

Training & Practice Update

October 2003 Volume 1, Issue 3

Medical Student Training in Geriatrics at the Beginning Of the 21st Century

Background

Each year, in the United States, allopathic medical schools train approximately 66,300 students and graduate nearly 16,000 new physicians.¹ Less than 2% of these graduating physicians will seek out a career in geriatric medicine or geriatric psychiatry,² however, nearly all of these new physicians (except those entering pediatrics) will provide care to large numbers of older adults. In 1999, 25% of office visits to physicians in the U.S. were made by adults age 65 or over.³ Forty-six percent of these office visits were to family physicians and general internists; 54% were made to other medical specialists.³ For example, 56% of ambulatory visits to ophthalmologists, 54% of visits to cardiologists, and 46% of visits to urologists were made by patients 65 years and older.⁴

Medical students are influenced by their educational experiences, which include positive clerkship experiences and physician role models. Without role models and the opportunity to train with the well elderly in ambulatory settings, students are less likely to develop the knowledge, skills and attitudes to provide excellent geriatrics care.⁵ A 2001 survey found that medical school geriatrics faculty and staff spend only a median of 5% (Interquartile range, 5-10%) of their time focused on medical student education in geriatrics.⁶

Elective geriatric medicine courses were common in the 1990s, but were seldom chosen by medical students: only 2.9% selected these courses in 1992.⁷⁻⁸ Both the 1993 Institute of Medicine (IOM) and the 1995 Bureau of Health Professions (BHP) reports on geriatric education

documented limited required geriatrics curricula in medical schools as well as few students taking the available elective courses in geriatrics.^{7,9} In comparison, all U.S. medical schools require 4-8 weeks of clinical training in pediatrics, although the majority of medical school graduates do not provide medical care to children.¹⁰

To encourage the training of medical students in geriatrics, two significant initiatives were recently launched: 1) The Association of American Medical Colleges (AAMC), with funding from the John A. Hartford Foundation (Hartford), funded 40 U.S. medical schools in 2000 and 2001 (20 each year) to enhance their geriatrics curricula and 2) The Donald W. Reynolds Foundation (Reynolds) funded 10 medical schools in 2001 and 10 more schools in 2003 to strengthen physicians' geriatrics training, including training for medical students. (See the Appendix for a list of funded medical schools.)

As part of the grant application for the Hartford and Reynolds programs, medical schools were required to describe their existing efforts in training medical students in geriatrics. The ADGAP Longitudinal Study of Training and Practice in Geriatric Medicine collected and reviewed these grant applications. This review provides a picture of the state of medical student education and training in geriatrics **before** these schools implemented new curriculum as a result of their grant awards. Over one third of the 126 medical schools accredited by the Liaison Committee on Medical Education (LCME) were included in this review.

Methodology

Medical schools funded by the AAMC/Hartford Foundation in 2000 and 2001 and the Reynolds Foundation in 2001 and 2003 were asked to share the section of their grant application that described their current medical student geriatrics education curriculum. Forty-four of the 51 schools responded. (While 60 grant awards were given out, 9 schools received an award from both the AAMC/Hartford Foundation and the Reynolds Foundation, hence a total of 51 schools received awards.) The 9 schools that received both awards probably improved their geriatrics curriculum between awards. However, since we were interested in depicting the status of geriatric education to medical students prior to schools receiving either of these awards, we only analyzed the first grant they had been awarded.

After the information on current geriatrics activities from each responding school was compiled, it was divided into preclinical (years 1 and 2) and clinical (years 3 and 4) activities for analysis. A grid to quantify the geriatrics didactic content for the preclinical years was constructed, and schools were categorized as having an identifiable *structured* geriatrics curriculum, an identifiable but *unstructured* geriatrics curriculum, or *minimal* geriatrics curriculum. (For their preclinical curriculum, schools were categorized as having a *structured* curriculum if they described a comprehensive planned curriculum throughout the first two years; categorized as having an *unstructured* curriculum if geriatrics was implicit and under the umbrella of other topics, or without specific objectives. Schools with *minimal* geriatrics curriculum included those with limited and uncoordinated content. Some schools provided lecture time in actual hours and this information was quantified.)

