a formal family meeting and do not involve attending physicians. In a teaching program, house staff may be the physicians who speak to families about interventions and prognosis in informal venues. This aspect of communication and the role of trainees, has been underappreciated and unexplored in the medical literature.

Methods: We performed a study of house staff communication at the Mt. Sinai St. Luke’s Intensive Care Unit. The ICU has generally 12-14 patients staffed by four intern-resident teams, led by a critical care fellow and attending. The project resident surveyed residents daily to record their communication events over a three-week period. Events were categorized according to venue, topic, and duration. Following the study period, a brief questionnaire concerning their experience was administered to the house staff. The questionnaire was given only once and participation was voluntary.

Results: Over a three week period, we recorded a total of 113 encounters with total time spent approximately 23 hours. Events included 97 bedside meetings and 26 phone encounters. Subject matter included prognosis in 38, clinical updates in 46, and goals of care in 22, and consent for interventions in 31. For some encounters, more than one subject was discussed. The residents spent an average of 77 min/day in communication with families. A post-ICU rotation survey was completed by 12 residents. The majority felt comfortable in providing medical updates to families. All had attended a family meeting led by an attending or fellow. Only half felt confident in discussing goals and DNR.

Conclusion: We describe an underappreciated aspect of communication by medicine residents who accomplish substantial communication with ICU families. The spectrum of communication involves informal meetings that occur at the bedside and on the phone and comprise important topics of prognosis and goals of care. Only 50% of residents feel prepared for these events. This results call for more attention, education, and preparation for these types of communication.

D61

Effectiveness of Educational Interventions for Practice Behavior Changes in Dealing with Fall Risks in the Geriatric Population
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Background: The goal of this study was to evaluate educational interventions for medical residents and its effectiveness in improving documentation of fall history and a multifactorial falls risk assessment.

Methods: A retrospective chart review from geriatric clinic was conducted over two years. In 2013, 49 pre and 50 post intervention charts and in 2014, 171 pre and 175 post intervention charts were included. In 2013, residents underwent an educational session. In 2014 residents received the same educational session and also reviewed an additional fall risk questionnaire filled by patients before each visit. Charts were reviewed for documentation of fall history and multifactorial falls risk assessment.

Results: The 2013 and 2014 EBP intervention did not significantly increase fall history documentation. The 2013 a significant increase was seen in medication review (73.5% pre to 94.0% post, p<.006) and assessment of continence (69.4% pre vs 92.0% post, p<.005). The 2014 intervention lead to an increase in assessment of gait (5.3% pre to 40.6% post, p<.005), continence (43.3% pre to 63.4% post, p<.005), and feet (52.6% pre to 64.0% post, p=.032). Comparing the intervention of 2014 to 2013, there was a significantly higher proportion of documentation of fall circumstances (p=.045), assessment of gait (p<.005), neuro physical exam (p=.02) but a reduced documentation of falls in past 365 days (p=.02) and reduced number of referrals for intervention once risk was identified. (p=.06), with no significant differences in the groups baseline pre-EBP intervention.

Conclusion: While educational sessions and supplementary education material for residents did not significantly increase their documentation of fall history, there were improvements in other aspects of the clinical encounter documentation. Further research is needed on ways to promote assessment of fall history and continued improvements in encouraging the completion of a multifactorial falls risk assessment.

D62

Effects of Adherence to a Mediterranean Style Diet on Functional Capacity Measures in Postmenopausal Women
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Supported By: Diet and Health Initiative, UCONN Storrs Internal Grant Competition

Background: There is supporting evidence from large epidemiological studies that adherence to a Mediterranean style diet (MedSD) is associated with lower risk of many chronic diseases and overall mortality. Poor functional capacity predicts higher morbidity and mortality as well as higher healthcare costs. We designed a small intervention trial with postmenopausal females to evaluate adherence to a MedSD and its effects on measures of functional capacity.

Methods: 16 postmenopausal women (age>65) on a typical American diet were selected. Subjects were educated by a registered dietician to alter their diet to replace other fats and oils with olive oil, replace meat with high n-3 LCPUFA fish such as salmon or tuna, replace high fat/high sugar and processed snacks with fruits, and incorporate vegetables, legumes, and whole grains in place of refined grains and high fat meats. Changes in Food Frequency Questionnaire scores, 3-day Diet Record, serum total fatty acids, anthropometry, physical activity, chair rise time, single leg time, hand grip strength between the typical diet period and intervention diet were compared using paired t-tests. Correlations were evaluated between dietary changes and physical performance changes.

Results: Subjects adhered to a MedSD. We did not find significant differences in hand grip strength or the Short Physical Performance Battery. Significant correlations were found between change in chair rise time and changes in intake of carbohydrates (r= 0.587) and trans and saturated fat (r=0.818).

Conclusions: This study suggests that certain aspects of the MedSD including reductions in saturated fat and carbohydrate consumption correlate with improvement in chair rise time. Inability to find other significant changes in primary outcomes was likely affected
by small sample size and physically robust participant group. Additionally, by demonstrating the participants’ ability to adhere to the MedSD, we are confident that this study design can be used for future studies with a larger group of frailter, older adults to assess the effect of MedSD on physical performance.

**D63**

**Rare cases of acquired tracheobronchomegaly**

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Mounier-Kuhn Syndrome is a rare disorder characterized by anomalous and diffuse dilatation of the trachea, and main bronchi, generally accompanied by bronchiectasis with recurrent respiratory tract infections. Majority of cases are congenital and usually diagnosed between ages of 20 and 50 years. Very few cases have been described in the literature with diagnosis over 65 years of age.

Hereby, we present a 78-year-old male with history of recurrent bronchial infections who was noted to have normal airways on imaging and later developed tracheobronchomegaly. We believe this case represents a rare acquired form of the disease.

**Case report:**

78yo Caucasian male with medical history of pulmonary fibrosis and recurrent respiratory infections presented to the ER complaining of worsening dyspnea and chest pain. Physical examination revealed a patient in acute distress, tachycardic, and tachypneic with bibasilar crackles and transmitted breath sounds. Labs revealed mild leukocytosis 13.5, no left shift.

Subsequent imaging of chest with high resolution showed dilated trachea and main bronchi with interstitial pneumonitis. The patient was noted to have a normal CT scan on prior admission.

**Discussion:**

Acquired tracheobronchomegaly or Mounier-Kuhn syndrome, is a rare disorder of unknown cause, described for the first time in 1932. The prevalence of Mounier-Kuhn syndrome although stated to be relatively low, has been noted in the above case in our hospital. Of note the patient was noted to have normal imaging studies on prior admissions and seemed to have acquired this anomaly.

Treatment for this syndrome is primarily limited to intense antibiotic therapy, respiratory therapy for secretions management, bronchodilators and corticosteroids during exacerbations.

A careful evaluation of airway anatomy in images is very important for patients presenting with recurrent lower respiratory infections, chronic cough or incomplete response to appropriate antibiotic therapy for pneumonia as we could be facing and failing to diagnose Mounier-Kuhn syndrome even in elderly patients.

**D64**

**The Baystate Frailty Study – Prevalence of Frailty in a Cohort of Hospitalized Elderly Patients**

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Supported By: Department of Medicine, Baystate Medical Center, Springfield, MA

**Background:**

Elderly patients have limited physiological reserves and decreased ability to compensate for stress, resulting in a delayed return to baseline function and an increased vulnerability to in-hospital and post-discharge complications.

The objectives of this study are to assess the prevalence of frailty and its association with in-hospital and post-discharge outcomes in hospitalized elderly patients (phase I) and to implement a coordinated care team approach to improve the outcomes of frail elderly patients (phase II).

**Methods:**

This is a prospective study including patients older than 65 years admitted for urgent surgeries, trauma, elective orthopedic surgeries and 3 frequent medical diagnoses (heart failure, COPD, pneumonia). In the first phase, we collected measures of frailty at admission using Edmonton Frailty Scale. Patients scoring >10 were classified as severely frail, 6-9 as mildly frail or vulnerable and 0-5 as non frail. Patients were followed with phone calls at one, two and three months after discharge.

**Results:**

Of the 212 patients who were enrolled till now, 110 were admitted for urgent surgeries or trauma, 38 for elective orthopedic surgeries and 64 for medical conditions. Mean age was 76.70 (SD = 8.3) and 131 were female (61.8%). The mean Edmonton Frailty Scale (EFS) for the entire patient cohort was 5.10 (SD = 3.6). Mean EFS was 4.7(SD = 3.4) for urgent surgery/truma patients, 7.2 (SD = 3.1) for medical patients and 2.8 (SD = 3.0) for elective surgeries. Overall 61.3% of patients were vulnerable-mildly frail and 14.2% were severely frail. Medical patients were the most likely to be frail (72%) and patients undergoing elective surgeries the least likely (5%).

168 patients consented for phone calls follow up and we were able to obtain follow up for 121 at 30 days, 100 patients at 60 and 57 at 90 days. At 30, 60 and 90 days after discharge 29%, 48% and 64% of patients returned to baseline. At 90 days after discharge 34% of all patients and 60% of severely frail patients were readmitted at least once.

**Conclusion:**

Less than half of the patients over 65 years of age hospitalized for urgent or emergent surgeries and for 3 frequent medical conditions were non frail. Medical patients were the most likely to be frail and had the higher score on EFS, followed by patients admitted for urgent surgeries.

**D65**

**Integration of the FallProof Balance Program into the Gerofit Veterans Fitness Program**

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Supported By: VA Office of Geriatrics and Extended Care Transformative 21 Non-Institutional Long Term Care Program

**Background:** Falls are particularly concerning in geriatric populations. Gerofit is a model Clinical Demonstration Program designed to promote health and functional independence in older Veterans. FallProof is a balance program that seeks to reduce fall risk in older adults. Our objective was to determine the effectiveness of FallProof integration into Gerofit.

**Methods:** The study took place at the Greater Los Angeles VA and included Veterans (≥ 65 years) at risk for falls. Balance was assessed by the 4-Item Fullerton Advanced Balance (FAB) scale, which has been shown to be a predictor of fall risk. Adherence was defined as attendance in balance instruction per week over a 3-month period.

**Results:** Preliminary results of 17 males (age 66-94 years) demonstrated an average of 61% adherence. Of these, 10/17 had “at risk” FAB scores. There was significant improvement in FAB scores between baseline and 3-month assessments of 1.24 ± 0.50 (p = 0.03). Compared to baseline, two individuals (20% of the “at risk” group) were no longer considered “at risk” after 3-months of intervention. There was a trend for improvement in FAB score based on adherence (See figure, r = 0.29, p = 0.14).

**Conclusions:** FallProof integration into Gerofit demonstrated significant improvement in balance. Integration of formal balance in-
D66
Angiographic Detection of Acute Lower Gastrointestinal Bleed: Relationship with Intensity of Focal Findings on 99mTc-RBC Scans and Blood Transfusions
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Supported By: AFAR-MSTAR

PURPOSE: The objective of this study was to assess the relationship between qualitative grading of 99mTc-RBC scans and subsequent positive angiography. The relationship between 24-hour transfusion units, defined as units of blood received 24 hours prior to start of angiography, and the probability of positive angiography was also evaluated.

METHODS: A 10-year retrospective IRB-approved, HIPAA-compliant review was conducted of all 99mTc-RBC scans and visceral catheter angiograms which were performed for diagnosis and localization of acute lower gastrointestinal bleeds (ALGIB). Intensities of ALGIB on 99mTc-RBC scans were graded less than, equal to, or greater than the blood pool activity of the aorta. 99mTc-RBC scans were reviewed independently by two board-certified, nuclear medicine fellowship-trained radiologists. Visceral angiograms were reviewed independently by two board-certified, fellowship-trained radiologists.

RESULTS: Of the 116 patients (male, n=65; median age 78 years, range 17-96 years) who had positive 99mTc-RBC scans and subsequently underwent angiography, 22% (n=25) were positive for ALGIB. Median 24-hour transfusion units was 2. Range was 0-10 units. With each blood unit increase, the odds of positive angiogram increased 26% (p=0.03). 6% (n=7), 38% (n=44), 56% (n=65) were graded less than, equal to, and greater than the blood pool activity of the aorta respectively. Agreement of radiologists for grading of 99mTc-RBC scans was 0.65 (Kappa) (95% CI, 0.5177 to 0.7769).

ALGIB with intensities greater than that of the aorta had a higher probability of positive angiography than intensities equal to the aorta (p=0.027).

CONCLUSION: Patients who receive more transfusion units 24 hours before angiography is performed are more likely to have a positive angiogram. ALGIB with intensities greater than the aorta demonstrate a higher probability of positive angiography than intensities equal to the aorta.
fined as the percentage of individuals living below the poverty level according to US census data and was used in analyses as a binary variable (BGP ≥20%). Self-reported health measures included fatigue, pain, disability, helplessness, and days of poor health. We calculated covariate-adjusted means and standard errors according to BGP and Wilcoxon signed-rank P values were computed.

Results: The majority of participants were female (86%) with a mean age of 54 years, 43% owned a home, 76% reported household incomes ≤$30K year, and 47% lived in areas with ≥20% BGP. The average disease duration of participants was 7.8 years. Increased disability was reported by participants of BGP ≥20% (p=0.033). Participants of BGP ≥20% reported fewer mentally unhealthy days however, this failed to reach statistical significance (p=0.122). Additional measures of self-reported health were not associated with AEI in adjusted analyses.

Conclusion: Our results support an association between AEI and disability among AAs with RA, suggesting that health outcomes of AAs with RA may be influenced by AEI. Further research is warranted to better understand how AEI may contribute to disparities in health among aging AAs with RA.

# AdjM3Means and standard errors (SE) of self-reported health status by block group poverty (BGP) (≥20%) in the CLEAR Consortium (n=898)

<table>
<thead>
<tr>
<th>BGP</th>
<th>Fatigue (VAS)</th>
<th>Pain (VAS)</th>
<th>Disability (HAQ Score)</th>
<th>Helplessness</th>
<th>Pain Diary Score (VAS)</th>
<th>Days per month (≥0.50)</th>
<th>Limited Activity</th>
<th>Mentally Unhealthy</th>
<th>Physically Unhealthy</th>
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<tr>
<td>&lt;20%</td>
<td>5.37 (0.27)</td>
<td>5.03 (0.30)</td>
<td>1.29 (0.05)</td>
<td>5.03 (0.30)</td>
<td>2.78 (0.08)</td>
<td>7.29 (0.28)</td>
<td>7.37 (0.57)</td>
<td>13.0 (0.48)</td>
<td></td>
</tr>
<tr>
<td>≥20%</td>
<td>5.38 (0.18)</td>
<td>6.03 (0.27)</td>
<td>1.40 (0.04)</td>
<td>6.03 (0.27)</td>
<td>2.83 (0.09)</td>
<td>7.72 (0.49)</td>
<td>6.58 (0.54)</td>
<td>12.5 (0.36)</td>
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</tr>
</tbody>
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D69 Optimizing the nursing home experience by using modern technology to improve communication, efficiency, and outcomes: A literature review

T. Reske, B. Callihan, Medicine/Geriatrics, LSU, New Orleans, LA.

Supported By: Nothing to disclose

Background: The older population in the US is increasing and the trend in frail and ill patients is to keep them integrated in the community and avoid institutionalization. Older adults needing nursing home care tend to have more complex care needs, while facilities providing this care are faced with limited resources. With this comes an increased demand on nursing homes to deliver efficient care. Nursing homes can use technology appropriately to increase communication and care, which ultimately improves outcomes and quality of life.

Methods: A PubMed search was performed for papers on modern technology being used in the nursing home setting. Search terms included “modern technology”, “telemedicine”, “telegeriatrics”, “telehealth”, “telemonitoring” and “geriatrics”, “elderly” and “nursing homes”. Only papers published between 2004 and 2014 were included into the search. They were then reviewed for the most effective outcomes.

Results: One hundred and twenty five abstracts were found and 24 full texts reviewed. The search identified 11 relevant papers. The most effective interventions showed that the use of telemedicine or “telegeriatrics” reduced hospitalizations of nursing home residents.

Conclusions: Technology is increasingly used to improve care and outcomes in institutionalized older adults in nursing homes. The PubMed search revealed that the use of modern technology for nursing homes reduces costs, improves quality of care, and decreases hospitalizations. Further research is needed to capture outcomes in care using modern technology to design new care standards in the nursing home setting.

D70 The PainGauge: A Feasibility Study comparing the effectiveness of a mobile health app and a pain diary in assessing pain

D. K. Perivakoil, Harker Upper School, Campbell, CA.

Background: Persistent pain is widely prevalent among older adults. Data show that more than 50% of older persons living in a community setting and more than 80% of nursing home residents experience pain. One barrier to effective pain assessment and management is the lack of real-time data of pain levels on an ongoing basis. Such data would assist geriatricians to better understand patterns of pain (if any) in their patients and the diurnal variation of its intensity.

