The Association of Directors of
Geriatric Academic Programs

Geriatric Medicine Training and Practice in the United States at the Beginning of the 21st Century

July 2002

This study and report were made possible through the generous support provided by the Donald W. Reynolds Foundation of Las Vegas, Nevada.

The Association of Directors of Geriatric Academic Programs (ADGAP)
Longitudinal Study of Training and Practice in Geriatric Medicine

Geriatric Medicine Training and Practice in the United States at the Beginning of the 21st Century

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July 2002

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The Association of Directors of Geriatric Academic Programs (ADGAP) Longitudinal Study of Training and Practice in Geriatric Medicine

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Preface/Acknowledgements

This report summarizes research from the initial two years (July 2000-June 2002) of the Association of Directors of Geriatric Academic Programs (ADGAP) Longitudinal Study of Training and Practice in Geriatric Medicine.

ADGAP was formed in the early 1990s to provide a forum for academic geriatric medicine divisions and program directors. Its purpose is to foster the enhancement of patient care, research, and teaching programs in geriatric medicine within medical schools and their associated clinical programs. ADGAP is affiliated with the American Geriatrics Society (AGS) in New York City and shares offices and staff with the AGS. Members of the initial organizing committee included Itamar Abrass, MD, John Beck, MD, Christine Cassel, MD, Harvey Cohen, MD, Jeffery Halter, MD, and Robert Luchi, MD. The first President was Jerome Kowal, MD. He was followed by David Lipschitz, MD, Jeanne Wei, MD, Gregg Warshaw, MD and David Reuben, MD. The current ADGAP president is John Burton, MD.

ADGAP contracted with the University of Cincinnati's Office of Geriatric Medicine and Institute for Health Policy and Health Services Research (IHPHSR) to conduct the study. The director of the IHPHSR, Alfred J. Tuchfarber, PhD, and the expert IHPHSR staff have been invaluable partners in this effort; their support and talent were critical for carrying out this study.

A distinguished National Oversight Panel guided the direction of the project. These leaders, from their diverse perspectives, provided the project team with their knowledge and wisdom, reviewed drafts of surveys and chapters, and were always quick to respond to calls for help or advice. This report represents only a portion of the data collected during the past two years. It presents a "snapshot" of the state of geriatric medicine in the United States in the spring of 2002. ADGAP intends to maintain and periodically update this database as a longitudinal record in the field. Researchers and educators are encouraged to contact the project staff for background details of the study.

The practice of geriatric medicine is by its very nature interdisciplinary. Physicians providing care to older adults recognize and depend on the skills of many other health care disciplines. Although the research detailed in this report is limited to physician practice and education, ADGAP and the National Oversight Panel recognize that we have addressed only one aspect of the educational challenge of improving the knowledge and skills of all health professionals caring for the aged.

This study and report were made possible through the generous support provided by the Donald W. Reynolds Foundation of Las Vegas. ADGAP sincerely appreciates the Foundation's commitment to improving the medical care provided to older Americans.

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We would like to acknowledge Richard Allman, MD, John Burton, MD, William Hall, MD, and David Reuben, MD, who reviewed the final draft of this report on behalf of ADGAP.

We would also like to thank Marie Marley, PhD for editing the report.

We recognize the special assistance provided by:

Kathleen Bond, MA, Bureau of Health Professions
Josepha Cheong, MD, University of Florida
Harvey Cohen, MD, Duke University
James Corrigan, formerly with National Institute on Aging
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Rosanne M. Leipzig, MD, PhD, Mount Sinai School of Medicine
Annette Medina-Walpole, MD, University of Rochester
Deirdre Terry, Association of Directors of Geriatric Academic Programs

While the authors acknowledge the invaluable assistance of many individuals, any errors or omissions in this report are the authors' sole responsibility.

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1 Executive Summary

The aging of the U.S. population will have a major impact on the practice of medicine and future health care costs. Efforts to document the status of past and current geriatrics training for physicians have been fragmented, and plans to track future geriatrics education are not well designed. Many existing medical education data sets are not limited to geriatrics, making it difficult to document the geriatrics training included in the data. Surveys specific to geriatrics training have not been coordinated, and in many cases the data collected have become outdated. Moreover, there has been no central database of information about geriatric medicine training and clinical practice. A comprehensive project designed to develop a centralized database of information relative to the growth and development of geriatric education and practice, as well as to track future developments, has been seriously needed for several years. Such a project is now being undertaken, under the auspices of the Association of Directors of Geriatric Academic Programs and with funding from the Donald W. Reynolds Foundation. The results to date are presented in this report. The major findings are highlighted in this Executive Summary.

Project Goal and Methods

The overall goal of this project is to build a comprehensive database containing information about the growth, development, and future status of geriatric medicine training and clinical practice in the U.S. It will allow for analysis and dissemination of information about these issues that will be helpful to medical educators, policy makers, and others involved in geriatric medicine. This report contains an analysis of data we collected from the fall of 2000 through the spring of 2002. We have developed collaborative relationships with individuals and organizations involved in geriatrics education, including groups that conduct surveys, maintain databases, and/or develop geriatric medicine curricula. Information gathered by these organizations is summarized in this report. In addition, during the 2000-2002 project period we conducted five original surveys of geriatric medicine educators. The results of these surveys are also included in this report.

The Development of Geriatrics Training in the U.S.

A series of national reports, published between 1978 and 1993, sponsored by the Institute of Medicine (IOM), highlighted the challenges facing the medical profession as the population ages. These reports recommended that all medical schools and teaching hospitals include curricula on aging for medical students and residents. During the mid-1970s the National Institute on Aging (NIA) was established at the National Institutes of Health (NIH). This critical event gained the attention of the American academic medicine community and provided the impetus for creating academic geriatrics programs. Another important development in the field was the creation by the NIA of the research program, Older Americans Independence Centers (Pepper Centers) in 1991.

The Veterans Health Administration (VHA) is the most important source of training funds for geriatricians in the U.S. It began funding training for geriatric medicine fellows in 1980 and also established Geriatric Research, Education and Clinical Centers (GRECCs). Another important development in geriatric medicine was the establishment of a Certificate of Added Qualifications (CAQs) in Geriatric Medicine in 1988. This certification was achieved jointly by the American Boards of Internal Medicine and Family Practice. The American Board of Psychiatry and Neurology established a Certificate of Added Qualifications in Geriatric Psychiatry in 1991.

Recent initiatives from the John A. Hartford Foundation of New York City and Donald W. Reynolds Foundation of Las Vegas are supporting the development of medical school academic geriatric medicine programs, including geriatrics training for medical students and primary care and specialty physicians.

Health Care Costs and the Practice of Geriatric Medicine

In 1999, 25% (192.2 million) of office visits to physicians in the U.S. were made by adults age 65 or over. Forty-six percent of these visits were to family physicians or general internists; 54% were to other medical specialists. However, over the past decade, the trend has been for an increasing percentage of ambulatory visits to occur in non-primary care specialists' offices. During 1999, the hospitalization rate was 1.9 times higher for adults age 65-74 than for the overall population; it was 2.7 times higher for adults age 75 and over.

Although the health and physical functioning of older adults appears to be improving, the rapid growth of the oldest age groups will continue to have a major impact on health care costs. A report by the Centers for Medicare and Medicaid Services indicated that after a decade of stability, health care spending for the elderly grew to $1.3 trillion in 2000. This was an increase of nearly 7% from 1999 and was

the fastest acceleration in 12 years. This spending represented 13.2% of the U.S. gross domestic product. From 1999 to 2000, Medicare spending alone rose 5.6% to $224.4 billion. Also during this period, nursing home and home health care total expenditures rose, after several years of stable rates.

Medicare reimbursement is the single most influential force shaping medical practice in the U.S., accounting for 26.7% of all physician income in 2000. Geriatricians limit their clinical practices to older adults, and thus receive the vast majority of their compensation from Medicare. Many of the time-intensive services geriatricians provide to older adults and their families are not adequately reimbursed. The growing gap between Medicare reimbursement and the actual costs of delivering medical care seriously affects the willingness of young physicians to consider careers in geriatric medicine.

Currently the national average number of geriatricians is 5.5 per 10,000 persons over age 75. Individual state rates range from 2.2-15.9. There are 1.4 geriatric psychiatrists per 10,000 persons over age 75, with individual state rates ranging from 0.2-4.1. The number of Certificates of Added Qualifications awarded from 1988 through 2001 includes: 9,907 awarded by the American Board of Internal Medicine (ABIM) and the American Board of Family Practice (ABFP), 2,508 by the American Board of Psychiatry and Neurology, and 503 by the American Osteopathic Boards of Internal Medicine and Family Practice.

Geriatric medicine and psychiatry certificates of added qualifications are valid for ten years, with re-certification required. The number of physicians seeking re-certification has been low. It is estimated that from 1998 through 2004 there will be a 34% reduction (from 9,256 to 6,137) of ABIM/ABFP-certified geriatricians in the U.S.

Academic Geriatrics Programs in U. S. Allopathic and Osteopathic Medical Schools

The growth of geriatric medicine has been and will continue to be largely dependent on the successful establishment of academic geriatric medicine programs in U.S. allopathic and osteopathic medical schools. In the spring of 2001 we conducted a cross-sectional study that assessed the current status of U.S. academic geriatric medicine in these schools. Geriatric academic leaders at each of the 144 medical schools were surveyed. Identifiable academic geriatric units were present in 95 and 10 of the 121 responding allopathic and osteopathic medical schools, respectively. The most common academic unit was a division within a department, which existed at two-thirds of the schools that had identifiable programs. The mean number of physician faculty was 7.5 FTEs (median 5.0; range 0-42). Fifty percent of the programs had six or fewer physician faculty, while 8% had more than 18. Fifty-eight percent of the programs had budgets of one million dollars or less.

There was considerable variability in how each program set priorities. Allopathic schools tended to devote a higher percentage of their resources to research, scholarship, and residency and fellowship training than the osteopathic schools. Osteopathic schools placed more emphasis on medical student education than allopathic schools. Both types of programs allocated, on average, 37% of their faculty and staff effort to geriatric medicine clinical practice. More than 60% of the program directors cited a lack of sufficient research faculty and trainees, poor reimbursement for clinical care, and a lack of institutional financial support as “significant” obstacles to program development.

It was remarkable that we could identify a leader/contact person for geriatric medicine at each of the medical schools. Even though there are currently only six departments of geriatric medicine (Mt. Sinai School of Medicine, University of Arkansas, University of Oklahoma, Philadelphia College of Osteopathic Medicine, Western University of Health Science, and Ohio University College of Osteopathic Medicine), one-third of the respondents in our survey stated that they reported directly to their deans. This typically created access to new financial support and continued interdepartmental influence.

There is a need to develop medical school geriatrics programs of the size and scope of other academic disciplines. Although many medical schools now have credible academic programs with enough faculty and resources to implement solid clinical, education and research activities, others lag far behind in the program development required to ensure the adequate training of future physicians to care for the elderly. New strategies are needed to nurture these smaller geriatric medicine programs. In addition to program development there is a continuing need for new resource investment to train faculty for roles as teachers and researchers.

Although much has been accomplished in the area of geriatric medicine program development, there are many challenges ahead. These challenges are significant and complex, as discussed in Chapter 5 of this report.

Geriatric Medicine and Geriatric Psychiatry Fellowship Programs

The Administration on Aging (AOA) and the VHA began funding geriatric medicine and psychiatry fellowship positions in the late 1970s. Initially the American Boards of Family Practice (ABFP) and Internal Medicine (ABIM) required two years of fellowship training in an ACGME-approved program for candidates to be eligible to sit for the CAQ examination. In 1995, both Boards changed the entry requirement from two to one year of training. The first exam for fellows having one year of training was given in 1998.

The American Board of Psychiatry and Neurology (ABPN) began certifying geriatric psychiatrists in 1991, requiring one year of fellowship training for entry to the exam. In addition, since 1991 the American Osteopathic Boards of Family Practice and Internal Medicine (ABOFP and AOBIM) have both offered a geriatric medicine certifying examination for graduates of osteopathic fellowships. Osteopathic fellowship programs require two years of training. Each certifying Board initially offered a practice pathway, permitting practicing physicians without fellowship training to sit for the exam. The ABFP/ABIM closed this option in 1994, the ABPN in 1996, the AOBIM in 1994, and the ABOFP in March 2002.

The number of fellowship programs and the number of fellows have slowly increased over the past decade. In 2001, there were 119 allopathic and 7 osteopathic geriatric medicine programs, and 62 geriatric psychiatry programs in the U.S. Approximately 330 geriatric medicine and 86 geriatric psychiatry fellows were participating in those programs. Nonetheless only 73% of first-year positions in geriatric medicine and 63% of those in geriatric psychiatry were filled for academic year (AY) 2001-2002. Forty percent of the trainees are graduates of U.S. medical schools.

Results of surveys conducted in 2001, for this report, to gather information about AY 2001-2002 fellowships, revealed considerable variation among programs. Most were small, with only 15 medicine programs reporting having more than four first-year fellows. The median number of geriatric psychiatry first-year fellows was two per program. Only 51 medicine and 10 psychiatry programs reported offering training beyond the one-year required clinical experience. Only 5 medicine programs had more than two second-year trainees, and there were only two second-year geriatric psychiatrists in training. Finally, 58 geriatric medicine (60%) and 29 geriatric psychiatry (62%) programs had either none or only one U.S. medical school graduate first-year fellow.

As previously stated, the VHA is the major source of financial support for first-year geriatric medicine and psychiatry fellows. In academic year 2000-2001, the VA funded 197 first-year geriatric medicine and geriatric psychiatry fellow slots. Funding for first-year geriatric fellows also comes from Medicare's graduate medical education reimbursement program. Other sources of support include the Bureau of Health Professions (BHPr), clinical revenue generated by faculty, medical school funds, other state or federal revenue, foundation grants and individual donors. Funding for advanced training—beyond one year—for *clinician-educators* is very limited, although there are numerous NIH, VHA, and private foundation-supported *research training* programs. In the University of Rochester's 2001 survey of graduates of geriatric medicine fellowship programs during the past decade, respondents were asked to indicate the most influential factors in their decision to choose a career in geriatric medicine. The most frequent response (42%) was "societal need for more physicians to care for the elderly." Over half of respondents had made their career choice during residency training, and 27% had made the decision before beginning medical school. Almost half (48%) stated that a role model or mentor had influenced their choice.

Several factors may account for the relatively small number of applicants to geriatrics fellowship programs and the recruitment of only small numbers of U.S. medical school graduates. One factor is that physician interest in primary care is correlated with interest in geriatrics, and the increased interest in primary care that began in the late 90s is now weakening. Another significant influence in medical students' career choices is debt. More than 80% of U.S. medical school graduates are indebted upon graduation; the average debt is just shy of $100,000. A further disincentive is that the income of both academic and non-academic primary care physicians and geriatricians remains relatively low compared to that of procedure-oriented disciplines.

The recruitment of high-quality U.S. medical school graduates into geriatric fellowship programs remains a challenge for the discipline. The retention of first-year fellows for additional years of academic training has been low. In the future, incentives will be needed to attract the best graduates of U.S. family practice, internal medicine, and psychiatry residency programs to academic careers in geriatric medicine. Loan forgiveness programs (such as that recently started by the NIH for research-oriented physicians) and/or integrated five-year "research fellowship and junior faculty" awards could alleviate the current financial disincentives facing young physicians considering careers in academic geriatrics.

Preparing all Physicians to Care for the Aged: Graduate Medical Education

In 1999, 9,780 physicians graduated from family practice and internal medicine residency programs, but only 321 subsequently entered geriatric medicine fellowships. Also in 1999, 1,056 trainees graduated from psychiatry residencies, with only 86 enrolling in geriatric psychiatry fellowships. During the same year an additional 14,176 physicians graduated from other residency and fellowship programs (excluding pediatrics) whose specialties do not offer subsequent fellowships in geriatric medicine. Thus, formal geriatric medicine training for virtually all physicians ends with their residency training. This emphasizes the urgent need to increase geriatric medicine training in residency programs.

The future practices of U.S. physicians will necessarily involve providing care to increasing numbers of older adults. Twenty-one percent of family physicians' practices in 1999 consisted of ambulatory visits from adults age 65 and over. It is projected that by 2020 at least 30% of family physicians' outpatient practices, 60% of their hospital practices, and 95% of their nursing home and home care practices will involve individuals age 65 and older. In 1999 thirty-nine percent of general internists' practices comprised ambulatory visits from adults age 65 and over. These percentages are also expected to increase considerably by 2020.

We conducted separate surveys of General Internal Medicine (GIM) and Family Practice (FP) Residency Programs as part of our project. We found that 93% of GIM and 92% of FP responding programs had geriatrics curricula. These results indicate increases in training, compared to 36% of GIM and 80% of FP programs that reported, in a 1998 study, having geriatrics curricula. Our survey data suggests that although the number of physician faculty available to teach geriatric medicine in FP residency programs has not changed significantly over the past 13 years, the number in GIM programs has increased. The most frequently cited barrier to improving geriatric medicine training was over-crowded curriculum demands placed on residency programs.

As with internists and family physicians, the number of psychiatrists with certification in geriatric medicine is small, and recruitment into fellowship programs is weak. Thus, general psychiatrists without advanced training in geriatric mental health will continue to provide the majority of psychiatric care to older adults. The psychiatry training requirements developed by the psychiatry

residency review committee provide a basis for developing residency curriculum in geriatrics. However, no studies have been conducted to examine how these requirements are being implemented.

The Council on Resident Education in Obstetrics and Gynecology (CREOG) estimates that by the year 2030, 20% of women cared for by obstetrician-gynecologists (OB-GYNs) will be older than age 65. Since 1996, the training requirements for OB-GYN have required specific education in geriatrics and geriatric gynecology. As with psychiatry, no studies have been conducted to determine the extent to which OB-GYN program directors are implementing the required curriculum.

Integrating Geriatrics into the Subspecialties of Internal Medicine is a comprehensive project of the American Geriatrics Society aimed at defining the basic knowledge, attitudes, and skills subspecialists must possess to care for the older patient appropriately and efficiently. This project was launched in 1994 with a $1.5 million grant from the John A. Hartford Foundation of New York and smaller amounts of support from Merck, Pfizer, and Warner-Lambert pharmaceutical firms. The project has conducted Geriatric Education Retreats to immerse exemplary subspecialty faculty in geriatrics for specialists in endocrinology, diabetes, and metabolism; cardiology; oncology; infectious disease; rheumatology; immunology; pulmonary and critical care medicine; nephrology; gastroenterology; psychiatry and neurology.

The John A. Hartford Foundation and the American Geriatrics Society (AGS) are active in a parallel project, *Increasing Geriatrics Expertise in Surgical and Medical Specialties*, targeting physicians in specialties not addressed by the internal medicine program. In 2002, this project established the *Jahnigen Career Development Scholars Program*, which offers two-year career development awards to young faculty in anesthesiology, emergency medicine, general surgery, gynecology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine and rehabilitation, thoracic surgery, or urology. This program will help awardees initiate and sustain careers in research and education in geriatrics aspects of their respective disciplines.

Although the practice of adult medicine by all specialties has always involved the care of older patients, demographic trends will result in an increase in the number of older Americans being cared for by all physicians. The prolongation of human life is a 20th-century success story. The 21st century's challenge to the medical profession is to provide enough skilled teachers, researchers, and clinicians with expertise in geriatrics, including familiarity with the expanding geriatrics knowledge base, to care for the nation's older population. The basis of an agenda for research and training that will integrate geriatrics into each medical specialty now exists. Geriatricians can assist their colleagues in this educational effort, but it is also crucial that faculty leaders from each specialty become involved.

Preparing all Physicians to Care for the Aged: Medical Student Education

The four-year curricula of U.S. medical schools are crowded with traditional content and many new and important areas of study. Consequently, organized curricula in geriatric medicine have been slow to develop in many medical schools. In the early 1990s fewer than 15 allopathic schools offered required, separate courses in geriatric medicine. Osteopathic schools' curricula were further ahead; a 1994 survey found that 31% had a required geriatric medicine course.

Another approach to teaching geriatric medicine content has been to integrate it into existing courses. The 1994 survey results indicated that 85% of allopathic schools provided an average of 20 hours of geriatric medicine content in existing required courses. A July 1998 AAMC report found that although required courses dealing solely with geriatric medicine remained rare, 98% of schools reported some form of required geriatric medicine experience. A September 2000 report summarized results of the AAMC's annual Medical School Graduation Questionnaires from 1998 and 1999. In 1998 and 1999, however, more than 40% of allopathic medical students felt that their medical schools' geriatric medicine curriculum time was inadequate. A survey of osteopathic school graduates, in 2000, found that only 17% felt that geriatric medicine time was inadequate.

In 2000, the AAMC, with a grant from the John A. Hartford Foundation, began a Geriatrics Curriculum Grants Initiative. Its purpose is to enhance medical student education related to gerontology and geriatrics. This program awarded 20 two-year, $100,000 grants in 2000 and another 20 in 2001. The Donald W. Reynolds Foundation of Las Vegas also launched a major initiative in 2000 to strengthen geriatrics training for medical students, residents, and practicing physicians. In the spring of 2001 the foundation awarded four-year grants of $2 million each to 10 U.S. medical schools.

Graduating medical students' observations that they have not spent enough time learning about geriatric medicine is consistent with the results of our survey of geriatric medicine academic leaders. The respondents indicated that more than one half of their schools did not require even one medical student clinical experience in a specialized geriatrics inpatient, outpatient, or community setting. The new initiatives sponsored by the Hartford (through the AAMC) and Reynolds Foundations are certainly needed and have the potential to improve geriatrics training for medical students at U.S. medical schools.

Geriatric medicine in the United States is a relatively young discipline. Over the past 25 years academic geriatric medicine programs have been implemented at most U.S. allopathic and osteopathic medical schools. This is a significant accomplishment, yet much remains to be done. The authors of this report and the members of ADGAP intend for it to establish benchmarks for the field and enable measurement of the impact of current and future strategies for developing academic geriatric medicine. In the future, as our database is regularly updated, it will provide a means of measuring the impact of programs that are supporting faculty development and increasing the quality and quantity of geriatrics training in the U.S. When combined with demographic and health care utilization data, the database will also help geriatric medicine policy advisors identify gaps in geriatric training. Finally, analyses of the database will help provide direction for future initiatives by federal and state governments and private foundations.

2 Project Background

Introduction

The percentage of Americans over age 65 has more than tripled, increasing from 3.1 million (4.1% of the population) in 1900 to 35.0 million (12.4% of the population) in 2000. By 2030 that number is expected to increase to 70 million (20.6% of the population) (Administration on Aging, 2001). This dramatic increase is due to the fact that baby boomers, individuals born between 1946 and 1964, will begin turning 65 in 2011.

The older population itself is also living longer. Comparing statistics from 1900 to 2000, the 65-74 age group was eight times larger in 2000 (18.4 million) than in 1900. The 75-84 age group was 16 times larger (12.4 million), and the 85+ group was 34 times larger (4.2 million) (Administration on Aging, 2001). Along with the increased numbers of older Americans, the elder population is becoming increasingly diverse. By the year 2030, one in four people over the age of 65 will be from a racial or ethnic minority (AHRQ Task Force on Aging, 2001).

Although Americans are living longer, they are also experiencing increased chronic diseases, such as arthritis, atherosclerotic vascular disease, cancer, hearing and visual loss, and dementia. While not always immediately life threatening, these illnesses can impair function and require ongoing expert management for optimal outcomes. Consequently, the elderly population utilizes the health care system more than younger populations. In 1997 people age 65 and over averaged more annual contacts with doctors than persons under 65 (11.7 contacts per year compared to 4.9 contacts) (Duncker & Greenberg, 2001).

At present no health care profession has the minimum projected number of trained personnel necessary to meet the unique health care needs of older adults. The Institute of Medicine (IOM) has conducted several studies of medical education related to aging. In 1993 and 1994 the John A. Hartford Foundation sponsored the two most recent reports from the IOM. The Bureau of Health Professions has also sponsored studies of geriatric education; the most recent was published in 1995. These studies have resulted in federal, state, and foundation initiatives to increase the quality and quantity of training of health professionals in the care of older adults.

The 1993 IOM report with its 1994 background report also emphasized other trends that will affect the development of a high quality care system for older people: 1) the need for growth in available resources (including geriatric nurse practitioners and medical social workers), cost containment, and managed care; 2) changes in the funding and organization of graduate medical education; and 3) the interdisciplinary nature of geriatric practice.

Existing efforts to document and track the status of past, current, and future geriatrics training are fragmented, and many data sets are not limited to geriatrics training. Survey efforts specific to geriatrics have not been coordinated, and, in many cases, the collected data have become outdated. Further, most of those conducting these studies have no plans for future updates. There is no central database of information about training needs in geriatric medicine. A comprehensive project to develop a database of information relative to the growth and development of geriatric education efforts, seriously needed for several years, is now underway and is the subject of this report.

Project Goal

The overall goal of this project is to build a comprehensive database containing information about the growth and development of geriatrics training and clinical practice. This database will allow for analysis and dissemination of information about these issues. This report contains a summary and analysis of data collected from fall 2000 through spring 2002.

Project Objectives

- To provide high-quality, up-to-date information about the status of geriatric medical education
- To provide information that can lead to increased recognition of the importance of geriatric research and training programs
- To establish benchmarks for the field of geriatric medicine and enable measurement of the impact of current and future strategies for developing academic geriatric medicine

The database currently provides reliable data on the current physician workforce and available resources to train clinicians, teachers, and researchers. In the future, as the database is updated, it will provide a means of measuring the impact of programs that are developing academic geriatric medicine, supporting faculty development, and increasing the quality and quantity of geriatrics training. When combined with demographic and health care utilization data, the database will help geriatric medicine policy advisors identify gaps in geriatric education and manpower. Analyses of the database will also help provide direction for future initiatives by federal and state governments and private foundations.

Project Methodology

National Oversight Panel

A National Oversight Panel was established to review, advise on, and approve the project work plan (see Acknowledgement page). The panel met in Chicago on September 21, 2000 to review and prioritize the planned database content items and identify primary and secondary data sources. It met again on January 28, 2002 in Orlando, Florida, to comment on an early draft of this report. Throughout the course of this project, panel members have contributed in various ways, such as helping in developing and reviewing survey questions, pre-testing surveys, and assisting with plans to acquire existing data, including data from their own organizations.

Project Setting and Team

The Office of Geriatric Medicine and the Institute for Health Policy and Health Services Research (IHPHSR) at the University of Cincinnati (UC) Medical Center are administering this database formation project for ADGAP. Gregg Warshaw, MD, Project Director, is Director of the Office of Geriatric Medicine at UC. The IHPHSR is a multidisciplinary research organization composed of several research centers offering a wide range of programs and services including expertise on database design and management, mail and web surveys, biostatistics, and data archiving. IHPHSR staff working on the project include a project manager, biostatistician, data manager, survey developer, web site developer, junior research associate, and an archivist/network administrator. (See acknowledgements for a complete list of the IHPHSR Project Staff.)

Acquisition and Organization of Existing Data

During the first project year, we identified individuals and organizations involved in geriatric medical education, including groups that conduct surveys, maintain databases, and/or develop geriatric medicine curricula. We have developed collaborative relationships with these individuals and organizations (Table 2.1). Project staff conducted on-site visits to the Association of American Medical Colleges (AAMC), National Institute on Aging (NIA), Veterans Health Administration (VHA), American Board of Family Practice (ABFP), American Medical Association (AMA), and the Accreditation Council for Graduate Medical Education (ACGME). A summary of data collected from existing sources is presented in Table 2.2.

The IHPHSR project team is successfully collaborating with several ongoing data collection projects. The University of Rochester, under the direction of Annette Medina-Walpole, MD, completed a survey of 1990-1998 graduates of residency review committees (RRC)-approved Family Practice (FP) and Internal Medicine (IM) geriatric medicine fellowships. The results of this study are presented in Chapter 6. In addition, with assistance from the Rochester group, we have transferred the surveyed fellows' contact information to the IHPHSR (with the fellows' permission). We will maintain and update this database through future surveys. The IHPHSR team has also closely followed the work conducted as part of the Society of General Internal Medicine's project, *Training General Internists in Geriatrics: Planning for Sustained Improvement.* Excerpts from the background paper prepared for that project, *Improving Geriatrics Training During Internal Medicine Residency Programs*, are given in this report (see Chapter 7).

Table 2.1 Data Sources

- Accreditation Council for Graduate Medical Education
- American Association for Geriatric Psychiatry
- American Board of Family Practice
- American Board of Internal Medicine
- American Board of Medical Specialties
- American Board of Psychiatry and Neurology
- American Foundation for Aging Research
- American Geriatrics Society
- American Medical Association
- American Medical Directors Association
- American Osteopathic Association
- Association of American Medical Colleges
- Bureau of Health Professions
- National Institute on Aging
- The John A. Hartford Foundation of New York City
- University of Rochester, Geriatric Medicine Program
- Veterans Health Administration

We are compiling, on an on-going basis, data from various other organizations involved in the training and practice of geriatric medicine. Our activities are oriented toward identifying, acquiring, and organizing this data. All data that are collected annually are being organized into a relational database; a database in which several tables are related by means of key variables. The structure is defined to ensure sufficient storage of data and to allow easy linking between different types of data. This structure will be used to organize subsequent data that are available for multiple years. It will allow for query of data by year, by a particular agency, or by a specific variable such as number of certified geriatricians. It will also provide easy access to data definitions for researchers who might want to know, for example, if the data is gathered by academic year (AY), calendar year (CY), or fiscal year (FY). Future plans include updating acquired data annually, obtaining data that has been identified but not yet included in our database, searching for new data sources, and making the data web-accessible.

IHPHSR Surveys

During the 2000-2002 project period, the IHPHSR conducted surveys of the following groups:

- Program Directors of Family Practice Residency Programs (Winter 2001);
- Directors of Geriatric Academic Programs in U.S. Allopathic and Osteopathic Medical Schools (Spring 2001);
- Directors of Allopathic and Osteopathic Geriatric Medicine Fellowship Programs (Fall 2001);
- Directors of Geriatric Psychiatry Fellowship Programs (Fall 2001);
- Program Directors of General Internal Medicine Residency Programs (Winter 2002);

The surveys could be completed either on paper or online. To improve response rates and ensure that the surveys covered material most relevant to the target groups, we collaborated with the

Table 2.2 Secondary Data and their Sources

Data Element	Source of Data
Undergraduate Medical Training	
Number of medical schools teaching geriatric topics as a required or elective course	Liaison Committee for Medical Education Part II, Annual Medical School Questionnaire, Association of American Medical Colleges and the American Medical Association
Individual medical schools teaching geriatrics, death and dying and palliative care	Liaison Committee for Medical Education, Association of American Medical Colleges and the American Medical Association
Medical school graduates' perceived adequacy of geriatrics training	Medical School Graduation Questionnaire, Association of Academic Medical Colleges
Merck/AFAR Research Scholarships in Geriatric Pharmacology for Medical and Pharmacy Students	American Federation for Aging Research
Name of medical schools awarded Hartford or Reynolds Foundation Grants to enhance geriatric content	John A. Hartford and Donald W. Reynolds Foundations
Listing of medical students receiving Hartford Awards and school attended	John A. Hartford Foundation
The John A. Hartford/AFAR Medical Student Geriatric Scholars Program	American Federation for Aging Research
Glenn/AFAR Foundation Scholarships for Research in the Biology of Aging	American Federation for Aging Research
Residency Training	
Training efforts in geriatrics outside of primary care disciplines	The John A. Hartford/American Geriatrics Society Projects: *Integrating Geriatrics into the Subspecialties of Internal Medicine* (William R. Hazzard, MD, Project Director) and *Increasing Geriatrics Expertise in Surgical and Medical Specialties* (David H. Solomon, MD and John R. Burton, MD, Project Directors)
Total number of positions and first year positions available in Family Practice, Internal Medicine, and Psychiatry	AMA and AAMC National Survey of Graduate Medical Education, JAMA, Educational Issue,
Total number of weeks of geriatrics content required in Internal Medicine programs	The National Study of Graduate Education in Internal Medicine, 1996-1997, American Board of Internal Medicine
Fellowship Training	
Number of certified geriatrics fellowship programs	Accreditation Council for Graduate Medical Education in Internal Medicine, Family Medicine, and Psychiatry
Aggregate demographic information on geriatric fellows in Family Practice, Internal Medicine, and Psychiatry	JAMA, Educational Issue, American Medical Association and American Board of Internal Medicine
Growth in number of geriatric fellows	JAMA, Educational Issue, American Medical Association and The National Study of Graduate Education in Internal Medicine (NaSGIM)
Geriatric Medicine, Psychiatry, and Neurology Positions per Facility	Office of Academic Affiliations, Veterans Health Administration
Names and addresses of graduates from geriatric medicine fellowship programs from 1988-1998	University of Rochester
Names and addresses of osteopathic fellows	American Osteopathic Association
Practicing Geriatricians	
Number of certified geriatricians, pass rates, geographic distribution, and specialty	American Board of Internal Medicine, American Board of Family Practice, American Board of Psychiatry and Neurology, American Board of Medical Specialists, and the American Osteopathic Association
Number of re-certified geriatricians, geographic distribution, and specialty	American Board of Internal Medicine, American Board of Family Practice, American Board of Psychiatry and Neurology, and American Board of Medical Specialists
Demographic data on certified geriatricians: date of birth, year of examination, years in practice, size of community where practice, organization of practice, percent of time spent in direct care, teaching, research, or administration, type and status of hospital where practices, and medical school appointments	American Board of Family Practice

Table 2.2 Secondary Data and their Sources, ***continued***

Data Element	Source of Data
Practicing Geriatricians, continued	
Job opportunities and career paths of fellows graduating from 1990-1998	Survey of fellowship graduates conducted by the Geriatric Medicine Unit, University of Rochester, Annette Medina-Walpole, MD, Principal Investigator
Salaries of geriatricians	Medical Group Management Association
List of Jack Weinberg Memorial Awards for Geriatric Psychiatry	American Psychiatry Association Council on Aging
Merck/AFAR Junior Investigator Awards in Geriatric Clinical Pharmacology	American Federation for Aging Research
Geriatrics Faculty	
Medical School Faculty Salaries	American Association of Medical Colleges *Report on Medical School Faculty Salaries*, March 1998, May 1999, March 2000, and May 2001
Junior faculty development award opportunities AFAR Research Grants	Direct contact with foundations, NIA, VHA, American Federation for Aging Research
Name, school, and research topic of Paul Beeson Physician Faculty Scholars in Aging Research	American Federation for Aging Research and the Paul Beeson Physician Faculty Scholars program at www.beeson.org
Physician faculty in subspecialties and non-medical specialties who have focused on geriatrics	The John A. Hartford/American Geriatrics Society Projects: *Integrating Geriatrics into the Subspecialties of Internal Medicine* (William R. Hazzard, MD, Project Director) and *Increasing Geriatrics Expertise in Surgical and Medical Specialties* (David H. Solomon, MD and John R. Burton, MD, Project Directors).
Continuing Education	
Practicing Physician (Continuing Medical) Education opportunities and participation	Bureau of Health Professions, AMA, the American Geriatrics Society, American Academy of Family Physicians
Enhancing Geriatric Care Through Practicing Physician Education	The John A. Hartford /American Geriatric Society Project.: Sharon Levine, MD and Bruce E. Robinson, MD, MPH, Project Co-Directors.
Other Relevant Information	
Demographic & health care utilization information on the elderly	National Center for Health Statistics, Centers for Disease Control and Prevention
Resources for educational training	Stanford University-Hartford Consortium, American Geriatrics Society
Trends in NIA Appropriations	National Institute on Aging Budget Office
Funding for Careers and Training	National Institute on Aging, Veterans Health Administration, Bureau Health Professions, and Foundations
List of Geriatric Research, Education, and Clinical Centers (GRECCS)	Veterans Health Administration
List of Pepper Centers (Older Americans Independence Centers)	National Institute on Aging
Location and Funding for Alzheimer's Disease Centers	National Institute on Aging
List of Centers of Excellence Programs (Hartford Centers)	The John A. Hartford Foundation
Attendance at national meetings and Membership in Organization	American Geriatrics Society, Association of Medical Directors of America, and American Association for Geriatric Psychiatry

professional organizations of the groups surveyed. Following each survey listed below, the name of the organization with which we consulted is given:

- Survey of Program Directors of Family Practice Residency Programs - Society of Teachers of Family Medicine (STFM) and Association of Family Practice Residency Directors (AFPRD)
- Survey of Directors of Geriatric Academic Programs - Association of Directors of Geriatric Academic Programs (ADGAP)
- Survey of Allopathic and Osteopathic Geriatric Medicine Fellowship Programs - Association of Directors of Geriatric Academic Programs (ADGAP)
- Survey of Accredited Geriatric Psychiatry Fellowship Programs - American Association for Geriatric Psychiatry (AAGP)
- Survey of General Internal Medicine Residency Programs - Society of General Internal Medicine (SGIM)

3 Historical Development of Geriatric Medicine Training and Practice in the United States

Background

The United States is facing a crisis in physician expertise to care for its aging population. With the number of elderly increasing from 3.1 million in the 1900s to 70 million by 2030, training health professionals in geriatric care is vital to ensure that older persons receive high quality medical care. Over the last 25 years progress has been made in developing medical education, research, and clinical programs in geriatric medicine (Figure 3.1).

The history of geriatric medicine prior to 1975 in Great Britain and the U.S. has been described (Libow, 1990). Early work by Ignatz Leo Nascher in the U.S. and several pioneering British geriatricians, led by Marjorie Warren, established the foundations for modern geriatric medicine. Dr. Nascher chose the term "geriatrics" as a name parallel to "pediatrics." Dr. Warren established a Department for the Aged in London's West Middlesex Hospital in 1935. These pioneers recognized that illness can present and evolve differently in the very old and that new approaches to care and treatment were required. E.V. Cowdry edited the proceedings of an early U.S. conference on the problems of aging. This book, *Problems of Ageing; biological and medical aspects*, was published with funding from the Josiah Macy, Jr. Foundation in 1939. It significantly increased academic interest in gerontology and geriatrics (Cowdry, 1939). After the Second World War, the British established geriatric medicine as a component of its new National Health Service (NHS). The NHS founders established several geriatric specialist positions at major teaching hospitals, and these leaders wrote the early textbooks for geriatric medicine (Cassel, 1995).

In 1941, Nathan Wetherell Shock, PhD, became the first chief of the newly formed Unit on Gerontology of the Division of Physiology of the five-year-old National Institute of Health. He later built the Gerontology Research Center of the National Institute on Aging and was the catalyst for the emergence of aging research in the United States. Dr. Shock insisted that aging was not a disease and focused research on two questions: "What are the underlying biological factors that produce what we perceive as aging?" and "What are the mechanisms that produce impaired performance with age?" In the late 1950s, he and his colleagues began the Baltimore Longitudinal Study of Aging (www.nih.nia.gov).

The American Geriatrics Society was founded in New York City in 1942 when a group of physicians interested in advancing medical care for older adults met with the intention of forming a specialty society dedicated to geriatric medicine. Among those physicians were Leo Nascher, Dr. Malford W. Thewlis who was named the first executive secretary, and Dr. Lucien Stark, who became the first AGS president (www.americangeriatrics.org). Some universities established gerontology programs beginning in the 1950s, but medical school interest in geriatric medicine was quite limited well into the 1980s. This slow development occurred despite the landmark passage of the Medicare and Medicaid Acts in 1965.

By the mid-1970s British geriatricians had identified and begun to address the challenging clinical syndromes unique to old age, e.g., multiple interrelated diagnoses, adverse events associated with medications, injuries from falls, delirium and dementia, and urinary incontinence. A commitment of resources to develop the new discipline's scientific basis was now needed. In the U.S., Robert Butler published *Why survive? Being old in America* (Butler, 1975) and this led a successful effort during 1974 - 1976 to establish the National Institutes of Health's (NIH) National Institute on Aging (NIA). This critical event gained the attention of the American academic medical community. NIA's small earlier annual budgets rapidly grew as an intramural program in Baltimore and extensive extramural programs were developed elsewhere. By the early 1990s NIA's annual budget exceeded $300 million and it has more than doubled over the past decade (Table 3.1).

Veterans Health Administration

The number of veterans over age 65 was projected to increase from 3 million in 1980 to 9 million in 2000. The Veterans Health Administration (VHA) began funding the training of geriatric medicine fellows in 1980, and over the next decade trained 275 geriatricians. The VHA remains the most important source of training funds for geriatricians in the U.S. The Geriatric Research, Education and Clinical Centers (GRECC) program was another of the VHA's responses to the growing challenge of caring for the elderly. The goals of the GRECC program are to advance scientific knowledge regarding medical, psychological and social needs of older veterans, to develop improved and innovative models to provide clinical services for them, and to advance the quality of education in geriatrics and gerontology throughout the VHA health care system.

The GRECCs are affiliated with accredited medical schools that provide education in geriatrics for medical residents, nurses, and allied health care students. The first GRECC was organized in 1975. Between 1975 and 1980, GRECCs were established at 8 VHA medical

Figure 3.1 Geriatric Medicine in the United States: A Selective Timeline

Source: Administration on Aging, 2002, Anders, Bierman, Hazzard, 1985, Bureau of Health Professions, 1995, Libow, 1990, Mount Sinai School of Medicine, 2002

$29.5 billion Medicare disbursements
25.7 million Americans age 65 & over

$195.9 million NIA extramural support
$95.3 billion Medicare disbursements
31.2 million Americans age 65 & over

$578.2 million NIA extramural support
$186.7 billion Medicare disbursements
35 million Americans age 65+ (12.4% of US population)
70 million Americans age 65+ (20.6% of US population)

1980 | 1990 | 2000 | 2030

1980s Early US geriatric medicine textbooks published, including *Clinical Aspects of Aging: A Comprehensive Text* prepared under the direction of AGS, editor, William Reichel & *Principles of Geriatric Medicine*, edited by Reubin Andres, Edwin Bierman, William Hazzard

Early 1990s Association of Directors of Geriatric Academic Programs (ADGAP) established

1980s GM Fellowship programs expanded from a few to more than 93 programs in 1986

1980 DVA began support for Geriatric Psychiatry Fellowships

1980 NIA began GM Academic Teaching Nursing Home Program

2000 Hartford Foundation/AAMC started awards to 40 US medical schools to enhance geriatric curriculum

2000 ADGAP received grant from D W Reynolds Foundation to create longitudinal, national database on geriatric medicine training & practice

1981 Group on Geriatric Education established within Society of Teachers of Family Medicine

1981 Robert Wood Johnson Foundation's financial support helps to accelerate growth of academic nursing homes

1981 American Federation for Aging Research (AFAR) founded to assist scientists' further careers in aging research and geriatric medicine

1991 Initial Claude Denison Pepper Older Americans Independence Centers established by NIA

2001 D. W. Reynolds Foundation awarded 10 Comprehensive Geriatric Medicine Education Awards to US medical schools

1982 Mt Sinai Medical School in NYC became 1st medical school to establish freestanding US Department of Geriatrics

1983 T. Franklin Williams named 2nd director of NIA

1992-1993 AAMC reported only 9 of the 129 medical schools required a separate course in geriatrics (AY 1992-93)

1993 Richard J. Hodes named 3rd director of NIA

1993 IOM report *Strengthening Training in Geriatrics for Physicians* recommended 6 months of geriatrics training by 1996 and 9 months by 1999 for primary care residents

1993 ACGME accredited 1st Geriatric Psychiatry Fellowship programs

1984 NIA Alzheimer's Disease Centers' program established.

1984 Panel on Statistics for an Aging Population established by National Research Council to study adequancy of current statistical information & methodology, particularly in area of health & medical care for an aging population

1994 84 IM & 17 FP fellowship programs accredited by ACGME

1994 Final year non-fellowship-trained candidates could sit for GM fellowship CAQ exam

1994 Hartford Foundation/AGS Projects to Increase Geriatrics Expertise in Surgical and Medical Specialties and Subspecialties of IM began

1995 ABIM and ABFP changed requirement for length of geriatric medicine fellowship training to 1 year

1995 Initial Paul Beeson Physician Faculty Scholars in Aging Research Program awarded by AFAR with support from Hartford, Commonwealth, & Starr Foundations & Alliance for Aging Research

1986 Alliance for Aging Research founded to promote medical research on human aging

1987 IOM's Committee on Leadership for Academic Geriatric Medicine promoted a Center-of-Excellence strategy to invigorate the development of academic geriatrics

1997 D.W. Reynolds Center on Aging established at U of Arkansas

1988 1st certifying examination in geriatric medicine, jointly developed by the ABIM & ABFP

1988 ACGME initially accredited 62 IM & 16 FP Geriatric Medicine Fellowship programs

1988 Study of IM & FP Residency Programs found that 36% of IM & 80% of FP programs had geriatrics curricula

1988 The Geriatrics Interest Group (SGIG) within the Society of General Internal Medicine established with Rebecca Silliman, MD as Chair

1989 Formal requirement for GM training in IM residency programs included by the IM RRC

1999 D.W. Reynolds Department of Geriatrics established at U of Oklahoma

1980 | 1990 | 2000 | 2030

National Research Council, 1988, Reuben, Fink, Vivell et al., 1990, US Senate Special Committee on Aging, 2002

Table 3.1 National Institute on Aging Awards By Component and Funding Mechanism FY 1990-2001 (millions of dollars)[1]

Fiscal Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
NIA Extramural Total	**195.9**	**270.9**	**323.8**	**337.4**	**359.9**	**372.5**	**391.9**	**420.1**	**451.0**	**518.7**	**578.2**	**684.3**
Research Grants	174.6	247.0	291.4	304.6	325.8	337.7	357.5	384.4	415.1	474.5	546.3	624.9
R&D Contracts	11.8	13.0	20.9	21.2	21.9	22.2	21.2	22.0	21.7	27.9	15.1	40.0
Research Training	9.5	10.9	11.5	11.6	12.2	12.6	13.2	13.7	14.2	16.3	16.8	19.4

[1]Includes Older Americans Independence Centers (Pepper Centers) and Alzheimer's Disease Centers.
Source: NIA Budget Office, 2002

centers: Bedford and Brockton/West Roxbury, MA; Little Rock, AR; Minneapolis, MN; Palo Alto, CA; St. Louis, MO; Seattle and American Lake, WA; Sepulveda, CA; and West Los Angeles, CA.

In 1980, Public Law 96-330 authorized the VHA to establish 15 additional GRECCs. This law also developed a Geriatrics and Gerontology Advisory Committee, charged with evaluating existing and future GRECCs. In 1985, PL 99-166 increased the number of GRECCs from 15 to 25 (Goodwin and Morley, 1994). Currently there are 21 funded centers. (See Appendix A for a list of the GRECCs and their research focuses.)

Developments Resulting from Institute of Medicine Reports

A series of national reports sponsored by the Institute of Medicine (IOM) highlighted the challenges facing the medical profession as the population ages. The IOM, under the leadership of Paul B. Beeson, MD, published the first of these reports, *Aging and Medical Education*, in 1978, calling for increased physician training in geriatric medicine (IOM, 1978). The report recommended that all medical schools and teaching hospitals include curricula on aging for medical students and residents. These recommendations led to the "Teaching Nursing Home" projects funded by the NIA and the Robert Wood Johnson Foundation in the early 1980s. The Beeson report also included projections of the future need for geriatric medicine manpower in the U.S. This careful analysis, published in 1980, estimated that 8,000 geriatricians would be needed by 1990 (Kane, Solomon, Beck et al., 1980). In 1985, the Bureau of Health Professions (BHPr) established the first Geriatric Education Centers. The goals of these multidisciplinary training programs include improving the training of health professionals in geriatrics through curriculum development and educational programs for students and practitioners. In FY 2001, 45 Geriatric Education Centers were established and 35 were receiving BHPr funding.

The second IOM study written by the Committee on Leadership for Academic Geriatric Medicine was published in the Journal of the American Geriatrics Society in 1987. This report recommended rapidly developing the capacity to train academic leaders in geriatrics, establishing "centers of excellence", launching a national campaign to attract medical students, residents, fellows, and practicing physicians into geriatrics, and developing a coordinated approach to public and private commitments of financial resources to support geriatric medicine (IOM, 1987).

In 1991, the IOM published its third report, *A National Research Agenda on Aging: Extending Life, Enhancing Life* (IOM, 1991). This report, funded by the Commonwealth Fund and the Pew Charitable Trusts, outlined opportunities for improving health and functioning of older adults through new research. The IOM emphasized research-training programs' needs for additional funding.

In 1993, the IOM published its fourth report, *Strengthening Training in Geriatrics for Physicians* (IOM, 1993), documenting the considerable progress that had been made in the 16 years since the Beeson report was published. This report was enhanced by information from a background paper prepared for the Committee on Strengthening the Geriatric Content of Medical Education (IOM, 1994). The fourth report recommended expanding expectations for training primary care physicians in geriatric medicine. It also recommended establishing a new emphasis on providing geriatric medicine training for medical sub-specialists and non-primary care and surgical specialists. The latter recommendation resulted in important new initiatives led by the American Geriatrics Society and funded by the John A. Hartford Foundation.

A program to integrate geriatric medicine content into the subspecialties of internal medicine, begun in 1994, is being led by William Hazzard, MD. This program is encouraging the leadership of each medical subspecialty (e.g., cardiology, infectious diseases, nephrology) to integrate new curricula and research activity in aging into their training programs (see Chapter 7).

A parallel initiative, led by David Solomon, MD and John Burton, MD is engaging 10 surgical and related specialties (anesthesiology, emergency medicine, general surgery, gynecology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine and rehabilitation, thoracic surgery, and urology) in a similar effort to increase recognition of aging in most aspects of medical practice (see Chapter 7). The late Dennis Jahnigen, MD was a leading force behind this project, which grew out of his recognition of the importance of including geriatrics training for physicians in all specialties.

Certificate of Added Qualifications

The Beeson Report sidestepped the controversial strategy that was being suggested by some, of developing a new medical specialty of geriatric medicine, independent of internal medicine and family practice. In Great Britain, geriatric medicine had already been established as a freestanding medical specialty, but many American medical leaders opposed this approach. Within general internal medicine and family practice, practitioners and academic leaders firmly stated that the care of the older adult was central to their practice. The 1987 IOM report compromised and stated that geriatric medicine should become a recognized academic discipline *within* relevant medical specialties. These recommendations led to an

important political decision by the American Boards of Internal Medicine and Family Practice (ABIM and ABFP). In 1987, with considerable opposition from many of their sister organizations, the ABIM and ABFP requested permission from the American Board of Medical Specialties (ABMS) to jointly develop a Certificate of Added Qualifications (CAQ) in Geriatric Medicine.

The CAQ would certify and recognize academic and practicing geriatricians, but stopped short of developing a new specialty board. Under this arrangement board certified internists and family physicians would need to maintain their primary board certification to be eligible for the geriatrics CAQ. This innovative agreement by the ABIM and ABFP resulted in formal certification of geriatric medicine training programs by the ACGME. In 1988, the first jointly sponsored (ABIM/ABFP) geriatric medicine certifying examination was administered. The ABIM and the ABFP report that since 1988 more than 9,900 family physicians and internists have obtained CAQs in geriatric medicine. The 1988, 1990, 1992, and 1994 examinations were open to practicing physicians without fellowship training. Subsequently, entry to the examination required completion of an accredited geriatric medicine fellowship.

The American Board of Psychiatry and Neurology (ABPN) offered the first certifying examination for a CAQ in geriatric psychiatry in 1991. There have been over 2,500 certificates in geriatric psychiatry awarded. The American Board of Osteopathic Family Practice (ABOFP) and the American Board of Osteopathic Internal Medicine (ABOIM) began certification in geriatrics in 1991. Currently, 503 certificates in osteopathic geriatric medicine have been earned.

