The Impact of the Aging Population on the Health Workforce in the United States

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I. Introduction

A. Goals/Objectives of this Report

The expected growth of the older adult population1 in the U.S. over the next fifty years will have an unprecedented impact on the U.S. health care system. A major impact will be in terms of supply of and demand for health care workers. The supply of health care providers may decrease as large numbers of workers retire and/or reduce their working hours. At the same time, older adults consume a disproportionate share of American health care services, so that demand for such services will grow. The aging of the population will also affect the nature of the skills and services that the health care workforce must be equipped to provide, and the settings in which this care is provided.

The aging of the population, including the so-called baby boom generation (people born between 1946 and 1964) is already beginning to impact the health care system. Because the number of Americans age 65 and older (35 million in 2000) will rise by more than 19 million by 2020, this impact will continue to grow as the century progresses.

The National Center for Health Workforce Analysis of the Bureau of Health Professions in the Health Research and Services Administration commissioned the New York Center for Health Workforce Studies at the SUNY School of Public Health to assess the effects of aging on the supply of and demand for health professionals of different types needed to serve the U.S. population. More qualitative issues (e.g., how must the health care workforce change, other than by augmenting its numbers, in order to meet the needs of the next generation of older adults) are also considered. The report:

- discusses salient trends and issues in both the health care workforce overall and in specific health occupations and professions;
- creates a baseline of information about the workforce that serves older adults;
- identifies key factors expected to have an impact on the ability of the health care system to meet the future health care needs of older adults in the U.S.;
- suggests areas for future policy research;
- alerts policy makers and others about the likely impact of the aging of the population on the health workforce; and
- identifies shortcomings in current information resources that make it difficult to project and forecast future health workforce needs.

[1] For the purpose of this report, “older adults” are defined as people age 65 and older.

The report is presented in two sections. The first is a series of chapters that provide a general context for understanding the impact of the aging of the population, including factors that may facilitate or complicate the provision of services to older adults. These chapters focus on how the aging of the population will affect the U.S. health care industry, and how the health care industry as a whole may respond to those challenges. These chapters include a summary of important demographic trends in the population of older adults (with discussion of the implication of those trends), a discussion of health care funding for seniors, a consideration of the ways in which models of health care delivery may evolve in response to the aging of the population, a discussion of the challenges of providing care to older adults in rural areas, a profile of the contributions made to eldercare by informal caregivers (i.e., family members or other unpaid caregivers), and an exploration of the ways in which technology may be used to improve health care delivery to seniors.

The second section of the report contains fourteen chapters on individual health care professions and occupations expected to play important roles in serving the health care needs of older adults in the future. These chapters address supply and demand trends for individual health professions or groups of related professions. These chapters provide a profile of the services that the occupation or profession provides to older adults, a description of the current status of the profession, a discussion of the formal training/education that workers receive in regard to aging-related issues, and a discussion of the issues that are likely to play a role in future supply and demand (e.g., reimbursement, access to care). Special attention is given to geriatric or gerontological specialists within occupations and professions, particularly the training required of such specialists, the services they provide (i.e., how their contributions potentially differ from those of non-specialists), and their expected future supply.

B. Scope of the Report

The impact of population aging on the health workforce is a broad topic, with many facets to explore. Clearly it is not possible to include every health profession and occupation in such a report. At least 71 occupations of the 700 professions and occupations tracked by the Bureau of Labor Statistics (BLS) data are health occupations. Other occupations also make significant contributions to health care. Accountants, social scientists, clerks, and even janitorial workers contribute to the functioning of hospitals, nursing homes, and health providers' offices. As such, these workers may be fairly defined as part of the "health care industry."

Twenty-two professions and occupations deemed central to the provision of health care to older adults were chosen to be profiled. These professions and occupations range from physicians to nurse aides/attendants/orderlies. For almost all of these workers, direct patient care is a primary part of their job. These occupations and professions were also deemed particularly relevant to health care for seniors because they address health problems or issues related to aging (for example, podiatrists treat foot problems and chiropractors treat back problems, both of which are common problems faced by older people). Some providers that may be underused by older adults, such as psychologists and dentists, are included because of their potential to provide a much greater level of service based on the health care needs of older Americans (i.e., depression and tooth loss are both problems disproportionately experienced by older people).

One of the initial goals of the report was to focus specifically upon those workers dealing with older adults, especially geriatric or gerontological specialists. This focus has become somewhat blurred, however, for several reasons.

- First, many health professions and occupations do not offer formal credentials focused on the needs of older adults.

- Second, when such a credential is offered, the number of workers with the credential is typically very small (even when most workers in the professions deal with large numbers of older adult patients).

- Third, a majority of health workers in most health care settings deal with substantial numbers of older adults whether or not they are specialists. Focusing on geriatricians, for example, ignores the reality that the vast majority of physician services for older adults are provided by physicians who are not geriatricians. Older adults consume a disproportionate share of most health care services (from cardiology to pharmacy to optometry). Although the supply of (and demand for) geriatric/gerontological specialists in the health workforce is certainly relevant to the current report, a report focusing only on such specialists would produce a very misleading view of health care delivery to seniors.

The quantitative aspects of the report are based in large part on projections of demand from the Bureau of Labor Statistics (BLS), and on recent supply trends in educational production or licensure. These figures are based on current trends, and are less reliable beyond the next few years. (Indeed, demand projections from BLS are not available beyond ten years out into the future.) Many variables contribute to both supply and demand, and these cannot be forecast accurately beyond a few years.

At the same time, the major impact of the baby boom generation entering late adulthood will not really begin to be felt until 2011 and beyond, when the first baby boomers (those born after WWII) reach their 65th birthdays. The years between 2011 and 2050 will be the critical period for the U.S. health care system, as the baby boomers retire from the labor force. It is not too early for the health care system to begin to prepare for those years, if it is to effectively meet the challenge of population aging.

Even the quantitative discussion of the short term must be considered loosely, with a focus not on numerical conclusions, but on general trends in health care and society that portend issues in the future. The report does not include original projections or forecasts, although it presents some information that one might consider when making projections or forecasts. The report does include some general statements about the likelihood that supply will be adequate to meet demand, but these should not be taken as conclusive. It is possible to note that certain occupations and professions display more potential for shortages than others, and such assessments of the *potential* for future shortages or surpluses are included in the report.

C. Implications of Population Aging for the Health Workforce

Each individual health profession or occupation has a different set of attendant issues that can not be generalized to other occupations or professions or to the health care system as a whole. This is why each individual profession/occupation is highlighted in detail in its own chapter. There are, however, certain broad themes that recur throughout the report and are relevant to the health care system overall. Many of these are discussed in more detail in the chapter, "Context of Caring For Older Adults," but the general conclusions are presented here briefly.

1. Greater Numbers of Older Adults

- The population of older adults will grow dramatically over the next 50 years, especially the "oldest old" (those 85 and older).

- The large numbers of children born between 1946 and 1964 (the "baby boom" generation) will reach their 65th birthdays between 2011 and 2029. Between 2000 and 2020, the U.S. population will add 19 million older adults. Overall, the numbers of older adults in this country will grow 138% in the next fifty years. By the year 2050, one of every five Americans will be age 65 or older.

- Due to greater longevity as a result of better nutrition, safety, and medical care, the numbers of people who are age 85 and older will grow even more dramatically. The population of the "oldest old" is expected to grow by 377% by the year 2050. These people use significantly more health care services than younger people.

2. More Services Used by Older Adults

- Older adults have different health care needs than younger age groups, and this will affect the demands placed on the health care system in the future.

- Older adults are more likely to suffer from chronic illnesses (e.g., cancer, heart disease, diabetes) than younger people. About 84% of those age 65 and older suffer from at least one chronic condition, compared to 38% of those age 20 through 44 [Wu and Green, 2000].

- Older adults are more likely to require the services of health professionals as a result of injuries and illnesses due to greater physical vulnerability (e.g., they are more likely to break bones in falls; they are more likely to contract pneumonia as a consequence of influenza).

- Older adults have more limitations in terms of performing activities of daily living than younger people, due to greater rates of physical and cognitive disability. Almost 35% of those age 65 and older have an activity limitation, compared to about 6% of those age 18 through 44 [U.S. Department of Health and Human Services (USDHHS), 2003].

- Older adults consume far more prescription medications than younger people.

- Older adults consume more ambulatory care, hospital services, nursing home services, and home health care services than younger people. People age 65 and older average 706 ambulatory care visits per 100 people (compared to 291 visits per 100 people age 18-44); average 286.6 hospital discharges per 1,000 people (compared to 94.8 for ages 18-44); and constitute more than 70% of home health care patients [USDHHS, 2003].

3. Access to Care is a Greater Issue for Older Adults

- Transportation to health care services is more of an issue for the frail older adults, as their driving ability is likely to be constrained. More than 90% of people in their sixties are licensed drivers, but only slightly more than 50% of people in their eighties are still licensed [AARP, 2003].

- Older adults are disproportionately likely to live in rural areas (24% of older adults versus 19% of the U.S. population [AARP, 2003]), where health care providers may be in short supply and public transportation is not available.

- Older adults who live in nursing homes are often constrained to see only health care providers who visit the facility to provide services. Some providers are not easily able to provide services to institutionalized older adults because necessary equipment (for example, a dental chair) is not available at the facility.

4. Resources to Pay for Services for Older Adults

- Older adults have one major payer for their health care services, so services to older adults are in large part structured by Medicare reimbursement. Although many older adults have some sort of supplementary coverage, Medicare reimbursement policies can affect both supply of workers (by providing incentives or disincentives to serve older adults) and demand for services (by providing incentives or disincentives to older adults to obtain certain services.)

5. Changing Demographic Profile of Older Adults

- The needs and utilization patterns of baby boomer older adults may be different from those of current older adults in important ways, and this will also affect the demands placed on the health care system in the future.

- The future cohort of older adults will be more racially and ethnically diverse than current older adults (64% non-Hispanic white in 2050, versus 83.5% non-Hispanic white in 2000 [Federal Interagency Forum on Aging-Related Statistics (FIFARS), 2000]), requiring a health care workforce that is more multilingual and culturally competent than is now the case.

- Older Americans are more likely to be high school (67%) and college (15%) graduates than in the past, and more information is available than ever before, so older adults will thus be more likely to be informed about health care practices and services. They may be more likely to seek out certain services because of their higher level of sophistication, and may look for health care information from new sources (such as the Internet).

- Today's older adults are less likely to be poor (10.5%) and more likely to have high incomes[2] (27.5%) than in the past [FIFARS, 2000]. They may be in better health overall because of better access to health care over their lifetimes. Many will also have more discretionary income to spend on health services not covered by Medicare, especially health services that may improve their quality of life while perhaps not being medically essential.

- Baby boomer older adults will have a smaller pool of potential family caregivers than current older adults. They have had fewer children than their parents, and are more likely to have had no children (more than 12% of women in this cohort are childless [USDHHS, 2001a]). They are also more likely to be divorced (lifetime divorce rates are projected to be 53% for the cohort [Cherlin, 1992]), and will thus be more likely to live alone as they enter old age.

6. The Organization of Health Care Delivery

- The new demands placed on the health care system will not only include a need for greater numbers of health care workers, but may also involve changes in the way services are currently provided to older adults.

- New models of care will be developed and modified to serve a swelling population of older adults.

- New opportunities will develop for health care personnel in settings in which they are not currently well-represented (for example, physician assistants and nurse practitioners may appear more often in long-term care settings).

7. The Need for New Skills and Procedures

- Workers in some health professions/occupations will need better training in geriatric issues. The current standards for geriatric education vary by profession/occupation, but future increases to the geriatric content available to providers as part of their training may include any or all of the following:

    - increases in the geriatric content provided as part of the required curricula in educational/training programs;
    - increases in the geriatric content included on licensure examinations;
    - increases in the availability of continuing education in geriatrics; and
    - establishment of or increases in specialty geriatrics programs or credentials.

- Health care workers in some professions may need to find new ways of providing services. This may include more services being provided at the homes of patients, in group settings, in nursing homes and assisted living facilities, or through the Internet.

- The settings in which health care is provided to older adults may change substantially. Home health and assisted living settings are expected to employ many more health

[2] Defined as 400% or more of the poverty threshold

professionals in the next 10 years or so. Employment in nursing homes is expected to also rise, although more moderately.

- The formal or informal scope of practice for many professions/occupations may change as a response to greater demand due to population aging. Many helper professions and occupations (e.g., pharmacy technicians, dental hygienists, therapy assistants, nurse aides) might potentially assume a greater role in the provision of services to patients if shortages occur in the corresponding primary professions.

- Changes in technology may also be necessary to offset potential workforce shortages. From automated pill packaging in pharmacies to video-links that allow urban medical specialists to "see" a rural patient and consult with the primary care physician, to sensors that ensure an Alzheimer's patient doesn't wander away from their home to microchips that record a patient's nutritional intake, technology will play a growing role in heightening productivity among health professionals by allowing them to serve more patients/consumers.

- Large numbers of health care workers will be retiring at the same time the demand for health care is on the rise. Certain professions and occupations are at greater risk of depletion than others.

- Occupations with long educational trajectories tend to be older on average than those with shorter educational trajectories. Physicians, for example, with their lengthy training, are among the oldest health professionals (30% of physicians are age 55 and older, compared to only 14% of the civilian labor force [BLS, 2001]). Clinical psychologists, who must have a doctorate, are also substantially older than the average.

- Relatively new occupations tend to be younger than average. The therapy professions, for example, largely did not exist fifty years. Few baby boomers were aware of these professions as a career option. Therefore, there are fewer baby boomer therapy professionals, and the therapy professions (ranging from 3% to 7% older than age of 55, compared to 14% of the civilian labor force [BLS, 2001]) will be less depleted by baby boomer retirements than long-standing professions such as nursing.

- Factors such as reimbursement are associated with the influx of new entrants into occupations and into geriatric settings and specializations. Some professions are more attractive to young people than others, and these professions will be better able to withstand large numbers of retirements, as the retirees will be quickly replaced. (Geriatric sub-specialties in medicine, for example, are not popular among new medical school graduates. These specialties are also poorly reimbursed compared to others.)

- New entrants to some professions or occupations must also have some motivation to choose to work with older adults. Many younger nurses, for example, avoid long-term care settings such as nursing homes (where the median age for registered nurses is 44) in favor of hospitals (where the median age for registered nurses is 41), because the latter pays better. In such a situation, a critical shortage of workers may occur even though the numbers of practitioners in a profession are adequate overall.

8. Specific Professions/Occupations

- ***Physicians***. The number of new physicians that currently enter U.S. practice each year (from allopathic, osteopathic, and foreign medical schools) should be adequate to meet projected aggregate demand. The numbers of new geriatricians, however, are declining just as the number of Americans age 65 and older will increase dramatically. The decline in geriatric specializations may create imbalances between the population needing care and the training of the physicians giving care.

- ***Physician Assistants***. Educational production of physician assistants currently appears adequate to meet demand over the next decade or more. Shortages in the profession are not anticipated in the near future, but PAs have not yet reached their full potential in the treatment of older adults, and the use of PAs in new models of care may affect the demand trajectories for the profession.

- ***Advanced Practice Nurses***. The educational production of advanced practice nurses (APNs) has increased or remained stable since 1990, with the number of nurse practitioners (NPs) growing especially rapidly. Nonetheless, this growth may be insufficient to meet future demands. Annual replacement needs are likely to accelerate over the next ten to twenty years because large numbers of APNs (whose median age ranges from 45 to 48, depending on type of APN) will be reaching conventional retirement age. It is not certain whether increased production will occur, and if the increases will be proportionate to the increased replacement needs. APNs have also not been used to their full potential in long-term care settings. As the number of older adults rises, and APNs are used more effectively in the treatment of this population, demand for APNs may grow substantially.

- ***The Nursing Professions and Occupations***. The nation is already experiencing a shortage of registered nurses (RNs) estimated at 6%. By the year 2020, the supply of RNs is projected to fall 29% below predicted requirements [Health Resources and Services Administration (HRSA), 2002]. In the past few years, many states reported a shortage of RNs, primarily due to an aging RN workforce and inadequate numbers of people choosing to enroll in nursing school [BLS, 2001]. However, in a recent study, 39% nursing schools refused admission to qualified students due to a lack of faculty and resources to educate them, and were not able to raise their student enrollments at this time. The lack of faculty will continue to be a problem as many are near or at retirement age. Other factors that contribute to reduction in the pool of RNs available to work in long-term care settings are professional burnout, unappealing work climates, lack of job satisfaction, quality of care issues, and lack of managerial support [MacEachern, 2002].

- The Bureau of Labor Statistics projects that about 320,000 job openings for Licensed Practical Nurses (LPNs) will occur between 2000 and 2010, with about 140,000 of these openings due to net growth. The supply of active LPNs has decreased slightly, however, since 1995, while the number of potential LPNs produced annually (as measured by number of candidates successfully passing the licensure exam) has declined by 28%. Undoubtedly, these reductions in the potential and actual supply of LPNs are ill-timed.

Recruitment and retention of LPNs must increase in order to avert a shortage in the near future.

- Although the supply of both nursing aides and home health aides has expanded since 1995, these increases have been moderate relative to projected demand. The Bureau of Labor Statistics projects 498,000 job openings for nursing aides, and 370,000 job openings for home health aides between 2000 and 2010. Problems with recruitment and retention of qualified workers continue to threaten the supply of direct care paraprofessionals.

- ***The Oral Health Professions and Occupations***. The Bureau of Labor Statistics projects that job openings for 43,000 dentists, 76,000 dental hygienists, and 136,000 dental assistants will occur between the years 2000 and 2010. In 2000, accredited postsecondary schools with oral health programs produced 4,488 dentists, 5,777 dental hygienists, and 4,792 dental assistants (National Center for Education Statistics (NCES), 2001; American Dental Association (ADA)). Production of dentists may therefore be sufficient to meet BLS projected demand, but the production of dental hygienists and dental assistants may be inadequate (although dental assistants are not required to graduate from a formal educational program).

  Some sources indicate potential for a shortage of dentists (USDHHS, 2000), but a greater potential problem may be the distribution of oral health professionals. Some people (e.g., those in rural areas) have very limited access to dental care, while others may have no difficulty obtaining oral health care. In addition, while it is likely that improved access to oral health care for older adults would increase the number of oral health workers who could be supported financially, the fresh demand could lead to pronounced shortages.

- ***Chiropractors***. The Bureau of Labor Statistics projects that 21,000 job openings for chiropractors will occur between the years 2000 and 2010, with 12,000 of these jobs due to net growth and the rest due to replacements. Educational programs in chiropractic currently produce about 3,800 new chiropractors per year, which is more than enough to meet this demand. Demand for chiropractors may exceed current projections, however, as a result of recent and proposed changes to reimbursement (especially Medicare reimbursement) for chiropractic services.

- ***Podiatrists***. The Bureau of Labor Statistics projects that job growth plus net replacement will create 6,000 new job openings in podiatry between 2000 and 2010, yet if current graduation rates continue, colleges of podiatric medicine will only produce 5,690 graduates annually. This small gap could grow larger by the year 2020, when approximately 10,000 of the current 18,000 podiatrists will have reached the age of 65 [BLS, 2001]. Any potential for a shortage of podiatrists over the next decade will depend, however, on use of services by older adults. Little is currently known about how older adults use podiatry services, and current patterns of use could change if the Medicare system changes in the next twenty years.

- ***Optometrists***. It appears that there are currently enough optometrists to meet the needs of the public. Around the year 2012, however, the baby boomer generation optometrists will

reach retirement age and start to leave practice. The supply may begin to shrink sooner if enrollments in schools of optometry do not increase. There has been concern among practicing optometrists about the harm that a potential oversupply could do to the profession, but these fears do not seem founded at this point. The average income of optometrists has continued to rise, despite their strong numbers [Center for Health Workforce Studies (CHWS), 2003].

- ***The Therapy Professions***. The future job market for therapy professionals will be influenced by a number of variable factors, especially reimbursement. Strong growth is currently projected for each of these professions [BLS, 2003a, and there is some indication that shortages of occupational therapists (OTs) may already be developing, despite the recent oversupply. The small numbers of therapy students specializing in aging practice is also a concern.

  Another variable that will influence demand for therapists is the role played by therapy assistants in the provision of therapy services. Due to rising health care costs, third party payers are beginning to encourage therapist assistants and aides to take more hands-on responsibility for the delivery of services. Having assistants and aides work more closely with clients under the guidance of a therapist should help to control the costs of therapy [BLS, 2003a], and help to reduce the magnitude of any shortages of therapists that might arise in the future.

- ***Pharmacists***. The Bureau of Labor Statistics projects that pharmacy positions will grow by 53,000 jobs between the years 2000 and 2010. Another 65,000 job openings will occur due to replacements [BLS, 2003a]. Thus, a total of 118,000 new pharmacists would be needed to fill all positions opening up between 2000 and 2010. Currently, 7,600 pharmacists earn first professional degrees each year, meaning that only about 76,000 new pharmacists will be produced between 2000 and 2010 [American Association of Colleges of Pharmacy (AACP), 2003], and some of these may choose not to practice or to practice part time. Although pharmacy enrollments have increased noticeably since the 1999-2000 academic year, it is uncertain that this growth will be sufficient to ensure an adequate supply of pharmacists over the coming decade.

- The country may face a critical shortage of pharmacists unless educational production can be enlarged, or unless ways are found to further increase the productivity of pharmacists (e.g., by using more pharmacy technicians or by adopting new technologies) [HRSA, 2000]. Such a shortage would disproportionately affect older adults, due to their much higher use of prescription medications and their greater risk of complications from such medications.

- ***Registered Dietitians***. The future supply of dietitians will depend, among other things, on future trends in educational production. The Bureau of Labor Statistics projects 21,000 job openings by the year 2010, with 7,000 of them resulting from net growth in the profession. If registrations of new dietitians stabilize at current rates, the supply *will* continue to grow. If rates of graduation from educational programs continue to decline, however, the supply will begin to level off and eventually decrease. It is not certain how the recent introduction of the Medicare Medical Nutrition Therapy (MNT) benefit will

affect future demand. The new availability of non-referral services from independent dietitians may result in a greater demand for nutritional services than anticipated.