For the clinical years, the schools' descriptions were reviewed to see if they had a *required separate* geriatric experience, if the geriatric experience was *integrated* into a required core clinical rotation, if the geriatrics experience was a *selective* experience, if the experience provided *some exposure* to older patients but without a

structured curriculum, or if the experience was offered as an *elective*. (Schools that were categorized as having their geriatric experience *integrated* into a required core clinical rotation had specific lectures on geriatric topics or geriatrics faculty directly supervised the clinical rotation. The experience was categorized as *some exposure* if the student's clinical rotation included working with older adults, but no specific teaching activities on geriatric topics occurred. Schools were categorized as having a *selective* experience in geriatrics when it was dependent upon the site of the student's clinical rotation or availability of faculty interested in geriatrics. More than one category of geriatric clinical experience could be in place at a given school.)

The results of the preclinical and clinical analysis were validated by an expert in geriatric medical education. Grants were also reviewed to see if geriatricians or geriatric psychiatrists were involved in teaching, if the school had a student chapter of the American Geriatrics Society (AGS) or an interest group in geriatrics. Our analysis was supplemented with secondary data from the LCME, the AAMC, and the AGS.

Results

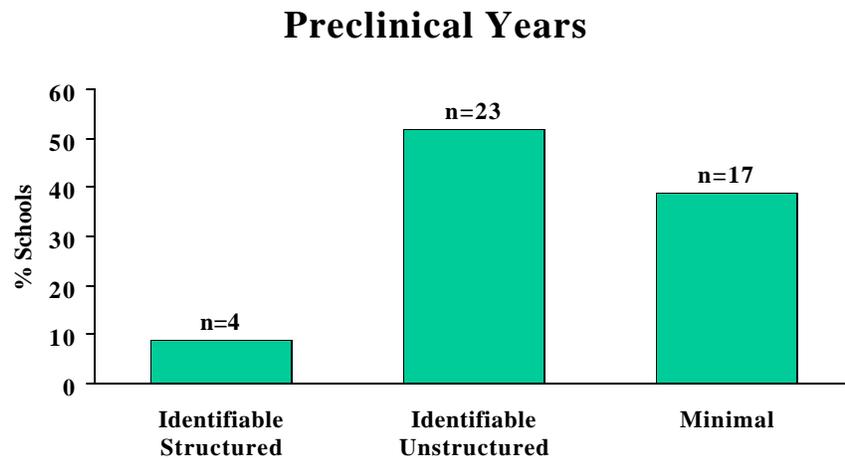
Forty-four of the 51 eligible medical schools responded and shared their grant applications. Ten (23%) were located in the Northeast, 14 (32%) each in the Midwest and South, and 6 (13%) in the West. Fifty-two percent (23) had more than 510 students in their medical school programs, while 48% (21) had fewer than 510 students. (The median number of students in each of the 126 U.S. medical schools is 510.) Seventy percent (31) of the schools were in the top half of National Institute of Health (NIH) funded schools. Hartford Foundation Centers of Excellence were located at 16 schools (36%), Geriatric Research, Education, and Clinical Centers (GRECCs) at 10 (23%), Pepper Centers at 8 (18%), and Alzheimer's Disease Centers (ADC) at 12 (27%) of the 44 medical schools. (In the U.S., in total, 28 Centers of Excellence, 21 GRECCs, 13 Pepper Centers and 32 ADCs have been funded.)

Overall, geriatricians or geriatrics faculty were directly involved in teaching geriatrics to medical students at 32% (14) of the schools. This involvement ranged from tutoring to lecturing to curriculum design. Other participating faculty were described as having

variable expertise and enthusiasm for geriatrics. Twenty-three (52%) schools had student chapters of the AGS or a student interest group. (The AGS reports that from 2000 to the present, 33 AGS student chapters have been started. Eight of these are no longer active.)