Methods: The PainGauge App was tested with 7 older adult and compared its effectiveness against a traditional pain diary. The PainGauge app was installed in the participant’s smartphone. They were then asked to record their pain scores at least once every two hours using the App or a diary. All participants utilized both modalities in random order for 3 days each (total of 6 days). Data included their pain scores and user feedback at the end of the study period.

Results: Participants recorded more data with the PainGauge (98 data points with accurate time codes) than the pain diary (54 data points and many missing time codes). All participants preferred the PainGauge as it (a) was easy to use and just required them to press a button (b) sounded an alert every two hours to remind them to record their pain (c) automatically recorded the date and time of the pain scores, minimizing their burden. One participant recommended that the PainGauge should also be available as a “small device worn around the neck the size of a garage opener with buttons to press to record pain scores” for patients who cannot/ do not use smartphones.

Conclusion: The PainGauge mHealth App is a feasible and effective tool to accurately record real-time pain scores on older adults on an ongoing basis. Older adults found it easier to use and preferred it over the traditional pain diary.

Mentors: R. Pannani MS, C. Sprenner

D71 Getting Helpful Information from the Internet about the Prognosis of Advanced Cancer and Hospice/Palliative Care: A Way to Increase Awareness about Life-Ending Diseases

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Supported By: Funding was provided by the 2014 Medical Student in Aging Research (MSTAR) program by AFAR and the NIA

Background: Prognostic awareness, or knowing that one has a life-ending disease, is increasingly associated with a better end of life experience, including less depression and anxiety. However, physicians are reluctant to discuss the end of life prognoses with patients and only 17% of advanced cancer patients estimate their prognosis correctly. We sought to determine whether or not some of the most commonly used and trusted websites for cancer information mention anything about the prognosis of stage IV incurable cancer and hospice/palliative care.

Methods: Approaching this project from the mindset of a 43 year old person with stage IV incurable cancer, 4 commonly used websites were accessed (American Cancer Society, American Society
of Clinical Oncology, National Cancer Institute, Up To Date®) as well as a disease specific website, for each of the top 10 cancer deaths. Ultimately, a total of 50 websites were used.

Results: About half the websites, 26/50 (52%), had some notation of 5-year survival. Only 4/50 (8%) gave any average or median survival for what the average person could expect. Only 13/50 (26%) noted that stage IV cancer was a serious and usually life-ending illness. Nearly all had some information for hospice and palliative care.

Conclusions: Online resources play a major role in disseminating health information to patients, but our data shows that a number of commonly used websites do not contain the essential prognostic information for patients to fully understand their disease. With only small additions to current websites, public access to helpful prognostic information can increase which can lead to a higher number of terminally ill patients who have an improved end of life experience.

D74
Development of a Lower Urinary Tract Symptoms Guideline for Community Pharmacists
G. Gabriel,1 R. Tsuyuki,2 C. Sadowski,1 1. Pharmacy, University of Alberta, Edmonton, AB, Canada; 2. Faculty of Medicine and Dentistry, University of Alberta, Edmonton, AB, Canada.

Background: Older adults commonly experience lower urinary tract symptoms (LUTS). LUTS contribute to significant suffering, and patients often wait before seeking help. Because of the accessibility of pharmacists in the community, they have an opportunity to be able to assess for LUTS and provide care through a specifically designed LUTS clinical guideline for Canadian pharmacists. The objective of this project is to create an adapted LUTS guideline, from current established physician-oriented/focused guidelines, for Canadian pharmacists to follow that enables them to identify, assess, and recommend appropriate LUTS treatment; or refer for further care.

Methods: A search was conducted for LUTS guidelines, and the relevant LUTS guidelines were assessed using the AGREE II tool. The guidelines that were found to have the highest numbers in the majority of the six domains from the AGREE II tool were used to develop the initial draft of the LUTS guideline in combination with established Canadian guidelines. The draft was then reviewed by Canadian health care professionals specializing in urology and geriatrics to be assessed for content validity.

Results: We identified a total of 22 relevant LUTS guidelines that were assessed using the AGREE II tool. The guidelines with the highest numbers in the majority of the six domains from the AGREE II tool were two guidelines published by the National Institute for Health and Care Excellence, and these two guidelines in combination with Canadian guidelines were used to develop our initial draft. After review, a total of 25 major comments were provided and the guideline was adjusted to create the final draft of the pharmacist-focused LUTS guideline. Feedback from the review focused on boundaries for pharmacist practice, and clarity on red flags and referral points.
Conclusions: We successfully adapted the LUTS guidelines for Canadian community pharmacists. Boundaries and collaboration in the community setting are perceived challenges to implementing interventions by community pharmacists. Further work is required to implement an intervention study with this guideline to determine if this will increase early identification and treatment of LUTS patients by community pharmacists in Canada.

D75 Characteristics and Health Care Utilization of Medicare Beneficiaries with Advanced Heart Failure who Enroll in Hospice C.Yim, S. Moore, C. Murtaugh, L. Gelfman. 1. Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 2. Visiting Nurse Service of New York, New York, NY; 3. Icahn School of Medicine at Mount Sinai, New York, NY.

Supported By: AFAR (Medical Students Training in Aging Research)
Visiting Nurse Service of New York (Center for Home Care Policy and Research)
Icahn School of Medicine at Mount Sinai’s Older American Independence Center (1P30AG28741-01)

Background: Patients with advanced heart failure (HF) enroll in hospice at low rates, and data on their healthcare utilization is limited. We sought to describe the characteristics and healthcare utilization of fee-for-service Medicare beneficiaries with HF before and after hospice enrollment.

Methods: We performed a descriptive analysis of Medicare fee-for-service beneficiaries, with at least one home health claim between 7/1/09 and 6/30/10, and at least 2 HF hospitalizations between 1/1/09 and 6/30/09, who subsequently enrolled in hospice between 07/01/09 and 12/31/09. We then conducted bivariate analyses of annualized rates to compare the healthcare utilization of these beneficiaries in the six months before and 12 months after hospice enrollment.

Results: Of the 5,073 beneficiaries who met inclusion criteria, 55% were female, 45% were older than 85 years of age, 13% were non-white, and 76% had a mean Elixhauser co-morbidity index of 2.38 (STD 1.22, range: 0-6). The median number of days elapsed between the second HF hospital discharge and hospice enrollment was 45 days. The median length of hospice service was 15 days and 39% of the beneficiaries died within 7 days of enrollment. Eleven percent of the beneficiaries in our sample disenrolled at least once during the 45 days. The median length of hospice service was 15 days and 39% of the beneficiaries died within 7 days of enrollment. Eleven percent of the beneficiaries in our sample disenrolled at least once during the 45 days.

Conclusions: There were 3,290 patients interviewed during a 7-week recruitment period in June and July 2014. Mean age (± SD) of patients was 84 (± 5.5) years old, 70.5% were female and 98.2% were white. Of these, 136 (41.3%) were classified as having altered mental status compared to cognitively intact. Classifications were into 4 mutually exclusive categories: impaired consciousness, delirium, cognitive impairment, cognitively intact. Demographics, neuroimaging use, and findings were abstracted from patient electronic medical records.

Results: 329 patients were interviewed during a 7-week recruitment period in June and July 2014. Mean age (± SD) of patients was 84 (± 5.5) years old, 70.5% were female and 98.2% were white. Of these, 136 (41.3%) were classified as having altered mental status: cognitive impairment (29.8%), delirium (9.1%), or impaired consciousness (2.4%). A CT scan or MRI was performed on a total of 77 patients (23.4%). No acute intracranial pathology was identified in any patient. Neuroimaging use was significantly associated with being classified as having altered mental status compared to cognitively intact patients (p < 0.0001).

Conclusions: Neuroimaging was negative for acute findings among older persons in the ED who did not have signs or symptoms of acute stroke, seizure, or head trauma with loss of consciousness. Further research on the initial findings on clinical guidelines in this patient population could help reduce costs, optimize resource utilization, and improve care for older persons in the ED.


Supported By: University at Buffalo

Background: Impaired consciousness, delirium, and cognitive impairment are common and serious comorbidities among older adults during emergency department (ED) visits. Few studies of neuroimaging use in the ED focus on older adults. The purpose of this study was to examine the epidemiology of mental status among adults age 75 years and older presenting to the emergency department without loss of consciousness, stroke, seizures, or new focal neurological findings and the associated use of neuroimaging.

Methods: The study is a prospective convenience sample. Adults age 75 years and older presenting to an urban ED were eligible for inclusion. Patients presenting with signs or symptoms of acute stroke, head trauma with loss of consciousness, or seizure were excluded. Participating patients were interviewed and administered the Abbreviated Glasgow Coma Scale (GCS), Confusion Assessment Method (CAM), and the Six-Item Screener. Classification was into 4 mutually exclusive categories: impaired consciousness, delirium, cognitive impairment, cognitively intact. Demographics, neuroimaging use, and findings were abstracted from patient electronic medical records.

Results: 329 patients were interviewed during a 7-week recruitment period in June and July 2014. Mean age (± SD) of patients was 84 (± 5.5) years old, 70.5% were female and 98.2% were white. Of these, 136 (41.3%) were classified as having altered mental status: cognitive impairment (29.8%), delirium (9.1%), or impaired consciousness (2.4%). A CT scan or MRI was performed on a total of 77 patients (23.4%). No acute intracranial pathology was identified in any patient. Neuroimaging use was significantly associated with being classified as having altered mental status compared to cognitively intact patients (p < 0.0001).

Conclusions: Neuroimaging was negative for acute findings among older persons in the ED who did not have signs or symptoms of acute stroke, seizure, or head trauma with loss of consciousness. Further research on the initial findings on clinical guidelines in this patient population could help reduce costs, optimize resource utilization, and improve care for older persons in the ED.


Background: The Affordable Care Act (ACA) of 2010 initiated the Medicare Independence at Home (IAH) Demonstration Program to determine whether caring for ill and disabled elders at home-based primary care can achieve improved quality of care and overall cost savings.

Methods: A qualitative and quantitative cost-benefit analysis of being an IAH Demonstration site for two years was performed through interviews with clinicians and leaders at a participating house call program.

Results: Over the initial two years of participation, the IAH house call program invested over $300,000 in new funds, including 1170 hours of dedicated staff time, to ensure adherence with IAH processes and data requirements. This included new weekend RN staff for post-hospital home visits and significant staff resources devoted to enrollment and data tracking. Benefits of IAH participation include
increased urgent care capacity, stronger population oversight and outcomes measurement, the potential for shared savings, and higher program profile. Costs included the up-front financial outlays, dedicating staff time to IAH duties, and opportunity cost of participating in the demonstration.

**Conclusion:** These results highlight both the service enhancements and up-front, unfunded financial and staff costs of participating in a Medicare Demonstration Project. The ultimate return on new program investments will depend on final results of the IAH shared savings disbursement.

### Financial Program Costs of IAH Participation

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<tr>
<th>Item</th>
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<th>Indirect Costs</th>
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<td><strong>Total Cost</strong></td>
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<td><strong>$15,341</strong></td>
</tr>
</tbody>
</table>

*Cost estimates are for the first two years of IAH participation.*

### D78

**The effect of registered nurses in Assisted Living: A literature review**

L. C. Parrish, A. Beeber. School of Nursing, University of North Carolina at Chapel Hill, Chapel Hill, NC.

**Background:** Medication errors are a major problem in health care settings and in particular Assisted Living (AL). AL provides care for approximately 1 million older adults in need of long-term care services. While the needs of this population are quite high, there is variation state by state in how medications are delivered (some states require registered nurse (RN) oversight while others do not). There is mixed evidence as to how nursing presence relates to medication errors. The objective of this literature review is to assess if the presence of a nurse compared with a non-nurse direct healthcare worker affected the occurrence of medication errors in AL.

**Methods:** A review of relevant literature was performed using Google Scholar and PubMed using the key words registered nurse (RN), licensed practical nurse (LPN), staff, medication, error, assisted living, and residential. Inclusion criteria included articles written in English and published 2009-2014.

**Results:** The search yielded 54 citations of which 10 were applicable on abstract review. A hand search yielded 2 references. A total of 3 were included in the review. The results showed no difference in medication errors between nurses and non-nurses. Non-nurses without medication training have a higher risk of completing medication errors compared to nurses and medication-trained non-nurses.

**Conclusions:** The results of this literature review suggest the need for evidence to determine the relationship between nursing care and quality of care outcomes. Further research is needed to examine current medication delivery practices in AL and to explore strategies to improve medication safety.

### D79

**Readmissions – Does is it increase with age?**

M. THOTHALA, N. Thothala. UNION HOSPITAL, TERRE HAUTE, IN.

**Background:** The objective of this study was to evaluate the association between increasing age and 30-day readmission rate.

**Methods:** This is a retrospective cohort study at a single large community hospital. We identified Medicare patients admitted to the hospital from January – December 2013. Inclusion criteria: ages ≥18 and any cause 30-day readmission. We further divided the groups into ages <65 years, 65-79 years and ≥80 years. Exclusion criteria: Discharge against medical advice, OB/GYN, prison unit and Hospice. Primary outcomes were increasing age with 30-day readmission rates. Limitations: Retrospective data analysis, single site and admissions/discharges to other hospitals not captured.

**Results:** Of the 9918 total admissions 1808 (18.3%) were readmissions. Further divided into ages <65 years, 65-79 years and ≥80 years. Admissions were 2157, 4745, 3016 and readmissions 506 (23.5%), 824 (17.5%), 488 (16.2%) respectively. Total no patients initially discharged to SNF increased with age 11%, 17% and 34% respectively. Total readmits discharged to SNF increased across all age groups increased to 17%, 20.5% and 40.5%. Age adjusted odds ratio for risk of death with 30-day readmission increased 2-3 times and was higher in younger age groups. Age <65 is 3.03(1.80-5.07), P <0.0001; Age 65-79 is 3.38(2.50-4.58), P<0.0001; Age ≥80years is 2.17(1.56-3.02), P<0.00963*01.

**Conclusions:** Although 18% of patients aged ≥80 were re-admitted compared to only 16.7% in age 65-79, re-admission rate was lower at 16.2% v/s 17.5%. The high rates of observed deaths and higher proportion of discharge to SNF (focused on decreasing re-admissions) lead to a decrease in readmission rates. In fact readmission rate decreased with increasing age and was lowest in age ≥80years. These results suggest that advancing age is not independently associated with higher 30-day readmission rates.

### D80

**Communication between physicians and skilled home health-care providers: A systematic literature review**

N. Rana,1 O. C. Sheehan,2 B. Leff,2 C. M. Boyd.1 1. University of New England College of Osteopathic Medicine, Biddeford, ME; 2. Division of Geriatric Medicine and Gerontology, Johns Hopkins University School of Medicine, Baltimore, MD.

Supported By: UNECOM 2014 Peter Morgane Research Fellowship

**Background:** In 2009, about 3.3 million older Americans received care from >10,000 skilled home health care (HHC) agencies. Prior reports indicate there may be inadequate communication between physicians who are responsible for ordering HHC and skilled HHC providers (HHCMP) (i.e. nurses, physical and occupational therapists). The plan of care (POC), often detailed on the “Form 485” is the primary method of information exchange between HHCP and physicians. The physician

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**Note:** The above text is an excerpt from a larger document and may include references and tables that are not fully legible or are not included in this representation. For a complete understanding, please refer to the original source.
must sign the POC to initiate new orders and to implement changes to the POC. Little is known about communication between physicians and HHCPs in the context of HHC provision. A systematic review was conducted to understand the state of communication between physicians and HHCPs and implications for patient-care.

**Methods:**

Working with a librarian, an optimized algorithm was designed to find peer-reviewed and gray literature using PubMed, SCOPUS, PsychINFO, CINAHL, and Cochrane library. At each step of search, articles were filtered based on their relevance to the primary objective. An article database was created using ReadCube. Reference lists of these articles and studies citing these articles were also analyzed and relevant articles were added to the database. The final list of articles was organized in a spreadsheet under pre-defined subheadings.

**Results:**

Initial search yielded 552 titles, of which 82 articles met inclusion criteria based on abstract review. Addition of relevant references associated with these articles gave a total of 102 articles. Most studies addressed communication barriers between nurses and physicians, in various settings, with very few specifically addressing communication between HHCP and physicians. Factors which lead to inadequate communication in HHC settings, include the structure and process of completing the 485 form, unavailability of physicians when approached by HHCP, lack of standardized information transfer between care settings, lack of verbal communication, and improper division of labor between physicians and HHCPs.

**Conclusion:**

There is a dearth of research on communication in the context of skilled HHC. Improving the current modes of communication, including the structure of the 485, may improve communication between physicians and HHCPs and improve the overall quality of HHC.

**D81 Encore Presentation**

**Predictors and Prevalence of Advance Directives in Hospitalized Heart Failure Patients, Self-Report vs EHR**

N. Malviya,1 M. Ong,2 1. UT Southwestern, Dallas, TX; 2. Internal Medicine, UCLA Medical Center, Los Angeles, CA.

**Supported By:** This research was funded by The Medical Student Training in Aging Research Program, the National Institute on Aging (T35AG026736), the John A. Hartford Foundation, the MetLife Foundation, and the Lillian R. Gleitsman Foundation.