- ***Clinical Psychologists***. Due to the diversity of specializations and settings in which psychologists work, it is difficult to determine how many *clinical* psychologists (as opposed to other types of psychologists) will be demanded by the future labor market relative to how many are being produced. Thirty-four percent of psychologists with doctoral degrees will reach retirement age by 2010 (if clinical psychologists with doctoral degrees are not substantially older or younger than their non-clinical colleagues, this is approximately 27,000 retirements of clinical psychologists by 2010). If current annual educational production of clinical psychologists continues at current rates, about 22,000 clinical psychologists will be produced between 2000 and 2010. This is not sufficient to replace aging clinical psychologists.

- ***Professional Social Workers***. Although the social work profession will continue to grow in the coming years, it is not evident that the social work needs of older adults are currently being met. If barriers to professional social work care for older adults are addressed in the coming decades, it may be necessary to employ many more social workers than we currently do. Furthermore, it is not certain that the number of social workers working with older adults who are adequately trained in age-related issues will be sufficient to meet the social work needs of the growing population of older adults.

- ***Nursing Home Administrators***. While demand for nursing home administrators (NHAs) will continue to grow proportionate to the growth of the population of older adults, substantially smaller numbers of candidates are sitting for the national licensure examination (only about half of which are likely to actually become NHAs at current rates). About 1,500 new NHAs per year will be needed between 2000 and 2010 to account for both demand growth and replacement needs. Recent estimates suggest that only about 1,150 new NHAs will enter the workforce each year, and that number may decline.

II. The Context of Caring For Older Adults

A. Demographics of Older Adults in the U.S.

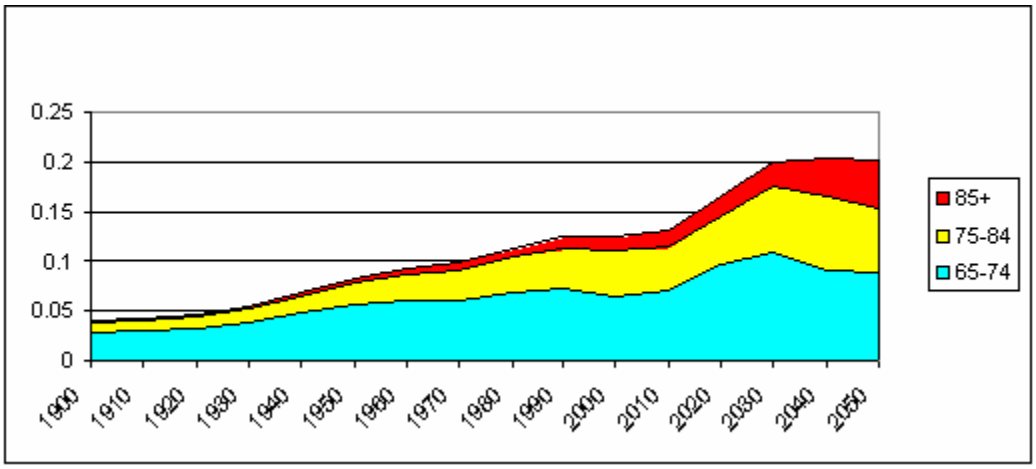
1. The Growing Population of Older Adults

Pre-industrial societies have been oriented towards large numbers of children. High rates of fertility produced large numbers of young people, while disease and injuries created short life expectancies that limited the number of older adults. But across the world, nations are now experiencing unprecedented population aging. This phenomenon will occur most dramatically in the most economically developed countries (such as the U.S. and Japan), where birth rates have been significantly lower than needed to maintain population. Over the past 40 years, this has kept the numbers of young people low, while substantially lengthened life expectancies have simultaneously led to larger numbers of older adults.

The overall effect of this population aging (or "graying," in the words of some observers) is not yet sure. There is little doubt, however, that as the population of older adults grows in number and as a percentage of the overall population, the provision of health care will become an evermore challenging issue. It is certain that the graying of the population will accelerate in the next 50 years.

The aging of the U.S. population has been slowly occurring since mortality rates began to decline in the early 1900s (see Figure 1). Greater longevity meant that more Americans survived until their elder years, but high birth rates kept the youthful population large as well. In 1900 and again in 1950, children younger than age 5 represented the largest five-year age group in the population. Indeed, between 1946 and 1964, Americans were having children in record numbers. The millions of American children born during this period became known as "the baby boom generation" or simply as "baby boomers." As this disproportionately large birth cohort has moved through the life course they have had tremendous impact on American culture.

Figure 1: Percent of Total Population, Age 65 and Older, 1900 to 2050



Source: U.S. Bureau of the Census

By the late 1960s, birth rates had declined substantially and have remained low since that time, leaving fewer children and youth to serve as a counterweight to the baby boomers. The combination of the baby boomers moving through adulthood and the low birth rates of subsequent generations has gradually pushed up the average age of the American population.

In 2011, the first baby boomers (born 1946 – 1964) will reach the age of 65, and by 2030, the youngest of this group will have reached this milestone while the oldest will be nearly 85 years old. Americans' life expectancy has continued to increase, making it likely that a substantial percentage of the baby boomers now in their 40s and 50s will see their 85th birthdays and beyond. These projected developments will change the contours of age and sex distribution in the U.S. population (see Figures 2 and 3).

Figure 2: Resident Population of the United States (in thousands), 2000

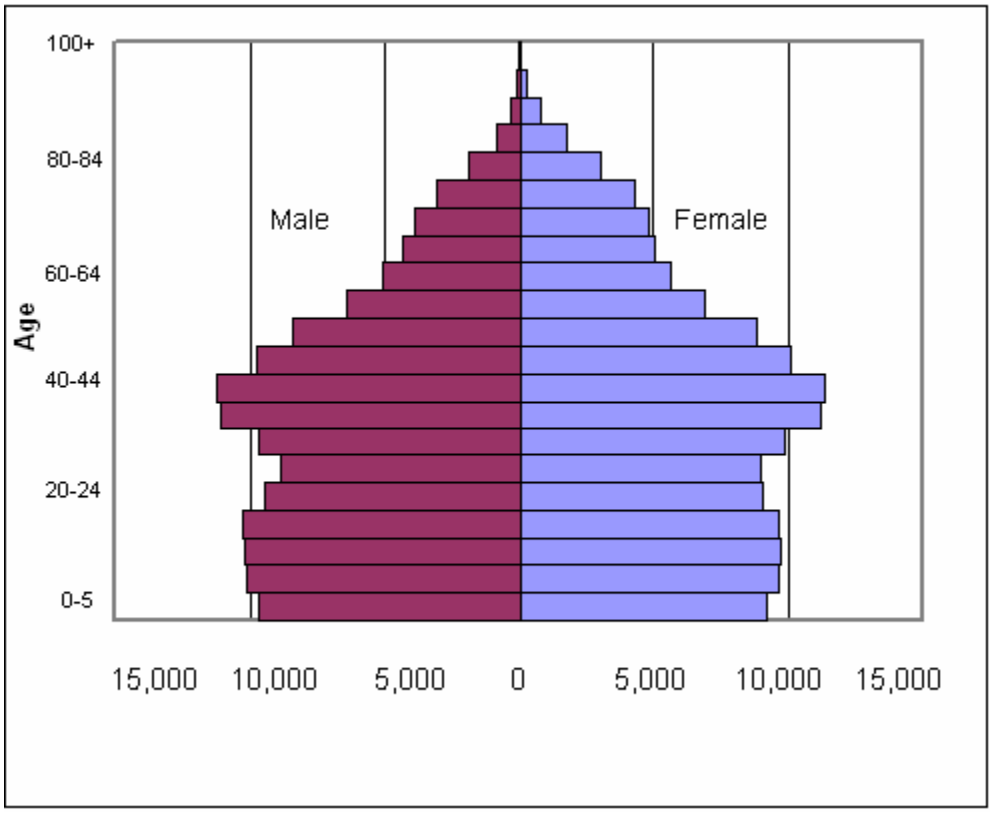
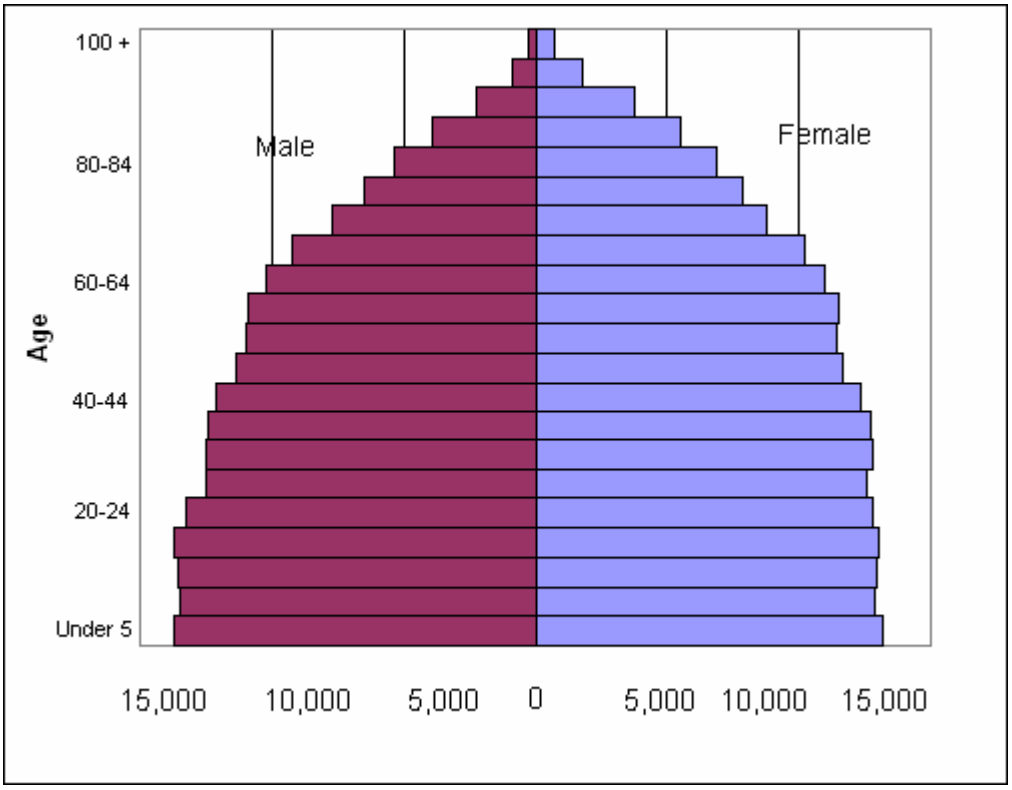
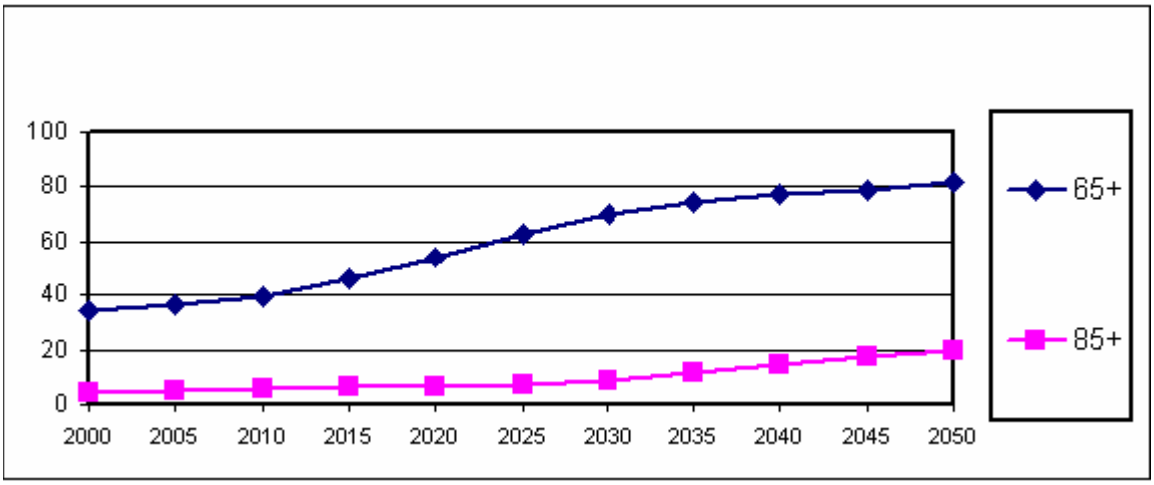


Figure 3: Projected Resident Population of the United States (in thousands), 2050



The increases in both numbers of older adults and the percentage of the population that is older are reasons for concern by policy makers. As time goes on, the growth in the numbers of older adults will require progressively larger number of working adults to support the Social Security and Medicare funds, and also to provide needed services including health care. Furthermore, as Figure 4 shows, the number of adults age 65 or older in 2000 is expected to expand from 34.4 million, or about 12.5% of the U.S. population, to about 53.7 million, or 16.5% of the population, by the year 2020, and to almost 82 million, or 20% of the population, by the year 2050. More important, the number of people age 85 and older (often referred to as the "oldest old") will increase from about 4 million or 1.5% of the U.S. population in 2000, to 6.7 million or more than 2% of the population in 2020, and to 19.3 million or almost 5% of the population by the year 2050.

Figure 4: Projected Numbers of Elderly Americans, Age 65+ and 85+ (in millions), from 2000 to 2050



Source Figure 2, 3, and 4: U.S. Bureau of the Census

2. Life Expectancy

Not only will there be larger numbers of older adults, due to the disproportionately large numbers of baby boomer reaching their elder years, but older adults are also expected to live much longer on average than older adults of the past. Children born in 1900 could expect to live, on average, until age 47. Children born in 1950, however, could expect to live until 68, and children born in the 1960s could expect to live until age 70 [FIFARS, 2000].

Life expectancy at birth, however, is often skewed downward by high rates of child and infant mortality. A more accurate picture of the future of today and tomorrow's older adults can be gleaned by looking at remaining life expectancy at age 65 and age 85. In 1950 a person who reached the age of 65 could expect to have approximately 14 more years of life. People who survived to age 65 in 1997, in contrast, could expect to live 18 more years on average (a 28% increase). People who were 85 in 1997 could expect to live more than six additional years [FIFARS, 2000]. This will ensure that older adults will be a growing proportion of American society for decades to come.

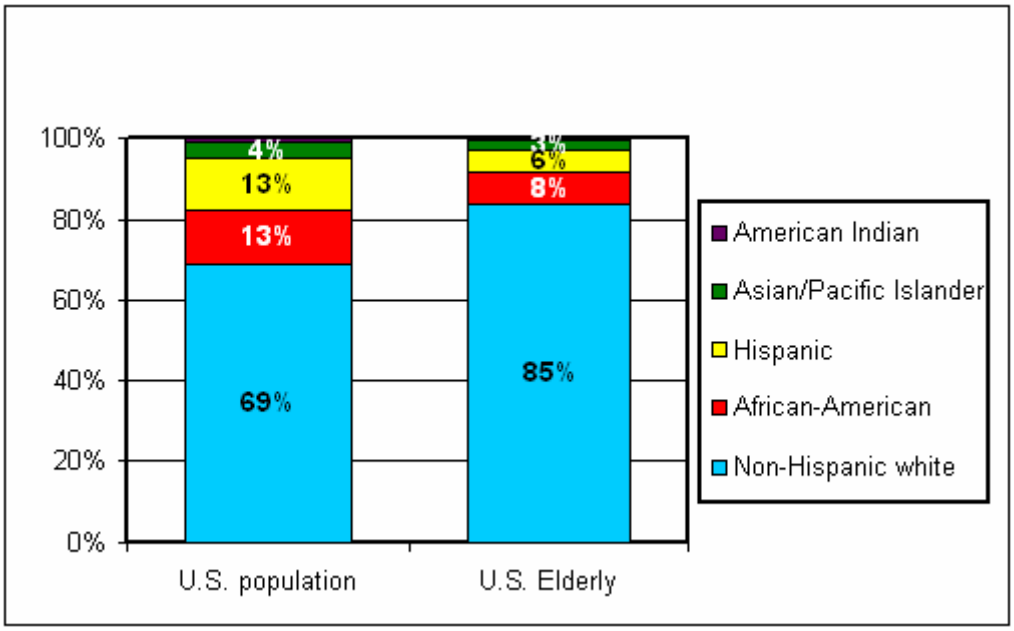
3. Gender

Demographers talk about the gender composition of populations in terms of sex ratios, or the number of men per 100 women. In the U.S., older women dramatically outnumber older men, and the sex ratio becomes more imbalanced among the oldest old. This is due largely to greater mortality among males at almost all ages from almost all causes. In 2000, women were estimated to account for 58% of the population older than age 65, and 70% of the population age 85 and older.

4. Racial and Ethnic Composition

Historically, older adults have been disproportionately white, in part because of differential mortality rates between whites and non-white minority groups. This disparity has grown more pronounced among the oldest old. Figure 5 shows that in 2000, about 85% of those 65 and older were non-Hispanic white, 8% were African-American, 6% were Hispanic, 3% were Asian or Pacific Islander, and about 0.5% were American Indian. This compares to the general U.S. population that was 69% non-Hispanic white, 13% African-American, 13% Hispanic, 4% Asian or Pacific Islander, and 0.75% American Indian. Among those 85 and older in 2000, 86% were non-Hispanic white, 7% were African-American, 4.5% were Hispanic, 1.5% were Asian, and 0.05% were American Indian.

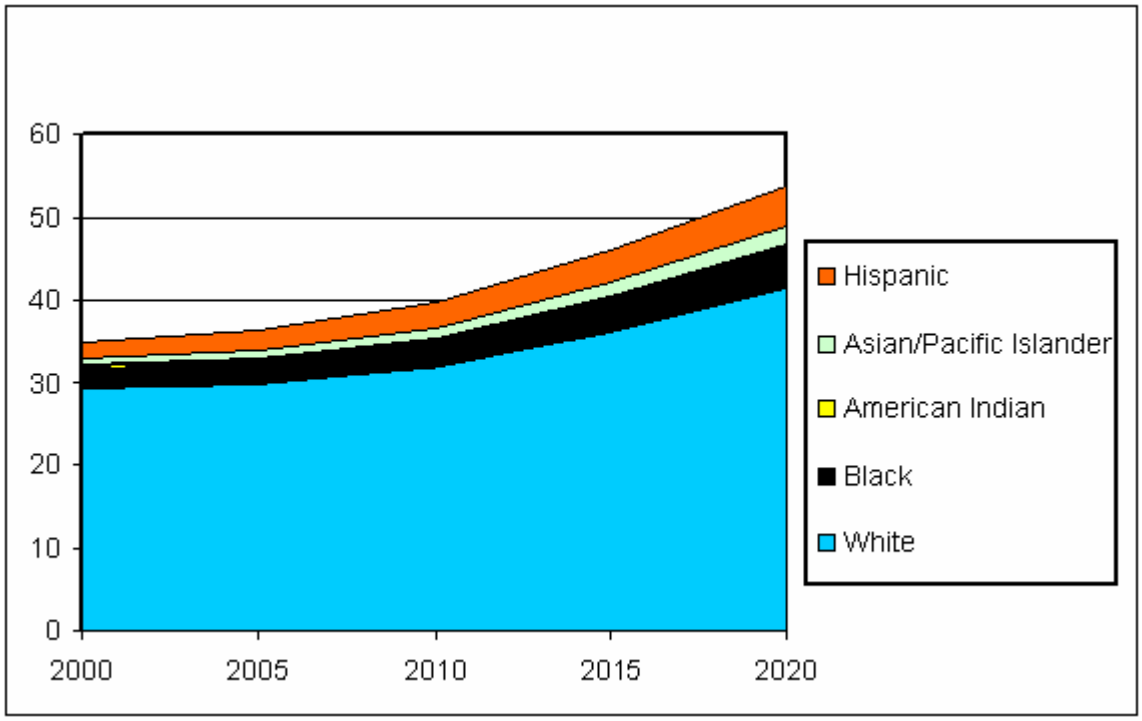
Figure 5: Racial and Ethnic Distribution of Elderly Americans (Ages 65 and Older) and All Americans, 2000



Source: U.S. Bureau of the Census

The population of older adults is expected to become more diverse over the next ten to twenty years (Figure 6). By the year 2020, only 41.3 million or 77% of those 65 and older will be non-Hispanic whites. The groups of older adults that will experience the greatest relative growth in the overall population will be Hispanics and Asians, who by 2020 will number 5.3 million and 2.4 million and comprise 9% and 4% of the older adult population, respectively.

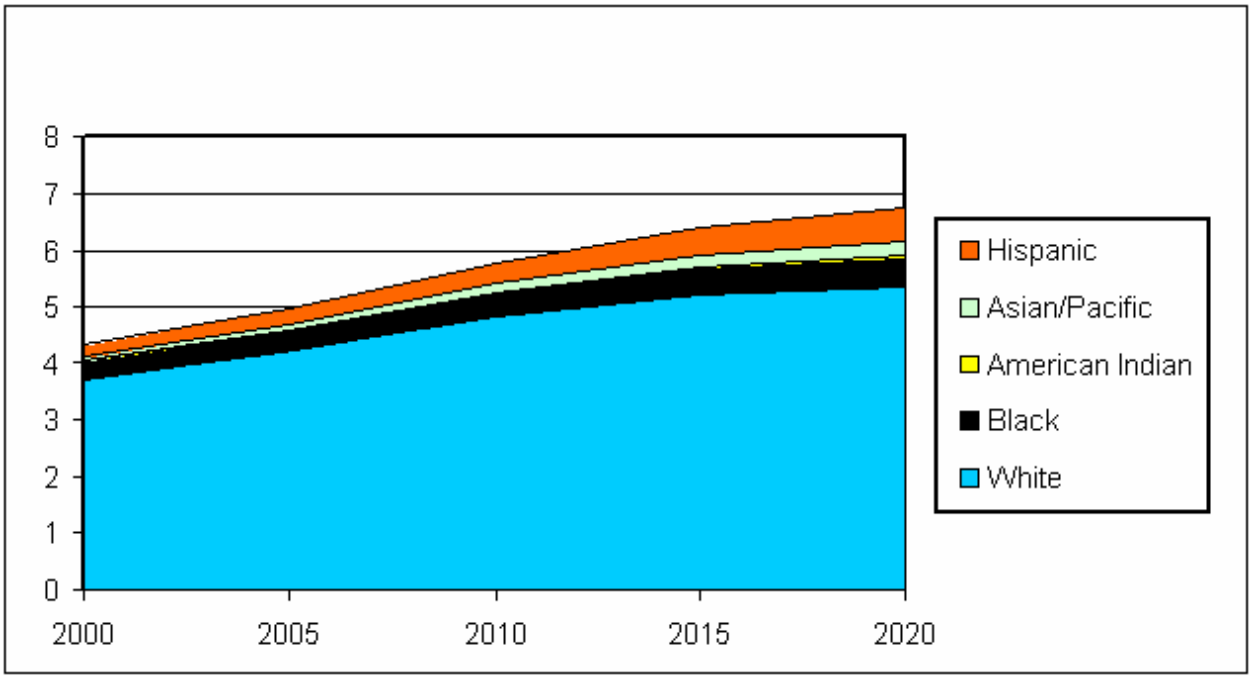
Figure 6: Racial and Ethnic Distribution of Americans Ages 65 and Older (in millions), 2000 through 2020



Source: U.S. Bureau of the Census

Furthermore, the population of "oldest older" adults, age 85 and older, is also becoming more diverse. By 2020, 5.3 million or 79% will be non-Hispanic whites. However, the number of adults age 85 and older who are Hispanic will triple between 2000 and 2020, from 200,000 to 600,000. The population of Asians age 85 and older will more than triple in the same two decades, from about 70,000 to 260,000 (Figure 7).