Centers of Excellence

As the training and certification of geriatricians were gaining credibility, the IOM sponsored a second study as a follow-up to the Beeson report. This 1987 paper by the IOM Committee on Leadership for Academic Geriatric Medicine (IOM 1987) documented slow progress toward implementing the educational objectives outlined in the earlier report. Medical student and resident geriatrics education was still voluntary in most medical schools.

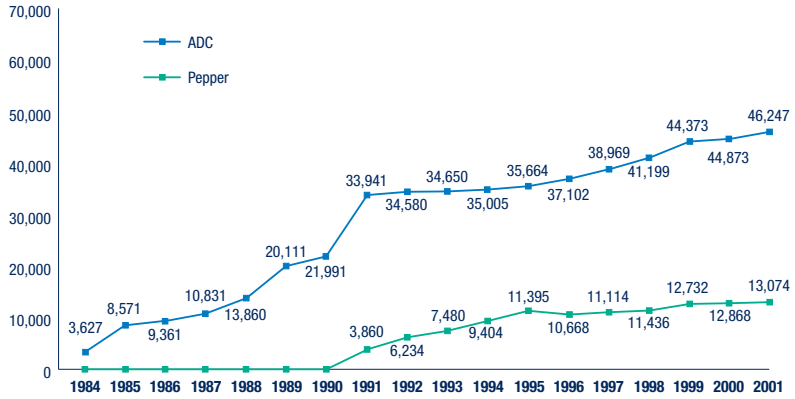
In the mid-1980s fewer than 100 physicians completed geriatric medicine fellowships each year. The 1987 IOM report promoted a Center of Excellence (CoE) strategy, designed to create critical levels of faculty and other resources at selected medical schools. These academic training centers were to produce the needed number of geriatric medicine faculty for all medical schools. The CoE program had three central goals: 1) to develop training programs that would attract learners and produce future faculty, 2) to implement research programs that would add to the discipline's knowledge base and provide research training, and 3) to provide clinical training in a variety of settings. The model was partially based on the VHA's GRECCs. However, as the IOM report pointed out, the GRECCs' mission did not include training and placing academic faculty. The CoE strategy was to expand on the GRECCs' mission in this regard.

With funding from the John A. Hartford Foundation of New York City, the CoE strategy was implemented. In 1988, the Foundation initiated its first CoE program, the Academic Geriatrics Recruitment Initiative, to address the critical shortage of geriatric faculty members in American medical schools. The program's purpose was to enhance and increase academic geriatric programs and training, with the goal of increasing the nation's capacity to provide effective and affordable care to its rapidly growing elderly population. This project yielded positive results, including producing many scientists, teachers, and clinicians knowledgeable in geriatrics and a higher level of recognition and appreciation for the discipline throughout medical centers, universities, and affiliated clinical service settings. In 1997, the Foundation's trustees renewed and expanded the previous CoE concept by increasing the geographic range of funded CoE and expanding training capacity, particularly in dealing with the country's increasingly diverse elders. By identifying and funding CoE nationwide, more institutional attention will be brought to the field, and faculty will be able to become the leaders the field needs (See Appendix B for list of CoE). The American Federation for Aging Research (AFAR) serves as the CoE coordinating center, and its activities include systematization within seven previously funded and 11 new CoE, as well as the seven CoE Designation Award sites.

Pepper Centers

The CoE program was enhanced in 1991 when Congress gave the NIA additional dollars to establish aging research and education centers across the country (www.nia.nih.gov). These centers are named for Claude Denison Pepper (1900-1989), a Florida congressman known nationwide for advocacy for older adults' rights. The centers' primary goal reflects his interest in helping older Americans maintain their independence as long as possible. The research conducted by the Pepper Older Americans Independence Centers supports this goal by developing ways to delay or even prevent chronic diseases that disable so many older people and cause them to become dependent on others.

Figure 3.2 National Institute on Aging Funding History of Older Americans Independence Centers (Pepper Centers) and Alzheimer's Disease Centers (ADC) (thousands of dollars)



	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of ADCs	5	10	10	12	12	15	20	28	28	28	28	27	27	27	27	28	30	29
Number of Pepper Centers	--	--	--	--	--	--	--	3	5	6	8	10	11	10	10	10	10	9

Source: NIA Budget Office, 2002

As an educational resource, the Pepper Centers are educating and encouraging older adults by sharing free health promotion information that addresses ways to improve their health and better their lives. Originally, 3 Pepper Centers were funded and in 2001 there were 9 funded centers (See Appendix C for a list of current centers.) The total budget for these centers increased from $3,860,000 in 1991 to $13,074,000 in 2001 (Figure 3.2).

Alzheimer's Disease Centers

The NIA began funding Alzheimer's Disease Centers (ADCs) in 1984 and currently funds 29 centers at major U.S. medical institutions. (See Appendix D for a list of current centers.) Researchers at these centers are working to translate research advances into improved diagnosis and treatment for Alzheimer's Disease (AD) patients while, at the same time, focusing on the program's long-term goal of finding a way to cure and possibly prevent AD. Areas of investigation range from the basic mechanisms of AD to managing symptoms and helping families cope with effects of the disease.

Center staff conduct basic, clinical, and behavioral research, and train scientists and health care providers new to AD research. Although each center has its own unique area of emphasis, a common goal of the ADCs is to enhance research on AD by providing a network for sharing new ideas and research results. The National Alzheimer's Coordinating Center in Seattle, under the direction of Walter Kukull, PhD, coordinates data collection and fosters collaborative research among the ADCs. Many ADCs have satellite facilities that offer diagnostic and treatment services and collect research data in underserved, rural, and minority communities. The funding history of these Centers is presented in Figure 3.2

Nathan Shock and Edward R. Roybal Centers

The NIA began the Nathan Shock Centers for Excellence in Basic Biology of Aging in 1995. The goal of this center grant program is to enhance already well-developed institutional programs in basic research on aging. Current funded centers are established at Harvard, the University of Texas at San Antonio, the University of Michigan, the University of Washington, and at the Lankenau Medical Research Center/Jefferson Health System in Philadelphia. The NIA began the Edward R. Roybal Centers (named for the former U.S. congressman from Los Angeles) for Research on Applied Gerontology in 1993. Funded by the NIA's Behavioral and Social Research Program, the goal of these centers is to conduct applied research utilizing existing basic knowledge about cognitive and psychosocial aging. Current funded centers are established at Boston University, Cornell University, the University of Alabama at Birmingham, the University of Illinois at Chicago, the University of Michigan, and the University of Miami.

Recent Initiatives

Two new educational initiatives hold promise for the near future. The Association of American Medical Colleges (AAMC), with funding from the Hartford Foundation, is supporting 40 U.S. medical schools' efforts to enhance the quality and quantity of their medical student geriatric medicine curricula. The central goal of this effort is initiating a required geriatric medicine curriculum for each student in all four years of medical school training. In addition, the Donald W. Reynolds Foundation of Las Vegas recently funded ten medical schools (approximately $2 million per school over 4 years) to build comprehensive geriatric medical education programs for medical students, residents, and practicing physicians. The Foundation currently anticipates funding 20 additional schools under this initiative over the next five years, for a total commitment of $60 million. Efforts are also well underway to develop the next generation of academic leaders. Research career awards through the NIA, VHA, the American Geriatrics Society, and the American Federation for Aging Research are supporting numerous young investigators, and ADGAP recently announced a new program to identify and support young leaders (see Chapter 5).

Challenges for the Future

In addition to the need to continue developing the next generation of academic leaders, researchers, and educators, the field of geriatric medicine will face challenges related to Medicare over the coming decade. These include the need to promote careful use of Medicare dollars. Medicare expenditures are heavily invested in reactive and highly expensive technical hospital care. Critical components of care such as preventive medicine, primary care, prescription medication benefits, psychiatric services, and long-term care services are arguably either un-funded or under-funded.

In summary, geriatric medicine remains a young discipline. Over the past 25 years academic geriatric medicine programs have been implemented at most U.S. medical and osteopathic schools, and thousands of practicing geriatricians have been certified. This is a significant accomplishment, yet much remains to be done. Academic programs at many American medical colleges are still small and fragile. Time to insure that our health system will be able to respond effectively to an aging America is limited. Although recent research has documented a trend toward declining disability in the elderly (Cutler, 2001), without major changes in the health status of our older population, health care costs will escalate rapidly (Schneider & Guralnik, 1990). Further investment in basic and clinical research and in training all physicians in the care of the aged remains a critical priority.

4 The Practice Of Geriatric Medicine

Background

The maintenance of functional independence into late life is a central goal of geriatric medicine. Although the practice of geriatric medicine includes preventive medicine and the diagnosis and treatment of reversible diseases, it is dominated by the challenge of caring for patients with chronic illness. The geriatrician's goal in managing chronic illness is maximizing the older adult's productivity, well being, and happiness (Williams, 1994). To achieve these goals, the delivery of quality, cost-effective medical services to older adults is critical. As discussed in this report, accomplishing these goals will require continuous broad education and research initiatives that reach every medical student, resident, fellow, and practicing physician. Physicians certified in geriatric medicine and geriatric psychiatry are leading this effort, but leadership, expertise, and commitment are required from all medical and surgical specialties and other health care disciplines. The certain dramatic growth in the number of older adults during the coming decades and the increasing cost of new, effective medical and surgical treatments add urgency to this challenge. In addition, the delivery of medical services to older adults occurs not only in the familiar office and hospital settings, but also takes place in the patient's home, retirement home, rest home/assisted living facilities, day care, nursing home, and hospice settings. Effective medical care for older adults in all settings requires that physicians work cooperatively with practitioners representing many health care disciplines such as nursing, social work, and the various therapies. Physicians without training in geriatric medicine often lack the skills to care for patients in these less familiar settings or to practice in interdisciplinary teams.

Characteristics of Geriatric Medicine

Geriatric medicine incorporates general knowledge of medical practice, especially internal medicine, family practice, neurology, psychiatry and rehabilitation. In addition, geriatric medicine emphasizes problems that are more common in older adults, particularly broad clinical issues such as: confusion and dementia, depression, falls and instability, incontinence, chronic pain management, sensory impairment, and end-of-life care. The common occurrence of multiple problems in the geriatric population makes the practice of primary care geriatrics unusually challenging. Geriatricians use a multidimensional clinical approach that includes the assessment of physical, psychological, functional, social, and economic domains. Geriatricians, in collaboration with other health care professionals, utilize comprehensive geriatric assessment (CGA). CGA is a multidisciplinary evaluation in which the multiple problems of older persons are uncovered, described, and explained and in which the resources and strengths of the person are cataloged, the need for services assessed, and a coordinated care plan developed to focus on interventions for the person's problems. In addition, geriatric medicine and associated caregivers use rehabilitative techniques to increase the likelihood that medical treatments result in stabilized or improved function. A careful assessment of the iatrogenic risks associated with medical treatments is central to geriatric medicine decision-making. To maintain their independence in the community, many older adults receive informal support from family and friends and formal support from community service providers. Understanding the characteristics of these support systems is an essential component of geriatric medicine practice. Geriatricians are trained to provide medical care across the spectrum of clinical settings, from the hospital, to the office, to the nursing home, and in the home.

The American Geriatrics Society has proposed guidelines for effective ambulatory geriatric clinical services (Table 4.1). These guidelines help to define some of the resources required to provide quality care to older adults.

Table 4.1 Critical Components for Ambulatory Geriatric Clinical Care and Services

1. Access to primary care and geriatric consultation involving personnel with training and experience in geriatrics.
2. Availability of an interdisciplinary team to coordinate care and services.
3. Information systems and quality improvement programs that are geriatric focused and can transfer information across care sites.
4. Information and materials to enable the older adult to participate in self-management of chronic disease.
5. Access that is sensitive to the needs of older patients: e.g., transportation, accessible parking and entrances, adequate lighting, and appropriate examination tables.
6. Specialized programs to assess and manage incontinence, falls, osteoarthritis and deconditioning, depression, memory loss and dementia, chronic pain, end-of-life care.

Source: AGS Health Care Systems Committee, Position Statement, www.americangeriatrics.org, 2001

Current Status of Medical Care for Older Adults

Expanding Numbers of the Very Old and Increasing Medical Care Expenditures

In 2000, the number of adults age 65 and over numbered 35 million, about one in every eight Americans. By 2030 the number of older Americans will have doubled to 70 million. Adults age 85 and over are the fastest growing group in the United States (Administration on Aging, 2001). Although the health and physical functioning of older adults appears to be improving, there remains a concern that the rapid growth of the oldest age groups will have a major impact on health care costs (Schneider & Guralnik, 1990).

The Centers for Medicare and Medicaid Services (CMS), (Health Care Finance Administration (HCFA) until 2001), recently released a report on U.S. health care expenditures for 2000 (Levit, Smith, Cowan et al., 2002). After a decade of stability, health care spending grew to $1.3 trillion in 2000. This was up nearly 7% from 1999 and was the fastest acceleration in 12 years. These expenditures represented 13.2% of the U.S. gross domestic product. In 2000, Medicare spending rose 5.6% to $224.4 billion. In 2000, nursing home and home health total expenditures also rose after several years of stable or declining rates of spending.

Table 4.2 Most Common Chronic Health Conditions in Americans Age 65 and Older, 1996

Diagnosis	Occurrence (per 100 persons age 65 +)
Arthritis	49
Hypertension	36
Hearing Impairment	36
Heart Disease	27
Orthopedic Impairment	18
Cataracts	17
Sinusitis	12
Diabetes	10

Source: Kramarow, Lentzner, Rooks et al., 1999

Table 4.3 Limitations of Activity Caused by Chronic Conditions in Non-institutionalized Older Adults, by Selected Characteristics: United States, 1997-1999

Characteristic		ADL Limitation (%)[1]			IADL Limitation (%)[2]		
		1997	1998	1999	1997	1998	1999
Age:	Age 65 – 74 years	3.4	3.3	3.1	6.9	7.1	6.2
	Age 75 years and over	10.4	9.6	9.9	21.2	20.5	19.1
Sex:	Male	5.2	5.1	4.9	9.1	9.2	8.4
	Female	7.7	7.1	7.2	16.9	16.4	15.1
Race and Hispanic Origin:							
	White, non-Hispanic	6.1	5.6	5.7	13.0	12.4	11.5
	Black, non-Hispanic	11.7	11.1	11.9	21.2	21.8	20.8
	Hispanic	10.8	9.9	8.6	16.3	19.3	14.1
Poverty Status[3]:							
	Poor	13.0	9.5	10.1	26.9	25.3	22.3
	Near Poor	7.5	7.9	6.7	16.3	18.3	15.1
	Non-Poor	5.3	4.6	5.5	10.1	9.7	9.7

[1] Activities of Daily Living (e.g., bathing, dressing, toileting, transferring, continence, feeding)
[2] Instrumental Activities of Daily Living (e.g., managing finances, shopping, preparing meals, traveling)
[3] Poverty status is based on family income, family size, number of children, age of adults in family. Poor persons are below the poverty threshold, near poor persons have incomes of 100 percent to less than 200 percent of the poverty threshold.

Source: CDC, National Center for Health Statistics, 2001

Medicare and Managed Care

The 1982 Tax Equity and Fiscal Responsibility Act (TEFRA) authorized the Medicare program to begin contracting with health insurance companies for the development of managed Medicare plans. After a slow start, the program grew rapidly in the 1990s. By 1993, 1.5 million Medicare beneficiaries were enrolled in managed Medicare plans; enrollment peaked in 1999 at 6.35 million (16% of eligible beneficiaries) (Berenson, 2001). Enrollment was not uniform across the country, and some communities saw 40-50% of all Medicare eligible adults in managed care plans (e.g., Los Angeles, Portland, San Diego) (Health Care Advisory Board, 1996). During the peak enrollment year of 1999, twelve states had enrollment rates over 20%, and in California enrollment was 40% of all Medicare beneficiaries (Berenson, 2001).

In the fall of 2001, national Medicare managed care enrollment had declined to 14% of eligible beneficiaries (Berenson, 2001). Administrative costs, difficulty controlling utilization, and reductions in Medicare capitated payments to insurance companies has led to a number of insurance providers leaving the managed Medicare marketplace. The providers that remain are charging patients higher co-payments and deductibles, making managed Medicare a less attractive option. The potential promise of applying managed care principles to Medicare remains, but a new phase of public policy initiatives will be required to reinvigorate this program (Berenson, 2001).

Home and Community-Based Services for the Elderly

Beginning in the 1970s federal and state governments promoted demonstration programs to reduce the institutionalization of older adults and to improve the integration of health and social services for the aged. The overall goals of these initiatives have been to reduce government expenditures and improve the health and function of the

participants. Geriatricians have been integral to the development and implementation of many of these programs. Reviews of these programs' impact have been published (Weiner & Skaggs, 1995; Weissert, Cready, & Pawelak, 1988).

An example of an innovative service demonstration program is the Program of All-Inclusive Care for the Elderly (PACE). PACE includes a comprehensive service delivery system for Medicare and Medicaid eligible elders living in the community. The program is funded on a capitated basis by Medicare and Medicaid. PACE is modeled on a system of acute- and long-term care services developed by On Lok Senior Health Services in San Francisco. In 1986, the Robert Wood Johnson Foundation provided funding for six sites to develop PACE programs to see if the successful program developed under the leadership of Marie Louise Ansak in the Chinatown area of San Francisco could be replicated in other communities. Based on the success of these demonstration programs, the Balanced Budget Act of 1997 approved the granting of provider status to PACE programs under Medicare and gave states' Medicaid agencies the option to include PACE as a Medicaid benefit. PACE programs are now in the process of transitioning from demonstration sites to permanent provider status under Medicare (Center for Medicare Education, 2001). The scope of current PACE sites is very small. In 1996, there were 12 PACE sites serving approximately 4,800 individuals. In October 2001, 25 Medicare-Medicaid PACE sites were operating and 11 Medicaid only PACE sites were open. In December 2000, the nationwide client census was 7,956 (National Pace Association, 2002) and by March 1, 2002 there were 26 PACE programs in 15 states (Personal communication, Robert Greenwood, May 17, 2002). Each site serves an average of 200 enrollees, whose average age is 82.

PACE services include an interdisciplinary team that assesses participant's needs, develops care plans, and delivers all necessary services (including acute care services and when necessary, nursing facility services). These services are integrated to achieve seamless provision of comprehensive care. PACE programs provide social and medical services primarily in adult day health centers, supplemented by in-home and referral services in accordance with the participant's needs. The PACE service package must include all Medicare- and Medicaid-covered services and other services deemed necessary by the multidisciplinary team. PACE providers receive a monthly capitated payment consisting of a lump sum from Medicare combined with either Medicaid or a participant's private pay resources; Medicare participants who are not eligible for Medicaid pay monthly premiums equal to the Medicaid capitation amount, but no deductibles, co-insurance, or other type of Medicare or Medicaid cost-sharing apply (Center for Medicare Education, 2001). The capitated payment is used to provide the comprehensive services required by the participant. PACE providers assume full financial risk for participants' care without limits on amount, duration, or scope of services (HCFA, PACE Quarterly Report, 1999).

A 1998 evaluation report of the impact of PACE on participant outcomes concluded that PACE participants, as compared to matched controls, had lower rates of nursing home and hospital use, higher utilization of ambulatory services, better health status and quality of life during the first-six months of enrollment, as well as a lower mortality rate. The benefits of PACE were greater for participants with high levels of physical impairment. As noted, the expansion of the PACE model has been slow, and each site serves a small number of older adults (Chatterji, Burstein, Kidder et al., 1998).

Health of Older Adults

The most common chronic health care conditions affecting older Americans are listed in Table 4.2. Although limitations in activity associated with these chronic conditions have been declining in recent years, they remain significant. In 1999, 6.3% of adults age 65 and over reported at least one limitation in Activities of Daily Living (ADL), and 12.4% reported at least one limitation in Instrumental Activities of Daily Living (IADL). Sex, race, and poverty status appear to be related to the occurrence of functional limitations, with women, non-whites, and the poor all reporting higher rates of ADL and IADL deficits (Table 4.3). The most common reasons older adults saw physicians in the office in 1991 and the final diagnoses associated with these visits, are shown in Table 4.4. The leading causes of death for adults age 65 and over in the United States are listed in Table 4.5 for both 1980 and 1999.

Table 4.4 Most Common Reasons for Office Visits and Most Common Final Diagnoses Among Older Patients, All Physicians, 1999

	Age 65 – 74	Age 75 and Over
Reason for Visit	Progress visit	Progress visit
	General medical exam	General medical exam
	Hypertension	Hypertension
	Diabetes mellitus	Leg symptoms
	Cough	Cough
	Knee symptoms	Blood pressure test
	Medication	Low back symptoms
	Back symptoms	Test results
	Test results	Medication
Final Diagnoses	Hypertension	Hypertension
	Diabetes mellitus	Diabetes mellitus
	Chronic IHD[1]	Chronic IHD[1]
	Osteoarthritis	Osteoarthritis
	Lipid disorders	Heart failure
	Bronchitis	Special examinations
	Special examinations	Cardiac dysrhythmias
	COPD[2]	Back disorders
	General medical exam	Disorders of the urinary track
	Allergic rhinitis	COPD[2]

[1]IHD – Ischemic Heart Disease
[2]COPD – Chronic Obstructive Pulmonary Disease

Source: US Department of Health and Human Services, 2001

Table 4.5 Leading Causes of Death and Numbers of Deaths, Age 65 Years and Over: United States, 1980 and 1999

1980*		1999**	
Cause of Death	**Deaths**	**Cause of Death**	**Deaths**
Diseases of the Heart	595,406	Diseases of the Heart	607,265
Malignant Neoplasms	258,389	Malignant Neoplasms	390,122
Cerebrovascular Diseases	146,417	Cerebrovascular Diseases	148,599
Pneumonia and Influenza	45,512	Chronic LRD[1]	108,112
COPD[2]	43,587	Pneumonia and Influenza	57,282
Atherosclerosis	28,081	Diabetes mellitus	51,843
Diabetes mellitus	25,216	Alzheimer's disease	44,020
Unintentional injuries	24,844	Unintentional injuries	32,219
Renal Disease[3]	12,968	Renal Disease[3]	29,938
Chronic liver disease	9,519	Septicemia	24,636

[1]LRD – Lower respiratory disease

[2]COPD – Chronic obstructive pulmonary disease

[3]Renal Disease – Nephritis, nephrotic syndrome, and nephrosis

*Source: Centers for Disease Control and Prevention, National Center for Health Statistics, 1980

**Source: Hoyert, Smith, Arias et al., 2001

Table 4.6 Aged Medicare Enrollees: 1980-1999

Year (as of July 1st)	**Millions of People**
1980	25.5
1985	28.2
1990	30.9
1995	33.1
1996	33.4
1997	33.6
1998	33.8
1999	33.9

Source: U.S. Centers for Medicare & Medicaid Services, 2000

Utilization of Services

The trends in the number of aged Medicare enrollees and federal Medicare expenditures for the aged over the past 20 years are shown in Tables 4.6 and 4.7. Federal efforts to control the rate of growth of these expenditures has centered on complex formulas that control payments to providers and the less successful application of managed care principles to Medicare. Medicaid payments to older adults have also risen significantly during the past 20 years (Table 4.8). The VHA, charged with caring for the nation's veterans, is the largest health system in the United States with more than 6 million patients. The median age of veterans is 58.3 years; 36.8% of male veterans are over the age of 65 and 1.5% are over the age of 85 (www.va/opa/vetpopbook). The VHA medical care budget in 2001 was over $22 billion (US Department of Veterans Affairs, 2002).

In 1999, 25% of office visits to physicians in the U.S. were made by adults age 65 or over (192.2 million visits). This represented 592 visits per 100 persons age 65 or older, as compared to 283 visits per 100 persons of all ages (CDC, 2001:281). Forty-six percent of office visits made by older adults were to family physicians or general internists; 54% were made to other medical specialists (CDC, 2001:285). Over the past decade, the trend has been for an increasing percentage of ambulatory office visits to occur in non-primary care specialists' offices. Table 4.9 lists the percentage of ambulatory visits accounted for by older adults to various specialties in 1999. During 1999, hospitalization rates were 120 hospital discharges per 1000 persons of all ages. As compared to the overall population, the hospitalization rate was 1.9 times higher for adults age 65-74, and 2.7 times higher for adults age 75 and over (CDC, 2001: 291).

In 1999, in the U.S., more than 1.9 million nursing home beds were available, and the occupancy rate was 83%. The rates of nursing home utilization varied from 11/1000 people age 65-74 to 183/1000 people age 85 or over (CDC, 2001: 306). During 1998, 1.82 million people utilized some type of home health care service, for an overall rate of 70 patients/10,000 people. This rate increased to 407/10,000 people age 75-84 and 885/10,000 for people age 85 or over (CDC, 2001:289). Tables 4.10 and 4.11 show trends in skilled nursing facility utilization and the growth of nursing homes. Table 4.12 lists the number of proprietary, voluntary non-profit, and government owned nursing homes.

The majority of nursing home beds are occupied by older adults (Table 4.13). Among older adults in nursing homes, one-half are age 85 or older, 75% are women, and 88% are white. In 1997, Medicare and Medicaid combined were the source of payment for 68% of institutional care (US Center for Health Statistics, 2000). In addition, the VHA operates 137 nursing homes and in 2001 provided treatment to 87,000 nursing home patients (www.va.gov).

During the past decade there has been a nationwide rapid growth of assisted living facilities. While definitions of assisted living vary across states, it was estimated in 1998 that 600,000 residents were living in 25,000-30,000 assisted living facilities. The typical assisted living resident is an 83-year-old female requiring assistance with 3

Table 4.7 Medicare Disbursements for the Aged: 1980-2000

Year (ending Sept. 30th)	**Hospital Insurance – Part A[1]** (millions of dollars)	**Medical Insurance – Part B[1]** (millions of dollars)
1980	20,951	8,497
1990	58,503	36,837
1995	100,107	54,830
1996	109,379	57,807
1997	120,239	60,989
1998	118,467	65,118
1999	113,321	67,996
2000	110,142	76,507

[1]Beginning in 1998, home health agency transfers were shifted from Part B to Part A.

Source: U.S. Centers for Medicare & Medicaid Services, unpublished data, 2001

ADLs (Citro & Hermanson, 1999). The extent of physician visits to and the supervision of assisted living residents has not been documented.

The use of home health services by older adults and the enrollment of aged patients in hospices continue to grow, as shown in Table 4.14. The VHA operates 73 comprehensive home-care programs (U.S. Department of Veterans Affairs, 2002).

Physician Workforce Trends

The most recent estimates of the number of geriatricians and geriatric psychiatrists required to provide medical care to older Americans were developed in the early 1990s (Reuben, Zwanziger Bradley et al., 1993). Their study considered demographic and economic factors as well as the need for all non-surgical physicians. They projected that primary care physicians would provide 62-69% of all care to older adults, with the remaining care provided by geriatricians and medical specialists. Geriatricians spent about 43% of their time in direct clinical care (remaining effort includes administration, research, and teaching). Reuben's model took into consideration that the need for geriatricians would be closely related to U.S. economic growth, with fewer geriatricians required in a "slow-growth economy" situation. "Geriatricians are perceived as a luxury item. That is, in times of

Table 4.8 Medicaid Recipients and Payments to Adults Age 65 or Over: 1990-1998

Year	Recipients	Payments ($)
1990	3,202,000	21,508,000
1995	4,119,000	36,527,000
1996	4,285,000	36,947,000
1997	3,955,000	37,721,000
1998	3,964,000	40,602,000

Source: U.S. Centers for Medicare & Medicaid Services, 2001

Table 4.9 Ambulatory Visits to Physicians By Specialty, Patients 65 Years and Older

Practice	Percent
Ophthalmology	55.8
Cardiovascular diseases	53.9
Urology	46.2
General Internal Medicine	38.9
General surgery	32.9
Neurology	26.6
Dermatology	25.8
Otolaryngology	24.8
Orthopedic surgery	22.5
General /family practice	20.7
Psychiatry	10.2
OB/GYN	6.6

Source: CDC, NAMCS, 1999

Table 4.10 Skilled Nursing Facilities,[1] 1980-1999

Year	Number	Beds (1,000s)	Beds/1,000 Medicare Part A Enrollees
1980	5,155	448	16.0
1990	9,008	512	15.2
1995	13,281	657	17.7
1996	14,177	672	17.8
1997	14,860	685	18.0
1998	15,037	723	18.8
1999	14,913	837	21.6

[1]Facilities and beds certified under Medicare.

Source: U.S. HCFA, 2001 and U.S. Census Bureau, 2001

Table 4.11 Nursing Homes and Related Care Facilities,[1] Selected Characteristics, 1985-1999

Year	Number of Homes	Number of Beds (1,000s)	Beds/NH	Occupancy Rate[1]
1985	19,100	1,624	85	91.8
1995	16,700	1,771	106	87.4
1997	17,000	1,821	107	88.4
1999	18,000	1,965	109	82.8

[1]Nursing and related care homes with 3 or more beds and routinely provided nursing and personal care services. Excludes places providing only room and board and places serving specific health problems.

Source: U.S. NCHS, National Nursing Home Survey, 1999

Table 4.12 Ownership of Nursing Homes 1999

Type	Number of Homes	Number of Beds (thousands)
Proprietary	12,000	1,291
Voluntary Non-Profit	4,800	523
Government and other	1,200	151

Source: U.S. NCHS, National Nursing Home Survey, 1999

Table 4.13 Nursing and Related Care Homes,[1] Residents 65 Years and Older, Selected Characteristics, 1997

Total Patients:		1,465,000
Characteristic		Percent
Age:	65-74 years	13.5
	75-84 years	36.1
	85 years and over	50.4
Sex:	Male	25.4
	Female	74.6
Race:	White	88.4
	Black	9.4
	Hispanic	2.2
Type of Nursing Care:		
	Skilled care	47.8
	Intermediate care	47.8
	Residential care	3.6
Source of Payment:		
	Medicaid	38.2
	Medicare	29.7
	Private Sources	28.2
	Other	3.8

[1]Nursing and related care homes with 3 or more beds and routinely provided nursing and personal care services. Excludes places providing only room and board and places serving specific health problems.

Source: U.S. CHS, Advance Data, 2000

Table 4.14 Home Health and Hospice Care of Aged Patients, 1998

Characteristic		Home Health	Hospice
Number of Patients[1]			
65 and over		6,598,000	440,000
85 and over		1,594,000	108,000
Percent of Total Patients[2]			
65 and over		69	77
85 and over		18	20
Payment Source (percent)			
65 and over	Medicare	85	
	Medicaid	6	
	Private insurance	6	
	Own income	3	

[1]Active and inactive patients, patients could be included more than once if multiple episodes of care.
[2]Aged patients/Total patients of any age.

Source: U.S. National Center for Health Statistics, 2001

Current Number and Distribution of Practicing Geriatricians and Geriatric Psychiatrists

As described in Chapter 3, the ABIM/ABFP began certifying geriatricians in 1988, the ABPN started certifying geriatric psychiatrists in 1991, and the AOBIM /AOBFP began certifying osteopathic geriatricians in 1992. The practice pathway option for certification ended for geriatric medicine in 1994, geriatric psychiatry in 1996, osteopathic geriatric internal medicine in 1994, and osteopathic family practice in 2002. The total number of CAQs awarded from 1988 through 2001 includes: 9,907 ABIM/ABFP certificates, 2,508 ABPN certificates (Table 4.15) and 503 AOBIM and AOBFP certificates (Personal communication, Armando Ramirez, American Osteopathic Association, 2001). The end of the practice pathway accounts for the decline in new CAQs awarded from FP and IM since 1994 and by psychiatry since 1996.

In 2000, the distribution of geriatricians varied considerably by state. For example, New York had 8.4 geriatric medicine specialists/10,000 people over the age of 75 and the ratio in California was 5.7/10,000. However, in other populous states, the number of geriatricians was much lower. For example, in Florida the ratio was 3.4/10,000 and in Texas, 3.9/10,000. Arizona had 4.0 geriatric medicine specialists/10,000 people over the age 75. The current distribution of certified allopathic geriatricians and geriatric psychiatrists in the U.S. are shown in Figures 4.1 and 4.2.

Table 4.15 Geriatric Certificates of Added Qualifications Issued by the American Board of Family Practice, American Board of Internal Medicine, and American Board of Psychiatry and Neurology, 1988-2001

Subspecialty	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Total
Geriatric Medicine, Family Practice (FP)	752	--	473	--	597	--	771	--	254	--	102	28	27	21	3025
Geriatric Medicine, Internal Medicine (IM)	1654	--	1204	--	1254	--	1568	--	291	--	336	183	200	192	6882
Total FP and IM	2406	--	1677	--	1851	--	2339	--	545	--	438	211	227	213	9907
Geriatric Psychiatry	--	--	--	490	359	--	422	376	713	--	65	--	83	--	2508

Source: ABMS, 1997 and 2001 & Personal communication, Lou Grosso, ABIM, 2002

affluence, the services of a geriatrician are needed; in times of austerity, their services are considered less essential" (Reuben, Zwanziger, Bradley et al., 1993:451). Using three economic scenarios, Reuben calculated the number of geriatricians needed: Scenario I: moderate growth; Scenario II: recession growth and Scenario III, steady growth. Using the steady growth forecast (a fair representation of the 1990s economic growth), Reuben estimated that 9,705 geriatricians would be required by the year 2000. Scenario I resulted in 6,335 geriatricians being needed and Scenario II resulted in 3,668 geriatricians being needed.

The Center for Health Workforce Studies at the School of Public Health, University at Albany, State University of New York, was recently awarded a contract to prepare a report titled The *Aging of America: Implications for the Health Workforce*. The report, funded by the Health Resources and Services Administration (HRSA), will include projections of the number of physicians needed and trained in geriatric medicine. (See http://chws.albany.edu for more information about this project.)

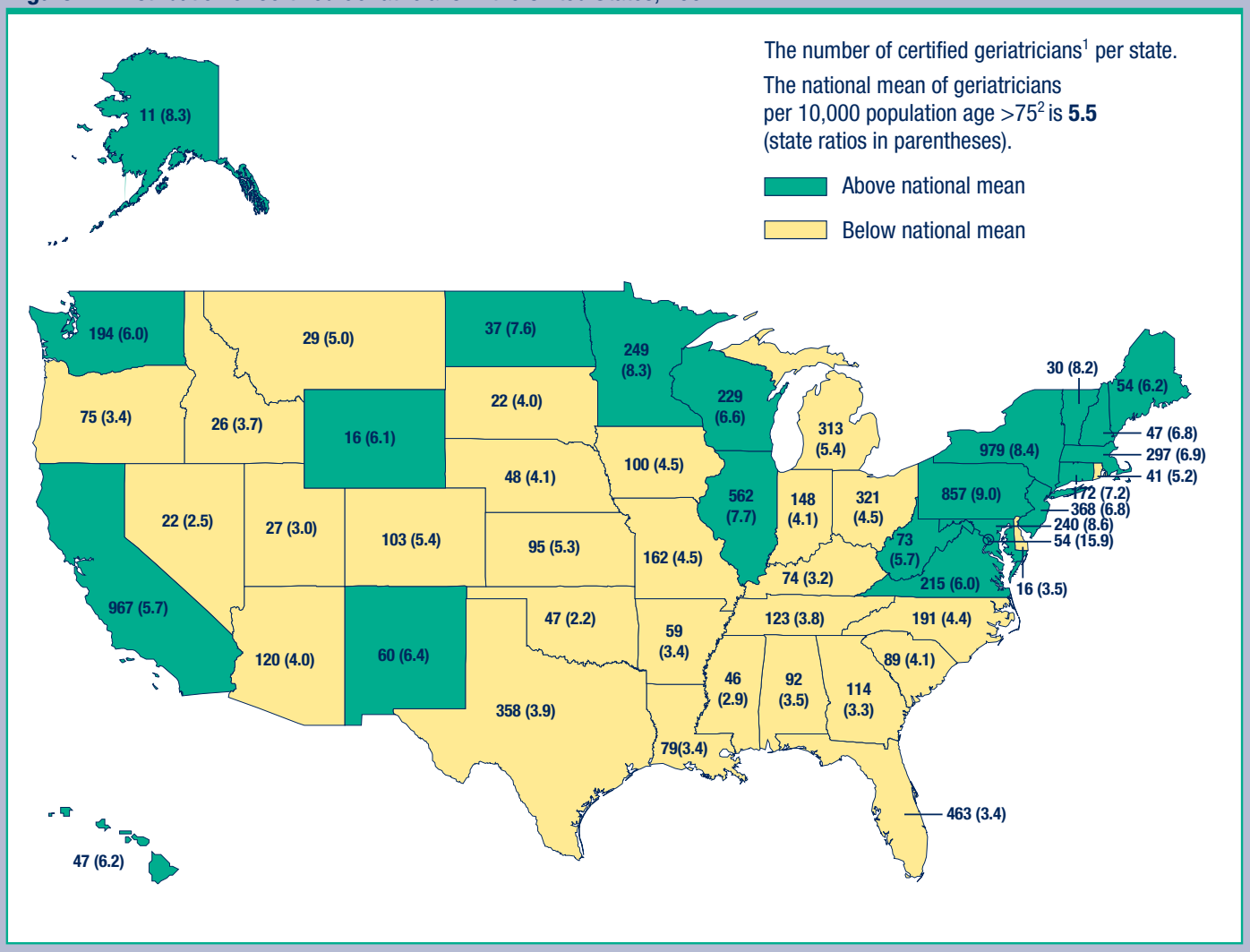
Geriatric medicine and psychiatry CAQs are valid for ten years, with re-certification required to extend certification. Re-certification in allopathic geriatric medicine began with the November 1996 examination (Table 4.16). Re-certification in osteopathic geriatric medicine for Internal Medicine does not begin until October 2002. (Personal communication, Gary Slick, Executive Director, ABOIM, May 2002). Family Practice osteopathic physicians with CAQs awarded

Table 4.16 Re-certification in Geriatric Medicine and Geriatric Psychiatry

Specialty	1996	1997	1998	1999	2000	2001
Internal Medicine	19	--	--	--	--	--
Internal Medicine & Family Practice	--	308	758	317	653	338
Geriatric Psychiatry	--	--	--	--	190	331

Sources: ABPN Newsletter, 2001 and ABIM web page http://www.abim.org/

Figure 4.1 Distribution of Certified Geriatricians in the United States, 2001



[1]American Board of Medical Specialities, 2002
[2]Census 2000 as compiled by the Administration on Aging

Source: IHPHSR ADGAP Database Project, 2002

before 1996 do not have to re-certify, while those certified after 1996 must re-certify (Personal communication, Carol Thoma, AOBFP, May 2002).

The American Board of Internal Medicine (ABIM) Study of Re-Certification

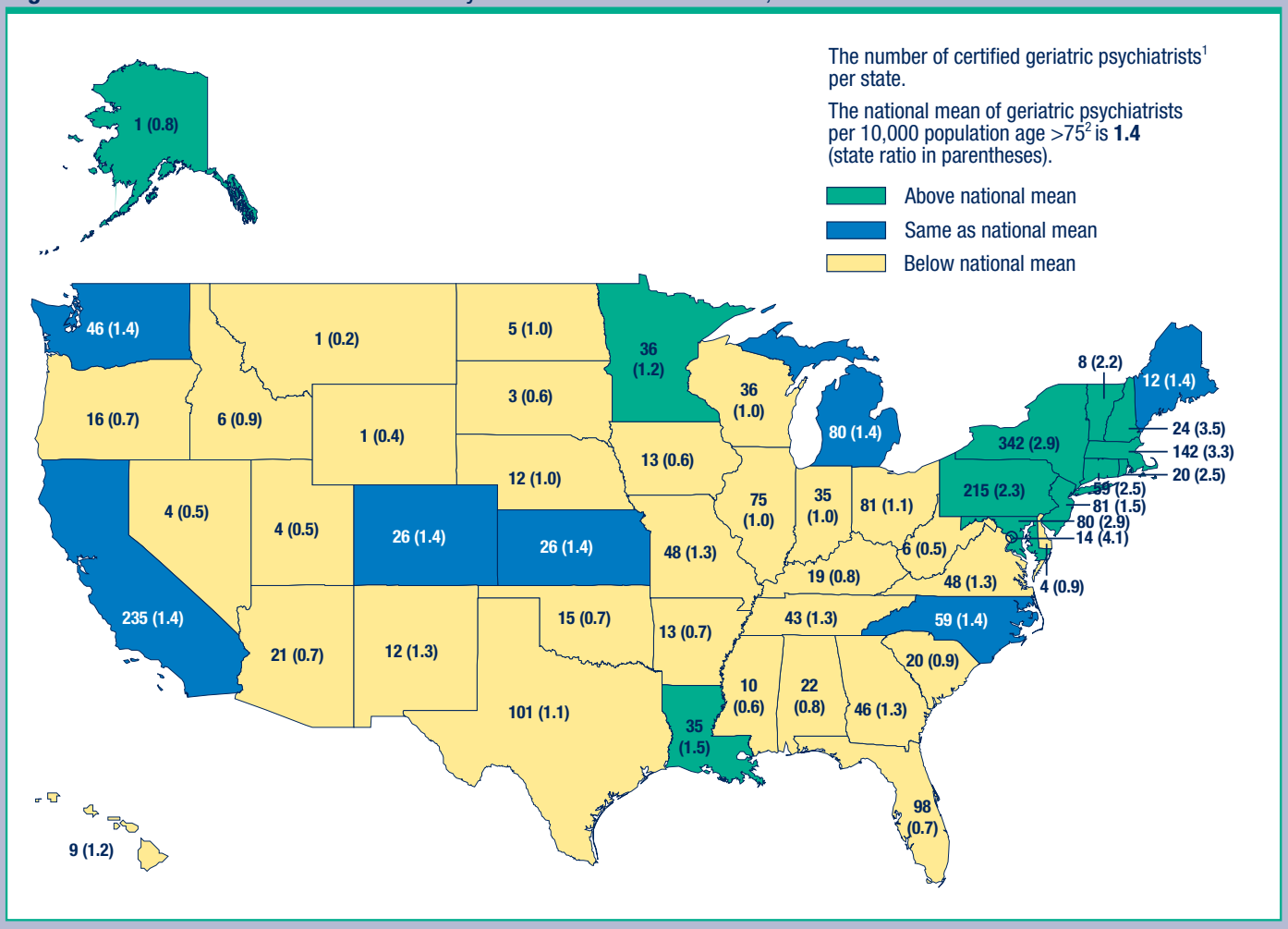
In 2001 the ABIM conducted a review of re-certification in geriatric and critical care medicine (the latter began re-certification examinations one year before geriatrics in 1997) (Wiley and Grosso, 2001). Four cohorts were followed: critical care medicine in 1987 and 1989 and geriatric medicine in 1988 and 1990. Diplomates were tracked to determine how many returned to seek re-certification.

For this study, diplomates were considered to have returned for re-certification if they sat for the final proctored re-certification examination. These diplomates were compared across several variables with those who did not re-certify (i.e., type of medical school attended, type of training received, age, and initial certification examination score).

Approximately 50% of diplomates in critical care medicine and 42% of those in geriatric medicine have returned for re-certification. The type of medical school attended was not related to the percent of returnees: USMSGs and IMGs were evenly divided in critical care medicine diplomates, for geriatric medicine 45% were USMSGs and 42% were IMGs. A higher percentage of diplomates who were formally trained returned for re-certification: 58% versus 47% for critical care and 59% versus 43% for geriatric medicine. Those who returned had scored slightly higher on their initial certification exam (567.5 compared to 548.5 for critical care and 554.5 compared to 544.5 for geriatric medicine) and were slightly younger than those who did not return (37.5 compared to 38.5 years for critical care and 39.5 compared to 42.5 for geriatric medicine). (These are the mean ages at the time of the initial added qualification exam.)

Preliminary analysis of the ABFP diplomates found a 50% re-certification rate for the 1988 cohort. Although ABIM/ABFP diplomates from the 1988 and 1990 examinations may still apply for re-certification, it appears that a significant decrease in the number of certified geriatricians will occur over the coming decade,

Figure 4.2 Distribution of Certified Geriatric Psychiatrists in the United States, 2001



[1]American Board of Medical Specialities, 2002
[2]Census 2000 as compiled by the Administration on Aging

Source: IHPHSR ADGAP Database Project, 2002

despite the continued growth of fellowship training programs. It is estimated that from 1998 through 2004 there will be a 34% reduction (from 9,256 to 6,137) of ABIM/ABFP certified geriatricians in the U.S. (Table 4.17). The number of candidates seeking to become certified has been low, but pass rates have been high (90-95%).

The APA Survey of Psychiatric Practice

Colenda et al., published a review of the findings relative to geriatric psychiatry from the American Psychiatric Association's 1996 survey of practicing psychiatrists (Colenda, Pincus, Tanielian et al., 1999). For this mail survey, initiated in the spring of 1996, a random sample of practicing psychiatrists was selected. Nine hundred seventy surveys

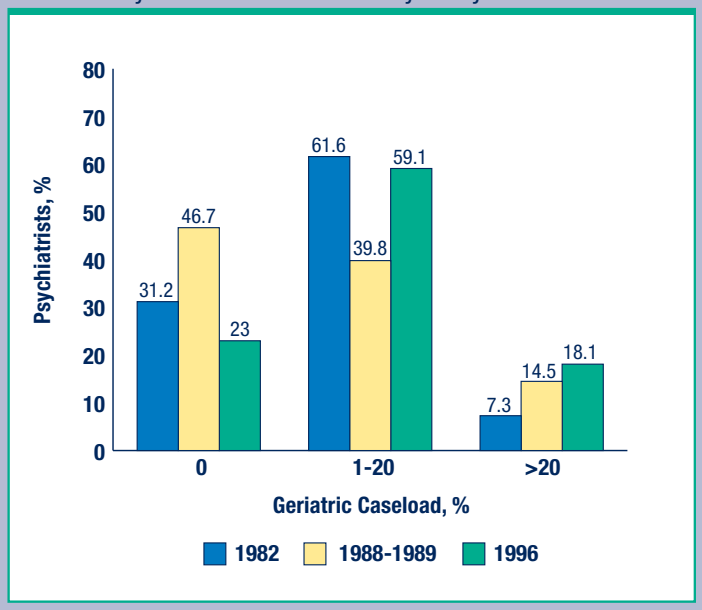
Table 4.17 Projection: Estimated Certified Geriatricians in the United States, 1998-2004

Internal Medicine (IM) and Family Practice (FP)	
Description	**Number**
Total IM/FP CAQs issued from 1988-1998	9256
Total IM/FP CAQs issued after 1998 through 2001	651
Estimated fellowship graduates/CAQs for 2002, 2003 & 2004 (3 years X 260 fellows/year)	780
Estimated Total IM/FP CAQ issued from 1988-2004	10,687
Number of 1988, 1990,1992 and 1994 cohorts eligible for re-certification	8273
Number who did not re-certify from 1988, 1990, 1992, and 1994 cohorts (Estimated rate of re-certification is 45%)[1]	4550
Estimated total active IM/FP certified geriatricians in 2004	6137
Estimated reduction in number of certified geriatricians in the U.S. from 1998 to 2004	34%

[1]Estimated rate based on experience of re-certification from 1996-2001

Source: IHPHSR ADGAP Database Project, 2001

Figure 4.3 Geriatric Caseload for Psychiatrists by Survey Year, American Psychiatric Association Survey of Psychiatric Practice



Modified from: Colenda, Pincus, Tanielian et al., 1999

were analyzed, representing a response rate of 70.5%. Data from the 1996 study were compared to previous national surveys from 1982 and 1988-89.

For the sub-analysis of geriatric psychiatry, 893 responders were analyzed. Eighteen percent of psychiatrists in this sub-group were classified as having high geriatric caseloads (HGP). This group of psychiatrists had practices with older patients exceeding 20% of their practice population. Fifty-nine percent of this group was classified as having low geriatric caseloads (LGP). The LGP had practices with older patients constituting 20% or less of their patients. Twenty three percent of LGPs reported they did not provide care for older adults (Figure 4.3). Significant demographic differences between the HGP and LGP groups were found. In the HGP there were fewer women psychiatrists (19% vs. 27%), fewer white/non-Hispanics (69% vs. 77%), fewer US/Canadian medical school graduates (67% vs. 81%), and fewer having medical school appointments (50% vs. 59%). Fifteen percent of the HGP physicians had obtained certification in geriatric psychiatry, as compared to 2% in the LGP group. Over time, the surveys revealed a disproportionate increase in minority and IMG psychiatrists who are HGPs; this trend was most significant when comparing the 1988-89 sample to the 1996 sample.

The HGPs in the 1996 sample spent proportionally more time in office-based practices, hospital settings, and nursing homes than the LGPs. Medicare payments accounted for a mean of 29% of income for HGPs as compared to 11% for LGPs.

Medicare Fees and Compensation of Practicing Geriatricians

Medicare is the primary payer for most clinical services provided by geriatricians. Secondary payers (e.g., Medicaid or private supplemental insurance), if available and/or affordable to the patient, cover co-payments and deductibles not paid by Medicare. Medicare's fee schedule establishes payment amounts to physicians for clinical services. Physicians who participate in the Medicare program may not collect more for a service than the designated Medicare fees, consisting of Medicare payments and allowable co-payments. The amount Medicare reimburses physicians for an office-based service varies by locale. Medicare's national average fee for a particular service is referred to as the NAA (National Average Allowance). Medicare fees for selected services commonly performed by geriatricians and geriatric psychiatrists are shown in Table 4.18.

In some communities private insurance reimbursement rates are significantly higher than Medicare, and geriatricians are at a relative financial disadvantage compared to physicians caring for younger, insured patients. In other locales, Medicare and private insurance fee schedules are similar. In either case, the office-based primary care practice is challenging with respect to reimbursement, requiring highly efficient office organization and visit rates of six or more patients per hour. In 2002, Medicare reduced the average reimbursement to physicians by 5.4%, with further decreases planned over the next several years. Physician organizations are advocating for a reversal of the 2002 and future funding cuts, arguing that further fee reductions threaten access to quality care for Medicare beneficiaries (Pear, 2002).

Medicare reimburses geriatricians' specialized clinical services at variable rates. There is currently no specific reimbursement amount for *geriatric assessment* in the hospital or the office. Physicians bill for these assessments utilizing standard evaluation and management codes. Also, Medicare reimbursement for psychiatric services is paid at 50% of the allowable charges as compared to 80% for other medical care. In addition, Medicare Part B has limited or no reimbursement rates for other health profession team members.

Until the summer of 2000, some hospital-based outpatient geriatric assessment units utilized cost-based reimbursement to hospitals under Medicare Part A to defray the costs of social workers, nurses, and other team members. In cost-based reimbursement, providers are reimbursed at rates based on facility-specific costs as reported on the facility's cost reports. Since July 2001, hospitals have been reimbursed under a new ambulatory provider code structure for Part A outpatient services. This provides incentives for a higher emphasis on patient volume and procedures than the cost-based system, and has led to the closing of a number of hospital outpatient geriatric assessment services. During the past five years nursing home and home care service reimbursement has increased relative to office-based care, although the allowed overhead associated with nursing home and home care practice is lower than the 50-60% associated with primary care office practice.

The 2001 Medical Group Management Association (MGMA) survey of compensation for physicians in private practice (using 2000 data) included only 17 geriatricians. The median annual total income from clinical practice for geriatricians was $141,679. Comparison data for other selected specialties is listed in Table 4.19 (Medical Group Management Association, 2001). As with academic physicians (see chapter 5), geriatricians' compensation is competitive with other non-procedural specialists, but lags behind physicians in procedural practices.