**Background:** Heart failure patients incur the greatest cost on Medicare as HF is the leading cause of hospitalization in Americans aged 65+. AHA Guidelines for Heart failure state that comprehensive care should address end-of-life care, since it decreases the likelihood of in-hospital death and lowers end-of-life spending. Despite this, HF patients have low rates of ADs, reported as 35% at the time of death. HF patients have a 25% mortality rate at 6 months, which underscores the importance of ADs. This study sought to determine the prevalence and predictors of advance directives in hospitalized HF patients and documentation rates of ADs in the EHR.

**Methods:** Baseline survey data from hospitalized patients with heart failure that required in-hospital death and lowers end-of-life spending. Despite this, HF patients have low rates of ADs, reported as 35% at the time of death. HF patients have a 25% mortality rate at 6 months, which underscores the importance of ADs. This study sought to determine the prevalence and predictors of advance directives in hospitalized HF patients and documentation rates of ADs in the EHR.

**Results:** 46.4% of patients reported an advance directive. Predictors of an AD in hospitalized heart failure patients included post-graduate education 3.06(1.58-5.95), white race, 3.23(1.82-5.56), >$75,000 income 2.73(1.67-4.45), female gender 1.43(1.08-1.90), non-employed status 1.96(1.15-3.45), increased age 4.20 (2.13-8.29), and English-speaking (Ref-Russian) 2.63(1.39-5.00). 20% of the BEAT-HF UCLA patients had an AD documented in the EHR. PPV of self-reporting an advance directive was 31%. For the UCLA subset, predictors of having an AD documented in the EHR were age above 90 10.76(1.09-82.69), income above $75,000 5.63(1.53-20.69), non-employed status 7.69 (1.08-50.0), and English-speaking (Ref-Spanish) 25(1.45-500).

**Conclusion:** A higher proportion of HF patients in CA (46.4%) report an AD than in Olmstead County, MN (41%). The EHR documentation of ADs at UCLA appears to be poor, with a low PPV of self-report. Further investigation is needed to determine factors leading to undocumented ADs.

**D82 Availability of Data to Monitor a Nursing Home Antibiotic Stewardship Intervention**

S. J. Dotson,1 P. D. Sloane,2,3 K. Scales,2 K. Ward2 1. University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC; 2. Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, NC.

**Supported By:** 1. UNC-CH Summer Research in Aging for Medical Students, NIA 5-T35-AG038047-05 2. Infection Management and Antibiotic Stewardship in Nursing Homes, AHRQ 1 R18 HS028846-01

**Background:** The spread of antibiotic resistance necessitates quality improvement programs to improve prescribing practices in long-term care facilities, where studies suggest that a significant proportion of prescriptions may be unnecessary. As preliminary work for a study of antibiotic stewardship in nursing homes (NHs), we sought to determine what aggregate infection management data would be readily available for monitoring project outcomes. It was hypothesized that required infection control documentation plus reports from imaging, laboratory, and pharmacy providers might provide ready sources of relevant data.

**Methods:** Structured interviews were conducted at 28 NHs in North Carolina, a subset of the 32 NHs to be included in the upcoming study. Interviewees included NH administrators, directors of nursing, infection control nurses, and medical directors. Questions concerned antibiotic prescribing records, infection surveillance, electronic medical records, and preferred educational interventions. The results were used to create audit forms that draw from existing data sources in order to reduce the study burden on NH staff.

**Results:** Interviews revealed considerable variation in existing infection control programs and electronic medical record systems. All NH staff members were confident they could readily procure the data desired by project investigators. The one exception was emergency department visits, which many NHs do not routinely track. Eighty-eight percent of NHs already compiled a list of systemic antibiotic prescriptions, and 86% recorded C. difficile and MRSA infections. The majority either received or could request monthly reports from imaging and laboratory service providers, with just two imaging providers and two laboratory providers serving 86% and 89% of the NHs respectively. Pharmacies are more varied and appeared to play a limited role in antibiotic review and consultation.

**Conclusions:** Data collection to monitor the effectiveness of interventions to improve antibiotic stewardship appears relatively straightforward. Facilities regularly track data on antibiotic use and infections with selected resistant bacteria, and aggregate data are readily available from x-ray and lab providers. Partnering with pharmacies, on the other hand, appears impractical and less beneficial.
The impact of pharmacists caring for geriatric patients across the healthcare continuum on the identification, resolution, and prevention of drug therapy problems: A subset of the PIVOTS (Pharmacist-led Interventions on the Transitions of Seniors) Group


Supported By: American Society of Health-System Pharmacists

Older adults take more prescription medications and are more susceptible to side effects than any other age group, placing them at high risk of drug therapy problems (DTPs). Using data from one interprofessional geriatric practice in which pharmacists provide continuous comprehensive medication management across two outpatient geriatric clinics, a skilled nursing facility (SNF), assisted living facilities (ALF), and the hospital, we sought to quantify the degree to which pharmacists identified and addressed DTPs for patients residing in and transitioning between these various healthcare settings.

This prospective chart review analyzes data from ~1,000 patient encounters with pharmacists in a geriatric care practice from August 2014 through February 2015. For all patient care encounters, pharmacists use The Assurance System to document each DTP, specific medications involved, the patient’s current care setting, actions taken to resolve the DTP, and the 90 day impact of DTP resolution. Data from August – November 2014 are used for this interim analysis. We generated descriptive statistics to describe the most common DTPs and medications involved.

An interim analysis was performed at month four of the six month period. At this time, 563 patient encounters were identified for 110 patients—most of whom resided at home. The most common DTP and drug involved were the need for additional monitoring and warfarin. At the end of the six-months, additional data points will include a full review of the most common DTPs, medications and classes involved in DTPs, actions taken by the pharmacists to resolve DTPs, and 90-day impact of these interventions. Differences in DTPs and interventions across the levels of care will be analyzed.

By describing the impact of pharmacists providing direct patient care to older adults across the healthcare continuum in identifying, resolving, and preventing DTPs, we intend to build a foundation to then examine the effect of the pharmacist patient care outcomes and create a sustainable, replicable, and transferable interprofessional practice.

Provider Documentation of Geriatric Issues among Older Adults Receiving Care in Safety Net


Supported By: Funding was provided by the Medical Student Training in Aging Research (MSTAR) Program (T35 AG026736) and Tideswell at UCSF.

BACKGROUND: In a safety net setting, we evaluated primary care provider (PCP) documentation of geriatric issues and whether geriatric consultation influences subsequent documentation.

METHODS: We performed a retrospective chart review of patients referred to an outpatient geriatric consult service at San Francisco General Hospital. The geriatrics service serves two primary care clinics and provides advice through an e-consult, an e-consult with care coordination services, or a comprehensive geriatrics assessment. We queried charts for patients ≥60 years of age, referred from October 2012 to November 2013, and received care ≥6 months after the consult. For two primary care visits pre- and post-consult, we recorded documentation of geriatric issues, such as cognitive impairment, falls, and symptoms prevalent in older adults. Comparisons were analyzed using descriptive statistics and paired sample t-tests.

RESULTS: Among 90 patients referred, mean age was 77.9 years (±7.3) and 62.2% were female. Most patients (66.7%) were non-English speaking. Patient’s race included 40% Hispanic, 32.2% Asian, 15.6% African-American, and 12.2% White. Many, 78.9%, were dual-eligible. The most common conditions included diabetes (43.3%), dementia (37.8%), and mental health disorders (31.1%). Pre-consult, PCPs documented screening for falls in 54.4%, cognitive impairment in 38.9%, mental health conditions in 35.6%, and activities of daily living in 28.9%. An advance directive or goals of care were documented in 45.6% of charts. Symptoms (pain, shortness of breath, insomnia, fatigue or anorexia) were often documented post-consult (91.1%). The only difference in a pre-post comparison was that providers documented fewer screens post-consult for cognitive impairment (38.9 vs. 21.1%).

CONCLUSION: Among PCPs in safety net clinics, less than half had documentation of common geriatrics issues, other than symptoms, prior to consulting a geriatrician. The consult did not affect post-consult documentation. More studies are needed to determine how to improve documentation of important geriatric issues.
Improving Transitions of Care for Palliative Older Patients
Blessing Amune, Jennifer Healy, D.O., Sandra Sanchez-Reilly, MD
The University of Texas Health Science Center at San Antonio1, GRECC/GEC South Texas Veterans Health Care System2, University Health System3 San Antonio, TX

Background: Geriatric palliative care (GPC) utilizes interdisciplinary teams of physicians, nurses, social workers, and chaplains to not only relieve physical symptoms of disease, but emotional and spiritual ones as well. Additionally, GPC teams help with identifying goals of care, advocacy, and care coordination. Interdisciplinary team (IDT) work is frequently documented as a communal weekly plan note with input from all team members who are involved in the patient’s care.

Methods: Pilot quality improvement study of all English-speaking patients seen by GPC service who were discharged during May of 2014. Patients and/or family member(s) were asked to complete a phone survey with questions regarding their transition experience 4-6 weeks after the patient’s hospital discharge. Variables included transition destination, how transition went overall, whether information given at time of discharge was useful, additional services patient transitioned with, and type of follow-up.

Results: Of the 43 English-speaking palliative patients discharged during the month of May, 25 patients completed the survey (10 non-reachable and 8 deaths), 56% GPC patients went home (2% with hospice; 22% with home health care; 32% without additional services), meaning that most post-hospital care was being handled by family caregivers (FCG). Only 20% of respondents knew they had a GPC outpatient appointment, (100% patients had been given one)—identified need for improvement. Additionally, 28% respondents were not aware of being scheduled for any other follow-up appointments (i.e. primary care) and claimed to have received no useful handouts. 75% reported discharge information useful. 85% reported the transition went well.

Conclusion: The majority of GPC patients who transitioned home were mostly cared for by FCG, many did not know they had a GPC follow-up appointment or any other. Unfortunately, the GPC IDT communal plan note was not set up to include information about follow-up appointments and this could be easily improved in the future. Further, important comments from patients/families included the need for families to visit long term care facilities before transition, as well as, continued emotional support from the hospital during and after transition.
Results: Staff rated the interdisciplinary nature of SIBR significantly (p<0.001) better in all 8 distinct areas when compared to staff on the control units. When asked whether SIBR on the ACE unit improved communication between the team and with family 100% of SIBR participating ACE staff agreed or strongly agreed while only 71% of control staff gave the same responses.

Conclusions: Improved communication is key to maintaining a safe hospital environment with quality patient care. SIBR improves both nursing job satisfaction & related perceptions of quality & safety for geriatric patients, and may help to achieve higher nurse retention & safer patient care. These results point to the interconnectedness and dual benefit to both job satisfaction and quality of care that can come from enhancements to team communication through SIBR.

D89
Correlation of Discharge Comprehension and Hospital Returns among Community-Dwelling Elderly Patients
Supported By: American Federation for Aging Research

Background: Aging patients often face complex discharge instructions and medication changes upon leaving emergency departments or inpatient wards to return home. Adverse events resulting from patient confusion about instructions and medications may result in their return to the hospital soon after discharge, contributing expense to their care. This study examines the relationship between patients’ comprehension of their discharge instructions and subsequent ED revisits within 72 hours or unplanned rehospitalizations within 30 days of discharge.

Methods: Upon their departure from the hospital, patients over 65 were asked to participate in a brief survey. Patient comprehension of discharge instructions was evaluated across six domains, which included home care, causes for concern, medication changes, and intended follow-up. We reviewed the health records of patients who received this survey over a 7-month period to identify those who returned to the hospital within that population. Cohort patients were stratified according to their discharge comprehension survey score, and rates of patient returns were compared between those patients whose survey score fell below the tenth percentile of the group (survey score <75%) and the remainder of the cohort.

Results: Of 270 patients discharged home from the hospital, 76% demonstrated full comprehension of their discharge instructions and 21% either revisited the ED within 72 hours or were readmitted within 30 days post-discharge. Of those patients with poor discharge comprehension, 7.1% had a 72-hour ED revisit and 28.6% had a 30-day readmission (vs. 5.0%, p=0.62 and 17.8%, p=0.17, respectively, for the remainder of the cohort).

Conclusions: Survey data reveal that most patients’ comprehension of their discharge instructions was good, although 24% of participants had some deficit in their understanding. Although no statistically significant correlation between discharge comprehension and hospital returns was identified in this preliminary analysis, further study is warranted to identify other contributors to patient returns.

D90
Client and Nurse Perspectives of Faith Community Nursing
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Supported By: Medical Student Training in Aging Research (MSTAR)

BACKGROUND: Faith community nursing (FCN) is a model of community-based healthcare focused on disease prevention, education and integration of spirituality into the experience of health and illness. Faith community nurses (FCNs) work with individuals and families within their faith group as well as the surrounding community to promote health and improve quality of life. Although nurses offer services that support community members of all ages, faith community nurses spend most of their time with seniors and older adults.

METHODS: This is a qualitative, exploratory investigation of one FCN program in a medium-sized, urban congregation in a large midwestern city. Ten participants, including three nurses and seven of their clients, engaged in semi-standardized interviews exploring the impact of FCN in this community and in each participant’s life. Researchers focused on two questions: What do faith community nurses offer this community? And, do clients receive all of the services and support faith community nurses (FCNs) aim to provide? Researchers used the symbolic interactionism theory to interpret data collected and coded using NVivo 10. Content analysis revealed frequently recurring key points and topics of meaning in the client and nurse interaction. Importance was assessed both by the gravity of participants’ comments and the frequency of occurrence throughout the interviews.

RESULTS: Five themes emerged through coding of nurse and client interviews that represent the expressed value and purpose of FCN to this community. These themes include: the tasks and services that nurses provide, nursing expertise, spirituality, familiarity, and community support for nursing efforts. These themes explain the usefulness of the FCN model and describe the value of the faith community nurse-client relationship.

CONCLUSION: In the community examined, the FCNs provide many valuable services, nearly all of which were discussed in participant interviews and appreciated by clients. This study provides support for the development of additional FCN programs in more communities by revealing the many ways the FCN model impacts the health and wellbeing of community members. It is also a call for further research and attention on the model of FCN and its role in supporting healthy communities.

D91
Cost Savings Associated with A Pharmacy-based Transitional Care Program for Hospitalized Older Veterans
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Supported By: This work was funded by the Veterans Administration T21 Non-Institutional Long Term Care Initiative.

Background: The purpose of this clinical demonstration project was to estimate cost savings associated with a pharmacist-based transitional care program for high risk hospitalized older veterans at Audie Murphy VA Hospital.

Methods: Veterans admitted to the Medicine service during June-Sept 2013 and March-April 2014 were eligible if they met the following criteria: 1) ≥ 70 years or older taking ≥ 12 medications, ≥ 65 years with 2) diagnosis of dementia; 3) ≥ 2 inpatient admissions in the last year; or 4) ≥ 3 emergency department visits in the last year. The program included an inpatient face-to-face meeting with a clinical pharmacy-specialist (CPS) and telephone contact by the CPS within 3 days of discharge. These encounters included comprehensive medication reconciliation with recommendations made to the inpatient medicine team and/or the outpatient provider. 30-day readmissions was monitored in those receiving the intervention compared to a convenience sample of all individuals who met the inclusion criteria but did not receive the intervention. Chi-squared was used to examine difference in readmission. Readmission cost savings were calculated based on the local bed day cost ($2,921) and average length of stay (5 days). The average cost of an admission is $14,605. Savings attributable to interventions by the CPS (discontinuation of medications, dose optimization, therapeutic drug monitoring, and allergy preven-
tion) were calculated using TheraDoc clinical surveillance software for March-May 2014.

Results: The 30-day readmission rate was 18.1% in the intervention group (n=149) and 22.1% in the usual care group (n=344; P=0.48). Our program prevented the readmission of an estimated 19.7 patients over this 6 month period, resulting in savings of $287,718 (19.7*$14,605), which projects $627,225 savings in 1 year. CPS interventions resulted in $12,584 savings over 2 months, which projects to $75,504 in 1 year. Therefore, total savings are $702,729/year.

Conclusion: A pharmacist-based transitional care program resulted in reduced readmissions, appropriate prescribing, and substantial cost savings.

D92
Managing pain in chronically ill homebound patients through home-based primary and palliative care intervention

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Supported By: This study was supported by Mount Sinai’s Claude D. Pepper Older Americans Independence Center, the Chiang Foundation, and a MSTAR program grant.

Background: Many older adults are homebound due to chronic illness and functional impairment. Home-based primary and palliative care (HBPC), which provides access to medical care for this population, has been shown to significantly reduce symptom burden. However, little is known about the interventions used to manage the prevalent symptom of pain in this population.

Methods: All new patients in an urban HBPC program who completed a baseline Edmonton Symptom Assessment Scale (ESAS) during the initial home visit were enrolled in a 6-month observational cohort study. Symptom burden was captured at 2, 4, and 6 months via telephone. Symptom severity was rated as 0=none, 1=moderate, and 4-10=severe. All treatments the cohort received during the follow-up period were extracted monthly from electronic medical records. Treatments for pain were further categorized by medication type and titerations, referrals, equipment, procedures, and nursing. Data were analyzed using SAS version 9.2.