Figure 7: Racial and Ethnic Distribution of Americans Age 85 and Older (in millions), 2000 Through 2020



Source: U.S. Bureau of the Census

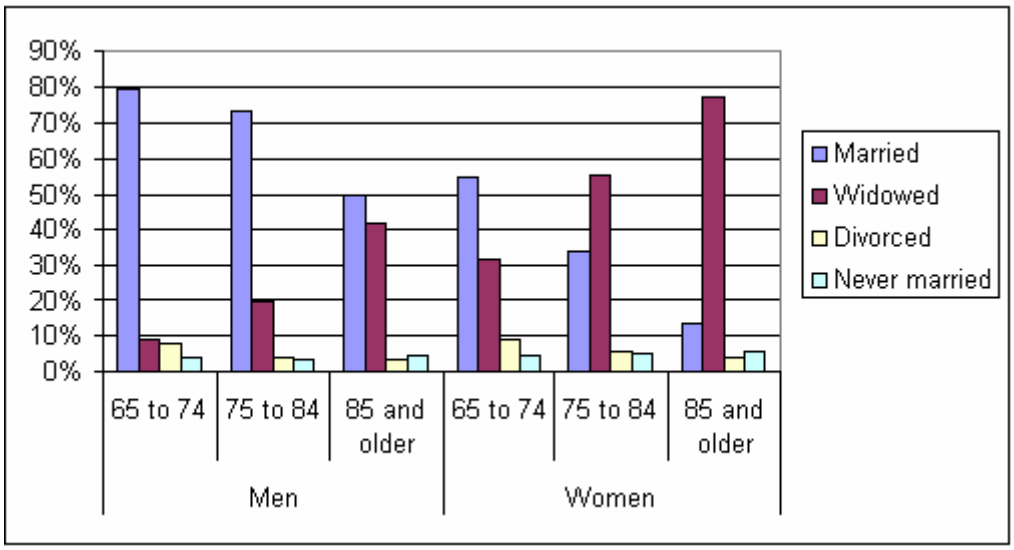
Greater racial-ethnic diversity among older adults will require greater availability of culturally competent services. Health professions and occupations may need to recruit more workers who are bilingual or multilingual, and cultural competence may require more attention in health professions curricula.

5. Marital Status and Family

Older adults today are largely those who reached adulthood in the 1940s and 1950s, i.e., the parents of the baby boomers. Rates of marriage were high post-World War II, and the vast majority of older adults have been married. Relatively few older adults are divorced. Marital status, however, varies by age and gender. Due to the greater mortality of men, older women are less likely to be currently married and more likely to be widowed than older men. The likelihood of being widowed increases substantially with age. The likelihood of being divorced is inversely proportional to age, as divorce did not become common until the 1970s, when the youngest older adults were in their 30s and 40s. Figure 8 illustrates some of these phenomena.

Marital status for baby boomers when they reach 65 is likely to be substantially different from that of their parents. Baby boomers married at slightly lower rates and have divorced at much higher rates than preceding generations, so they will be more likely to be “never married” or divorced. Less than one-fourth of couples marrying in 1947 (the parents of the baby boomers) eventually divorced. Lifetime divorce rates for baby boomers marrying in 1977, in contrast, are projected to be about 53%. Improved health and lower mortality rates may also make them less likely to be widowed.

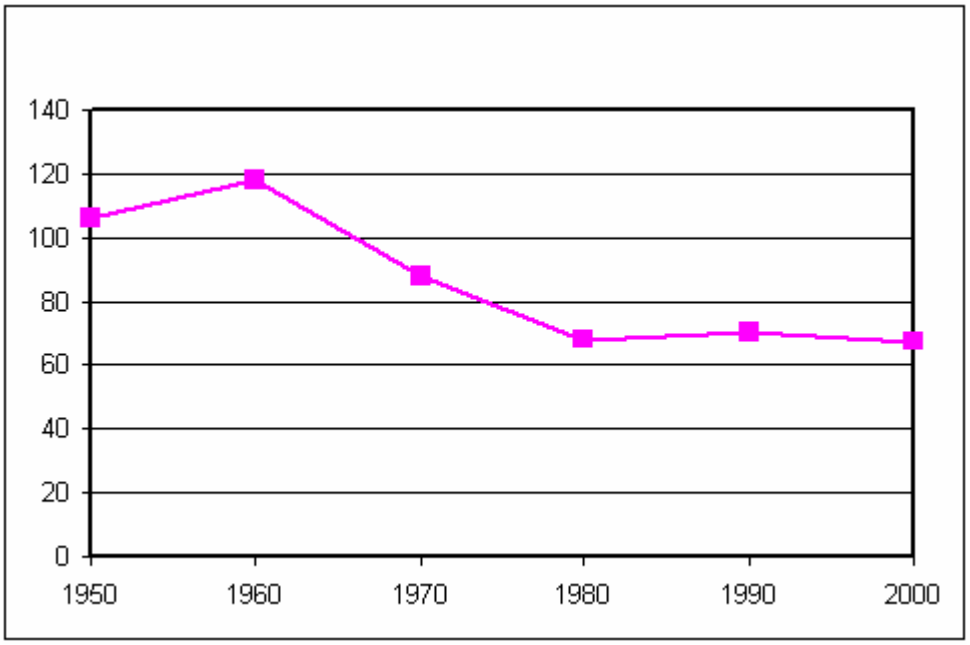
Figure 8: Marital Status by Sex and Age, U.S. 1998



Source: Federal Interagency Forum on Aging Related Statistics, 2000

Baby boomers will have fewer adult children than today's older adults, who were more likely than any other generation of the twentieth century to have had a fourth or fifth child. About 20% of women born in the 1930s (age 64-73 in 2003) had five or more children. The baby boomers have had significantly smaller families than their parents. Figure 9 highlights the reduction in the fertility rate (births per 1,000 women age 15-44) in the U.S. between 1950 and 2000.

Figure 9: Fertility Rate, U.S., 1950-2000

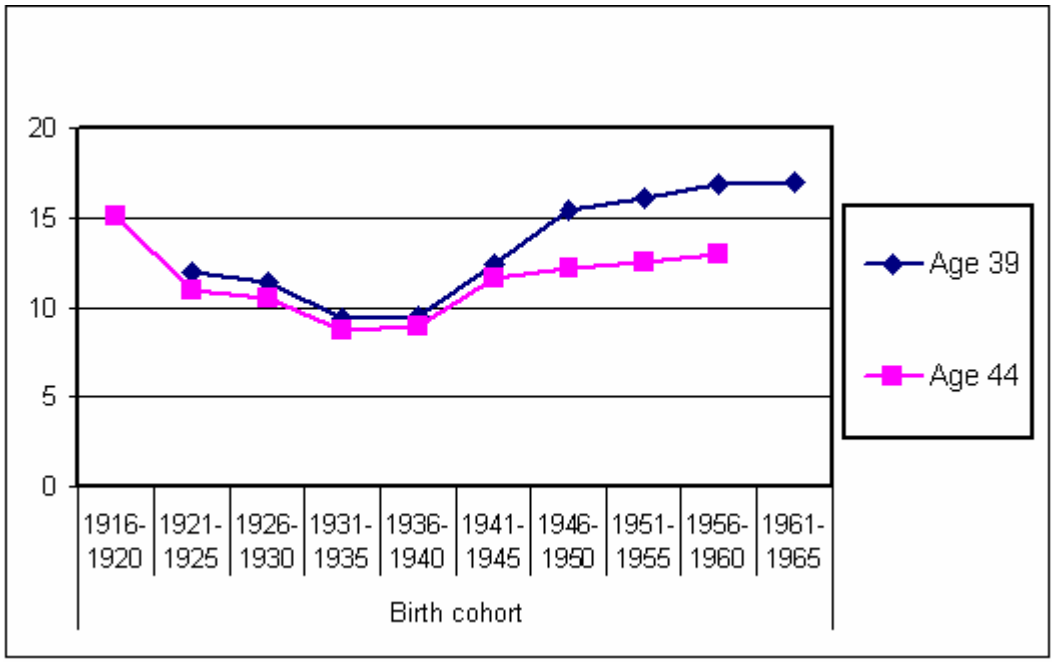


Source: Health, United States, 2002

The baby boomers are also more likely to have remained childless than many of today's older adults. Women born between 1916 and 1920 (age 83 to 87 in 2003), had relatively higher rates of childlessness (15%) by age 44. This is because these women, who entered their childbearing years between 1931 and 1935, had lower rates of marriage due to the social instability created by the Great Depression and the absence of eligible men during World War II. Every subsequent cohort up to and including those born 1931-1935 (age 68 to 72 in 2003) had successively lower rates of childlessness. More than 91% of women in the 1930 to 1935 cohort reached age 44 having had at least one live birth.

Figure 10 shows that beginning with women born 1936 to 1940 (age 63 to 67 in 2003), rates of childlessness have increased. More than 12% of baby boom women who have reached age 44 are childless, and rates have increased progressively between the oldest and youngest baby boomers. Seventeen percent of those women born in the 1961-1965 cohort were childless upon reaching their 39th birthday (although some of these women may have a child in their 40s).

Figure 10: Percent of Women Who Have Not Had at Least One Live Birth at Age 39 and 44, by Birth Cohort



Source: Health, United States, 2001 [USDHHS, 2001]

The consequences of these new family patterns will be felt in terms of the social support networks available to older adults in the future. Older adults will be less likely to have spouses available to help them, because they are more likely to have never married or to be divorced. They will also be less likely to have adult children available to help them than today's older adults.

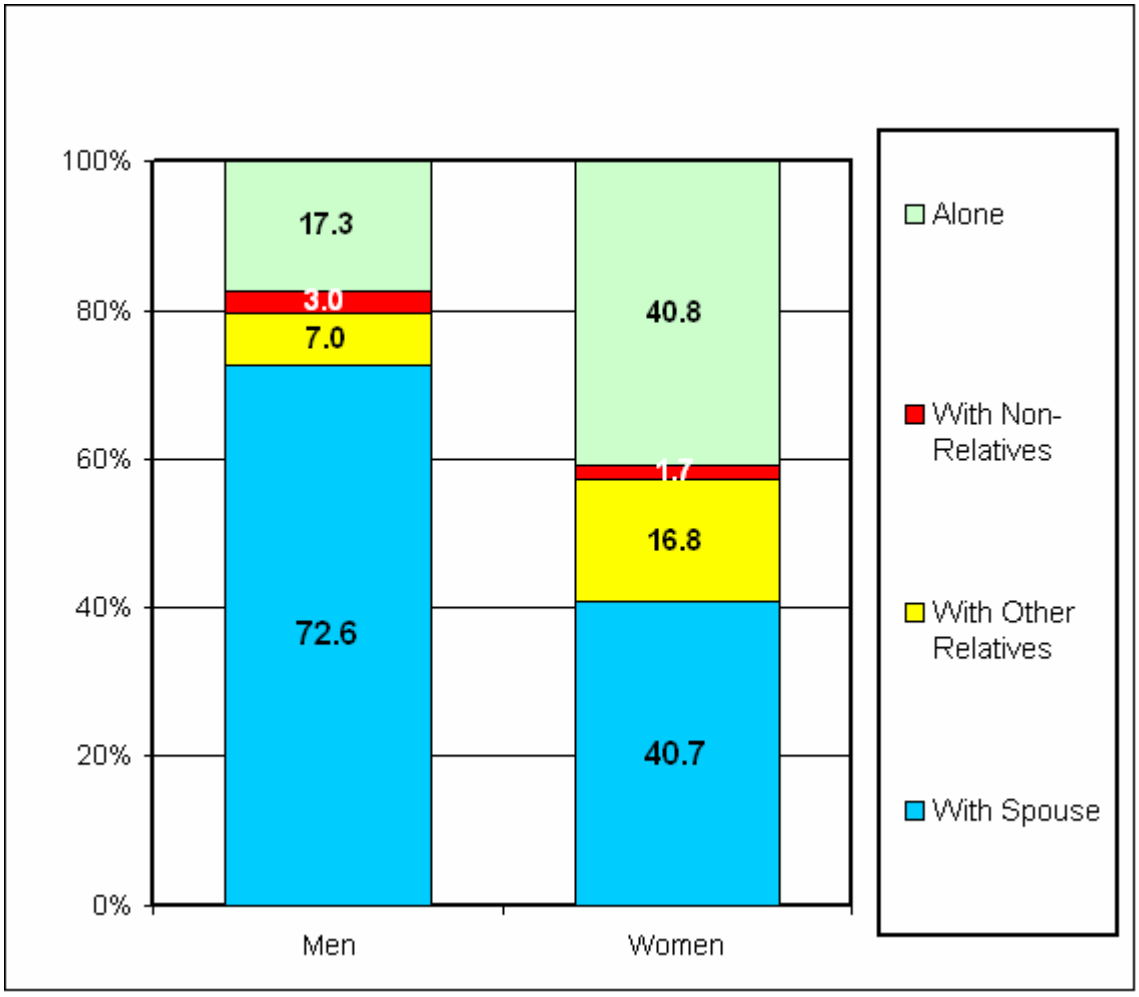
These demographic changes will have an important impact on the health workforce of the future. The health care system will be hard pressed to reach some older adults without access to informal caregivers to provide transportation to health services, assistance with activities of daily

living, and coordination of care. Some services may become more important than they currently are. For example, if older men are less likely to have wives to provide meals for them, nutritional services such as those provided by dietitians may be more necessary.

6. Living Arrangements

Despite a popular conception that large numbers of older adults live in institutions, the fact is the vast majority of older adults is community-dwelling and will not spend any time in a nursing home. Community-dwelling older adults are most likely to live alone, with a spouse, or with other relatives. Figure 11 shows that the likelihood of each of these living arrangements varies by gender and age, with men most likely to be living with a spouse, and women most likely to be living alone.

Figure 11: Living Arrangements of the Population Age 65 and Older, U.S. 1998



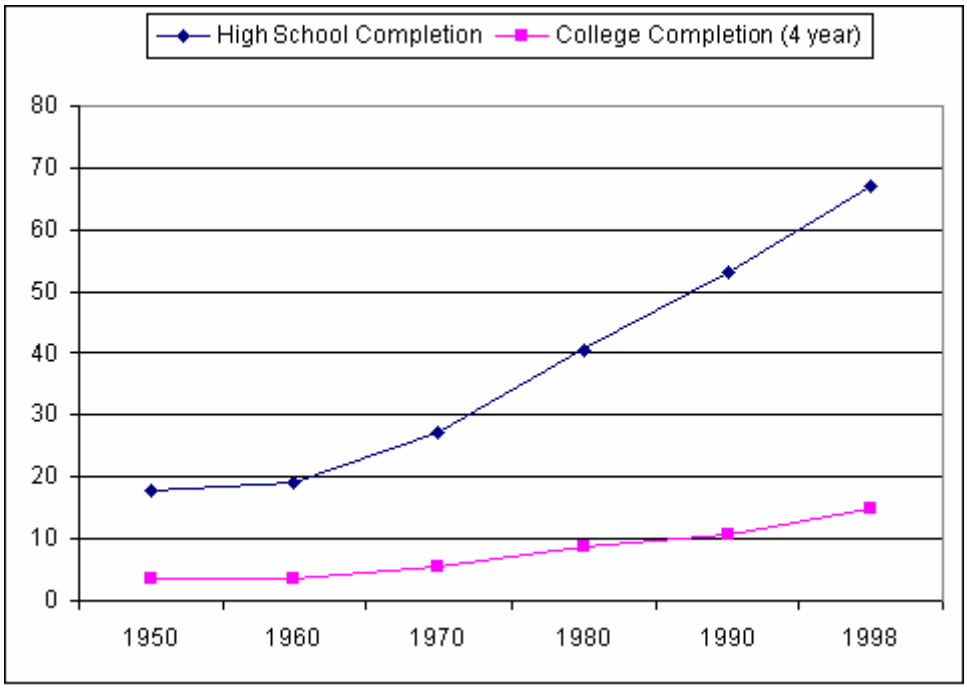
Source: Federal Interagency Forum on Aging Related Statistics, 2000

Living arrangements for the baby boomers may be different, however, as they will be less likely to be married as they enter their senior years, and have fewer adult children with whom they can live and on whom they can rely for personal assistance. Residential facilities such as assisted living might be required to house larger proportions of future older adults than is now the case.

7. Educational Attainment

Today's older adults are substantially more educated than previous generations, in terms of both high school and college completion (Figure 12). In 1950, less than 18% of older adults had completed high school, and fewer than 4% had completed college. In 1998, a majority of people age 65 or older had finished high school (67%), and a substantial number had completed college (about 15%). Large educational disparities remain between older men and older women in terms of college completion, with older men about twice as likely as women to have a bachelor's degree.

Figure 12: Percentage of the Population Age 65 and Older with High School Diploma and Bachelor's Degree or Higher, 1950 to 1998



Source: Federal Interagency Forum on Aging Related Statistics, 2000

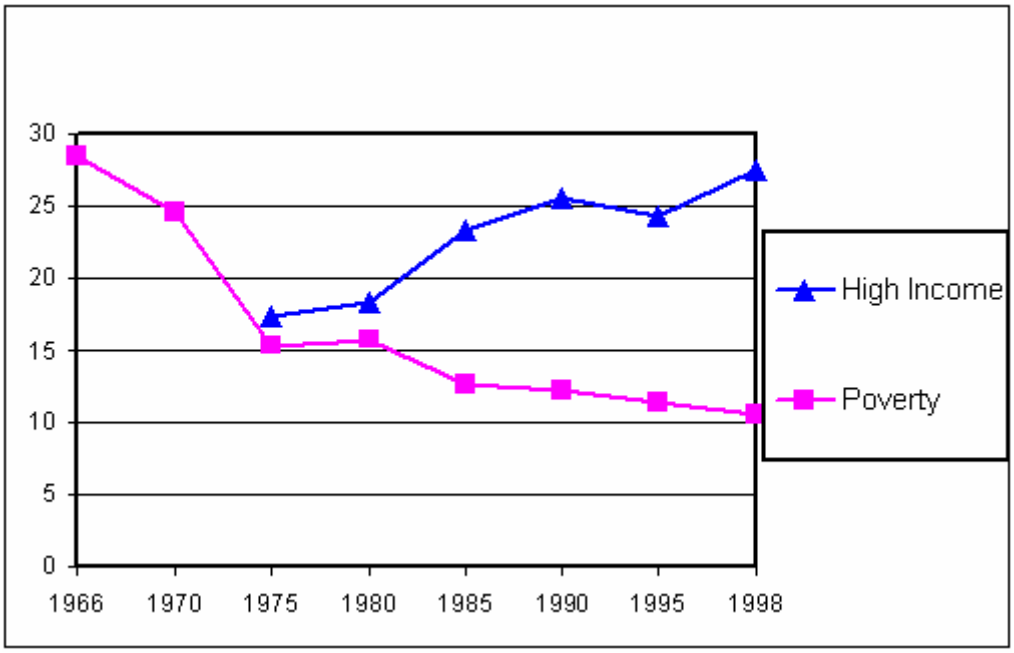
Increasing educational attainment among older adults may have the effect of expanding demand for health care, as older adults with higher levels of education tend to use preventative and specialty services more frequently. They may be better able to take advantage of insurance and government programs that support and reimburse medical expenses. They also may be more sophisticated in terms of obtaining health and medical information (e.g., through the use of the Internet), and may assume greater roles in directing their own health care.

8. Income and Poverty

In terms of socioeconomic well-being, older adults are somewhat better off than their predecessors (Figure 13). They are less likely to be poor (10.5% in 1998 versus 28.5% in 1966), and much more likely to be in a high-income category (27.5% in 1998 versus 17.4% in 1975). Older adults today are more likely to have pensions, and they draw more of their financial

support from assets than in past generations [Federal Interagency Forum on Aging Related Statistics, 2000].

Figure 13: Percent of Americans Age 65 and Older Living in Poverty or With High Income



Source: Federal Interagency Forum on Aging Related Statistics, 2000

This financial level of comfort is achieved concurrently with a substantial reduction in the average labor force participation rate of older men. In 1963, more than 40% of men age 65-69 and more than 20% of men age 70 and older were in the paid labor force. Today, fewer than 29% of men age 65-69 and only about 12% of men age 70 and older continue to work [Federal Interagency Forum on Aging Related Statistics, 2000]. (The labor force participation of older women has risen very slightly due to the greater labor force participation of women overall.)

Nonetheless, poverty has not ceased to be a problem among older adults. Despite some gains in socioeconomic status, certain groups of older adults are still at a high risk of poverty and are at a greater risk of poverty than older adults in the total population overall. Older women are 78% more likely than older men to be poor. Unmarried older adults are 255% more likely to be in poverty than those who are married. Finally, rates of poverty are much higher among older adults from almost all minority groups than among non-Hispanic whites: African-American older adults are about 221% more likely to be poor than non-Hispanic white older adults, Hispanic older adults are about 156% more likely to be poor, and Asian older adults are 95% more likely to be poor [FIFARS, 2000].