Table 4.18 Medicare Allowable Payments for Selected Physician Services 2002

Service	RVU[1]	NAA ($)[2]
New Level 5 Office Visit	4.59	166
Established Level 3 Office Visit	1.39	50
Established Level 4 Office Visit	2.18	79
Level 3 Outpatient Consultation	3.20	116
Level 5 Outpatient Consultation	5.88	213
Level 3 Hospital Admission	4.17	151
Level 3 Hospital Visit	2.11	76
Level 3 Hospital or Nursing Home Consultation	2.63	95
Level 5 Hospital or Nursing Home Consultation	5.21	189
Psychiatric Outpatient		
Diagnostic Interview	4.00	145
Psychotherapy (30 minutes)	1.99	72
Medication Management	1.41	51
Nursing Home Admission	3.28	119
Nursing Home Annual Exam	1.94	70
Level 2 Nursing Home Visit	1.71	62
Level 3 Nursing Home Visit	2.33	84
Nursing Home Discharge	1.91	69
New Level 3 ALU Visit	2.25	81
Established Level 2 ALU Visit	1.74	63
New Level 4 Home Visit	4.70	170
Established Level 3 Home Visit	3.16	114
Home Care Plan Oversight	2.61	94
Shave Biopsy (1.1 – 2.0 cm, arm)	2.31	84
Simple laceration repair (2.5 cm, scalp)	3.96	143
Proximal Hip Fracture (Open Repair)	30.77	1,114
Flexible Sigmoidoscopy	2.93	106
Screening Colonoscopy	12.69	459

[1]RVU Relative Value Unit. Based on Medicare's Resource Based Relative Value Scale (RBRVS). Formula computes the relative worth of one service/procedure in relation to another procedure. Medicare fees are computed by multiplying the RVU value by a conversion factor. The conversion factor varies depending on geographic locality (adjustments are made for regional variations in overhead and liability).

[2]NAA Medicare's National Average Allowances (fees). The national average conversion factor for 2002 is $36.1992.

Source: Health Care Consultants of America, 2001

Professional Organizations Dedicated to Clinical Geriatrics

Several professional organizations have specific agendas that support the education and practice of geriatricians, geriatric psychiatrists, and other physicians who provide care to older adults.

The American Geriatrics Society

Founded in 1942, the American Geriatrics Society (AGS) is a nationwide not-for-profit association of more than 6,000 geriatrics health care professionals, research scientists, and other concerned individuals dedicated to improving the health, independence, and quality of life of older people. The AGS promotes high quality, comprehensive, and accessible care for America's older population, including those who are chronically ill and/or disabled. The organization provides support to health care professionals, policy makers, and the public by developing, implementing, and advocating for programs in patient care, research, professional and public education, and public policy. Figure 4.4 shows the growth in the AGS membership over time.

The stated goals of the American Geriatrics Society are:

- To develop and promote quality, culturally-sensitive, interdisciplinary geriatric clinical care and to support practitioners providing such care.
- To increase the number of health care professionals who are knowledgeable about and participate in the clinical care of older adults and who seek to improve their quality of life.
- To promote high quality research that expands knowledge of the aging process and addresses the health care problems of older people.
- To conduct education programs for all health professionals that promote better understanding of the aging process and its unique clinical challenges.
- To provide public education and information that addresses the health care concerns and needs of older people, their families, and other caregivers.
- To engage in public policy that focuses on the study, accessibility and improvement of culturally sensitive health care and quality of life for older people, including preventive, rehabilitative, long-term and end-of- life care.

The AGS develops and distributes updated clinical reviews for practicing physicians every three to four years. The *Geriatrics Review Syllabus: A Core Curriculum in Geriatric Medicine, Fifth Edition (GRS5)* was prepared by more than 100 experts in the medical care of older persons and in gerontology.

Another useful AGS publication is *Geriatrics At Your Fingertips*, a 230-page pocket guide to evaluation and management of diseases and disorders most commonly affecting older persons. *Geriatrics At Your Fingertips* has been distributed by the AGS to all third-year medical students and first-year residents in internal medicine, surgery, obstetrics and gynecology, emergency medicine, and family practice. This distribution program, funded by the John A. Hartford Foundation, allowed for distribution to medical students in 2000, 2001, and 2002 and to residents in the selected specialties in 2000 and to additional residents upon residency program request in 2001 and 2002. Sixty-two percent of U.S. residency programs requested to participate in the

Table 4.19 Total Annual Compensation for Private Practice Physicians, 1999[1]

	Sample Size	Median ($)
Geriatrics	17	141,679
Family Practice without OB	3,240	141,493
General Internal Medicine	3,358	145,375
Psychiatry	229	151,132
Nephrology	172	217,726
Rheumatology	176	156,521
Endocrinology	147	157,489
Gastroenterology	530	264,500
Neurology	297	178,197
PM&R	132	172,311
Urology	488	268,825

[1]Net clinical salary (not including benefits)

Source: MGMA, 2001

2001 and 2002 distribution (American Geriatrics Society, 2001). The AGS sponsors a monthly scientific journal, *The Journal of the American Geriatrics Society*, and is affiliated with the monthly clinical journals, the *Annals of Long-Term Care: Clinical Care and Aging* and *Clinical Geriatrics*.

To encourage practicing physicians and nurses to participate in geriatrics CME programs, the AGS has established the Geriatrics Recognition Award (GRA), which recognizes physicians and nurses committed to increasing their knowledge of geriatrics through CME programs. One of the requirements for physicians receiving this award is to earn a minimum of 150 credits from CME programs in geriatrics within four years or less. Three hundred ninety-seven physicians have received this award (www.americangeriatrics.org, June 2002).

American Medical Directors Association

The American Medical Directors Association (AMDA) is the national professional association for nursing home medical directors and other physicians who practice in the long-term care continuum. It was established in 1976 and is committed to the continuous improvement of patient care quality, which it promotes by providing education, advocacy, information, and professional development to its members. The AMDA currently has more than 8,700 members and a database of more than 2,000 nursing home attending physicians. Figure 4.4 displays trends of AMDA membership over time. The Association's broad goals are:

- To expand and diversify its membership to reflect and represent the changes in physician practice throughout the long-term care continuum.
- To preserve and strengthen the role of the physician in all settings throughout the long-term care continuum.
- To be the premier source of information on physician practice throughout the continuum of long-term care services.
- To strengthen the role of the physician as educator to peers and other long-term care professionals.
- To promote the image of the physician through the CMD program and other vehicles to demonstrate competency, cost-effectiveness, and impact on quality of care.

AMDA sponsors a Certified Medical Director (CMD) program. CMD certification requires that physicians attain indicators of competence in both clinical medicine and medical direction/administrative medicine in long-term care. The certification process is based on an experiential model that requires participation in existing programs such as fellowships, board certification, CME programs offered by major provider organizations and AMDA-approved comprehensive courses. Currently, no specific examination or testing is required. Certification lasts for six years. Since the program's inception, 1,633 physician medical directors have received the CMD designation and 720 of these directors also have a CAQ (Personal communication, Lorraine Tarnove, Executive Director, AMDA, May 2002). AMDA sponsors a bimonthly scientific and clinical journal, the *Journal of the American Medical Directors Association*, and a monthly clinical newspaper, *Caring for the Ages*.

American Association for Geriatric Psychiatry

The American Association for Geriatric Psychiatry (AAGP) is a national association representing and serving its members in the field of geriatric psychiatry. Founded in 1978, it is dedicated to promoting the mental health and well being of older people and improving care for those with late-life mental disorders. Membership has been steady over the past several years. AAGP had 1,569 members in 2000 and 1,675 members in 2001 (Personal communication, Carrie Stankiewicz, AAGP, April 23, 2002). AAGP's mission is to enhance the knowledge base and standard of practice in geriatric psychiatry through education and research, and to advocate for strategies to meet the mental health needs of older Americans. The AAGP sponsors a bimonthly scientific journal, T*he American Journal of Geriatric Psychiatry*.

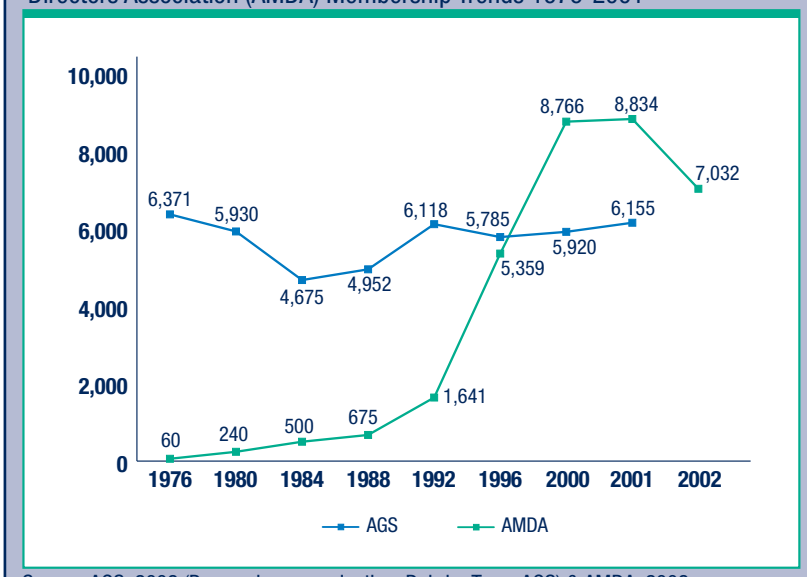
American Academy of Home Care Physicians

The American Academy of Home Care Physicians (AAHCP) is a national organization representing and serving the needs of physicians and related professionals interested in improving care of patients in the home. Founded in 1984, the AAHCP currently has over 700 members (www.aahcp.org). The AAHCP sponsors an educational meeting each year in association with the annual meeting of the American Geriatrics Society. The AAHCP organizes home health care medical director training seminars that lead to medical director certification. The AAHCP is affiliated with *Home Health Care Consultant*, a monthly clinical journal.

Continuing Medical Education (CME)

Most practicing physicians, especially those whose formal training ended before 1985, received limited organized instruction in geriatrics during their medical school or residency training. Many professional medical organizations provide CME and written materials with geriatric content. (See Appendix E for a list of educational resources for the practicing physician.) Traditional methods of CME have been shown to increase physician knowledge and change attitudes on a

Figure 4.4 American Geriatric Society (AGS) and American Medical Directors Association (AMDA) Membership Trends 1976-2001



Source: AGS, 2002 (Personal communication, Deirdre Terry, AGS) & AMDA, 2002 (Personal communication, Lorraine Tarnove, AMDA)

short-term basis, but they rarely translate into long-term changes in physician performance (Robinson, Barry, & Renick et al., 2001).

Physician Confidence in Learning More about Common Geriatrics Topics

In a 1998 study, primary care physicians were surveyed to assess their confidence in treating older patients and their interest in learning more about geriatric medicine topics. A convenience sample of family physicians and internists attending the annual AAFP and ACP meetings were chosen for the study. The survey sample participants had graduated from medical school a mean of 16 years previously. Physicians with more years of clinical experience and with a higher percentage of older patients in their practices had more confidence in their abilities in geriatrics. Most of the physicians surveyed were interested in learning more about the topics of dementia, functional assessment, urinary incontinence, and sensory impairment (Robinson, Barry, & Renick et al., 2001).

Enhancing Geriatric Care Through Practicing Physician Education (PPE)

Recognizing a need to more effectively educate community-based primary care physicians about the special health care needs of older adults, several foundations and corporations have supported various educational initiatives over the past five years. The John A. Hartford Foundation of New York is funding a special project titled *Enhancing Geriatric Care through Practicing Physician Education* to develop, implement, evaluate, and disseminate optimal ways to spread geriatrics knowledge and to enhance the skills of community-based primary care physicians. The project began with a one-year planning grant (12/96-12/97) to the AGS. That grant resulted in development of a coordinated strategic approach to address the geriatric educational needs of practicing primary care physicians, taking into account the current health care environment. The outcome was a pair of innovative models, the Physician Leader Model and the Opinion Leader Model, for practicing physician education in geriatrics. In 1998 the John A. Hartford Foundation awarded the AGS a four-year, $1.9 million grant to develop, implement, evaluate, and disseminate both models. These models employ different approaches to apply the most up-to-date knowledge and use adult learning strategies for teaching evidence-based medicine directed at the areas of physician education and performance change. Sharon Levine, MD, and Bruce E. Robinson, MD, are the current project co-directors.

In developing the Physician Leader Model, the AGS collaborated with the American College of Physicians-American Society of Internal Medicine (ACP-ASIM) and the American Academy of Family Physicians (AAFP) to identify and train physicians who, in turn, are expected to conduct geriatric educational sessions with primary care physicians in their communities. Five physician leader model training sessions were conducted at the annual meetings of the ACP-ASIM and the AAFP, with fifty participants subsequently returning to their communities to facilitate small-group, two-hour educational sessions with their peers. A sixth and final training session took place at the AAFP's national meeting in October 2001. Preliminary data indicate that trainees had conducted 64 community sessions by December 2000, with a total of 553 community doctors participating. The results of this program are still being studied.

In promoting the Opinion Leader Model, the AGS identified and trained opinion leaders (influential physicians in selected communities) to provide leadership for physicians, health care teams, the public, and policy makers to enhance the quality of care provided to geriatric patients. Two communities, Sarasota, Florida, and Stamford, Connecticut, have participated in the Opinion Leader Model, focusing on improving physician early identification of memory loss. After completing their first year of work, physicians in the Stamford Opinion Leader Program chose to extend their participation for a second year. In-depth evaluations are now underway to learn more about the participating physicians' experiences in both communities, and to apply "lessons learned" to those who wish to replicate the model at their own sites.

Assessing Care of Vulnerable Elders (The ACOVE Project)

The ACOVE project is developing and testing the use of evidence-based indicators of the quality of care being provided to older adults. The project began in 1998 and is based at UCLA/RAND. It receives funding from Pfizer, Inc. Neil Wenger, MD, and Paul Shekelle, MD, PhD, are the co-project directors. The project is guided by a Policy Advisory Committee, chaired by Phillip Lee, MD.

ACOVE's first-phase goal was to develop and test a system to evaluate the quality of healthcare received by community-dwelling older adults. The resultant measurement system is based on evidence in the medical literature and the clinical expertise of an independent panel of experts. An advisory panel of geriatrics experts identified 22 clinical conditions for which effective treatments exist and which the

panel felt were most important for measuring quality of care provided to medically vulnerable older persons.

The full set of quality indicators for these conditions were published in the fall of 2001 (Wenger, Shekelle, Davidoff et al., 2001). This publication also reviews the evidence supporting the selected quality indicators for half of the conditions: dementia, end-of-life-care, falls and mobility, heart failure, medication management, osteoarthritis, osteoporosis, pain management, pressure ulcers, pneumonia, and urinary incontinence. Papers describing the evidence related to quality indicators for the other eleven conditions are available on the American College of Physicians-American Society of Internal Medicine website (www.acponline.org/sci-policy/).

The ACOVE project team developed instruments to test the quality indicators in actual clinical practice, utilizing data abstracted from the medical record, the patient (or a proxy), and administrative data. Preliminary results suggest that physicians perform well when addressing common internal medicine topics, but do not attain the quality indicators for the selected geriatric syndromes. The next phase of the ACOVE project will test an intervention to improve physician performance in three geriatric syndrome areas; cognitive impairment/dementia, falls, and urinary incontinence.

Reynolds Geriatric Education Centers

Several of the ten Reynolds Education Centers funded in July 2001 have educational components directed to practicing physicians. (See Table 5.9 in chapter 5 for a list of funded centers.)

Geriatric Interdisciplinary Teams in Practice Initiative

In 2000 and 2001, the John A. Hartford Foundation awarded four grants to support the development and evaluation of diverse approaches to using teams in the clinical care of older adults. These projects are located at the Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois, Project Director, Steven K. Rothschild; PeaceHealth Oregon Region, Center for Senior Health, Eugene, Oregon, Project Director, Ronold D. Stock; University of Colorado Health Sciences Center, Denver, Colorado, Project Director, Eric Coleman; and the Group Health Cooperative of Puget Sound, Seattle, Washington, Project Director, Edward Wagner (Regenstreif, Robbins, Langston et al., 2001).

Implications

The aging of the U.S. population will have a major impact on the practice of medicine and future health care costs. Current cost containment strategies are inadequate to address this demographic trend. The principles of geriatric medicine practice that have developed over the past 50 years, if widely applied to the care of older Americans, provide an opportunity to deliver quality, cost-effective care for the well elderly and for older adults with chronic illness. In addition, investment in research that leads to substantial advances in the prevention and treatment of the diseases that result in the greatest functional loss among the old is essential.

Medicare reimbursement is the single most influential force shaping medical practice in the U.S., accounting for 26.7% of physician income in 2000 (AMA, Socioeconomic Monitoring Survey of Physicians, 2002). Medicare, in large part, remains a traditional indemnity payer, with incentives skewed toward conducting procedures and providing technical care associated with hospital practice. Disproportionately large co-pays for psychiatric services and limited compensation for outpatient evaluation and management services create a disincentive for physicians to provide primary care or comprehensive assessment services to older adults. This results in the common phenomenon of older patients seeking care from several medical or surgical sub-specialists and receiving limited care coordination from their primary care physicians. Geriatricians limit their practice to older adults, and thus receive the majority of their compensation from Medicare. Many of the time-intensive services geriatricians provide to older adults and their families are inadequately reimbursed. The growing gap between Medicare reimbursement and the actual costs of delivering quality medical service seriously affects the health care currently provided to our elders and certainly in the future will discourage young physicians from considering a career in geriatric medicine.

Applying the principles of managed care to Medicare is an experiment in progress directed at reversing these disincentives to coordinated care. For geriatricians, managed care offers the promise of realigning incentives toward preventive care, providing increased support to the frail elderly, and integrating acute and long-term care. Geriatricians are also in high demand as physician leaders of many managed Medicare insurance plans, but existing economic forces in most communities are making managed Medicare programs difficult to sustain. Future Medicare reform, driven by the need to contain federal expenditures, will critically affect the practice of geriatric medicine and psychiatry and the medical care that frail older adults will receive in the future.

The ABIM, ABFP, and ABPN's decision to certify geriatric medicine training was predicated on academic geriatricians' needs. Credibility and the potential for academic program growth required a training pathway leading to recognition of faculty clinicians' specialized clinical skills. A temporary practice pathway is a standard approach utilized by specialty boards to phase in new training requirements and associated examinations. For physicians practicing in the community, the new geriatric medicine CAQs represented a potential threat to physicians' ability to continue providing care to older adults. Many physicians chose to sit for the CAQ examination even though they were uncertain about the relevance of certification to them. For practicing physicians without primary board certification, the CAQ door was never open. The AMDA medical director certification process and AGS recognition award, described above, were, to some degree, responsive to the needs of practicing physicians without board certification who were searching for a geriatric medicine credential.

Preliminary data from the ABFP/ABIM surveys suggests that many of the early diplomates are not returning for re-certification. One explanation may be that over the past ten years practitioners in community practice have not found the CAQ to significantly influence their practice activities, job availability, or salaries. Surprisingly, the ABIM also documented that only 60% of geriatric fellowship-trained IM diplomates from the 1988 and 1990 cohorts have returned for re-certification. For these reasons, it is likely that the number of certified geriatric medicine and psychiatry physicians will decline

over the next five years. This reinforces the need for continued efforts to improve the geriatric medicine skills of physicians-in-training and those in practice.

Data from the 1996 survey of practicing psychiatrists underscores the need for geriatric psychiatry training in general psychiatry residency programs, particularly since general psychiatrists will be delivering the vast majority of psychiatric services to older adults in the future. In this survey, even among the physicians with larger numbers of older patients in their practices, only 15% had a geriatric psychiatry CAQ.

The early 1990s' projections for the number of physicians with advanced geriatric medicine and psychiatry training required to lead clinical and educational programs can now be retrospectively assessed. The Reuben projections (Reuben, Fink, Vivell et al., 1990) for the number of geriatric medicine physicians that would be needed in 2000 were almost met, while projections for the number of geriatric psychiatrists that would be needed fell short.

The innovative efforts described above to provide practicing physicians with tools to improve their care of older adults hold significant promise. Although popular with physicians, traditional CME has not been shown to result in lasting improvements in physician behavior. New approaches are needed, and the results of evaluations of the AGS/Hartford, ACOVE, Reynolds/Education Centers, and Interdisciplinary-team projects are providing critical guidance to medical educators. The most efficient way to reach large numbers of practicing physicians is through the large primary care and specialty societies, (e.g., the AAFP and ACP-ASIM), the main sources of credible education for many physicians.

The following chapters (5-8) in this report review the progress of medical educators' efforts to prepare future physicians for academic careers as educators or researchers in geriatric medicine and psychiatry. They also address progress toward the preparation of all physicians to provide excellent clinical care for older adults.

5 Academic Geriatrics Programs in U.S. Allopathic and Osteopathic Medical Schools

Background

The growth of geriatric medicine is in large dependent on the successful establishment of academic geriatric medicine programs in U.S. allopathic and osteopathic medical schools. Medical schools should include in their mission the development of geriatric medicine education, research and innovation, and excellence in clinical services. The Veterans Health Administration (VHA) health care system is a major partner in all aspects of many medical schools through their affiliated hospitals, clinical work, training activities, and research programs (Goodwin and Morley, 1994).

Each year, in the United States medical schools are responsible for training 76,817 medical students and are currently graduating a total of 18,597 students per year (JAMA, 2001 and AACOM, 2002). A medical school's faculty provides the majority of graduate training (residency and fellowship) and a substantial amount of continuing medical education for practicing physicians. Health sciences research (basic, clinical, and health services research) is an important component of the missions of most U.S. medical schools. Also, medical schools and their associated clinics, hospitals, and community programs are significant providers of clinical care. This clinical care is characterized by technical sophistication and a substantial focus on underserved populations (AAMC, 2001).

In 2002, 125 allopathic and 19 osteopathic medical schools are accredited in the U.S. These medical schools are diverse in size, resources, and academic missions (Tables 5.1 & 5.2). As reviewed in Chapter 3, numerous national reports and health policy leaders have advocated for the establishment of academic geriatrics programs in U.S. medical schools. The development of these programs began a little more than two decades ago. A new allopathic school was established in June 2000 in Tallahassee, Florida and began enrolling students in May 2001. This new medical school has a legislated mandate to train medical students to care for the older adult.

Current Status of Academic Geriatrics

Survey of Directors of Geriatric Academic Programs

A cross-sectional study to assess the status of U.S. academic geriatric medicine in allopathic and osteopathic medical schools was completed during spring 2001 by the IHPHSR as part of this project. A survey was mailed to the academic leaders in geriatric medicine at the144 allopathic and osteopathic medical schools that were then accredited either by the Association of American Medical Colleges (AAMC) or the American Association of Colleges of Osteopathic Medicine (AACOM) (see Tables 5.1 & 5.2). The academic leader was defined as the physician at each medical school who was recognized by the dean as providing overall leadership for the academic geriatric medicine program. The results of the survey are presented below, along with data from other sources relevant to describing the status of academic geriatrics.

Academic Leaders

The survey response rate was 84%; 121 directors of geriatric academic programs (DGAPs) responded (103 at 125 allopathic schools and 18 at 19 osteopathic schools). Among the allopathic DGAPs, 82% held their primary appointment in the department of internal medicine, 13% in the department of family practice, and the remaining 5% had appointments in the dean's office, the department of community health, or the department of geriatric medicine. Among osteopathic DGAPs, 45% held their primary appointment in the department of family practice, 33% in the department of internal medicine and the remaining 22% in the department of geriatric medicine, pharmacology, or a physician assistant program.

Overall, 44% of the DGAPs had been in their current positions 4 years or less (Figure 5.1). The median time in their current position was 5 years at allopathic schools (range, less than 1 to 27 years), and 3 years for osteopathic schools (range, less than 1 to 15 years).

Eighty-six percent of the DGAPs held the academic rank of associate or full professor. At allopathic schools, 60% of the DGAPs held tenured positions and at osteopathic schools, 22% held tenured appointments. The academic position of two-thirds of the DGAPs without tenure did not allow them to earn tenure in the future. Among the current DGAPs, 42% reported completing formal geriatric medicine fellowship training and earning a certificate of added qualifications (CAQ). Thirty-seven percent had earned a CAQ through the practice pathway, and the remaining 21% had not completed fellowship training or earned a CAQ.

In their roles as academic geriatric leaders, it was common for the DGAPs at allopathic schools to have more than one reporting relationship; 26.5% reported to two or more individuals. Approximately 33% of the allopathic DGAPS reported directly to the dean, 66%

Table 5.1 Academic Geriatric Programs in Allopathic Medical Schools

State	Medical School	Total Enroll[1]	NIH Rank[2]	Academic Leader	Academic Rank	Program Structure	Year Started	Reporting Relationship
AK	University of Arkansas College of Medicine	574	70	David A. Lipschitz, M.D., Ph.D.	Professor	1	.	Dean Chancellor/Vice Chair
AL	University of Alabama at Birmingham	695	16	Richard M. Allman, M.D.	Professor	2 4	1973 1976	Chair, Dept Internal Med Provost/Dean
AL	University of South Alabama College of Medicine	262	97	Thomas Stevens, M.D.	Professor	2	.	Chair, Dept Internal Med
AZ	University of Arizona College of Medicine	413	52	John T. Boyer, M.D.	Professor	2	1984	Dean Chair, Dept Internal Med
CA	Loma Linda University School of Medicine	676	102	James P. Larsen, M.D.	Assistant Professor	2	1991	Chair, Dept Internal Med
CA	Stanford University School of Medicine	472	13	Peter Pompei, M.D.	Associate Professor	2	1990	Chair, Dept Internal Med
CA	University of California Davis	141	62	George C. Xakellis, Jr., M.D.	.	.	.	Chair, Dept Family Med
CA	University of California Irvine College of Medicine	391	58	Laura Mosqueda, M.D.	Associate Professor	4	1982	Dean
CA	University of California Los Angeles	670	10	David Reuben, M.D.	Professor	2	1979	Chair, Dept Internal Med
CA	University of California San Diego School of Medicine	487	17	Jerry Johnson, M.D.	.	.	.	.
CA	University of California San Francisco	622	3	Seth Landefeld, M.D.	Professor	4 2	1992 1997	Chair, Dept Internal Med
CA	University of Southern California Keck School of Medicine	664	88	Loren Lipson, M.D.	.	.	.	.
CO	University of Colorado	527	20	Robert Schwartz, M.D.	Professor	2 4	. 1992	Chair, Dept Internal Med Chancellor/Vice Chair
CT	University of Connecticut School of Medicine	326	68	George A. Kuchel, M.D.	Associate Professor	2 4	. .	Dean Chair, Dept Internal Med
CT	Yale University School of Medicine	491	5	Mary E. Tinetti, M.D.*	Professor	4 2	1980 2001	Chair, Dept Internal Med
DC	George Washington University	617	92	Elizabeth L. Cobbs, M.D.	Associate Professor	2 3	1980 2000	Not Reported
DC	Georgetown University School of Medicine	675	55	Paul S. Aisen, M.D.	.	.	.	.
DC	Howard University	443	85	Thomas O.Obisesan, M.D.	.	.	.	.
FL	University of Florida College of Medicine	459	49	David T. Lowenthal, M.D., PhD.	.	.	.	.
FL	University of Miami School of Medicine	595	42	Bernard A. Roos, M.D.	.	.	.	.
FL	University of South Florida College of Medicine	395	77	Ronald S. Schonwetter, M.D.	Professor	2	1981	Chair, Dept Internal Med
GA	Emory University School of Medicine	439	23	Joseph G. Ouslander, M.D.	Professor	2 3 4	1990 1990 2001	Dean Chair, Dept Internal Med Hospital
GA	Medical College of Georgia	719	82	Thomas W. Jackson,M.D.	.	.	.	.
GA	Mercer University School of Medicine	211	121	Richard J. Ackermann, M.D.	.	.	.	Dean Chair, Dept Family Med
GA	Morehouse School of Medicine	154	75	Marvin L. Crawford, M.D.	.	.	.	.
HI	University of Hawaii	239	111	Patricia L. Blanchette, M.D., M.P.H.	Professor	2 4	1984 1984	Dean
IA	University of Iowa College of Medicine	668	22	Gary E. Rosenthal, M.D.	Associate Professor	3 2	1987 1998	Chair, Dept Internal Med Chair, Dept Family Med
IL	Finch University of Health Sciences	737	107	Axel G. Feller, M.D.	Professor	2	1996	Chair, Dept Internal Med
IL	Loyola University Stritch School of Medicine	513	80	Myles N. Sheehan, S.J., M.D.	Associate Professor	2	1998	Dean
IL	Northwestern University Medical School	677	40	Madelyn Iris, Ph.D.	Assistant Professor	4	1983	Dept Chair
IL	Rush Medical College	489		Martin J. Gorbien, M.D.	Associate Professor	2	.	Chair, Dept Internal Med
IL	Southern Illinois University School of Medicine	288	114	Richard B. Rosher, M.D.	.	.	.	.
IL	University of Chicago	445	26	Greg A. Sachs, M.D.	Associate Professor	2	2000	Chair, Dept Internal Med
IL	University of Illinois College of Medicine	1250	48	Donald Jurivich, D.O.	Associate Professor	2	1986	Chair, Dept Internal Med

Structure: 1 = Department; 2 = Division/Section; 3 = Unit within 2 Departments; 4 = Program/Center/Institute; . = not reported

*Academic leader during our survey in the spring of 2001, not the current academic leader.

Table 5.1 Academic Geriatric Programs in Allopathic Medical Schools, *continued*

State	Medical School	Total Enroll[1]	NIH Rank[2]	Academic Leader	Academic Rank	Program Structure	Year Started	Reporting Relationship
IN	Indiana University School of Medicine	1128	38	Steven R. Counsell, M.D.	Associate Professor	2 4	1997 1997	Division Chief
KS	University of Kansas School of Medicine	712	71	Stephanie A. Studenski, M.D., MPH*	Professor	4 2	1986 1996	Chancellor/Vice Chair
KY	University of Kentucky College of Medicine	383	57	Nancy J. Stiles, M.D.	Associate Professor	3 2	. 1992	Division Chief
KY	University of Louisville School of Medicine	584	79	James G. O'Brien, M.D.	Professor	2 3	1990 1998	Chair, Dept Family Med
LA	Louisiana State University School of Medicine	700	76	Henry Rothschild, M.D., Ph.D.	Professor	2	1985	Chair, Dept Internal Med
LA	Louisiana State University Shreveport	399		Andrew Dentino, M.D.	Associate Professor	2	1993	Chair, Dept Internal Med
LA	Tulane University School of Medicine	609	88	David M. Grossman, M.D.	Assistant Professor	2	1996	Chair, Dept Internal Med
MA	Boston University School of Medicine	629	39	Rebecca A. Silliman, M.D., Ph.D.	Professor	2	1977	Chair, Dept Internal Med
MA	Harvard Medical School	723	21	Lewis Arnold Lipsitz, M.D.	Professor	4	1978	Dean
MA	Tufts University School of Medicine	703	65	Robert Dickman, M.D.	.	.	.	.
MA	University of Massachusetts Medical School	425	37	Sarah M. McGee, M.D.	Assistant Professor	2	2001	Chair, Dept Internal Med
MD	Johns Hopkins University School of Medicine	470	1	John Burton, M.D.	Professor	2	1983	Chair, Dept Internal Med
MD	Uniformed Services University of the Health Sciences	662	122	Jay Shapiro, M.D.	.	.	.	.
MD	University of Maryland School of Medicine	553	36	Andrew P. Goldberg, M.D.	Professor	2	1990	Chair, Dept Internal Med
MI	Michigan State University College of Human Medicine	435	108	Gary Ferenchick, M.D.	.	.	.	.
MI	University of Michigan Medical School	689	9	Jeffrey B. Halter, M.D.	Professor	2 4	1984 1987	Dean Chair, Dept Internal Med
MI	Wayne State University School of Medicine	1036	54	Joel Steinberg, M.D.	Assistant Professor	2	1988	Chair, Dept Internal Med Division Chief
MN	Mayo Medical School	166		Eric G. Tangalos, M.D.	Professor	2	1995	Chair, Dept Internal Med
MN	University of Minnesota Duluth School of Medicine	104		Glenn Nordehn, D.O.	Assistant Professor	4	1999	Chair, Dept Family Med
MN	University of Minnesota Medical School Minneapolis	817	27	Ken Hepburn, M.D.	Professor	2 4	1987 2000	Dean
MO	Saint Louis University School of Medicine	597	83	John E. Morley, M.D., B.Ch.	Professor	2	1989	Chair, Dept Internal Med
MO	University of Missouri Columbia School of Medicine	375	95	Steven C. Zweig, M.D., MSPH	Professor	4	1997	Dean Chair, Dept Family Med
MO	University of Missouri Kansas City	337	112	Jon F. Dedon, M.D.	Assistant Professor	2	1991	Chair, Dept Family Med
MO	Washington University School of Medicine	458	4	John O. Holloszy, M.D.	Associate Professor	2	1994	Division Chief
MS	University of Mississippi School of Medicine	386	96	William Marcus Meeks, Jr., M.D.	Associate Professor	2	1992	Chair, Dept Internal Med
NC	Duke University School of Medicine	347	8	Harvey J. Cohen, M.D.	Professor	4 2	1955 1984	Dean Chair, Dept Internal Med
NC	East Carolina University	298	106	Kenneth K. Steinweg, M.D.	Associate Professor	2	1984	Chair, Dept Family Med
NC	University of North Carolina	643	15	Jan Busby-Whitehead, M.D.	Associate Professor	4	1987	Dean Chair, Dept Internal Med Division Chief
NC	Wake Forest University School of Medicine	441	35	Marco Pahor, M.D.	Professor	2	.	Chair, Dept Internal Med
ND	University of North Dakota	224	104	James F. Hanley, M.D.	.	.	.	Dean
NE	Creighton University College of Medicine	450	115	Donald R. Frey, M.D.	.	2	.	.
NE	University of Nebraska College of Medicine	477	74	Jane F. Potter, M.D.	Professor	2	1982	Chair, Dept Internal Med
NH	Dartmouth Medical School	271	60	John H. Wasson,M.D.	.	.	.	.
NJ	University of Medicine and Dentistry New Jersey	696	67	R. Knight Steel, M.D.	Professor	2	.	Dean Chair, Dept Internal Med
NJ	University of Medicine and Dentistry New Jersey (RWJ)	628	61	Elaine A. Leventhal, M.D., PhD.	.	.	.	.

Structure: 1 = Department; 2 = Division/Section; 3 = Unit within 2 Departments; 4 = Program/Center/Institute; . = not reported

*Academic leader during our survey in the spring of 2001, not the current academic leader.

Table 5.1 Academic Geriatric Programs in Allopathic Medical Schools, *continued*

State	Medical School	Total Enroll[1]	NIH Rank[2]	Academic Leader	Academic Rank	Program Structure	Year Started	Reporting Relationship
NM	University of New Mexico	300	69	Carla Herman, M.D., M.P.H.	Associate Professor	3 2	. 1980	Chair, Dept Internal Med
NV	University of Nevada College of Medicine	208	100	Arnold H. Greenhouse,M.D.	.	.	.	.
NY	Albany Medical College	510	99	Henry Pohl, M.D.	.	2	1991	.
NY	Albert Einstein College of Medicine	510	25	Laurie G. Jacobs, M.D.	Associate Professor	2	1984	Dean Chair, Dept Internal Med Hospital
NY	Columbia University College of Physician and Surgeons	604	11	Rafael A. Lantigua, M.D.	.	.	.	.
NY	Cornell University	390	33	Ronald D. Adelman, M.D.	.	.	.	Chair, Dept Internal Med
NY	Mount Sinai School of Medicine	429	24	Christine Cassel, M.D.*	Professor	1	1982	Dean
NY	New York Medical College	783	86	Krishan L. Gupta, M.D.	Professor	2	1983	Chair, Dept Internal Med
NY	New York University School of Medicine	689	32	Michael L. Freedman, M.D.	Professor	2	1974	Chair, Dept Internal Med
NY	State University of New York Brooklyn	775	81	Jeanette Mladenovic, M.D.	Professor	2	.	Dean
NY	State University of New York Buffalo	550	84	Bruce J. Naughton, M.D.	Associate Professor	2	1983	Chair, Dept Internal Med
NY	State University of New York Stony Brook	424	66	Suzanne D. Fields, M.D.	Associate Professor	2 2	1992 1994	Chair, Dept Internal Med
NY	State University of New York Syracuse	630	94	Sharon A. Brangman, M.D., FACP	Associate Professor	4 2	1987 1995	Chair, Dept Internal Med
NY	University of Rochester	395	28	William J. Hall, M.D.	Professor	2	1997	Chair, Dept Internal Med
OH	Case Western Reserve University School of Medicine	591	14	Elizabeth E. O'Toole, M.D.	Professor	2	1984	Dean Chair, Dept Internal Med
OH	Medical College of Ohio	582	98	John F. McGreevey, Jr., M.D.	Associate Professor	2	1980	Dean Chair, Dept Internal Med
OH	Northeastern Ohio Universities	421	120	Maria R. Schimer, M.P.H., J.D.	Associate Professor	2	1978	.
OH	Ohio State University	861	50	Bonnie S. Kantor, Sc.D.	Other	4	1978	Dean
OH	University of Cincinnati College of Medicine	630	43	Gregg A. Warshaw, M.D.	Professor	2 4	1983 1987	Dean Chair, Dept Family Med
OH	Wright State University	365	103	Marshall Kapp, J.D., MPH	Professor	2	1990	Dean, Dept Chair
OK	University of Oklahoma	584	78	Marie A. Bernard, M.D.	Professor	1 2	1997 1997	Dean
OR	Oregon Health Sciences University	424	30	Nora Tobin, M.D.*	Assistant Professor	2	.	Chair, Dept Internal Med
PA	Jefferson Medical College	896	44	Karen Novielli, M.D.*	Assistant Professor	2	1995	Chair, Dept Family Med
PA	MCP Hahnemann University	972	90	Joel D. Posner, M. D.	.	.	.	.
PA	Pennsylvania State University	435	64	Noel Ballentine, M.D.	.	.	.	Chair, Dept Internal Med
PA	Temple University School of Medicine	781	73	Susan J. Denman, M.D.	Associate Professor	2	1996	Chair, Dept Internal Med
PA	University of Pennsylvania School of Medicine	596	2	Jerry Johnson, M.D.	Professor	2	1994	Chair, Dept Internal Med
PA	University of Pittsburgh School of Medicine	586	12	Neil M. Resnick, M.D.	Professor	2	1994	Chair, Dept Internal Med
PR	Ponce School of Medicine	249	113	Ana Padro, M.D.	.	.	.	.
PR	Universidad Central del Caribe School of Medicine	238	118	Ismael Toro-Crajales, M.D.	.	.	.	.
PR	University of Puerto Rico School of Medicine	446	89	Ismenio Millan, M.D.	.	2	1988	.
RI	Brown Medical School	310	72	Richard W. Besdine, M.D.	Professor	3 2	. 1997	Dean Chair, Dept Internal Med
SC	Medical University of South Carolina School of Medicine	548	53	Dennis W. Cope, M.D.	.	.	.	.
SC	University of South Carolina School of Medicine	290	119	G. Paul Eleazer, M.D.	Associate Professor	2	1990	Chair, Dept Internal Med
SD	University of South Dakota School of Medicine	209	110	Edward T. Zawada, Jr., M.D.	Professor	2	1987	Dean
TN	East Tennessee State University College of Medicine	242	116	Jacqueline J. Lloyd, M.D.	Associate Professor	4	1985	Dean Chair, Dept Internal Med Chair, Dept Family Med
TN	Meharry Medical College	352	87	Veronica J. Scott, M.D.*	Associate Professor	2	1988	Chair, Dept Internal Med

Structure: 1 = Department; 2 = Division/Section; 3 = Unit within 2 Departments; 4 = Program/Center/Institute; . = not reported

*Academic leader during our survey in the spring of 2001, not the current academic leader.

Table 5.1 Academic Geriatric Programs in Allopathic Medical Schools, *continued*

State	Medical School	Total Enroll[1]	NIH Rank[2]	Academic Leader	Academic Rank	Program Structure	Year Started	Reporting Relationship
TN	University of Tennessee Memphis	671	63	Rodney L. Holladay, M.D.	.	.	.	Dean Chair, Dept Internal Med
TN	Vanderbilt University School of Medicine	418	19	Robert S. Dittus, M.D., M.P.H.	.	2	.	.
TX	Baylor College	668	7	George E. Taffet, M.D.	Associate Professor	4 2	1987 1989	Chair, Dept Internal Med
TX	Texas Tech University Health Science Center	482	109	Glen Provost	Other	4	2000	Chancellor/Vice Chair
TX	The Texas A & M University System	271	93	David L. Hackethorn, M.D.	.	.	.	Hospital
TX	University of Texas Houston	817	51	James N. Kvale, M.D.	Professor	2	1997	Chair, Dept Family Med
TX	University of Texas Medical Branch at Galveston	810	47	James S. Goodwin, M.D.	Professor	2 4	1992 1992	Dean Chair, Dept Internal Med Hospital
TX	University of Texas Medical School at San Antonio	824	46	Michael S. Katz, M.D.	Professor	2	1987	Chair, Dept Internal Med Hospital
TX	University of Texas Southwestern Medical Center	825	18	Craig D. Rubin, M.D.	Professor	2	1989	Division Chief
UT	University of Utah School of Medicine	406	41	Gerald Rothstein, M.D.	.	.	.	.
VA	Eastern Virginia Medical School	111	105	Stefan Gravenstein, M.D.	Professor	2 3 4	1996 1996 1996	Dean Chair, Dept Internal Med
VA	University of Virginia	559	29	Mark E. Williams, M.D.	Professor	2	1980	Chair, Dept Internal Med
VA	Virginia Commonwealth University	683	59	Thomas M. Mulligan, M.D.*	Professor	2	1985	Chair, Dept Internal Med Hospital
VT	University of Vermont College of Medicine	384	56	Naomi K. Fukagawa, M.D., Ph.D.	.	.	.	Chair, Dept Internal Med
WA	University of Washington School of Medicine	784	6	Itamar B. Abrass, M.D.	Professor	2	1978	Chair, Dept Internal Med
WI	Medical College of Wisconsin	794	45	Edmund H. Duthie, M.D.	Professor	2 4	1981 1990	Chair, Dept Internal Med
WI	University of Wisconsin Medical School	586	31	Michael J. Siebers, M.D.	Associate Professor	4 2	. 1986	Chair, Dept Internal Med
WV	Marshall University School of Medicine	207	117	Shirley M. Neitch, M.D.	Professor	2 2	. 1989	Dean Chair, Dept Internal Med
WV	West Virginia University School of Medicine	358	101	Richard D. Layne, M.D.	Professor	3 2	1995 2000	Chair, Dept Internal Med

Structure: 1 = Department; 2 = Division/Section; 3 = Unit within 2 Departments; 4 = Program/Center/Institute; . = not reported

*Academic leader during our survey in the spring of 2001, not the current academic leader.

[1]Total medical student enrollment, JAMA, 2001
[2]Ranking of NIH extramural funding by medical school, http://grants1.nih.gov/grants/award/rank/medttlnod.htm

Source: IHPHSR ADGAP Database Project, 2001

reported to the chair of internal medicine, and 12% reported to the chair of family medicine. At osteopathic schools, 66% of DGAPs reported directly to their dean, 11% to the chair of internal medicine and 22% reported to the chair of family medicine. Eighty-eight percent of all DGAPs were members of important medical center committees, including the curriculum, medical school executive, promotion and tenure, admissions, and health system executive committees.

The DGAPs reported that they spend a median of 12 hours per week in administrative tasks associated with leading their academic programs (range, less than one to 50 hours). Eighty-three percent of the DGAPs received institutional support for a portion of their salary. The median salary support level was 50%; 28% received 75% or more of their salary support directly from their colleges.

The NIA has an academic leadership award program (K07). These "organizer" awards give senior individuals the resources needed to enhance their respective institutions' capacity to conduct relevant research on some aspect of aging. Among the current DGAPS, 10% have received this award.

Program Structure

Identifiable academic geriatric units were present in 95 out of 103 and 10 out of 18 of the responding allopathic and osteopathic medical schools, respectively. The academic units were varied, and in 32 schools the programs were organized into several units. The DGAPs were not always the leader of each of these units. The majority of these geriatric academic units were established after 1985 (Figure 5.2). The academic leader, structural units, and year of establishment at each school are listed in Tables 5.1 & 5.2. There are currently six departments of geriatric medicine, three each in allopathic and osteopathic colleges of medicine. The most common academic unit was a division within a department, which existed at two-thirds of the schools with identifiable programs. Forty-four schools (40 allopathic and 4 osteopathic) had an interdisciplinary structure, consisting of either a department, a unit within two or more departments, or a freestanding program, center, or institute.

Table 5.2 Academic Geriatric Programs in Osteopathic Medical Schools

State	Medical School	Total Enroll[1]	Academic Leader	Academic Rank	Program Structure	Year Started	Reporting Relationship
AZ	Arizona College of Osteopathic Medicine	482	Karen Nichols, D.O.	.	.	.	Dean
CA	Touro University College of Osteopathic Medicine	339	Joseph P. McNerney, D.O.	Professor	.	.	Dean
CA	Western University of Health Science	699	Mike Y. Jeong, D.O., C.M.D.	Assistant Professor	1	2000	Dean
FL	NOVA Southeastern University	680	Charlotte A. Paolini, D.O.	Assistant Professor	2	1991	Chair, Dept Family Med
IA	Des Moines University	805	Robert H. McKinney, D.O.	Assistant Professor	2	1999	Dean Chair, Dept Internal Med
IL	Chicago College of Osteopathic Medicine	640	Frank J. Prerost, Ph.D.	.	.	.	Dean
KY	Pikeville College	1002	William T. Betz, D.O.	.	.	.	Chair, Dept Family Med
ME	University of New England	463	James B. Donahue, D.O.	Associate Professor	2	1996	Chair, Dept Family Med
MI	Michigan State University	523	Larry Lawhorne, M.D.	.	.	.	Chair, Dept Family Med
MO	Kirksville College of Osteopathic Medicine	616	Donald R. Noll, D.O.	Associate Professor	2	.	Dean
MO	University of Health Sciences	871	Mike Johnston, D.O.	.	.	.	Dean
NJ	University of Medicine and Dentistry New Jersey	309	Thomas Cavalieri, D.O.	Professor	4	1987	Dean
NY	New York College of Osteopathic Medicine	1065	Robert Mancini, D.O.,Ph.D.	.	.	.	Dean
OH	Ohio University College of Osteopathic Medicine	416	Wayne Carlsen, D.O.	Associate Professor	1	1998	Dean
OK	Oklahoma State University	352	Charles Henley, D.O.	.	.	.	Dean
PA	Lake Erie College of Osteopathic Medicine	576	Jacques Gilloteaux, D. S.	.	.	.	.
PA	Philadelphia College of Osteopathic Medicine	1002	Katherine E. Galluzzi, D.O.	Professor	1	1989	Dean
TX	University of North Texas Health Sciences Center	455	Janice A. Knebl, D.O.	Associate Professor	2	1986	Chair, Dept Internal Med
WV	West Virginia School of Osteopathic Medicine	285	Marlene A. Wager, D.O.	Professor	2	.	Division Chief

Structure: 1 = Department; 2 = Division/Section; 3 = Unit within 2 Departments; 4 = Program/Center/Institute; . = not reported

[1]Total medical student enrollment, AACOM, 2002, Annual Osteopathic Medical School Questionnaire, AY2000-2001
Source: IHPHSR ADGAP Database Project, 2001

Program Resources

Faculty and Staff

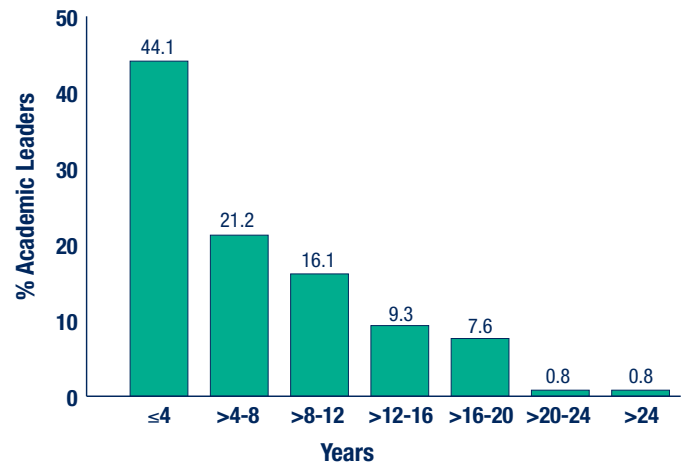
The number of professional faculty and staff in geriatrics varied considerably among the medical school programs. For example, the mean number of physician faculty was 7.5 FTEs (median 5.0, range 0 to 42). Fifty one percent of the programs had 6 or fewer physician faculty, while 8% had 18 or more (Figure 5.3). The mean number of physician faculty was lower at the osteopathic schools (3.3 FTEs) as compared to the allopathic schools (8.2 FTEs). Overall, only 30.2% of schools had 9 or more physician faculty in geriatric medicine.

Academic geriatric medicine programs had developed interdisciplinary faculties and staffs as seen in Table 5.3. The number of women and minority faculty is shown in Table 5.4. Salaries for geriatrics faculty appear generally comparable to those of primary care and specialty faculty (Table 5.5). (See Table 4.19 in Chapter 4 for practicing physicians' compensation.)

Budgets

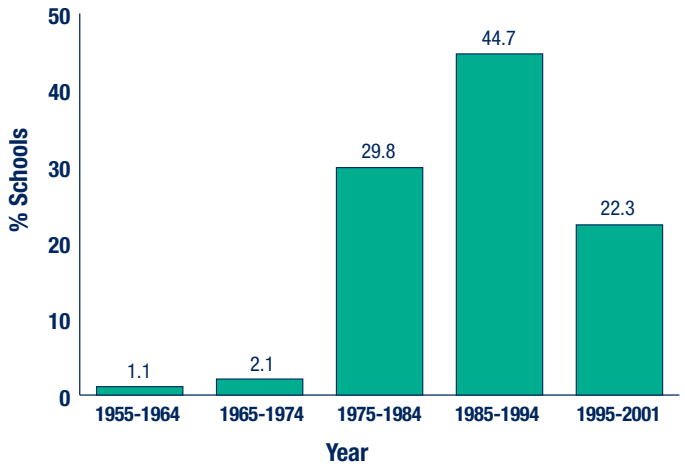
Fifty-eight percent of the programs had annual budgets of one million dollars or less. Osteopathic program budgets were significantly smaller ($p<0.001$), with 62.5% reporting annual budgets of less than $250,000, as compared to only 19.3% of allopathic programs reporting budgets below $250,000 (Figure 5.4). Most programs had diverse revenue sources, with clinical revenue representing an important source of income. For all reporting schools, 27% of income was through clinical revenue. The VHA provided 13.1% of the revenue

Figure 5.1 Number of Years as Academic Leader in Geriatrics (n=118)



Median 5.0 years, Range 0-27 years
Source: IHPHSR ADGAP Database Project, 2001

Figure 5.2 Establishment Year of Earliest Geriatric Academic Unit[1] (n=94)



[1]The geriatric academic unit could be a department, a division or section within a department, or an interdisciplinary program, center or institute.