Results: 86 HBPC patients were enrolled (mean age 89; 73% female; 47% white). 47% had a Charlson Comorbidity Index score ≥3. 40% had dementia, 30% had a history of stroke, and 22% had chronic heart failure. 55% of the study population had no pain at baseline, 18% had mild pain, and 27% had moderate-severe pain. In those with moderate-severe pain at baseline, opiate use increased from 48% to 60% at follow-up and acetaminophen use increased from 48% to 87%. For patients with moderate-severe baseline pain on opiates (n=23), opiate use increased from 48% to 60% at follow-up and acetaminophen use increased from 48% to 87%. For patients with moderate-severe baseline pain who were started on an ACE Unit to a GM Unit. There was a 3 fold decreased use of medications ordered, use of antipsychotics and benzodiazepines, 30 day re-admission and discharge to home.

D93
Comparative Analysis of Outcomes of an ACE Unit in a Predominantly Hispanic Population

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Supported By: No financial disclosures to report.

Background: Acute Care for Elderly(ACE) Units focus on vulnerability of older patients that put them at increased risk for hospital associated disability. ACE Units have been shown to improve care in a number of areas such as cost of care, length of stay (LOS), functional status, discharge disposition and patient satisfaction. We performed a pilot study to compare outcomes on an ACE Unit to that of a General Medical (GM) Unit at University Medical Center in El Paso, Texas.

Methods: A retrospective chart review was performed for patients admitted to the ACE Unit and the GM Unit for the period December 2012 - December 2013. Patients 65 and over were included. Patients who were medically unstable or scheduled for surgery were excluded. Twenty five charts were randomly selected from each unit by a random number generator. Variables analyzed were cost/patient, LOS, use of Foley catheters, use of restraints, number of medications ordered, use of antipsychotics and benzodiazepines, 30 day re-admission and discharge to home.

Results: Mean age was similar for the two units (77.2 years,ACE; 77.8 years,GM). LOS was not significantly different (6.48 days, range 2-20 days ACE; 5.16 days, range 1-18 days GM p=0.27). Cost of care/patient was higher in the ACE unit but did not attain statistical significance ($35,144/patient, range $6,946-$172,827 ACE; $24,167/patient, range $8,324-$67,291 GM, p=0.15). There were no significant differences between 30 day re-admission, use of restraints, number of medications ordered or antipsychotics/benzodiazepine use. There was a 3-fold greater use of Foley catheters on the GM Unit compared to the ACE Unit.

Conclusions: There were no significant differences in a number of parameters of care in this small pilot study comparing outcomes of an ACE Unit to a GM Unit. There was a 3 fold decreased use of Foley catheters in the ACE Unit. This would be expected to reduce the impact of complications from Foley catheter use such as urinary tract infections, falls and delirium.

D94
Geriatrics in Malaysia


Introduction: Malaysia is aging rapidly. In 2010, 5.1% of citizens were over the age of 65 yrs. Life expectancy is 71.9 for men and 77 for women. By 2020, there will be 31.6 million Malaysians; 2.2 million will be elders, constituting 7% of the population. By 2050, the UN estimates 22% of Malaysians will be older adults. There is clearly an increasing need for geriatrics care; the authors report on the current state of geriatrics in Malaysia.

Academic Geriatrics in Malaysia: Many students receive no didactic or clinical geriatrics training in medical school given the limited number of qualified geriatricians. Following graduation, students are required to undergo at least 3 years of training at government hospitals to be registered practitioners. Thereafter, they may apply to the 3-year Masters Medicine (MMed) programs (equivalent to US internal medicine residency programs). The Univ. of Malaya Medical Centre is the single postgraduate MMed that incorporates 2-3 months of geriatrics rotations over this period. In contrast, all US internal medicine residency programs must include geriatrics and trainees frequently rotate through required or elective geriatrics blocks. An alternative pathway is through the MRCP in the UK.
**D95**

**Family Involvement in Nursing Home Transfers**

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**Background:** Potentially avoidable hospitalizations (PAH) of nursing home residents are a growing area of study, given serious financial and health ramifications. Reasons for PAH are multifactorial and include provider presence and preferences, nursing home capabilities, communication breakdowns, and financial incentives. One factor which has been cited as driving PAH is family or resident preferences. Very little research has been done on the degree of resident and family input in hospital transfer decisions. In this study, we describe qualitative findings from semi-structured telephone interviews with family members of Indiana nursing home residents who transferred to the hospital, to better understand the role of family members in the nursing home to hospital transfer decision process.

**Methods:** Interview subjects, family members of hospitalized residents, were identified through the OPTIMISTIC database, a CMS funded clinical demonstration project to reduce PAH in 19 central Indiana nursing homes. Family members of residents who transferred over the prior 3 months due to symptoms of “altered mental status,” “shortness of breath,” and “pain” were eligible. Interviews, via telephone, were conducted using a structured guide with qualitative prompts regarding family member’s involvement in resident’s care; perceptions of NP/MD accessibility in the nursing home; advanced care planning; recall of and involvement in a particular transfer; and feelings regarding transfer. Examples of questions include: “Have you ever had to make decisions regarding care of your loved one in the past?”, “Were you comfortable participating in the decision-making process?”, “Have you ever discussed/looked into treatment options available in the facility?”

**Results:** Preliminary results suggest that family members are largely aware of resident attitudes toward end of life care issues. Family members are also favorable to receiving care in the nursing home in non-emergent conditions but are unaware of interventional care options available.

**Conclusion:** Early data from this study suggests that family members feel positively about the care nursing home residents are receiving. There is a lack of information, however, regarding in-nursing home treatment options for residents. Improved understanding of nursing home services may contribute to decreased PAH.

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**D96**

**An Analysis of a Novel Trigger System for Palliative Care Referrals for Patients in the Surgical Intensive Care Unit**

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Supported By: MSTAR

**Background:** Triggers to initiate consultation by palliative care (PC) teams have been analyzed in a variety of settings. These have yielded mixed results in changing outcomes such as the number of PC consultations, the time from trigger to consultation, or the rate of consultation for patients dying in the hospital. However, few studies have examined the use of triggers in the Surgical Intensive Care Unit (SICU). Our goal was to better understand how triggers for PC consultation can be utilized in the SICU to improve patient and health-system outcomes.

**Methods:** A Quality Improvement team developed triggers for PC Consults in the SICU based on length of stay, ICU readmission and co-morbidities. The SICU in this study is a 14-bed unit in a large tertiary care, 1170 bed hospital in New York. The triggers were implemented on September 4, 2013. Data was analyzed for 8 months before and after implementation with a 30-day “wash-out” period in between. Each patient was followed for a 30-day period after discharge to observe for readmission to the hospital or ER. Data was obtained from the Mount Sinai central database and linked to the PC service’s database to collect key outcomes including hospital length of stay, PC utilization, hospice utilization, and readmission rates.

**Results:** The pre-intervention group consisted of 406 patients and the post-intervention group consisted of 347 patients. Between these two groups, there was a statistically significant rise in PC utilization (16.4% to 21.7%, p=0.003) and time from PC consult to discharge (13.9 to 20.5 days, p=0.026). There was no significant change in hospital length of stay (19.3 to 21.7 days, p=0.38), 30-day emergency department readmission rates (7.2% to 6.3%, p=0.75) or in time to PC consult (16.4 to 15.1 days, p=0.77). There was no increase in hospital mortality.

**Conclusions:** Implementation of triggers for PC consultation in the SICU was associated with increased PC utilization and time from PC consult to discharge, with no increase in inpatient mortality. The increased time from the beginning of PC consult to discharge without an increased hospital LOS is seen as an improvement in care, because it allows the team more time to work with patients and families with serious illness in order to provide supportive care. This may have implications for ICUs seeking to improve PC utilization.

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**D97**

**End-of-Life Decision Making Tools: An analysis and comparison for the Nebraska Dementia Care Ecosystem**

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Supported By: AFAR

Medicare

CMMS Innovation Grant

**Background:** Alzheimer’s disease encompasses a gradual loss of function and of capacity of a patient to make end-of-life decisions for themselves. An effort has been made to complete advance directives to allow patient participation in end-of-life decisions. However, it has been met with several barriers, such as confusion about the technical writing of the advance directive forms and reluctance of the patient and family members to think about the patient’s death. These barriers justifity further efforts to educate and work with families regarding advance directive completion. We propose the Dementia Care Ecosystem, a program that integrates navigated care, web-based education
materials, and advice from legal professionals, to facilitate family advanced directive planning.

Methods: We performed a literature search to identify the best tools and discussion methods to address advance directive preparation and completion. Once identified, we compiled the tools and discussion methods into a questionnaire to be given via a 15-20 minute telephone call. Calls were conducted by a care team navigator to 900 participants in Nebraska (600 experimental, 300 control) and 1200 participants in California (800 experimental, 400 control). The answers to the questions were analyzed based on the following questions. First, how successful is the questionnaire at encouraging the patient to create an advance directive? Specifically, how many of the experimental group completed advance directives compared to the control group and how quickly did the experimental group complete the advance directives compared to the control group? Secondly, how comfortable are the trial members with the approach followed to discuss advance directives and how comfortable are they with their advance directive?

Results: Families are willing to complete the 15-20 minute phone interview and are comfortable with the manner in which advance directives are addressed.

Conclusions: Although the clinical trial is ongoing, pilot data suggests that the questionnaire is consistent with family values and that families are comfortable and willing to complete the 15-20 minute interview. As the trial progresses, we anticipate to answer the remaining questions, particularly how successful the questionnaire and Dementia Care Ecosystem are at supporting the completion of advance directives.

D98
The Impact of Post-Hospital Discharge Home Visit Timing by Nurse Practitioners and Physicians on All-Cause Readmissions
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Supported By: American Federation for Aging Research and Blue Cross Blue Shield of North Carolina.

Background: Timely outpatient follow-up after an acute hospitalization is associated with reduced readmissions. However, the impact of timely follow-up care on readmissions has not been extensively studied in the context of home visits. We investigated the impact of post-hospital discharge home visit timing by nurse practitioners (NP) and physicians (MD) on all-cause readmissions among patients enrolled in a transitional care program at an academic medical center.

Methods: We conducted a retrospective analysis of patients enrolled in a Transitional Care (TC) home visit pilot program who were discharged from hospital to home between April 1 and June 30, 2014. Patients received at least one home follow-up visit from an NP or MD in the 30 days post-hospital discharge. Patients who received their first visit within 3 days of discharge (Early Follow-up) were compared to patients who received their first visit after 3 days post-discharge (Regular Follow-up). Patient demographic, health, and home visit data were collected via review of Electronic Health Record and standardized data collected as part of the home visit pilot project. Cox Proportional Hazard analysis was used to determine the cumulative incidence of all-cause readmissions in the 30 days following the first TC home visit among patients receiving Early vs. Regular Follow-up.

Results: 112 TC patients were included, of whom 38% were black and 47% were women. Mean age of all participants was 73 years (range 27-103), with 37 patients in the Early Follow-up group (33%) and 75 patients in the Regular Follow-up group (67%). The Early and Regular Follow-up groups did not differ significantly with respect to their cumulative incidence of hospital readmission in the 30 days following the first TC home visit (Early = 27.0%, Late = 25.3%, p=0.89).

Conclusions: In this small, non-randomized, retrospective study of vulnerable patients, the rate of hospital readmission in the 30 days following the first NP/MD home visit did not differ for patients receiving their first home visit within 3 days of hospital discharge compared to after 3 days post-discharge.

D99
Evaluation of a Fall Risk Screening and Management Protocol in a Pharmacist Run Anticoagulation Clinic
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Supported By: John A. Hartford Foundation Center of Excellence in Geriatric Medicine and Training.

The benefits of warfarin have been shown to outweigh its risks in older adults with atrial fibrillation but it remains underused with those who have previously fallen. However, falls are often preventable when evidence-based strategies are applied. With this in mind, a fall risk screening and management protocol was implemented in a pharmacist run anticoagulation clinic at a public safety net hospital with all patients aged 65 years between September 2012 and February 2014. A positive falls screen, defined as a yes response to ≥1 of 3 falls screening questions, triggered a brief pharmacist-delivered intervention (patient education, vitamin D3 prescription [if not active], and a letter to the primary care provider [PCP] suggesting referral to physical therapy [PT] and/or the local Falls Clinic). We have previously described the demographic, health, and fall-related characteristics of patients reached by this program during its first 6 weeks of implementation. Here we report findings from a process evaluation of the 18 month program period. The electronic health record served as the source of data. Records 6 months pre and post intervention were reviewed using structured chart abstraction. Discrepancies from dual chart abstraction were resolved by discussion and consensus. One hundred one patients comprised the sample. The mean age was 76 years; 50% were female. Over half (56%) screened positive for falls/fall risk (i.e. at risk). Of those at risk, 49% were on a vitamin D supplement. Among those at risk and not taking it, 66% received a new vitamin D prescription. Of those at risk, 14% were referred to PT, and 16% to the Falls Clinic. Follow through on PT and Falls Clinic referrals was 50% and 44% respectively. Analysis of a composite variable (comprised of any of the following: PT referral, Falls Clinic referral, new PCP documentation of a plan to address fall risk, new vitamin D supplementation) found that 49% of those at-risk received at least one intervention. These results suggest that falls screening in an anticoagulation clinic may be an efficient way to identify older adults at fall risk and trigger evidence-based preventive care for falls.

D100
Time-in-motion analysis of the geriatric clinical pharmacist in four geriatric care settings: Pharmacists-led Interventions on Transitions of Seniors (PIVOTS)

Supported By: American Federation for Aging Research and Blue Cross Blue Shield of North Carolina.

Background: Medication-related problems are a common cause of hospital admissions for older adults. Pharmacists working collaboratively with physicians have been shown to improve the quality of care patients receive. Through PIVOTS, two geriatric clinical pharmacists and a post-graduate year 2 geriatric pharmacy resident provide direct patient care for patients within four different levels of care:
skilled nursing facility, personal care facility, two outpatient geriatric practices, and inpatient. The primary objective of the study is to identify the specific work of the pharmacists within the patient care team through a time-in-motion analysis. The secondary objective is to calculate the value added to the practice.

**Methods:** Detailed observations of the pharmacists will occur during a series of one-hour observations staggered throughout three days at each of the geriatric care settings. The observations will be recorded until saturation is reached. Qualitative analysis and descriptive statistics will be used to complete the analysis. These results will be used to associate potential revenue and quality metrics with the tasks and activities of the pharmacists.

**Results:** Broad “patient care processes” including comprehensive medication management, transitions of care, answering patient-specific and drug information questions, anticoagulation management, and education have been identified. These processes were further broken down into actionable “tasks” including communication with other healthcare professionals, documentation, patient interviews, chart review, and research. These processes and tasks were analyzed throughout the four different levels of geriatric care.

**Conclusion:** The findings of this time-in-motion analysis bring together the practical application of adding the geriatric clinical pharmacist to the interprofessional practice. This analysis brings forward the common key elements of these pharmacists as well as the potential financial value in order to show that this practice is reproducible, sustainable, and transferable.

**D101**

Physician perceptions of pharmacists integrated within their practice: a mixed methods analysis of effects on patient care and non-patient care activities

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Supported By: Nothing to disclose

A growing body of evidence demonstrates the value of collaborative practices between physicians and pharmacists in improving patient-centered care. At UPVMC St. Margaret, novel interprofessional practices have been developed in geriatric and family medicine settings in all levels of care. There, pharmacists collaborate with providers and patients to identify and solve drug therapy problems, provide patient education, and serve as a drug information resource. These activities are particularly impactful during care transitions.

The primary objective is to evaluate physicians’ perceptions of the effect of the pharmacist practice on physician activities by collecting the providers’ perceptions of key elements of their practice including: 1) the quantity and quality of physician-patient interaction, and 2) the physician’s participation in non-patient care activities (scholarly activity, practice improvement, education, quality of life).

Each physician that practices with a pharmacist will be recruited via email to complete an electronic survey. The survey will gather baseline characteristics of physicians including time spent practicing with pharmacists and quantitative data describing the resulting effects on how they care for their patients. Physicians will then be invited for brief key informant interviews to gather more descriptive qualitative data on the same themes. Quantitative data from the survey will be analyzed using descriptive statistics (means, standard deviations). A qualitative analysis will be performed on the interviews.

This analysis will describe the impact of pharmacists on the quantity and quality of physician activities. The survey data will describe perceptions of 40 physicians on changes in personal practice patterns in hours/week spent on specific activities. The follow-up interview will provide further details and specific examples from each of these physicians.

Currently, there is limited data that describes physician perceptions of the effects of pharmacists on the physician’s personal practice patterns. Bringing these perceptions to light is imperative to ensuring the success and sustainability of these collaborative practices, and the reproducibility for other healthcare teams.