The upward trend in the socioeconomic status of older adults is likely to continue as the baby boomers age, due to their higher levels of education. Some inequalities by sex, marital status, and race/ethnicity will persist, although there are likely to be some reductions in the level of these inequalities.

As older adults gain greater financial security, their use of the health care system may change, but it is not possible to predict the nature of the impact. Financially secure older adults may need fewer services than poor or low-income older adults because their overall health, safety, and nutrition are likely to be better. On the other hand, they may use more services because they are more likely to be able to afford necessary treatments, and may be more willing to be pay for services and products that are not medically essential but that increase quality of life. Better access to preventative care, however, may actually reduce the need for some services (e.g., skilled nursing, long-term care) by keeping older adults well and active for a greater portion of their older years.

It is important to note that the reduced labor force participation among older adults, made possible by greater financial security, will also reduce the supply of health care workers at all levels. Retirements will reduce the health care workforce at approximately the same time that demand for services is expected to grow as a result of population aging. As the baby boomers move from being providers of health care services to consumers of health care services, the impact on the health workforce could be very substantial.

9. Health Status

Chronic Health Conditions. The prevalence of most chronic conditions (long-term illnesses or conditions that are rarely cured) in older adults has increased slightly over the past twenty years. Acute conditions (such as infectious disease) no longer rank as leading causes of mortality as they did in the past, and better overall health is delaying the age of onset of many chronic conditions. Nonetheless, longer life expectancies give the average American a greater number of older years, and thus more time to develop chronic conditions. A large percentage of Americans older than age 65 suffer from chronic conditions, and their numbers may continue to grow for a number of conditions, including:

- Arthritis: 64% of women, 50% of men
- Diabetes: 12% of women, 13% of men
- Cancer: 17% of women, 23% of men
- Stroke: 8% of women, 10% of men
- Hypertension: 48% of women, 41% of men
- Heart disease: 19% of women, 25% of men

Source: FIFARS, 2000

These chronic conditions, which sufferers may experience for years, demand more from the health care system than acute illnesses (e.g., pneumonia, influenza, diarrheal illness) that were once major causes of death among all age groups. They require more complex treatments and entail a higher risk of functional disability and activity limitation. Many patients with these conditions require long-term care, at least in their final years.

Disability. Rates of disability among older adults, on the other hand, have declined over the past twenty years. Today's older adults are, generally speaking, more active and independent even as they live longer and suffer more chronic disease.

Functional limitations among older adults are usually characterized in terms of a person's ability to carry out instrumental activities of daily living (IADLs) and activities of daily living (ADLs). Instrumental activities of daily living are the ability to manage one's affairs, and include shopping, housework, meal preparation, managing money, managing medications, using the telephone, and leaving the house. IADL limitations may include mental as well as physical decline, and are subject to the physical environment (e.g., an older adult living fifteen miles from a grocery store is more likely to be limited in terms of ability to shop than an older adult living a block from a grocery store, even though she might not be more physically or cognitively "disabled" than her counterpart).

ADLs include basic self-care activities, such as bathing, toileting, dressing, feeding, and getting into or out of beds and chairs. Obviously, older adults with ADL limitations require more care than those with only IADL limitations, and ADL limitations are likely to follow from physical disabilities. The physical environment can also influence ADL ability, in the form of assistive or adaptive technology (e.g., grab bars in showers, raised toilet seats, etc.)

The percentage of people age 65 and older with some level of IADL or ADL limitation is estimated at about 21%. About 9% suffer from IADL limitations only, with another 12% suffering at least one ADL limitation [AARP, 2003]. Women are more likely to have a chronic disability than men, and older African-Americans are more likely to have a chronic disability than older non-Hispanic whites [FIFARS, 2000]. Older adults with higher levels of education and income are less likely to experience impairment. Although the rate of disability has declined, lifetime incidence of disability remains high – about 68% of older adults can expect to experience at least one ADL disability or to experience cognitive impairment at some point during their lifetime [AARP, 2003].

Cognitive Impairment. Age-related cognitive impairment (e.g., dementia) can affect levels of IADL and ADL disability, and is a major risk factor for entering a nursing home. Cognitive impairment can take the form of mild memory loss, stroke damage, Alzheimer's disease, or other dementia. Dementia affects judgment as well as memory and organizational skills, and persons with severe dementia often require round-the-clock supervision. They may also lose their sense of time and place, see and hear things that are not there, fail to recognize family or friends, or even become hostile and aggressive to others. Persons with only mild dementia (e.g., memory lapses) may continue to live independently, although they may no longer be able to perform such IADLs as managing money.

Overall, about 4% of the youngest old (age 65-69) suffer from some degree of memory impairment, compared to about 36% of the oldest old (age 85 and older). Among 18% of the oldest old, memory impairment is severe. Men are more likely than women to experience cognitive impairment, and the risk of most forms of cognitive impairment increases with age.

Mental Health. Despite the stereotype of older adults as often lonely and depressed, the majority of older adults are satisfied with their lives and their social contacts. Much of their mental well-being, however, depends upon factors such as social relationships, physical health, and economic security. Depression and other mental illnesses among older adults are not normal, typical, or inevitable, but remain a serious problem for seniors.

Overall, the percentage of seniors with severe depressive symptoms varies by age from about 15% among those age 65-69 to about 23% among those age 85 and older [FIFARS, 2000]. According to some estimates, as many as one out of five older Americans suffers from a diagnosable mental disorder (including cognitive impairment). Older adults (especially older men) are also disproportionately likely to commit suicide.

The health care system, however, typically underserves older adults in terms of mental health services. As the numbers of older adults rise, there may be increased demand for social workers, psychologists, and psychiatrists who specialize in the treatment of the mental health problems of older adults.

10. Summary Highlights

- The number of Americans older than age 65 will increase by 19 million between 2000 and 2020, and increase by another 28 million between 2020 and 2050.

- Older adults have different health care needs than younger age groups, and this will affect the demands placed on the health care system in the future.

- Older adults are more likely to suffer from chronic illnesses (e.g., cancer, heart disease, diabetes) than younger people. About 84% of those age 65 and older suffer from at least one chronic condition, compared to 38% of those age 20 through 44 [Wu and Green, 2000].

- Older adults are more likely to require the services of health professionals as a result of injuries and illnesses due to greater physical vulnerability (e.g., they are more likely to break bones in falls; they are more likely to contract pneumonia as a consequence of influenza).

- Older adults have more limitations in terms of performing activities of daily living than younger people, due to greater rates of physical and cognitive disability. Almost 35% of people age 65 and older have an activity limitation, compared to about 6% of those age 18-44 [USDHHS, 2003].

- The baby boomers are socially and demographically different from the current generation of older adults in important ways, and these differences will affect their use of the health care system in their senior years (in terms of both amount of services and types of services consumed).

- The future cohort of older adults will be more racially and ethnically diverse than current older adults (64% non-Hispanic white in 2050, versus 83.5% non-Hispanic white in 2000 [Federal Interagency Forum on Aging-Related Statistics [FIFARS, 2000], requiring a health care workforce that is more multilingual and culturally competent than is now the case.

- Older Americans in 1998 were more likely to be high school (67%) and college (15%) graduates than in the past, and this trend is expected to continue. More information is

available than ever before, so older adults will thus be more likely to be informed about health care practices and services. They may be more likely to seek out certain services because of their higher level of sophistication, and may look for health care information from new sources (such as the Internet).

- Older adults in 1998 were less likely to be poor (10.5%) and more likely to have high incomes[3] (27.5%) than in the past [FIFARS, 2000]. They may be in better health overall because of better access to health care over their lifetimes. Many will also have more discretionary income to spend on health services that are not covered by Medicare, especially health services that may improve their quality of life while perhaps not being medically essential.

- Baby boomer older adults will have a smaller pool of potential family caregivers than current older adults. They have had fewer children than their parents, and are more likely to have had no children (more than 12% of women in this cohort are childless [USDHHS, 2001a]). They are also more likely to be divorced (lifetime divorce rates are projected to be 53% for the cohort [Cherlin, 1992]), and will thus be more likely to live alone as they enter old age.

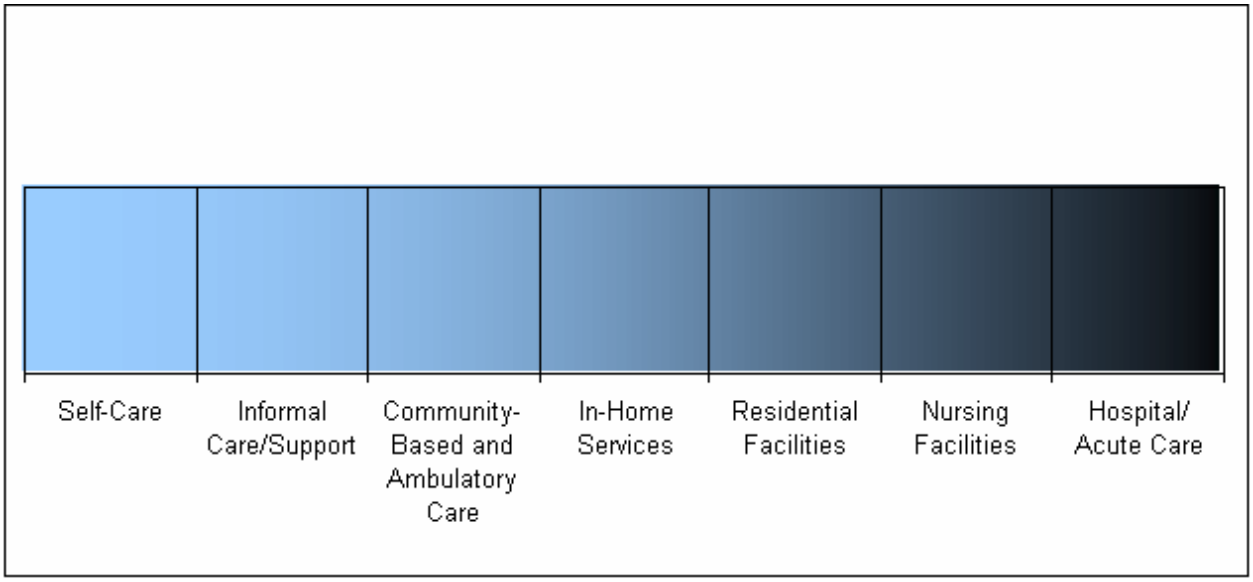
[3] Defined as 400% or more of the poverty threshold

B. Models of Care

The traditional model of the formal health care delivery system in the U.S. is a physician-centered system focused on the provision of acute and preventive care in hospital or ambulatory care settings. This acute care model is necessary, but not sufficient, for the provision of appropriate services to older adults. In fact, there are six other models of health care relevant to older adults that must be considered in any comprehensive system. As the older adult population grows in both numbers and as a percentage of the U.S. population, the other six models of care are likely to capture an expanding share of health care services for older adults, and employ an increasing proportion of the health workforce.

Models of care for older adults can be conceptualized in terms of a continuum, ranging from self-care to informal care (i.e., that obtained through family and social networks); community-based care (e.g., support groups, senior centers, adult day care, and the Program of All-inclusive Care for the Elderly or PACE); in-home services (e.g., personal care assistance, meal delivery services); congregate living situations (e.g., retirement communities, assisted-living facilities); nursing facilities (e.g., nursing homes); and hospitals [CHWS, 2002a]. Each of these models involves a varying degree of intensiveness of formal services, and a varying degree of care coordination, and progressively greater costs (Figure 14).

Figure 14: Models of Care for the Elderly (Ranging from Least to Most Intensive)



The preference for these different models of care has changed over time. Historically, most care for older adults has been either self-care or informal care by family or community members. In the past half-century, because fewer children are available to care for grandparents and great-grand parents, nursing homes have become more common as a model of care for older adults, especially the oldest old. Recently, however, new models of care have become more widely available: community-based care (for ambulatory older adults living at home), in-home services (for house-bound or bedridden older adults), and non-nursing residential facilities (for older adults with minor functional impairments). Hospitals have been relegated to caring for only those with the most serious injuries and illnesses that require aggressive, complex treatments.

Although both the numbers of older adults and the percentage of the population that is older have been increasing and will continue to increase for the foreseeable future, the proportion of older adults using nursing homes has decreased over the past fifteen years. Decreasing disability rates among older adults and a reluctance to enter nursing home care have both contributed to the decline in the popularity of nursing homes [Bishop, 1999]. In addition, law and public policy advocate the least restrictive environment possible for the frail older adults. At the same time, the other models of long-term care have grown in popularity. The result for older adult health care consumers and their families is that they have a greater range of options than ever before.

These new models of care will change the face of the health care industry over the next ten to twenty years. Demand for workers in home health care, community, and non-nursing residential settings is expected to increase dramatically, while demand for workers in nursing facilities will continue to grow, but more slowly. Many health services workers previously involved in care of older adults primarily on an acute-care basis will find expanding opportunities as part of health teams in other settings. This parallel focus in geriatric care will require new models of training for health care workers.

Table 1 illustrates the extent to which future opportunities for health care workers will more often be available in home health and residential care rather than in nursing homes (although nursing home employment will grow rapidly). All but one of the featured occupations will see growth of 36% or less in nursing home settings (the single exception being personal care aides, who will find demand growing by 67% in nursing homes). Dietitians and nutritionists will actually see their job opportunities in nursing homes *decline* slightly [BLS, 2003a].

In contrast, few occupations will see growth of less than 60% in home health care and residential care (the exceptions being medical and health services managers, who will grow only 36% in home health; licensed practical nurses, who will grow only 45% in residential care; home health aides, who will grow only 53% in residential care; and speech-language pathologists, who will grow only 11% in home health).

In part, these rates of growth for home health care and residential care are so high because they are calculated using a small baseline (i.e., home health and residential care are currently a relatively small segment of the overall health care system, employing 5.9% and 2.1% of health care workers respectively [U.S. Census, 2000]). Nursing homes, which currently employ 12% of health care workers, will continue to provide more health care employment in terms of number of jobs than home health or residential care.

Obviously, significant “growth” cannot be projected for professions and occupations that are not currently found in home health or residential care in substantial numbers. Some of these professions and occupations (e.g., physician assistants or dental hygienists) may eventually become a significant presence in home health or residential care nonetheless.

Table 1: Projected Growth of Health Occupations and Professions in Home Health Care, Nursing Homes, and Non-Nursing Residential Homes, U.S., 2000-2010

	Overall	Home Health	Nursing Homes	Residential Care
General Health Care				
Physician Assistants	54%	Not available	24%	70%
Registered Nurses	26%	70%	36%	70%
Licensed Practical Nurses	20%	70%	23%	45%
Nursing Aides	24%		24%	70%
Home health Aides	47%	70%	24%	53%
Personal care Aides	63%	70%	67%	87%
Medical and Health Services Managers	32%	36%	24%	70%
Therapy				
Physical Therapists	33%	61%	29%	61%
Physical Therapist Aides	46%	87%	36%	87%
Physical Therapist Assistants	45%	87%	36%	87%
Occupational Therapists	34%	68%	34%	68%
Occupational Therapist Assistants	40%	87%	36%	87%
Occupational Therapist Aides	45%	87%	36%	87%
Respiratory Therapists	35%	70%	24%	70%
Respiratory Therapy Technicians	35%	70%	24%	
Speech-Language Pathologists	39%	11%	24%	70%
Oral Health				
Dentists	6%	Not available	24%	70%
Dental Hygienists	37%	Not available	24%	70%
Dental Assistants	37%	Not available		71%
Mental /Behavioral Health				
Mental Health and Substance Abuse Social Workers	39%	70%	24%	87%
Medical and Public Health Social Workers	32%	104%	36%	70%
Child, Family, and School Social Workers	27%	70%	24%	70%
Psychologists	18%	64%	19%	70%
Medication and Nutrition				
Pharmacists	24%	70%	24%	70%
Pharmacy Technicians	36%	70%	24%	
Pharmacy Aides	19%	70%	24%	
Dietitians and Nutritionists	15%	70%	-1%	70%

Source: 2000-2010 Industry-Occupation Employment Matrix [BLS, 2003]

1. General Care Delivery System

The general health care delivery system currently consists of two main branches: hospital (inpatient) care and ambulatory (outpatient) care. Doctors' offices, other health practitioners' offices, hospital outpatient services, and general and specialty clinics deliver ambulatory care. The system tends to focus on acute care (the care of injuries and short-term illnesses) and preventative medicine (e.g., cholesterol checks, cancer screenings), rather than chronic care (the care of long-term illnesses or disabilities).

The general care delivery system is therefore limited in how adequately it can deal with the long-term care needs of the older adult population. Although the general delivery system is often the first point of access for older adults with chronic conditions, appropriate care for such patients ultimately requires services designed to treat the whole person (i.e., to address functional losses, challenges from the physical environment, social needs, and emotional health) as well as to "treat" or "cure" the physical self.

Table 2 compares and contrasts the general delivery system (inpatient and ambulatory care) with the long-term care system. The systems differ in terms of the settings in which services are delivered, the focus of the services, use of the health workforce, and composition of the patient base. Long-term care differs dramatically in the composition of the patient base, and in the workforce used. More than 85% of health workers in long-term care are nurses or nursing or personal care aides.

Table 2: Characteristics of Health Care Delivery Systems.

	Inpatient Care	Ambulatory Care	Long-term Care
Delivery	• Hospitals	• Doctors' offices • Hospitals • Clinics	• Nursing homes • Home health care • Assisted living
Focus of Services	• Acute care	• Preventative care • Acute care • Some chronic care	• Chronic care
Patient Base	• All ages • Older adults over-represented	• All ages • Older adults over-represented	• Overwhelmingly older • Some non-older adults with disabilities
Workforce[4]	• Registered nurses (38%) • Nursing aides (14%) • Technicians (13%) •Physicians and surgeons (esp. specialists) (7%) •LPNs (6%) •Health services managers (5%) •Therapists (5%)	• Physicians (17%) •Other practitioners (12%) •Technicians (12%) • Registered nurses (esp. nurse practitioners)(11%) •Medical assistants (11%) •Therapists (5%) •Health services managers (4%)	• Nursing and personal care aides (60%) • Registered nurses (15%) • LPNs (11%) •Health services managers (3%) •Social workers (3%) •Therapists (2.5%) •Technicians (1%)

The general care delivery system is plagued by problems such as limited provider-patient time, limited geriatric training among providers, and lack of coordination of services between providers. Issues such as transportation may also limit the access of older adult patients, particularly non-ambulatory patients, to the general care delivery system. While the provision of general health care to older adults is definitely very important, the traditional care delivery system only provides part of the care that older adults need. This is where different models of care (i.e., institutions and programs structured around the needs of older adults) become more important.

2. Coordination of Care

Older adults often require acute, chronic, and preventative care at the same time, seeing a wide range of health care generalists and specialists for a wide range of services. They may sometimes need to see providers simply for referrals to other providers. Furthermore, older adult patients may not know the appropriate provider for a given problem or be aware of what services are

[4] Data are taken from 2000 U.S. Census. Numbers indicate percentage of health workers in each setting represented by the individual occupation. Ambulatory care includes all health practitioner offices and outpatient care centers. Long-term care includes nursing homes, residential care facilities, and home health care services.

available to them. In addition, the multiple providers they see may not know what other provider(s) have done or what medications they have prescribed.

Given these complexities, older adults—especially those who are dealing with complicated and stressful medical conditions—are not always able to coordinate their own care. If an older adult patient is unable, a family member is the next most likely to coordinate the patient's care. The availability of formal coordination of care or case management is limited at this time to more intensive models of care such as some in-home programs (e.g., hospice), residential care, and nursing home care. The general care delivery system offers little assistance in case management.

Community agencies may offer case management services to older people who meet certain qualifying conditions, but there is no public system of care coordination. In some communities, geriatric case managers may be available to patients or families who can afford to pay for their services (e.g., to take them to medical appointments, monitor medication, or monitor other levels of need). The availability of even such private services is limited, however, and private case management can be expensive. The bottom line is that the care of many older adults is not adequately coordinated:

- seven out of ten chronically ill patients age 50 and older report that no one helps to coordinate their care [AARP, 2003];
- about 38% of persons age 50 and older report a need for one person to coordinate their medical and non-medical care [AARP, 2003];
- eighty-five percent (85%) of physicians report that lack of coordination of care for chronically ill patients results in serious problems [AARP, 2003]; and
- sixty-six percent (66%) of physicians report that their training did not adequately prepare them to fill a coordination of care role [AARP, 2003].

Interdisciplinary Care Teams. One option for coordination of care as a part of the general delivery system is for the physician-centered model to be modified in favor of a model that incorporates interdisciplinary teams to address multiple health problems through a case management approach to care. The members of these interdisciplinary care teams would vary, depending upon the needs of the patients and the resources of the health care institutions involved. The teams may include such workers as physicians, nurse practitioners (NPs), physician assistants (PAs), pharmacists, RNs, social workers, occupational therapists, dietitians, and/or nurse aides [CHWS, 2002a].

The health workforce may be significantly affected by a greater shift towards case management and interdisciplinary care teams. Such teams will employ a different constellation of professionals than traditional models of care, and may employ them in different settings (e.g., home health rather than hospitals). The role of such professionals may also change. For example, social workers (who currently have limited involvement in the provision of primary care) may experience a tremendous expansion of their role in clinical settings. Dietitians, who serve older adults primarily in institutional settings or treat only patients with nutrition-related conditions such as diabetes, may become more visible in routine medicine for older adults, helping them to

maintain health in collaboration with other service providers. Market demand for many providers of non-primary care may increase overall, as older patients are connected more efficiently with providers whose services they may need, but not currently receive.

Reimbursement and Financing. One of the impediments to developing a case management model of coordinated care for older adults is that it is not evident where reimbursement would come from for case managers and members of the team. Currently, hospitals and nursing and non-nursing residential care programs are able to provide discharge planning out of their regular inpatient fees, similarly provide such services out of their fees. However, case management for those who are not institutionalized is not a reimbursable service under Medicare.

It is possible that multi-disciplinary practices or groups could allocate a portion of their overhead costs to pay for case managers, in much the way they pay for receptionists and other administrative staff. There is little motivation, however, for the typical single-specialty or two-specialty health care group to enlarge their overhead expenses by hiring additional staff.