Source: IHPHSR ADGAP Database Project, 2001

for the reporting allopathic academic geriatric programs (Table 5.6). For medical schools with affiliated Geriatric Research, Education, and Clinical Centers (GRECCs), the VHA contribution to total program revenue ranged from 5% to 48%. Five schools with GRECCs did not report the VHA as a revenue source, so our data may slightly underestimate the overall contribution of the VHA to academic geriatric programs. (Tables 5.7 & 5.8 list the sources of revenues for individual schools.) The percentage of program revenues from educational and/or research grants and contracts was significantly positively correlated to the schools' annual budgets ($p<0.001$).

Annual program financial reserves also varied among the programs and were generally low (Figure 5.5). Among allopathic schools 43% had no financial reserves; 81% of osteopathic schools had no reserves. Although some medical school programs are not allowed to develop reserve funds, the availability of financial reserves is generally a measure of a program's maturity and stability. Medical school financial officers recommend that academic programs develop fiscal reserves equal to 3 months of their operating budget. Using this guideline, we estimate that only 18% of the reporting programs have achieved this goal.

Major Sources of Support

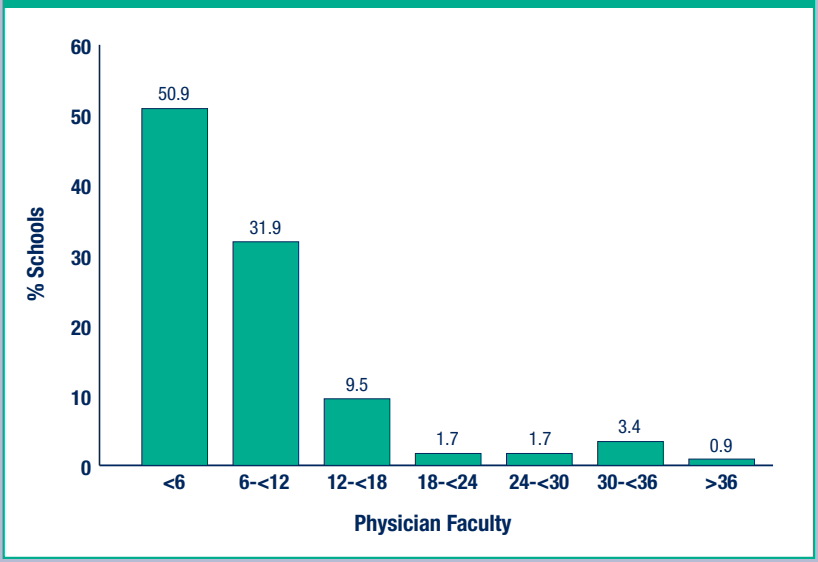
A number of federal, state, and private foundation programs provide significant support for program development. Federal programs include VA GRECC programs, NIA Older Americans Independence Centers (Pepper Centers), NIA Alzheimer's Disease Centers (ADC), NIA Shock Basic Biology and Roybal Applied Gerontology Centers, and BHPr funded Geriatric Education Centers. Foundation projects supporting geriatric medical education include John A. Hartford Foundation's Centers of Excellence (CoE), Donald W. Reynolds Foundation Education Centers, and the AAMC/Hartford medical student program. Table 5.9 shows the allopathic medical schools with funding in 2000-2001 from CoE, Pepper, GRECC, ADC, AAMC, or Reynolds programs. (See Appendix A and C for a list of the research focus of the current VHA GRECC programs and Older Americans Independence Centers (Pepper Centers). See Appendix B and D for a list of the Hartford Centers of Excellence, and the Alzheimer's Disease Centers.) The Reynolds Centers were awarded a total of $20 million over 4 years, starting in July 2001 (after our survey was conducted) and therefore could not be reported by the academic leaders in their survey responses regarding sources of revenue.

Some states provide funding for training in geriatrics. In 1978 the Ohio General Assembly authorized direct funding of Offices of Geriatric Medicine at each of Ohio's private and public allopathic and osteopathic schools. This legislation specifically charged the medical schools with incorporating geriatric medicine content into their curricula. Since 1978 this funding has been reauthorized in each Ohio biennium budget and has been administered by the Deans of Ohio's medical schools. Although the authorized dollars have declined over the years, in FY 2001 Ohio's seven medical schools each received $155,000 for geriatric medicine education. California expends about $1.1 million per year for geriatric education. This money is divided among the University of California schools that operate health professions schools. Other states that provide funding include New York, Kansas and North Carolina.

Program Priorities

The academic missions of medical schools in general are diverse and complex. This certainly is true of geriatric medicine programs. The allocation of geriatric medicine faculty and staff time demonstrated that the programs were addressing diverse objectives (Table 5.10). There was considerable variability in how each program set priorities (Tables 5.11 and 5.12). The allopathic schools tended to devote a higher percentage of resources to research, scholarship, and

Figure 5.3 Distribution of Physician Faculty Among Schools (n=116)



Source: IHPHSR ADGAP Database Project, 2001

Table 5.3 Academic Staff[1] in Geriatric Programs (Full-Time Equivalents)

	Allopathic Schools (n=100)		Osteopathic Schools (n=16)		All Schools (n=116)	
Categories	Mean	Range	Mean	Range	Mean	Range
Physician faculty (MD, DO, or equivalent)	8.2	0-42	3.3	0.5-22	7.5	0-42
Geriatric Medicine and Geriatric Psychiatry First Year Fellows	2.7	0-13	0.3	0-3	2.4	0-13
Geriatric Medicine and Geriatric Psychiatry Fellows (second year and beyond) and MD Postdoctoral faculty	1.0	0-7	0.3	0-2	0.9	0-7
PhD Postdoctoral staff without faculty appointment	1.0	0-20	0.1	0-1	0.9	0-20
Research Faculty (Does not include MDs or faculty included in another category)	2.8	0-43	0.2	0-2	2.5	0-43
Physician Assistants	0.3	0-4	0.0	0-0.5	0.3	0-4
Nurse Practitioners	2.1	0-15	0.3	0-2	1.9	0-15
Clinical Nurse Specialists	0.7	0-7	0.1	0-1	0.7	0-7
Pharmacists	0.3	0-4	0.1	0-1	0.3	0-4
Social Workers	1.1	0-6.2	0.3	0-1	1.0	0-6.2
Other Professional Support Staff	0.9	0-23	0.3	0-3	0.9	0-23

[1]Clinical support staff not included

Source: IHPHSR ADGAP Database Project, 2001

residency and fellowship training than the osteopathic schools ($p<0.008$). Osteopathic schools placed more emphasis on medical student education than the allopathic schools ($p<0.001$). Both types of programs allocated, on average, 37% of their effort to clinical practice. To further clarify the variability among allopathic schools, 7% of academic programs had a significant commitment (25% or greater of total effort) to medical student education; 13% to residency education; and 33% to research/scholarship activities. No schools showed a significant commitment to all three areas; medical student education, residency education, and research/scholarship, although 7 schools did have significant commitments in two of the three areas.

Even the larger programs do not have the resources to adequately address the entire spectrum of educational and research missions in these schools. For research/scholarship, 58 schools reported 2.0 or greater FTEs and 28 schools reported 5.0 or greater FTEs; for medical student education 32 schools reported 2.0 or greater FTEs and 5 schools reported 5.0 or greater; and for resident education 41 schools reported 2.0 or greater FTEs, and 7 schools reported 5.0 or greater FTEs. Overall, 22 schools reported allocating 2.0 FTEs to 5 out of 6 areas of effort (student, resident, or fellow training, continuing education, clinical practice, or research), and only one school allocates 5.0 FTEs to 5 out of 6 of these areas.

Program Obstacles

The DGAPs rated 9 potential obstacles to achieving their programs' goals (Table 5.13). Lack of research faculty and trainees, poor reimbursement for clinical care, and lack of institutional financial support were each rated "significant" by more than 50% of the DGAPs. Osteopathic DGAPs, in particular, emphasized the lack of research faculty and also reported trouble recruiting clinical fellows. Allopathic DGAPs tended to be more likely than osteopathic DGAPs to report poor access to medical students' curricular time as an obstacle, although the difference was not significant ($p=0.112$).

The DGAPs reported on vacancies across all categories of faculty and staff. Among all schools, 112 physician faculty positions were currently vacant (Figure 5.6). DGAPs were not asked to clarify whether these vacancies were for clinician-educators or clinician-researchers, but from responses to the obstacles question, it appears that clinician-researchers were most commonly being sought. Vacancy numbers in other professional positions (including nursing and social work) were relatively small (a maximum of 3 FTE vacancies at any one school).

Implications

It was remarkable that in 2001 we could identify a leader/contact for geriatric medicine at each of the 144 U.S. medical schools. Even though there are currently only six departments of geriatric medicine

Table 5.4 Women and Minority Faculty in Academic Geriatric Programs (Full-Time Equivalents)

Faculty	Rank	Allopathic Schools (n=94) Mean	Allopathic Schools (n=94) Range	Osteopathic Schools (n=17) Mean	Osteopathic Schools (n=17) Range	All Schools (n=111) Mean	All Schools (n=111) Range
Women	Asst. Professor	2.4	0-15	0.9	0-7	2.2	0-15
	Assoc. Professor	0.9	0-6	0.6	0-3	0.8	0-6
	Professor	0.3	0-3	0.1	0-1	0.2	0-3
	Other	0.2	0-4	0.2	0-2	0.2	0-4
Minorities[1]	Asst. Professor	0.7	0-7	0.2	0-2	0.6	0-7
	Assoc. Professor	0.3	0-5	0.1	0-1	0.2	0-5
	Professor	0.1	0-2	0.1	0-2	0.1	0-2
	Other	0.1	0-2	0.0	0	0.1	0-2

[1]Minorities include African Americans, American Indians or Alaskan Natives, Native Hawaiians or other Pacific Islanders, Hispanics or Latinos. Mean and range are in (FTEs).

Source: IHPHSR ADGAP Database Project, 2001

Table 5.5 Medical School Faculty Total Compensation 2000-2001 (thousands of dollars)[1]

Departments	Instructor Median	Assistant Professor Median	Associate Professor Median	Professor Median	Chair or Chief Median
Geriatrics - IM	100	122	145	180	188
Family Practice	125	128	145	156	219
Internal Medicine	75	105	129	163	271
General Internal Medicine	110	120	142	169	220
Psychiatry	110	116	134	166	259
Nephrology	119	127	158	175	272
Rheumatology	80	111	128	167	195
Endocrinology	83	110	132	172	260
Gastroenterology	95	144	174	195	219
Neurology	70	109	134	165	260
PM & R	125	132	141	185	236
Urology	58	184	229	280	333

[1]Fringe benefits not included

Source: AAMC Report on Medical School Faculty Salaries, All Schools, MD Degree, Clinical Science Departments, January 2002

(Mt. Sinai School of Medicine, University of Arkansas, University of Oklahoma, Philadelphia College of Osteopathic Medicine, Western University of Health Science, and Ohio University College of Osteopathic Medicine), one-third of the academic leaders reported directly to their dean. This typically created access to new resources and continued interdepartmental influence. The integration of DGAPs into the medical schools' leadership was further confirmed by their significant participation in important medical school curriculum and leadership committees.

The relatively low number of fellowship-trained DGAPs (42% of the leaders surveyed) reflected the youth of the discipline. Leadership has been drawn from senior faculty who completed their formal training before the availability of fellowship programs, since geriatric fellowships became more common after 1980. Many senior faculty are nearing the end of their careers, and the demand for new leaders will be high in the coming decade.

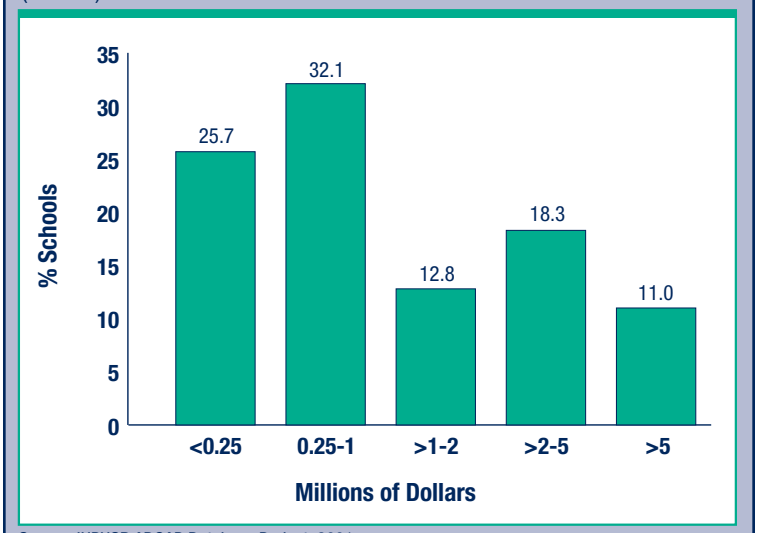
In a 1993 report, it was argued that a significant shortage of geriatric medicine faculty existed in U.S. medical schools and residency programs (Reuben, Zwanziger, Bradley et al., 1993). An IOM national advisory panel recommended that each medical school have nine geriatric physician faculty to sustain their programs. Twenty-three allopathic schools reported less than 2.5 FTE physician faculty, and 66 (two-thirds of the respondents) had less than the IOM target of 9 FTE faculty.

The DGAPs unexpectedly reported openings for only 112 physicians. If the number of current vacancies is proportionally extrapolated to include the non-responding schools, this results in open positions for 133 geriatric physician faculty at U.S. medical schools. This number seems small when compared to estimates of the number of physician faculty required to sustain programs. (However, it is relatively large when compared to the number of geriatric medicine fellowship graduates pursuing careers in academic geriatric medicine.) A possible explanation for the small number of faculty openings is that some programs lack the financial resources to recruit additional faculty. This seems especially relevant for clinician-educators. In fact, the DGAPs reported a greater need to fill open and funded vacancies for research faculty (at 61% of schools) than clinician-educator faculty (at 28% of schools).

The wide variability among medical school spending on geriatric medicine is not surprising. In the United States, medical schools are diverse, and the size and scope of their overall programs vary considerably (see Tables 5.1 and 5.2). In addition, since the 1987 IOM report on geriatric medicine was published, an explicit "centers of excellence" (CoE) strategy has been developed. This strategy emphasizes the concentration of resources at a limited number of medical schools to yield maximum training of the next generation of academic leaders. When the medical schools responding to our survey were ranked by annual budget, 71% of those with the largest annual budgets (top third) also had one or more of the following designations: Hartford Foundation Centers, association with a GRECC, Alzheimer's Disease Center, Pepper Center Award, and/or department status. This finding suggests that the CoE strategy has been effective.

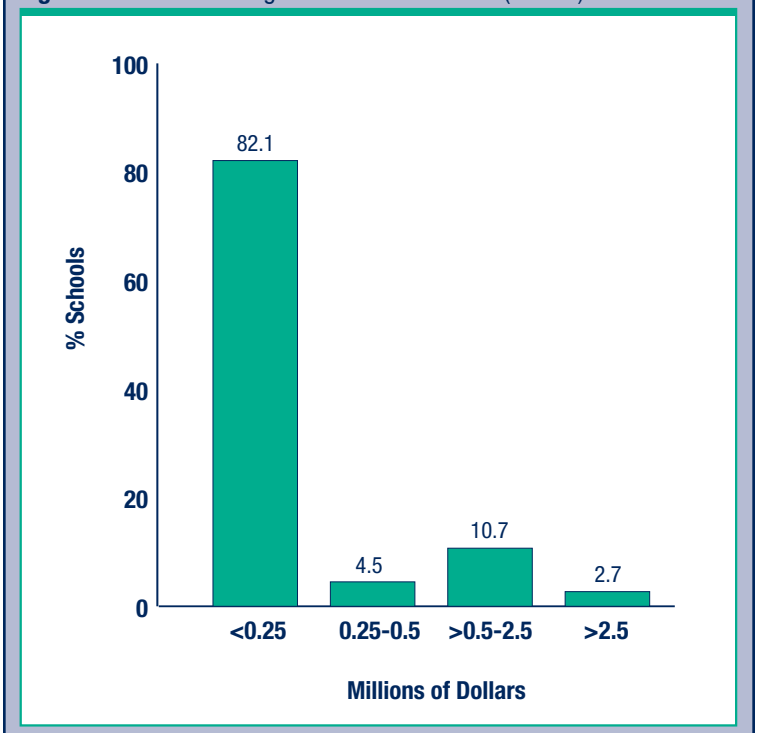
The limited investment in research/scholarship at 86% of the allopathic schools was consistent with the above discussion regarding financial and faculty resources and the wide range of overall medical school missions. The DGAPs reported that the primary obstacle to the development of their academic programs was the lack of research

Figure 5.4 Geriatric Programs' Annual Budget for AY 2000-2001 (n=109)



Source: IHPHSR ADGAP Database Project, 2001

Figure 5.5 Geriatric Programs' Reserve Dollars (n=112)



Source: IHPHSR ADGAP Database Project, 2001

faculty and fellows. In fact, 71% of the respondents reported that the lack of senior research faculty was a significant obstacle to achieving their program goals. Although research career development funding is available through the NIH and the VHA, attracting and retaining future research faculty remains a significant challenge for the discipline.

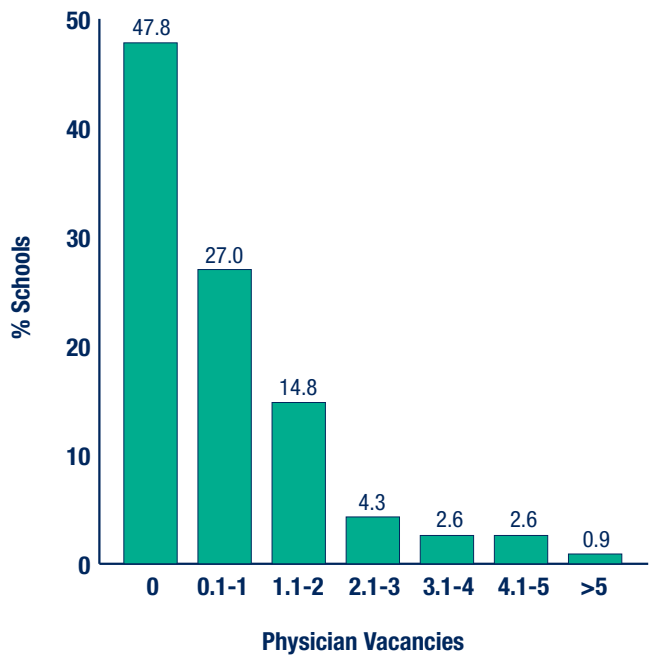
DGAPs reported concern about the impact of poor reimbursement for clinical activity. Medicare is the primary payer for most clinical services provided by geriatricians (see Chapter 4). In addition to relatively low clinical reimbursement levels, teaching physicians are further burdened by Medicare's Teaching and Supervision guidelines. The Center for Medicare and Medicaid Services (CMS) rules for compensating physicians who teach and supervise medical students and residents require the physicians to be present during a "key portion" of a procedure and require detailed documentation in the medical record. These documentation rules are particularly challenging in the non-hospital care settings such as home and nursing home settings.

Another obstacle noted frequently by the DGAPs was the lack of institutional financial support for growth of their program. It is widely recognized that geriatric medicine and other primary care disciplines are seldom the priority at academic medical centers, particularly in comparison to the clinical and research programs of cancer and cardiovascular medicine (Hazzard, 1991). Nonetheless, at several successful geriatric medicine CoE, the programs had grown to the size and strength necessary to compete effectively for institutional resources. Also, the recent Reynolds Education Center grants required a 50% institutional match on the $2,000,000 award. A number of medical schools that had previously demonstrated limited financial commitment to geriatrics achieved the required matching commitments. These events suggest that leaders of academic medical centers are aware of the importance of geriatric medicine, but they have numerous competing priorities. When a DGAP can bring new funds to the medical center for research or education, some deans will respond with significant matching support.

Analysis of the DGAPs' allocation of faculty and staff time suggests that patterns of emphasis vary among academic geriatric medicine programs. For the most part the programs are choosing one or two priority areas for their academic missions. It appears that in many medical schools the resources simply do not exist to put together a comprehensive approach. Among allopathic schools, medical student education was a low priority as compared to osteopathic schools. This may be due to the difficulty in gaining access to curriculum time combined with the high cost and limited institutional support for medical student teaching. A strong emphasis on residency training is also not common in allopathic or osteopathic schools. The new Hartford/AAMC and Reynolds Foundation grant programs will encourage many academic geriatric programs to direct more effort to medical student and resident education (see Chapters 7 and 8).

The evolution of academic geriatric medicine in the United States has been pluralistic. The intellectual and clinical content of geriatric medicine overlap with that of other primary care and subspecialty practice. Geriatric medicine has been described as the first "supraspecialty" that can most successfully develop in collaboration with most other medical disciplines (Hazzard, 2000). This unique position of geriatric medicine results in serious challenges for the successful development of geriatric medicine academic programs at U.S. allopathic and osteopathic medical schools. Medical schools are, for the most part, highly traditional and slow to incorporate change. They are organized around discipline-specific departments, with department leaders holding most of the power, control, and the responsibility for negotiating resources from the dean. More narrowly defined departmental divisions have gained some influence, depending on their ability to generate research and/or clinical income. During the past 15 years, some medical schools have recognized the limitations of this "silo" organizational structure and

Figure 5.6 Physician Faculty Vacancy Rates (n=115)



Median 0.5 positions, Range 0-7 positions
Source: IHPHSR ADGAP Database Project, 2001

have developed successful examples of interdisciplinary clinical, research, and, occasionally, education programs.

Many DGAPs were new to their positions. To address the administrative training of the younger DGAPS, a new leadership development program has been established. This 3-year initiative is administered by ADGAP and funded by the John A. Hartford Foundation. The program supports leadership training for competitively-selected DGAPs with 6 years or less of experience in their current positions. Up to six DGAPs will be selected each year and will be funded to participate in formal leadership training courses and work with senior mentors on their campuses, as well as with national leaders in geriatric medicine. Six Leadership Scholars were chosen in 2001 and another 5 in 2002.

Our survey suggests that new strategies are needed to nurture smaller geriatric medicine programs that do not have the resources to recruit new faculty from CoE. The John A. Hartford Foundation recently announced a small grant award program to provide a "leg-up" to these emerging programs. This new program, "*Developing a New Generation of Academic Programs in Geriatrics*" is administered by ADGAP. These two-year, $100,000/year awards will enable academic health centers that have already made substantial commitments to geriatrics to further strengthen their programs. It is expected that these grants will help position more medical schools to be competitive for Centers of Excellence or Reynolds Education Center grants. The first awards from this program were made in the winter of 2002. A number of mechanisms exist through the NIA (see Chapter 6), VHA, and the private sector to support the career development of clinician-researchers from instructors to the independent investigator level. Similar career support mechanisms are rare for clinician-educators. The new Reynolds Foundation Geriatric Education Program is expected to provide $60,000,000 for geriatric medicine education centers to 30 medical schools over the next 10 years (the first ten centers were established in July 2001). This program and efforts by the Bureau of Health Professions and the John A. Hartford Foundation through the AAMC medical student curriculum initiative will support the demand for new clinician-educator faculty (AAMC & John A. Hartford Foundation, 2000).

Although it has been stated that academic geriatric medicine programs will develop most effectively in environments that encourage cooperation among medical disciplines, other health disciplines, and social scientists (Hazzard, 2000), the optimal organizational structure for geriatric programs remains unclear. Our study revealed the variety of approaches medical schools are utilizing, and it is too early to declare a "best" approach. In this context, it has been a struggle for academic geriatric medicine programs to take root in many U.S. medical schools. Efforts have been assisted by generous support from the federal government, some state governments, and the private sector (Reuben, 1994).

In summary, public and private investment in the development of academic geriatric medicine has been substantial over the past 25 years. Our survey of the DGAPs, when combined with other data on academic geriatrics, provides a comprehensive picture of the remarkable progress academic geriatrics has made in the past 25 years and sets a benchmark for measuring further development during the next decade. Many medical schools now have credible

Table 5.6 Sources of Geriatric Programs Revenues for AY 2000-2001 (Percent)

Category	Allopathic Schools (n=99)	Osteopathic Schools (n=16)	All Schools (n=115)
College of Medicine-required geriatrics support	10.5	23.8	12.3
College of Medicine-discretionary geriatrics support	8.1	34.0	11.7
Direct Hospital Support	9.6	3.6	8.8
Income from Endowments	5.1	0.0	4.4
Clinical Practice	25.7	33.1	26.8
Veterans Health Administration	13.1	0.0	11.3
Research Grants and Contracts, direct and indirect	17.4	2.2	15.2
Educational Grants and Contracts, direct and indirect	9.1	3.4	8.4
Other	0.4	0.0	0.4

Source: IHPHSR ADGAP Database Project, 2001

Table 5.10 Allocation of Faculty and Staff Time (Percent)

Area	Allopathic Schools (n=100)		Osteopathic Schools (n=16)		All Schools (n=116)	
	Mean	SD	Mean	SD	Mean	SD
Medical Student education in geriatrics	10.0	11.4	36.0	27.1	13.6	17.0
Residency Education in geriatrics	13.4	10.8	7.3	9.7	12.6	10.8
Fellowship training in geriatrics	11.9	11.6	3.0	5.4	10.7	11.3
Continuing education in geriatrics	4.0	4.5	3.3	4.3	3.9	4.4
Clinical practice in geriatrics	36.0	20.5	40.8	20.7	36.6	20.5
Research/Scholarship in geriatrics	20.0	17.7	6.9	6.8	18.2	17.2
Other	4.7	11.5	2.7	9.5	4.4	11.2

Source: IHPHSR ADGAP Database Project, 2001

Table 5.13 Obstacles to Achieving Goals of Geriatrics Programs[1]

Possible Obstacles to Achieving Goals	% of Schools Ranking Obstacles 5 or >
Lack of senior research faculty	70.7
Poor clinical reimbursement for patient care	65.2
Lack of research fellows	61.4
Lack of junior research faculty	57.8
Lack of institutional financial support	53.4
Lack of access to medical students' curricular time	38.6
Lack of clinical fellows	32.6
Lack of clinical educators	28.4
Lack of access to residents' curricular time	23.7

[1]Measured on a 1 – 7 Likert scale from 'not an obstacle' to 'major obstacle'.

Source: IHPHSR ADGAP Database Project, 2001

academic programs with the faculty and resources needed to implement clinical, education and research activities. However, many other academic centers lag far behind in ensuring the adequate training of future physicians. There is a continuing need for new resource investment to train faculty for roles as teachers and researchers, and to develop medical school geriatrics programs of the size and scope comparable to those of other academic disciplines. Although much has been accomplished, there are complex challenges ahead for academic geriatric medicine.

Table 5.7 Sources of Geriatric Program Revenues for AY 2000-2001, Allopathic Schools (Percent) (n=103)

State	Medical School	1	2	3	4	5	6	7	8	9
AL	University of Alabama at Birmingham	0	20	1	0	16	10	43	10	0
AL	University of South Alabama College of Medicine	35	0	0	0	65	0	0	0	0
AR	University of Arkansas College of Medicine	12	0	11	5	15	15	26	21	0
AZ	University of Arizona College of Medicine	15	0	0	2	10	71	2	0	0
CA	Loma Linda University School of Medicine	0	0	0	0	50	50	0	0	0
CA	Stanford University School of Medicine	0	0	30	0	30	30	0	10	0
CA	University of California Davis	0	0	0	0	0	0	0	100	0
CA	University of California Irvine College of Medicine	0	2	0	5	0	0	20	73	0
CA	University of California Los Angeles	2	0	7	1	3	15	70	2	0
CA	University of California San Francisco	10	5	1	0	1	50	20	13	0
CO	University of Colorado	0	0	20	5	20	15	35	5	0
CT	University of Connecticut School of Medicine	5	5	10	20	30	0	30	0	0
CT	Yale University School of Medicine	0	0	20	15	15	20	30	0	0
DC	George Washington University	0	0	0	0	60	30	5	5	0
FL	University of South Florida College of Medicine	20	0	0	1	37	37	5	0	0
GA	Emory University School of Medicine	0	7	7	0	34	32	15	5	0
GA	Mercer University School of Medicine	0	0	50	0	50	0	0	0	0
HI	University of Hawaii	16	4	34	0	0	27	10	9	0
IA	University of Iowa College of Medicine	0	15	15	0	53	10	2	5	0
IL	Finch University of Health Sciences	0	0	0	0	0	100	0	0	0
IL	Loyola University, Stritch School of Medicine	0	0	0	0	100	0	0	0	0
IL	Northwestern University Medical School	0	0	60	10	0	0	30	0	0
IL	Rush Medical College	.	.	.	.	.	.	.	.	.
IL	University of Chicago	0	0	0	0	0	0	0	0	0
IL	University of Illinois College of Medicine	0	0	5	5	35	50	5	0	0
IN	Indiana University School of Medicine	0	9	32	4	18	7	30	0	0
KS	University of Kansas School of Medicine	37	0	0	5	1	2	40	15	0
KY	University of Kentucky College of Medicine	0	45	0	0	30	20	5	0	0
KY	University of Louisville School of Medicine	30	25	0	30	15	0	0	0	0
LA	Louisiana State University School of Medicine	0	0	0	0	60	0	40	0	0
LA	Louisiana State University Shreveport	0	50	0	0	40	0	0	10	0
LA	Tulane University School of Medicine	10	20	0	0	20	50	0	0	0
MA	Boston University School of Medicine	7	0	50	0	17	0*	16	10	0
MA	Harvard Medical School	0	20	20	0	0	0*	50	10	0
MA	University of Massachusetts Medical School	0	0	25	0	50	0	0	25	0
MD	Johns Hopkins University School of Medicine	0	0	30	5	30	0	35	0	0
MD	University of Maryland School of Medicine	0	5	0	0	0	5	90	0	0
MI	University of Michigan Medical School	0	14	19	16	0	19	30	2	0
MI	Wayne State University School of Medicine	0	0	0	0	90	0	10	0	0
MN	Mayo Medical School	0	0	0	0	80	0	10	10	0
MN	University of Minnesota Duluth	0	0	0	0	0	0	0	100	0
MN	University of Minnesota Medical School Minneapolis	0	80	0	0	0	0*	10	0	10
MO	Saint Louis University School of Medicine	0	10	0	8	30	20	30	2	0
MO	University of Missouri Columbia School of Medicine	25	10	0	0	25	20	15	5	0
MO	University of Missouri, Kansas City	0	0	40	0	50	0	0	10	0
MO	Washington University School of Medicine	0	10	0	5	25	0	60	0	0
MS	University of Mississippi School of Medicine	60	0	0	0	40	0	0	0	0
NC	Duke University School of Medicine	0	10	0	5	10	20	50	5	0
NC	East Carolina University	0	0	0	0	75	0	0	25	0
NC	University of North Carolina	38	0	0	0	0	0	31	31	0
NC	Wake Forest University School of Medicine	5	4	5	1	30	0	55	0	0
ND	University of North Dakota	100	0	0	0	0	0	0	0	0
NE	Creighton University School of Medicine	.	.	.	.	.	.	.	.	.
NE	University of Nebraska College of Medicine	0	58	0	5	20	0	15	2	0
NJ	University of Medicine and Dentistry of New Jersey	70	0	30	0	0	0	0	0	0
NM	University of New Mexico	10	3	25	0	25	20	7	10	0
NY	Albany Medical College	.	.	.	.	.	.	.	.	.
NY	Albert Einstein College of Medicine	0	15	20	10	50	0	5	0	0
NY	Cornell University	0	40	26	0	17	0	8.5	8.5	0
NY	Mount Sinai School of Medicine	0	11	11	8	5	0*	43	22	0
NY	New York Medical College	10	0	0	0	90	0	0	0	0
NY	New York University School of Medicine	0	0	60	20	0	10	10	0	0
NY	State University of New York Syracuse	30	0	0	0	40	0	0	30	0
NY	State University of New York Stony Brook	0	15	20	15	50	0	0	0	0
NY	State University of New York Buffalo	5	0	50	0	30	0	15	0	0
NY	State University of New York Brooklyn	100	0	0	0	0	0	0	0	0
NY	University of Rochester	0	5	8	2	50	0	25	10	0

* Program Director did not report VHA funding at these GRECC affiliated sites.

1=College of Medicine, Required Support; 2=College of Medicine, Discretionary Support; 3= Direct Hospital Support;
4=Endowment Income; 5=Clinical Practice; 6=Veterans Health Administration; 7=Research Grants; 8=Educational Grants; 9=Other

Table 5.7 Sources of Geriatric Program Revenues for AY 2000-2001, Allopathic Schools (Percent) (n=103), *continued*

State	Medical School	1	2	3	4	5	6	7	8	9
OH	Case Western Reserve University School of Medicine	3	0	2	2	6	10	72	5	0
OH	Medical College of Ohio	30	30	0	10	30	0	0	0	0
OH	Northeastern Ohio Universities	80	0	0	0	0	0	0	20	0
OH	Ohio State University	30	30	0	0	0	0	15	25	0
OH	University of Cincinnati College of Medicine	15	0	10	15	20	0	30	10	0
OH	Wright State University	90	0	0	0	0	0	10	0	0
OK	University of Oklahoma	10	0	0	85	0	0	0	5	0
OR	Oregon Health Sciences University	0	0	0	0	0	100	0	0	0
PA	Jefferson Medical College	0	15	15	0	50	0	10	10	0
PA	Pennsylvania State University	5	10	20	0	60	0	5	0	0
PA	Temple University School of Medicine	0	10	0	0	60	0	0	30	0
PA	University of Pennsylvania School of Medicine	0	5	5	5	10	20	20	35	0
PA	University of Pittsburgh School of Medicine	0	3	45	0	24.5	7	20	0.5	0
PR	University of Puerto Rico School of Medicine	80	0	0	0	10	0	10	0	0
RI	Brown Medical School	0	10	10	10	30	0	40	0	0
SC	University of South Carolina School of Medicine	8	1	40	1	40	5	2	3	0
SD	University of South Dakota School of Medicine	0	0	0	0	30	15	15	40	0
TN	East Tennessee State University	0	60	0	0	10	0	3	27	0
TN	Meharry Medical College School of Medicine	0	0	0	0	0	87	0	13	0
TN	University of Tennessee, Memphis	0	0	0	0	30	70	0	0	0
TX	Baylor College of Medicine	10	10	0	10	10	10	10	10	30
TX	Texas Tech University Health Sciences Center	0	0	0	0	0	0	90	10	0
TX	The Texas A & M University System	.	.	.	.	.	.	.	.	.
TX	University of Texas Medical Branch at Galveston	0	30	0	10	30	0	30	0	0
TX	University of Texas Medical School at San Antonio	20	5	0	5	5	20	30	15	0
TX	University of Texas Southwestern Medical Center	0	10	40	10	0	20	10	10	0
TX	University of Texas, Houston	0	0	0	0	90	0	0	10	0
VA	Eastern Virginia Medical School	0	25	0	25	25	0	25	0	0
VA	University of Virginia	0	10	10	10	50	0	10	10	0
VA	Virginia Commonwealth University	0	0	0	0	40	60	0	0	0
VT	University of Vermont College of Medicine	0	0	0	0	0	0	100	0	0
WA	University of Washington School of Medicine	2	0	11	0	3	48	36	0	0
WI	Medical College of Wisconsin	0	15	0	0	10	70	1	4	0
WI	University of Wisconsin Medical School	0	5	5	0	40	0*	40	10	0
WV	Marshall University	0	5	0	30	65	0	0	0	0
WV	West Virginia University School of Medicine	0	0	0	65	33	0	0	2	0

* Program Director did not report VHA funding at these GRECC affiliated sites.

1=College of Medicine, Required Support; 2=College of Medicine, Discretionary Support; 3= Direct Hospital Support; 4=Endowment Income; 5=Clinical Practice; 6=Veterans Health Administration; 7=Research Grants; 8=Educational Grants; 9=Other

Source: IHPHSR ADGAP Database Project, 2001

Table 5.8 Sources of Geriatric Program Revenues for AY 2000-2001, Osteopathic Schools (Percent) (n=18)

State	Medical School	1	2	3	4	5	6	7	8	9
AZ	Arizona College of Osteopathic Medicine	0	100	0	0	0	0	0	0	0
CA	Touro University College of Osteopathic Medicine	0	100	0	0	0	0	0	0	0
CA	Western University of Health Science	0	100	0	0	0	0	0	0	0
FL	NOVA Southeastern University	0	50	0	0	50	0	0	0	0
IA	Des Moines University	0	75	0	0	25	0	0	0	0
IL	Chicago College of Osteopathic Medicine	90	0	0	0	0	0	5	5	0
KY	Pikeville College	0	0	0	0	100	0	0	0	0
ME	University of New England	100	0	0	0	0	0	0	0	0
MI	Michigan State University	0	10	20	0	60	0	0	10	0
MO	Kirksville College of Osteopathic Medicine	0	45	0	0	45	0	10	0	0
MO	University of Health Sciences	.	.	.	.	.	.	.	.	.
NJ	University of Medicine & Dentistry of New Jersey	30	0	0	0	40	0	10	20	0
NY	New York College of Osteopathic Medicine	.	.	.	.	.	.	.	.	.
OH	Ohio University College of Osteopathic Medicine	20	20	0	0	40	0	0	20	0
OK	Oklahoma State University	0	0	10	0	90	0	0	0	0
PA	Philadelphia College of Osteopathic Medicine	0	44	27	0	29	0	0	0	0
TX	University of North Texas Health Sciences Center	40	0	0	0	50	0	10	0	0

1=College of Medicine, Required Support; 2=College of Medicine, Discretionary Support; 3=Direct Hospital Support; 4=Endowment Income; 5=Clinical Practice; 6=Veterans Health Administration; 7=Research Grants; 8=Educational Grants; 9=Other.

Source: IHPHSR ADGAP Database Project, 2001

Table 5.9 Allopathic Medical Schools Funded by Selected Federal or Private Foundation Programs

State	Medical School	CoE	OAIC	GRECC	ADC	AAMC	Reynolds
AK	University of Arkansas College of Medicine	X		X	X		
AL	University of Alabama at Birmingham	X		X	X	X	
AL	University of South Alabama College of Medicine						
AZ	University of Arizona College of Medicine				X	X	
CA	Loma Linda University School of Medicine						
CA	Stanford University School of Medicine	X		X	X		
CA	University of California Davis				X		
CA	University of California Irvine College of Medicine				X	X	
CA	University of California Los Angeles	X	X	X	X	X	
CA	University of California San Diego School of Medicine				X		
CA	University of California San Francisco	X				X	
CA	University of Southern California Keck School of Medicine				X		
CO	University of Colorado	X					
CT	University of Connecticut School of Medicine	X	X			X	
CT	Yale University School of Medicine	X	X				X
DC	George Washington University						
DC	Georgetown University School of Medicine					X	
DC	Howard University						
FL	University of Florida College of Medicine						
FL	University of Miami School of Medicine			X		X	
FL	University of South Florida College of Medicine			X			
GA	Emory University School of Medicine	X			X		
GA	Medical College of Georgia						
GA	Mercer University School of Medicine						
GA	Morehouse School of Medicine						
HI	University of Hawaii	X					X
IA	University of Iowa College of Medicine						X
IL	Finch University of Health Sciences						
IL	Loyola University Stritch School of Medicine						
IL	Northwestern University Medical School				X		
IL	Rush Medical College				X		
IL	Southern Illinois University School of Medicine					X	
IL	University of Chicago	X					
IL	University of Illinois College of Medicine						
IN	Indiana University School of Medicine		X			X	
KS	University of Kansas School of Medicine		X	X		X	
KY	University of Kentucky College of Medicine				X		
KY	University of Louisville School of Medicine					X	
LA	Louisiana State University School of Medicine						
LA	Louisiana State University Shreveport					X	
LA	Tulane University School of Medicine						
MA	Boston University School of Medicine	X		X	X		
MA	Harvard Medical School	X	X	X	X		
MA	Tufts University School of Medicine						
MA	University of Massachusetts Medical School					X	
MD	Johns Hopkins University School of Medicine	X			X	X	
MD	Uniformed Services University of the Health Sciences						
MD	University of Maryland School of Medicine		X	X			
MI	Michigan State University College of Human Medicine						
MI	University of Michigan Medical School	X	X	X	X		X
MI	Wayne State University School of Medicine					X	
MN	Mayo Medical School						
MN	University of Minnesota Duluth School of Medicine						
MN	University of Minnesota Medical School Minneapolis			X		X	
MO	Saint Louis University School of Medicine	X		X		X	
MO	University of Missouri Columbia School of Medicine					X	
MO	University of Missouri Kansas City					X	
MO	Washington University School of Medicine		X		X		
MS	University of Mississippi School of Medicine						
NC	Duke University School of Medicine	X	X	X	X	X	
NC	East Carolina University						
NC	University of North Carolina						
NC	Wake Forest University School of Medicine	X	X				
ND	University of North Dakota						
NE	Creighton University College of Medicine						
NE	University of Nebraska College of Medicine					X	X
NH	Dartmouth Medical School						
NJ	University of Medicine and Dentistry New Jersey (RWJ)						

CoE-Hartford Centers of Excellence; **OAIC**-Older American's Independence Centers; **GRECC**-Geriatric Research, Education, & Clinical Centers; **ADC**-Alzheimer's Disease Centers; **AAMC**-Association of American Medical Colleges/Hartford Grants; **Reynolds**-Donald W. Reynolds Grants

Table 5.9 Allopathic Medical Schools Funded by Selected Federal or Private Foundation Programs, *continued*

State	Medical School	CoE	OAIC	GRECC	ADC	AAMC	Reynolds
NJ	University of Medicine and Dentistry New Jersey Hackensack						
NM	University of New Mexico					X	
NV	University of Nevada College of Medicine						
NY	Albany Medical College						
NY	Albert Einstein College of Medicine					X	
NY	Columbia University College of Physician and Surgeons				X	X	
NY	Mount Sinai School of Medicine	X		X	X	X	
NY	New York Medical College						
NY	New York University School of Medicine					X	
NY	State University of New York Buffalo						
NY	State University of New York Brooklyn						
NY	State University of New York Stony Brook						
NY	State University of New York Syracuse					X	
NY	University of Rochester	X	X		X		X
NY	Cornell University						X
OH	Case Western Reserve University School of Medicine	X		X	X		
OH	Medical College of Ohio						
OH	Northeastern Ohio Universities						
OH	Ohio State University					X	
OH	University of Cincinnati College of Medicine					X	
OH	Wright State University						
OK	University of Oklahoma						
OR	Oregon Health Sciences University				X		
PA	Jefferson Medical College					X	
PA	MCP Hahnemann University						
PA	Pennsylvania State University						
PA	Temple University School of Medicine						
PA	University of Pennsylvania School of Medicine	X			X		
PA	University of Pittsburgh School of Medicine			X	X	X	
PR	Ponce School of Medicine						
PR	Universidad Central del Caribe School of Medicine						
PR	University of Puerto Rico School of Medicine						
RI	Brown Medical School						
SC	Medical University of South Carolina School of Medicine						
SC	University of South Carolina School of Medicine					X	X
SD	University of South Dakota School of Medicine						
TN	East Tennessee State University College of Medicine					X	
TN	Meharry Medical College					X	
TN	University of Tennessee Memphis						
TN	Vanderbilt University School of Medicine			X			
TX	Baylor College	X			X		
TX	Texas Tech University Health Science Center					X	
TX	The Texas A & M University System						
TX	University of Texas Medical Branch at Galveston		X			X	
TX	University of Texas Houston						
TX	University of Texas Medical School at San Antonio	X		X		X	
TX	University of Texas Southwestern Medical Center				X		
UT	University of Utah School of Medicine			X			
VA	Eastern Virginia Medical School						
VA	University of Virginia						
VA	Virginia Commonwealth University						X
VT	University of Vermont College of Medicine						
WA	University of Washington School of Medicine	X		X	X		
WI	Medical College of Wisconsin					X	X
WI	University of Wisconsin Medical School			X		X	
WV	Marshall University School of Medicine						
WV	West Virginia University School of Medicine						

CoE-Hartford Centers of Excellence; **OAIC**-Older American's Independence Centers; **GRECC**-Geriatric Research, Education, & Clinical Centers; **ADC**-Alzheimer's Disease Centers; **AAMC**-Association of American Medical Colleges/Hartford Grants; **Reynolds**-Donald W. Reynolds Grants

Sources: IHPHSR ADGAP Database Project 2001

Table 5.11 Allocation of Faculty and Staff, Allopathic Schools (n=103)

State Medical School		Total FTEs*	% Time Spent on Each Activity MS	R	F	CME	CP	RES	O
AL	University of Alabama at Birmingham	26.0	10	10	15	5	35	20	5
AL	University of South Alabama College of Medicine	3.0	1	39	0	0	60	0	0
AR	University of Arkansas College of Medicine	87.0	20	5	10	5	40	20	0
AZ	University of Arizona College of Medicine	17.0	5	20	20	5	45	5	0
CA	Loma Linda University School of Medicine	2.0	5	10	0	5	80	0	0
CA	Stanford University School of Medicine	6.0	5	20	25	5	40	5	0
CA	University of California Davis	12.0	10	20	5	0	10	10	45
CA	University of California Irvine College of Medicine	9.5	15	15	5	0	60	5	0
CA	University of California Los Angeles	78.0	5	10	10	1	34	40	0
CA	University of California San Francisco	26.0	4	5	20	1	40	15	15
CO	University of Colorado	24.0	7.5	12.5	20	5	30	25	0
CT	University of Connecticut School of Medicine	26.0	5	5	5	5	35	40	5
CT	Yale University School of Medicine	32.0	5	20	25	0	25	25	0
DC	George Washington University	29.9	5	10	25	5	50	5	0
FL	University of South Florida College of Medicine	20.0	2	18	40	2	33	5	0
GA	Emory University School of Medicine	41.0	2	10	10	5	50	10	13
GA	Mercer University School of Medicine	3.0	5	25	0	5	50	15	0
HI	University of Hawaii	34.6	5	5	40	5	5	40	0
IA	University of Iowa College of Medicine	11.0	2	5	5	10	60	10	8
IL	Finch University of Health Sciences	3.0	10	20	0	5	50	15	0
IL	Loyola University, Stritch School of Medicine	0.1	10	0	0	0	5	0	85
IL	Northwestern University Medical School	10.0	30	0	0	0	0	70	0
IL	Rush Medical College	9.0	5	15	20	5	30	5	20
IL	University of Chicago	16.6	3	10	20	2	45	20	0
IL	University of Illinois College of Medicine	11.0	5	10	10	0	70	5	0
IN	Indiana University School of Medicine	39.8	1	1	1	0	70	27	0
KS	University of Kansas School of Medicine	23.5	25	5	5	10	20	25	10
KY	University of Kentucky College of Medicine	2.4	7	7	0	0	50	14	22
KY	University of Louisville School of Medicine	8.6	10	20	20	5	30	15	0
LA	Louisiana State University School of Medicine	7.0	10	15	5	5	40	25	0
LA	Louisiana State University Shreveport	2.0	10	40	0	0	20	5	25
LA	Tulane University School of Medicine	6.0	2.5	5	40	2.5	50	0	0
MA	Boston University School of Medicine	24.6	20	20	20	0	20	20	0
MA	Harvard Medical School	100.0	5	5	5	5	40	30	10
MA	University of Massachusetts Medical School	3.1	20	20	0	0	60	0	0
MD	Johns Hopkins University School of Medicine	48.0	5	5	10	0	40	30	10
MD	University of Maryland School of Medicine	29.0	3	10	15	2	20	50	0
MI	University of Michigan Medical School	57.3	5	10	10	2	30	43	0
MI	Wayne State University School of Medicine	31.0	5	20	20	5	40	10	0
MN	Mayo Medical School	14.0	2	2	5	1	85	5	0
MN	University of Minnesota Duluth	0.1	75	0	0	0	0	25	0
MN	University of Minnesota Medical School Minneapolis	13.6	10	5	15	5	50	10	5
MO	Saint Louis University School of Medicine	36.0	10	10	10	10	40	20	0
MO	University of Missouri Columbia School of Medicine	7.5	5	10	10	5	30	40	0
MO	University of Missouri, Kansas City	21.5	10	10	50	5	20	5	0
MO	Washington University School of Medicine	21.0	0	0	5	5	10	80	0
MS	University of Mississippi School of Medicine	5.3	5	30	0	0	50	15	0
NC	Duke University School of Medicine	106.0	3	5	12	0	25	55	0
NC	East Carolina University	8.1	0	50	20	0	25	5	0
NC	University of North Carolina	15.8	15	25	10	5	25	20	0
NC	Wake Forest University School of Medicine	18.0	5	5	10	5	35	40	0
ND	University of North Dakota	2.0	30	60	0	0	5	5	0
NE	Creighton University School of Medicine	0.0	.	.	.	.	.	.	.
NE	University of Nebraska College of Medicine	15.7	5	15	20	5	25	15	15
NJ	University of Medicine and Dentistry of New Jersey	3.8	10	10	20	0	10	20	30
NM	University of New Mexico	20.5	5	10	15	5	60	5	0
NY	Albany Medical College	0.0	.	.	.	.	.	.	.
NY	Albert Einstein College of Medicine	28.0	10	10	10	0	50	20	0
NY	Cornell University	21.5	5	10	20	5	30	30	0
NY	Mount Sinai School of Medicine	57.5	15	5	20	5	30	25	0
NY	New York Medical College	15.0	15	10	15	5	25	10	20
NY	New York University School of Medicine	29.0	8	7	20	5	50	10	0
NY	State University of New York Stony Brook	11.0	10	10	20	10	40	10	0
NY	State University of New York Syracuse	16.0	2	8	15	5	70	0	0
NY	State University of New York Buffalo	5.5	5	25	20	5	20	25	0
NY	State University of New York Brooklyn	3.0	50	40	0	10	0	0	0
NY	University of Rochester	37.0	10	10	10	0	50	20	0

MS=Medical Student; **R**=Residency; **F**=Fellowship; **CME**=Continuing Medical Education; **CP**=Clinical Practice; **RES**=Research/Scholarship; **O**=Other
* Full time equivalents (FTEs) working in academic geriatrics program

Table 5.11 Allocation of Faculty and Staff, Allopathic Schools (n=103), *continued*

State	Medical School	Total FTEs*	% Time Spent on Each Activity MS	R	F	CME	CP	RES	O
OH	Case Western Reserve University School of Medicine	18.0	5	5	10	5	65	10	0
OH	Medical College of Ohio	7.0	15	15	0	5	55	10	0
OH	Northeastern Ohio Universities	2.3	60	10	0	25	0	5	0
OH	Ohio State University	22.0	40	10	0	10	20	2	0
OH	University of Cincinnati College of Medicine	18.5	10	20	15	5	30	20	0
OH	Wright State University	4.0	20	25	0	0	0	55	0
OK	University of Oklahoma	22.0	15	5	15	5	35	25	0
OR	Oregon Health Sciences University	10.6	3	10	20	0	60	7	0
PA	Jefferson Medical College	15.6	15	15	30	0	30	10	0
PA	Pennsylvania State University	11.5	5	10	0	5	70	10	0
PA	Temple University School of Medicine	22.0	5	5	20	5	60	5	0
PA	University of Pennsylvania School of Medicine	61.0	5	20	15	0	30	30	0
PA	University of Pittsburgh School of Medicine	67.4	4	10	9	2	45	20	10
PR	University of Puerto Rico School of Medicine	6.9	7	10	65	0	15	3	0
RI	Brown Medical School	35.0	5	7	3	2	40	33	10
SC	University of South Carolina School of Medicine	14.6	8	7	7	1	70	7	0
SD	University of South Dakota School of Medicine	8.0	10	30	0	20	20	20	0
TN	East Tennessee State University	3.0	10	45	0	20	15	10	0
TN	Meharry Medical College School of Medicine	1.0	5	20	20	15	0	30	10
TN	University of Tennessee, Memphis	3.0	5	10	0	0	75	10	0
TX	Baylor College of Medicine	43.0	5	10	14	1	50	20	0
TX	Texas Tech University Health Sciences Center	5.3	15	5	5	0	0	75	0
TX	The Texas A & M University System	0.0	.	.	.	.	.	.	.
TX	University of Texas Medical Branch at Galveston	33.0	5	5	5	5	40	40	0
TX	University of Texas Medical School at San Antonio	49.0	10	10	10	5	20	35	10
TX	University of Texas Southwestern Medical Center	14.0	13	25	20	2	10	20	10
TX	University of Texas, Houston	6.0	5	20	20	5	40	10	0
VA	Eastern Virginia Medical School	18.1	10	10	10	10	25	25	10
VA	University of Virginia	21.5	5	10	10	5	40	10	20
VA	Virginia Commonwealth University	29.0	10	10	10	0	40	30	0
VT	University of Vermont College of Medicine	6.5	0	0	0	5	0	80	15
WA	University of Washington School of Medicine	46.0	7	7	6	0	20	60	0
WI	Medical College of Wisconsin	20.0	5	10	10	5	60	10	0
WI	University of Wisconsin Medical School	20.5	10	10	10	10	40	20	0
WV	Marshall University	5.0	10	15	0	5	65	5	0
WV	West Virginia University School of Medicine	3.0	5	20	0	1	40	5	29

MS=Medical Student; **R**=Residency; **F**=Fellowship; **CME**=Continuing Medical Education; **CP**=Clinical Practice; **RES**=Research/Scholarship; **O**=Other
* Full time equivalents (FTEs) working in academic geriatrics program

Source: IHPHSR ADGAP Database Project, 2001

Table 5.12 Allocation of Faculty and Staff, Osteopathic Schools (n=18)

State	Medical School	Total FTEs*	% Time Spent on Each Activity						
			MS	R	F	CME	CP	RES	O
AZ	Arizona College of Osteopathic Medicine	1.0	20	30	0	0	50	0	0
CA	Touro University College of Osteopathic Medicine	0.5	70	0	0	0	30	0	0
CA	Western University of Health Science	2.0	50	0	10	0	30	5	5
FL	NOVA Southeastern University	1.1	50	15	0	0	30	5	0
IA	Des Moines University	1.0	45	0	0	0	45	10	0
IL	Chicago College of Osteopathic Medicine	4.0	50	25	0	0	25	0	0
KY	Pikeville College	3.0	90	0	0	10	0	0	0
ME	University of New England	5.0	80	0	0	10	0	10	0
MI	Michigan State University	1.6	5	15	0	10	60	10	0
MO	Kirksville College of Osteopathic Medicine	3.0	25	0	0	0	50	25	0
MO	University of Health Sciences	0.0	.	.	.	.	.	.	.
NJ	University of Medicine and Dentistry of New Jersey	30.0	10	10	15	5	50	10	0
NY	New York College of Osteopathic Medicine	0.0	0	0	0	0	0	0	0
OH	Ohio University College of Osteopathic Medicine	8.5	30	0	0	5	55	10	0
OK	Oklahoma State University	4.3	15	10	0	10	60	5	0
PA	Philadelphia College of Osteopathic Medicine	3.0	5	2.5	10	2.5	75	5	0
TX	University of North Texas Health Sciences Center	14.0	21	8.5	13	0	42.5	15	0
WV	West Virginia School of Osteopathic Medicine	2.5	10	1	0	0.5	50	0.5	38

MS=Medical Student; **R**=Residency; **F**=Fellowship; **CME**=Continuing Medical Education; **CP**=Clinical Practice; **RES**=Research/Scholarship; **O**=Other.
* Full time equivalents (FTEs) working in academic geriatrics program

Source: IHPHSR ADGAP Database Project, 2001

6 Geriatric Medicine and Geriatric Psychiatry Fellowship Programs

Background

Training for geriatric medicine fellows began in the U.S. in the early 1970s. A few pioneers organized training programs in long-term care facilities and hospitals. A 1972 informal AGS survey identified that there were 6 programs (Libow, 1972). The Administration on Aging and the VHA began funding geriatric medicine and psychiatry fellowship positions in the late 1970s, and geriatric fellowship program growth was significant in the early 1980s with an increase from 36 programs in 1980 to 93 in 1986 (IOM, 1987). A 1986-87 survey of geriatric medicine and psychiatry programs found that they were small, and most of the fellows were in their first year of training (IOM, 1987).