**D102**

ICU admissions in PACE: Rates, predictors and outcomes.

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Supported By: AFAR, NIA, MSTAR

**Background:** The Program for All-Inclusive Care for the Elderly (PACE) is a community-based model of care for high-risk frail older adults. Regular monitoring of chronic conditions and preventative care is implemented to maintain functional independence and avoid unnecessary hospitalizations or acute care use. While PACE has been shown to decrease rates of potentially avoidable hospitalizations, ICU usage within the program has not been studied. We assessed the rates, outcomes and predictors of ICU usage at one PACE site (Hopkins ElderPlus, or HEP).

**Methods:** We performed a retrospective chart review of all HEP participants actively enrolled as of 1/1/11 (n=146). We collected demographic and medical characteristics plus ICU utilization, including length of stay. Outcome measures included readmission rates and mortality up to 6 months after discharge (for those with ICU or non-ICU admissions). Patients were identified into 3 groups: those with an ICU admission during the review period (“ICU”), those with a non-ICU hospital admission (“inpatient”), and those without any admissions (“outpatient”).

**Results:** Of the 146 HEP enrollees, 75 had a non-ICU hospital admission during the review period and another 19 were admitted to ICU (total 24 separate ICU admissions). Average ages were 77 yrs (ICU), 80 yrs (inpatient) and 77 yrs (outpatient). 31% of ICU group patients lived with a caregiver, compared to inpatient (44%) and outpatient (50%) groups. Average number of diagnoses and medications was only slightly higher in the ICU group (11 and 13 respectively) compared to the inpatient (10, 11) and outpatient (10, 11) groups. Average length of enrollment in PACE was less for the ICU group (26 months), compared to the inpatient and outpatient groups (36 and 43 months, respectively). The majority of patients in all 3 groups were dependent in ≥ 2 ADLs. The average ICU length of stay was 4.5 days and 30-day readmission rate was 15.8% (3/19). The 30 day and 6 month mortality rate for ICU patients was 33% and 46%, respectively.

**Conclusion:** ICU admission for PACE enrollees was associated with a high mortality rate at 30 days and 6 months. Longer time of enrollment in PACE was associated with lower rate of acute care usage. Additional study is needed to better define appropriate use of ICU within PACE.
identified patients’ attitudes toward pharmacists and their potential to help physicians manage hypertension.

Methods: We conducted 15 semi-structured interviews and 4 focus groups in Mandarin or Cantonese from February to April 2014 with 57 participants from a senior wellness center and local clinics in Los Angeles County. Participants self-identified as ethnic Chinese, were age 65+, and prescribed 1+ antihypertensive medication. Exclusion criteria included current enrollment in a hypertension management program, dementia, or a previous stroke. All sessions were audio recorded, translated and transcribed into English. The lead coder (EC) developed a grounded-theory based codebook and the transcripts were independently coded by 2+ coders (VSL, EC, RG). The coders regularly met to reconcile their coding. Analysis of commonly used codes revealed key themes, with illustrative quotes presented as examples.

Results: The mean age of interviewees was 70 (range: 66-80) and 72 for focus group participants (range: 65-88). Major themes from the interviews included patients having little contact with pharmacists, experiencing language barriers to understanding medications, and perceiving the pharmacist’s role as primarily dispensing medications. After the training and roles of clinical pharmacists were explained, both interview and focus group participants were receptive to having a clinical pharmacist work collaboratively with their physicians to help manage their hypertension medications.

Conclusions: Many Chinese American seniors with hypertension expressed negative attitudes towards community pharmacists mostly due to lack of clinical interactions. They were willing to incorporate clinical pharmacists into hypertension management teams once their qualifications and roles were explained. To enhance acceptability of clinical pharmacists in this population, programs should distinguish clinical pharmacists from retail pharmacists by highlighting their additional training and certification, emphasize pharmacist collaboration with patients’ physicians, and characterize pharmacists as specialists in medications.

D104
Neuropsychological Predictors of Mortality in Adult Protective Services (APS) Clients Referred for a Decision Making Capacity Assessment
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Supported By: Support for this study was provided by The American Federation for Aging Research (AFAR) Medical Student Training and Aging Research (MSTAR) program.

Background: Adult Protective Services (APS) is a state agency charged with protecting older adults from abuse, neglect, and exploitation. APS can facilitate the emergent removal of at-risk clients from their home if the client is perceived to be in imminent danger. Psychi atrists are often called on to assess elders for “capacity” and offer an opinion on the client’s acute safety. The purpose of this study was to determine if neuropsychological performance predicts survival in an APS sample referred for a capacity assessment.

Methods: A retrospective medical record review was conducted on APS clients referred for a capacity assessment between March 2008 and March 2011. Information extracted included demographics and scores on a neuropsychological battery sensitive to depression (GDS), memory (MIS), visuospatial ability (CLOX2), executive function (CLOX1 and EXIT25), and general cognition (MMSE). The number of days from the time of the assessment to their death was calculated. Kaplan-Meier survival curves and Cox proportional hazard regression models were constructed to determine the relationship between neuropsychological performance and survival.

Results: N=233 medical records were available for review (mean age 78.1, SD 10.6). In a univariable analysis CLOX2 and MMSE met the threshold for multivariable comparison. However, after adjusting for age and education, only MMSE performance was independently associated with survival (Hazard ratio 0.95, Std Error 0.02, p=0.043).

Conclusions: We conclude that only MMSE performance was associated with survival in our sample. Measures of depression, executive function, and visuospatial ability did not seem to independently predict mortality. Professionals who work with APS clients should be aware that poor MMSE performance in particular may forebode a negative outcome.

D105
Creative Music Therapy Improves Mood and Engagement of Older Patients with Delirium & Dementia in an Acute Tertiary Hospital
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Introduction
The hospital ward can be unfamiliar and stressful for older patients with impaired cognition, rendering them prone to agitation and resistive to care. Extant literature shows music therapy can enhance engagement and mood, thereby ameliorating agitated behaviors. This study evaluates the impact of Creative Music Therapy (CMT) on mood and engagement in patients with delirium and/or dementia (PtDD) in an acute care setting. We hypothesize that CMT increases constructive engagement and pleasure, and reduces negative affect and negative engagement.

Methodology
Twenty-five PtDD (age=86.5yrs ±5.7, MMSE 6/30±5.4) were observed for 90 minutes (30mins before, 30mins during and 30mins after music therapy) on 3 consecutive days; Day1 (control condition without music) and Days2&3 (during CMT). Music interventions included: 1) clinical music improvisation e.g. spontaneous music making with musical instruments with therapist on the keyboard/guitar, 2) playing familiar songs of patient’s choice. Main outcome measures were mood and engagement (ME) assessed through Menorah Park Engagement Scale (MPES) and Observed Emotion Rating Scale (OERS).

Results
Wilcoxon signed-rank test showed a statistically significant positive change in Constructive & Passive Engagement (Z=3.383, p=0.01) in MEPS, and Pleasure & General Alertness (Z=3.188, p=0.01) in OERS, during CMT. The average Pleasure ratings of Days2&3 was higher than Day1 (Z=2.466, p=0.014). Negative engagement (Z=2.582,p=0.01) and affect (Z=2.004,p=0.045) were both lower during CMT compared to no music.

Conclusion
These results suggest CMT holds much promise to improve mood and engagement of PtDD in an acute hospital setting. It was also observed that CMT transcended cultures and languages, making it useful to facilitate care in other areas such as physical rehabilitation and medical therapy.

D106
Changes in motoric and cognitive function among non-demented older adults with mild parkinsonian signs
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Supported By: Daniel Santos was funded by the American Federation for Aging Research, Medical Student Training in Aging Research (MSTAR) Program.

Background: Mild parkinsonian signs (MPS), which include bradykinesia, rigidity, tremor, and postural instability/gait disturbances, are highly prevalent in aging. Though MPS have been considered by some investigators as benign features of normal aging, other studies...
have reported their association with dementia and functional disability. Our objective was to evaluate the evolution of motor and cognitive changes with aging in elders with MPS. We hypothesized that participants with MPS would perform worse on both motor and cognitive tasks at baseline and show greater decline in these tasks over a 1-year follow-up period.

Methods: 279 non-demented community-dwelling older adults (mean age: 76.58 ± 6.87 years, 55% female) participated in this study. We used a conservative approach to define MPS status (presence of any two or more parkinsonian signs regardless of severity or the presence of any one parkinsonian sign of moderate to severe severity) at baseline. Motor performance was assessed by gait speed (cm/s), unipedal stance test for balance (s), and knee strength (kg). Cognitive functions were quantified using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS). Outcomes were measured at baseline and at 1-year follow up visit.

Results: At baseline, 127 participants met criteria for MPS (46%). MPS participants had slower gait velocity (value vs. value, p < .01) and worse unipedal stance (value vs. value, p < .01) but not knee extension strength (p > .05) than non-MPS participants. They also had worse RBANS total scores (value vs. value, p < .01). Participants with MPS had larger decline in gait velocity over 1-year (value vs. value, p = .04) than non-MPS participants, but not on unipedal stance or knee strength. The MPS participants also did not show increased cognitive declines.

Conclusions: Participants with MPS showed decreased motor and cognitive functions at baseline. Over the period of 1-year, participants with MPS showed a larger decline in gait velocity but not cognition functions. These findings suggest that MPS represent a clinical marker of pathological motor aging.

**D107**

**Primary Progressive Aphasia: A Case Report**

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Primary progressive aphasia (PPA) is a focal dementia that manifests as language decline with preserved memory, motor skills, and personality traits. Patients present with anomia and progress to word-finding difficulties, spelling deterioration, and abnormal speech. The nosology for progressive aphasia is debated; some offer PPA as a single disease while others have proposed a triad classification. Epidemiology of the disease is uncertain; some assert it is reasonable to assume there are thousands of patients with PPA.

The patient is a 70-year-old female with history significant for hypertension who presented with complaint of gradual one-year decline in cognitive function and word-finding difficulties. The patient was said to pronounce or use words incorrectly or in an unusual way. Review of systems was positive for the aforementioned language difficulties; negatives included memory loss, ataxia, bladder incontinence, and changes in personality. Physical exam was normal except for mildly impaired short term memory; speech was intact. Depression screen was negative. MOCA score was 17/30.

Lab testing showed normal chemistry, hematocrit, folate, vitamin B12, thyroid studies, RPR, and Lyme titer. A brain MRI showed diffusely prominent ventricles but no gross abnormalities. Brain PET scan showed asymmetric decreased FDG uptake in the left temporoparietal cortex and posterior aspect of the left parietal lobe.

The patient was referred for neuropsychology evaluation which suggested that the patient’s cognitive deficits were primarily language-based with preservation of non-language cognitive abilities. This presentation suggests a diagnosis of primary progressive aphasia.

**References**


Figure 1. PET scan showing decreased FDG uptake in left temporoparietal lobe.

**D108**

**Immunohistochemical Analysis of Synaptic Alterations in the Arcuate Nucleus of BALB/c Mice with Age-Related Feeding Deficits**

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**Background:**

As human age, many notable alterations in behavior begin to appear even in the absence of a disease process. Altered metabolism and feeding deficiencies develop with age and become problematic in many ways to the health of the geriatric population. It is speculated that the hypothalamus, one of the prominent regulators of appetite, is affected by this aging process. Our lab has demonstrated age-related deficits in feeding behaviors in BALB/c mice and thus provide a useful model for looking at possible change within distinct regions of the hypothalamus. One region of particular interest is the arcuate nucleus, as it plays an integral role in feeding behaviors. With the BALB/c mouse model, our goal is to look for any potential changes in cell number or synaptic density in the arcuate nucleus of the hypothalamus in older mice and compare them to young controls.

**Methods:**

To investigate if there are alterations in synaptic density in the aging hypothalamus, brains of old (21-22 month) and young (2-3 month) BALB/c mice were harvested, cryoprotected, and then sectioned. Immunohistochemistry for various excitatory and inhibitory synaptic markers was performed. Images of these samples were captured using confocal microscopy and synaptic puncta were quantified using ImageJ software.

**Results:**

Through this experiment, we demonstrated an increase in the expression of vesicular glutamate transporter 1 (Vglut1) in the arcuate nucleus of aged mice compared to young controls.

**Conclusion:**

Our data presents evidence for synaptic alterations in the aging hypothalamus that could potentially lead to functional changes. Though this may help to support this hypothesis, more research is necessary to see what neurons are being affected and to what extent the expression is actually causing physiologic and behavioral changes.

**D109**

**Prevalence of Hearing Loss in a Memory Clinic**

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**Introduction**
Age-related hearing loss is common among older adults. Recent epidemiologic studies suggest that hearing loss is independently associated with accelerated declines in cognitive function. However, the prevalence of hearing loss among the clinical subpopulation of cognitively impaired older adults is relatively unknown. This study examines the prevalence of hearing loss in a memory disorder clinic.

**Method**

Retrospective chart review of 34 patients from the John Hopkins Memory and Alzheimer’s Treatment Center was conducted. All were clinically diagnosed with cognitive impairment and underwent audiometric screening. Air conduction thresholds were obtained at octave frequencies from 0.5-8 kHz. A speech frequency pure tone average of hearing thresholds at 0.5-4 kHz was calculated in the better-hearing ear. A pure tone average of > 25 dB Hearing Level (HL) was defined as hearing loss in accordance with the World Health Organization’s (WHO) definition of disabling hearing loss.

**Results**

Among the 34 patients, 65% (22/34) of patients met the WHO criteria for disabling hearing loss, but only 32% (7/22) owned hearing aids. Age ranged from 62-93 years with average age of 76.6 (SD 7.8), and average MMSE (serial 7’s) score was 18.9 (SD 6.2). Average age was significantly higher in those with hearing loss compared to those with normal hearing [79.6 (SD 7.4) vs. 71.1 (SD 5.3); p=0.001]. Average MMSE score was significantly lower in those with hearing loss compared to those with normal hearing [16.6 (SD 6.4) vs. 22.9 (SD 3.4), p=0.01].

**Conclusion**

Our preliminary data suggest that age-related hearing loss is highly prevalent among cognitively impaired older adults, and a significant proportion of those with hearing loss did not own hearing aids. Hearing loss in individuals with cognitive impairment may be an additional barrier to effective communication with caregivers and further impact one’s ability to conduct daily activities and cognitive tasks. Based on these data, we are currently conducting a study to provide a low-cost amplification device along with training on usage and key communication strategies to cognitively impaired older adults and their caregivers.

**D110**

**White Matter Changes in the Brainstem & Motoric Cognitive Risk in Non-Demented Older Adults**


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Supported By: Joanna L. Mergeche was supported by the Medical Student Training in Aging Research program and the American Federation for Aging Research. Gilles Allali was supported by a grant from the Geneva University Hospitals. This study was supported by the French Ministry of Health (Projet Hospitalier de Recherche Clinique national n°2009-A00533-54) and NIH- National Institute on Aging (R01 AG039330).

**Background and Methods:**

Motoric Cognitive Risk Syndrome (MCR) is a recently recognized prodromal stage of dementia – particularly vascular dementia – that is characterized by slow gait and cognitive complaint. This study aims to determine if MCR is associated with regional white matter changes (WMC) detected on FLAIR in two independent samples of non-demented older adults: 174 from a French memory clinic sample (62.1% male, mean age 70.7±4.3 yrs) and 128 from an Indian community-dwelling and clinic sample (72.7% male, mean age 66.6±5.4 yrs).

**Results:**

Overall, 23.5% of participants met criteria of MCR and 73.5% of participants had evidence of WMC (Figure 1). In a weighted, pooled multivariate model controlling for age, sex, education, and stroke, MCR was significantly associated with WMC present in the brainstem (OR: 2.23 [95% CI 1.10-4.50], p=0.03).

**Conclusion:**

This finding supports the hypothesis that a vascular mechanism underlies the pathophysiology of MCR. More work is necessary to further elucidate the pathophysiological mechanisms of MCR.
D111
Genetic deletion of ErbB family members, including EGFR, does not replicate the neuroprotective effect of EGFR inhibitors
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Supported By: Genentech, Inc.

Background:
Axon degeneration is a prominent feature in various neurodegenerative diseases, yet the signaling pathways that control this process are poorly understood. Identification of genes that regulate axon degeneration can yield targeted therapies for the treatment of neurological disease. From a prior unbiased chemical neuroprotection screen, we identified a number of compounds that robustly inhibited axon degeneration in vitro—including multiple structurally distinct EGFR inhibitors. Although these findings implicate EGFR involvement in axon degeneration, small molecule inhibitors can have unforeseen off-target effects. To elucidate the mechanism of neuroprotection for EGFR inhibitors, we studied axon degeneration in knockouts for all four ErbB family members.