This may change as the general delivery system changes overall. For the past ten or twenty years health care provision has been evolving toward a system of large conglomerates. Recently, some hospitals have diversified into the provision of outpatient and long-term care services, giving them a motivation to keep each case within their own vertical market. If the patient needs home health aides or durable medical equipment, for example, hospitals or large medical groups who offer such services have an incentive to arrange these services for all of their patients. How this may affect the quality of health care received by older patients is not sure, but as such arrangements become more common, there will be more opportunity to study these issues.

Managed care organizations are more likely to provide and cover case management and interdisciplinary care teams, but a limited number of older adults are currently enrolled in such organizations. If the popularity of managed care among older adults increases, this model of care may become more prevalent.

Evaluation Research. When weighing the costs and benefits of coordinated care, many institutions and health care groups will measure outcomes in economic terms. When conducting or interpreting such evaluation studies, it is important to recognize that the payback from case management programs is likely to take place over many years. The initial costs of case management are high because many resources must be used. If, however, outcomes are measured over the long-term (e.g., ten-year rates of hospital admissions or disease complications) it should be possible to determine whether the benefits outweigh the costs.

It is also important to recognize that programs initiated in hospitals or other acute care settings use a self-selecting sample: patients who enter the programs are those who have already demonstrated a high level of medical need. Coordinated care programs may prove most valuable with the “well older adults” (i.e., those who have not yet developed chronic conditions or functional limitations). By connecting well patients with preventive services, such programs could provide an important point of access to more critical services as the patient develops greater levels of need. Implementing case management earlier in the cycle of care may also pay off in the long-term, by preventing costly problems before patients reach critical levels of need.

Example: The New Jersey Easy Access, Single Entry (NJ EASE) *is one example of a publicly sponsored case management system. NJ EASE is a single point of entry program initiated by the New Jersey Department of Health and Senior Services. The goal of the program is to provide a new and easy way for senior citizens and their families to learn about and obtain needed services.*

The program relies on three levels of assessment of an elderly person's needs. When someone calls in, they must first provide their health information to an assistance worker, who performs a "level one" screening. This serves to identify any needs that may be unmet. If the assistance worker perceives that the patient needs some kind of service or benefit covered by a waiver program or by other health service offering, they refer the patient to an eligibility worker. The eligibility worker then determines whether the need exists for further services. If so, the eligibility worker will arrange for a nurse or social worker to perform an in-home assessment. At this point, the patient is assigned to a case manager (a nurse or social worker) and is given a case number. The case manager becomes responsible for developing a health plan, and monitoring the patient's progress through the plan, with occasional re-evaluations.

NJ EASE is paid for by the state of New Jersey, through a Medicaid waiver program. Other states are now starting to develop similar management systems. Geriatric Education Centers (GECs) provide the education and training for the personnel involved in these programs, with the goal of increasing the number of certified case managers (http://www.state.nj.us/health/senior/sanjease.shtml).

3. Self Care

A majority of older adults live in their community, including those with functional limitations. Nearly 79% of older adults who need long-term care live at home or in community settings rather than in institutions [AHRQ, 2000]. Older adults also express a strong preference for such living arrangements: 92 to 95% of older adults report a desire to remain in their own homes [AARP, 2003]. The feasibility of remaining in one's own home depends not only on the functional status of the older adult, but also on the characteristics of their homes and communities.

Assistive Equipment. Independence for older adults is promoted by the availability of appropriate assistive equipment, both in their own household and in public spaces in the community. Assistive equipment can maximize the length of time older people can continue to live in the community, and can also reduce reliance on formal health services personnel (thus both reducing costs of care and minimizing shortages of such personnel).

A wide range of such equipment exists for purchase and rental, but older adults and their caregivers must be aware of what is available and how to obtain it. Assistive equipment that contributes to independence and quality of life for older adults with functional limitations includes:

- walking aids (e.g., canes, walkers, crutches);

- wheel chairs (manual, electric, or scooters);
- lifts/hoists;
- medication aids (e.g., pill organizers, medication dispensers, timers and alarms);
- independent living aids (e.g., raised toilets, easy-grip silverware, meal trays);
- bathing equipment (e.g., security chairs, bathtub mats, hand-held showerheads, no-rinse shampoos);
- incontinence supplies (e.g., commodes, protective undergarments, portable receptacles);
- home modifications (e.g., wheel chair ramps, railings, grab bars, lowered countertops); and
- personal safety devices (e.g., medical ID bracelets, door closers, door lock stoppers, perimeter alarms, and electronic mobile trackers).

Livable Communities. Communities with large populations of older adults can enhance the ability of older people to remain independent by offering public transportation options, "walkable" neighborhoods (those in which amenities are located within walking distance of residential areas and in which sidewalks are safe and well-lit), reducing crime (e.g., through neighborhood watch programs), and providing housing that is both appropriate for frail or disabled people and affordable for those on fixed incomes.

4. Informal Care

The first source of support for most older adults who are unable to adequately meet all of their own needs is usually family or friends. Fifty-seven percent of community dwelling long-term care recipients age 65 and older rely on informal supports only, while an additional 36% rely on a combination of informal and formal care. Only 7% of community-dwelling long-term care recipients receive no informal care [AARP, 2003].

Informal caregivers are usually women caring for a spouse or parent, and are increasingly likely to be members of the full-time workforce. Informal caregiving can cause a great deal of stress and strain to the caregiver, especially if the caregiver is working full-time and/or raising their own family, or if the caregiver is also older and in need of care.

Informal caregivers are de facto members of the health workforce, and the supply of these unpaid caregivers is an important factor in determining need and/or demand for paid caregivers. Due to higher rates of divorce, non-marriage, childlessness, and female work force participation, as well as smaller numbers of children per family, the supply of potential caregivers for those in the baby boom generation is likely be lower than that for previous generations. A more complete discussion of informal and family caregivers can be found in the separate chapter on "**Family Caregivers**."

5. Community-Based Care

Community-based care has always been a part of the traditional health care delivery system in the form of ambulatory care: physician offices, outpatient centers/clinics, and the offices of other practitioners. But in many communities, a number of other services are also available to older adults who live in their own homes. Community-based programs may be publicly funded at the

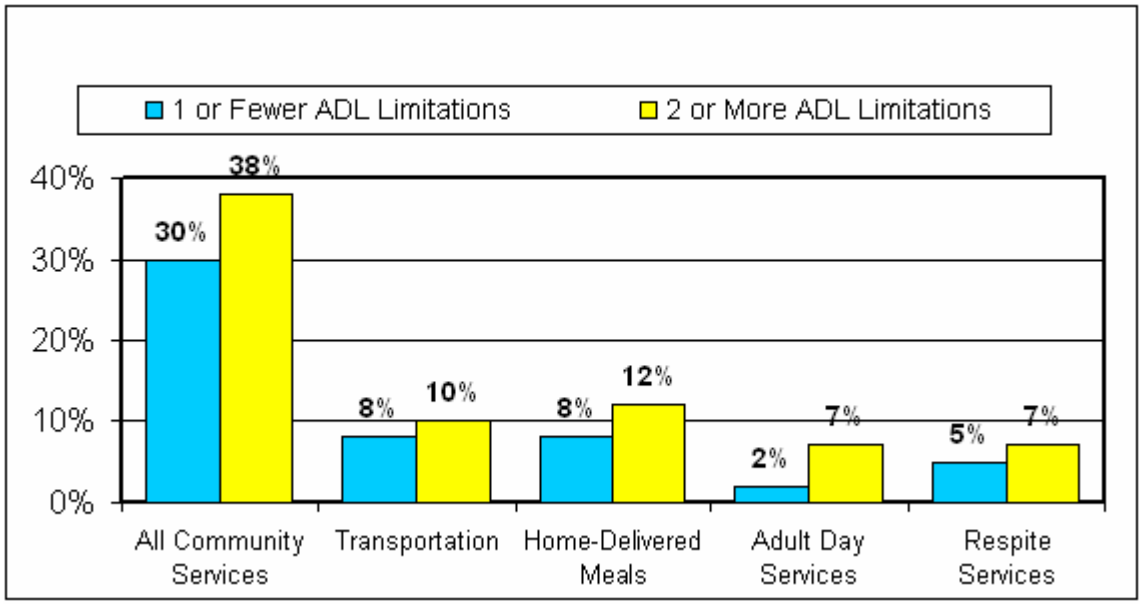
national, state, or local level, or they may be volunteer-based and operate under the auspices of private organizations such as churches or civic groups.

The most common services are transportation, home-delivered meals, adult day care services, and respite services (Figure 15). Use of these services is relatively low, even among disabled older adults (between 30 and 38% of disabled older adults use community services, with use varying by the severity of impairment [AARP, 2003]). Some older adults are not aware that these programs exist, while others receive some of these types of services from friends and family rather than community programs. Case management can play an important role in linking older adults with appropriate community programs to help them remain at home for as long as possible.

Transportation. Assisted transportation, such as special shuttle buses, may be available to seniors to enable them to get to doctors' appointments, grocery stores, etc. Only about 8% of seniors with 1 or fewer ADL limitations use transportation programs, however (this figures rises to 10% for seniors with 2 or more ADL limitations) [AARP, 2003]. Undoubtedly, such programs are also limited in rural areas, which may contribute to low levels of utilization.

Home-Delivered Meals. As Figure 15 illustrates, meal-delivery services such as Meals on Wheels serve 8-12% of older adults (depending on their level of functional limitation) [AARP, 2003]. Again, these programs are most likely to serve urban and suburban seniors than rural seniors. A variation of the meal delivery service is the provision of congregate meals at places like senior centers. The ability to participate in congregate meal programs depends in part upon access to transportation.

Figure 15: Use of Community-Based Services, U.S., 1998



Source: AARP, 2003

Adult Day Services. Between 2% and 7% of seniors use the services of adult day programs [AARP, 2003]. Such programs provide a range of services, including transportation, meals, and social and therapeutic activities. They may also offer preventative health services (e.g., blood pressure monitoring, flu shots) and administer medications. Such services are particularly valuable for community-dwelling older adults who require regular supervision (due to dementia, for example), and whose caregivers work full-time.

Respite Services. Respite services are directed to the informal caregivers of older adults rather than to the older adult patients themselves. Respite care involves the provision of a paid or volunteer caregiver to allow family caregivers to have some personal time. Respite care may be offered out of the home, in a setting like an adult day center, or in the home. It is estimated that only 5 to 7% of older adults have a caregiver participating in a respite care program [AARP, 2003].

Programs of All-inclusive Care for the Elderly (PACE). The PACE model is centered on the belief that it is better for the well-being of older adults with chronic care needs and their families to be served in the community whenever possible. PACE serves enrollees in day centers and clinics, their homes, and in hospitals and nursing homes. By utilizing a service delivery system and an interdisciplinary team for care management, the PACE model integrates primary and specialty medical care. The comprehensiveness of health and social services provided by PACE, as well as its cost-effective coordinated system of care delivery, and its method of integrated financing have been shown to have wide applicability and appeal [Eng, et al., *Journal of American Geriatric Society*, 1997].

6. In-Home Services

When self-care, informal care, and community services are not practical or adequate for older adults, the next option before residential placement is formal home care. Such care is usually delivered by home care agencies, and may range from occasional to round-the-clock support. Home care services include medical and non-medical services including skilled medical or nursing care, personal assistance, household chore services, companionship services, and other services. Home care providers may include nurses, therapists, physicians, or social workers.

Only 6% of persons age 50 and older used home care services, but this increases with age. Two percent of persons age 50-64 use home care, compared to 28% of those age 85 and older [AARP, 2003]. Home care is most commonly delivered to low-income older adults, but this is primarily because of their higher rates of disability and thus their higher level of need. Income differentials are less pronounced in the oldest age groups, when people are likely to have functional limitations regardless of socioeconomic status.

Medicaid (under many programs) and Medicare cover home care, but only if it is delivered through a certified home health agency (CHHA), and there are limitations and conditions attached to Medicare and Medicaid coverage. Some older adults prefer to hire their own independent home care workers, so that they can choose someone who offers services and a schedule most appropriate to their needs.

Hospice Care. Hospice care is a special type of in-home care for older adults. The most striking difference between hospice and other models of care, however, is that hospice care is designed for and directed to patients in the later stages of terminal illness such as cancer. The hospice model emphasizes palliative care (e.g., pain management) rather than curative treatment. Hospice generally integrates functional family support, case management, social work services and discharge planners, while coordinating a continuity of services [Hospice Net, 2003]. Hospice also assumes that family will be an active part of the care team, while other models of care do not necessarily share the same expectation [CHWS, 2002b]. Trained volunteers can offer respite care for family members as well as meaningful support to the patient.

Hospice teams include physicians, nurses, social workers, counselors, hospice-certified nursing assistants, clergy, therapists, and volunteers. Professional medical care is given, and sophisticated symptom relief is provided. Hospices provide medications, supplies, equipment, and hospital services. Additional helpers in the home are available through hospice programs, if and when needed [Hospice Net, 2003]. The goal of hospice care is to keep the dying patient in his or her own home rather than in an institution during the last weeks and days of life. Some hospice programs, however, do offer inpatient facilities in which the terminal patient is cared for in a "home-like environment."

Hospice is covered by Medicare, with some important limitations. Patients must choose hospice care *instead* of routine Medicare covered benefits. The focus of their benefits under hospice is palliative care, and curative care is no longer covered [CMS, 2003].

7. Assisted Living Models

What is Assisted Living? Assisted living (a.k.a. supportive housing, retirement community, care community) models of care are another possible paradigm for health service delivery for older adults. Assisted living refers to residential facilities that offer services such as meals, housekeeping, personal assistance, transportation, and social support activities. Assisted living facilities may provide some health care, such as on-site preventative and/or routine services (e.g., cholesterol checks, flu shots, etc.), but they do not typically provide nursing services on a regular basis. Some assisted living facilities may offer case management services to assist patients in coordinating their medical care.

Assisted living is therefore marketed to older adults who need assistance with some instrumental activities of daily living (IADLs) – for example, grocery shopping or meal preparation. They generally do not provide care to those who need assistance with activities of daily living (ADLs) – for example, using the toilet or feeding oneself. Assisted living is considered by many older adults and their families to be a more palatable option than nursing homes, because such facilities offer an additional degree of privacy and autonomy (73% of assisted living units are private rooms or apartments [AARP, 2003]). They are also generally less expensive than nursing homes because they employ fewer health care professionals and other staff.

Assisted living settings range from small facilities, which encourage ties with community for social support and services, to large facilities that have many services on-site. Assisted living is currently evolving to include options and services such as recreational activities and transportation for older adults. It is believed that this model of care, as it continues to expand and

evolve, will appeal to consumers because of its focus on choice, maximum independence, and privacy [CHWS, 2002a].

Trends in Assisted Living. The utilization of assisted living facilities is likely to rise dramatically as the baby boomer population ages. Not only will there be greater numbers of older adults, but they will have lower rates of disability [AARP, 2003; FIFARS, 2000] (making them less likely to consider nursing homes), and less access to family caregivers due to smaller numbers of children and more female labor force participation (making them potentially less able to remain in their own homes). Assisted living is expected to be a favored option among those unable to remain in their own homes, but unwilling to enter a nursing home.

Over the past decade, there has been a noticeable movement away from nursing homes and toward assisted living facilities.

- In 2002, there were about 900,000 assisted living beds in the U.S., in more than 36,000 licensed facilities [AARP, 2003].
- From 1991 to 1999, the number of assisted living beds increased by 115% [AARP, 2003].

Problems/Limitations of Assisted Living. Despite the attractiveness of assisted living as a model of care, these types of facilities have some important associated problems or limitations.

Affordability. Assisted living is primarily a "self-pay" option, with considerable associated costs. For this reason, utilization depends on whether or not someone can afford the care. In 2000, such facilities cost about $2,242 a month on average, and most residents use their assets or family supports (in addition to their regular incomes) to cover the fees [AARP, 2003]. Lower income adults are not necessarily excluded from assisted living: forty states currently pay for assisted living facilities on a negotiated basis, through Medicaid waivers or housing assistance programs. Nonetheless, the fact that Medicare does not cover assisted living almost certainly constrains some older adults from availing themselves of this option.

Staffing. The assisted living workforce is in large part a minimally skilled infrastructure, with professionals called in as needed. Most facilities contract with at least one nurse, but in some facilities the RN is only available by phone, or may cover multiple facilities. The more expensive facilities offer a greater availability of nursing care, with a more highly qualified workforce. Overall, 71% of assisted living facilities in 1999 had at least one part-time or full-time nurse on their staff [AARP, 2003].

One problem with this model is that most workers have minimal health care training, but are required to perform a multitude of duties. This model is strictly driven by the demands of the marketplace, rather than by regulatory structures, as there are no federal standards or requirements for assisted living facilities to follow. Most direct-care paraprofessionals (e.g., nurse aides, personal care aides) in assisted living settings perform far more duties than specified in their job descriptions, some of which they may not be qualified to perform.

Incomplete or Misleading Marketing Materials. Facilities favor the term "assisted living" when possible in their marketing, because "assisted living" is regarded as relatively attractive by seniors (compared to nursing homes). There is no consistent definition of assisted living across states, however, so some facilities use the term without offering the type of environment or level of services associated with assisted living [AARP, 2003]. Residents (especially those who self-pay) expect certain services and a high level of care in return for their money. There have been complaints that some assisted living centers have not provided all of the services that residents were promised – for example, some facilities charge additional fees for services such as helping someone get to the dining room [Family Caregiver Alliance, 2003].

8. Skilled Nursing Facilities

Skilled nursing facilities (a.k.a. nursing homes) predominantly serve older adults who need assistance with ADLs as well as IADLs, and/or who suffer from dementia. Despite their declining popularity, their numbers continue to grow (and will continue to grow into the future) because they serve a population which is not adequately served by any other model of care. Nursing home residents need assistance with 3.8 ADLs on average, compared to 2.3 ADLs among assisted living residents and 1.6 ADLs among recipients of home health care [AARP, 2003].

Skilled nursing facilities are heavily staffed with RNs (15% of their health care workforce), LPNs (14%) and direct care paraprofessionals (54%) [U.S. Census, 2000]. They may also employ other health care professionals (either on a payroll or contract basis), such as dietitians, social workers, pharmacists, or dental hygienists. Physicians are typically on call twenty-four hours a day.

The dominant perception of skilled nursing facilities is that they are institutions for long-term care, and in many cases this is true. Many nursing home residents, however, are recovering from a hospitalization or illness, and will return to their homes, a family member's home, or an assisted living facility. Some older adult patients move in and out of nursing homes several times during the last years of life.

***Trends in Skilled Nursing Care*.** The number of skilled nursing facilities and beds has continued to grow due to the increasing number of older adults, although it is growing more slowly than other models of care such as assisted living and home health care. Skilled nursing beds increased by only 19% between 1991 and 1999, while assisted living beds increased by 115% over the same period. Nursing home occupancy rates also dropped from 92% to 87% during this time, reflecting less appeal of this model of care and greater use of nursing homes as low cost sites for recovery services by younger patients after discharge from a hospital [AARP, 2003].

As of 1999, there were approximately 1.6 million nursing home residents in 18,000 nursing homes across the U.S. About 4% of older adults live in nursing homes at any given time, but 46% of those who turn 65 in the next twenty years are expected to spend at least some time in a nursing home. Nursing home residents are likely to be female (72%), white (85%), widowed (57%), and older than age 85 (46%) [AARP, 2003].

Problems/Limitations of Skilled Nursing Care Facilities. Numerous issues and problems relate to skilled nursing care. Ninety percent of Americans express reluctance to move into a nursing home setting [AARP, 2003], and numerous regulatory and policy initiatives have been directed at improving nursing home quality of care.

Cost. Skilled nursing care is one of the most expensive types of long-term care, and reimbursements are limited:

- Seventy percent of long-term care dollars are spent on nursing home care, despite the fact that most long-term care is provided in other settings.
- In 2001, nursing home care cost an average of $55,000 per patient per year.
- Medicare only provides coverage for nursing homes under limited conditions (a recent hospitalization of at least three days), and for a limited period of time (100 days).
- Medicare co-payments of $105 a day (as of 2003) are initiated after the first 20 days.
- In 1996, Medicaid paid for 44% of national expenditures on nursing home care (Medicaid coverage of skilled nursing, however, varies by state), private sources paid for 33%, and Medicare paid for 19%.

Quality of Care. Quality of care is another important issue for nursing care. The Nursing Home Reform Act requires states to conduct unannounced inspections of nursing homes, at least once every 15 months. Findings have been disturbing. AARP [2003] reports that in 1999:

- twenty-one percent (21%) of nursing homes were cited for failure to ensure quality of care;
- nineteen percent (19%) were cited for failure to remove accident hazards; and
- eighteen percent (18%) were cited for failure to prevent pressure sores.

Staffing. Nursing homes have been particularly challenged in recruiting and retaining qualified staff. This problem also exists in other types of long-term care organizations (e.g., assisted living and home care), but nursing homes provide a higher level of services, and so they require larger numbers of more highly skilled professionals. RNs are in particularly short supply, but problems have also been reported with the recruitment and retention of licensed practical nurses (LPNs) and nurse aides. AARP [2003] reports the following statistics about the employment of nursing aides and nurses:

- One in three nurse aides earns less than $10,000 per year.
- Fewer than 25% of nurse aides have health or retirement benefits.
- Sixty-one percent (61%) of RNs are satisfied with their earnings, but a much lower percentage is satisfied with the level of recognition they receive from their employers.

- Annual turnover rates of nurse aides in nursing homes range from 40% to 100+%.

- By 2020, the total number of registered nurses is expected to fall short of actual need by 20%.

9. Discussion

Models of care that have previously occupied only marginal positions within the overall health care system are expected to grow rapidly in the future as the numbers of older Americans increase. New models of care have become more widely available: community-based care, in-home services, and non-nursing residential facilities (i.e., assisted-living facilities). Hospitals have been relegated to caring for only those with the most serious injuries and illnesses that require aggressive, complex treatments. The proportion of older adults using nursing homes has also decreased over the past fifteen years, although this trend may not continue.