On April 20, 1988 the American Boards of Family Practice (ABFP) and Internal Medicine (ABIM) administered the first certification examination in geriatric medicine (ABFP/ABIM) (Cassel, 1987). The examinations in 1988, 1990, 1992 and 1994 also were open to practice pathway candidates. The ABFP and the ABIM initially required two years of fellowship training in an ACGME-approved program for non-practice pathway entry to the examination. In 1995, after an extensive debate within their disciplines, the Boards changed the entry requirements from two years to one year of fellowship training. Fellows with one year of training could sit for the certification exam beginning in 1998 (Hazzard, Currin, & Woolard, 2000).

The American Board of Psychiatry and Neurology (ABPN) began certifying geriatric psychiatrists in 1991, requiring one year of fellowship training for entry to the examination. A practice pathway was also available through 1996. Since 1991 the American Boards of Osteopathic Family Physicians and Osteopathic Internal Medicine (ABOFP/AOBIM) have both offered a geriatric medicine certifying examination for graduates of osteopathic fellowship programs. The exams were initially offered conjointly, similar to the ABFP/ABIM approach, but since 1995 each Board has conducted separate examinations. The AOBIM closed the practice pathway option in 1994, and the ABOFP practice pathway closed in March 2002.

In 1987, geriatric medicine fellows were surveyed to determine their career choice satisfaction (Siu & Beck, 1990). Fellows involved in teaching and having a medical school appointment had high levels of satisfaction. However, reports by the Institute of Medicine (IOM) and Bureau of Health Professions (BHPr) showed that in the early 1990s fellowship program growth was slow and there were a limited number of qualified candidates (IOM, 1993, 1994; BHPr 1995).

This chapter documents the growth and development of geriatric medicine fellowship training in the United States through 2001. Longitudinal data on training programs and the trainees taken from existing databases supplement the results of a national survey of fellowship directors we conducted in the fall of 2001. Our surveys were mailed to the fellowship program directors of all geriatric medicine allopathic programs (n=119), osteopathic programs (n=7) and geriatric psychiatry (n=62) fellowship programs accredited by the ACGME or the AOA.

Current Status of Fellowship Programs

Geriatric medicine has struggled to define itself within the primary care/specialty care world of clinical medicine. The different perspectives of academic geriatricians and geriatricians in clinical practice have fueled this conflict. Furthermore, the ABFP/ABIM's subtle distinction between developing a certificate of added qualifications and adding a new specialty board added to the confusion.

A 1988 survey of fellowship-trained physicians planning to sit for the 1988 CAQ exam assessed their clinical activity. (Reuben, Zwanziger, Bradley et al., 1994). Primary care accounted for the majority of clinical care provided by respondents in family practice (90%) and internal medicine (78%).

In 1993, the National Study of Internal Medicine Manpower conducted a survey of geriatric fellowship program directors in internal medicine (NaSIMM) (Lawlor, Lyttle, & Moldwin, 1997). Their finding that the increase in the number of fellows in the late 1980s and early 1990s had occurred in training years two and beyond was of particular interest. The number of one-year programs had remained steady. In the 1980s most fellows were U.S. medical school graduates, but the NaSIMM found that in 1993 more than half of fellows were international medical school graduates (IMGs). The formal accreditation of geriatrics training had opened the field to IMGs, since visa requirements generally limit IMG training to ACGME approved programs.

An editorial accompanying the NaSIMM survey outlined the arguments for reducing the training requirement for certification in geriatrics from two years to one year (Reuben & Solomon, 1997). The two-year fellowship programs in the mid-1980s required 12 months of clinical training; the remainder of the time was spent in academic training. U.S. medical school graduates of FP and IM residency

Table 6.1 Geriatric Medicine and Geriatric Psychiatry Fellows in ACGME-Accredited Graduate Medical Education Programs (All Years of Training)

Academic Year	Family Practice, Geriatric Medicine		Internal Medicine, Geriatric Medicine		Geriatric Psychiatry	
	Total # of Programs	Total # Fellows	Total # of Programs	Total # Fellows	Total # of Programs	Total # Fellows
1991-1992	17	17	75	181	--	--
1992-1993	17	16	80	199	--	--
1993-1994	16	17	82	208	--	--
1994-1995	15	16	84	204	--	--
1995-1996	14	22	85	201	38	38
1996-1997	14	22	89	220	44	82
1997-1998	17	29	90	276	47	84
1998-1999	20	37	92	298	49	91
1999-2000	21	42	93	326	55	98
2000-2001	23	28	96	293	61	86
2001-2002	22	--	97	--	62	--

Source: AMA and AAMC data from National Surveys of GME programs, JAMA, 1991-2001

Table 6.2 First Year Geriatric Medicine and Geriatric Psychiatry Fellow Positions Available and Filled

Academic Year	Family Practice and Internal Medicine, Geriatric Medicine			Geriatric Psychiatry		
	Total # of First Year Positions Available	Total # of Fellows in Year 1 Positions	% Positions Filled	Total # of First Year Positions Available	Total # of Fellows in Year 1 Positions	% Positions Filled
1995-1996	206	117	56.7	--*	35	
1996-1997	222	144	64.9	82	77	93.9
1997-1998	226	205	90.7	98	81	82.6
1998-1999	262	239	91.2	107	89	83.2
1999-2000	307	269	87.6	113	95	84.1
2000-2001	337	247	73.3	125	79	63.2
2001-2002	373	--	--	132	--	--

*Data not available

Source: AMA and AAMC data from National Surveys of GME programs, JAMA, 1995-2001

programs were not eager to commit to two additional years of training, and many potential applicants were not interested in the academic component of the two-year fellowship. Many program directors felt that the one-year certifying requirement would provide more flexibility, allowing for different tracks for the training of clinicians, clinician-educators, and clinician-researchers.

In the spring of 1999, Hazzard et al. conducted a brief survey of geriatric medicine fellowship directors to gather initial feedback on the reduction of the required training duration from two years to one year (Hazzard, Currin, & Woolard, 2000). The responses were mixed. The number of applicants had notably increased, but the quality of applicants was still a concern. Not surprisingly, program directors noted that the fellows' research productivity had declined. Overall, 61% of respondents stated that the decision to reduce the required length of training was, on balance, positive.

The ACGME's residency review committees (RRCs) for family practice and internal medicine develop the requirements for training in geriatric medicine. They also survey and accredit programs. The ACGME geriatric medicine fellowship requirements were revised in 1997 to account for the reduction in training duration (www.acgme.org). The IM and FP guidelines are nearly identical. In both cases fellowship programs must maintain a close affiliation with an ACGME-accredited IM or FP residency program. The RRCs are currently circulating for comment new draft revisions of the training requirements.

The Psychiatry RRC develops training requirements for geriatric psychiatry fellowships. It implemented the most recent requirements in July 1995 (www.acgme.org). The American Osteopathic Association develops training guidelines and accredits osteopathic geriatric medicine fellowship programs (www.aoa.org).

Fellowship Program Growth

The number of fellowship programs and the number of fellows has slowly increased over the past decade. Table 6.1 displays program growth and total number of fellows in all years of training in ACGME-approved geriatric medicine (FP and IM) programs and

Table 6.3 Growth of Geriatric Medicine and Geriatric Psychiatry Fellowship Programs

Specialty	1996-1997		1997-1998		1998-1999		1999-2000		4-year growth in programs	4-year growth in fellows	Program average growth rate per year	Fellows average growth rate per year
	# of programs	# of fellows	# of programs	# of fellows	# of programs	# of fellows	# of programs	# of fellows				
Family Practice, Geriatric Medicine	14	22	17	29	20	37	21	42	50.0%	90.9%	14.7%	21.7%
Internal Medicine, Geriatric Medicine	89	220	90	276	92	298	93	326	4.5%	48.2%	1.5%	14.3%
Geriatric Psychiatry	44	82	47	84	49	91	55	98	25.0%	19.5%	7.7%	5.9%
Total	147	324	154	389	161	426	169	466	15.0%	43.8%	4.7%	13.0%

Source: Data from the Graduate Medical Education Database, Copyright 1999, AMA, Chicago, IL. (Used with permission)

geriatric psychiatry programs. During 2000-2001 the IM RRC recognized 96 geriatric medicine programs, and the FP RRC recognized 23. A total of 321 fellows were training in these programs. Table 6.2 displays first-year positions available and filled for these programs since the 1995-96 academic year. Table 6.3 displays growth rates in these programs between 1996 and 2000. There were 7 osteopathic fellowship programs, 5 in FP and 2 in IM. During AY 2000-01, there were 7 fellows training in these programs. (See Appendix F for list of fellowship programs.)

The AMA and AAMC report that during the past five years approximately 40% of allopathic geriatric medicine trainees were U.S. medical school graduates (USMSGs). This percent of positions filled with USMSGs compares with recent rates for cardiology (56%), infectious disease (56%), ophthalmology (84%), and general surgery (82%) (JAMA, 2001). As well as USMSGs, a small number of Canadian graduates and U.S. osteopathic medical school graduates are training in these programs. In AY 1991-1992, 134 (68%) allopathic geriatric medicine fellows were U.S. or Canadian medical school graduates. This number decreased to 91 (40%) in 1995 (JAMA, 1995), contributing to the decision to establish one-year fellowships. The number of allopathic fellows who are U.S. or Canadian medical school graduates rose in AY 2000-2001 to 134; this remains only 41% of geriatric fellows (JAMA, 2001).

Financial Support for Geriatric Fellows and Junior Faculty

Sources of support for geriatric medicine trainees and junior faculty are diverse. Many fellowships are incorporated into medical school academic programs that have complex funding sources (see Chapter 5). Table 6.4 lists the sources of support for trainee salaries. The sources of support are generally different for first-year fellows as compared to those available for fellows in the second year or beyond.

First-year Fellowship Funding

Support for accredited graduate medical education (GME) training is provided by Medicare for all clinical disciplines. The Medicare program is the primary source of funding for GME, providing 74% of funding (nearly seven billion dollars) in 1998 (Council on Graduate Medical Education, 15th Report, 2000). This funding includes direct and indirect medical education payments made directly to hospitals sponsoring GME programs. Direct medical education payments (DME) compensate teaching hospitals for overhead costs related to GME, as well as salaries and fringe benefits for residents, fellows, teaching physicians and GME administrative staff.

The Indirect Medical Education Adjustment (IME) compensates teaching hospitals for the higher operating costs associated with residency programs such as more complicated cases, additional tests ordered by residents as part of the learning process, and reduced patient care productivity by staff members. The calculation of both these DME and IME payments involve complicated formulas, particularly for the IME portion. The payment amounts are calculated per trainee, vary historically and regionally, and are related to each hospital's census of older adults (higher hospital use by older adults yields higher payments). The average per-resident amount (APRA) in federal fiscal year (FFY) 2000 was $73,000, with a range of $60,000 to $120,000 (National Center for Health Workforce Information and Analysis, 2000). Recent adjustments to lower these payments have been implemented by Medicare as a cost savings measure, and further cuts are anticipated.

In addition, the implementation of "caps" on hospital reimbursable training positions has created competition among program directors for resident slots. This can result in more recently-established programs losing out to more established training activities or disciplines that have a significant clinical financial impact on the hospital.

The VHA is a critical source of financial support for geriatric medicine and psychiatry fellows and trainees from many other disciplines. From 1980-1991, the Office of Academic Affiliations funded 275 geriatric medicine fellowships. In AY 2000-2001 60% (197/326) of first-year geriatric medicine and geriatric psychiatry fellow slots were funded by the VHA, with an average cost per fellow of $43,500. This compares to 123 slots funded by the VHA in AY 1995-1996 at an average cost of $39,108 per fellow. (Veterans Health Administration, 2001). Unlike Medicare GME dollars, VHA funding is clearly earmarked for trainees' salaries and benefits. The change in the geriatric medicine fellowship duration from 24 to 12 months in the late 90's did not result in a net loss of VHA fellowship stipend support; instead, support for second-year fellowships was shifted to the accredited first year.

Table 6.4 Sources of Financial Support for Clinical and Academic Training for Geriatric Medicine and Geriatric Psychiatry Fellows and Junior Faculty

Geriatric Medicine Training Year	Medicare	VHA	NIH	BHPr	Foundations
Clinical Year 1	GME Funding	VHA Geriatric Fellowship		Training for Physicians, Dentists, and Behavioral Mental Health Professionals Program	
Year 2	GME[1] Funding	VHA Special Fellowship		Training for Physicians, Dentists, and Behavioral Mental Health Professionals Program	Hartford/AFAR Academic Fellowships RWJ Clinical Scholars Hartford Centers
Years 3 to 6		VHA Special Fellowship RCD Awards HSR&D Awards RR&D Awards ARCD Awards GRECC	K08 Award K23 Award T 32 NRSA Award F32 NRSA Award Pepper Centers Nathan Shock Centers Alzheimer's Centers	Geriatric Academic Career Award	Hartford/AFAR Fellowships RWJ Clinical Scholars Pfizer/AGS Health Outcomes AFAR Research Grants AFAR/Pfizer Immunology Merck/AFAR Clinical Pharmacology Brookdale Fellowship Beeson Faculty Scholars Hartford Centers Reynolds Centers
Years 7 and beyond		CDEA Awards GRECC	K24 Award K02 Award Pepper Centers Nathan Shock Centers Alzheimer's Centers		Beeson Faculty Scholars Hartford Centers

Source: IHPHSR ADGAP Database Project, 2002

Abbreviations and Key

AFAR American Federation for Aging Research
ARCD Advanced Research Career Development
CDEA Career Development Enhancement Award
GME[1] Graduate Medical Education (Use for Year 2 is controversial, see text)
HSR&D Health Services Research and Development
K08 Mentored Clinical Scientist Development Award
K24 Mid-career Investigator Award in Patient-Oriented Research
NIH National Institutes of Health
RCD Research Career Development
RWJ Robert Wood Johnson Foundation
VHA Veterans Health Administration
AGS American Geriatrics Society
BHPr Bureau of Health Professions
F32 Postdoctoral Individual Award
GRECC Geriatric Research Education and Clinical Center
K02 Independent Scientist Award
K23 Mentored Patient-Oriented Research Career Development Award
NRSA National Research Service Award
RR&D Rehabilitation Research and Development
T32 Institutional Research Training Grant

Additional support for fellowship training as reported by the program directors has also included:
Clinical Revenue
Medical School Revenue
Other State or Federal Revenue
Other Foundation or Private Support
The John Hartford Foundation of New York City is supporting advanced training in geriatrics for medical sub-specialists through the Association of Subspecialty Professors (T. Franklin Williams awards program), and training for surgical specialists through the American Geriatrics Society (Dennis Jahnigen awards program).

The Bureau of Health Professions (BHPr) initiated funding for geriatric medicine and dentistry faculty training programs in 1988. This program provides two years of stipend for fellows and one year salary support for faculty retraining. Initially this program accepted trainees who had completed family practice, internal medicine, and general dentistry residency programs. Geriatric psychiatry was added to the training program in 1992. Since its inception, the Training for Physicians, Dentists, and Behavioral/Mental Health Professionals Program has funded 55 programs and trained 324 fellows and faculty. Eighty five more fellows and faculty are projected to be trained from the most recent funding cycle (Personal communication, Kathleen Bond, BHPr, May 24, 2002).

Other sources of support for first-year fellows include clinical revenue, medical school revenue, other state or federal revenue, foundation or private support.

Funding for Multiple-Year Fellows and Junior Faculty

The reduction in fellow training from two years to one year has left Medicare GME funding for second-year trainees uncertain. Under current regulations, GME dollars can only be utilized for ACGME-accredited training. The AGS and ADGAP have advocated for legislation to establish an exception to this rule for geriatric medicine. Twenty-three geriatric medicine fellowship programs reported, in our recent survey, utilizing Medicare GME dollars to partially support second-year fellows during 2000-2001.

Similar to GME dollars, VHA funding is usually restricted to the ACGME-accredited portion of training. This directly affected geriatric medicine in the late 1990s when funding for year-two trainees was no longer allowed. In an effort to replace some of the lost second-year fellow funding, the VHA is utilizing a "special fellowships program" mechanism. The VA Special Fellowship Program in Advanced Geriatrics began in FY 2000 with fellows starting in AY 2001. Seven existing GRECC sites were chosen to implement these two-year academic training fellowships with one of the sites being a hub site responsible for coordinating the curriculum development and recruitment strategy. Two fellows per site (14 positions or one fellow/year of the two-year program) will be funded. The special fellows will have already completed one year of an ACGME fellowship program. Fellows in this two-year advanced geriatric fellowship program will spend at least 75 percent time in research, education, and career development (U.S. Department of Veterans Affairs, 2001). (See www.grecc-gla.org/sfpag for further information.)

Additional sources of funding for fellows and junior faculty, after completion of clinical fellowship training, are generally targeted to research training. An exception is the *BHPr Geriatric Academic Career Award (GACA)*, an award that supports the career development of clinician educators in geriatrics. The BHPr established this program in 1998 and it supports young faculty members, with $50,000 of support over a five-year period. One million dollars is available in FY 2002 for this program. In addition, fellows training at the 21 VHA GRECC sites and the 10 Reynolds Education Centers have access to funds to support their development as clinician-educators.

The NIA supports training for young investigators through K-series awards and National Research Service Award (NRSA) Institutional and Individual Fellowship awards (http://grants.nih.gov/training/extramural.htm). The K-awards that typically support clinician-scientist training in patient-oriented research include K23 (post clinical fellowship without previous research funding) and K24 (post independent funding) awards. The comparable awards for clinicians pursuing laboratory research are the K08 and K02. The K23 award, established in 1998, is a particularly important new NIH clinical research training award that was developed for clinicians immediately following clinical fellowship training. The award is focused on providing both didactic training and mentored research experiences in patient-oriented research for up to five years. The T32 award is a NRSA Institutional grant that provides for local funding of up to 3 years of post-doctoral research training. The F32 award is a NRSA individual postdoctoral fellowship that can fund up to 3 years of mentored research training for young investigators. The number of awards funded, utilizing these mechanisms, by the NIA during federal FY 1991-2001 are listed in Table 6.5. Throughout the NIH, during FY 2001, the funding success rates for K23, K24, and K08 awards were above 40%, and for K02 awards the application success rate was over 50%.

The VHA sponsors career development opportunities for young investigators that are comparable to the NIH mechanisms. The Medical Research Career Development (RCD) program is for recently certified clinicians (within 5 years of completion of clinical training) and provides 3 years of salary and research support. The VHA also sponsors similar Health Services Research and Development (HSR&D) and the Rehabilitation Research and Development (RR&D) career development programs. More experienced clinician-researchers, but generally still at the assistant professor level, are eligible for Advanced Research Career Development (ARCD) awards. Finally, established VA researchers can obtain additional training through the Career Development Enhancement Award (CDEA).

The American Federation for Aging Research (AFAR) provides training and research support to young geriatric medicine faculty throughout the continuum of faculty development. The *John A. Hartford/AFAR Academic Fellowship Program in Geriatric Medicine and Geriatric Psychiatry* began in 1997. This program supports fellows for up to three years after completion of primary residency training. The fellows receive $50,000 of support over one to two years and must spend 75% of their time completing a mentored, scholarly project. Ten awards are available for July 2002.

The *Merck/AFAR Junior Investigator Award in Geriatric Clinical Pharmacology* began in 1988. This award is designated for physicians up to four years after they complete fellowship training. The junior

Table 6.5 National Institute on Aging Selected Funding for Careers and Training FY 1991 to FY 2001 (thousands of dollars)

CAREERS	FY1991	FY1992	FY1993	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001
K02	0	0	0	0	0	268	463	809	1,016	970	826
K08	2,230	2,346	2,056	2,520	2,619	2,510	3,193	3,682	2,927	2,748	3,531
K23	0	0	0	0	0	0	0	133	1,209	2,140	2,732
K24	0	0	0	0	0	0	0	0	443	540	783
TRAINING											
Individual											
F32	853	609	732	809	967	1,469	1,157	1,222	1,270	1,512	1,870
Institutional											
T32	9,873	10,611	10,405	10,918	11,127	10,705	12,099	12,552	14,502	15,145	16,735

Source: National Institute on Aging, 2002

investigators receive $60,000 of support per year for two years of mentored training and research. Two awards are available for July 2002.

The AFAR/Pfizer Research Grants in Immunology and Aging program began in 1999. This program funds MDs or PhDs that are in their first- or second-year of a faculty appointment. The grants provide $50,000 of funding over one or two years for up to 4 young faculty each year.

The Pfizer/American Geriatrics Society Foundation for Health in Aging Junior Faculty Scholars Program for Research on Health Outcomes in Geriatrics began in 1998. This award is designated for physicians within their first two years of a faculty appointment. Each year two awardees receive $65,000 per year of support for two years for mentored research.

The Paul Beeson Physician Faculty Scholars in Aging Research Program began in 1995. (See Appendix G for list of awardees to date.) The Hartford Foundation, The Commonwealth Fund, Donor Friends of the Alliance for Aging Research, and the Starr Foundation fund this important source of support for young faculty with exceptional promise for an academic geriatric medicine career. Applicants must be within ten years of medical school graduation and have a full-time faculty appointment. The program funds approximately ten awardees per year for three years, with $450,000 of salary support and mentored research.

Additional funding sources for advanced training of fellows and junior faculty are limited to selected academic centers. The Brookdale Foundation invites selected institutions (57 medical schools are eligible) to submit candidates for 2-year research salary support. Candidates are generally two to five years beyond the completion of their clinical training. Current salary caps for physicians are between $60,000 and $70,000 and provide for at least 80% of the awardees salary. An active research mentor at the fellow's institution is required.

The Robert Wood Johnson Foundation's Clinical Scholars Program is a long-standing, 2-year fellowship to train physicians in patient oriented research. This program was established in 1973, is currently active at 7 medical schools, and has been the source of research training for a number of academic geriatricians. A review of the listing of Robert Wood Johnson clinical scholars found 65 with a focus in geriatrics (Robert W. Johnson, 2001).

Fellows extending their training at the NIA Pepper Centers, the Alzheimer's Disease Centers and the active Hartford Foundation Centers of Excellence have variable access to research training and project support. The NIA also supports four national Nathan Shock Centers of Excellence in the Basic Biology of Aging. Research at these centers is expected to yield breakthroughs in understanding the course of normal aging and the diseases and conditions that affect older people, such as frailty and cancer. Other sources of support for fellows in their second year or beyond of training include clinical revenue, medical school revenue, other state or federal revenue, other foundation or private support.

Surveys of Geriatric Medicine and Geriatric Psychiatry Fellowship Program Directors

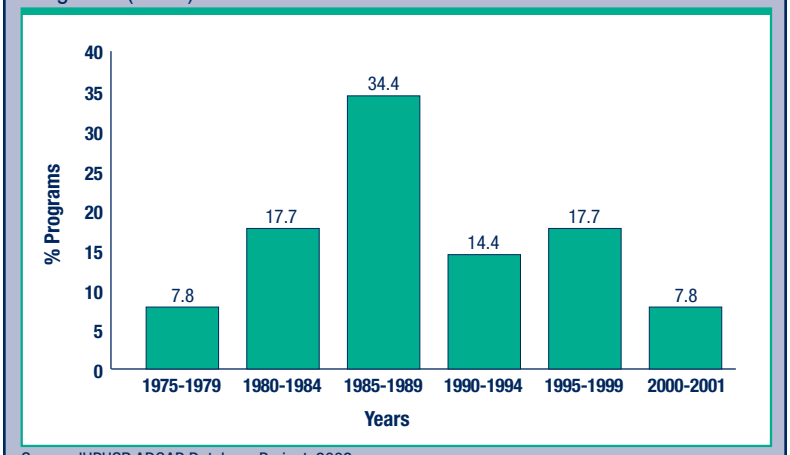
We surveyed geriatric medicine and geriatric psychiatry fellowship programs in the fall of 2001 to determine the current status of the fellowship programs.

Survey of Geriatric Medicine Fellowship Program Directors

Survey response rate was 76% with 96 program directors (PD) responding (91 out of 119 allopathic programs and 5 out of 7 osteopathic programs). About one-third of the fellowship program directors were also the academic leader in geriatrics at their medical school. Among the allopathic programs, 74 out of 97 internal medicine and 17 out of 22 family medicine programs responded. Among the osteopathic responders, 2 out of 2 internal medicine and 3 out of 5 family medicine programs responded. We found no difference between responders and nonresponders with regards to census track region ($p=0.255$), number of first year positions available or filled ($p>0.570$), or the year the programs were accredited ($p=0.103$). Overall, 46% of the PDs had been in their current position for 4 years or less. The median time for PDs to be in their current position was 5 years (range, less than 1 to 20 years). The median time since completing formal clinical/academic training was 15 years (range, less than 1 to 35 years). Among PDs, 59% reported completing formal geriatric medicine fellowship training and earning a certificate of added qualifications (CAQ), 37% had earned a CAQ through the practice pathway, and the remaining 4% had not completed fellowship training or earned a CAQ.

The PDs reported that they spend a median of 8 hours per week in administrative tasks associated with leading their fellowship programs (range, 1 hour to 50 hours). Seventy-seven percent of the PDs received institutional support for a portion of their salary. The median support level was 65 percent and 29% of PDs received at least three-quarters of their salary support directly from their institutions.

Figure 6.1 Establishment Year of Geriatric Medicine Fellowship Programs (n=90)



Source: IHPHSR ADGAP Database Project, 2002

Geriatric Medicine Fellowship Program Structure, Curriculum and Resources

Fellowship programs were established between 1975 and 2001 with over 50% being established by 1989 (Figure 6.1). Accreditation of these programs occurred between 1988 and 2000, 50% were accredited by 1990. Forty-six percent of programs offered only one-year fellowship training experiences. The remaining 54 percent of programs offered training beyond the accredited 12 months. Among the 51 programs that offered training beyond 12 months, 22 programs offered a third year and 5 programs offered a fourth year. For the majority of reporting programs, this additional training was reported to be optional, but six programs required fellows to spend more than one-year in training.

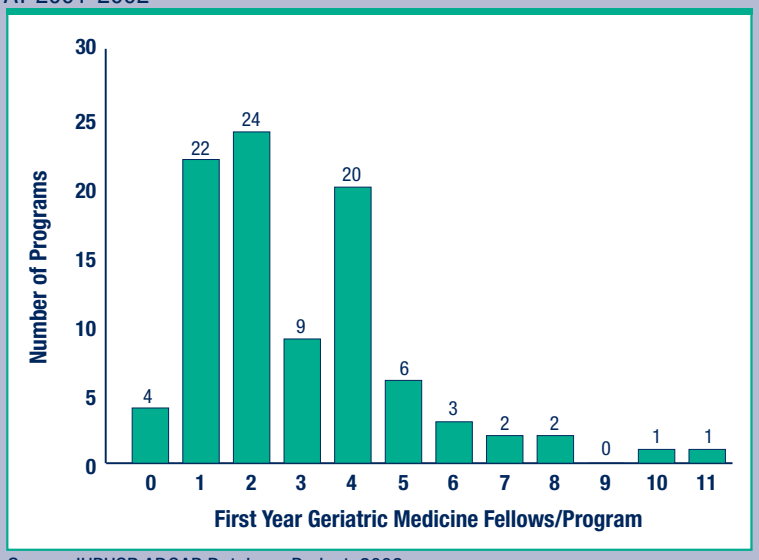
The fellowship programs had developed interdisciplinary faculty and staff. One-half of the PDs reported that they were actively recruiting for additional geriatric medicine faculty for their programs. Within the accredited 12 months of clinical training, many programs included didactic and/or experiential training in research, teaching, and/or administrative skills. Programs reported lecture hours in research (n=70; median 12.0 hours), teaching skills (n=65; median 10 hours), administrative skills (n=60; median 10 hours) and experiential training in half days for research (n= 38; median 27.5 half days) teaching skills (n=72; median 12 half days) and administrative skills (n=47; median 10 half days). The curriculum focus of the 51 training programs extending beyond one year varied with a majority of the programs offering training experiences to prepare fellows to become clinical educators (37 programs) or clinical/health services researchers (46 programs). Fewer programs offered basic research (28 programs) or administrative/physician executive training (22 programs). The PDs reported that fellows extending their training beyond the required 12-months spent a median of 25% of their effort providing clinical care (range, 10% to 75%).

Table 6.6 Distribution of United States Medical School Graduates (USMSGs) in First Year Positions At Geriatric Medicine Fellowship Programs for AY 2001-2002

Number of USMSG, First-Year Fellows/ Program	Number of Programs	Total Number of USMSG, First-Year Fellows
0	33	--
1	25	25
2	15	30
3	8	24
4	6	24
5	1	5
6	1	6
7	--	--
8	1	8
9	1	9
Total	**91**	**131**

Source: IHPHSR ADGAP Database Project, 2001

Figure 6.2 Distribution of First Year Geriatric Medicine Fellows for AY 2001-2002



Source: IHPHSR ADGAP Database Project, 2002

Trends in Application Rates for Geriatric Medicine Fellowship Programs

Program Directors reported stable number of application rates between AYs 1999 and 2002. In AY 2001-2002 the median number of applications per program for first-year positions was 32.5 (range, 2 to 250 applications) and programs conducted a median of 6 interviews for first-year positions (range, 1 to 45 interviews). The median number of applications per available first-year position was 10 (range, 0.6 to 77) and the median number of interviews per position was 2.0 (range, 0.6 to 9). Geriatric fellowship programs do not participate in the resident/fellow matching system. The majority of PDs begin to make offers to accept fellows into their programs within 12 months of the matriculation date, and 69% of PDs were still recruiting fellows within six-months of their program's start date.

In AY 2001-2002, data from the AMA reports a fill rate for first-year geriatric medicine fellowship positions of 73% (247 first-year fellows/337 positions). The PDs were asked to report on their program's ability to meet committed clinical responsibilities when fellowship positions were not all filled. Only 7 programs reported that fulfilling clinical demands was difficult without a full complement of fellows.

First-Year Geriatric Medicine Fellows

The size of geriatric medicine fellowship programs is varied. In AY 2001-2002, the PDs in our study reported a median of 3 available first-year positions (range, 1 to 11 positions) and a median number of 2 filled first-year positions (range, 0 to 11 fellows). The distribution of first-year geriatric medicine fellows is shown in Figure 6.2 for AY 2001-2002. More than one-half of the programs reported having 2 or less first-year fellows and 31% of programs had 3 to 4 first-year fellows.

The distribution of USMSG-first-year geriatric medicine fellows among the reporting programs in 2001-2002 in our survey is shown in Table 6.6. Thirty-three (36%) programs reported having no USMSGs among their first-year fellows and another 25 (28%) reported having only one.

Table 6.7 Program Directors Reported Sources of Funding for Fellows' Stipends for the First 12 Months of Geriatric Medicine Fellowship Training (n=95)

Funding Source	Percent of Programs Reporting
Hospital (Part A, Graduate Medical Education Funding or other sources)	78.9
Veterans Health Administration	48.4
Other institutional support (medical school, department money, clinical revenue)	46.3
Other external support (Foundations, gifts, etc.)	27.4
Bureau of Health Professions	10.5
Other - NIH funding	2.1
Other - Not specified	1.0

Source: IHPHSR ADGAP Database Project, 2001

Table 6.8 Program Directors Reported Sources of Funding for Fellows' Stipends for Training Beyond Year One of Geriatric Medicine Fellowship Training (n=50)

Funding Source	Percent of Programs Reporting
Foundations, AFAR/AGS awards	58.0
Other institutional support (medical school, department money, clinical revenue)	56.0
Hospital (Part A, Graduate Medical Education Funding or other sources)	46.0
Veterans Health Administration	40.0
National Institute on Aging Training Grants	16.0
Bureau of Health Professions	16.0

Source: IHPHSR ADGAP Database Project, 2001

Sources of Support for Geriatric Medicine Fellows During First Year of Required Training

Sources of reported support for geriatric medicine trainees are diverse as described above. Table 6.7 describes the sources of support for first-year fellows as reported by the PDs. More than three-fourths of the PDs reported utilizing Medicare Part A or other hospital funding and nearly one half of the programs received VHA funding for their first-year fellows. These findings are consistent with VHA data. The VHA reports supporting 170 fellows at 55 fellowship programs in AY 2000-2001.

Geriatric Medicine Fellows Beyond Year One

The fifty-one (54%) responding programs with second-year fellowship training opportunities reported a median of one to 2 available second-year positions (range, 1 to 7 available positions) for AY 2001-2002. The median number of filled second-year positions (fellows) in AY 2001-2002 was 1 (range, 0 to 7 fellows) (Figure 6.3). The total number of reported second year fellows in training during AY 1999-2000 was 69; during AY 2000-2001 this was 68; and during AY 2001-2002 this was 61.

The 22 responding programs with third-year fellowship training opportunities reported a median of one to 1.5 available third year positions (range, 1 to 4) for AY 2001-2002. The total number of reported third-year fellows in training was 7 during AY 1999-2000, 10 during AY 2000-2001, and 10 during AY 2001-2002. Five programs reported offering training for a fourth year. During AY 2001-2002, one fourth-year fellow was in training.

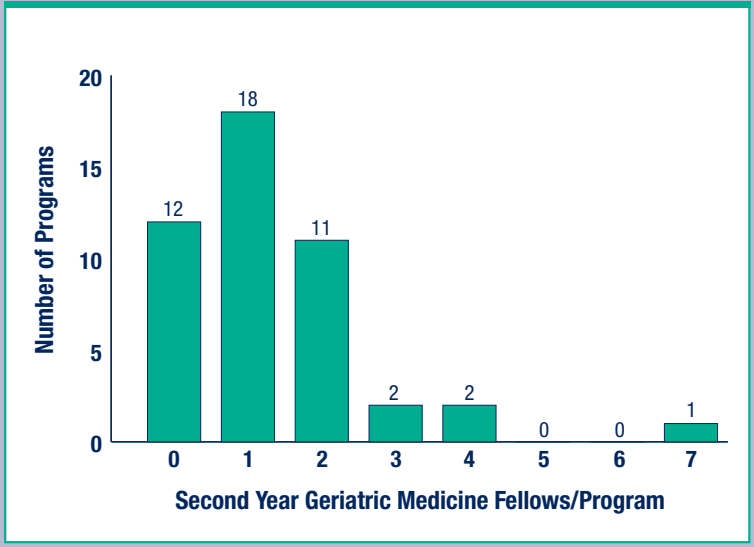
The data on fellows in training from our survey was compared to existing summary data from the AMA. For AY 2000-2001, allopathic programs reported 74 fellows in training beyond year one. This is consistent with the 72 second year and beyond fellows reported for the same year in our survey.

Program directors with training opportunities beyond one year were asked to report if they had been unable to retain international medical graduates (IMG) for further training because of J1 visa limitations. (J1 visas generally apply only to ACGME-approved training, i.e., only year one for geriatric medicine fellowship programs.) Twenty one PDs reported that they had not been able to retain at least one IMG fellow due to J1 visa limitations. Since 1998, the PDs reported that this problem had affected a total of 65 IMGs (median 2 fellows per program, range, 1 to 10 fellows).

Sources of Support for Geriatric Medicine Fellows Beyond One Year of Training

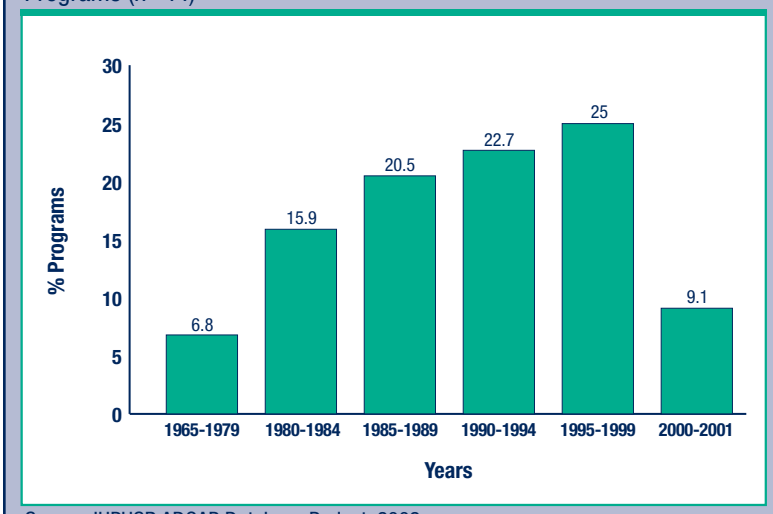
The PDs reported utilizing diverse resources to support fellows-in-training beyond year one (Table 6.8). The VHA was reported to be a source of funds for fellows-in-training beyond year one at 20 programs. Hospital support through Part A Medicare graduate medical education dollars was reported to be a source of funds for fellows-in-training beyond year one at 23 programs. The use of Part A dollars to support fellows beyond the accredited ACGME one-year program remains controversial.

Figure 6.3 Distribution of Second Year Geriatric Medicine Fellows for AY 2001-2002



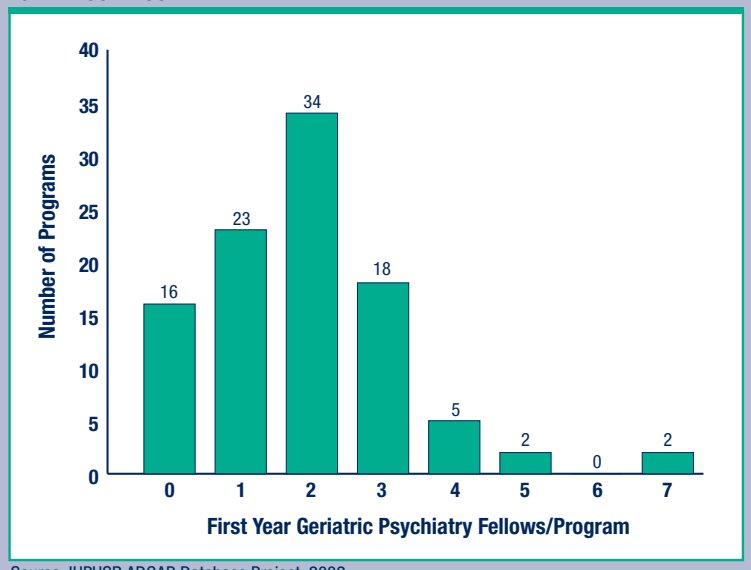
Source: IHPHSR ADGAP Database Project, 2002

Figure 6.4 Establishment Year of Geriatric Psychiatry Fellowship Programs (n=44)



Source: IHPHSR ADGAP Database Project, 2002

Figure 6.5 Distribution of First Year Geriatric Psychiatry Fellows for AY 2001-2002



Source: IHPHSR ADGAP Database Project, 2002

Survey of Geriatric Psychiatry Fellowship Program Directors

Survey response rate was 76% with 47 program directors (PD) responding (47 out of 62). We found no difference between responders and nonresponders with regards to number of first year positions available or filled ($p>0.467$), or the year the programs were accredited ($p=0.497$). Forty-one percent of the geriatric psychiatry PDs had been in their current position for 4 years or less. The median time for PDs to be in their current position was 6 years (range, less than 1 to 21 years). The median time since completing formal clinical/academic training was 13 years (range, 4 to 30 years). All the current PDs had a CAQ. Forty seven percent reported completing formal geriatric psychiatry fellowship training and earning their certificate and 53% had earned a CAQ through the practice pathway.

The PDs reported that they spend a median of 5 hours per week in administrative tasks associated with leading their fellowship programs (range, 2 to 20 hours). Eighty one percent of the PDs received institutional support for a portion of their salary. The median support level was 65%. Forty nine percent of PDs received at least three-quarters of their salary support directly from their colleges.

Geriatric Psychiatry Program Structure, Curriculum and Resources

Geriatric Psychiatry (GP) Fellowship programs were established between 1965 and 2001 with 50% being established by 1991 (Figure 6.4). Accreditation of these programs occurred between 1995 and 2001 with 50% being accredited by 1995. Seventy nine percent of programs reported offering only one-year fellowship training experiences. The remaining 21 percent of programs offered training beyond the accredited 12 months. Among the 10 programs offering training beyond 12 months, 2 programs offered a third year and 1 program offered a fourth year. For all the reporting programs, this additional training was optional.

The fellowship programs had developed interdisciplinary faculty and staff. Seventeen percent of the PDs reported that they were actively recruiting for additional geriatric psychiatry faculty for their programs. Within the accredited 12 months of clinical training, many programs included didactic and/or experiential training in research, teaching, and/or administrative skills. Programs reported lecture hours in research (n=30; median 13.5 hours), teaching skills (n=15; median 10 hours), administrative skills (n=25; median 4 hours), and experiential training in half days for research (n= 21; median 40 half days) teaching skills (n=34; median 10 half days), and administrative skills (n=17; median 10 half days). Over 90% of the programs required GP fellows to spend time training in nursing homes and inpatient GP consultation units, while less than 20% required training in hospice care. Slightly over half of the programs required fellows to complete home visits.

The curriculum focus of the training programs extending beyond one year varied with a majority of the programs offering training experiences to prepare fellows to become clinical educators or basic

Table 6.9 Distribution of United States Medical School Graduates (USMSGs) in First Year Positions At Geriatric Psychiatry Fellowship Programs for AY 2001-2002 (n=37)

Number of USMSG, First-Year Fellows/Program	Number of Programs	Total Number of USMSG, First-Year Fellows
0	17	0
1	12	12
2	6	12
3	1	3
4	1	4
Total	**37**	**31**

Source: IHPHSR ADGAP Database Project, 2001

Table 6.10 Program Directors Reported Sources of Funding for Fellows' Stipends for the First 12 Months of Geriatric Psychiatry Fellowship Training (n=47)

Funding Source	Percent of Programs Reporting
Hospital (Part A, Graduate Medical Education Funding or other sources)	61.7
Veterans Health Administration	48.9
Other institutional support (medical school, department money, clinical revenue)	40.4
Other external support (Foundations, gifts, etc.)	19.2
Bureau of Health Professions	4.3
State Agencies	6.4

Source: IHPHSR ADGAP Database Project, 2001

Table 6.11 Program Directors Reported Sources of Funding for Fellows' Stipends for Training Beyond Year One of Geriatric Psychiatry Fellowship Training (n=8)

Funding Source	Percent of Programs Reporting
Veterans Health Administration	62.5
Other institutional support (medical school, department money, clinical revenue)	50.0
National Institute on Mental Health	37.5
Hospital (Part A, Graduate Medical Education Funding or other sources)	25.0
Foundations, AFAR/AGS awards	25.0
Bureau of Health Professions	12.5
State Agencies	12.5

Source: IHPHSR ADGAP Database Project, 2001

researchers, with fewer programs offering clinical research or administrative/physician executive training. The PDs reported that fellows extending their training beyond the required 12 months spent a median of 20% of their effort providing clinical care (range, 10% to 80%).

Trends in Application Rates for Geriatric Psychiatry Fellowship Programs

Program Directors reported a steady rate of applications during the academic years 1999 to 2002. In AY 2001-2002, the median number of applications for each first-year position was 8 (range, 0 to 30 applications). Programs conducted a median of 4 interviews for each of these first-year positions (range, 0 to 15 interviews). Geriatric psychiatry fellowship programs do not participate in the resident/fellow matching system. The majority of PDs reported they begin to make offers to accept fellows into their programs within 12 months of the matriculation date, and 37% of PDs were still offering positions within six-months of the start date.

In AY 2000-2001, data from the AMA reports a fill rate for first-year geriatric psychiatry fellowship positions of 63% (79 first-year fellows/125 positions). The PDs were asked to report on their program's ability to meet committed clinical responsibilities when fellowship positions were not all filled. Only 6 programs reported that fulfilling clinical demands was somewhat difficult without a full complement of fellows.

First-Year Geriatric Psychiatry Fellows

The size of geriatric psychiatry fellowship programs is varied. In AY 2001-2002, the PDs in our study reported a median of 2 available first-year positions (range, 0 to 7 positions). The median number of filled first-year positions in AY 2001-2002 was 2 (range, 0 to 7 fellows). The distribution of first-year geriatric psychiatry fellows for AY 2001-2002 is shown in Figure 6.5. Seventy percent of the programs reported having 2 or less first-year fellows, and 15% had no first year fellows. Table 6.9 shows how the number of USMSGs in their first year of training varied between programs. Forty-six percent of the programs reported they had no USMSGs as first-year fellows.

Sources of Support for Geriatric Psychiatry Fellows During First Year of Training

Sources of reported support for geriatric psychiatric fellows are diverse. Table 6.10 describes the sources of support for first-year fellows as reported by the PDs. Sixty-two percent of the PDs reported utilizing Medicare Part A or other hospital funding and nearly one-half of the programs received VHA funding for their first-year fellows. These findings are consistent with VHA data. The VHA reports that it supported 27 first-year fellows at 22 fellowship programs for AY 2000-2001.

Geriatric Psychiatry Fellows Continuing Beyond Year One

The ten responding programs with second-year fellowship training opportunities reported for AY 2001-2002 a median of one available second year position (range, 1 to 3 available positions). The total number of reported second-year fellows in training during 1999-2000 was 5, during 2000-2001 it was 3, and during 2001-2002 it was 2. Only one program reported having third- or fourth-year fellows.

The data on fellows in training from our survey was compared to existing summary data from the AMA. For AY 2000-2001, programs reported 7 fellows in training beyond year one. This is consistent with the second-year fellows reported for the same year in our survey.

Program directors with training opportunities beyond one year were asked to report if they had been unable to retain international medical graduates (IMGs) for further training because of J1 visa limitations. Only two PDs reported that they had not been able to retain at least one IMG fellow due to J1 visa limitations. Since 1998, the PDs reported that this problem had affected a total of 4 IMGs. Only 10 programs offer training beyond the one year accredited by ACGME.

Sources of Support for Geriatric Psychiatry Fellows Beyond Year One

The PDs reported utilizing diverse resources to support fellows in training beyond year one (Table 6.11). The VHA was reported to be the major source of funds for fellows in training beyond year one. Other

Table 6.12 Fellowship-Trained Geriatricians, (1990-1998 Cohort) Personal Characteristics

Category	Characteristic	Respondents (n=490)[1]	Percent[2]
Gender	Male	243	50
	Female	247	50
Ethnicity	African American	19	4
	Asian	124	26
	Caucasian	290	61
	Hawaiian/Pacific Islander	4	1
	Hispanic/Latino	36	8
	Native American	2	0.4
Medical School Location	United States	293	60
	Puerto Rico	10	2
	Foreign	186	38
Residency Specialty	Family Medicine	84	17
	Internal Medicine	400	82
CAQ	Geriatric Medicine	384	80
Fellowship Completion Period	1990-1992	120	25
	1993-1995	152	31
	1996-1998	218	44

[1]Frequencies do not total 490 in every case due to missing data.
[2]Percentages do not total 100% in every case due to rounding.