Methods:
Embryonic dorsal root ganglion neurons were obtained from EGFR (ErbB1) or ErbB3 null animals, or ErbB2/4 Nestin-cre conditional knockouts. Neuronal explants were cultured with nerve growth factor (NGF) overnight, and then deprived of NGF for 18-24 h, in the presence or absence of an EGFR inhibitor (PD168, 5 µM). Neurons were fixed and labeled with anti-neuron specific beta-tubulin. The percentage of degenerated axons was determined from multiple photomicrographs, blind to treatment and genotype. For all knockout neurons were fixed and labeled with anti-neuron specific beta-tubulin. For all knockouts, the presence or absence of an EGFR inhibitor (PD168, 5 µM) over time was evaluated by Western blot of brain and/or spinal cord tissue.

Results:
No reduction in axon degeneration was observed with EGFR or ErbB3 deletion. ErbB2, ErbB4, or ErbB2/4 conditional deletion also did not affect axon degeneration. For all genotypes, the EGFR inhibitor reduced axon degeneration by at least 80%.

Conclusion:
The neuroprotection observed with EGFR inhibitors is unlikely due to the inhibition of any single ErbB family member (or ErbB2/4 together). Since EGFR kinase inhibitors can reduce activity for EGFR, ErbB2, and ErbB4 simultaneously, it is also possible that these receptors can compensate for each other in axon degeneration. To test this, it would be necessary to delete all ErbB family members simultaneously, an experiment that is now practicable with the advent of CRISPR (clustered regularly interspaced short palindromic repeat) recombination technology. Alternatively, EGFR inhibitors may be reducing axon degeneration through an off-target effect. These results highlight the value of investigating drug mechanism with genetic tools.

D112
The Effects of Alzheimer Behaviors on Spousal Caregiver Endothelial Function
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Supported By: Institutions: National Institutes of Health, Grant R25 MH071544/MH/NIMH (PI: Dilip V. Jeste, M.D.) University of California, San Diego, Stein Institute for Research on Aging University of California, San Diego, San Diego, Shirley-Marcos Alzheimer’s Disease Research Center NIA Grant: P50 AG005131 (PI: Doug Galasko, MD) NIA Grant: R01 G015301 (Igor Grant, MD)
Key words: Alzheimer’s Disease, Caregiving, Endothelial Dysfunction
Mina L. Sardashti BS, Guerry M. Peavy PhD, Brent T. Mausbach PhD

Abstract
Background
The responsibility of caring for a spouse with Alzheimer’s Disease is known to cause poor health outcomes. Behaviors common in patients with Alzheimer’s Disease are quantified and scored to assess the distress level impacting the caregiver. These behavioral assessments may be helpful in predicting the severity of poor health outcomes, specifically endothelial function, in caregivers. This study examines the relationship between patient behavior and spousal caregiver endothelial function.

Method
Using data from both the Alzheimer’s Disease Research Center database and corresponding caregiver studies data, patient and spouse pairs (n=23) were examined for a relationship between the patients’ increased numbers of behavioral distresses via the Neuropsychiatric Inventory (NPI) and decreased endothelial function via Flow Mediated Dilation (% increase (FMD) measurements in the caregiver. Female (n=14) and male (n=9) caregivers were both included in the study. Longitudinal data was used in order to calculate the change in behavior and FMD over time.

Results
As the number of distressing behaviors increased in the Alzheimer’s patient, endothelial function decreased in their spousal caregiver, as demonstrated by impaired flow mediated dilation. (r = -.510)

Conclusions
This study highlights the importance of identifying impaired endothelial function in caregivers, as a sign associated with cardiovascular disease. Using the NPI to quantify the behaviors exhibited in the patient could serve as a tool to predict the cardiovascular risk of the caregiver. By identifying the risk to caregiver health early in the dependent’s diagnosis, a window of opportunity may be provided for the caregiver to preemptively seek resources that may help lower their health risk. Furthermore, any treatment which lowers the number of behaviors exhibited by the patient will not only benefit their health, but will also indirectly benefit the health of their spousal caregiver.

Poster Abstracts
D113  
The Role of Sleep Apnea Induced Oxidative Stress in Stroke Pathogenesis and Recovery  
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Supported By: Medical Students Training in Aging Research, American Federation for Aging Research

Background: Obstructive sleep apnea (OSA) is a common, but undiagnosed comorbidity among patients with a number of age-related disorders, including stroke, Alzheimer’s disease, and Parkinson’s disease. Many of the risk factors for sleep apnea, such as obesity, are modifiable and treatment of sleep apnea itself can limit its systemic effects. Because of these facts, understanding the role of OSA in more serious diseases may promote awareness and early diagnosis, thus preventing serious adverse health outcomes.

Given the knowledge that sleep apnea increases oxidative stress, in order to investigate the effects of sleep apnea on the pathogenesis of and recovery from stroke, we used chronic intermittent hypoxia (CIH) as an animal model of sleep apnea in rats.

Methods: 12 rats underwent behavioral testing and were then randomly assigned to chambers with either a constant normoxic environment or one that simulates the chronic intermittent hypoxia of sleep apnea. Cerebral ischemia was induced in rats by occlusion of the middle cerebral artery. After a day of recovery, cognitive impairment, oxidative stress, and the size of the ischemic lesion was measured.

Results: The experiment showed that CIH increased the size of the stroke lesion in the brain. In this setting, CIH did not appear to alter circulating oxidative stress protein measures or acute stroke behaviors.

Conclusion: Based on these results, sleep apnea co-morbidity can have deleterious effects on stroke outcomes.

D114  
When Altered Mental Status is Not Delirium: A Case of Geriatric Catatonia  
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Catatonia is an often-overlooked, serious but treatable neuropsychiatric condition which may be easily mistaken for a host of other disease states, particularly in the geriatric patient population. This case follows the diagnostic progression of one Mr. G, a previously-healthy 77-year-old male who initially presented to the emergency department with depressed mood, paranoia, confusion, and social withdrawal, treated as a neurocognitive decline. A full workup including complete blood count, metabolic panel, B12, folate, EKG, and CT of the head were all negative. Mr. G’s discharge from the emergency department with a prescription for risperidone 0.25 mg and rapid return to the hospital later revealed a worsening depression with psychotic features in a catatonic state; upon examination in the psychiatric inpatient unit he screened positive on the Bush-Francis Catatonia Rating Scale with a score of eight. A trial of 0.25 mg of lorazepam twice daily and 15 mg of mirtazapine at night rapidly resolved Mr. G’s symptoms over the course of 24 hours. Through this case report we explore the diagnostic quandary of identifying catatonia in the geriatric patient, and emphasize the importance of catatonia as a differential consideration in the setting of “mental status change.”

D115  
Older Adults’ Experiences with Colorectal Cancer Screening Discussions  
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Supported By: This project was supported by the Agency for Healthcare Research and Quality (AHRQ) Research Centers for Excellence in Clinical Preventive Services, grant number P01 HS021133. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Agency for Healthcare Research and Quality

MSTAR grant

Background: Inappropriate colorectal cancer (CRC) screening occurs when older adults in poor health undergo screening and those in good health fail to undergo screening. Understanding older adults’ discussions with their providers about CRC screening may lead to potential targets for interventions to reduce inappropriate CRC screening. The aim of this study was to qualitatively understand older adults’ experiences discussing CRC screening with their providers.

Methods: We conducted a mixed-method cross-sectional survey of English-speaking primary care patients aged ≥70 years. Participants needed to be eligible for CRC screening without history of colorectal cancer, inflammatory bowel disease, or dementia. Eligible patients were identified prior to an upcoming clinic appointment and interviewed afterwards about their visit. Two investigators (CK and AS) independently coded transcribed verbal responses to an open-ended question asking them about their discussions. We used an iterative process to identify domains associated with CRC screening discussions, resolving disagreements by group consensus.

Results: Of 424 participants, 201 had discussions and reported their final screening decision. We identified 10 broad domains, five of which reflected the discussion process and five of which referenced the content of those discussions. Process domains consisted of: 1) patient’s role in the decision; 2) physician’s role in the decision, 3) whether the decision was mutual; 4) the format of the decision; and 5) insufficient time to make the decision. Content domains included the following: 1) patient’s medical history; 2) CRC screening specific issues; 3) timing/frequency concerns; 4) environmental constraints on CRC screening; and 5) patient’s values towards screening.

Conclusions: Older adults focused both on how the CRC screening discussions happened and what was said in those discussions. Future work is needed to see if interventions developed using these domains can improve the appropriateness of CRC screening in older adults.

D116  
Antihypertensive medications and blood pressure variability: Women’s Health and Aging Study II (WHAS II)  
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Supported By: Funding was provided by the 2014 Medical Student Training in Aging Research (MSTAR) Program by The American Federation for Aging Research (AFAR) and the National Institute on Aging (NIA).

Background: Evidence suggests that increased blood pressure variability (BPV) is associated with increased risk of mortality, cardiovascular events, strokes and cognitive impairment. There are few studies evaluating the association between antihypertensive medications and BPV.

Methods: Participants included 436 non-demented community-dwelling female participants over the age of 70 years, who were
enrolled in the Women’s Health and Aging Study II and followed for up to 9 years. The associations between angiotensin converting enzyme inhibitor (ACE-I), angiotensin receptor blocker (ARB), diuretic (DIUR), calcium channel blocker (CCB), beta receptor blocker (BRB) and no antihypertensive medication (NOMED) use on systolic BPV, diastolic BPV, pulse pressure variability and mean arterial pressure variability were evaluated over a 9-year period using linear regression analyses adjusted for covariates including age, BMI, and comorbidities. Blood pressures were averaged and variability was defined as the SD for the participant’s mean pressure across visits.

Results: BRB use was associated with significant increases in systolic, diastolic, pulse pressure and mean arterial BPV (β = 1.68, p < 0.061; β = 1.62, p < 0.02; β = 1.81, p < 0.02; β = 1.44, p < 0.032; respectively), while NOMED use was associated with significant decreases in systolic, diastolic, pulse pressure and mean arterial BPV (β = -4.31, p < 0.001; β = -2.67, p < 0.002; β = -2.59, p < 0.006; β = -3.15, p < 0.001; respectively). There was no significant association between ACE-I, ARB, DIUR, CCB use and pressure variability.

Conclusion: Our longitudinal data suggest that ACE-I, ARB, DIUR and CCB use may not affect blood pressure variability, while BRB use increases pressure variability, in older women. Our study findings provide additional information on the effects of antihypertensive medication and could guide clinicians in their choice of drugs for the treatment of hypertension.

D117
Microscopic Hematuria in Older Adult
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INTRODUCTION:
Renal cell carcinoma is the most common type of kidney cancer in adults, more common in men aged 50 to 70 years old. It lacks early warning signs, only 10% will have the classic triad of flank pain, hematuria and flank mass. We present an older adult who self reported hematuria in our busy primary care clinic.

CASE HISTORY:
Mr CK is a 79 year old, non smoker man with past medical history of hypertension, hyperlipidemia, and gout with an unremarkable family history. He was attending our clinic for his routine follow up appointment for his chronic diseases. He walked steadily with a cane into the clinic. His blood pressure and cholesterol level were well controlled and planned to review him in 6 months. During the consultation, he casually reported he had an episode of resolved hematuria, no associated abdominal pain or other urinary symptoms. Further history revealed that he has dry cough, loss of appetite and 10kg weight loss over the past months. On examination, there is a palpable mass in the right upper quadrant extending to the right flank. Mr CK had further investigations of chest x-ray, abdominal ultrasound, urinalysis and laboratory test. His laboratory results were unremarkable but urinalysis showed microscopic hematuria, chest x-ray revealed multiple irregular opacities throughout both lung fields and abdominal ultrasound confirmed right renal mass. Subsequently, Mr CK had CT scan which showed right renal mass with nodules in both lungs, the biopsy of renal mass confirmed renal cell carcinoma. Mr CK has anticipated his diagnosis, made his funeral arrangement but keen to receive further treatment. In view of Mr CK good functional status, he is given palliative chemotherapy to control his disease.

DISCUSSION:
In a busy primary care clinic, older adult has a limited time slot for consultation. In spite of this, our case illustrates that it is still possible to recognise alarming signs and symptoms of hematuria, weight loss and prolonged cough. In older man with self reported hematuria, physician should further evaluate for pathology of the genitourinary tract. We believe early diagnosis can initiate discussion on advance directive and potential palliative treatment for good quality of life.

D118
Small cell carcinoma of the bladder - A rare aggressive tumor and a curse to the elderly
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Introduction:
Small cell carcinoma (SCC) of the bladder is an extremely rare and highly aggressive tumor that presents generally in the elderly. Frequently, it is detected at an advanced stage with nodal and visceral metastases.

Our case portrays the challenges in balancing ageism, realism and the dearth of data in treating cancer of elders, particularly those with a low incidence.

Case:
An active 78-year-old male with atrial fibrillation, hypertension and diabetes mellitus presented to the hospital with new onset gross hematuria associated with jaundice, periumbilical abdominal discomfort, nausea, malaise, night sweats, and anorexia. He neglected having fever, chills, weight changes, or change in bowels. He is a nonsmoker and his alcohol consumption is moderate. Prior to his admission, he was independent of his ADLs and IADLs. Vital signs were normal. Physical examination was remarkable for dry mucous membranes, icterus, irregular heart rhythm and distended abdomen. Laboratory work up showed moderate transaminitis, hyperbilirubinemia, and acute kidney injury. Ultrasounds of abdomen and retroperitoneum showed innumerable hypoechoic masses throughout the liver and a 3-cm vascularized bladder mass suspicious for malignancy. Chest imaging was negative for primary or metastatic lesions. A CT guided biopsy of the hypoechoic masses in the liver showed metastatic small cell carcinoma.

Unfortunately, he had an acute decline in his function while hospitalized. He remained bedbound with an Eastern Cooperative Oncology Group (ECOG) performance score of 4. The Oncology team recommended supportive care given the risk of chemotherapy (carbo/ cis + etoposide/irinotecan) outweighing the benefit of treatment given his decline in function, advanced disease and multiorgan failure. Goals of care were addressed and the patient and family opted for hospice evaluation. The patient died during the same hospitization only 11 days after diagnosis.

Conclusion:
There is no standard approach to the management of SCC of the urinary bladder because if its rarity. Treatment approach is based on multimodality therapy combining cisplatin-based chemotherapy/radiation therapy plus radical cystectomy, except when metastatic disease is present; however, this is not yet an established therapy and the specific benefits and risks for the geriatric patients is scarce.

D119
Prognostic assessment of hospitalized older adults with community-acquired pneumonia: a geriatric approach
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Supported By: Nothing to disclose

Background: Pneumonia is a major cause of morbidity and mortality in older adults. Though several instruments were developed to assess prognosis in the context of pulmonary infection, none contemplate factors of known relevance in this population, such as functionality, cognition, and multimorbidity. We thus sought to investigate prognostic factors in hospitalized older adults with community-acquired pneumonia (CAP).

Methods: This was a retrospective cohort study including 572 patients aged 60 years and over who were admitted to a geriatric ward Geriatric ward of a university hospital from 2009 to 2013, in Sao Paulo, Brazil. Cases of CAP were defined as those
diagnosed by attending physicians at admission with supporting radiological findings. Primary outcome was in-hospital mortality, and secondary outcomes were length of stay and 12-month survival. Multivariate analysis was performed to investigate the association of these outcomes with socio-demographic, clinical, functional, cognitive and laboratory characteristics. These were collected from comprehensive geriatric assessments routinely carried out at admissions. We also reviewed medical records to determine length of treatment and most commonly used antibiotics. Results: Mean age was 80.4 years and 63.3% of women. Overall in-hospital mortality was 21.3%. A total of 144 patients had CAP and it was the leading infectious disease at admission. Although patients had socio-demographic characteristics, those with CAP were more frequently dependent in ADLs (p<0.001) and IADLs (p=0.016), demented (37.5 vs. 24.3%; p=0.018), and delirious (37.5 vs. 24.3%; p=0.002). CAP was associated with higher in-hospital mortality (29.2 vs. 18.7%; p=0.008), which was predicted by the following factors: ADL dependency (OR=1.31; p=0.011); delirium (OR=2.68; p=0.017); reduced albumin levels (OR=0.39; p=0.021); and reduced creatinine clearance (OR=0.89; p=0.035). Length of hospitalization or treatment did not vary according to mortality. Survival after 12 months of discharge was not affected by CAP diagnosis. Conclusions: We confirmed the importance of CAP as a cause of morbidity and mortality among hospitalized older adults. Our results also indicate that clinicians should consider additional factors when assessing prognosis in this context, including functional dependency, delirium, low albumin levels and impaired renal function.

D120 Dysphagia in Older Adults
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Dysphagia is usually a sign of problem with the throat or esophagus. We present a case of difficulty in swallowing due to superior vena cava obstruction (SVCO). SVCO occurs in about 15,000 per year in the United States. As a result, patient usually presented with dyspnea and upper trunk swelling.