Nearly 79% of older adults who need long-term care live at home or in community settings rather than in institutions [AHRQ, 2000]. Fifty-seven percent of community-dwelling long-term care recipients age 65 and older rely on informal supports only, while an additional 36% rely on a combination of informal and formal care. Only 7% receive no informal care. Between 30% and 38% of disabled older adults use community services, with utilization varying by the severity of impairment [AARP, 2003]. Only 6% of persons age 50 and older use home care services, but this increases to 28% for those age 85 and older [AARP, 2003]. Assisted living beds increased by 115% during the 1990s, while skilled nursing beds increased by only 19%. About 4% of older adults live in nursing homes at any given time, but 46% of those who turn 65 in the next twenty years are expected to spend at least some time in a nursing home [AARP, 2003].

The new models of care will change the face of the health care industry over the next ten to twenty years. Demand for workers in home health care, community, and non-residential settings is expected to rise dramatically, while demand for workers in nursing facilities will continue to grow, but more slowly. Still, the largest numbers of workers are likely to continue to be employed in hospitals and nursing homes, which currently employ 34% and 12% of the health care workforce respectively [U.S. Census, 2000].

This may require a shift in the training of medical and health personnel, as well as changing the locus of demand for such personnel. Health policy makers may need to focus more on health care more in terms of chronic care, with interdisciplinary teams in which nurse practitioners (NPs), physician assistants (PAs), and social workers assume a major role.

C. Family Caregivers

As the number of older adults in the United States grows, so will the number of people needing assistance with their daily lives. Nine percent of the population age 65 and older has difficulty with at least one instrumental activity of daily living (IADL), such as grocery shopping or managing money. Twelve percent of the older adult population has difficulty with at least one activity of daily living (ADL), such as bathing or toileting [AARP, 2003]. Among people older than age of 85 (who are the fastest growing segment of the population), 50% need some help with personal care [NFCA, 2002].

Family and unpaid caregivers play an important role in providing care to older adults. Family caregivers currently provide approximately 80% of home care services. The value of the services provided by these caregivers is estimated to be approximately $257 billion annually. According to some estimates, nearly 27% of adults have provided care for a chronically ill, disabled, or aged family member or friend in the past year [NFCA, 2002].

Caregivers are confronted with many different tasks that vary depending on the problems experienced by their frail relative. Types of assistance frequently provided include: transportation; shopping; household chores; coordinating assistance from social service and health care providers; routine health care such as administering and monitoring medications; personal care such as bathing, feeding, toileting, and dressing; general supervision; financial management; financial assistance; and the sharing of a common household [Toseland, Smith, and McCallion, 2001; Toseland & McCallion, 1997].

The trajectory of care also varies. For some chronic diseases, the needs of frail older family members can be episodic (e.g., in the early stages of cancer). For other situations (e.g., in the immediate aftermath of experiencing a stroke), physical caregiving demands are very intensive for several weeks or months until the care recipient regains some independence. Generally, however, the need for care expands over time, so that family caregiving frequently involves a long-term, open-ended commitment. Although there may be some reduction in the physical demands of caregiving when a frail family member is hospitalized or institutionalized, the emotional demands of caregiving continue for as long as the family member lives [Toseland et al., 2001].

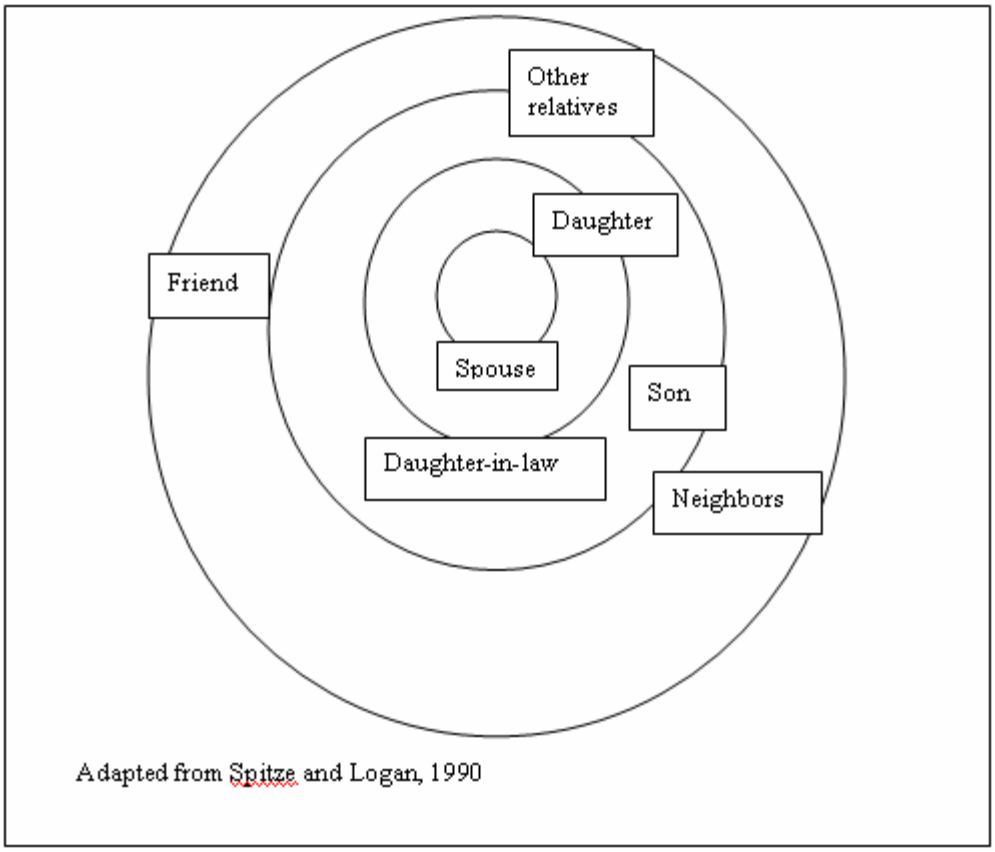
1. Profile of Family Caregivers

Estimates of the number of family caregivers vary widely, depending upon the definition of caregiving used, but one commonly cited statistic is that approximately 22 million caregivers provide informal, unpaid services to older adults [Toseland et al., 2001]. Approximately 23% of U.S. households contain at least one member who cares for an older person. As the number of older adults in the U.S. multiplies in the future, the number of people and the percentage of households involved in caregiving will also increase.

Gender and Age. Approximately 56 to 75%[5] of those giving informal care to older adults are women (depending upon the definition of care used). Female caregivers have also been found to spend 50% more time on average providing care than male caregivers. The average age of those giving care to older adults is 46. Many caregivers are therefore at the age where they are still involved in the paid labor force, and often raising families of their own. Nearly one-quarter (23%) of family caregivers are spouses of the care recipient, and are likely themselves to be older and potentially in failing health. Overall, 31% of those caring for older adults describe their own physical health as "fair to poor" [FCA, 2001].

Relationship. There is generally one primary caregiver in a family. Figure 16 illustrates how obligation for caregiving is strongest for spouses, and gradually decreases as relationships become more distant (e.g., friends, neighbors). If a spouse is available, she or he is most likely to provide care. If not, then an adult daughter is most likely to become the primary caregiver. In the absence of an adult daughter, a son or daughter-in-law is likely to provide care. If none of these family members are available, other relatives, neighbors, and friends may provide care.

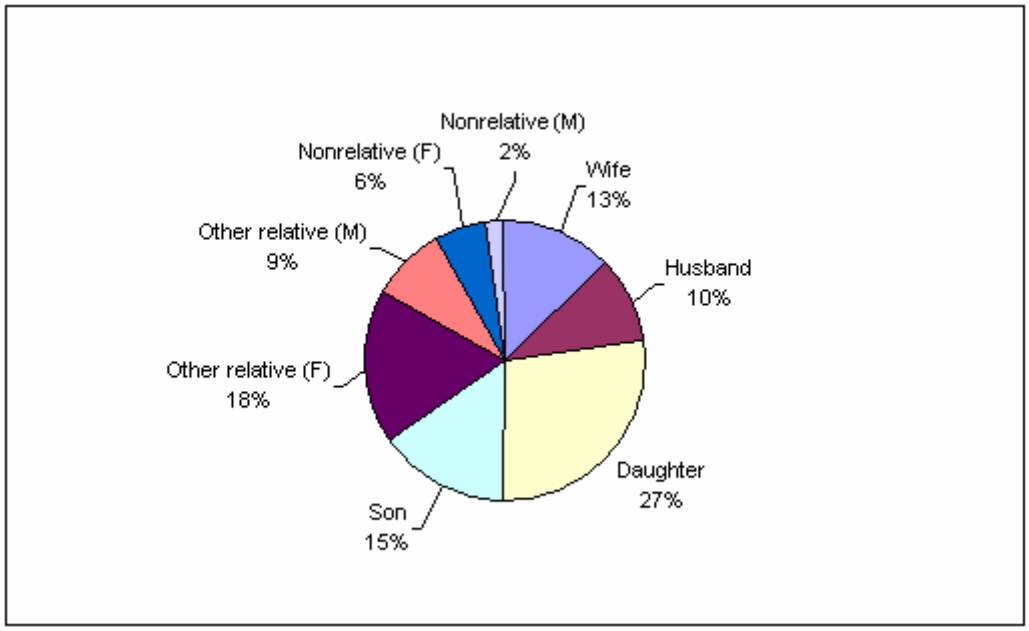
Figure 16: Model of Obligation for Caregiving, by Relationship



[5] This estimate is very imprecise due the differences in definition of "caregivers" used in numerous studies. Women are more likely to provide different kinds and levels of care than men (e.g., personal care such as bathing and toileting, and any care that occurs on a daily basis or takes many hours a week), and so studies that define caregivers based on these kinds and levels of care produce higher percentages of female caregivers.

Figure 17 illustrates the actual breakdown of caregivers by relationship, which may be different from theoretical obligation. Daughters, for example, provide more care in practice than spouses because so many older adults needing care are widowed.

Figure 17: Caregivers by Relationship to Older Adult



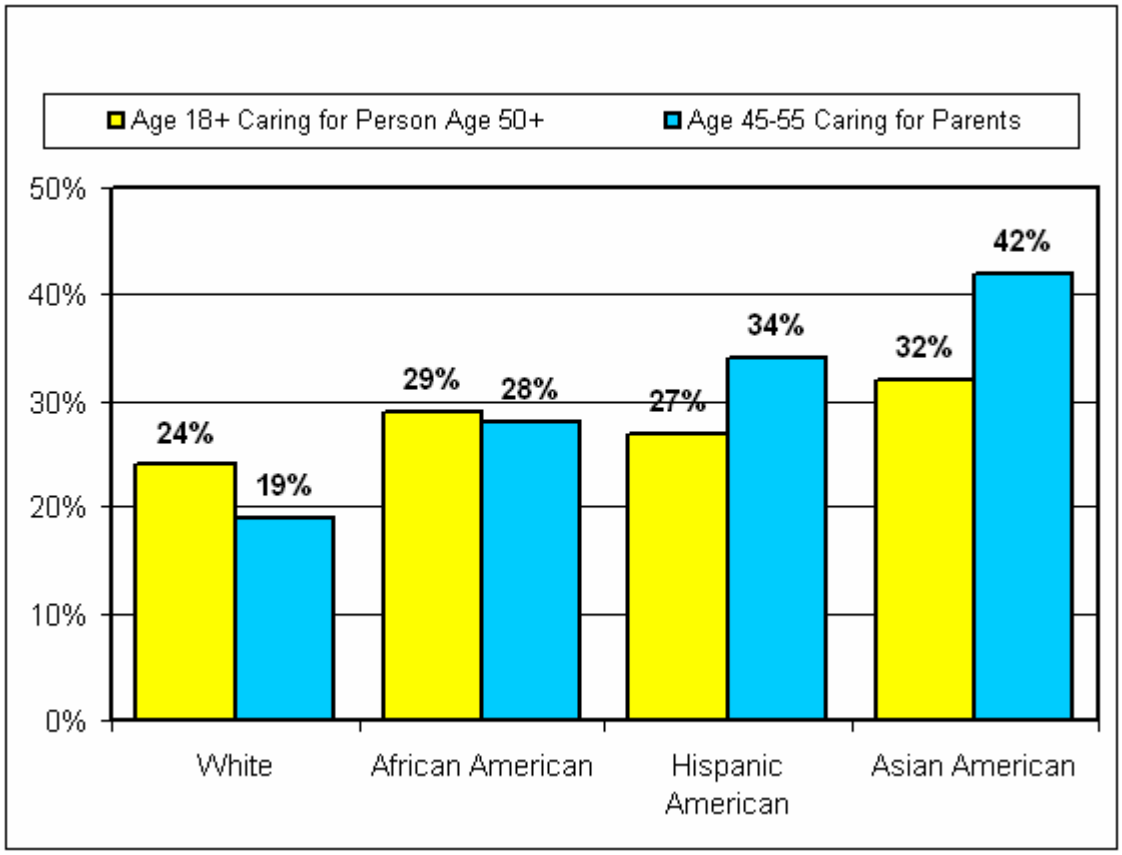
Source: Spector, W.D. et al., 2000

Studies of family caregiving frequently focus on the primary care provider, but additional support provided by other family members and non-relatives is also important. This can take the form of either direct care for the patient (e.g., a sibling assisting the caregiver) or support for the caregiver (e.g., a grandchild cooking dinner for her siblings while her mother cares for her grandmother).

Ethnicity. Caregiving norms and needs vary significantly across cultural groups. The percentage of adults caring for a person age 50 and older ranges from 24% among non-Hispanic whites to 32% among Asian Americans. Figure 18 illustrates how caregiving is related to ethnicity.

The composition of care networks also differs by ethnicity. Whites are most likely to receive help from their spouses, Hispanics are the most likely to receive help from their adult children, and African-Americans are the most likely to receive help from a non-family member [National Academy on an Aging Society, 2000].

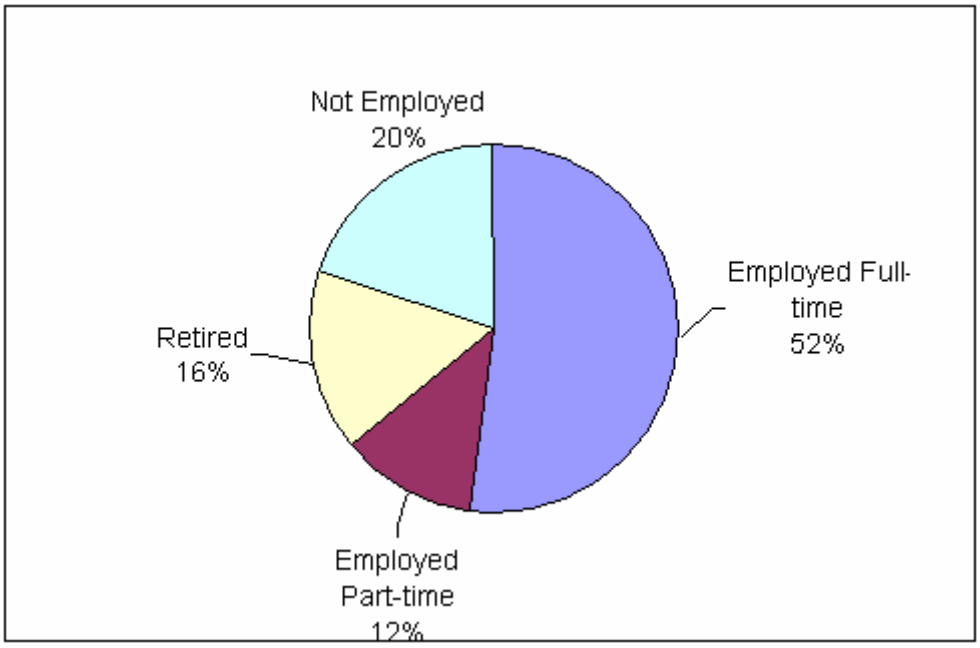
Figure 18: Caregiving and Ethnicity



Source: Family Caregiver Alliance, 2001

Employment s Status. The vast majority of family caregivers hold paid employment, and many of those who do not are retired (see Figure 19). Overall, 25% of the workforce is providing care to an older person.

Figure 19: Caregiver Employment Status



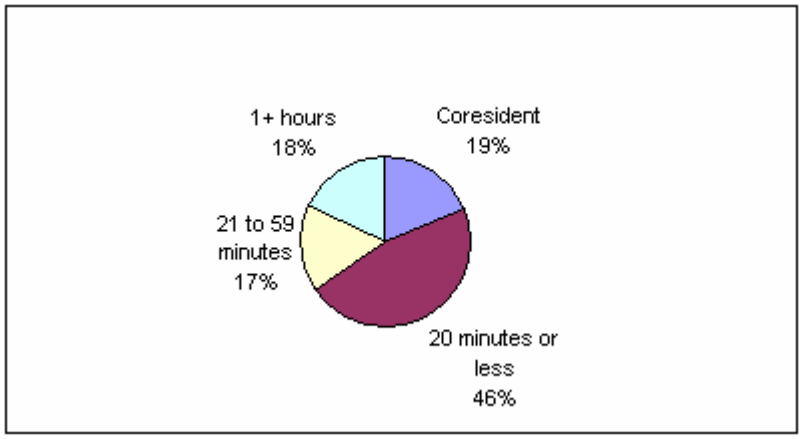
Source: Family Caregiver Alliance, 2001

Time Spent Caregiving. Caregivers of people age 65 and older spend an average of 20 hours a week providing care. One out of five spends more than 40 hours a week providing care. Hours of care provided may also vary by ethnicity, with African-Americans spending the most time per week on average, and Asian Americans spending the least [Family Caregiver Alliance, 2001].

Typically, caregivers provide care from one to four years, but one out of five provides care for five years or longer. The overall average duration of care is 4.5 years [Family Caregiver Alliance, 2001].

Distance. Most caregivers to older adults live close to the care recipient, and 19% actually live with the care recipient. Almost as many caregivers, however, live an hour or more away from the recipient as live with the recipient (see Figure 20).

Figure 20: Distance Between Caregiver and Care Recipient



Source: Family Caregiver Alliance, 2001

2. Trends in the Availability of Family Caregivers

The supply of family caregivers is not constant over time. The two most likely relatives to give care are a spouse and an adult daughter, but the likelihood that an older person will have a living spouse or an adult child (as well as the number of adult children older adults have on average) is subject to social and demographic trends. The amount of time a potential caregiver is available further depends upon such factors as labor force participation and involvement with one's own family. These have also changed over time.

A number of specific trends influence the availability of caregivers:

- The dramatic increase in single parent families and lowered birth rates will result in older persons having fewer spouses and adult children available to care for them.
- Greater participation by women in the workforce is increasing the potential for conflict between work and caregiving responsibilities [Doty, Jackson, & Crown, 1998].
- Increased female participation in the workforce means that adult daughters are delaying childbearing, which creates the potential for conflict between child care and elder care responsibilities.

The availability of potential caregivers is decreasing, but demand for care is increasing. Not only are there additional older adults, but changing health care policies have shortened hospital stays for both physical and mental health problems and have resulted in the discharge of frail older people who are in greater need of intensive home health care than ever before [Hooyman & Kiyak, 1996].

Overall, there were 11 potential caregivers for every person needing care in 1990. By the year 2050, the ratio will be 4-to-1. As a result, every individual potential caregiver faces a greater likelihood of being an actual caregiver at least once in his or her lifetime. As a result, women born in the most recent population cohorts are more likely to be caregivers than their predecessors, and are likely to experience two or more caregiving episodes in their lifetime [Jenkins, 1997; Robinson, Moen,& Dempster-McClain, 1995; Toseland, et al., 2001].

3. Family Caregivers and the Paid Health Workforce

Paid health care professionals can support family caregivers in a variety of ways. The health care workforce can provide support, training, and models of care for the families as well as the patient. For example:

- Physicians, physician assistants, and nurse practitioners can educate caregivers about patient conditions and treatments.
- Health professionals can intervene, mediate, and counsel when differential sharing of caregiving responsibilities among family members causes conflict, particularly among siblings.

- Health professionals can respond to conflicts that arise in families when time spent caregiving for a frail elder is seen as impeding other family activities and relationships [Strawbridge & Wallhagan, 1991; Smith, Smith, & Toseland, 1991].

- Health professionals can provide support and training to caregivers. They can also provide information, referrals, and coordination of care.

- Clinical psychologists and others can provide assistance in dealing with the personal stress and emotional challenges of providing care to a family member.

- Nurses and home health care aides can offer important information to the family caregiver about health, nutrition, and how to help the person they are caring for.

Unfortunately, issues related to family caregiving are not part of the curriculum of most health professionals. Potential benefits exist, however, for the patient, the caregiver, and the health workforce when health professionals are trained to assist and train family caregivers. Patients can receive better care, caregiver stress and strain can be reduced, and the health workforce can be used more effectively.

> ***Example:*** *The Resources for Enhancing Alzheimer's Caregiver Health (REACH) program is an example of how trained professionals can provide education and training to family caregivers. This program specifically targets caregivers of patients with dementia and trains occupational therapists to provide instruction to caregivers in their respective homes about modifications in the home, such as energy conservation mechanics, setting up the home to cue a dementia patient, and general training, to make their caregiving tasks easier.*
>
> *A second phase of the program involves telephonic caregiver support. A variety of different types of professionals works within this program, forming an interdisciplinary team. Caregivers are provided a telephone with a screen on it, and the caregiver can navigate through a menu to review teaching and support materials. Additionally, teleconferences can be arranged for caregivers who are not all in the same geographic region [University Center for Social and Urban Research, 2003].*

4. Issues for Family Caregivers

Physical and Emotional Well-being. Caregiving can negatively impact the health and well-being of caregivers, both physically and emotionally. Potential negative effects of caregiving include:

- exhaustion and fatigue (especially if the caregivers are older adults themselves);
- psychological problems such as depression or increased anxiety;
- the revival of forgotten sibling and parental conflicts;
- social problems resulting from restriction of caregivers' contacts with friends, neighbors, and other social contacts in the community [Toseland, Smith, & McCallion, 1995];
- loss of control over one's time, which may lead to anger and frustration;
- guilt, and feelings of not being fair to the care receiver or other family members;
- loss of privacy (if the elder lives with the caregiver);

- consistent or periodic grieving over the elder's decline [Bass, 1990]; and
- use of fantasy, wishful thinking, passive avoidance, and self-blame or internal attribution [Neundorfer, 1991; Toseland et al., 2001].