Source: Medina-Walpole, Barker, Katz, et al., 2002

Table 6.13 Fellowship-Trained Geriatricians, (1990-1998 Cohort) Career Decision-Making

Category	Factors Influencing Decisions	Respondents (n=490)[1]	Percent[2]
Three Most Important Factors	Societal Needs	204	42
	Non-Medical Experience	189	39
	Range of Medical Problems	176	36
	Multidisciplinary Specialty	168	34
	Residency Experience	152	31
	Better Career Prospects	90	18
	Medical School Experience	72	15
	Family/Personal Life Style	69	14
	Research Opportunities	65	13
	Academic Opportunities	58	12
	Community/Hospital Aspects	56	11
	Teaching Opportunities	55	11
Timing of Career Decision	Prior to/During Medical School	129	26
	During Residency	256	53
	During Career	98	20
Role Model/Mentor	Influence	233	48

[1]Frequencies do not total 490 in every case due to missing data.
[2]Percentages do not total 100% in every case due to rounding.

Source: Medina-Walpole, Barker, Katz, et al., 2002

institutional support such as department money or clinical revenue was reported by 4 of the 8 programs as a source of support for second-year fellows.

Survey of Graduates of Geriatric Medicine Fellowship Programs

Geriatric Medicine Fellowship Graduate Career Choices

The University of Rochester recently conducted a survey of 1990-1998 allopathic graduates of FP and IM geriatric medicine fellowships (Medina-Walpole, Barker, Katz et al., 2002). The survey goals were to: 1) determine the timing and most important factors in physicians' decisions to pursue careers in geriatric medicine; 2) document core elements and experiences of fellowship training; 3) identify current professional activities and practice settings; and 4) examine the relationship between length of training and overall academic career development opportunities. Responses were received from 490 of the 787 (62%) subjects in the final survey database. Comparison of responders and non-responders revealed that women were more likely to respond than men (67% versus 58%) and that year of fellowship completion was not associated with response rate. The majority (80%) (392 of the 490 respondents) had completed two or more years of fellowship training. A notable increase in the number of one-year fellows occurred in the period 1996-1998, coincident with the change in requirements for CAQ eligibility.

Table 6.12 lists selected respondent characteristics. Median age at fellowship completion was 34 years. The majority trained in internal medicine sponsored fellowships (82%) and received CAQs in geriatric medicine (80%).

Career Decision Making for Geriatric Medicine Fellows

Respondents were asked to select the three most influential factors for their decision to choose a career in geriatric medicine (Table 6.13). The most frequent response was "societal needs for more physicians to care for the elderly" (42%). Over half of the respondents made their career choice during residency training, and 26% made the decision before or during their medical school training. Almost half (48%) stated they had been influenced by a role model or mentor.

Fellowship Training Activities for Geriatric Medicine Fellows

The majority of respondents reported they had received training that mirrors the guidelines of the AGS and ACGME (Burton, 1994; Reuben, 1994; American Medical Association, 2000). Regarding academic fellowship training activities, 77% reported participation as a principal or co-investigator in a research project, the majority (71%) of which were clinical. Basic science research accounted for only 13%. Forty-eight percent of respondents had published research during their fellowships; 34% had presented abstracts; 20% had published research articles; 11% had published non-research articles; and 11% had published book chapters. Forty percent had completed formal coursework in epidemiology, research methods, management/administration or public policy.

Current Practice and Professional Activities for Geriatric Medicine Fellows

Table 6.14 lists the respondents' current professional focuses and clinical activities. Forty-four percent identified "essentially all geriatrics" as their focus, and 73% reported that they work with multidisciplinary teams. When asked to document involvement in clinical activities during a typical week, at least 60% reported that they participate in outpatient geriatric assessment, outpatient primary care, and long-term care.

Table 6.14 Fellowship-Trained Geriatricians, Current Professional Focus and Clinical Activities

Category	Focus/Activities	Respondents (n=490)[1]	Percent[2]
Focus of Current Position	Essentially all Geriatrics	210	44
	Primarily Geriatrics; Secondarily Internal Medicine	93	19
	Primarily Geriatrics; Secondarily Family Medicine	28	6
	Primarily Geriatrics; Secondarily Specialty Practice	27	6
	Primarily Internal Medicine; Secondarily Geriatrics	60	13
	Primarily Family Medicine; Secondarily Geriatrics	37	8
	Primarily Sub-Specialty; Secondarily Geriatrics	22	5
Clinical Activities During Typical Week	Outpatient Assessment	278	60
	Outpatient Primary Care	297	64
	Acute Inpatient Geriatrics	165	35
	Acute Care for Elders Unit	34	7
	Inpatient Consultation	136	29
	Inpatient Assessment Unit	132	28
	Rehabilitation Service	99	21
	Long-Term Care	305	66
	Home Visits	112	24
	Hospice/Palliative Care	133	29
	Day Care	30	6
	Dementia Special Service	75	16
	Liaison Consultation/ Other Specialties	39	8
Multidisciplinary Team	Involvement	347	73

[1]Frequencies do not total 490 in every case due to missing data.
[2]Percentages do not total 100% in every case due to rounding.

Source: Medina-Walpole, Barker, Katz, et al., 2002

Respondents reported having a wide range (0 to 40) of geriatrician colleagues in their current places of work, with 21% reporting zero colleagues and half reporting 1-5 colleagues.

Respondents were also asked to document the percentage of time they devote to patient care, research, teaching and administration. The majority of respondents' time was spent in clinical work, with 66% spending more than 50% of their time in patient care and 39% spending more than 75%. Two-thirds devote 5-25% effort to teaching and administration. Only 11% spend greater than half of their time on research, with a large majority conducting no research.

Current Academic Credentials and Activities for Geriatric Medicine Fellows

Table 6.15 details respondents' current academic credentials and activities. Sixty-nine percent hold academic appointments; the majority were junior faculty at the assistant professor level. Twenty-six percent hold Master's or PhD degrees, with Master of Public Health (MPH) degrees the most common. Seventy-eight percent reported involvement in teaching and 39% reported participation as principal or co-investigator in research; the majority of research is clinical projects.

1996–1998 Sub-Cohort Analysis

Since the majority of one-year fellows completed training between 1996 and 1998, further analysis of this time period was performed to provide a comparison of academic career development of one to that

Table 6.15 Fellowship-Trained Geriatricians (1990-1998 Cohort), Current Academic Credentials and Professional Activities

Category	Credentials/Activities	Respondents (n=490)[1]	Percent[2]
Academic Appointment		**332**	**69**
Rank	Instructor	64	20
	Assistant Professor	237	72
	Associate Professor	25	8
	Professor	1	0.3
Higher Level Degree/Training		**127**	**26**
Degree	Master of Public Health (MPH)	71	14
	Other Master's Degree	48	10
	Doctoral Degree (PhD)	11	2
Teaching Commitment		**378**	**78**
Disciplines	Medical Students	240	64
	Residents	294	78
	Geriatric Fellows	215	57
	Nurses	105	28
	Other Health Professionals	95	25
	Continuing Medical Education	67	18
Principal or Co-Investigator		**187**	**39**
Focus of Research	Clinical	120	65
	Epidemiology	46	25
	Health Services	45	24
	Education	27	15
	Basic Science	16	9
Publications		**214**	**44**
Types	Abstract	142	29
	Research Article	131	27
	Non-research Article	93	19
	Book	5	1
	Book Chapter	96	20
	Book Review	20	4
Professional Society Member			
Organizations	American Geriatrics Society (AGS)	410	84
	American Medical Directors Association (AMDA)	138	28
	Gerontological Society of America (GSA)	122	25

[1]Frequencies do not total 490 in every case due to missing data.
[2]Percentages do not total 100% in every case due to rounding.

Source: Medina-Walpole, Barker, Katz, et al., 2002

of two or more year fellows with the same amount of post-fellowship time (Table 6.16). Seventy-three respondents had completed one year of training; 145 had completed two or more years of training during this time.

While clinical activity during training and in their current careers were similar between the two groups, there were significant differences regarding career development. Respondents with two or more years of fellowship training were more likely to have made their career decisions based on their positive medical school experience and their attraction to the multidisciplinary nature of the field. Regarding overall professional activities, fellows with more than one year of training were more likely to have conducted research, published research articles, and submitted abstracts for presentation at scientific meetings during or since their fellowship training. They were also more likely to currently participate in national professional geriatric societies and be involved in teaching. Their practice focus was "essentially all geriatrics" and they were more likely to work as multidisciplinary team members and have a greater number of geriatrician colleagues. Additionally, fellows with two or more years of training were more likely to have completed formal coursework.

Implications

Graduates of these fellowship programs will be the next generation of geriatrics clinical and academic leaders. One hundred nineteen geriatric medicine programs and 62 geriatric psychiatry programs are now accredited by the ACGME and 7 programs are accredited by the AOA. Only 73% of first-year positions in geriatric medicine and 63% in geriatric psychiatry allopathic fellowship programs were filled for AY 2001-2002. Several factors may account for the relatively small number of applicants to geriatrics fellowship programs and the small number of USMSGs. The percent of fellows who are USMSGs is one measure of trainee pool quality. During 1997-1998 USMSGs filled 75% of residency and fellowship positions (Council of Graduate Medical Education (COGME), 1999). Geriatric medicine and psychiatry training programs fall below this mean. As discussed in Chapter 7, physician interest in primary care is correlated with interest in geriatrics, and the increased interest in primary care that began in the late 90s is now weakening. A significant factor in career choice is medical student debt. Over 80% of U.S. medical school graduates are indebted upon graduation; the average debt is just shy of $100,000 (Cohen, 2001). As presented in Chapter 4, salaries for both academic and non-academic primary care physicians and geriatricians remain relatively low compared to procedure-oriented disciplines.

Variation exists among fellowship programs. Most programs are small, with only 15 medicine programs and 2 psychiatry programs

Table 6.16 Fellowship-Trained Geriatricians, (1996-1998 Cohort) Analysis of Respondents with One Year Versus Two or More Years of Fellowship Training

Category		Total n=218[1] n (%)	One Year Fellowship n=73 n (%)	≥ Two Years Fellowship n=145 n (%)	P Value[2]
Career Decision Making	Prior to / During Medical School	52 (24)	9 (13)	43 (40)	.005
	Influencing Factor: Medical School Experience	29 (13)	5 (7)	24 (17)	.05
	Influencing Factor: Multidisciplinary Specialty	69 (32)	13 (18)	56 (39)	.002
Overall Professional Activities	Principal or Co-Investigator on Fellowship Research Project	153 (72)	25 (36)	128 (90)	.001
	Principal or Co-Investigator on Current Research Project	68 (32)	15 (21)	53 (37)	.02
	Principal Author During or Since Fellowship	108 (50)	25 (34)	83 (57)	.001
	Authored Research Articles	55 (25)	9 (13)	46 (32)	.002
	Authored Abstracts	75 (35)	16 (22)	59 (41)	.007
	Teaching Involvement in Current Position	159 (74)	47 (66)	112 (78)	.06
	Completed Coursework During Fellowship	75 (34)	10 (13)	65 (45)	.001
	Current Professional Focus: Essentially All Geriatrics	79 (37)	15 (21)	64 (46)	.001
	Multidisciplinary Team Member	144 (69)	37 (53)	107 (77)	.001
	Median Number Geriatrician Colleagues (Range)	3 (0-40)	2 (0-27)	4 (0-40)	.03
	American Geriatrics Society Member	182 (83)	55 (75)	127 (88)	.02

[1]Frequencies do not total 218 in every case due to missing data; percentages do not total 100% in every case due to rounding.
[2]Chi-square analysis.

Source: Medina-Walpole, Barker, Katz, et al., 2002

reporting having more than four first-year fellows. Only 51 medicine and 10 psychiatry programs now report offering training beyond the one year required clinical experience. Among these programs, only 5 medicine PDs reported having more than two second-year trainees and only 2 geriatric psychiatrists were reported as second-year trainees during AY 2001-2002. Finally, 60% of medicine and 62% of psychiatry programs reported having none or only one USMSG first-year fellow during AY 2001-2002. Since program growth has been rapid the quality of training may not be uniform across programs. On the other hand, for a young discipline the establishment of a fellowship program represents a "beach-head" at many academic centers.

Our study found that PDs are utilizing a variety of funding sources to support the stipends of their fellows. Our data are limited in that we

only documented the reported sources of support, not the amount of each source utilized by the PDs. Support for accredited graduate medical education (GME) training is provided by Medicare for all clinical disciplines. The actual use of the GME dollars is varied and not well documented. Most program directors negotiate with their hospital administrators for access to GME dollars to support fellow salaries and benefits and training program faculty. It was remarkable that 79% of the medicine and 62% of the psychiatry PDs reported having some access to GME dollars to support their fellows since these funds go directly to the hospital. Although Medicare is the major source for all disciplines' GME funds, geriatric training programs do not receive special consideration as compared to other disciplines.

When ACGME-accredited fellowship programs were reduced from 2 years to 1 year of training, the financial impact on fellowship stipend support beyond the first year of training was significant, particularly for medicine programs. The loss of VHA funding for second-year trainees has only been partially replaced, but the VHA remains the most important source of support for first-year fellowship positions. The status of second-year Medicare funding remains unclear. Funding for advanced training for clinician educators is very limited. On the other hand, numerous NIH, VHA, and private foundation supported research training programs exist and the supply of these positions appears to be meeting the demand.

The University of Rochester survey of recent fellowship graduates documents career decision-making of geriatric fellows trained in the past decade (Medina-Walpole, Barker, Katz et al., 2002). As a group, 53% of survey respondents made their career decision during residency and 27% made their decision prior to or during medical school. "Their career decisions were commonly influenced by mentors and were motivated by opportunities to address societal needs." This survey also emphasizes: "the timing of career decision-making is important". Additionally, with half of all respondents influenced by a role model or mentor, the field must assure the availability of exemplary faculty role models that embody geriatric career pathways, as clinician-educators and research-scientists.

The influence of duration of training was also assessed in the University of Rochester survey. "Irrespective of length of training, most are doing predominantly clinical work in settings of particular importance to frail older patients. A majority hold academic appointments and are participating in teaching. Only 11% devote greater than half their time to research, the majority of which is clinical. Further analysis of the 1996-1998 cohort, shows that those with longer fellowship training are more likely to participate in academic career development activities." Also, according to the Rochester survey, "length of training does not affect the current clinical practice commitments of respondents but is correlated with their likelihood of participating in academic career development activities such as teaching, conducting research, and authoring publications" (Medina-Walpole, Barker, Katz, et al., 2002).

In summary, geriatric medicine and psychiatry programs have developed rapidly during the past ten years. The recruitment of high-quality U.S. medical school graduates into these programs remains a challenge for the discipline, but its importance has been demonstrated. Also, the retention of first-year fellows for additional years of academic training has been difficult. In the future, incentives will be needed to attract the best graduates of U.S. family practice, internal medicine, and psychiatry training programs into academic careers in geriatric medicine. For example, loan forgiveness programs (such as the one recently started by the NIH for research oriented physicians) and/or integrated five-year "research fellowship and junior faculty" awards could alleviate the currently existing financial disincentives and funding uncertainties facing residency graduates.

7 Preparing All Physicians To Care For The Aged: Graduate Medical Education

Background

Allopathic and osteopathic medical students continue their professional education with residency training in primary care or specialty residency programs recognized by the 24 medical specialty boards in allopathic medicine or the 18 boards in osteopathic medicine. Many residents then obtain additional training in subspecialty fellowships. Internal medicine and family practice residents can elect to enroll in geriatric medicine fellowship programs. Psychiatry residents can continue their training in geriatric psychiatry fellowships (see chapter 6). However, the great majority of residents and fellows do not enroll in specialized geriatric medicine programs. In 1999, for example, 9,780 physicians graduated from family practice and internal medicine allopathic residency programs, but only 321 subsequently entered geriatric medicine fellowships. In 1999, 1,056 graduated from allopathic psychiatry residencies, but only 86 enrolled in geriatric psychiatry fellowships. During 1999 an additional 14,176 physicians graduated from other residency and fellowship programs (JAMA, 2000). (These figures do not include pediatrics.) Thus, formal geriatric medicine training for virtually all physicians ends with their primary care or specialty residency training.

The future practices of U.S. physicians will necessarily emphasize providing care to older adults (see chapter 4). Twenty-one percent of family physicians' practices in 1999 consisted of ambulatory visits from adults age 65 and over. Family physicians in 2020 can anticipate that at least 30% of their outpatient practices, 60% of their hospital practices, and 95% of their nursing home and home care practices will involve individuals aged 65 and older (American Academy of Family Practice, 2001). Thirty-nine percent of general internists' practices in 1999 comprised ambulatory visits from adults age 65 and over. The importance of geriatric medicine training in all primary care and specialty residency programs and subspecialty

Table 7.1 Allopathic Residency and Fellowship Programs with Specific Requirements for Geriatric Curriculum[1]

Residency Review Committee	Programs	Effective Date
Anesthesiology	Anesthesiology	January 1, 2001
Anesthesiology	Critical Care	January 1, 2001
Anesthesiology	Pain Management	July, 1999
Emergency Medicine	Emergency Medicine	January 1, 2001
Family Practice	Family Practice	July 1, 2001
Internal Medicine	Nephrology	July, 2001
Internal Medicine	Cardiovascular Disease	July, 1999
Internal Medicine	Critical Care Medicine	July, 1999
Internal Medicine	Endocrinology, Diabetes, and Metabolism	July, 1999
Internal Medicine	General Internal Medicine	July, 2001
Internal Medicine	Hematology	July, 2001
Internal Medicine	Hematology and Oncology	July, 2001
Internal Medicine	Infectious Disease	July, 1999
Internal Medicine	Oncology	July, 1999
Internal Medicine	Pulmonary Disease and Critical Care Medicine	July, 1999
Internal Medicine	Rheumatology	July, 1999
Neurology Neurology	July, 2001	
Neurology	Neurology Pain Management	June, 2000
Obstetrics and Gynecology	Obstetrics and Gynecology	July, 2001
Physical Medicine and Rehabilitation	Physical Medicine and Rehabilitation	July, 2001
Physical Medicine and Rehabilitation	Pain Management	July, 2001
Psychiatry	Addiction Psychiatry	July, 1995
Psychiatry	Forensic Psychiatry	February, 1996
Psychiatry	Pain Management	June, 2000
Psychiatry	Psychiatry	January, 2001
Surgery	Critical Care	July, 1997

[1]Program requirements were reviewed for specific content related to the elderly, aged, or older adult. We did not include in this list internal medicine subspecialties if their individual program requirements did not specifically mention requirements related to the elderly. However all Internal Medicine subspecialties must meet not only their own subspecialty requirements, but also the overall program requirements for residency education in the subspecialties of internal medicine. These overall program requirements include specific requirements related to caring for the older adult.

Source: IHPHSR ADGAP Database Project, 2002

fellowships is widely recognized. The 1993 Institute of Medicine report, *Strengthening Training in Geriatrics for Physicians* specifically recommended substantially expanding geriatric medicine training in primary care residencies and increasing geriatric medicine education in non-primary care specialties. An ambitious recommendation in this IOM report was to incorporate six months of geriatric medicine training into family practice and internal medicine residency programs by 1996 and to have a minimum of nine months of training by 1999.

The Bureau of Health Professions (BHPr) prepared, *A National Agenda for Geriatric Education*, in 1995. It addressed geriatrics training in all residency programs and made specific recommendations regarding the inclusion of geriatrics curricula. The BHPr report also recommended linking the presence of geriatrics curricula to the distribution of graduate medical education (GME) dollars. Several initiatives over the past eight years have been directed toward achieving these national recommendations.

Current Status of Graduate Medical Education

The Accreditation Council on Graduate Medical Education (ACGME) administers residency review committees (RRCs) for each allopathic residency and subspecialty program. Representatives from specialty boards and the specialty societies make up these committees. The RRCs are responsible for reviewing and accrediting training programs, and conducting ongoing reviews (usually once every 5 years) of existing programs. Training programs are evaluated on how well they have implemented general and specialty-specific requirements for the structure and content of their programs. A new emphasis on measuring educational outcomes of programs is currently included in the reviews. When specific content is regarded as critical by an RRC, references to this are written into the special requirements to be utilized by program directors in developing their curricula. During periodic reviews, programs not responsive to RRC priorities are cited for deficiencies. Table 7.1 lists the specialties with specific references to geriatric medicine training in current RRC guidelines. A summary of these educational requirements is presented in Appendix H.

Little is known about graduating residents' readiness for practice. In geriatric medicine a "residency-practice mismatch" exists; new physicians are typically not adequately prepared to care for the many complex older adults who will be in their practices (Reuben, McCue and Gerbert, 1988).

A 1998 national survey of residents graduating from eight specialty-training disciplines at U.S. academic health centers addressed this question (Blumenthal, Gokhale, Campbell et al., 2001). A stratified, random sample of graduating residents was surveyed, and 65% (n=2,626) responded. Three of the eight specialty disciplines questioned were internal medicine, family practice, and obstetrics/gynecology. The survey asked graduating residents from these three programs to assess their preparedness in several areas relevant to geriatric medicine (Table 7.2). Significant numbers of residents in all three specialties indicated they did not feel well prepared to manage the terminally ill, the chronically ill, nursing home patients, or other elderly patients.

This chapter reviews current geriatrics training initiatives in primary care internal medicine, family practice, psychiatry, and obstetrics/gynecology; non-primary care specialties; and medical and surgical subspecialties.

Primary Care Graduate Medical Education

High-quality primary care for older adults requires well-trained general internists and family physicians, along with geriatricians. Today's internal medicine and family medicine residents require focused training that imparts the attitudes, knowledge, and skills they will need to provide sophisticated and comprehensive geriatric care. Resident training is a time of intense clinical experience, and for many physicians it is their last formal training before entering practice.

Trends in the selection of primary care residents, especially in general internal medicine and family medicine, influence the quality and quantity of future primary care physicians and geriatricians. (The source of applicants to geriatric medicine fellowships is the FP/IM residency graduate pool). The perceived demand for specialties and their respective potential compensation influences student career choice. During the mid-1990s managed care's demand for primary care physicians drove up compensation, and medical student interest followed. Since the 1998 residency match, this trend has reversed.

Table 7.2 Residents' Self-Assessment of Preparedness in Caring for Specific Types of Patients (Percent)

Specialty	Condition	Very Unprepared	Somewhat Unprepared	Somewhat Prepared	Very Prepared
Internal Medicine	Critically Ill	0	2	30	68
	Terminally Ill	1	7	37	55
	Elderly	0	3	45	52
	Chronically Ill	0	6	41	52
	Nursing home	5	26	56	13
Family Practice	Critically Ill	9	25	49	17
	Terminally Ill	2	11	45	42
	Elderly	1	5	46	48
	Chronically Ill	1	7	49	43
	Nursing home	4	16	52	27
Obstetrics & Gynecology	Critically Ill	2	12	54	32
	Terminally Ill	3	15	45	37
	Elderly	1	14	57	29
	Chronically Ill	3	23	55	19
	Nursing home	29	40	27	5

Source: Blumenthal, Gokhale, & Campbell et al., 2001

General Internal Medicine

The 1999 National Ambulatory Medical Care Survey found that about 135 million office visits were made to over 50,000 general internists in 1999, representing 18% of all office visits made to all physicians during that year. More than one-third of these visits were made by adults age 65 and over (CDC, NAMCS, 1999). There are currently 390 general internal medicine residency programs. More than 8,211 first-year categorical and primary care positions are available in these programs; there were a total of 21,173 categorical and primary care internal medicine residents in all three years of training in 2000 (JAMA, 2001).

As part of its project *Training General Internists in Geriatrics: Planning for Sustained Improvement*, the Society of General Internal Medicine (SGIM) conducted a comprehensive review of geriatric medicine training within internal medicine residency programs. This project was supported by a grant from the John A. Hartford Foundation. A systematic literature review was conducted to uncover information about geriatric training and curricular recommendations for GIM residents. In addition to the literature search, twenty-six structured, one-hour interviews were conducted with experts from diverse programs that focused on training internal medicine residents in geriatrics. The information presented below is condensed from *Results of the SGIM Study of Geriatrics Training in General Internal Medicine Residencies* (Callahan, Thomas, Dunn et al., 2001).

Most internal medicine residency programs provide geriatric training. Of the 75% of IM residency programs responding to the 1997-1998 NaSGIM survey, 99% indicated that geriatric topics are part of their didactic curricula. Seventy-nine percent of the categorical medicine programs required an ambulatory experience in geriatrics. However, it was not clear whether the training resulted in mastery of geriatric competencies or simply skill in providing primary care to geriatric patients. In addition, many residents from these programs did not have the opportunity to see older patients in the relevant range of practice settings.

The ACGME began requiring geriatrics content in Internal Medicine residency programs in October of 1989, although full implementation was not mandatory until 1995 (see Appendix H). The most recent national surveys examining how geriatrics is taught in IM residency programs were published in the late 1980s and early 1990s. In the 1988 survey, 33% of IM programs had no full-time faculty with training in geriatrics. Structured geriatrics curricula were present in just 36% of programs, and only 61% required some geriatrics training (Reuben, Fink, Vivell et al., 1990).

In three studies using surveys and focus groups, residents acknowledged their need for more geriatric training (Chodosh, Tulsky, & Naumburg, 1999). They reported a lack of confidence in assessing the following issues relevant to caring for the older adult: evaluation of falls, incontinence, depression, knowledge about pressure ulcers, dementia, and polypharmacy (Baum, Lappin, & Rutecki, 1997), management of confusion, osteoporosis, and preventing iatrogenic problems (Rhymes, Woods, & Teasdale, 1996), and care of nursing home patients (Blumenthal, Gokhale, Campbell et al., 2001).

Internal Medicine residents' attitudes, knowledge and skills in geriatric medicine have been evaluated in only a few studies. Residents' attitudes toward older adults were generally positive in three of the four single-site studies that evaluated this item (Lindberg & Sullivan, 1996; Barbour, Tompkins, & Esienberg, 1987; Anderson, Rakowski, & Hickey, 1988). Of three studies that evaluated resident attitudes after an educational intervention, two found an improvement (Barbour, Tompkins, & Eisenberg, 1987; Anderson, Rakowski, & Hickey, 1988), while one found no decline in initially positive attitudes (Lindberg & Sullivan, 1996). Regardless of which measures of geriatric knowledge were used, pre-intervention residents at single sites answered only about half of the questions correctly (Lindberg & Sullivan, 1996; Reuben, Davis & Lee, 1997; Swamy & Fortunato, 1997). Although educational interventions typically produce statistically significant improvements in residents' scores on knowledge tests, the absolute degree of improvement has been quite small (Lindberg & Sullivan, 1996; Duthie & Gambert, 1983; Ramirez, Leipzig, & Berkman, 1998).

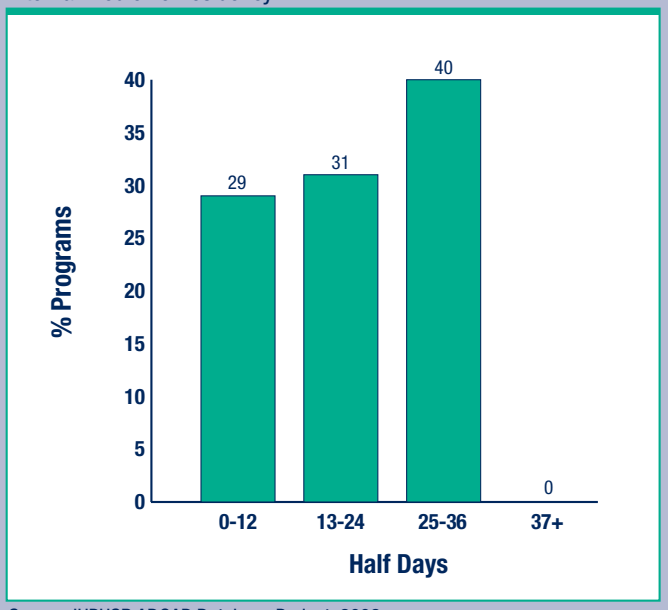
Residents' reported lack of confidence in managing geriatric conditions is consistent with the results of four other studies finding that residents' practice or comfort level in caring for older adults was inadequate. These studies found that; (1) geriatric medical issues were under-documented (Siu, Leake, & Brook, 1988), (2) residents reported they were much less comfortable evaluating and managing cognitive function, depression, under-nutrition, and gait/balance dysfunction than they were managing congestive heart failure and diabetes mellitus (Miller, Morley & Rubenstein, 1991), and (3) the residents were also less likely to document signs and symptoms of depression in an actual geriatric patient than were psychiatry and psychology residents (Rapp & Davis, 1989).

In the only study evaluating the effect of an educational intervention on resident practice, (Lavizzo-Mourey, Beck, & Diserens, 1990) audits of ambulatory charts over a four-year period revealed that intern documentation of mental status items (other than orientation) was present for only 5-6% of patients; functional status items, 4-5%; pneumovax, 22-33%; influenza vaccination, 11-29%; social supports and living situation, 7-17%; and health habits (smoking/alcohol), 11-12%. After a longitudinal and block geriatrics intervention, overall performance was still low, although statistically significantly improved. The residents documented mental status items (other than orientation) in 8-18% of patients; functional status in 5-13%, social supports and living situation in (3-15%); and health habits in 13-14%.

The SGIM Task Force of Geriatric Medicine conducted four surveys of internal medicine and family practice residencies from 1993-95 to examine the views of program directors and/or geriatrics education coordinators about geriatrics curriculum content, teaching strategies, faculty, and barriers to effective geriatrics teaching in each of the following settings: nursing home, home, acute care, and ambulatory practice (Counsell, Katz, Karuza et al., 1994). Site-specific curriculum guidelines were developed using information from these surveys and a process of expert consensus (Counsell & Sullivan, 1994; Sullivan, Boling, Ritchie et al., 1998).

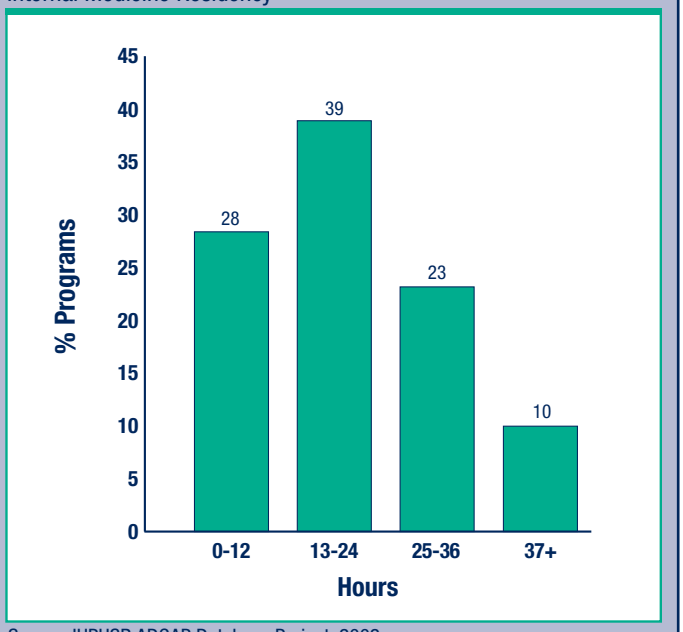
The SGIM followed its first national conference, *Training General Internists in Geriatrics: Planning for Sustained Improvement* with a second national conference held in October 2001 and titled *Training Internal Medicine Residents in Geriatrics Knowledge and Practice: Sustainable Solutions* (Thomas, Callahan, Dunn et al., 2001). Following

Figure 7.1 Required Time (Half Days) Devoted to Clinical Instruction in Geriatric Medicine during 3-Year General Internal Medicine Residency



Source: IHPHSR ADGAP Database Project, 2002

Figure 7.2 Required Time (Hours) Devoted to Didactic Instruction in Geriatric Medicine during 3-Year General Internal Medicine Residency



Source: IHPHSR ADGAP Database Project, 2002

the work from these conferences, the John A. Hartford Foundation awarded $2,041,931, starting July 2002, to the Society of General Internal Medicine. The SGIM is to work with the Association of Program Directors in Internal Medicine to enhance geriatrics curricula in general internal medicine residency programs by developing collaborative centers for research and education in the care of older adults. Ten center grants, each for a total of $100,000 over 2 years, will be awarded. Each center will provide a model for the collaboration of GIM and geriatrics in developing generalist leaders to improve the care of older Americans. Seth Landefeld, MD is the director of this three-year project.

Survey of General Internal Medicine Program Directors

In preparation of the present report, the IHPHSR conducted a survey of current efforts and trends in geriatric education for general internal medicine residents. This survey was completed in collaboration with the Society of General Internal Medicine (SGIM) in the spring of 2002.

Characteristics of Responding GIM Residency Programs

A total of 206 of the 390 surveys were returned, for a response rate of 53%. The size and census tract location of the responding programs were similar to those of the non-responders.

Geriatric Medicine Curriculum in GIM Programs

One hundred ninety one programs (93%) required geriatric medicine training; 15 (7%) did not. Six of the 15 programs without required geriatrics training did not offer any elective geriatrics experience.

Forty percent (n=75) of the programs required between 25 and 36 half-days of geriatric medicine clinical training during the 3-year residency. Thirty-one percent (n=57) required between 13 and 24 half days, and 29% (n=55) required 12 half days or less of clinical training (Figure 7.1). Similarly, 23% (n=43) of the programs required between 25 and 36 hours of instruction, and only 28% (n=53) of the programs reported 12 hours or less of instruction (Figure 7.2). As could be expected, programs with more half-days of clinical instruction tended to have more didactic training (Spearman's rho = 0.385, $p<0.001$).

General Internal Medicine programs depended on nursing home (67%), outpatient geriatric assessment centers (62%), and geriatric preceptors in non-geriatric ambulatory settings (53%). However, training also occurred at a variety of other sites such as hospices (49%), hospital-based skilled nursing facilities (38%), home care (44%), and inpatient hospital consultation (42%).

Except for the experience of geriatric preceptors in non-geriatric ambulatory settings, all experiences were most frequently offered in a block format. For example, nursing home rotations were block experiences in 83% of the programs, outpatient geriatric assessment center experiences in 93% of the programs, and geriatric inpatient consultation team in 92% of the programs.

Faculty Resources in GIM Programs

The mean number of faculty dedicated to teaching geriatric medicine in GIM was 2.8 *full-time equivalents* (FTEs). These included internists (74%), family physicians (5%), and other health care professionals (21%). There was a mean of 4.2 *individual* physician faculty with certificates of added qualifications (CAQs) in geriatrics per program and an additional 2.2 *individual* physician faculty with an interest in geriatrics. This totals to 6.4 available physician faculty to teach geriatrics per program. However, 28 programs (14%) have no faculty with CAQs. Of the faculty with CAQs, 51% received their CAQ through the practice pathway; the remaining 49% received their CAQ after completing a geriatric fellowship. Most programs (88%) used a multidisciplinary approach (i.e., a team of physicians and other non-physician health care workers such as nurses, social workers, physical therapists, and/or pharmacists) to teach geriatrics.

Trends in GIM Residency Programs

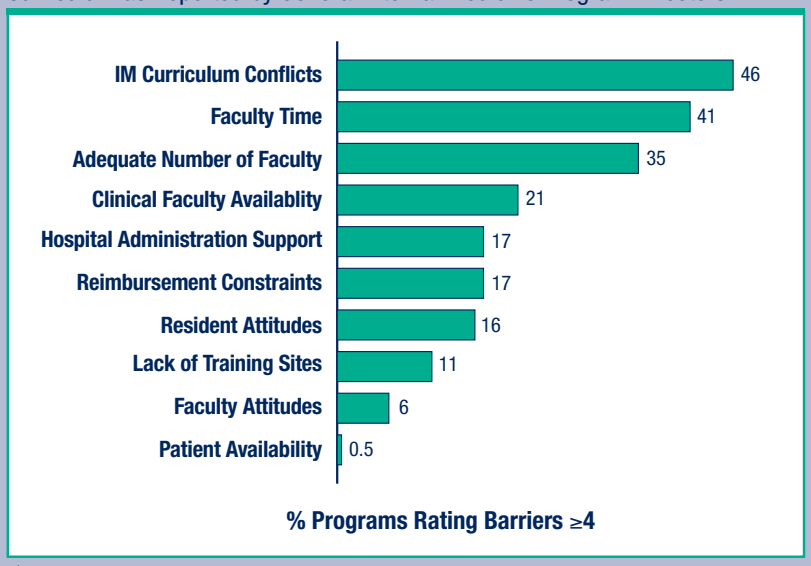
Required lecture and seminar time dedicated to geriatric medicine had remained stable in 60% of the programs, had increased in 33% of the programs, and had declined in only 5% of programs (2% of programs did not require geriatric lectures or seminars). When asked to project whether the geriatric education curriculum time (clinical or didactic) would change over the next three years (July 2002-June 2005), directors anticipated substantial (8%) or modest (45.6%) increases, no change (44.6%) or a decrease (2%).

Barriers to Implementation of Geriatrics Curricula in GIM Programs

Residency directors were asked to rate seven potential barriers to implementing their geriatric medicine curricula using a five point Likert scale. Conflicting time demands with other curriculum was ranked as the most significant barrier (Figure 7.3).

Residency directors were also asked to rate on a five-point Likert scale seven-curriculum topics as to their importance for training of internists. ICU/CCU, geriatrics, and palliative care were rated as the highest priorities (Figure 7.4).

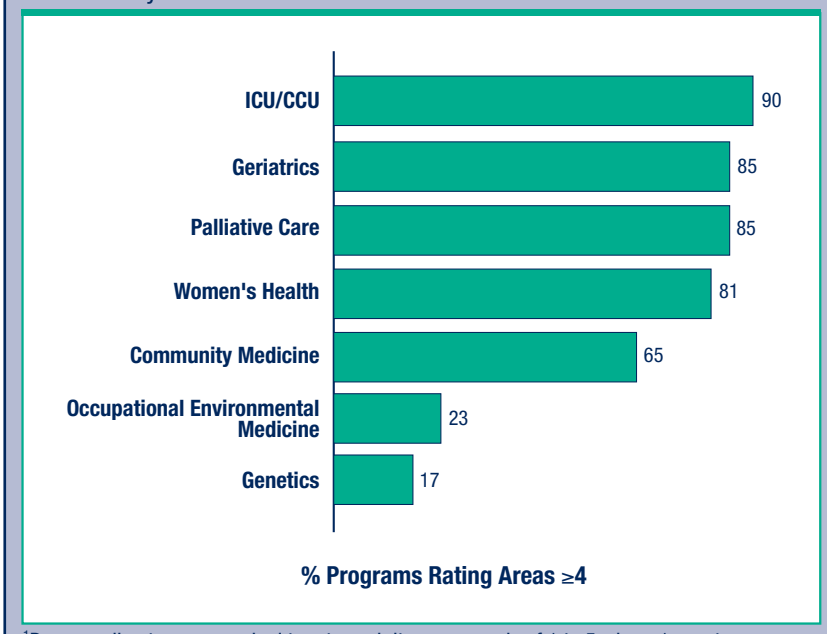
Figure 7.3 Significant Barriers to Implementing a Geriatric Medicine Curriculum as Reported by General Internal Medicine Program Directors[1]



[1]Program directors were asked to rate each item on a scale of 1 to 5 where 1 = never a barrier and 5 = always a barrier.

Source: IHPHSR ADGAP Database Project, 2002

Figure 7.4 Program Directors' Rating of the Importance of Residency Curriculum Areas to the Training of Successful General Internal Medicine Physicians[1]



[1]Program directors were asked to rate each item on a scale of 1 to 5 where 1 = not at all important and 5 = extremely important.

Source: IHPHSR ADGAP Database Project, 2002

Family Practice

In January 2000, there were 69,063 family physicians in the United States providing direct patient care (American Academy of Family Practice, 2001). Nearly one half of practicing family physicians work in communities with populations under 25,000 (American Academy of Family Practice, 2001). The 1999 National Ambulatory Medical Care Survey found that about 170 million office visits were made to family physicians. Visits to family physicians represented 22.5% of all ambulatory visits made to all physicians during that year.

Since 1969 more than 470 family practice residency programs have been established and accredited by the RRC for family practice (American Medical Association, 1998). More than 3600 first-year positions are available in these three-year training programs; there were a total of 10,503 family medicine residents in 2000 (American Academy of Family Practice, 2000). Eighty-five percent of all family practice residency programs are based in community hospitals; although most are either affiliated with or administered by a medical school. The remaining programs are based at a medical school (12%) or the military (3%).

AAFP Residency Assistance Program (RAP) Consultations

The RAP was established in 1975 to provide consultative assistance to family practice residency program directors interested in enhancing the quality of their training programs (Hejduk, Kahn, & Ostergaard, 1997). Administered by the American Academy of Family Physicians (AAFP), the RAP program has provided over 1,000 consultations during the past 25 years. The AAFP conducted on-site geriatric medicine curriculum consultations for 40 community-based family practice residency programs between 1996 and 2001. Ten specially-trained family physician/geriatrician faculty conducted these one-to four-day consults. This project was developed as part of the Residency Assistance Program (RAP) in family practice, with funding from the John A. Hartford Foundation.

Curriculum Retreats for Family Practice Residency Program Directors

The AAFP and the Association of Family Practice Residency Directors conducted three geriatric education retreats for FP program directors during 2000 and 2001. The goals were to build recognition among the residency directors of the skills future family physicians will need to care for adults and to allow the residency directors to identify and develop solutions to barriers to improving geriatric medicine training for residents. Forty-six program directors participated in the three retreats. The participants represented programs in all geographic regions, small and large programs, and urban and rural settings. They developed a consensus on the geriatric medicine knowledge, skills, and attitudes that should be expected of all FP residency graduates. They also developed a list of basic, required educational resources for each FP residency program and proposed solutions to common obstacles to successful geriatrics curriculum development. This material was disseminated to all FP program directors in early 2002.

As described above, the last published comprehensive survey of geriatric medicine training in family practice residencies dates back to Reuben's work in the late 1980s (Reuben, Fink, & Vivell et al., 1990). At that time, 80% of family practice programs reported having some geriatric medicine curriculum in place. The preferred training site was the nursing home, with 93% of programs reporting they used this site. Programs reported they had few faculty teaching geriatrics and would need more in the future.

Survey of Family Practice Program Directors

In preparation of this report, the IHPHSR conducted a survey of current efforts and trends in geriatric education for family medicine residents. This survey was completed in collaboration with the Society of Teachers of Family Medicine (particularly Ina Li, MD and Christine Arenson, MD, of Thomas Jefferson University) and the Association of Family Practice Residency Directors. The survey was mailed to the residency directors of each U.S. family medicine program listed in the American Academy of Family Physicians' (AAFP) November 2000 list of ACGME-Accredited Residency Programs in Family Practice (American Academy of Family Physicians, 2000). Currently, there are 471 family medicine residency programs.

Characteristics of Responding FP Residency Programs

A total of 352 of the 471 surveys were returned, for a response rate of 75%. The size and organizational type of the responding programs were similar to those of the non-responders.

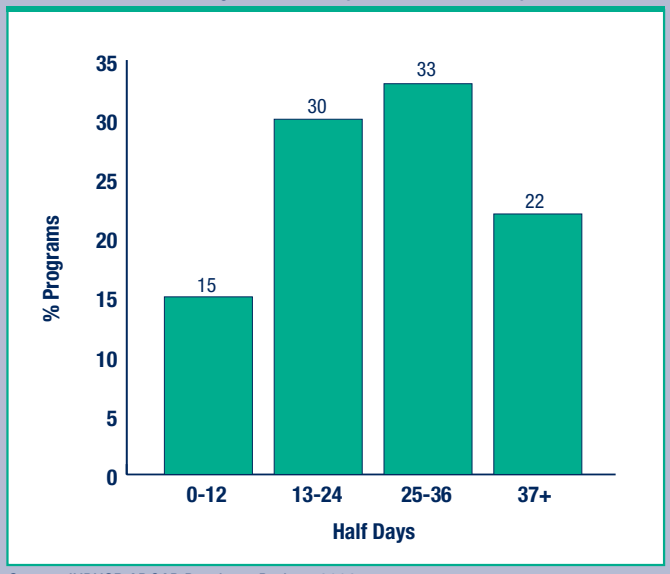
Geriatric Medicine Curriculum in FP Residency Programs

Three hundred twenty one programs (92%) required geriatric medicine training; 29 (8%) did not. Ten of the 29 programs without required geriatrics training did not offer any elective geriatrics experience, although some indicated they had some didactic curriculum in geriatrics.

One third of the programs required between 25 and 36 half days of geriatric medicine *clinical* training during the 3-year residency. Twenty-three percent required greater than 36 half days, and 15% required 12 half days or less of clinical training (Figure 7.5). Similarly, 21% of the programs required more than 36 hours of instruction, and only 10% of the programs reported 12 hours or less of instruction (Figure 7.6). As could be expected, programs with more half days of clinical instruction tended to have more didactic training (Spearman's rho = 0.252, $p<0.001$).

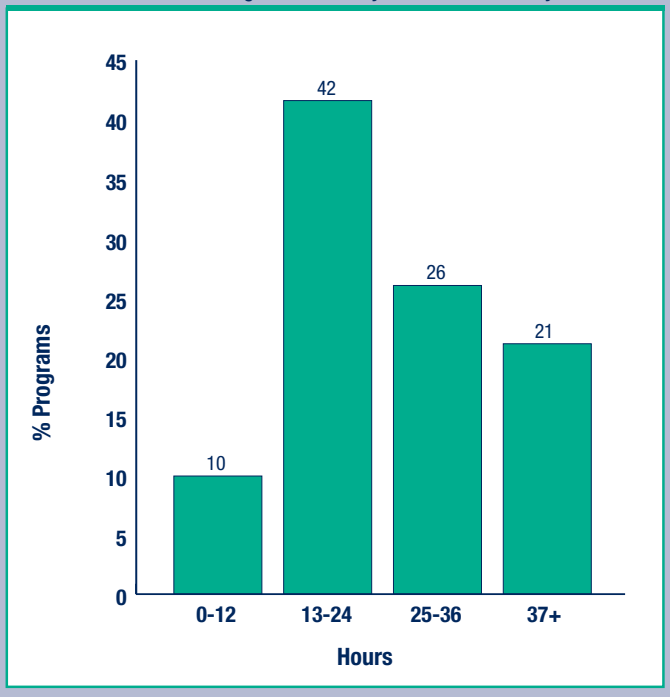
FP residency programs depended on nursing home or assisted-living facilities (97%) and home care (93%) as training sites for geriatrics. However, training also occurred at a variety of other sites such as hospices (62%), hospital-based skilled nursing facilities (58%), outpatient geriatric assessment centers (51%), and inpatient consultation (42%).

Figure 7.5 Required Time (Half Days) Devoted to Clinical Instruction in Geriatric Medicine during 3-Year Family Practice Residency



Source: IHPHSR ADGAP Database Project, 2002

Figure 7.6 Required Time (Hours) Devoted to Didactic Instruction in Geriatric Medicine during 3-Year Family Practice Residency



Source: IHPHSR ADGAP Database Project, 2002

Nursing homes and home care experiences were most frequently offered in a longitudinal format. For example, nursing home rotations were longitudinal in 86% of the programs and in block format in 40%, with 26% of programs reporting using both formats. In home care, 81% of programs offered a longitudinal experience, while 33% offered a block rotation; 14% used both formats. In other clinical venues the block and longitudinal formats were more equally divided, with the exception of outpatient geriatric assessment centers, which were more often offered in block format.

Faculty Resources in FP Residency Programs

The mean number of faculty dedicated to teaching geriatric medicine in FPRs was 1.05 *full-time equivalents* (FTEs). These included family physicians (72%), internists (10%), and other health care professionals (18%). There was a mean of 1.44 *individual* physician faculty with certificates of added qualifications (CAQs) in geriatrics per program and an additional 1.16 *individual* physician faculty with an interest in geriatrics. This totals to 2.6 available physician faculty to teach geriatrics per program. However, 72 programs (23%) have no faculty with CAQs. Of the faculty with CAQs, 75% received their CAQ through the practice pathway; the remaining 25% received their CAQ after completing a geriatric fellowship. Most programs (83%) used a multidisciplinary team of physicians and other non-physician health care workers such as nurses, social workers, physical therapists, and/or pharmacists to teach geriatrics.

Trends in FP Residency Programs

Residency directors were asked to report on changes in their geriatric medicine curricula between July 1997 and the present. The ACGME program requirement wording for geriatric education in FPR programs was changed in 1997 and was interpreted by many educators as a weakening in the requirements (see Appendix H). In fact, 48% of program directors responded that these changes had influenced their geriatric medicine curriculum, 39% denied they had had any impact, 3% were unsure of the impact, and the remaining 10% were unaware of the change in requirements.

Required lecture and seminar time dedicated to geriatric medicine had remained stable in 57% of the programs, had increased in 38% of the programs, and declined in only 3% of programs (2% of programs did not require geriatric lectures or seminars). When asked to project whether the geriatric education curriculum time (clinical or didactic) would change over the next three years (July 2001-June 2004), directors anticipated substantial (8%) or modest (43%) increases, no change (47%) or a decrease (2%).

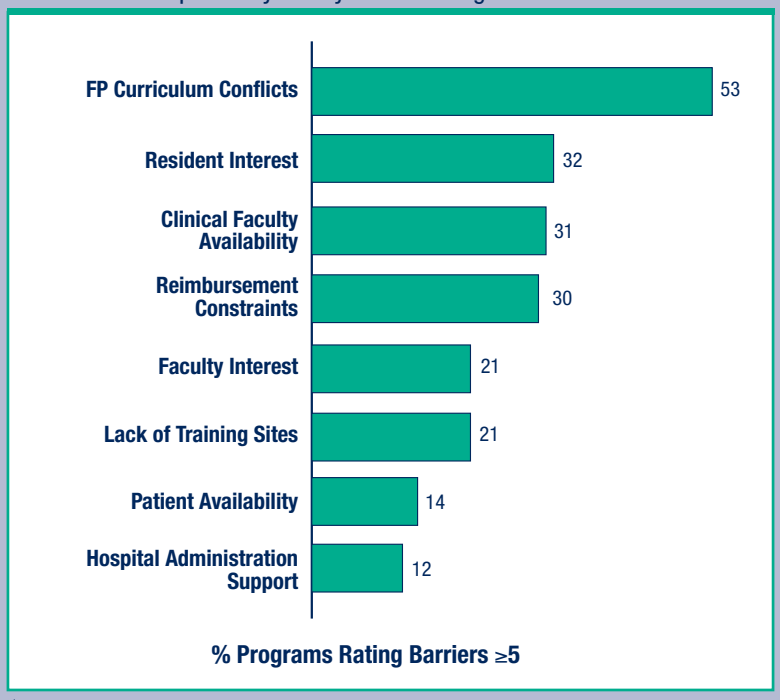
Barriers to Implementation of Geriatrics Curricula in FP Residency Programs

Residency directors were asked to use a seven point Likert scale to rate seven potential barriers to implementing their geriatric medicine curricula. Conflicting time demands with other curriculum was ranked as the most significant barrier (Figure 7.7). Comments included:

"Family Medicine training is so broad, there is so much to cover as prescribed by the RRC, it is difficult to fit in more geriatrics."

"The faculty members spend most of their time precepting and signing charts (to satisfy Medicare billing guidelines) with little time left to teach or develop improved curriculum."