Geriatrics Curriculum Preclinical Years (Years 1 & 2)

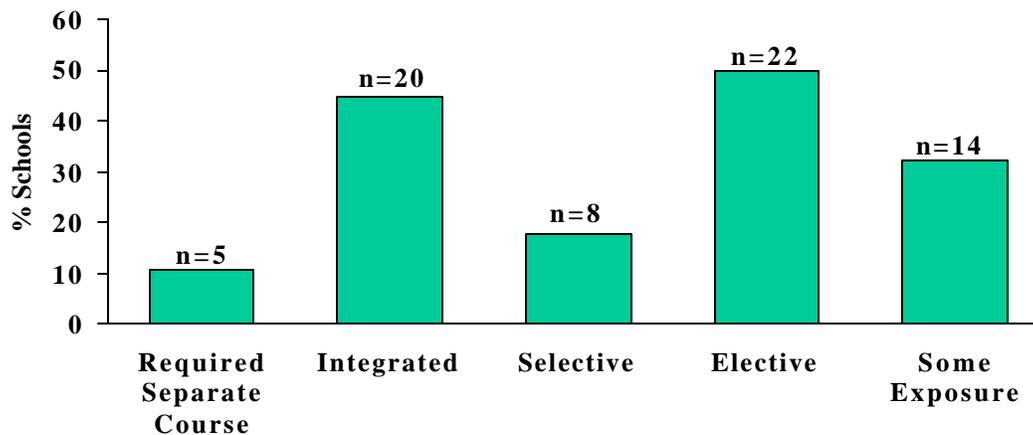
- Nine percent (4) of schools reported an identifiable structured geriatrics curriculum.
- Fifty-two percent (23) presented geriatrics material in an identifiable but unstructured curriculum.
- Thirty-nine percent (17) reported minimal geriatrics curriculum.
- Seventeen schools provided actual lecture time devoted to geriatrics: 1-5 hours at 3 schools; >5-10 hours at 1 school; >10-15 hours at 6 schools, and >15 hours at 7 schools.
- Sixteen percent (7) specifically mentioned that they taught geriatric pharmacodynamics.
- Twenty-five percent (11) mentioned that geriatrics faculty, geriatricians or geriatric psychiatrists were involved in preclinical instruction.



Geriatrics Curriculum Clinical Years (Years 3 & 4)

- Eleven percent (5) reported a separate required clinical course in geriatrics.
- Forty-six percent (20) of schools reported that specific lectures on geriatric topics were integrated in the required core clerkships.
- Eighteen percent (8) reported that students' clinical experience in geriatrics was a selective geriatric experience dependent upon the site of their clinical rotation or availability of faculty interested in geriatrics.
- Fifty percent (22) offered electives in geriatrics, but few students enrolled.
- Thirty-two percent (14) reported some exposure: their geriatric clinical experience included exposure to older patients, but students did not receive teaching activities on geriatric topics.
- Five percent (2) reported a required rotation on a geriatric psychiatry clinical unit.
- Sixteen percent (7) mentioned that geriatrics faculty, geriatricians or geriatric psychiatrists were involved in clinical instruction.

Clinical Years



Schools could have more than one type of clinical experience

AAMC Survey of Graduating Medical Students

Each spring senior medical students are asked to complete a survey regarding their experiences during medical school. The table below summarizes their answers since 1998 regarding training in geriatrics. (By comparison in 2002,

82% of graduating students responded that instruction in primary care was appropriate and 78% that instruction in Women's Health was appropriate.¹¹)

All Schools	Inadequate	Appropriate	Excessive	Count
1998	45%	52%	3%	13,887
1999	43%	54%	3%	12,684
2000	39%	57%	4%	14,103
2001	42%	55%	3%	14,164
2002	39%	57%	4%	14,178

Source: AAMC, Medical School Graduation Questionnaire, All Schools Report.

Discussion

The readiness of physicians to meet the health care needs of older adults is dependent on the quality of medical education they receive. Prior to the AAMC/Hartford and Reynolds funded schools implementing curriculum changes as part of their grant awards, 9% of the schools reported a strong geriatric program in the preclinical years, while 39% had a very limited geriatrics program. More emphasis was placed on geriatrics training in the last two years of medical school. Forty-six percent of the schools reported clinical experiences in geriatric medicine integrated in the required clerkships. However, 32% of the schools geriatric clinical experience consisted of having students' assigned elderly patients as part of the general curriculum. The geriatric exposure for students at 18% of the schools depended upon the clinical site that the students chose. Half of the schools in our study reported that they offered electives in geriatrics, but that few students signed up for these electives. (In Academic Year 2000-2001, the LCME reported 93 of the then 125 medical schools had an elective course in geriatrics.)¹² The AAMC survey of graduating medical students suggests that as late as 2002, over one third of the students

felt their instruction in geriatrics was inadequate.