Case
Mr AG was a 69 years man, past medical history significant for hypertension and stage 3 chronic kidney disease (CKD), presented to emergency with difficulties in swallowing and weight loss. He was admitted to the surgical services for evaluation of presumed esophageal cancer. He was informed of his suspected diagnosis and offered nasogastric feeding. Subsequent, fine needle aspiration of the supraclavicular lymph node showed as malignant lymphoma. In view of his complex medical condition, he was referred to Geriatric and Palliative Medicine services. After careful history and physical examination, Mr G has had 1 month history of productive cough with dyspnea on exertion especially when eating and drinking. He looks short of breath with significant swelling of upper extremities and dilated chest veins. Clinically, there were supraclavicular lymphadenopathies, both lungs were reduced air entry on bisubally with dull to percussion. He was unable to lie flat for CT scan and core lymph node biopsy. Mr G was started on fentanyl infusion to control his dyspnea, undergone bilateral pleural drainage and started on dexamethasone. He was symptomatically better and could tolerate CT scan which showed pulmonary embolism and confirmed a 10.5cm by 5.3cm by 10.6cm mediastinal mass causing SVCO. Family conference was held to update and discussed the goal of care. Mr AG was able to sit out on a wheelchair and enjoy his last few weeks. Unfortunately, prior receiving any chemotherapy, Mr AG died of disseminated intravascular coagulopathy, complication of malignant lymphoma.

Discussion:
Our case illustrates the importance of geriatric and palliative medicine in caring for older adults suffered from cancer. They required meticulous history and symptoms assessment and comprehensive physical examination. It is very important to control the presenting and distressing symptoms on first medical encounter while pursuing for further investigation and diagnosis. Hence, it is very importance for all medical students to train in geriatric and palliative medicine.

D121 A Cross-sectional Study on the Prevalence of Sedating Medication Use Among Older Patients Attending the Emergency Department
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Supported By: University Emergency Medicine Foundation

Medical Student Training in Aging Research Program, American Federation for Aging Research

Background
Compared with younger drivers, those over age 65 drive fewer miles but have more motor vehicle collisions (MVCs). Older adults often use medications that have a sedating effect. Previous studies have shown that sedating medications can impair driving ability. The objective of this study was to determine the prevalence of sedating medication use among older drivers presenting to the emergency department (ED). We also aimed to assess their driving behaviors while using these medications, and advice given about the potential for these medications to cause driving impairment.

Methods
This was a cross-sectional study of 76 older adults (age ≥65) presenting at an urban ED for an illness or injury. Participants had to have driven in the past 30 days and show cognitive competence by passing a mini-mental status exam to be eligible. Structured interviews quantitatively assessed study variables.

Results
Of the 76 interviewed, 34 (45%) used sedating medications. Participants on and not on sedating medications averaged 38.3 miles and 38.6 miles driven per week, respectively. Those using sedating medications had a higher rate of MVC in the past 12 months (17%; 95%CI: 0-34%) than those not using them (10%; 95%CI: 1-19%). Opioids and SSRIs combined, accounted for over 50% of all sedating medications prescribed and 16% reported use of prescription sleep medications. No participants using prescribed sedating medications reported being advised by their prescriber about the potential for these medications to cause driving impairment.

Conclusions
Almost half the patients in this study were on sedating medications. Despite this, participants on sedating medications still drove the same number of miles per week, on average, as those not on these medications. In this small sample a greater percentage of the group on sedating medications had MVCs in the past 12 months. Given that no participants on sedating medications recalled being given advice about the potential for driving impairment, additional efforts are warranted.

References

D122 Efficacy of the Project Healthy Bones Program in an Elderly Community
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Supported By: Funding provided by the Francis E. Parker Memorial Home, INC grant program

Background: Project Healthy Bones (PHB) is a 24 week exercise and education program supported by the New Jersey Depart-
ment of Human Services, Division of Aging Services. It is a peer-lead course designed for older adults with or at risk for osteoporosis. The purpose of this study is to validate the benefits and implementation of the PHB program in an assisted-living facility.

Methods: Subjects from the Francis E. Parker Memorial Home’s assisted living, adult day care, and community programs were enrolled in this pilot study. Subjects required a MMSE of at least 20 and medical clearance from their doctor. Subject demographics, geriatric fitness assessments, exercise logs, quizzes, and surveys were collected at baseline, midpoint, and end of 24 weeks. Various strategies were implemented to increase compliance. Three Parker staff members were trained to continue PHB after study conclusion.

Results: Forty (6 men and 34 women, average age 80.3±9.1) of the 53 participants enrolled completed the program with an average attendance rate of 88%. Eleven quit after a few classes because class was too difficult and 2 quit after midpoint tests due to health problems (dementia, cancer). Baseline and post study data was analyzed using paired t-tests and regressions of change scores within the R statistical environment. The functional reach, four step square, timed up and go, chair stand, tandem stand, single leg stand, and occiput to wall tests significantly improved after the program. In the assisted living group, 12 week data was significant but 24 week was not due to drop outs. Knowledge about nutrition, osteoporosis, and fall risk improved by 17% and fear of falling improved 15%. The single leg stand test with closed eyes and on a balance pad did not improve. Twenty of 32 (63%) subjects eating inadequate or too much calcium improved their calcium intake. Improvement was significantly greater in subjects with a lower age on the chair stand and with a lower number of medications for the single leg stand (closed eyes). MMSE was associated with improvement. Six months after the study, Parker offered a modified PHB program.

Conclusion: Patients participating in PHB demonstrated improved strength, balance, posture, and flexibility resulting in a potential decrease in falls and fractures. PHB needs modification for the frailter population. *p<0.001, **p<0.01, ***p<0.05

D123
Hospital pneumococcal immunization policy results in inappropriate use
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Invasive pneumococcal disease (IPD) results in an estimated 5000 deaths annually in the United States. Reduction in morbidity and mortality associated with IPD in vaccinated patients, has led the Advisory Committee on Immunization Practices (ACIP) to recommend routine vaccination in high-risk patients. Hospitalization provides an opportunity for immunization, thus The Joint Commission had previously recommended screening every admitted patient for immunization. Most US hospitals have incorporated a pneumococcal immunization policy into the admission process. Although intended to be beneficial, it may result in immunization of patients not meeting stated ACIP criteria, or unwarranted repeat immunizations with studies suggesting that such practices may actually decrease immunity and thus be counterproductive.

In an attempt to identify those patients not meeting ACIP immunization criteria but vaccinated anyway to meet hospital’s vaccination protocol, we retrospectively reviewed the records of 661 patients admitted to our hospital.

As per our analysis 107 (29.88%) patients between the age group 18 and 65 years (n=358) were vaccinated with PPSV23 without any indication. 53 (17.49%) elderly patients were vaccinated more than once (n=303). A total of 160 patients (24.20%, n=661) were vaccinated not in accordance with ACIP recommendations. However, we suspect the actual number of elderly patients revaccinated is higher as a lot of them could not recall previous vaccination and were thus vaccinated again.

Studies have shown that revaccinations could cause an attenuated antibody response. This is postulated to result from the stimulation of pre-existing memory B cell (MBC) into terminal differential without inducing MBC. As a result, a lower number of MBC are available to respond to subsequent doses of vaccine or infection. In addition, injection site reactions are more common after revaccination than with primary administration. Therefore, hospital immunization policies may actually lead to wasteful financial and medical resources as well as unintended yet detrimental health consequences.

Immunization has been recognized as a milestone in preventive medicine. Nevertheless, it is imperative that in order to provide benefit and avoid potential harm, hospital vaccination policy designed to enhance immunization compliance are carried out correctly, and not just for reasons of meeting a particular core measure.

D124
Older Adults Visit Online Sites for Screening and Brief Intervention for Unhealthy Alcohol Use
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Supported By: The authors declare that they have no relevant financial or nonfinancial relationships to disclose.

Background: Online interventions for unhealthy alcohol use have proven efficacy in adult populations. With the aging of the baby boomer generation, there will be larger numbers of older adults who drink in excess of recommended drinking limits, however there is no literature comparing younger and older adults who visit online programs to change drinking behavior.

Methods: We examined data between January 1 to December 31, 2013 from visitors aged 21-80 to www.alcoholscreening.org (AS.org) who completed questions on drinking and others as part of the online screening and brief intervention (SBI).

Results: In one year, 94,221 adults aged 21-80 visited the site and answered drinking questions; 78,735 (84%) exceeded weekly or daily drinking limits, 77% were aged 21-49, 19% were aged 50-64 and 4% were aged 65 to 80. Seventy percent (N=55,332) agreed to answer further questions (same percentages in each age group). Across the three age groups, mean importance to change, selected number of negative consequences of drinking and number of barriers to make a change were lowest among the oldest age group, conversely, confidence to make change was highest in the oldest age group (p<0.001 for all comparisons) The most commonly selected barriers to change across age groups were not wanting to make a change (47, 49 and-53% from youngest to oldest) and friends and family drinking (66, 54 and 45% from youngest to oldest). Similar percentages of each age group wanted to cut back on drinking (77-79%) or stop drinking (21-24%). Those more likely to indicate a wish to reduce drinking were women, in the older age group, had higher importance to change, number of negative consequences confidence to make change, and number of barriers.

Conclusions: Most site visitors exceeded recommended drinking limits, almost a quarter of them were aged 50 years and older, and confidence to make a change increased with increasing age but desire to reduce drinking did not differ across age groups. Internet-based SBI for unhealthy alcohol use are used by all ages, however, if they work to reduce unhealthy drinking in older populations has not been explored.

Mean values for importance to change (0-10)

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Confidence to make a change (0-10)

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D125
Tailored Education To Improve Glaucoma Medication Adherence
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Supported By: Michigan Vision Clinician-Scientist Development Program K12EY02299

Background: Despite effective medications, glaucoma is the 3rd leading cause of blindness in the US and affects 10.3% of the population ≥ age 75. At least 1/3 of glaucoma patients are non-adherent to their medications, leading to more severe visual field loss. Interventions are needed to improve glaucoma medication adherence using proven methods like tailoring, in which educational content is adapted to the patient’s medical data and needs. The objective of this study was to develop and improve a tailored educational intervention and determine if it is necessary to tailor by age. Methods: We used purposeful sampling to identify glaucoma patients ≥ age 40; half were non-adherent and half were older (≥ age 75). Each subject was presented with tailored glaucoma education. Cognitive interviews were conducted to elicit feedback about the program, and shortcomings in the program were resolved through iterative revisions. Transcripts of the interviews were coded using standard content analysis methods with NVivo 10.0.

Results: 21 patients were interviewed and all 21 indicated that tailored information was useful, that a facilitator improved the experience over a solely web-based program, and that the intervention was valuable. 5/11 younger patients had difficulty instilling eyedrops versus 9/10 older patients. Family support impacted glaucoma management for 11/11 younger patients versus 6/10 older patients. 4/10 older patients and no younger patients said that they did not understand the purpose of glaucoma medication yet take it to comply with their doctors’ instructions. Conclusions: Family support, difficulties instilling eyedrops, and understanding the importance of eyedrops were salient issues for older glaucoma patients. The educational program did not initially tailor on family support; this variable will now be included due to its relevance to older patients. Studying older glaucoma patients underscored the need for a medical assistant to walk patients through the program instead of having patients work through a web-based program on their own; only a person can teach eyedrop instillation, discuss attitudes about taking medications, and ensure that patients know the importance of glaucoma medication.

D126
Quality of Life in the Mayo Clinic Care Transitions Program, a Survey Study.

Supported By: Mayo Clinic

Background: Health systems commonly implement transitional care programs to reduce hospital readmission and medical complications. Patients also value excellent quality of life (QoL). In studies examining QoL, one finds mixed efficacy with transitions programs.

Clinical Question: Does the Mayo Clinic care transition (MCCT) program improve patients’ self-reported QoL compared to usual care in older adults? Did enrollment in MCCT change QoL over one year?

Methods: We conducted a cross-sectional mailed survey with a one year longitudinal follow-up survey for participants enrolled in the MCCT. We included 119 participants (83 in MCCT and 116 in usual care) over 60 years of age with complex medical problems. Enrollment criteria included an elder risk assessment score over 16. Surveys were mailed in 2013, with followup in 2014 for MCCT participants. The primary outcomes were self-rated QoL using the validated PROM-ISE.10. Secondary outcomes included self-reported general, physical, and mental health. Within-group comparisons for MCCT patients over time and between-group comparisons for MCCT patients and controls were evaluated using Pearson’s Chi-squared analysis.

Results: Of 141 MCCT participants completing the baseline survey 83 (59%) completed the year follow up survey. In usual care, we observed a 19% response rate. In MCCT at baseline 26% reported fair to poor QoL compared to 36% after one year (p value 0.16). Between MCCT and usual care which reported 28% fair to poor QoL, there was no significant difference p value = 0.77. Between baseline and follow-up in MCCT patients, and between MCCT patients and controls, there were no significant differences in self-reported general health (p = 0.87 and 0.53, respectively), physical health (p = 0.84 and 0.99), or mental health (p = 0.87 and 0.76). All reported values had >25% fair to poor response. Greater than 55% of patients rated physical health as fair/poor on all surveys.

Discussion: We did not detect a difference in QoL between patients in MCCT and those in usual care. We saw a non-significant decline in QoL in MCCT participants over one year. We suspect the limited time of the intervention may explain the lack of within-group and between-group differences. The symptoms and progression of chronic disease may overwhelm any improvement in QoL that could be attributed to MCCT. Despite these findings, continued emphasis on patient reported outcomes is needed.

D127
Quality of Life After Bariatric Surgery in the Elderly: A Systematic Review
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Background: Obesity in the elderly is an emerging public health issue. While bariatric surgery (BSx) is effective and safe in young patients, long-term outcome data, including quality of life (QOL) and functional status remain unclear. These determinants are imperative in enhancing clinical decision-making in elders seeking surgery. We systematically examined whether QOL and function is improved in elders following BSx.

Methods: We searched the following databases for English-language randomized controlled trials and retrospective cohort studies between 1991 and 2013: MEDLINE, Embase, Cochrane Library (Wiley), CINAHL (EBSCO), PubMed (not-MEDLINE subset) and Web of Science. Indexed terms, text words, and concepts of BSx and elderly (aged 65+) were captured. The search strategy adjusted for the syntax appropriate for each database. We identified studies consisting of Roux-en-Y (open and laparoscopic) [RYGB] and gastric banding/sleeves. Studies consisting of at least one participant aged ≥65years with data on markers of quality of life or functional status were included. All studies were assessed by 2 independent reviewers. We followed the PRISMA guidelines for study selection. Qualitative, narrative analyses were performed on the resultant studies.

Results: The initial search yielded 3,733 citations. After applying inclusion/exclusion criteria, hand-searching of abstracts yielded 21 citations, one which was a randomized study. Others were either retrospective (n=8) or prospectively (n=12) collected data. Only 1 study uniquely examined persons aged ≥65years. Mean follow-up was 3.27years across all studies. The majority of the articles (n=12) were published after 2010. Ten studies consisted of solely RYGB (laparoscopic and open), 8 were banding, 2 were a gastric sleeve, and 1 compared RYGB and banding. We did not observe any trends between study year and surgical type. Six studies showed improvements in Short-Form 36 and BAROS measures. Only 1 study examined cardiorespiratory fitness post-BSx and none examined changes in functional status.
Conclusion: While BSx is being performed with greater frequency in elders and controversy exists as to whether it should be performed, there are a paucity of evidence with regards to long-term QOL and functional status data in patients aged 65. There may be a benefit, but dedicated studies with long-term follow-up are needed to examine QOL and function.

D128
The Relationship Between Self-Rated Quality of Life and Grip Strength in an Ambulatory Geriatric Medicine Patient Population
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Supported By: MSTAR (NIA T35)
Johns Hopkins Older American’s Independence Center

Background: Muscle weakness associated with sarcopenia and frailty in older adults may lead to reduced mobility and reduced quality of life (QOL). Using measured grip strength as a clinical measure of muscle weakness may help in predicting adverse outcomes in at-risk patients. The purpose of this study was to characterize a sample of older patients with poor strength, assess the prognostic value of measured grip strength for predicting self-rated QOL and adverse health outcomes.

Methods: The study was conducted in an outpatient geriatric medicine practice setting during routine appointments. Using a dynamometer, we measured grip strength and evaluated IADL difficulty and self-rated QOL through administration of the EQ-5D-5L health questionnaire. Retrospective data on chronic diseases, hospitalizations, and emergency room visits were collected from the medical record. We performed statistical analysis comparing described variables between weak and not weak participants (“weak” if grip strength <16kg for women or <26kg for men).

Results: Of the 70 subjects (34 female), 35 of the subjects were considered weak, and the mean grip strength kg (SD) for females was 15.4 (4.7) and 27.1 (10.5) for males. The mean age (SD) for weak and weak subjects, respectively, was 75.6 (6.9) and 84.6 (8.2). The weak group was 51.4% female, and the not weak group was 45.7% female. Compared to older adults with not weak grip strength, subjects with weak grip strength reported worse health-related quality of life (HRQOL) state; the mean HRQOL rating (scale 0 to 100, 0 being the worst health) for the weak individuals was 70.2 and the not weak group was 81.4 (p=0.007). Weak subjects also reported increased levels of anxiety and/or depression (p=0.024) compared to older adults with not weak grip strength. A higher prevalence of CHF and COPD was seen in weak grip strength participants. 40.0% of weak grip subjects and 11.4% of normal grip subjects had CHF (p=0.013), and 22.9% of weak grip subjects and 5.7% of normal grip participants had COPD (p=0.013).