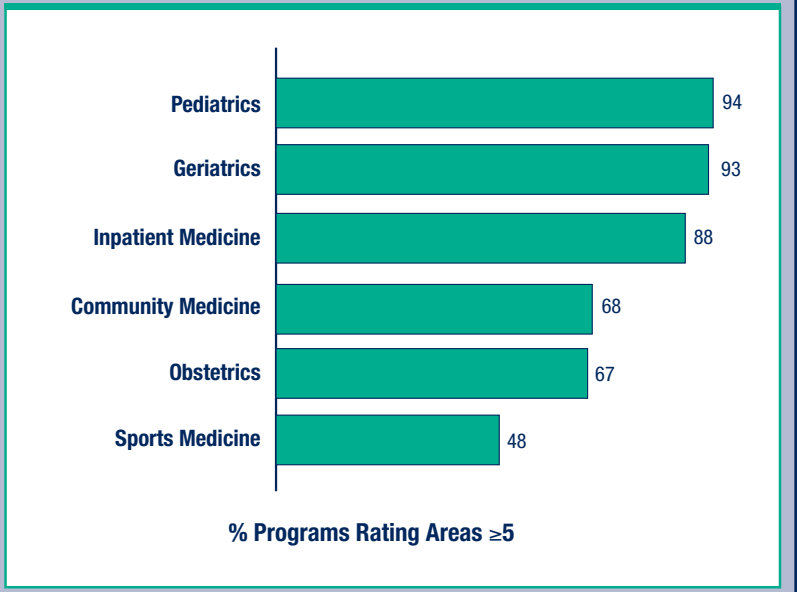
Figure 7.7 Significant Barriers to Implementing a Geriatric Medicine Curriculum as Reported by Family Practice Program Directors[1]



[1]Program directors were asked to rate each item on a scale of 1 to 7 where 1 = never a barrier and 7 = a major barrier.

Source: IHPHSR ADGAP Database Project, 2001

Figure 7.8 Program Directors' Rating of the Importance of Residency Curriculum Areas to the Training of Successful Family Practice Physicians[1]



[1]Program directors were asked to rate each item on a scale of 1 to 7 where 1 = not at all important and 7 = extremely important.

Source: IHPHSR ADGAP Database Project, 2001

"While our residents recognize that many of their patients will be over age 65, they also have learned (due to Medicare reimbursement levels and patient complexity) that they cannot afford to care for a high percentage of older adults and maintain a financially viable practice."

Residency directors were also asked to rate on a 7-point Likert scale seven curriculum topics as to their importance for training of family physicians. Pediatrics, geriatrics, and inpatient medicine were rated as the highest priorities (Figure 7.8).

Best Educational Practices in FP Residency Programs

Directors were asked to describe the best aspects of their geriatrics curriculum. We grouped these open-ended responses into 11 categories. The program directors were most enthusiastic about outpatient and community-based experiences and the overall design of their curricula.

Other Initiatives in Internal Medicine and Family Practice Residency Education—The Stanford University Geriatric Education Resource Center

The Stanford University Geriatric Education Resource Center (with funding from the John A. Hartford Foundation) developed and disseminates geriatric medicine educational materials for internal medicine and family practice residents. These materials were created with input from the AAFP and eight academic medical centers (Baylor, Harvard, Johns Hopkins, Stanford, UCLA, Chicago, Connecticut, and Rochester). The materials include packaged methods and stand-alone aids for teaching geriatric knowledge and skills. (See http://Sugerc.Stanford.edu/index0.html.)

In addition, each year up to six medical school faculty are selected to attend the Stanford Faculty Development Center for training to become Geriatrics in Primary Care (GiPC) seminar facilitators. The one-month facilitator-training course gives participants the knowledge and seminar leadership skills they need to deliver a series of eight 2-hour seminars to faculty and residents in their communities. The seminars are designed to help primary care faculty enhance their ability to care for older patients as well as teach this information to medical trainees and others who teach.

Participants are encouraged to explore their attitudes, knowledge, and skills related to geriatrics during a variety of instructional activities including: case studies, didactic presentations, role play exercises, brainstorming sessions, and personal and institutional goal setting. During the eighth seminar, participants develop a set of recommendations for improving their institutions' educational environments for geriatrics.

Psychiatry

As with internists and family physicians, the number of psychiatrists with certification in geriatric medicine is small, and recruitment into fellowship programs is weak. General psychiatrists without advanced training in geriatric mental health will continue to provide the majority of psychiatric care to older adults (see Chapter 4). The psychiatry RRC requirements provide a basis for developing residency curriculum in geriatrics (see Appendix H). However, little is known about how these requirements are being implemented.

A combined neurology and psychiatry Geriatric Education Retreat (see below) was held in March 2001. The most tangible outcome was interest in developing a combined Geriatric Neurology/Psychiatry geriatrics fellowship program. While psychiatry already has a fellowship program in place, neurology does not.

Obstetrics/Gynecology

The Council on Resident Education in Obstetrics and Gynecology (CREOG) estimates that by the year 2030, 20% of women cared for by obstetrician-gynecologists (OB-GYN) will be older than age 65. (CREOG Geriatric Education Task Force, 1999). In 1999, CREOG published educational objectives for training residents in OB-GYN. Since 1996, the RRC for OB-GYN has required specific training in geriatrics and geriatric gynecology (see Appendix H). To date no studies have been done to determine the methods currently being used by OB-GYN program directors to implement this new curriculum.

Internal Medicine Subspecialties

Physicians practicing in internal medicine subspecialty have completed two to three years of general medicine training and additional years of training in their chosen subspecialty. The practice activity of these physicians includes primary care as well as clinical activities specific to the chosen specialty. Most of these physicians will care for large numbers of older adults (see Chapter 4).

Integrating Geriatrics Into the Subspecialties of Internal Medicine is a comprehensive project of the American Geriatrics Society aimed at defining the basic knowledge, attitudes and skills every subspecialist must possess to care for the older patient appropriately and efficiently. This project was launched in 1994 with a $1.5 million grant from the John A. Hartford Foundation and a smaller amount of support from Merck, Pfizer, and Warner-Lambert pharmaceutical firms. In 1997, the project received a two-year $1.9 million grant extension from the Hartford Foundation. In 1999, the AGS received another extension grant ($2 million) from the Foundation to carry out more Geriatric Education Retreats (GERs), including an expanded focus outside of internal medicine with a GER for neurologists and psychiatrists. This third phase of the project includes collaboration with the Association of Subspecialty Physicians (ASP) and will have an emphasis on junior faculty development.

The project is being administered by The Wake Forest University School of Medicine, with Nancy Woolard as the project coordinator. William R. Hazzard, M.D. (University of Washington) is the project director.

The specific aims of this project are to:

- Assist leading subspecialists as they redirect their attention to the geriatric aspects of their disciplines.
- Identify opportunities for geriatrics-related teaching and research within the subspecialties of internal medicine.
- Foster leadership roles for, and professional satisfaction among, the subspecialists who pursue geriatrics-related teaching and research.

Geriatric Education Retreats (GERs), 5-day total immersion experiences to help "gerontologize" exemplary subspecialty faculty from leading academic health centers, have been organized to further the project's objectives. Topics covered during the GERs include educational and research opportunities in geriatric medicine for the relevant subspecialties. GERs have been provided for the following subspecialties:

- Endocrinology, Diabetes and Metabolism
- Cardiology
- Oncology
- Infectious Disease
- Rheumatology
- Immunology
- Pulmonary and Critical Care Medicine
- Nephrology
- Gastroenterology
- Psychiatry and Neurology

Faculty from general internal medicine also participated in a GER, as described earlier in this chapter. A September 2000 project summary reported that the GER process led to more than 100 publications in subspecialty journals and 60 submitted grant applications for research with an emphasis on geriatrics. More than half of these proposals were funded.

A project directed by the American Society of Clinical Oncology (ASCO) is an example of successful expansion of the GERs. Funded by the John A. Hartford Foundation, this project is testing a model for combined training in geriatrics and oncology at the fellowship and junior faculty levels. The ASCO Geriatrics/Oncology Training Program Development Grant is designed to help institutions develop three-year fellowships in geriatric medicine/medical oncology. Trainees will become eligible to sit for the American Board of Internal Medicine (ABIM) certification in medical oncology. In addition, they will be eligible for ABIM certification in geriatric medicine. The John A. Hartford Foundation awarded eight three-year grants under this program in 2002, totaling $225,000 per site, with a required institutional match of $75,000 to $150,000.

The Society of Geriatric Cardiology (SGC) founded in 1986, was well established before the GER program started. It is an early example of a medical subspecialty actively addressing geriatrics in its curriculum. SGC provides education, promotes research, and addresses public policy related to cardiovascular disease and aging. The SGC conducts educational geriatric medicine programs for physicians and other health care professionals at national meetings of the American Heart Association, the American College of Cardiology, the American College of Chest Physicians, and the American Geriatrics Society. In addition, it organizes and sponsors (or co-sponsors) stand-alone symposia and conferences nationwide, often in collaboration with local medical centers. The *American Journal of Geriatric Cardiology*, the official journal of the Society of Geriatric Cardiology, is circulated every two months to approximately 20,000 cardiologists and geriatric specialists. With funding from Merck, the SGC awards two $20,000 research grants annually.

Surgical and other Medical Specialties

The Hartford Foundation and the AGS are also active in a parallel project, *Increasing Geriatrics Expertise in Surgical and Related Medical Specialties*, targeting physicians in specialties not addressed by the internal medicine project. Planning for this project began in 1992 and it was launched in 1994 led by Dennis W. Jahnigen, MD. This ambitious program entered its third phase of funding on May 1, 2001 with a $5.9 million four-year grant. David H. Solomon, MD, (UCLA) and John R. Burton, MD, (Johns Hopkins) are the project co-directors, and Janis Eisner in the AGS New York City office is the project manager.

The project's objectives are:

- To improve the amount and quality of geriatric education received by medical and surgical residents.
- To identify and support specialty faculty in promoting geriatric training and research within their own professional disciplines.
- To assist professional certifying bodies and professional societies in improving the ability of their constituencies to care for elderly patients.

In 1998, this initiative established an Interdisciplinary Leadership Group (ILG), a working unit of national specialty leaders committed to improving the care of geriatric patients (see Appendix I). This project sought to stimulate geriatrics-related training among both established leaders and younger faculty in anesthesiology, emergency medicine, general surgery, gynecology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine and rehabilitation, thoracic surgery, and urology by implementing the following activities:

- Identification/development of leadership
- Development and/or dissemination of curriculum/training materials
- Support of educational symposia and special interest groups
- Support of resident research seed grants and/or senior investigator awards
- Encouragement of change of Residency Review Committee (RRC) special requirements and Board certifying examinations.

Plans for the third phase of this initiative include awarding two-year grants to 30 institutions to enrich their residency curricula, help faculty focus on research on geriatric aspects of their specialties, expand the Interdisciplinary Leadership Group (which initiated in May 2002 a new Section of Surgical and Related Medical Specialties in the American Geriatrics Society), provide discretionary grants to each specialty to support leadership development and education activities, develop the *Geriatrics Syllabus for Specialists* (GSS), establish the Jahnigen Career Development Scholars program, and serve as a clearinghouse for geriatric information for surgeons and medical specialists.

The *Jahnigen Career Development Scholars* program offers, on a competitive basis two-year career development awards to young faculty in anesthesiology, emergency medicine, general surgery, gynecology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine and rehabilitation, thoracic surgery, and urology. This program will help awardees initiate and sustain careers in

research and education in geriatric aspects of their disciplines. Each grant will provide two years of salary support ($75,000 per year) plus $25,000 per year to pay for research costs. Between 5 and 10 awards will be given in 2002, the program's first year.

The staff of the *Increasing Geriatrics Expertise in Surgical and Medical Specialties* project reports that many relevant articles have been published as a result of this project. In addition, the project has fostered the development of geriatric medicine educational resource materials in a number of specialties (www.americangeriatrics.org).

In the spring of 2001, as part of the present project, the IHPHSR surveyed U.S. allopathic and osteopathic geriatric medicine directors at academic medical schools. Some questions asked about their involvement in teaching residents in other specialties. Nearly one-half of the surveyed programs in allopathic schools were teaching gynecology and psychiatry residents. Both of these disciplines have program requirements specifically addressing geriatric medicine training. Teaching by geriatric medicine faculty in other disciplines was rare. Only six schools reported receiving financial support for geriatric medicine faculty from outside their geriatrics programs. The most common reasons geriatric medicine faculty reported for not teaching geriatric care principles to other specialties were not being asked and not having adequate faculty to teach in other programs.

Interdisciplinary Team Training

In 1995 the John A. Hartford Foundation launched a Geriatric Interdisciplinary Team Training (GITT) initiative that addressed the challenges of interdisciplinary geriatrics training. This program funded nine sites to develop models for geriatric interdisciplinary team training related to care of the elderly in a range of settings. The objectives of this multi-year national program were to develop practicum-based training models for advanced-practice nurses, residents in internal and family medicine, social workers and other health professionals. The program's premise was that having practitioners learn teamwork skills would lead to improvements in clinical outcomes, efficiency, and patient satisfaction. The program ended in 2000, and an evaluation was completed at a UCLA coordinating center (John A. Hartford Foundation Annual Report, 2001). The evaluation concluded that while there is no one "best way" to implement geriatric interdisciplinary team training, there are key features that must be in place for success. Fundamental building blocks include visionary leadership, strong faculty resources, and individuals committed to bringing about change.

Implications

Although the practice of adult medicine by all specialties has always involved the care of older patients, demographic trends and an expanding geriatric medicine knowledge base requires that every physician develop skills specific to the care of the older adult. The prolongation of human life is a 20th-century success story. The 21st century's challenge to the medical profession is to provide enough skilled teachers, researchers, and clinicians with expertise in geriatrics to care for the nation's older population. The basis of an agenda for research and training to integrate geriatrics into each specialty now exists. Geriatricians can assist their colleagues in this educational effort, but faculty leaders from each specialty must become involved.

Family Practice and General Internal Medicine

Prior to our surveys, more than a decade had passed since the last comprehensive survey of geriatric medicine education in FP and GIM residency programs. Reuben and his colleagues found in 1988 that 80% of FP programs and 36% of GIM programs had geriatrics curricula (Reuben, Fink, Vivell et al., 1990). Our surveys found that these numbers had increased to 92% for FP and 93% for GIM.

Among the FP and GIM residency programs in our survey that had required training, 55% of FP and 40% of GIM programs had required geriatric medicine clinical training exceeding 25 half-days. On the other hand, 15% of FP and 29% of GIM programs had less than 12 half-days of clinical training (less than one-half month over the 3-year training program). Similar variability was found among programs that required didactic training; 21% of FP programs had more than 36 hours, and 10% reported having 12 hours or less. Ten percent of GIM programs had more than 36 hours, and 28% reported having 12 hours or less of geriatric lectures.

Longitudinal geriatric medicine experiences, as opposed to the block format, have been popular particularly in family medicine residency programs as the curriculum demands of the 36-month training programs have increased (Mold, Mehr, Kvale et al., 1995). In our study, geriatric experiences in nursing homes and patient homes were mainly longitudinal for FP but remain block experiences for GIM.

FP and GIM residency programs continue to depend on nursing homes facilities for their geriatrics training. Ninety-eight percent of FP and 67% of GIM residency programs provided training in nursing homes. This reliance on nursing homes as the primary geriatric teaching site has remained stable over the years. In Reuben's 1988 survey, for example, 93% of FP residencies and 58% GIM programs utilized nursing homes for clinical training (Reuben, Fink, Vivell et al., 1990). A subsequent survey found that 86% of FP programs had required nursing home experiences (Counsell, Katz, Karuza et al., 1994).

Although using long-term care settings as teaching sites is commendable, it is of concern that some programs may regard a nursing home experience as sufficient exposure to geriatric medicine. Other sites are rich settings for geriatric medicine education. By exposing residents to a variety of sites and older adults, they come to appreciate the diversity of these patients' functional problems and health care needs. Eighty-two percent of FP and 44% of GIM residencies report including home care training, and more than 50% of FP programs were currently utilizing hospital-based SNFs and hospice care geriatric training sites. For GIM programs, the percentages were 38% and 50% respectively.

In our study of FP training programs we found a mean of 1.44 individual physician faculty with a CAQ and a mean of 1.16 additional physician faculty with an interest in geriatrics, for a total of 2.6 individual geriatric physician faculty per program. GIM training programs had a mean of 4.2 individual physician faculty with a CAQ and a mean of 2.2 additional physician faculty with an interest in geriatrics for a total of 6.4 individual geriatric physician faculty per program. (FP programs had a median of 21.0 residents, while GIM programs had a median of 42.5 residents.) In 1988, FP programs reported a mean of 2.3

and GIM programs a mean of 2.8 available physician faculty to teach geriatrics (Reuben, Fink, Vivell, et al., 1990). It appears that the number of physician faculty available to teach geriatric medicine in FP residency programs has not changed significantly over the past 13 years, while the faculty in the GIM programs has increased.

In Reuben's survey the most frequently cited major obstacle to implementing a geriatrics curriculum was lack of faculty (Reuben, Fink, Vivell, et al., 1990). Thirteen years later this was still reported as a significant obstacle. It remains important that existing faculty members with an interest but no formal geriatric medicine training be encouraged to teach residents and help foster enthusiasm for the field.

When we asked residency directors who had been successful in adding geriatric medicine into their curricula to explain their success, one of the most commonly cited reasons was that they had a few outstanding teachers who loved teaching geriatrics. Comments such as "charismatic faculty who inspire while teaching", and "lucky to have a physician who loves to teach with interest in geriatrics" are just a few examples that indicate how much geriatric education depends on faculty role modeling. Although expanding the number of fellowship-trained FP and GIM geriatric educators remains an important task, many existing faculty can generate excitement for the field. Programs should support increased geriatric training for physicians who wish to increase their clinical skills (Mold, Mehr, Kvale et al., 1995).

Multidisciplinary teams are central to good geriatric medicine practice, and 83% of FP and 88% of GIM residencies are currently using this approach. The unique perspectives of many other health disciplines can help residents learn about clinical solutions to their complex patients' problems and health care needs as well as expand the base of expert geriatric faculty in each program.

The most significant cited barrier to improving their geriatric medicine training was over-crowded curriculum demands placed on their programs. This complaint is not surprising given the breadth of general internal medicine and family medicine training and the increase in RRC requirements. When FP residency directors were asked to rate the respective importance of several curricular areas for training family physicians, pediatrics, geriatrics, and inpatient medicine were rated as the top three priorities. GIM residency directors rated ICU/CCU, geriatrics and palliative care. Program directors remain critical in determining the path of geriatric medicine training for FP and GIM residents.

These surveys suggest a large number of similarities in geriatric education across family medicine and internal medicine residencies. Most programs still depend on nursing homes as the major site for teaching geriatrics. The fact that most programs are anticipating stable or increased geriatrics curricula over the next three years is encouraging. However, faculty resources remain limited. Primary care residency training will always be faced with balancing many educational objectives, although FP and GIM program directors recognize the importance of geriatric medicine to the future of primary care practice.

Psychiatry and Obstetrics/Gynecology

Although both psychiatry and obstetrics/gynecology residency program requirements include specific language mandating geriatrics training, little is known about how these requirements are being addressed. The AGS/Hartford specialty projects are helping shape interest within these specialties. Medicare's limited support for mental health care, however, has created a disincentive for psychiatry programs to further expand curriculum related to the care of older adults. In addition, aging and mental illness are both viewed as chronic problems, without the attractive expectation of "cures." Education in geriatric psychiatry will need to overcome these biases (Halpain, Harris, McClures et al., 1999).

Specialty Residents and Subspecialty Fellows

Since the 1993 IOM report it has been recognized that the training of all physicians should include general geriatric medicine principles and specialty-specific topics related to aging. The AGS and the John A. Hartford Foundation have identified influential leaders within many specialties and supported them in their efforts to determine how the needs of our aging population will affect their practices and educational programs. Curriculum development and faculty development, although in early stages, are well underway. Evaluation of the impact of these new initiatives will help direct future investments in curriculum development and practice.

In summary, the following key questions need to be answered in order to further develop graduate medical education in geriatric medicine for all disciplines (Callahan, Thomas, Dunn et al., 2001).

1. What geriatric competencies are appropriate for all primary care and specialty residents upon completion of training?
2. Are multiple clinical training sites required?
3. Can residents develop an understanding for the unique nature of care in different settings, the subtleties of how living and receiving care in these settings influence medical care and the patient's experience of health and illness, if they don't participate in care at some of these sites?
4. How can programs increase the trainees' openness to learning from other health care professions?
5. How can programs influence the trainees' attitudes toward providing care to older adults?
6. Are geriatricians needed to teach? Do generalists and subspecialists currently have the skills and desire to integrate geriatrics into their teaching?

8 Preparing All Physicians for the Care of the Aged: Medical Student Education

Background

The four-year curricula of U.S. medical schools are crowded with traditional content as well as many new and important areas of study, e.g., molecular biology, cost-effective medicine, nutrition, women's health, end-of-life care, and ambulatory care. Consequently, organized curricula in geriatric medicine have been slow to develop in many medical schools. Both the 1993 IOM and the 1995 BHPr reports on geriatric education documented limited elective and required curricula in medical schools.

In the early 1990s fewer than 15 allopathic schools required separate courses in geriatric medicine (BHPr, 1995). Osteopathic schools' curricula were further ahead; a 1994 survey found that 31% had a required geriatric medicine course (Carlsen, Pfeiffer, Marx et al., 1996). As well as separate courses, topics in geriatric medicine can also be integrated into other subjects and courses. In the early 1990s as many as 85% of allopathic schools provided an average of 20 required hours of geriatric medicine. Elective geriatric medicine courses were common, but seldom chosen by medical students (only 2.9% selected these courses in 1992) (BHPr, 1995:155; Butler, Estrine, Honig et al., 2000).

Surveys of geriatric education in 73 allopathic and 16 osteopathic schools were published in 1994 and 1996 respectively (Karuza, Katz, Rosh et al.; Carlsen, Pfeiffer, Marx et al.) (Table 8.1). These studies confirmed that in the mid-1990s many medical schools were still in the early stages of developing geriatric medicine curricula. Osteopathic schools typically developed separate courses; allopathic schools more often integrated geriatric content into existing courses.

The AAMC and the Liaison Committee on Medical Education (LCME) conduct annual surveys to collect information on allopathic medical school curricula. Data from these surveys have been used to describe trends in geriatric medicine training in allopathic medical schools into the late 1990s. A July 1998 AAMC report summarized LCME curriculum data (Figure 8.1). Required courses remained rare, but 98% of schools reported some form of required geriatric medicine experience. A September 2000 report summarized recent results of the AAMC's Medical School Graduation Questionnaire, administered annually to senior medical students. In 1998 and 1999 more than 40% of medical students felt that their medical schools' geriatric medicine curriculum time was inadequate (Table 8.2).

The AACOM also surveys osteopathic medical schools annually regarding their curricula. Analysis of the data for AY 1999-2000 revealed 5,250 osteopathic medical students at 18 of the 19 osteopathic medical schools received training in geriatrics that year (Personal communication, Lorrie S. Van Akkersen, AACOM, February 2002). The 2000 graduating class of osteopathic students (n=2,326) were surveyed regarding geriatric medicine curriculum. There were 1,911 respondents; 77.4% felt time devoted to learning about geriatrics was appropriate, 16.6% felt the time was inadequate, and 6.0% felt the time was excessive. Only seven people (0.4%) expected to work in or seek additional training in geriatrics (Personal communication, Lorrie S. Van Akkeren, AACOM, February 2002).

In addition to medical school curricula in geriatric medicine, several foundation-sponsored student summer experiences have been available since the late 1980s. For example, the John A Hartford Foundation has been sponsoring such experiences at the Centers of Excellence (CoE) since 1989.

Table 8.1 Teaching of Geriatrics in Osteopathic (1996)[1] and Allopathic (1994)[2] Medical Schools (Percent)

Approach	Osteopathic Medical Schools (n=16)	Allopathic Medical Schools (n=73)
Integrate geriatrics into the curriculum	31	77
Set aside time for geriatrics	63	25
Elective geriatrics clerkship	81	84
Required geriatrics clerkship	31	10
No geriatrics clerkship	13	6

Source: [1]Carlsen, Pheiffer, Marx et al., 1996
[2]Karuza, Katz, Rush et al., 1994

Current Status of Medical Student Training

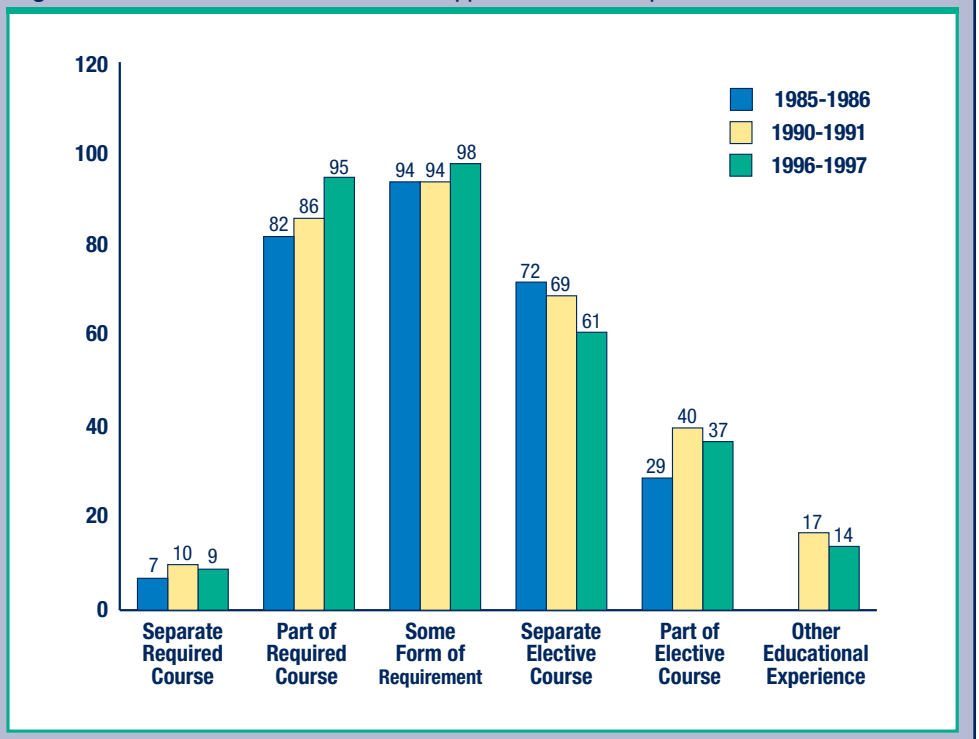
To encourage student interest in geriatric medicine, the American Geriatrics Society (AGS) sponsors student chapters in medical schools and provides $200 annually to support these chapters. As of May 2002 there were 23 AGS student chapters. There is growing interest in these chapters as 6 new chapters started since November 2001 and three additional medical schools were seeking approval to start a

chapter. The goals of these student chapters include:

- Encouraging interest in geriatrics among faculty and students in the various disciplines concerned with the care of the elderly.
- Encouraging curriculum development in the medical schools to include geriatrics in the general curriculum, as well as in elective course offerings and multidisciplinary programs.
- Developing educational programs in geriatrics open to the medical school faculty as well as to local health care professionals.
- Promoting educational activities with in community facilities such as nursing homes.

The American Medical Student Association (AMSA) is the oldest and largest independent association of physicians-in-training in the U.S. Founded in 1950 to provide medical students the opportunity to participate in organized medicine, AMSA began under the auspices of the American Medical Association. Today AMSA is a student-governed national organization of 30,000 medical students, pre-medical students, interns and residents advocating for the needs of physicians-in-training. AMSA has eight interest groups, including one in geriatrics. Interest Groups (IGs) provide a mechanism for students with similar interests to network. Each interest group has dedicated web pages and a list serv to facilitate communication. Interest groups can contribute to AMSA's publications and generate project ideas for any of its six action committees. The current geriatrics interest group coordinators are Kathleen Tschantz at the Ohio State University College of Medicine and Tara Sanft, Medical College of Wisconsin. The number of geriatric interest group participants has remained steady at about 150 members for the last three years (Personal communication, David Hamilton, IG coordinator, February 2001).

Figure 8.1 Trends in Geriatric Educational Opportunities for Allopathic Medical Students



Source: AAMC, 1998

Table 8.2 AAMC Medical School Graduation Questionnaire: Medical students responses to "Do you believe that the time devoted to your instruction in Geriatrics was inadequate, appropriate, or excessive?"

Schools	Inadequate (%)	Appropriate (%)	Excessive (%)	n
All Schools 1998	44.7	52.5	2.8	13,887
All Schools 1999	43.6	53.9	2.6	12,684
All Schools 2000	38.6	57.5	3.9	14,103

Source: AAMC 2000 Medical School Graduation Questionnaire All Schools Report, 2001

The American Federation for Aging Research (AFAR) currently administers several research enrichment programs for medical students. The AFAR's *Medical Student Geriatric Scholars Program* began in 1993, with the first cohort of students selected in 1994. More than 550 students, representing 80 medical schools, have participated in the program. The John A. Hartford Foundation provides additional support to the program, and the Fan Fox and Leslie R. Samuels Foundation provides support for students in the New York Metropolitan area. This program funds medical students for an 8 to 12-week externship in clinical geriatrics and aging research. Students can train at one of four national training centers (Harvard, Johns Hopkins, UCLA, or University of Washington). Furthermore, CoE sites may offer similar experiences to their own medical students. Students receive a $4,000 stipend; off-site students are also reimbursed for their living expenses.

The *Merck/AFAR Research Scholarships in Geriatric Pharmacology for Medical and Pharmacy Students*, started in 1997, funded six students in its first year. This program pays medical or pharmacy doctoral students for mentored 8 to 12-week research experiences. In 2002, up to eight $4,000 stipends will be awarded. Students in this program may conduct their research in any academic setting.

The *Glenn/AFAR Scholarships for Research in the Biology of Aging* began in 1994. This program, open to MD or PhD students, funds three-month mentored research experiences on subjects related to the basic sciences and aging. The program provides a $5,000 stipend, and the research may be conducted in any academic setting.

The AGS's E*dward Henderson Student Award* is presented yearly to one medical student interested in pursuing a career in geriatrics who has demonstrated excellence in the field. To be eligible for nomination, a student must have demonstrated: a commitment to the field of geriatrics through leadership in areas pertinent to geriatrics; initiation of new information or programs in geriatrics; or scholarship

in geriatrics as demonstrated through original research or reviews. The awardee receives a $500 travel stipend to attend the annual meeting of the American Geriatrics Society.

The American Geriatrics Society and Boston University, with funding from the NIA, has sponsored a *Summer Institute in Geriatrics* for medical students since 1986. This week-long conference, generally held each year during July, provides medical students entering their third or fourth years exposure to academia and geriatric medicine research. Activities include lectures, seminars, and case discussions as well as site visits to research and clinical programs. Faculty include nationally recognized academic geriatricians and other individuals pursuing research in geriatrics and gerontology. Approximately 250 medical students have attended the Institute. No Institute will be held the summer of 2002 as the curricula is being revised and updated since students are coming to the Institute with more background in geriatrics. (Personal communication, Laura Anastasi, Boston University, March 22, 2002).

In 1998, the AGS developed *Areas of Basic Competency for the Care of Older Patients for Medical and Osteopathic Schools* (www.americangeriatrics.org). This curriculum guide addressed attitudes, knowledge and skills that medical students should achieve. The AGS education committee conducted a mail survey of medical schools' pre-doctoral curricula in 1999-2000 (Eleazer, 2001). Ninety-three schools responded. Eighty-nine percent of responders indicated they had a geriatrics curriculum, but only 64% reported having developed learning objectives for medical students in the care of older persons. The mean number of hours of geriatric medicine lectures for all 4 years of training was 13.79 hours. Sixty-eight percent of the responding schools offered elective experiences in the home or nursing home settings.

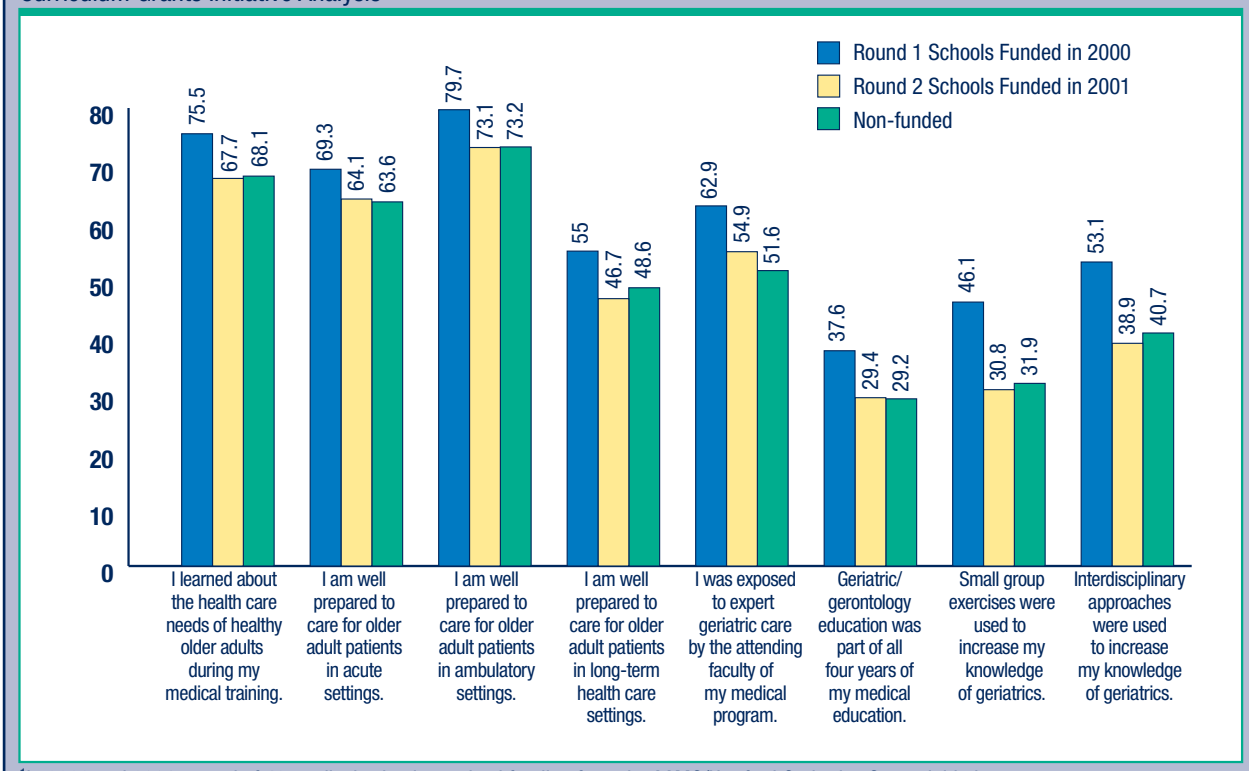
For this project, we surveyed, in the spring of 2001, U.S. allopathic and osteopathic directors of geriatric medicine programs. They were asked to report on their required geriatric medicine training settings. Each setting was utilized more commonly in the osteopathic schools. Nearly one-third of allopathic schools required nursing home and home visits. Besides nursing home and home visits, settings included inpatient geriatric consultation, geriatric acute care unit, outpatient geriatric assessment center, geriatric primary care clinic, hospice care, and assisted living. Fifty-eight medical schools (56.3%) indicated they did not have any required setting.

AAMC/Hartford Foundation Initiative

In 2000, utilizing the AGS's *Areas of Competency* as a guide, the AAMC, with a series of grants totaling five million dollars over a four-year period from the John A Hartford Foundation, initiated the *Geriatrics Curriculum Grants Initiative*. This program is led by M. Brownell Anderson, Associate Vice President of the AAMC's Division of Medical Education. The purpose of this program is to enhance medical student education related to gerontology and geriatrics by:

- Catalyzing in a small group of medical schools the development and implementation of innovative curricula on these topics, and
- Disseminating widely to all medical schools the results of the development, implementation, and evaluation of these curricula.

Figure 8.2 2001 AAMC Expanded Medical Student Graduation Questionnaire: AAMC/Hartford Geriatric Curriculum Grants Initiative Analysis[1]



[1]In 2000 and 2001, a total of 40 medical schools received funding from the AAMC/Hartford Geriatrics Grants Initiative. Medical schools were to implement a required experience for all students in each of their four years of training.

Source: AAMC Medical School Graduation Questionnaire, All School Report, 2001

This program awarded 20 two-year, $100,000 grants in 2000 and another 20 in 2001 (see Table 5.9 in Chapter 5). The program requires that each grantee implement a required experience for all students in each year of training. The majority of these allopathic medical schools are continuing the trend of integrating experiences into existing courses, rather than creating a separate geriatric medicine clerkship.

Each medical school in this program is developing an internal evaluation plan. In addition, the AAMC has expanded the content of its Medical School Graduation Questionnaire related to geriatric medicine. In 2001, 42.3% of graduating medical students (14,164 respondents) rated the time devoted to training in geriatrics as inadequate. This compared with student ratings of the time devoted to care of hospitalized patients (2.1% inadequate), primary care (5.1% inadequate) and woman's health (21% inadequate) (AAMC Division of Medical Education, 2001). Figure 8.2 lists preliminary findings from this first expanded survey for 2001 graduates. More than 50% of students reported that they were exposed to expert geriatric care by the attending faculty. Less than a third of the students reported geriatric curriculum in all four years of their training. There is a trend toward medical student participation in the Hartford/AAMC curriculum grant program to describe a more positive geriatrics experience. The AAMC is planning annual meetings of grantees and dissemination of the newly developed curriculum materials.

Reynolds Foundation Initiative

The Donald W. Reynolds Foundation of Las Vegas launched a major initiative in 2000 to strengthen geriatrics training for medical students, residents, and practicing physicians. The Foundation issued a request for proposals to all U.S. academic health centers and independent residency training programs. The Reynolds Geriatric Training program funds:

- Initiatives that are highly innovative and promise long-lasting, value-added impact in institutions that do not yet have strong medical student and residency training in geriatrics.
- To develop knowledge of fundamental biomedical aspects of aging, geriatric assessment and care coordination, and to train physicians to optimally manage the clinical conditions and special problems of the frail elderly.

In the spring of 2001, after reviewing 64 applications, the Foundation awarded ten four-year grants of $2 million each (see Table 5.9 in Chapter 5). If the progress of these initial grants is satisfactory, the Foundation expects to issue additional calls for proposals in 2002 and 2004 and to award up to 20 new grants, totaling $40 million.

These grants will support a broad range of training activities, as illustrated by the diversity of successful grant applications. The University of Rochester will integrate aging as a prominent theme in its new "double helix" curriculum that combines clinical and scientific training throughout all four years of training. The University of Michigan will require medical students and residents to prepare a "Geriatrics Portfolio" that documents their required geriatric training experiences. Virginia Commonwealth University will use a web site, "Geriatric Quick Consult", to offer practical advice on common problems to students and community physicians. The University of Iowa will develop a "geriatric virtual hospital," offering web-based teaching modules to students and practicing physicians covering ten common geriatric syndromes. It will also prepare digitized lectures on 40 core geriatric topics. Yale University will integrate into the education of all medical trainees a model of care that reflects the complex nature of the needs of the aging population and is scientifically informed, culturally and ethically appropriate. Yale plans to develop a case-based curriculum with multiple levels of complexity that will integrate these concepts into medical education from the basic sciences to continuing medical education for practicing physicians. (See http://www.dwreynolds.org for a description of each project.)

Implications

Faculty implementing new geriatrics curricula in medical schools confront challenges similar to those facing residency program directors: the curriculum is crowded, there are numerous demands for new topic area time, and traditional course content is not easily phased out to make room for new material. A review of the new Hartford/AAMC and Reynolds project proposals confirms several trends in medical student education.

First, medical schools are integrating new geriatrics content into existing courses and clerkships rather than developing new stand-alone courses. The advantage of this approach is that it does not require carving out new blocks of calendar time or displacing existing courses. Integration also promises to create greater changes in perspective throughout the medical school curriculum, adding sensitivity to aging topics in many basic science courses and clinical clerkships. Stand-alone courses have the advantage of focusing the students' attention on aging and allow faculty to structure a coherent geriatric medicine experience.

Second, medical school educators have embraced technology. Self-instructional computer-based exercises, simulated patients, and on-line lectures and course syllabi are being widely developed and utilized. Geriatricians are taking a lead in developing creative new teaching materials. To review and disseminate these new electronic products, both the AAMC and the Reynolds Foundation plan to develop curriculum resource centers. The Association of Directors of Geriatric Academic Programs (ADGAP) is developing a *Geriatric Education Coordinating Center (GECC)* that would review and disseminate educational strategies and materials for use in undergraduate, postgraduate, and practicing physician education. The Reynolds Foundation is funding this Center and the Director is Rosanne Leipzig, MD. The goals for the proposed GECC are to:

1. Facilitate interaction among the Reynolds Foundation grantees and others engaged in similar activities that encourages sharing of curriculum materials, successes, and lessons learned;
2. Provide a forum for presentation of materials and teaching methods developed by Reynolds Foundation grantees and others;
3. Provide a centralized mechanism for disseminating curriculum materials, lessons learned, successes, overall program impact to all geriatric medicine training programs and other interested organizations;
4. Provide "one stop shopping" for a wide range of geriatrics training materials that are currently available; and
5. Create a mechanism for providing feedback to curriculum developers.

Third, the future evaluation of medical students will place more emphasis on measurable outcomes demonstrated in standardized patient encounters. Similar to the ACGME, the LCME is encouraging medical schools to modernize approaches to student evaluation. Many schools are developing outcome evaluation methods utilizing structured patient encounters in which trained actors/actresses, frequently retired older adults, simulate patients presenting with common problems. As these new evaluation programs develop, geriatrics faculty will have opportunities to develop cases highlighting problems common to older adults.

As was true with residency training, several questions about trends in medical school curriculum development remain unanswered. Can students learn about the care of older adults without having training experiences in clinical sites away from the medical school, e.g., the home or nursing home? The logistics and costs in faculty and student time make training at such sites daunting for many programs to implement and maintain. Can faculty teaching geriatrics be drawn from other physician and non-physician clinicians? Can existing and future faculty development programs create a cadre of "geriatrics-capable" generalist and specialist faculty? (See chapters 5 and 6.) Medical students often resist training by professionals outside the medical profession, but geriatric medicine by its very nature is an interdisciplinary activity.

In summary, implementing new curriculum in medical schools is never easy. Traditional courses dominate the medical student's time, and the required faculty effort to teach clinical courses is considerable and under-funded. It is no surprise that geriatric curriculum has not been a high priority of allopathic medical schools. (Osteopathic schools have placed more emphasis on medical student training.) Graduating medical students' observation that they have not spent enough time learning about geriatric medicine is consistent with the report of geriatric medicine academic leaders (DGAPs). The DGAPs responded that more than one half of the surveyed medical schools do not require even one medical student experience in a specialized geriatrics inpatient, outpatient, or community setting. The new initiatives sponsored by the Hartford (through the AAMC) and Reynolds Foundations are certainly needed and have the potential to improve geriatrics training for medical students at a majority of the United States medical schools.

Conclusion

This report summarizes research from the initial two years of the Association of Directors of Geriatric Academic Programs (ADGAP) Longitudinal Study of Training and Practice in Geriatric Medicine. The material included in this report represents only a portion of the data and supporting documents we collected, and a number of important topics remain to be adequately addressed by our research team. In addition, the practice of geriatric medicine is by its very nature interdisciplinary, and we have only studied the medical profession.

The aging of the U.S. population will have a major impact on the practice of medicine and future health care costs for the elderly population. The principles of geriatric medicine practice developed over the past 50 years, if widely applied to the care of older Americans, will provide for the delivery of quality, cost-effective care for the well elderly and older adults with chronic illness. In addition, investment in research that leads to substantial advances in the prevention and treatment of the diseases that result in the greatest functional loss among the old is essential. Current cost containment strategies are inadequate to address the cost containment issue and greater efforts in that area are needed.

Geriatric medicine in the United States remains a young discipline. Over the past 25 years academic geriatric medicine programs have been implemented at most U.S. medical and osteopathic schools. This is a significant accomplishment, yet much remains to be done. Some medical schools now have credible academic programs with the faculty and resources needed to implement clinical, education, and research activities. However, many other academic centers lag far behind in the program development required to ensure adequate training of future physicians. There is a continuing need for new resource investment to train faculty for roles as teachers and researchers, and to develop medical school geriatrics programs of a size and scope comparable to those of other academic disciplines.

The growth and development of geriatric medicine fellowship programs during the past decade has been remarkable. Graduates of these programs will serve as the next generation of geriatrics clinical and academic leaders. The recruitment of high-quality U.S. medical school graduates into these programs, however, is a challenge for the discipline. Also, the retention of first-year fellows for additional years of academic training has been difficult. In the future, incentives will be needed to attract the best graduates of U.S. family practice, internal medicine, and psychiatry training programs into academic careers in geriatric medicine.

In addition to the urgent need to expand the numbers of academic and practicing geriatricians, the expanding geriatric medicine knowledge base requires that every physician keep abreast of the latest literature and develop skills specific to the care of the older adult. The prolongation of human life is a 20th-century success story. The 21st century's challenge to the medical profession is to provide enough skilled teachers, researchers, and clinicians with expertise in geriatrics to care for the nation's older population. The basis of an agenda for research and training to integrate geriatrics into each specialty now exists. Geriatricians can assist their colleagues in this educational effort and faculty leaders from each specialty must become involved.

Faculty implementing new geriatrics curricula in medical schools confront challenges similar to those facing residency and fellowship program directors: the curriculum is crowded, there are numerous demands for new topic area time, and traditional course content is not easily phased out to make room for new material. Graduating medical students' report that they have not spent enough time learning about geriatric medicine. The new initiatives sponsored by the Hartford (through the AAMC) and Reynolds Foundations are certainly needed and have the potential to improve geriatrics training for medical students at a majority of the U.S. medical schools.

The authors of this report and the members of ADGAP intend for it to establish benchmarks for the field and enable measurement of the impact of current and future strategies for developing academic geriatric medicine. When combined with demographic and health care utilization data, our database, as it is updated, will also help geriatric medicine policy advisors identify gaps in geriatric education and manpower. Analyses of the database will also help provide direction for future initiatives by federal and state governments and private foundations. Finally, the updated database will provide a means of measuring the impact of programs that are developing academic geriatric medicine, supporting faculty development, and increasing the quality and quantity of geriatrics training in the United States.

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APPENDIX A.
RESEARCH FOCUS OF CURRENT VETERANS HEALTH ADMINISTRATION GERIATRIC RESEARCH, EDUCATION, AND CLINICAL CENTERS (GRECCS)

GRECC LOCATION	BASIC BIOMEDICAL	APPLIED CLINICAL	HEALTH SERVICES	REHABILITATION
Ann Arbor, MI	• Neurosciences • Metabolism/nutrition	• Autonomic function • Diabetes mellitus • Hypertension	• Cost & quality of health care	
Baltimore, MD	• Metabolism/obesity • Hypertension • Brain injury/ rehabilitation	• Cardiovascular disease prevention • Stroke rehabilitation	• Cardiovascular disease risk factor survey • Health care utilization	
Boston, MA[1] Bedford Division	• Neuroscience/ cognitive disorders	• Management of advanced Alzheimer's disease & other dementia	• Ethics, advance directives, & outcomes research	
Boston, MA[1] Jamaica Plain/ W. Roxbury Div.	• Cardiovascular physiology & pharmacology • Neuroscience/ cognitive disorders • Metabolism	• Aging with a long-term disability	• Decision support technology	
Birmingham, AL/ Atlanta, GA	• Genito-urinary disorders • Mobility	• Genito-urinary disorders (e.g., incontinence & nocturia) • Mobility-physical function, falls, & driving	• Genito-urinary disorders • Mobility • Quality improvement • Cost-effectiveness	• Incontinence • Mobility
Bronx/NY Harbor, NY	• Cellular & molecular biology of musculo-skeletal system	• Clinical bone disease (osteoporosis & others) • Diabetes & vascular compliance • Ethics • Palliative care	• Palliative care	
Cleveland, OH	• Aging heart & energy metabolism • Cardiovascular physiology • Antibiotic resistance	• Post-stroke rehabilitation • Frailty • Palliative care	• Home-Based Primary Care • Rehabilitation outcomes	• Functional electrical stimulation
Durham, NC	• Cardiovascular physiology • Bones, joints & mobility • Cell biology of cancer & immune system	• Cardiovascular disease & exercise • Mobility, bones & joints • Cancer care	• Health promotion & disease prevention	
Gainesville, FL	• Exercise physiology • Geropharmacology • Immunology/infectious disease • Dementia	• Exercise Physiology • Immunology/infectious disease • Dementia • Geropharmacology	• Targeting admissions to GEMs • Exercise in frail elderly	
Little Rock, AR	• Hematopoiesis • Molecular biology	• Cancer • Chronic disease in the elderly • Nutrition	• Evaluation of geriatric & long-term care service delivery	
Madison, WI	• Cancer/immunity/ nutrition • Swallowing physiology • Neuroendocrine signaling	• Geriatric oncology • Swallowing	• Critical junctures in long-term care— non-institutional & institutional interventions	
Miami, FL	• Bone & cartilage metabolism • Neurodegeneration • Prostate disease	• Osteoporosis & osteoarthritis • Paget's disease • Parkinson's disease • Prostate disease	• Cost-effectiveness studies • Preventive services • Rehabilitation (falls & injuries)	

APPENDIX A. Research Focus of Current Veterans Health Administration Geriatric Research, Education and Clinical Centers (GRECCs), *continued*

GRECC LOCATION	BASIC BIOMEDICAL	APPLIED CLINICAL	HEALTH SERVICES	REHABILITATION
Minneapolis, MN	• Aging nervous system: neurobiology, neurology, psychiatry • Behavioral neurobiology	• Alzheimer's disease • Delirium • Psychopharmacology	• Health care utilization of health care services delivery • Epidemiology dementia	
Nashville/ Murfreesboro, TN	• Vascular biology • Geropharmacology	• Vascular dysfunction • Geriatric clinical pharmacology • Clinical prevention	• Geropharmaco-epidemiology • Geropharmaco-economics • Clinical quality improvement • Safety of health care	
Palo Alto, CA	• Endocrinology/ metabolism • Biomechanics of mobility • Changes in functional vision in aging	• Endocrinology/ metabolism • Cognitive function/ chronic disease • Adjustment to vision loss • Mobility/musculoskeletal dysfunction • Affective disorders	• Advanced care directives • Chemical & physical restraints • Family caregiving • Resource utilization & outcomes of hospitalization	
Pittsburgh, PA	• Stroke • Neuronal cell death • Gene therapy	• Depression in the elderly • Communication research • Polypharmacy • End of life	• Barriers to delivery of care to the elderly • Stroke related quality of life measures	• Aphasia rehabilitation
St. Louis, MO	• Physiology & metabolic concomitants of aging	• Effects of exercise & nutrition on physiological & metabolic parameters	• Health care utilization • Program evaluation	
Salt Lake City, UT	• Cellular biology/ physiology of cell proliferation, cytokines & immunity during aging	• Cytokines & steroids: effects on aging • Aerobic exercise & cognition during aging	• Real-time quality assurance	
San Antonio, TX	• Metabolism/ endocrinology • Nutrition	• Metabolic diseases • Cognitive/sensory impairment • Oral health/dentistry	• Health care utilization, functional status and ethnicity • Quality assessment & cost benefit analysis	
Seattle/ American Lake, WA	• Neurobiologic, neuroendocrine aspects of aging • Alzheimer's disease • Prostate biology	• Alzheimer's disease • Depression • Dementia • Prostate disease	• Bioethical aspects of medical decision-making in the elderly • Impact of nutrition on health status and utilization	
Sepulveda, CA	• Endocrinology of aging • Molecular biology of aging bone & brain • Alzheimer's disease	• Falls & instability • Long-term care • Pain • Exercise	• Cost-effective delivery of health care services to the elderly • Geriatric assessment • Clinical predictors	
West Los Angeles, CA	• Cellular & molecular basis of osteoporosis & osteoarthritis • Cellular & molecular basis of immunosenescence	• Pathogenesis & management of osteoporosis • Geriatric rehabilitation • Immunology/Infectious diseases	• Evaluation of clinical programs • Geriatric rehabilitation cost-effectiveness • Minority elderly health care utilization	

Source: Geriatrics and Extended Care Strategic Healthcare Group, DVA, 2001

[1]The Boston, MA GRECC has two divisions, Bedford and and Jamaica Plain/W. Roxbury.