With the explosion of new medical knowledge and the blurring of boundaries between emerging fields of study, finding time in a four-year curriculum to focus on geriatrics can be challenging. This dilemma has resulted in interdisciplinary courses and the integration of new content into existing courses.¹³ Not surprising, most schools integrated clinical geriatric medicine into the required clerkships. Few required a separate course. However, separate courses can more easily be discontinued after start-up funding expires, than an integrated curriculum. (As part of their curriculum changes, schools funded by the AAMC/Hartford program were encouraged to develop integrated geriatrics curriculum.)

The sample of medical schools in this study is biased in favor of schools with some expertise and significant interest in improving their geriatric medicine curriculum. The medical schools included in this review had also successfully competed for geriatric medicine education grant funds, and our study results may provide an optimistic picture of medical student training in geriatrics at the beginning of the 21st Century.

Nonetheless, most of these schools had limited geriatrics curriculum in place prior to the AAMC/Hartford and Reynolds initiatives. The geriatric medicine curriculum at the remaining U.S. medical schools is likely to be even less well developed.

Many medical students decide on their specialty choice before the end of the third year of medical school. The early introduction of positive experiences with older adults in clerkships, preceptorships or other educational activities will help ensure that students have a basis for making career decisions that may lead to further training and service with older adults. However, at the beginning of this decade, few experiences were available to students before the fourth year of medical school. Also, geriatrics faculty devoted little time to training medical students, instead spending most of their time in clinical practice or training fellows and residents.⁶ More geriatrician and trained primary care and subspecialty faculty are needed to provide the effective role models in geriatrics for medical students so that interest in careers in

geriatrics increases.⁵ It is no surprise, therefore, that only one U.S. medical school graduate per U.S. medical school enrolls each year in geriatric medicine fellowship programs. (The remaining fellows in these programs are international medical school graduates.)

This analysis provides a selective picture of the state of geriatric medicine education for U.S. medical students at the beginning of the 21st century and *before* schools implemented new and expanded curriculum as a result of their grant awards from the Hartford and Reynolds Foundations.

It is anticipated that the investment in curriculum and faculty development by these foundations will significantly expand training opportunities for medical students at these 51 colleges of medicine. The ADGAP study team will be re-surveying medical schools in the future to update our information on the state of medical student geriatrics training to measure the impact of the AAMC/Hartford and Reynolds funding programs in geriatrics training of medical students.

References

- ¹ US Medical School Enrollments for Academic Year 2000-2001 Table. JAMA. 2002;288:1090-1093.
- ² Graduate Medical Education Tables. JAMA. 2002;288:1151-1164.
- ³ Centers for Disease Control and Prevention. Health, United States 2001, Special Excerpt: Trend Tables on 65 and Older Population. Hyattsville, MD: U.S. Department of Health and Human Services, National Center for Health Statistics. November, 2001.
- ⁴ Centers for Disease Control and Prevention. National Ambulatory Medical Care Survey. Hyattsville, Maryland: National Center for Health Statistics. 1999.
- ⁵ AAMC Government Affairs and Advocacy. Statement on Patients in Peril: Critical Shortages in Geriatric Care submitted to the Special Committee on Aging, United States Senate on March 13, 2002. Available at <http://www.aamc.org/advocacy/library/educ/testimoy/2002/031302.htm>. Accessed July 29, 2003.
- ⁶ Warshaw GA, Bragg EJ, Shaull RW, Lindsell CJ. Academic Geriatric Programs in US Allopathic and Osteopathic Medical School. JAMA. 2002;288:2313-2319.
- ⁷ Bureau of Health Professions, HRSA. Susan M. Klein, editor. A National Agenda for Geriatric Education: White Papers. Rockville, Maryland: USDHHS. 1995.
- ⁸ Butler RN, Estrine J, Honin M et al., A national crisis -- the need for geriatrics faculty training and development: Toward functional independence in old age. New York: International Longevity Center. 2000.
- ⁹ Institute of Medicine. Strengthening Training in Geriatrics for Physicians. Washington, DC: National Academy Press. 1993.
- ¹⁰ AAMC. Curriculum Directory. Washington, DC: AAMC. 2000.
- ¹¹ AAMC. Medical School Graduation Questionnaire, All Schools Report. Washington, DC: AAMC 2002.
- ¹² Liaison Committee on Medical Education Part II Annual Medical School Questionnaire for 2000-2001 compiled by the AAMC Institutional Profile System. Available at <http://services.aamc.org/currdir/section2/LCMEHotTopics.pdf>. Accessed July 29, 2003.
- ¹³ Whitcomb, M. AAMC. Annual Meeting 2003. Group on Educational Affairs/Group on Student Affairs Mini-Workshops. The Education of Medical Schools: Ten Stories of Curriculum Change. Available at <http://www.aamc.org/members/gea/annualmtg2003/miniworkshop.htm>. Accessed August 5, 2003.