Among these adverse emotional outcomes, depression seems to represent the greatest risk. Clinical reports show that 50% of caregivers experience depression in the first year of caregiving [Butler, 1992]. For many, this depression may be severe enough to warrant intervention and treatment [Schulz et al., 1995; Toseland, et al., 2001].

Caregiving can undoubtedly be a serious emotional, physical, and psychosocial strain, but there are also potential positive effects for primary caregivers:

- a sense of competence in managing the caregiving tasks;
- self-respect or recognition by others for taking on caregiving duties;
- satisfaction that they have proved their love or returned the type of care that they received at an earlier time from the care receiver;
- resolution of earlier unresolved feelings or issues;
- a sense of feeling needed or useful [Bass, 1990; Gatz et al., 1990; Pearlin et al., 1996];
- feeling secure in a strong kinship system;
- attaining a better understanding of other's needs; and
- reaching a greater tolerance for other people's problems [Beach, 1997; Bass, 1990; Toseland, et al., 2001].

***Economic Consequences*.** Caregiving carries some important economic as well as physical and emotional costs for caregivers. Although caregivers are not paid, their services are not truly "free." One study on women and caregiving produced the following findings:

- thirty-three percent (33%) of working women decreased work hours;
- twenty-nine percent (29%) passed up a job promotion, training, or assignment;
- twenty-two percent (22%) took a leave of absence;
- twenty percent (20%) switched from full-time to part-time employment;
- sixteen percent (16%) quit their jobs; and
- thirteen percent (13%) retired early [FCA, 2003].

Even after returning to work, many caregivers continue to experience economic consequences of their caregiving in the form of lower wages, lost benefits, and reduced retirement benefits. Each informal caregiver is estimated to experience an average lifetime loss of $25,494 in Social Security benefits, $67,202 in pension benefits, and $566,433 in wage wealth as a result of their caregiving [FCA, 2003]. Caregiving is not only costly for the individual caregivers, but entails wider economic consequences. American businesses are estimated to lose between $11 billion and $29 billion each year due to employees' need to care for aging loved ones [NFCA, 2002].

***Support and Reimbursement*.** Numerous circumstances surrounding family caregiving to frail older adults place families in financial risk. These include added medical, therapeutic and equipment costs that are often not covered by insurance, as well as additional expenses such as those for increased use of utilities (e.g., washer and dryer due to incontinence) or for special food

or clothing [Bass, 1990]. Perhaps the greatest financial risk associated with caregiving, however, involves lost opportunity costs due to reduced or ended employment [Toseland, et al., 1991].

A number of policy initiatives have been considered to address these problems, including:

- meeting intensive-care needs by increasing the availability of formal home care programs and case management services;
- subsidizing formal services to supplement family care;
- providing financial relief in the form of cash payments or expanded tax allowances;
- compensating for the opportunity cost of foregone employment; and
- providing respite and educational and counseling programs for caregivers [Hooyman & Kiyak, 1996].

5. Discussion

Family and other unpaid or informal caregivers are a critically important part of the long-term care system in the U.S., providing up to 80% of home care services. These services, if paid, would cost billions of dollars annually. Yet family caregiving is a demanding activity that carries the potential for negative physical, emotional, social, and economic consequences for caregivers.

The availability of family caregivers is expected to decline in the future, while the number of older adults needing care will expand rapidly in the next ten to twenty years. As a consequence, family members and friends will be more likely to find themselves performing the role of a primary caregiver for a frail elder. Supports for caregivers, such as training by health care professionals, respite services, and reimbursement of costs, can help the health care system to make the best use of available potential caregivers in the future.

D. Financing of Geriatric Care

Health care expenditures for older adults grew dramatically in recent years, and will continue to rise as the numbers of older adults continue to increase. The AARP [2002] estimates that average health care expenditures per person age 50 and older increased 310% between 1977 and 1996. Even after accounting for inflation, health care expenditures increased by 49% for those age 65-74, 62% for those age 75-84, and 77% for those age 85 and older.

A small percentage of the older adult population accounts for a large percentage of expenditures on health care. In 1996, 2% of people age 65 and older accounted for 22% of health care expenditures for this group. About 50% of the older adult population accounted for about 90% of expenditures. Median health care expenditures per capita ($1,492 for age 65-74, $2,129 for age 75-84, and $2,025 for age 85 and older) were therefore smaller than average health care expenditures per capita ($4,031 for those age 65-74, $5,753 for those age 75-84, and $7,453 for those age 85 and older) [AARP, 2002].

In 1996, some form of public coverage (Medicare or Medicaid) covered about 64% of health care expenditures for older adults and private insurance covered about 19%. Average annual out-of-pocket expenses for older adults were $704 for those age 65-74, $894 for those age 75-84, and $1,285 for those age 85 and older [AARP, 2002].

Undeniably, the financing of health care for older adults is an important national policy issue. Many people, however, do not clearly understand the various forms of health care coverage available to older adults. Medicare, though available to most Americans age 65 and older, does not cover all health care costs for older adults. Overall, about 90% of Medicare beneficiaries obtain some form of supplemental insurance (a Medicare HMO, employer-sponsored insurance, privately purchased "Medigap" insurance, or, if qualified through means testing, Medicaid) [AARP, 2002]. Long-term care insurance is also available, but relatively few people have been willing or able to purchase it.

A description of the four primary sources of funding for health care for older adults is presented below. The programs described are: Medicare, Medicaid, Supplemental Insurance, and Long-Term Care Insurance.

1. Medicare

What is Medicare? Medicare is a health insurance program for people age 65 or older. Medicare coverage consists of two parts: Part A coverage, or Hospital Insurance (generally), and Part B coverage, or Medical Insurance (for which most people paid $58.70 a month in 2003).

Medicare Part A covered inpatient care in hospitals and a limited benefit for care in skilled nursing facilities, as well as hospice care and some home health care in 2003 (see Table 3). In that same year, Medicare Part B covered many doctors' services, outpatient hospital care, therapeutic services, laboratory and diagnostic tests, durable medical equipment, and a range of other medical services (see Table 4). The variation in coverage is often difficult for beneficiaries

and for their families to understand, especially since many services are not covered at all [The Family Circle/Kaiser Family Foundation, 2000] (Table 5).

Table 3: Medicare Part A Coverage (Selected Services), 2003

Service or Supply	Coverage	Enrollee payment to participating provider
Home Health Care	Services provided through a Medicare-approved agency are covered for homebound patients with physician's referral. Services must generally be initiated within 14 days of a minimum three-day hospital stay.	Typically, enrollee pays nothing
Hospice Care[6]	Services provided through a Medicare-approved agency are covered for terminally ill patients with physician's referral	Typically, enrollee pays nothing
Inpatient Respite Care	Inpatient care for hospice patients in Medicare-approved facility is covered for five days at a time	5% of Medicare-approved amount
Inpatient Hospital Care	Coverage for medically necessary hospital care. Includes general nursing and meals.	Days 1 - 60: deductible of $840. Days 61-90: $210 each day Days 91-150: $420 each day
Inpatient Mental Health	Same coverage as other hospital stay, up to 190 days during lifetime.	Same as inpatient hospital.
Skilled Nursing Care	Coverage for the first 100 days of care, only after a qualifying hospital stay.	Days 1 - 20: No payment Days 21-100: $105 each day

Source: Centers for Medicare and Medicaid Services

[6] Hospice is covered by Medicare, with some important limitations. Patients must choose hospice care *instead* of routine Medicare covered benefits. The focus of their benefits under hospice is palliative care, and curative care is no longer covered [CMS, 2003].

Table 4: Medicare Part B Coverage[7] (Selected Services), 2003

Service or Supply	Coverage	Enrollee payment to provider
Chiropractic Services	Limited benefit. Medicare covers manipulation of the spine to correct a subluxation, when provided by chiropractors or other qualified providers	20% of Medicare-approved amounts
Therapeutic Shoes	Limited benefit. Coverage only for people with diabetes who have severe diabetic foot disease. Covers one pair or shoes or inserts per year, as well as the fitting.	20% of Medicare-approved amounts
Foot Exam	Podiatric services are a limited benefit. Routine foot care is not covered. Coverage of exam every six months for people with qualifying diabetic condition.	20% of Medicare-approved amounts
Glaucoma Screening	Coverage for annual screening for people with diabetes or family history of glaucoma	20% of Medicare-approved amounts
Medical Nutrition Therapy Services	Coverage for people with diabetes or kidney disease, with doctor's referral. Includes nutritional assessment and counseling.	20% of Medicare-approved amounts
Physician Office Visits	Coverage for medically necessary services received in any location. Routine annual physicals are not covered. Some preventative services may be covered.	20% of Medicare-approved amounts
Outpatient Mental Health Care	Coverage of services provided by doctors, clinical psychologists, clinical social workers, clinical nurse specialists, or physician assistants	Usually 50% of Medicare-approved amounts
Partial Mental Health Hospitalization	Coverage only if doctor certifies that inpatient treatment would otherwise be required	Set copayment amount for each day or service
Non-Physician Provider Services	Coverage for the services of clinical psychologists, clinical social workers, advanced practice nurses, PAs, speech-language pathologists for medically necessary services	20% of Medicare-approved amounts
Oxygen Therapy	Medicare covers rental of oxygen equipment and cost of supplies	20% of Medicare-approved amounts
Durable Medical Equipment	Coverage varies according to the equipment prescribed.	Patient responsibility varies.
Home Health Care	Intermittent skilled nursing care, PT, SLT, OT to homebound provided under Part B to those with no Part A coverage.	100% of approved amounts not to exceed 8 hours a day or 28 hours a week
Physical/Occupational/ Speech Therapy	Coverage for medically necessary services. Privately practicing PTs and OTs are covered, but not privately practicing SLPs	20% of Medicare-approved amounts

Source: Centers for Medicare and Medicaid Services

[7] In 2003, most enrollees paid $58.70 a month for Part B coverage.

Table 5: Selected Services Not Typically Covered by Medicare, 2003

Custodial Care (i.e., help with ADLs)	Care is considered custodial if it could be done safely and reasonably by people without professional skills or training
Dental Services	Medicare does not cover routine dental care. Dental care received during hospital stays may be covered.
Eye Exams	Routine eye exams are not covered. Glaucoma screenings and macular degeneration may be covered.
Eyeglasses/Contact lenses	Generally, Medicare does not cover eyeglasses or contact lenses. Lenses are covered following cataract surgery.
Foot Care	Medicare generally does not cover routine foot care. Medically necessary treatment may be covered.
Physical Exams	Medicare does not cover routine physical exams. Patient must be advised that the cost is the patient's responsibility.
Nursing Home Care	Custodial care not covered (see above). Skilled nursing care covered under Part A.
Prescription Drugs	10% to 15% savings on prescription drugs following payment of a deductible

Source: Centers for Medicare and Medicaid Services

Medicare is available through the Original Medicare Plan (known as fee-for-service), or through Medicare + Choice Plans (also called Part C) (which includes Medicare Managed Care Plans, like HMOs). Additionally, Medicare beneficiaries enrolled in the Original Medicare Plan may supplement their coverage by enrolling in a private Medigap program (Medicare Supplement Insurance).

The Original Medicare Plan is managed by the federal government, and is available nationwide. Patients may use providers that participate with Medicare, and a coinsurance is charged for most services. Patients may also receive care from non-participating Medicare providers but the patient cost share is greater.

***Trends in Medicare*.** Physician participation has been constant at 97% participation rate as it is difficult for doctors not to participate (e.g., many hospitals require participation for admitting privileges, etc.). Some surveys have found, however, that many physicians have begun to limit the number of new Medicare patients that they'll accept. Cuts in physician reimbursements discourage some participation. Since the Medicare program began in 1966, the number of older recipients has grown from 19.1 million to 33.8 million (as of 1998). Additionally, Medicare spending has risen from 0.6% of the Gross Domestic Product in 1966, to 2.3% in 1999, and this growth is expected to continue, reaching 4.0% by 2025 [Lubitz, et al., 2001].

In recent years, Congress has broadened Medicare coverage so that it includes more preventive services, such as breast cancer screening [National Academy of Sciences, 2001], and medical nutritional therapy (MNT). The broadest changes to Medicare coverage occurred on November 25, 2003, when the United States Senate passed the Medicare Prescription Drug and Modernization Act, which was then signed into law by the President. Beginning in spring 2004, Medicare beneficiaries can buy a discount card that is expected to provide 10%-15% savings on the purchase of their prescription drugs (with additional assistance available for low-income seniors). Beginning in January 2006, Medicare beneficiaries can choose to remain in a traditional

Medicare program with no drug benefit, enroll in a stand-alone drug program, or enroll in a private health plan that offers drug coverage.

Although the annual deductible for Medicare Part B will increase annually beginning in 2005, and heavy users of prescription drugs (those spending more than $2,250 annually may still have to pay as much as $3,600 out of pocket per year), this program will improve older adults' access to prescription medications.

2. Medicaid

Medicaid is a program that underwrites services for people with low incomes. Although most Americans older than age of 65 are eligible for Medicare, some older people are also "dual eligibles:" individuals entitled to Medicare Part A and/or Part B and also eligible for some form of Medicaid benefit. This can be important because Medicaid may cover some services not covered by Medicare, although Medicaid coverage varies by state. States may also receive federal matching funds to provide certain optional services.

In 2003, 5 million older adults were beneficiaries of the Medicaid program. One of every ten Medicaid recipients is an older adult. In 1999, 28% of Medicaid expenditures were spent on services for older adults. About 14% of Medicare beneficiaries have supplemental insurance through Medicaid.

Income and resource eligibility limits are set by the states. Coverage also varies between states, but there are certain services that states are mandated by the federal government to provide. These services generally include the following:

- inpatient hospital services;
- outpatient hospital services;
- physician services;
- nursing facility services;
- rural health clinic services;
- home health care for persons eligible for skilled-nursing services;
- laboratory and x-ray services;
- federally qualified health-center (FQHC) services; and
- ambulatory services of an FQHC that would be available in other settings.

Long-term care is an important provision of Medicaid that will be used more and more as our nation's population ages. In recent years, the Medicaid program has paid for almost 45% of the total cost of care for persons using nursing facilities or home health services. However, for those persons who use more than four months of this long-term care, Medicaid pays for a much larger percentage. The data for 1998 show that Medicaid payments for nursing facility services (excluding ICFs/MR) and home health care totaled $41.3 billion for more than 3.3 million recipients of these services—an average 1998 expenditure of $12,375 per long-term care recipient [Centers for Medicare and Medicaid Services, 2003].

3. Supplemental Insurance

Older adults may obtain supplemental health insurance (beyond Medicaid) at an additional cost from a number of sources: a current or former employer, private "Medigap" insurance, or a Medicare HMO.

- About 37% of Medicare beneficiaries obtain supplemental coverage through coverage from a current or former employer. Although many people believe that employers offering pension plans are required to provide health benefits, this is not true. The percentage of employers offering supplemental health insurance to Medicare beneficiaries has decreased since 1993 [AARP, 2002].

- About 22% of Medicare beneficiaries obtain private (i.e., individually purchased) "Medigap" coverage. Such policies may be difficult to obtain or afford, however. High premiums and substantial out-of-pocket costs can make Medigap coverage unattainable for some older people, and this option is declining in popularity [AARP, 2002].

- About 17% of Medicare beneficiaries opt to enroll in a Medicare HMO under the Medicare+Choice program. Medicare+Choice plans provide care under contract to Medicare. They may provide benefits like coordination of care or reducing out-of-pocket expenses. Some plans may offer additional benefits, such as prescription drugs. Coverage and availability of specific plans varies [AARP, 2002].

4. Long-Term Care Insurance

Private long-term care insurance is available to cover the costs of nursing home care should such need arise for older beneficiaries. Such coverage also usually covers home health care, hospice, adult day services, and other models of care. Unfortunately, such plans are expensive (in 2000, annual premiums averaged $1,677), especially for a service that the vast majority of older people hope that they will not require. In 2000, only about 10% of older adults had such insurance [AARP, 2002].

Another factor that discourages participation in long-term care insurance programs is that as many as 4 out of 10 older adults believe that they already have long-term care coverage (although less than 10% actually do). In particular, many older people believe that Medicare covers nursing home care. This is only true under very limited circumstances, and a co-pay of more than $100 a day is imposed between days 21 and 100 of each nursing home stay. After the 100^{th} day, Medicare coverage expires.

The federal government now offers a long-term care insurance benefit (the Federal Long Term Care Insurance Program, or FLTCIP) to federal and U.S. postal employees and some veterans of the U.S. Armed Forces. A few states, such as New Jersey, also offer a long-term care benefit package to their state employees. (New York state has established a Long Term Care Partnership program that permits purchase of long term care insurance and retention of Medicaid eligibility when that benefit is depleted). Employer-sponsored long-term care insurance is still, however, relatively rare. It seems unlikely that employers will be motivated to begin offering such coverage, as it would be expensive to provide and employees who are not aware of Medicare limitations on nursing home coverage may underestimate its value.

5. Summary Highlights

Health care expenditures for older adults have grown dramatically in recent years, and will continue to rise as the numbers of older adults continue to increase. The AARP [2002] estimates that average health care expenditures per person age 50 and older increased 310% between 1977 and 1996. Even after accounting for inflation, health care expenditures swelled by 49% for those age 65-74, 62% for those age 75-84, and 77% for those age 85 and older.

In 1996, some form of public coverage (Medicare or Medicaid) covered about 64% of health care expenditures for older adults and private insurance covered about 19%. Average annual out-of-pocket expenses for older adults were $704 for those age 65-74, $894 for those age 75-84, and $1,285 for those age 85 and older [AARP, 2002].

Medicare is a health insurance program for people age 65 or older. Medicare coverage consists of two parts: Part A coverage, or Hospital Insurance (generally), and Part B coverage, or Medical Insurance (for which most people paid $58.70 a month in 2003). Although most older Americans are eligible for Medicare, it does not cover all health care costs for older adults, and there are important limitations to Medicare coverage.

Medicaid is a program that underwrites services for people with low incomes. Medicaid may cover some services not covered by Medicare. Long-term care is an important provision of Medicaid that will be used more and more as our nation's population ages. In recent years the Medicaid program has paid for almost 45% of the total cost of care for persons using nursing facilities or home health services.

Older adults may obtain supplemental health insurance (beyond Medicaid) at an additional cost. Overall, about 90% of Medicare beneficiaries obtain some form of supplemental insurance. Options for supplemental coverage include Medicare+Choice plans (used by 17% of Medicare recipients), privately purchased "Medigap" insurance (used by 22%), and insurance coverage through a current or former employer (37%).

Private long-term care insurance is also available for purchase, but such plans are expensive (in 2000, annual premiums averaged $1,677). Although the federal government and some states offer such coverage to their employees, only about 10% of older adults in 2000 had such insurance.

E. Rural Older Adults

1. Demographics

More than 50 million people in the United States live in areas considered to be rural[8], including about 7.5 million older adults (about 23%). Throughout the United States, rural areas tend to have higher proportions of persons older than age 65 than urban areas. Older adults compose approximately 20% of the rural population, compared to only 15% of the urban population. The rural population is aging rapidly due to "aging in place," which involves a combination of out-migration of young adults to urban areas with more job opportunities and in-migration of older adults who are retiring from urban areas. Since the people that remain in rural areas generally have lower incomes, this process strains community health care resources, making access to care difficult for rural older adults [USDA, 2002].

Rural older adults are predominantly non-Hispanic whites, but certain regions have high percentages of American Indians (e.g., Northwest and Southwest), Hispanics (e.g., Southwest), or African-Americans (e.g., South). Overall, however, only 7% of rural older adults are African-American, versus 12% of metropolitan older adults. American Indians are the most rural of all ethnic older adults, with about half living in rural areas (often reservation communities).

Rates of poverty are highest in the most rural counties in the U.S., and rural older adults are more likely than non-rural older adults to be poor. Fewer rural older adults are eligible for Social Security, and they receive lower Social Security benefits than non-rural older adults (due in large part to a lifetime of lower earnings). Pensions are less common among rural older adults as well. They are also more likely to own their own homes, but they are of lesser value and in poorer condition than those of non-rural older adults.

2. Availability of Services

Though a surplus of some health professionals exists for the nation as a whole, many rural communities struggle to recruit even an adequate supply of health professionals. Most physicians, for example, tend to practice in affluent urban and suburban areas. Only 9% of U.S. physicians provide services for the 20% of the U.S. population living in rural areas [Hart, 2000]. Many rural residents therefore experience a lack of basic health services, while the larger society cannot accommodate every health care professional that is produced.

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[8] Office of Management and Budget (OMB): Areas are either metropolitan or non-metropolitan. Metropolitan areas contain (1) core counties with one or more central cities of at least 50,000 residents or with a Census Bureau-defined urbanized area (and a total metro area population of 100,000 or more), and 2) fringe counties that are economically tied to the core counties. Non-metropolitan counties are outside the boundaries of metro areas and have no cities with as many as 50,000 residents.

The U.S. Census Bureau: Areas are either rural or urban. Rural areas comprise places (incorporated or unincorporated) with fewer than 2,500 residents and open territory. Urban areas comprise larger places and densely settled areas around them. Most research and policy use rely on these two definitions".

Administration on Aging: A rural area is an area that is not urban. Urban areas comprise (1) urbanized areas (a central place and it's adjacent densely settled territories with a combined minimum population of 50,000) and (2) an incorporated place or a census designated place with 20,000 or more inhabitants."

Although the availability of health care services in rural areas is limited, there is a relatively high level of need among rural residents. Overall, the health of rural older adults is poorer than the health of those in non-rural areas:

- Rural older adults are more likely than their urban counterparts to rate their health as "fair" or "poor," as opposed to "good" or "excellent" [Ricketts, 1999].

- Mortality rates are higher for seniors in non-metro counties [Bellamy, 2003].

- Larger proportions of rural older adults suffer from chronic health conditions, compared to non-rural older adults [Bellamy, 2003].

- Non-metro seniors have a 15.3% rate of ADL difficulty, versus 12.7% in metro areas [Bellamy, 2003].