Conclusion: Office-based measurement of grip strength identified a population with relatively low self-rated quality of life and a high burden of chronic illness. Measuring and analyzing change in strength over time in older adults in a clinical setting merits further study.
A retrospective chart review was performed between 4/5/2009 to 12/21/2013 at MNR Hospital in New Rochelle, New York to identify all patients over age 100 who underwent surgery. This cohort was stratified into three groups based on the severity of surgical procedure: Group 1 - minor procedures such as intubation and minor suturing; Group 2 - medical procedures such as colonoscopies, lumbar epidural steroid injections, and PICC line placements; and Group 3 - major surgical procedures such as colon resections and orthopedic procedures. Data were analyzed for statistically significant differences in length of stay (LOS) between groups, 90-day readmissions, and intraoperative/postoperative complications.

Results:
There were 137 admissions in 76 patients over 100 years. Within this group, there were 37 surgeries performed in 17 patients. Group 1, 2, and 3 had 12, 17, and 8 patients respectively. The mortality rate was 9.6%. The mean LOS was 5.9, 6.3, and 7.3 for groups 1, 2, and 3 respectively. The mean LOS for all patients admitted was 5.1 and 6.4 for all surgical patients. There were no statistically significant differences in LOS between any groups on pair-wise t-tests.

Conclusion:
Centenarians require surgical procedures with some frequency and often tolerate them quite well. The low mortality rate and lack of significant difference in LOS based on procedure type suggests that surgical treatment may not need to be withheld based solely on advanced age. We hope to continue our analyses further.

D131
Preoperative Cognitive Screening in Elderly Surgical Patients
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Supported By: American Foundation for Aging Research

Introduction: Cognitive impairment correlates with higher rates of postoperative complications and 6-month mortality following elective surgery. Among patients age 65+, an estimated 20-25% have some degree of cognitive impairment. In this study, we used the Mini-Cog (sensitivity 75-99%; specificity 81-93%) to cognitively stratify elderly patients during preoperative evaluation at Brigham and Women’s Hospital (BWH). We aimed to determine 1) if the Mini-Cog is a reliable assessment tool in the context of a busy preoperative center, and 2) if the screen can predict and/or modify postoperative outcomes.

Methods: 500 patients over age 65 scheduled for elective surgery at BWH completed the Mini-Cog prior to their preoperative evaluation (mean age 73). Mini-Cogs were administered by anesthesia residents, NPs, an undergraduate student, and the study team. We collected patient baseline information including age, weight, education level, METs, and ASA physical status, along with information on outcomes of interest including length of preoperative evaluation, hospital length of stay, complication rate, and discharge location to investigate their relationship to Mini-Cog score. Univariate analysis was performed using Spearman correlation (p<0.05 for statistical significance).

Results: 29% of participants had Mini-Cog ≥ 2 (positive screen for probable cognitive impairment). On univariate analysis, age (correlation coefficient CC = -0.19), male gender (CC = -0.15), education level (CC = 0.12), ASA physical status (CC = -0.13), and METs (CC = 0.17) were statistically significant predictors of Mini-Cog ≤ 2. Mini-Cog ≤ 2 was a statistically significant predictor of time required for preoperative evaluation (CC = 0.18, p = 0.003), and discharge to place other than home (CC = 0.14, p = 0.002). Consensus in scoring Mini-Cogs was above 83% for all administrators, indicating that this is a robust screen that can consistently be performed by individuals at varying levels of training.

Conclusion: The Mini-Cog is a convenient, robust, and feasible means of assessing baseline cognitive function in the preoperative setting and shows promise as a predictor of surgical risk and postoperative outcomes for elderly surgical patients. The results of this study have already informed changes in preoperative care management at BWH, including implementation of a video module that trains clinical staff to conduct the Mini-Cog in preoperative visits.

D132 Encore Presentation
Mini-Cog as a Predictor of Outcomes in Elder Fracture Patients
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Background: The Mini-Cog test is a validated and quick tool to screen for cognitive impairment. Cognitive impairment in older adults is becoming increasingly recognized as an important variable in treatment outcome. The purpose of this study was to investigate Mini-Cog as a predictor for mortality, complications and treatment outcome in older fracture patients.

Methods: This was a retrospective review of fracture patients, age 65 and older, admitted to co-managed Orthopaedic Trauma/Geriatrics Services from Nov 2011 to June 2014, who completed Mini-Cog testing. Pre-injury functional status, in-hospital complications, length of stay, 30 day readmission and 30-day, 6-month and 1-year mortality were obtained. Statistical analyses were performed in R 3.0.1. Chi-squared and Fisher’s Exact Test were performed for categorical variables and Mann-Whitney U test for continuous variables. Odds ratios (OR) and 95% confidence intervals (CI) were calculated for significant associations. Multivariate logistic regression was used to adjust for confounding variables.

Results: 541 patients underwent Mini-Cog testing, with a mean age of 81.5 years (range 65-102 years) and 74% female. There was a 34% prevalence of cognitive impairment, identified by abnormal Mini-Cog. Patients identified to have cognitive impairment had significantly higher odds of in-hospital complication (OR 2.27, p = 0.0002) and incidence of delirium (OR 3.97, p = 0.0001). Mean length of stay was only 0.5 days longer in the abnormal Mini-Cog group (5.7 days vs. 5.1 days, p = 0.04) and there was no significant difference in 30-day readmission (p = 0.33). Death within 1 year (OR 2.26, 95% CI 1.1-4.8, p = 0.05), 6-months (OR 3.41, 95% CI 1.5-8.0, p = 0.007), and 30-days (OR 5.98, 95% CI 1.2-29.9, p = 0.02) of fracture was more likely in the abnormal Mini-Cog group however, with adjustment for confounding variables of age and ASA status, Mini-Cog result was a predictor of mortality at 30-days and 6-months only.

Conclusion: Abnormal Mini-Cog result was associated with increased risk of in-hospital complications and early mortality. The similarity in length of stay and readmission rates may be result of co-management by a geriatrician. The Mini-Cog test may be useful in identifying older fracture patients at high risk for complications or death.

D133 Encore Presentation
The impact of postoperative complications of patient’s recovery after abdominal surgery: A prospective clinical trial

Supported By: This project was funded by Canadian Institutes of Health Research

Introduction: Traditionally, postoperative complications are used in the literature as a surgical outcome. However, to date, very few studies have quantified the impact of complications on recovery after abdominal surgery. The objective of this study was to investigate the impact of complications on the recovery rate of elderly patient’s functional status, after elective abdominal surgery.

Methods: The study consisted of a prospective clinical trial. Elderly patients (70 years and older) undergoing elective abdominal sur-
surgery were prospectively enrolled between July 2012 and July 2014. A preoperative (T0) and four postoperative assessments were conducted at 1 week (T1), 1 month (T2), 3 months (T3), and 6 months (T4) after surgery. The primary outcome, lower body strength, was measured at each time point the Short Physical Performance Battery (SPPB). The SPPB is a composite score of standing balance, gait speed, and ability to rise from a chair; with a minimally clinically significant difference being 0.3 units. We carried out a survival analysis on the time to recovery using a Cox Proportional Hazards model. Recovery was defined as having a SPPB score greater than or equal to that at T0.

**Results:** 102 patients (57 men and 45 women) were prospectively enrolled. Mean age was 77.6 ± 5.1 years, mean BMI was 27.3 ± 5.6, and the median CCI was 5 (2.0-7.0). Twenty-nine patients (28.4%) underwent minor surgery, 36 patients (35.3%) had one or more complications. The Cox regression showed that, in the presence of all other variables adjusted for in the model, postoperative complications play a big role in delaying recovery of functional status, as measured by the SPPB. The hazard ratio was 2.3 (p-value=0.003), indicating that patients without complications have a hazard of recovery 2.3 times that of patients with complications. The adjusted survival functions for patients with and without complications can be found here. The proportional hazards assumption was tested and was deemed appropriate (p-value=0.92).

**Conclusion:** This study provides objective evidence that elderly patient who experience postoperative complications take longer to recover to their baseline functional status. Postoperative complications are often preventable; hence efforts should be made to identify factors that could minimize them.

**D134 Encore Presentation**

**Understanding the effect of preoperative nutrition on the surgical recovery of elderly patients: A prospective study**

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Supported By: This research was funded by Canadian Institutes of Health Research (CIHR).

**Background:** Fifteen to twenty percent of surgical patients are malnourished before surgery. Although it is known that nutrition is an important factor in patient health, its impact on surgical recovery has not yet been determined. The primary objective of this study is to understand the effect of nutritional status on the postoperative recovery of elderly patients.

**Methods:** This is a prospective cohort study of patients aged 70 years and older undergoing elective general surgery (n=114), between July 2012 and July 2014. The Subjective Global Assessment (SGA), a validated tool for evaluating nutritional status, was used to determine preoperative nutritional status of each patient. The primary outcomes were upper body function (measured by grip strength) and lower body function (measured by the Short Physical Performance Battery (SPPB)). Patients were evaluated at 1-week (T1), 4 weeks (T2), 12 weeks (T3) and 24 weeks (T4) post-surgery. Repeated measures analyses were used to test whether SGA nutritional status affects the rates of recovery of grip strength and SPPB scores.

**Results:** 65 males and 49 females with a mean age of 77.6±5.1 years were enrolled in the study. The mean BMI was 28.4±4.5 and the median CCI was 5 (2-7). Participants were categorized as well nourished (n=99), moderately malnourished (n=15) and extremely malnourished (n=0). The mean preoperative grip strength for each SGA group was 25.6±8.1 kg and 20.1±7.2 kg, respectively. The mean preoperative SPPB score for each SGA group was 9.9±2.1 and 9.5±1.9, respectively. SGA group was found to significantly affect grip strength, with a well-nourished patient on average having an increase of 2.4 kg of strength as compared to a moderately malnourished patient. However, the rate of recovery for grip strength did not significantly differ between the SGA groups (p-value=0.47). As for lower body function, SGA group was found to have no significant effect on SPPB score or its recovery rate.

**Conclusion:** Nutritional status is a good predictor of grip strength. Although the postoperative recovery between SGA groups is similar, our study suggests that patients with superior preoperative nutritional status benefit from greater upper body function during recovery. Therefore, optimizing patient nutrition prior to surgery may have a moderate to long-term impact on postoperative recovery.

**D135 Percutaneous Endoscopic Gastrostomy Tube Placement in Geriatric Patients with Amyotrophic Lateral Sclerosis**

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Supported By: AFAR and the National Institute on Aging (NIA)

**Background:** Amyotrophic lateral sclerosis (ALS) is a progressive and fatal neurodegenerative disorder affecting upper and lower motor neurons. Patients eventually develop muscle weakness and paralysis, affecting their speech, swallowing and respiratory function. Nutritional support is crucial for increasing survival and quality of life. According to The American Academy of Neurology Guidelines percutaneous endoscopic gastrostomy (PEG) tube placement should be considered in ALS patients to increase survival. Those with low respiratory function, measured by forced vital capacity (FVC) of less than 30%, are considered high risk for developing complications from this procedure. Our goal is to evaluate the safety of PEG tube placement in geriatric patients with ALS who have varying degrees of respiratory and functional impairment.

**Methods:** Retrospective study from medical records of geriatric ALS patients treated at our institution within the past three years who received a PEG tube using propofol sedation at an outpatient surgical center affiliated with Methodist hospital. Respiratory and functional statuses were evaluated by obtaining FVC and ALS functional rating scale (ALSFRS) values, respectively. Complications related to procedure were assessed for each patient.

**Results:** At our institution, 53 ALS patients above the age of 50 had PEG tube placement from 2011-2014. The mean age was 65 (range 50-84), with 29 females and 24 males. Average time from onset of symptoms to bulbar dysfunction was 2 years. Four patients developed complications following PEG tube placement, all of which had significant comorbidities. Complications included: 1) Abscess at site of tube placement, 2) Post-procedure cellulitis, 3) Death due to unknown causes, 4) Mild desaturation followed by a respiratory episode that lead to patient’s death. No patients required ventilatory support in the immediate postoperative period. Mean survival after PEG placement was nine and a half months with a 5% mortality rate at 30 days. No correlation was found between complications and disease duration, low FVC (<30%) or ALSFRS values.

**Conclusions:** Geriatric patients diagnosed with ALS can undergo PEG tube placement with propofol sedation at a specialized outpatient surgical center with reasonable risk despite low ALSFRS and FVC (<30%) values.
D136
Post-Operative Cytokine Levels Correlate with Pain Scores in Older Hip Fracture Patients
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Supported By: The Mary and David Hoar Fellowship in the Prevention and Treatment of Hip Fracture (New York Academy of Medicine)
Mount Sinai Clinical and Translational Science Award (CTSA, 5KL2 RR029885-03)

Background: Hip fracture is an important cause of mortality, functional decline, and pain in geriatric patients. Pain following hip fracture surgery impacts functional recovery. Various cytokines have been linked to pain. Thus, we investigated the relationship between plasma cytokine levels and pain scores to identify cytokines associated with the development of pain after hip fracture surgery in older adults.

Methods: Forty patients aged ≥60 who presented with acute hip fracture were enrolled in a study at the Mount Sinai Hospital (November 2011 - April 2013). Post-operative day 3 (POD3) blood was collected and plasma levels of 6 inflammatory cytokines (TNF-α, sTNF-RI, sTNF-RII, IL-1RA, IL-6, and IL-18) were measured. Pain scores (pain with resting, walking, and transferring) were assessed at baseline (pre-fracture), POD3, and 6 weeks after hip fracture surgery. Linear regression models using log-transformed data were performed to assess the relationship between cytokines and pain.

Results: IL-18 (β = .66, P = .03) was associated with POD3 resting pain score in the unadjusted model. TNF-α (β = .99, P = .03) and sTNF-RI (β = .86, P = .04) were associated with POD3 resting pain score after adjusting for baseline resting pain, baseline Functional Independence Measure-motor, age, sex, and the American Society of Anesthesiologists score. The association between sTNF-RI (β = .83, P = .07) and IL-18 (β = .60, P = .08) and POD3 resting pain score approached significance in the adjusted model. TNF-α (β = 1.59, P = .05) was also associated with POD3 walking pain score in the adjusted model. Cytokine levels were not associated with POD3 transferring pain scores and 6 week pain scores of any type.

Conclusions: These findings suggest TNF-α and its receptors may mediate pain following hip fracture in older adults. Further study of the role of the TNF-α pathway in the peri-operative period may inform future clinical applications that monitor and treat pain in vulnerable elderly who are unable to accurately report pain.

D137 Encore Presentation
Clinical, Pathological, and Renal Functional Outcomes of Partial and Radical Nephrectomy in Elderly Patients
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Supported By: MSTAR Program: American Federation for Aging Research, National Institute on Aging

Background: Partial nephrectomy (PN) is the preferred surgical treatment for most patients with cT1 renal masses, while radical nephrectomy (RN) is reserved for larger, more advanced tumors not amenable to PN. Because the renal functional benefit of PN is realized over many years and is the procedure is associated with a higher complication rate than RN, elderly patients may not receive the benefit of PN at the cost of higher risk. We sought to characterize perioperative, renal functional and oncologic outcomes of elderly patients undergoing surgery.

Methods: Our institutional renal mass registry was queried for patients ≥65 years who underwent PN or RN. Clinicopathologic features and perioperative outcomes were compared between groups. Renal function outcomes as measured by change in GFR and freedom from GFR < 45 were analyzed. Overall survival (OS) and cancer-specific survival (CSS) were compared using appropriate methods.

Results: Overall, 889 patients met inclusion criteria. Of these 441 (49.6) underwent PN and 448 (50.4) underwent RN. Patients undergoing RN tended to be older (median age 71.9 vs 70.3 years, p < 0.001), had larger tumors (5.5 vs 2.8 cm, p < 0.001), a higher proportion of RCC (89.8% vs 76.6% in p < 0.001) but had similar ASA scores (median score 3 vs 3, p>0.1). There was no difference in between RN and PN in terms of operative time (median time 186 vs 195 minutes, p=0.5), median estimated blood loss (200 vs 200, p = 0.7). Complications rates were similar for RN and PN (overall 51.5% vs 48.5%, p = 0.5; Clavien I-II 30.9 vs 26.9%, p =0.2, Clavien III-IV 8.9% vs 10.8%, p =0.2 ). RN was associated with a greater median change in GFR on last follow-up (19.2 vs 7.6, p < 0.001) and freedom from GFR<45 (53.2% vs 24.7%, p<0.001). On multivariable analysis controlling for tumor diameter, pathologic stage and ASA score, PN was associated with similar perioperative outcomes, complications, and renal function outcomes as RN. Both OS and CSS favored PN, though selection bias likely exist. These data suggest that elderly patients may benefit from PN; age alone should not be a contraindication to nephron-sparing surgery.
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