AAMC/John A. Hartford Foundation Awards

Enhancing Geriatrics in Undergraduate Medical Education

Schools Funded in 2000

East Tennessee State University, Quillen College of Medicine, Johnson City, TN
Johns Hopkins University, Baltimore, MD
Medical College of Wisconsin, Milwaukee, WI
Mount Sinai School of Medicine, New York, NY
Ohio State University College of Medicine, Columbus, OH
Southern Illinois University, Springfield, IL
Texas Tech University Health Sciences Center, Lubbock, TX
University of Arizona, Tucson, AZ
University of California, Los Angeles, CA
University of California, San Francisco, CA
University of Connecticut, Farmington, CT
University of Kansas, Kansas City, KS
University of Miami, Miami, FL
University of Minnesota Medical School, Minneapolis, MN
University of Missouri, Kansas City, MO
University of Nebraska College of Medicine, Omaha, NE
University of North Carolina School of Medicine, Chapel Hill, NC
University of South Carolina School of Medicine, Columbia, SC
University of Texas Medical Branch, Galveston, TX
University of Wisconsin Medical School, Madison, WI

Schools Funded in 2001

Albert Einstein College of Medicine of Yeshiva University, Bronx, NY
Columbia University College of Physicians, New York, NY
Duke University, Durham, NC
Georgetown University, Washington, DC
Indiana University, Indianapolis, IN
Louisiana State University, Shreveport, LA
Jefferson Medical College, Philadelphia, PA
Meharry Medical College, Nashville, TN
Saint Louis University, St. Louis, MO
State University of New York, Upstate Medical University, Syracuse, NY
University of Alabama, Birmingham, AL
University of California, Irvine, Orange, CA
University of Cincinnati, Cincinnati, OH
University of Louisville, Louisville, KY
University of Massachusetts, Worcester, MA
University of Missouri, Columbia, MO
University of New Mexico, Albuquerque, NM
University of Pittsburgh, Pittsburgh, PA
University of Texas Medical School, San Antonio, TX
Wayne State University, Detroit, MI

Donald W. Reynolds Foundation Awards

Comprehensive Programs to Strengthen Physicians' Training in Geriatrics

Schools Funded in 2001

Cornell University, New York, NY
Medical College of Wisconsin, Milwaukee, WI
University of Hawaii, Honolulu, HI
University of Iowa, Iowa City, IA
University of Michigan, Ann Arbor, MI
University of Nebraska, Omaha, NE
University of Rochester, Rochester, NY
University of South Carolina, Columbia, SC
Virginia Commonwealth University, Richmond, VA
Yale University, New Haven, CT

Schools Funded in 2003

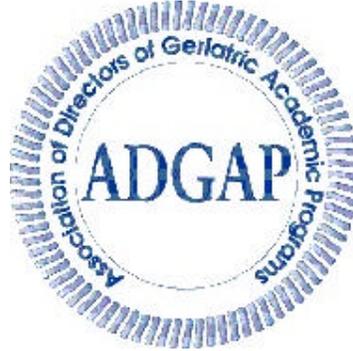
Boston University, Boston, MA
Emory University, Atlanta, GA
Indiana University, Indianapolis, IN
State University of New York at Buffalo, Buffalo, NY
University of Chicago, Chicago, IL
University of Cincinnati, Cincinnati, OH
University of Miami, Miami, FL
University of Missouri-Columbia, Columbia, MO
University of New Mexico, Albuquerque, NM
University of North Carolina, Chapel Hill, NC

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This work was supported by a grant from the Donald W. Reynolds Foundation in Las Vegas, Nevada.