APPENDIX B.

JOHN A. HARTFORD FOUNDATION CENTERS OF EXCELLENCE

State	City	Center	Director	Award Cycle	Award	Duration	Award Date
AK	Little Rock	University of Arkansas	David A. Lipschitz, MD,	Past Program	$10,000.00	2 Years	9/1/97
AL	Birmingham	University of Alabama at Birmingham	Richard M. Allman, MD	Present Program	$412,500.00	3 Years	12/1/97
CA	Los Angeles	University of California, Los Angeles	David B. Reuben, MD	Present Program	$450,000.00	3 Years	9/1/99
CA	Palo Alto	Stanford University	Peter Pompei, MD	Past Program	$10,000.00	2 Years	9/1/97
CA	San Francisco	University of California	C. Seth Landefeld, MD	Present Program	$525,000.00	3 Years	12/1/97
CO	Denver	University of Colorado	Andrew M. Kramer, MD	Present Program	$525,000.00	3 Years	12/1/97
CT	Farmington	University of Connecticut Center	Richard W. Besdine, MD	Past Program	$10,000.00	2 Years	9/1/97
CT	New Haven	Yale University	Mary E. Tinetti, MD	Present Program	$525,000.00	3 Years	12/1/97
GA	Atlanta	Emory University	Joseph G. Ouslander, MD	Present Program	$412,500.00	3 Years	12/1/97
HI	Honolulu	University of Hawaii	Patricia L. Blanchette, MD	Present Program	$525,000.00	3 Years	12/1/97
IL	Chicago	Rush-Presbyterian-St. Lukes Medical	Denis A. Evans, MD	Past program	$750,000.00	3 Years	12/1/96
IL	Chicago	University of Chicago	Greg A. Sachs, MD	Present Program	$524,590.00	3 Years	3/1/00
KS	Kansas City	University of Kansas	Stephanie A. Studenski, MD	Present Program	$525,000.00	3 Years	12/1/97
MA	Boston	Boston University	Patricia P. Barry, MD, MPH	Present Program	$525,000.00	3 Years	12/1/97
MA	Boston	Harvard Medical School	Lewis A. Lipsitz, MD	Present Program	$450,000.00	3 Years	9/1/99
MD	Baltimore	Johns Hopkins University	John R. Burton, MD	Present Program	$450,000.00	3 Years	9/1/99
MI	Ann Arbor	University of Michigan	Jeffrey B. Halter, MD	Present Program	$450,000.00	3 Years	9/1/99
MO	St. Louis	St. Louis University	John E. Morley, MD, BCh	Past Program	$10,000.00	2 Years	9/1/97
NC	Chapel Hill	University of North Carolina	Jan Busby-Whitehead, MD	Past Program	$598,000.00	27 Months	3/1/97
NC	Durham	Duke University	Harvey J. Cohen,MD	Present Program	$450,000.00	3 Years	9/1/99
NC	Winston-Salem	Bowman Gray School of Medicine	William R. Hazzard, MD	Past Program	$10,000.00	2 Years	9/1/97
NY	New York	Mount Sinai Medical Center	Rosanne M. Leipzig, MD,	Present Program	$450,000.00	3 Years	9/1/99
NY	Rochester	University of Rochester	William J. Hall, MD	Present Program	$525,000.00	3 Years	12/1/97
OH	Cleveland	Case Western Reserve University	Jerome Kowal, MD	Past program	$10,000.00	2 Years	9/1/97
PA	Philadelphia	University of Pennsylvania	Risa Lavizzo-Mourey,MD	Present Program	$450,000.00	3 Years	3/1/00
PA	Philadelphia	University of Pennsylvania	Risa Lavizzo-Mourey,MD	Past Program	$10,000.00	2 Years	9/1/97
PA	Pittsburgh	University of Pittsburgh	Neil M. Resnick, MD	Present Program	$525,000.00	3 Years	3/1/01
TX	Houston	Baylor College of Medicine	Robert J. Luchi, MD	Present Program	$525,000.00	3 Years	9/1/97
TX	San Antonio	University of Texas, San Antonio	David V. Espino, MD	Present Program	$525,000.00	3 Years	12/1/97
WA	Seattle	University of Washington	Itmar B. Abrass, MD	Present Program	$600,000.00	3 Years	9/1/99

Source: John Hartford Foundation web page (www.jhartfound.org/grants/coe.htm)

APPENDIX C.
RESEARCH FOCUS OF NATIONAL INSTITUTE ON AGING, CLAUDE D. PEPPER OLDER AMERICANS INDEPENDENCE CENTERS: FY 2000 AND/OR 2001 FUNDING

DUKE UNIVERSITY
PI: Harvey J. Cohen, MD
Research Emphases:
- Promoting Health After Cancer
- Taste and Smell Enhancement in Older Cancer Patients
- Improving Wheelchair Provision
- Genetics of Osteoarthritis

HARVARD UNIVERSITY
PI: Lewis Lipsitz, MD
Research Emphases:
- Cardiovascular Risk in Black Elders
- Sensory Function
- Delirium and Cognitive Decline

UCLA
PIs: David B. Reuben, MD and John F. Schnelle, PhD
Research Emphases:
- Immunodeficiency of Aging
- Cataract Management Trial
- A Weighted Vest to Prevent Leg Weakness and Osteoporosis

UNIVERSITY OF CONNECTICUT
PI: George A. Kuchel, MD
Research Emphases:
- Estrogen and Bone
- Exercise and Osteoporosis

UNIVERSITY OF KANSAS
PIs: Stephanie Studenski, MD and Pamela W. Duncan, PhD
Research Emphases:
- Improving Recovery after Stroke
- Attention and Motor Learning after Stroke
- Neural Bases for Stroke Recovery

UNIVERSITY OF MARYLAND
PI: Andrew P. Goldberg, MD
Research Emphases:
- Exercise Rehabilitation
- Exercise Training for Hemiparetic Stroke
- Upper Extremity Training for Chronic Stroke

UNIVERSITY OF MICHIGAN
PI: Jeffrey Halter, MD
Research Emphases:
- Dynamic Balance and Rapid Step Training
- Peripheral Neuropathy, Sensorimotor Function, and Balance
- Weight Gain Trajectory and Life Span in Mice

UNIVERSITY OF ROCHESTER
PI: William J. Hall, MD
Research Emphases:
- Respiratory Infections, Immunity, and Hemostasis in Aging
- Comparison of Gene Expression in Young and Old Human Skeletal Muscle

UNIVERSITY OF TEXAS-GALVESTON
PIs: James S. Goodwin, MD and John Papaconstantinou, PhD
Research Emphases:
- Interaction of Nutrition and Exercise on Muscle
- Interaction of Nutrition and Anabolic Steroids in Promoting Muscle Function

WAKE FOREST UNIVERSITY
PIs: Marco Pahor, M.D. and Sally A. Shumaker, PhD
Research Emphases:
- Arthritis, Diet and Activity Promotion Trial
- Cardiovascular Health and Activity Maintenance
- Excitation-Contraction Coupling in Aging Muscle

WASHINGTON UNIVERSITY
PI: John O. Holloszy, MD
Research Emphases:
- Can Exercise Training Reverse Physical Frailty?
- Can HRT Ameliorate Physical Frailty in Old Women?

YALE UNIVERSITY
PIs: Mary Tinetti, M.D. and Sharon K. Inouye, MD, MPH
Research Emphases:
- PREHABilitation Strategy for At-Risk Elders
- Driver-Related Rehabilitative Intervention for the Elderly
- Mechanisms of Insulin Resistance in Aging

Source: The Claude D. Pepper Older Americans Independence Centers, Directory and Center Publications, Update 2001.

APPENDIX D.
NATIONAL INSTITUTE ON AGING ALZHEIMER'S DISEASE CENTERS

State	City	Program	Director
Alabama	Birmingham	University of Alabama at Birmingham	Lindy E. Harrell, MD, PhD
Arizona	Phoenix	Sun Health Research Institute/ Arizona Consortium	Eric Reiman, MD
Arkansas	Little Rock	University of Arkansas for Medical Sciences	Cornelia M. Beck, RN, PhD
California	Palo Alto	Stanford University	Jerome A. Yesavage, MD
California	Sacramento	University of California, Davis	William J. Jagust, MD
California	Irvine	University of California, Irvine	Carl W. Cotman, PhD
California	Los Angeles	University of California, Los Angeles	Jeffery L. Cummings, MD
California	San Diego	University of California, San Diego	Leon Thal, MD
California	Los Angeles	University of Southern California	Caleb E. Finch, PhD
Georgia	Atlanta	Emory University	Allan I. Levey, MD, PhD
Illinois	Chicago	Northwestern University	Marsel Mesulan, MD
Illinois	Chicago	Rush-Presbyterian-St. Lukes Medical Center	Denis A. Evans, MD
Indiana	Indianapolis	Indiana University	Bernardino Ghetti, MD
Kentucky	Lexington	University of Kentucky	William R. Markesbery, MD
Maryland	Baltimore	The John Hopkins Medical Institutions	Donald L. Price, MD
Massachusetts	Bedford	Boston University	Neil William Kowall, MD
Massachusetts	Boston	Harvard University	John H. Growdon, MD
Michigan	Ann Arbor	University of Michigan	Sid Gilman, MD
Minnesota	Rochester	Mayo Clinic	Ronald Petersen, MD, PhD
Missouri	St. Louis	Washington University	Eugene M. Johnson, Jr. PhD
New York	New York	Columbia University	Michael L. Shelanski, MD, PhD
New York	New York	Mount Sinai School of Medicine/ Bronx VA Medical Center	Kenneth L. Davis, MD
New York	New York	New York University	Steven H. Ferris, PhD
New York	Rochester	University of Rochester	Paul D. Coleman, PhD
North Carolina	Durham	Duke University	Donald E. Schmechel, MD
Ohio	Cleveland	Case Western Reserve University	Karl Herrup, PhD
Oregon	Portland	Oregon Health Sciences University	Jeffery Kaye, MD
Pennsylvania	Philadelphia	University of Pennsylvania	John Q. Trojanowski, MD, PhD
Pennsylvania	Pittsburgh	University of Pittsburgh	Steven T. DeKosky, MD
Texas	Houston	Baylor College of Medicine	Stanley H. Appel, MD
Texas	Dallas	University of Texas, Southwestern Medical Center	Roger N. Rosenburg, MD
Washington	Seattle	University of Washington	Murray Raskind, MD
Washington	Seattle	National Alzheimer's Coordinating Center	Walter Kukull, PhD

Source: Alzheimer's Disease Centers website (http://www.alzheimers.org/pubs/adcdir.html)

APPENDIX E.
SELECTED GERIATRIC MEDICINE EDUCATIONAL RESOURCES FOR PRACTICING PHYSICIANS

Textbooks and Handbooks

Kane RL, et al. E*ssentials of Clinical Geriatrics, 4th edition.* McGraw-Hill, 1999, 621 pages, $34.95. (Short text.)

Cobbs, EL, Duthie EH, & Murphy JB, editors. *Geriatrics Review Syllabus: A Core Curriculum in Geriatric Medicine, 5th edition.* Blackwell Science and the American Geriatrics Society, 2002, 576 pages, $265.00. (Can be utilized as text or CME program, 70 credits, comes with CD-ROM version, and set of annotated study questions.)

Reuben D, et al., editor. *Geriatrics at Your Fingertips, third edition.* Blackwell Science and the American Geriatrics Society, 2002, 215 pages, $11.95. (Pocket guide to geriatrics, full of useful tables, updated annually.)

Ham RJ, et al., editor. *Primary Care Geriatrics: A Case-based Approach, 4th edition.* Mosby, 2001, 750 pages, $75.00. (Integrated cases make this book useful as a self-instructional text.)

Yoshikawa, TT, et al., editor. *Practical Ambulatory Geriatrics, 2nd edition.* Mosby, 1998, 528 pages, 39.95. (Shorter summaries of common problems encountered in ambulatory setting.)

Beers MH, et al., editor. *The Merck Manual of Geriatrics, 3rd edition.* Merck, 2000, $32.50.

Hazzard WR, et al., editor. *Principles of Geriatric Medicine, 4th edition.* McGraw Hill, 1999, 1668 pages, $149.00. (Comprehensive text.)

Cassel CK, et al., editor. *Geriatric Medicine, 3rd edition.* Springer Verlag, 1997, 1070 pages, $139.00. (Comprehensive text.)

Gallo JJ, et al., editor. *Reichel's Care of the Elderly: Clinical Aspects of Aging, 5th edition.* Lippincott Williams & Wilkins, 1999, 856 pages, $74.95. (Comprehensive text.)

Ouslander JG, et al. *Medical Care in the Nursing Home, 2nd edition.* McGraw-Hill, 1996, 556 pages, $62.00.

Gallo, et al., editor. *Handbook of Geriatric Assessment, 3rd edition.* Aspen, 1999, 361 pages, $47.00. (Reviews standard assessment tools.)

Osterweil D, et al., editor. *Comprehensive Geriatric Assessment,* McGraw-Hill, 2000, 838 pages, $75.00.

Journals

Journal of the American Geriatrics Society, published by the AGS, contains original research and scholarly reviews, reach WEB site through AGS.

Annals of Long-term Care – Clinical Care and Aging, published with the AGS, contains practical reviews, reach full-text WEB site through AGS.

Journal of the American Medical Directors Association, published by the American Medical Directors Association, research and review articles, reach through AMDA WEB site.

CD-ROMS

Education for Physicians on End-of life Care – EPEC. Developed by the Robert Wood Johnson Foundation and the American Medical Association, now based at Northwestern Medical School. http://www.epec.net/, Training guide, $99.00.

Computer-based Self-Instruction Modules in Geriatric Medicine, 3rd edition. Developed by the John A. Hartford Foundation and Baylor College of Medicine. Purchased through the Stanford University Geriatric Education Resource Center. This is a creative CD-ROM that includes 17 self-paced multimedia modules on important topics in geriatric medicine. http://www.stanford.edu/group/SFDP/sugerc, $295.00.

Continuing Medical Education Programs

Geriatric Medicine Continuing Education Courses, 3-6 days, excellent courses offered by AAFP, UCLA, Harvard, and Johns Hopkins, other sources.

Specialty meetings

American Geriatrics Society Annual Meeting (May) and American Medical Directors Annual Meeting (March). The AGS meeting contains a "CME meeting within the meeting" called the core curriculum.

Internet

American Geriatrics Society (http://www.americangeriatrics.org/) site has information on AGS meetings and ordering AGS products, a few clinical guidelines, and an excellent list of links.

American Medical Directors Association (www.amda.com) site has information on AMDA meetings and ordering AMDA products, a few clinical guidelines, and an excellent list of links.

American Association for Geriatric Psychiatry (www.aagpgpa.org) site has information on AAGP meetings and ordering AAGP products, a few clinical guidelines, and an excellent list of links.

Source: IHPHSR ADGAP Database Project, 2002

APPENDIX F.
GERIATRIC MEDICINE and GERIATRIC PSYCHIATRY FELLOWSHIP PROGRAMS

State	Program Type[1]	Geriatric Medicine Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
AL	IM	University of Alabama Medical Center Program	1989	3	NO
AR	IM	University of Arkansas for Medical Sciences Program	1977	5	YES
AZ	IM	Good Samaritan Regional Medical Center Program	1992	2	NO
AZ	FP	Sun Health/St. Joseph's Geriatric Fellowship Program	1996	4	NO
AZ	IM	University of Arizona Program	.	2	.
CA	FP	Arrowhead Regional Medical Center	1997	2	NO
CA	IM	Charles R. Drew University Program	1993	4	NO
CA	FP	Southern California Kaiser Permanente Medical Care Program	.	1	.
CA	IM	Stanford University Program	1983	3	NO
CA	IM	UCLA Medical Center Program	1975	10	YES
CA	IM	University of California (Davis) Program	1988	1	YES
CA	IM	University of California (Irvine) Program	1992	2	NO
CA	IM	University of California (San Diego)	1985	2	NO
CA	IM	University of California (San Francisco)/ Mount Zion Program	1976	6	YES
CA	IM	University of Southern California Program	.	2	.
CO	IM	University of Colorado Program	1985	3	YES
CT	IM	University of Connecticut Program	1986	4	YES
CT	IM	Yale-New Haven Medical Center Program	.	3	YES
DC	IM	George Washington University Program	1985	5	NO
FL	IM	Cleveland Clinic Foundation (Florida) Program	.	2	.
FL	FP	Florida Hospital Medical Center	1998	1	NO
FL	IM	University of Florida Program	.	4	.
FL	IM	University of Miami-Jackson Memorial Medical Center Program	.	8	.
FL	IM	University of South Florida Program	1985	4	NO
GA	IM	Emory University Program	1989	4	YES
HI	IM	University of Hawaii Program	1986	11	YES
IA	FP	University of Iowa Hospitals and Clinics	1998	1	NO
IL	IM	Loyola University Program	1982	9	YES
IL	IM	Lutheran General Hospital Program	1997	2	NO
IL	IM	McGaw Medical Center of Northwestern University Program	1989	2	NO
IL	IM	Rush-Presbyterian-St. Luke's Medical Center Program	1984	4	NO
IL	IM	University of Chicago Program	.	3	YES
IL	IM	University of Illinois College of Medicine at Chicago Program	1989	7	NO
IN	IM	Indiana University School of Medicine Program	.	2	YES
IN	FP	St. Vincent Hospital and Health Care Center Program	2001	1	NO
KS	IM	University of Kansas Medical Center Program	1986	0	YES
KY	FP	University of Louisville School of Medicine	1998	3	NO

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Program Type[1]	Geriatric Medicine Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
LA	IM	Tulane University Program	.	4	.
MA	IM	Baystate Medical Center Program	.	2	.
MA	IM	Beth Israel Deaconess Medical Center (East Campus) Program	1978	6	YES
MA	IM	Boston University Medical Center Program	1983	3	YES
MD	FP	Georgetown University Medical Center Providence Hospital	1995	1	NO
MD	IM	Johns Hopkins University Program	1983	8	YES
MD	IM	Union Memorial Hospital Program	.	4	.
MD	IM	University of Maryland Program	1988	3	YES
MI	FP	Sparrow Hospital/Michigan State University Program	.	1	NO
MI	IM	University of Michigan Program	.	8	.
MI	IM	Wayne State University/Detroit Medical Center Program	1995	3	YES
MI	IM	William Beaumont Hospital Program	.	4	.
MN	IM	Hennepin County Medical Center Program	1999	1	NO
MN	IM	Mayo Graduate School of Medicine (Rochester) Program	1990	2	NO
MO	IM	St. Louis University School of Medicine Program	1989	6	NO
MO	FP	University of Missouri at Kansas City Program	.	3	.
MO	FP	University of Missouri-Columbia Program	1992	2	YES
MO	IM	Washington University/B-JH/SLCH Consortium Program	1986	2	NO
NC	IM	Duke University Program	1979	4	YES
NC	FP	East Carolina University Program	1985	3	NO
NC	IM	University of North Carolina Hospitals Program	1989	2	YES
NC	IM	Wake Forest University School of Medicine (Bowman Gray)	.	4	.
NE	IM	University of Nebraska Program	1984	3	YES
NJ	IM	Jersey Shore Medical Center Program	.	2	.
NJ	IM	UMDNJ-New Jersey Medical School Program	.	2	.
NJ	FP	UMDNJ-Robert Wood Johnson Medical School Program	1985	4	NO
NM	IM	University of New Mexico Program	.	4	.
NY	IM	Albany Medical Center Program	1989	2	NO
NY	IM	Albert Einstein College of Medicine Program	1983	4	YES
NY	IM	Catholic Medical Center of Brooklyn and Queens Program	.	4	.
NY	IM	Flushing Hospital Medical Center Program	.	4	.
NY	IM	Long Island Jewish Medical Center Program	.	8	.
NY	IM	Maimonides Medical Center Program	1999	4	YES
NY	IM	Mount Sinai School of Medicine Program	1982	7	YES
NY	IM	New York Medical College (Our Lady of Mercy) Program	1993	6	YES
NY	IM	New York Medical College at St. Vincent's Hospital and Medical Center of New York Program	1990	1	YES
NY	IM	New York Medical College at Westchester Medical Center Program	1983	2	NO
NY	IM	New York Methodist Hospital Program	1996	4	NO
NY	IM	New York Presbyterian Hospital (Cornell Campus) Program	1998	3	YES
NY	IM	New York University Medical Center Program	1981	5	YES

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Program Type[1]	Geriatric Medicine Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
NY	IM	North Shore University Hospital/NYU School of Medicine Program	1990	4	NO
NY	IM	St Luke's-Roosevelt Hospital Center Program	2000	2	YES
NY	IM	Staten Island University Hospital Program	.	4	.
NY	IM	SUNY at Buffalo Graduate Medical-Dental Education Consortium Program	1983	2	YES
NY	IM	SUNY at Stony Brook Program	.	5	.
NY	IM	SUNY Health Science Center at Syracuse Program	1990	3	NO
NY	IM	University of Rochester Program	1992	4	NO
NY	IM	Winthrop-University Hospital Program	1988	3	NO
OH	FP	Case Western Reserve University MetroHealth Program	.	1	.
OH	IM	Cleveland Clinic Foundation Program	1986	.	NO
OH	FP	University Hospital/University of Cincinnati College of Medicine Program	1986	4	YES
OH	IM	University Hospitals of Cleveland/Case Western Reserve University Program	1986	4	NO
OK	IM	University of Oklahoma Health Sciences Center Program	1994	4	NO
OR	IM	Oregon Health Sciences University Program	1978	4	NO
PA	IM	Abington Memorial Hospital Program	2001	1	NO
PA	IM	Albert Einstein Medical Center Program	1989	4	NO
PA	FP	Lancaster General Hospital Program	2001	3	NO
PA	IM	MCP Hahnemann University Program	1982	3	YES
PA	IM	Temple University Program	.	8	YES
PA	FP	Thomas Jefferson University Program	1988	3	YES
PA	IM	University Health Center of Pittsburgh Program	1985	4	YES
PA	IM	University of Pennsylvania Program	1980	5	YES
PA	FP	University of Pittsburgh Medical Center (St Margaret) Program	1989	1	NO
PR	FP	University of Puerto Rico Program (Caguas)	.	4	.
PR	IM	University of Puerto Rico Program (San Juan)	.	2	.
SC	IM	Palmetto Health Alliance/University of South Carolina School of Medicine Program	1996	2	NO
TN	FP	University of Tennessee Medical Center at Knoxville Program	2001	2	NO
TN	IM	Vanderbilt University Program	1999	2	NO
TX	IM	Baylor College of Medicine Program	1984	4	YES
TX	IM	University of Texas Health Science Center at San Antonio Program	1987	3	YES
TX	IM	University of Texas Medical Branch Hospitals Program	1988	4	YES
TX	FP	University of Texas Southwestern Medical School (Fort Worth) Program	.	2	.
TX	IM	University of Texas Southwestern Medical School Program	2000	2	YES
UT	IM	University of Utah Program	.	2	.
VA	IM	Medical College of Virginia/ Virginia Commonwealth University Program	1987	5	YES

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Program Type[1]	Geriatric Medicine Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
VA	IM	University of Virginia Program	1980	1	NO
WA	IM	Madigan Army Medical Center Program	.	4	.
WA	FP	Swedish Medical Center - Seattle Program	2000	2	NO
WA	IM	University of Washington Program 1	1984	4	YES
WI	IM	Aurora Health Care Program	.	2	.
WI	IM	Medical College of Wisconsin Program	.	1	YES
WI	IM	University of Wisconsin Program	1978	4	YES

[1]IM programs accredited through Internal Medicine and FP programs accredited through Family Practice

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Program Type	Osteopathic Geriatric Medicine Fellowship Program	Year Program Established	Number of Positions Available AY2001-2002	Training Beyond Year 1 Offered
CO	FP	Colorado Springs Osteopathic Foundation Family Medicine Center	1998	2	NO
FL	FP	Nova Southeastern University College of Osteopathic Medicine/North Broward Hospital District	.	5	.
NJ	IM	University of Medicine and Dentistry of New Jersey School of Medicine	1990	1	YES
NJ	FP	University of Medicine and Dentistry of New Jersey School of Osteopathic Medicine	1989	1	YES
PA	FP	Philadelphia College of Osteopathic Medicine	1996	1	YES
TX	FP	University of North Texas Health Science Center at Ft Worth	.	2	.
TX	IM	University of North Texas Health Science Center at Ft Worth	1994	5	YES

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Geriatric Psychiatry Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
AL	University of Alabama Medical Center Program	1985	1	NO
CA	Stanford University Program	1986	1	NO
CA	UCLA Medical Center Program	1978	5	NO
CA	University of California (San Diego) Program	1994	2	NO
CT	Yale-New Haven Medical Center Program	.	3	.
DC	National Capital Consortium Program	.	2	.
FL	Jackson Memorial Hospital/Jackson Health System Program	1994	5	YES
FL	University of Florida Program	1996	2	NO
FL	University of South Florida Program	.	2	.
GA	Emory University Program	1995	2	NO
HI	University of Hawaii Program	1996	2	NO
IA	University of Iowa Hospitals and Clinics Program	2000	1	NO
IL	McGaw Medical Center of Northwestern University Program	1984	2	NO
IL	Rush-Presbyterian-St. Luke's Medical Center Program	1978	.	NO
IL	University of Illinois College of Medicine at Chicago Program	.	2	.
IN	Indiana University School of Medicine Program	.	2	.
KS	University of Kansas (Wichita) Program	1995	2	NO
LA	Louisiana State University Program	1991	2	NO
MA	Boston University Medical Center Program	2000	1	YES
MA	Cambridge Hospital/Cambridge Health Alliance Program	2001	0	NO
MA	McLean Hospital Program	.	2	.
MA	Tufts University School of Medicine Program	2001	2	NO
MD	Johns Hopkins University Program	1984	1	NO
MD	University of Maryland Program	1986	2	NO
MI	University of Michigan Program	.	3	.
MI	Wayne State University/Lafayette Clinic Program	.	3	.
MN	University of Minnesota Program	1992	1	NO
MO	St. Louis University School of Medicine Program	1985	3	NO
NC	Duke University Program	1965	2	NO
NE	Creighton University/University of Nebraska Program	1997	1	NO
NH	Dartmouth Hitchcock Medical Center Program	1993	2	NO
NJ	UMDNJ-Robert Wood Johnson Medical School Program	1995	3	NO
NM	University of New Mexico Program	.	2	.
NY	Albert Einstein College of Medicine at Beth Israel Medical Center Program	1985	3	NO
NY	Albert Einstein College of Medicine at Long Island Jewish Medical Center Program	1989	7	NO
NY	Albert Einstein College of Medicine Program	1984	2	NO
NY	Mount Sinai School of Medicine Program	.	3	NO
NY	New York Presbyterian Hospital (Columbia Campus) Program	1985	3	YES
NY	New York Presbyterian Hospital (Cornell Campus)/ Westchester Program	1982	2	NO
NY	New York University Medical Center Program	.	2	.
NY	St. Vincent's Hospital and Medical Center of New York Program	1992	4	NO
NY	SUNY Health Science Center at Brooklyn Program	1984	3	NO
NY	University of Rochester Program	.	2	YES

Appendix F. Geriatric Medicine and Geriatric Psychiatry Fellowship Programs, *continued*

State	Geriatric Psychiatry Fellowship Program	Year Program Established	Number of 1st Year Positions Available AY2001-2002	Training Beyond Year 1 Offered
OH	University Hospital/University of Cincinnati College of Medicine	1981	2	YES
OH	University Hospitals of Cleveland/ Case Western Reserve University Program	.	2	.
OR	Oregon Health Sciences University Program	1991	1	NO
PA	Albert Einstein Medical Center Program	1993	3	NO
PA	Milton S. Hershey Medical Center Program	.	2	.
PA	University Health Center of Pittsburgh Program	1996	5	NO
PA	University of Pennsylvania Program	1985	2	NO
RI	Brown University Program	1998	3	YES
SC	Medical University of South Carolina Program	.	2	.
TN	East Tennessee State University Program	.	1	.
TN	Vanderbilt University Program	.	2	.
TX	University of Texas Health Science Center at San Antonio Program	1991	2	YES
TX	University of Texas Southwestern Medical School Program	1994	3	YES
VA	Eastern Virginia Medical School Program	1999	1	NO
VA	Medical College of Virginia/Virginia Commonwealth University Program	1988	2	NO
VA	University of Virginia Program	1995	1	NO
VA	University of Virginia Roanoke/Salem Program	1999	1	NO
WA	University of Washington Program	.	2	YES
WI	University of Wisconsin Program	1980	2	NO

Source: IHPHSR ADGAP Database Project, 2002

APPENDIX G.
THE PAUL BEESON PHYSICIAN FACULTY SCHOLARS IN AGING RESEARCH PROGRAM

1995-1998 Beeson Scholars

Ashley Bush, M.B., B.S., D.P.M, Ph.D., Harvard Medical School: *Zinc Exposure as a Risk Factor for Alzheimer's Disease*.

Ted M. Dawson, M.D., Ph.D., Johns Hopkins University School of Medicine: *Gene Therapy for Neurologic Disorders*.

David M. Holtzman, M.D., Washington University School of Medicine: *Use of Animal Models and Neuronal Cell Lines to Study Alzheimer's-like Neurodegeneration*.

Edward H. Koo, M.D., University of California, San Diego School of Medicine: Focus: *The mechanism of amyloid beta-protein (AB) production from the amyloid precursor protein (APP) in neurons*.

Mark S. Lachs, M.D., M.P.H., Cornell University Medical College: *The Morbidity and Mortality of Elder Abuse*.

Frank M. Longo, M.D., Ph.D., University of California, San Francisco School of Medicine: *New Strategies for Treating Neurodegenerative Disease*.

Richard A. Marottoli, M.D., M.P.H., Yale University School of Medicine: *Older Driver Assessment: A Multilevel Approach.*

Lina M. Obeid, M.D., Medical University of South Carolina: *Lipid Signal Transduction in Cellular Senescence*.

Peter Reaven, M.D., University of California, San Diego School of Medicine: *The Relationship of Aging and Antioxidant Defense Systems to Artherosclerosis*.

Alan R. Shuldiner, M.D., University of Maryland School of Medicine: *Genetics of Diabetes and Obesity in the Elderly*.

1996-1999 Beeson Scholars

Christopher M. Callahan, M.D., Indiana University School of Medicine: *The Use of Percutaneous Endoscopic Gastrostomy among Older Adults in a Community Setting*.

Robert W. Doms, M.D., Ph.D., University of Pennsylvania: *STM2, APP, and Alzheimer's disease*.

P. Murali Doraiswamy, M.D., Duke University Medical Center: *Apolipoprotein E type 4 Allele and Cerebral Metabolism in Relatives at Risk for Familial Alzheimer's Disease*.

Harlan M. Krumholz, M.D., Yale University School of Medicine: *Clinical Spectrum, Treatment and Outcome of Elderly Congestive Heart Failure Patients*.

Makau Lee, M.D., Ph.D., University of Mississippi Medical Center: *Studies on Aging, Dietary Restriction and Gastric Mucosal Defense*.

Richard F. Loeser, Jr., M.D., Rush Medical College: *Growth Factors and Aging in Cartilage*.

Karen M. Prestwood, M.D., University of Connecticut Health Center: *Bone Turnover and the Response to Estrogen in Older Caucasian, Hispanic and African-American Postmenopausal Women*.

May J. Reed, M.D., University of Washington School of Medicine: *Angiogenesis, the Extracellular Matrix, and Wound Repair in Aging*.

Robert G. Smith, M.D., Ph.D., Baylor College of Medicine: *Role of Voltage-Gated Calcium Channel Autoantibodies in Motoneuron Injury in ALS*.

1997-2000 Beeson Scholars

Nir Y. Barzilai, M.D., Albert Einstein College of Medicine: *The Effect of Age-Dependent Increase in Visceral Fat on Insulin Action and Secretion*

Michele F. Bellantoni, M.D., Johns Hopkins University School of Medicine: *Growth Hormone and Sex Steroid Effects on Bone in Older Women*

James R. Burke, M.D., Ph.D., Duke University Medical Center: *Polyglutamine Proteins as a Model System for Studying Protein Aggregation and Cell Death in Aging and Neurodegenerative Disease*

Mark T. D'Esposito, M.D., University of Calfornia, Berkeley: *Functional Neuroimaging Studies of Working Memory in Normal Human Aging*

Thomas M. Gill, M.D., Yale University School of Medicine: *Identifying the Events That Precipitate Functional Dependence Among Community-living Elderly Persons*

Bernard F. Godley, M.D., Ph.D., University of Texas Medical Branch: *Role of Oxidative DNA Damage and Repair in Age-Related Macular Degeneration*

Todd E. Golde, M.D., Ph.D., Mayo Clinic Jacksonville, Mayo Medical School: *Proteolytic Generation of the Amyloid b Peptide in Alzheimer's Disease*

Helen Hoenig, M.D., M.P.H., Duke University Medical Center: *An Investigation of the Physical Costs and the Quality of Life Benefits of Wheelchairs for Older Persons*

Elan D. Louis, M.D., College of Physicians & Surgeons of Columbia University: *Functional Correlates of Essential Tremor*

Charles A. Thornton, M.D., University of Rochester School of Medicine: *Pathophysiology of Myotonic Dystrophy, a Progeroid Syndrome*

1998-2001 Beeson Scholars

Helene Benveniste, M.D., Ph.D., SUNY Stony Brook Health Sceince Center: *In Vivo Magnetic Resonance Microscopy and Alzheimer's Disease: Defining and Staging the Progression of Alzheimer's Pathology in Transgenic Mice Overexpressing Beta Amyloid Protein*

Laura Dugan, M.D., Washington University School of Medicine: *Mechanisms of Neuroprotection by C60 Derivatives: Relevance to Oxidative Stress during Aging*

Terri Fried, M.D., Yale University School of Medicine: *A Longitudinal Study of Terminally Ill Patient's Preference for Care*

Anne Kenny, M.D., University of Connecticut Health Center: *Mechanisms of Bone Loss in Older Men with Low Testosterone Levels*

Alison Moore, M.D., M.P.H., UCLA School of Medicine: *Screening for Harmful and Hazardous Drinking in Older Persons*

Thomas Perls, M.D., Harvard Medical School: *Familiality of Extreme Longevity and Mitochondrial Longevity-Assurance Genes in Centenarian Subjects*

Eric Peterson, M.D., Duke University Medical Center: *Toward a Rational Use of Revascularization in the Aged*

R. Scott Turner, M.D., Ph.D., University of Michigan Medical School: *The Role of X11a in Amyloid Precursor Protein*

Jeremy Walston, M.D., Johns Hopkins University School of Medicine: *Molecular Etiologies of Age-Related Changes in Body Composition*

Raymond Yung, M.D., University of Michigan Medical School: *Lymphocyte Homing in Aging*

1999-2002 Beeson Scholars

Jeanne Anderson, M.D., University of Washington School of Medicine: *Clinical Trials in Age-Associated Leukemia and Leukemia-Related Diseases with Correlative Studies of Clonality and Functional Status*

Kenneth Covinsky, M.D., M.P.H., University of California, San Francisco: *Outcomes of Frail Nursing Home-Eligible Elders Living in the Community*

Matthew Frosch, M.D., Ph.D., Harvard Medical School: *Estrogen, Aging and Alzheimer's Disease Mechanisms and Model Systems*

Daniel Laskowitz, M.D., Duke University Medical Center: *Apolipoprotein E, Microglial Activation, and Neurodegenerative Disease*

Dale Leitman, M.D., Ph.D., University of California, San Francisco: *Role of Coactivators in Estrogen Repression of Gene Transcription*

Richard Lin, M.D., SUNY Stony Brook Health Science Center: *The Role of Oxidative Stress in Aging Effects on Vascular Smooth Muscle Cell Growth and Signal Transduction*

David Lynch, M.D., Ph.D., University of Pennsylvania: *Excitotoxicity in Neurodegenerative Disorders: New Understanding from NMDA Receptor Subtypes*

Edward Marcantonio, M.D., Harvard Medical School: *Reducing Delirium in Post-Acute Care: An Interventional Trial*

Mitchell Nobler, M.D., Columbia University College of Physicians and Surgeons: *Serotonin and PET Neuroimaging in Normal Aging and Geriatric Depression*

Anne Louise Oaklander, M.D., Ph.D., Harvard Medical School: *Cellular Mechanisms of Chronic Neuropathic Pain*

Thomas Rando, M.D., Ph.D., Stanford University School of Medicine: *Mechanisms of Age-Related Muscle Atrophy: The Role of Cellular Antioxidant Defenses*

2000-2003 Beeson Scholars

Brock Beamer, M.D., Johns Hopkins University School of Medicine: *Genetic variations in PPAR- and RxR : Effects on Body Composition and Metabolism in Older Adults*

Gunnar Gouras, M.D., Weill College of Medicine of Cornell University: *Neuronal A-beta Accumulation: Aging and Oxidative Stress*

Mary Beth Hamel, M.D., M.P.H., Harvard Medical School: *Decision Making and Outcomes for Elderly Patients with Surgical Problems*

Joshua Hare, M.D., Johns Hopkins University School of Medicine: *The Role of Nitric Oxide in Aging-Related Cardiovascular Adaptions*

Fuki Hisama, M.D., Yale University School of Medicine: *The Molecular Basis of Aging in Werner Syndrome*

Jason Karlawish, M.D., University of Pennsylvania School of Medicine: *Caregiver and Patient Preferences for the Treatment of Alzheimer's Disease*

Jean Kutner, M.D., M.S.P.H., University of Colorado Health Science Center: *Symptom Management at the End of Life: Decreasing Distress and Improving Quality of Life*

Brett Lauring, M.D., Ph.D., Columbia University College of Physician and Surgeons: *An In- Vitro Assay for Gamma Secretase Processing of the Amyloid Precursor Protein*

Frank Lee, M.D., Ph.D., University of Pennsylvania School of Medicine: *Protein Kinases and Alzheimer's Disease*

R. Sean Morrison, M.D., Mount Sinai School of Medicine: *Interventions to Improve Pain Outcomes*

Scott Small, M.D., Columbia University College of Physician & Surgeons: *Functional Analysis of the Hippocampal Formation in Age-Related Memory Decline*

2001-2004 Beeson Scholars

Asa Abeliovich, M.D, Ph.D., Columbia University College of Physicians and Surgeons, *Molecular Analysis of the Familial Parkinson Disease Genes Parkin and Alpha-Synuclein*

Katrin Andreasson, M.D., Johns Hopkins University School of Medicine, *Mechanisms of Cyclooxygenase-2 Dependent Neuronal Injury in Aging and Neurodegenerative Disease*

Eric Coleman, M.D., M.P.H., University of Colorado Health Science Center, *Reducing Care Fragmentation Across Sites of Geriatric Care*

Jay Edelberg, M.D., Ph.D., Weill Medical College of Cornell University, *Restoration of Senescent Cardiac Angiogenic Activity by Bone Marrow Transplantation*

Wesley Ely, M.D., M.P.H., F.C.C.P., Vanderbilt University School of Medicine, *The Role of Delirium and Psychoactive Drug Use on Outcomes Following Mechanical Ventilation in Older Persons*

Roger Hajjar, M.D., Harvard Medical School, *Targeting Signaling Pathways in Aging Hearts by Gene Transfer*

James Mastrianni, M.D., Ph.D., University of Chicago School of Medicine, Aging and the Misfolded Protein: *Prion Disease as a Model for Disaggregating the Aggregate*

Michael Naski, M.D., Ph.D., University of Texas Health Science Center at San Antonio, *Matrix Homeostasis and Gene Expression in Aging Cartilage*

Cary Reid, M.D., Ph.D., Yale University School of Medicine, *Determining the Impact of Back Pain on Physical and Social Disability Among Older Adults*

Mary Whooley, M.D., University of California, San Francisco, School of Medicine, *Mechanisms of Association Between Depression and Poor Health Outcomes in Older Patients*

Kristine Yaffe, M.D., University of California, San Francisco, School of Medicine, *Determinants of Cognitive Change and its Outcomes in African-American and White Elders*

APPENDIX H.
RESIDENCY REVIEW COMMITTEES' RECOMMENDATIONS FOR GERIATRICS TRAINING IN SELECTED ALLOPATHIC SPECIALTIES WITH EFFECTIVE DATE

Specialty	ACGME Requirements
Addiction Psychiatry July, 1995	Educational Goals and Objectives: Clinical experience must include the opportunity to evaluate and follow a variety of patients of both sexes, including adolescents and adult and geriatric age groups spanning a broad range of diagnoses, as enumerated in Program Requirements. Multidisciplinary Team Exposure: The resident should work in settings that include representatives from clinical disciplines such as … geriatrics … as appropriate for the care of the patient. Patient Population: The number and variety of new and follow-up patients spanning the life cycle from adolescence to old age must be sufficient to ensure an adequate outpatient and inpatient experience.
Anesthesiology January 1, 2001	Educational Program – Clinical Components: Appropriate didactic instruction and sufficient clinical experience in managing problems of the geriatric population.
Anesthesiology Pain Management July, 1999	Educational Program – Didactic Components: Management of pain in the elderly.
Cardiovascular Disease July, 1999	Specific Program Content – Formal Instruction: Management of geriatric patients with cardiovascular disease.
Critical Care Medicine July, 1999	Key Clinical Faculty – There must be key clinical faculty members in geriatric medicine … who are available to participate in the education of residents in critical care medicine.
Emergency Medicine January 1, 2001	Educational Program – Curriculum – Family Violence: There must be instruction on the presentation, detection and management of domestic violence including … elder abuse (physical and sexual) as well as neglect.
Endocrinology, Diabetes, and Metabolism July, 1999	Specific Program Content – Clinical Experience – Residents must have formal instruction, clinical experience, or opportunities to acquire expertise in the evaluation and management of the following disorders: Endocrine aspects of aging, with particular emphasis on the care of geriatric patients with endocrine disease and diabetes and the endocrine changes associated with aging.
Family Practice July 1, 2001	Educational Program – Focused Experiences – Human Behavior and Mental Health: Family violence including … elder abuse (physical and sexual), as well as neglect, and its effect on both victims and perpetrators. Educational Program – Focused Experiences – Care of the Older Patient: Educational experience must be provided in the common and complex clinical problems of the older patient and must include the preventive aspects of health care, functional assessment, the physiological and psychological changes of senescence, the sociocultural parameters of the patient and his or her greater community, the nutritional and pathological (acute and chronic) entities of aging, and the effective utilization of all members of the health care team. There must be experience with the older adult patient in the hospital, the FPC, a long-term care facility, and the home.
Forensic Psychiatry February, 1996	Introduction – Educational Goals and Objectives: Clinical experience must include experiences in the following: forensic evaluation of a variety of subjects of both genders, including … geriatric ages groups, spanning a broad range of mental disorders and circumstances, including both civil and criminal contexts. Educational Program – Components of the Educational Program: A sufficient number and variety of patients, ranging from adolescence to old age and of diverse backgrounds, should be provided to ensure an adequate experience.
Hematology and Oncology July, 2001	Specific Program Content – The residents must have formal instruction, clinical experience, or opportunities to acquire knowledge in the following: Care and management of the geriatric patient with malignancy and hematologic disorders.
Infectious Disease July, 1999	Specific Program Content – Residents must have clinical experience or formal instruction in the prevention, evaluation, and management of the following disorders: Infections in geriatric patients.

Appendix H. Residency Review Committees' Recommendations for Geriatrics in Selected Allopathic Specialties with Effective Date, *continued*

Specialty	ACGME Requirements
Internal Medicine (Requirements for all sub specialties) July, 1999	Facilities and Resources – A sufficient number of new and follow-up patients, including the geriatric age groups, and patients of both sexes must be available to ensure adequate inpatient and ambulatory experience for each subspecialty resident. Specific Program Content – Patient Care Experience: Such experience should include sufficient opportunities in the management of the complex physical, social, and psychological problems prevalent in elderly patients. Specific Program Content – End-of-Life Care: 1. Each resident should receive instruction in the principles of palliative care for terminally ill patients, including the role of the health-care team. Instruction should include psychosocial, cultural, and religious issues related to death and dying. 2. It is desirable that residents participate in hospice and home care.
General Internal Medicine July, 2001	Introduction – Definition and Scope of Specialty: Internal medicine is the discipline encompassing the study and practice of health promotion, disease prevention, diagnosis, and treatment of men and women from adolescence to old age, during times of health and through all stages of acute and chronic illness. Facilities and Resources – Patient Population: There must be patients of both sexes, with a broad range of age from adolescent to geriatric patients. Educational Program – Specific Patient Care Experiences – Geriatric medicine: 1. Residents must have formal instruction and regular, supervised clinical experience in geriatric medicine. 2. The written curriculum must include experiences in the care of a broad range of elderly patients. 3. Geriatric clinical experiences must be offered. They may occur at one or more specifically designated geriatric inpatient units, geriatric consultation services, long-term care facilities, geriatric ambulatory clinics, and/or in home-care settings. Educational Program – Special Educational Requirements – End-of-life care: 1. Each resident should receive instruction in the principles of palliative care for terminally ill patients, including the role of the health-care team. Instruction should include psychosocial, cultural, and religious issues related to death and dying. 2. It is desirable that residents participate in hospice and home care. Educational Program – Special Educational Requirements – Violence: It is desirable that all residents receive instruction in the principles of recognition and management of domestic violence and of sexual, family, and elder abuse.
Internal Medicine, Hematology July 2001	Specific Program Content – Care and management of geriatric patients with hematologic disorders.
Nephrology July, 2001	Specific Program Content – Residents must have formal instruction, clinical experience, and opportunities to acquire expertise in the prevention, evaluation, and management of the following disorders: Geriatric aspects of nephrology, including disorders of the aging kidney and urinary tract. Specific Program Content – Formal Instruction – Specific content areas that must be included in the formal program (lectures, conferences, seminars, and journal clubs) include the following: Geriatric medicine, including: 1. physiology and pathology of the aging kidney and 2. drug dosing and renal toxicity in elderly patients.
Neurology Pain Management June, 2000	Educational Program – Didactic Components – The pain management curriculum must include the following topics in lectures and reading: Management of pain in the elderly.
Obstetrics and Gynecology July, 2001	Educational Program – General – Organization and Structure: In addition to rotations in obstetrics-gynecology, general medical management experience may also be obtained during rotations in geriatric medicine. Residents must have an experience in menopausal health care and geriatric medicine that is the equivalent of at least one month of a block rotation. Educational Program – Specific Educational Experiences – Primary and Preventive Care: Ambulatory primary care problems of the geriatric patient.
Oncology July, 1999	Specific Program Content: The residents must have formal instruction, clinical experience, opportunities to acquire knowledge in the following: Care and management of the geriatric patient with malignancy.
Pain Management	Educational Program – Didactic Components – The pain management curriculum must include the following

Appendix H. Residency Review Committees' Recommendations for Geriatrics in Selected Allopathic Specialties with Effective Date, *continued*

Specialty	ACGME Requirements
Physical Medicine and Rehabilitation July, 2001	Facilities and Resources: Equipment must be suitable for all age groups, with special attention to modified equipment for the … geriatric patient. Educational Program – Clinical Components – The clinical curriculum must be written and implemented for the comprehensive development of measurable competencies for each resident in the following areas: geriatric rehabilitation and end of life care. Educational Program – Clinical Components – The resident must have opportunities for progressive responsibility in diagnosing, assessing, and managing the conditions commonly encountered by the physiatrist in the rehabilitative management of patients of all ages of at least the following: diseases, impairments and functional limitations seen in the geriatric population.
Physical Medicine and Rehabilitation Pain Management July 1, 2001	Educational Program – Didactic Components – The pain management curriculum must include the following topics in lectures and reading: management of pain in the elderly
Psychiatry January, 2001	Educational Program – Curriculum – Clinical Experience – Geriatric Psychiatry: One-month FTE supervised clinical management of geriatric patients with a variety of psychiatric disorders, including familiarity with long-term care in a variety of settings. This may be fulfilled as part of the inpatient or outpatient requirement.
Psychiatry Pain Management June, 2000	Educational Program – Didactic Components – The pain management curriculum must include the following topics in lectures and reading: management of pain in the elderly.
Pulmonary Disease and Critical Care Medicine July, 1999	Key Clinical Faculty – There must be key clinical faculty members in geriatric medicine … who participate in the education of residents.
Rheumatology July, 1999	Specific Program Content – Formal Instruction – In the study of rheumatic diseases, musculoskeletal disorders, metabolic diseases of bone, osteoporosis, and acute and chronic musculoskeletal pain, the following specific content areas as a minimum, must be included in the formal program (lectures, conferences, and seminary): geriatric and aging influences.
Surgical Critical Care July, 1997	Introduction – Objectives – This advanced body of knowledge and level of skill must include the mastery of the use of advanced technology and instrumentation to monitor the physiologic status of … adults of … advanced years.

Source: ACGME Program Requirements, 2002 (http://www.acgme.org/req). Compiled by IHPHSR ADGAP Database Project, 2002.

APPENDIX I.
LIST OF INTERDISCIPLINARY LEADERSHIP GROUP OF THE AMERICAN GERIATRICS SOCIETY PROJECT TO INCREASE GERIATRICS EXPERTISE IN SURGICAL AND MEDICAL SPECIALTIES

Anesthesiology
Alan D. Sessler, MD
Representing: Foundation for Anesthesia Education and Research, American Society of Anesthesiologists

Emergency Medicine
Gary Strange, MD
Representing: Society for Academic Emergency Medicine

General Surgery
Walter J. Pories, MD, FACS
Representing: Association of Program Directors in Surgery

Obstetrics & Gynecology
Gerald Holzman, MD
Representing: American College of Obstetrics & Gynecologists

Ophthalmology
Thomas J. Liesegang, MD
Representing: American Academy of Ophthalmology

Orthopaedic Surgery
Kenneth J. Koval, MD
Representing: American Academy of Orthopaedic Surgeons

Otolaryngology
Steven M. Parnes, MD
Representing: American Academy of Otolaryngology

Physical Medicine and Rehabilitation
Dale C. Strasser, MD
Representing: American Academy of Physical Medicine and Rehabilitation

Thoracic Surgery
Renee S. Hartz, MD
Joseph LoCicero III, MD
Representing: Society for Thoracic Surgeons

Urology
George W. Drach, MD
Representing: American Urological Association

American Geriatrics Society
David H. Solomon, MD
Co-Director, AGS/Hartford Project: Increasing Geriatrics Expertise in Surgical and Medical Specialties
John R. Burton, MD
Co-Director, AGS/Hartford Project: Increasing Geriatrics Expertise in Surgical and Medical Specialties
Joseph G. Ouslander, MD
President, AGS
Paul R. Katz, MD
Editor-in-Chief, Geriatrics Syllabus for Specialists
Myron Miller, MD
Project Advisor to Orthopaedic Surgery, PM&R; Representative to AAOS Task Force; Outreach Program
Peter Pompei, MD
Liaison, AGS Education Committee; Project Advisor to Anesthesiology, Orthopaedic Surgery, Thoracic Surgery; Outreach Program
Meghan B. Gerety, MD
Treasurer, AGS
William B. Applegate, MD
Member, AGS Board of Directors

Source: Journal of the American Geriatrics Society, 48:699-701, 2000

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