Service Availability and Use. Almost every kind of health care service is less available in rural areas than in non-rural areas. Consequently, people in rural areas use fewer health services:

- Hospitals, especially small hospitals (50 beds or fewer), are the primary source of health care in rural areas. Nearly ¾ of rural hospitals operate either a home health agency or a skilled nursing facility or both [Jenkins, 2003].

- Many rural hospitals have become federally-designated critical access hospitals (CAHs). CAHs focus on emergencies and have a few patient beds for short inpatient stays, but do not provide long-term inpatient services. CAH-designated hospitals are reimbursed at a higher rate by Medicare, which allows them to stay open and continue to provide at least some health care in those particular communities [Jenkins, 2003].

- In 2000, 78 counties in 21 states had no health services. In these counties, considerable travel is necessary to access care [Frontier Education Center, 2000].

- Older rural residents visit their primary care physician less frequently than their urban counterparts. Rural older adults also average about half the number of visits to each subspecialty of internal medicine, e.g., cardiology or gastroenterology [Hart, 2000].

- Rural Medicare beneficiaries receive 15% fewer physician services (40% fewer in cardiology) than non-rural beneficiaries. Rural patients are seen less often, and later in the course of illness. Rates of hospitalization are higher for rural older adults, and stays are shorter [Bellamy, 2003; Jenkins, 2003].

- Rural areas have a more limited supply of community-based services (e.g., adult day care, hospice care, and respite care) [Bellamy, 2003].

- Rural older adults are less likely to use home health care than non-rural older adults (although the average number of home health visits among rural users of home health care is higher).

- There are 43% more nursing home beds per capita in rural than in metro areas, and rural older adults have more nursing home stays. (This may result from the lack of other accessible community-based services and lack of informal care providers: rural older adults may have fewer choices other than nursing homes) [Krout, 2002].

Issues in Provision of Rural Health Care. The provision of health care in rural areas, and the access of rural residents to the health care services that exist, are constrained by a number of factors:

- Rural areas cannot support a comprehensive array of services. Primary care practitioners must provide specialty services, sometimes conferring with specialists by phone or e-mail.

- Rural health care organizations struggle to recruit and retain an effective professional workforce. This is particularly problematic when rural areas must compete with urban areas for health care workers in short supply nationally (e.g., registered nurses, pharmacists).

- Lack of public transportation in rural areas inhibits service access and delivery:

    - forty percent of rural residents live in areas with no public transportation;
    - nearly 80% of rural counties have no public bus services; and
    - fifty-seven percent of rural poor do not own a car [Bellamy, Goins, and Ham, 2003].

- Many older adults in rural areas do not have family nearby to provide care, because rural older adults tend to "age in place," while younger people tend to migrate out of rural areas. This limits the social support system for rural older adults, and results in fewer informal sources of care.

- Older adults in rural and frontier areas have a 20% higher rate of non-insurance and underinsurance than their urban counterparts, despite a higher percentage of persons qualifying for Medicare (18% in rural, compared to 15% in urban areas):

    - This is mostly due to the higher percentage of people who are self-employed, work for small businesses, or do seasonal work.
    - Owning a large amount of land also causes some rural older adults to fail to qualify for Medicaid [National Rural Health Association, 1999].

- A lack of "economies of scale" increases the cost of service delivery in rural areas. It is difficult to cover fixed costs, which leads to higher costs per case.

- Reimbursement in general is a problem because procedures in rural areas are reimbursed at lower rates than in urban areas. Medicare reimbursement is determined in part on the cost of labor in a given area, so that areas with depressed wages experience lower Medicare reimbursements (unless they are federally-designated Health Professional Shortage Areas).

3. Rural Health Providers

Certain health professions have significant roles in the provision of rural health care and make particularly notable contributions to rural medicine, including those physicians who have graduated from U.S. medical schools, physicians who have graduated from foreign schools of medicine (international medical graduates [IMGs]), physician assistants, nurse practitioners, and certified registered nurse anesthetists.

U.S. Educated Physicians and International Medical Graduates. These physicians provide substantial amounts of care to rural populations, and their contributions are essential in many rural areas. In some rural areas, residents are completely dependent upon IMGs for the provision of primary care.

Physician Assistants. Approximately one-third of physician assistants have chosen to practice in communities of fewer than 50,000 people. PAs can also play important roles in bringing specialty services to rural areas. The culture within the profession is oriented to provide care to the underserved, including rural populations. PAs are reimbursed through a physician, but in many states they can establish clinics and work with the physician to provide services.

Nurse Practitioners. Approximately 20% of all NPs practice in rural areas, and NPs are present during 37% of rural hospital outpatient visits (compared to 5% of urban hospital outpatient visits). Many characteristics of NP training programs account for the successful rural NP production rate, including admission of students with rural backgrounds and interest, faculty role models with rural experience, and mission statements that emphasize service to the underserved.

Factors that negatively influence the supply of NPs in rural areas include longer work-hours, more isolation, and fewer colleagues. Furthermore, in some states NPs are subject to prescription writing restrictions, low Medicare and Medicaid reimbursements, and limiting private insurance policies, all of which may also impact the provision of their services in rural areas [Hart, et al., 2000].

Certified Registered Nurse Anesthetists. CRNAs are often the sole provider of anesthesia in rural areas, creating a substantial workload. The responsibility of rural CRNAs is not confined to the operating room. CRNAs in rural areas may supervise an Intensive Care Unit, run ventilators, and oversee pain management in the home, as well as providing hospice care [CHWS, 2002d].

4. Reimbursement Issues

A high proportion of the rural population is older and dependent upon Medicare coverage, so Medicare is critically important to health care in rural areas. Furthermore, rural older adults are less likely than their non-rural counterparts to have supplementary health insurance coverage. Only 68% of older adults in rural areas have access to private health insurance coverage, compared to 71% of older adults in suburban areas, and 72% of older adults in metropolitan areas [Ricketts, 1999]. Therefore, they are less likely than older adults in non-rural areas to obtain benefits not covered by Medicare Parts A and B.

Medicare patients account for as much as 80% of patient revenues in some small rural hospitals. Therefore, Medicare policies and practices have a strong influence on the provision of rural health care. Reimbursement for primary care services in rural areas (except for federal HPSAs) is lower than in urban areas. Therefore, older adults in rural areas may pay more:

- Effective reimbursement for travel time may motivate health care practitioners to travel to rural areas to provide care. For example, if a practitioner travels to a small town to hold a clinic on a selected day, then reimbursement for the extra time, cost, and distance traveled may be necessary in order to cover the true costs of providing care.

- Overall, Medicare pays less per rural beneficiary than per urban beneficiary. In 1995, total Medicare payments, including payments for the aged and disabled, were $124 billion in urban counties and $35 billion in rural counties, and payments per person were $5,487 per urban beneficiary compared to $4,477 for each rural beneficiary [Ricketts, 1999].

- As the administrative burdens of Medicare reimbursement expand, lower volume providers, such as remote rural hospitals and solo practitioners or small provider groups, expend a greater proportion of their reimbursement revenue on administrative and accounting overhead than do their larger volume urban counterparts. [Hart, et al., 2000].

5. Telemedicine

Telemedicine is "the application of telecommunications technology to the practice of medicine" [Redford and Goins, 2003]. Although telemedicine can be as routine as a phone call between a rural and urban provider, usually the term is applied to either interactive televideo or Internet applications. Both of these offer a number of opportunities for rural providers and patients.

Interactive Televideo (ITV)

- links rural patients to medical specialists in urban settings
- links rural primary care providers to specialists
- supports mid-level providers (e.g., nurse practitioners and physician assistants)
- telemonitors home health care patients
- continuing education for health professionals

The Internet

- information dissemination
- case management
- self-assessment tools
- continuing education for health professionals

Although the Internet has become a common venue for the provision of health care information and services, ITV has not yet been used to its fullest potential in health care. Issues that have impeded use of ITV include:

- lack of reimbursement;

- provider and patient acceptance;
- lack of infrastructure;
- licensing issues (e.g., if a person evaluating a patient is licensed in a different state);
- limited evidence of clinical efficacy [Medicare Payment Advisory Commission, 2001];
- confidentiality issues; and
- ITV is not incorporated into health care training programs in a standardized way.

6. Summary Highlights

More than 50 million people in the United States live in areas considered to be rural, including about 7.5 million older adults (about 23%). Throughout the United States, rural areas tend to have higher proportions of persons older than age 65 than urban areas. Older adults compose approximately 20% of the rural population, compared to only 15% of the urban population.

The provision of health care to older adults in rural areas is complicated by a number of issues. Rural older adults as a group have different health care needs and different patterns of service utilization compared to non-rural older adults. Only 9% of U.S. physicians provide services for the 20% of the U.S. population living in rural areas [Hart, 2000]. In 2000, 78 counties in 21 states had no health services. In these counties, considerable travel is necessary to access care [Frontier Education Center, 2000].

Many rural residents therefore experience a lack of basic health services. Older rural residents visit their primary care physician less frequently than their urban counterparts. Rural older adults also average about half the number of visits to each subspecialty of internal medicine, e.g., cardiology or gastroenterology [Hart, 2000]. Rural Medicare beneficiaries receive 15% fewer physician services (40% fewer in cardiology) than non-rural beneficiaries. Rural patients are seen less often, and later in the course of illness. Rates of hospitalization are higher for rural older adults, and stays are shorter [Bellamy, 2003; Jenkins, 2003]. Rural areas have a more limited supply of community-based services (e.g., adult day care, hospice care, and respite care) [Bellamy, 2003]. Rural older adults are less likely to use home health care than non-rural older adults (although the average number of home health visits among rural users of home health care is higher). There are 43% more nursing home beds per capita in rural than in metro areas, and rural older adults have more nursing home stays. This may result from the lack of other accessible community-based services and lack of informal care providers. Therefore, rural older adults may have fewer choices other than nursing homes [Krout, 2003].

Although the availability of health care services in rural areas is limited, there is a relatively high level of need among rural residents. Overall, the health of rural older adults is poorer than the health of those in non-rural areas. Rural older adults are more likely than their urban counterparts to rate their health as “fair” or “poor,” as opposed to “good” or “excellent” [Ricketts, 1999]. Mortality rates are higher for seniors in non-metro counties [Bellamy, 2003]. Larger proportions of rural older adults suffer from chronic health conditions, compared to non-rural older adults [Bellamy, 2003]. Non-metro older adults have a 15.3% rate of ADL difficulty, versus 12.7% in metro areas [Bellamy, 2003]. Hospitals, especially small hospitals (50 beds or fewer), are the primary source of health care in rural areas. Nearly ¾ of rural hospitals operate either a home health agency or a skilled nursing facility or both [Jenkins, 2003].

A number of programs and practices offer the possibility of improving health care for rural older adults, including:

- education and training programs for rural providers;
- recruitment programs to bring non-rural providers to rural areas;
- expansion of the boundaries of traditional health care (e.g., by telemedicine); and
- expansion of the clinical duties of health professionals (e.g., by scope of practice changes or the use of community workers).

F. Technology and the Health Workforce Serving Older Adults

As the U.S. health care system is challenged by the rapid aging of the American population, it will become even more desirable, and perhaps even critical, to find creative ways to apply technology to increase the productivity of the health workforce. The innovative application of technology can affect both supply-side and demand-side workforce issues.

- Technology can reduce demand for some health care services by:
    - keeping older people healthy and independent for longer periods of time;
    - reducing the incidence and prevalence of some diseases and disabilities;
    - increasing the availability and scope of preventative services; and
    - improving access to reliable health care information.
- Technology can also enhance the supply of health workers and services by:
    - increasing efficiency to allow more patients to be served per worker;
    - allowing workers to be more effectively trained and recruited; and
    - expanding the geographic horizons within which health workers may serve patients.

Technology is defined by the American Heritage Dictionary [2002] as "1) the application of science, especially to industrial or commercial objectives, and 2) electronic or digital products and systems considered as a group (e.g., office 'technology')." Borrowing from the second definition, "technology" is defined here as "mechanized, electronic, or digital products and systems." This would not, therefore, include such things as manual walkers or grab bars, although it would include such things as motorized wheelchairs and hearing aids as well as the things we more traditionally think of as technology (e.g., robots, microchips). "Mechanized" is added to the working definition, because "smart" electronic components are being added to mechanical devices in order to give them an extra layer of functionality or efficiency. Most mechanized devices that do not universally incorporate electronic or digital technology at this time soon will.

The Center for Aging Services Technologies (CAST) breaks aging services technologies into three categories:

- The first is **enabling technologies**, or technologies that "allow older adults to do more for themselves and to stay in their own homes or independent settings for as long as possible" [CAST, 2003]. From a health workforce perspective, enabling technologies are primarily demand-side technologies.
- The second is **operational technologies**, or technologies that "help aging services providers manage their human resources and internal needs more effectively." Operational technologies are primarily supply-side technologies.
- The third is **connective technologies**, or technologies that "keep older individuals in touch with their caregivers, families, and medical resources" [CAST, 2003]. This includes **"telemedicine,"** which allows a medical source to monitor patients from afar. In

this report, telemedicine will be considered one type of connective technology. Connective technologies can be either supply-side or demand-side technologies because they allow health care workers to be in multiple places at the same time (supply), but also allow older patients access to preventative services and information that may reduce the need for more extensive medical or nursing care (demand).

Not included in the definition are pharmaceuticals. Although these are products of a host of new technologies, they are assumed in this report to be in a special class of their own.

1. Enabling Technologies

Enabling technologies allow independence among older adults by either a) assisting them with tasks of daily living, or b) allowing monitoring and supervision to take place remotely, reducing the need for 24-hour care that could require institutionalization.

Assistive Technologies. Various types of assistive technology promote independence for older adults. Such technology can maximize the length of time older people can continue to live in the community, and can also reduce reliance on formal health services personnel (thus minimizing shortages of such personnel).

Assistive technology that contributes to independence and quality of life for older people includes:

- mechanized or electronic mobility devices (e.g., wheel chairs, scooters);
- mechanized or electronic lifts or hoists (which may help a patient get into or out of beds or chairs, go up and down stairs, or get onto and off of toilets);
- medication aids (e.g., electronic or digital pill organizers/dispensers that incorporate timers and alarms);
- personal safety devices (e.g., mechanized door closers, hot water sensors for baths);
- "smart" versions of current appliances, such as coffee makers that prompt patients with dementia with step-by-step instructions; and
- adaptive technologies to compensate for sensory disabilities (e.g., hearing aids, reading equipment for the visually impaired, teletypewriters and light signaler devices to facilitate phone use by the hearing impaired).

Remote Monitoring Technologies. Monitoring technologies allow a person at a remote site to keep track of the physical activities or the health indicators of older patients. The potential of monitoring technologies has not yet been fully realized. The only monitoring technology now widely available is in the form of perimeter alarms or electronic mobile trackers that can alert caregivers if a person with dementia wanders away. The future applications—some already in development or commercially available (though not widespread)—go far beyond simply locating patients. In the future, technology may allow caregivers and health care providers to monitor some or all of the following:

- activity levels;
- nutritional intake;

- vital signs;
- medication use;
- sleeping patterns; and
- balance/gait during walking (to monitor fall risk, or as an early indicator of Parkinson's disease or other medical problem.

2. Operational Technologies

Operational technologies are those that increase efficiency. This not only uses health personnel to their maximum potential, but can improve recruitment and retention of workers, and enhance quality of care for patients.

Information Management. New advances in information management make it easier to maintain, access, and transfer patient records. Software for hand-held computers (e.g., "personal digital assistants" or PDAs) helps physicians keep patient records readily accessible as they make their rounds. In the future, patient records may be transferred electronically (perhaps on "smart cards") between primary care providers and specialists, between doctors and other health care providers (e.g., therapists, dietitians), and between doctors and pharmacists, reducing medical errors. Patient privacy issues related to greater accessibility of medical information may be reduced in the future by technology such as retinal scanning, to ensure that the person attempting to read the electronic data is an authorized user.

Robotics. Robotics is relevant in health care industries that provide a product, such as pharmacy. In many large pharmacies today, machines scan prescriptions, print and apply bottle-labels, and count pills for busy pharmacists. The future may entail robot nurses to supplement services provided by human caregivers (e.g., taking vital signs, dispensing medication, helping patients into and out of bed).

Distance Learning. Many health workers could benefit from additional training, especially regarding the treatment of older patients. Many health professions and occupations furthermore require formal continuing education as a prerequisite for license renewal. Distance learning technology (classes by Internet or interactive televideo) can make it easier for busy health professionals to complete either voluntary or required continuing education, which potentially could increase both recruitment and retention of these workers. Health professionals in rural areas (which have disproportionately older populations and traditionally suffer health workforce shortages) may benefit the most from such technology. Distance learning is particularly important in geriatric training, as continuing education is the primary source of formal geriatrics education for many health occupations and professions.

3. Connective Technologies

Physical access to health care and health services is perhaps a greater issue among older adults than for any other demographic group. Many older adults are rural, and may not have local access to certain health services regardless of their own physical mobility or access to transportation. Suburban and urban older adults may also find their access to services and resources to be constrained by automobile ownership and driving ability, access to public transportation, and physical and mental ability to use public transportation, or ability to walk. Institutionalized older adults face even greater barriers to access to certain kinds of care, as they are often limited to the health services and resources provided by the institution. Connective technologies, or those that link patients to providers (or providers to other providers), can potentially address many of these issues.

Interactive Televideo (ITV). Interactive televideo (ITV) systems allow two-way transmission of picture and sound. In health care, ITV is used to allow patients in remote locations to see providers that they otherwise would not have access to. Obviously, ITV services are limited in that procedures that require the physical presence of the patient cannot be carried out via ITV. ITV is therefore most likely to be used for patient-physician consultations, or when a primary care professional is providing hands-on treatment, but requires the guidance of a specialist to proceed. In particular, ITV is valuable in rural areas where the primary care provider may not be a physician, but a nurse practitioner, physician assistant, chiropractor, or other health professional. ITV can also be useful in home health care, either as a monitoring tool, or to provide consultation and guidance to family members giving care.

The Internet. The Internet has become a source of health care information for Americans as a whole, and will probably serve a continually greater role to older adults as the tech-savvy baby boomers age. "Wired" older adults can now receive access to health care information—including information on preventative practices such as diet and exercise—from their own homes. Furthermore, they can receive information about resources available to them (e.g., nutrition programs, adult day programs, financial benefits, transportation) that they might otherwise not be aware of. They can use the Internet to shop for products related to health care and safety if their mobility is compromised or if they live in a rural area where certain products are difficult to find. Finally, they can use e-mail to contact service providers. E-mail consultation has not yet been used to its fullest potential by health care providers, but some providers are slowly beginning to offer such a service.

Electronic Care Coordination. A tremendous unmet need exists among older adults (who often suffer from multiple health problems or conditions, take multiple medications, and see multiple care providers) for coordination of care or case management services. Such services (which are most likely to be provided by a nurse practitioner or social worker) are currently not widely available, are unlikely to be reimbursed by insurance programs, and are costly when paid out of pocket.

Great potential exists for case management services to be made available on-line. Even if provided by the same trained professionals, the use of Internet applications to link consumers with case managers might make the service more cost-effective. Furthermore, sophisticated electronic applications available on-line or as PC software might be able to serve many case

management functions with only limited involvement of paid professionals. Not only could such software direct patients to appropriate services and resources in their local area, but it ultimately might be able to find the providers closest to the patient's home and schedule appointments for patients automatically (through an electronic interface with the provider's office) at the appropriate intervals, using standard time-management software to remind the patient when an appointment was upcoming. Such systems could become sophisticated enough even to schedule transportation services for the patient on appointment days.

4. Technologies of the Future

Other types of technologies may emerge in the future with the potential to change the way older adults are cared for. Although some of these technologies may sound more science fiction than reality, efforts are currently underway by engineers and medical researchers to successfully develop them. It is impossible to predict which research and development efforts will prove fruitful and which will ultimately be abandoned, but some of these innovations will unquestionably become widely available in the next decade or two. Examples of such future technologies include:

- Genetic engineering may lead to the ability to diagnose illnesses before symptoms appear (allowing actions to prevent or lessen the impact of chronic disease), cure disease through genetic manipulation, or grow custom-made organs from a patient's own DNA.
- Nanotechnologies may allow implantable or ingestible microchips to carry or record information about patients' vital signs and nutritional intake, easing diagnosis or making critical medical information immediately available to emergency medical personnel.
- New drug therapies may provide cures for the major causes of death and disability, such as cancer, stroke, diabetes, or heart disease.
- Faster, more accurate, and less expensive diagnostic and screening tools may enhance the efficacy of preventative medicine, in some cases allowing physicians to diagnose conditions before they have even developed.
- More effective immunization processes may prevent patients from developing diseases such as cancer.
- Creative mobility devices (e.g., the new stair climbing wheel chair) may restore lost mobility and function to an unprecedented degree in older patients.
- Voice recognition software may enable impaired older adults to turn on lights and appliances without the need for fine (or even gross) motor skills. Such software might also allow older adults who are injured or in medical distress to contact emergency personnel without needing to physically reach a telephone.

5. Barriers to Technology

A number of issues still constrain technologies mentioned above from becoming realities. Although the potential for these and similar technologies is vast, their evolution and adoption has been held back in many cases by factors unrelated to technological development.

One of the chief factors is a lack of the infrastructure necessary for many of these technologies to be widely used. In order for many of the more complex technologies to be used effectively, patients, informal caregivers, health care providers, insurance programs, and social service

agencies all must have access to the same infrastructure. In the case of smart cards carrying medical records to multiple providers and pharmacies, all parties involved must have the same card-reading technology, which may include not only software but standard peripheral devices that read the cards and possibly a device to scan fingerprints or retina to ensure the appropriate protection of private patient data.

In the case of care coordination software that would schedule a patient's appointments, large numbers of providers in a local area must have an on-line interface that allows appointments to be scheduled by patients at remote sites. In the case of ITV consultations, it is not only necessary for rural patients to have a local provider with ITV technology, but local providers must have a large enough pool of specialists who also have ITV equipment in order to make the service worthwhile.

Another barrier is financing. Some of the applications described above (e.g., robot in long-term care facilities, or pill-counting machines in pharmacies) may be fairly considered the provider's responsibility to purchase. Such efficiency-boosting technologies reduce labor costs, and therefore may prove cost-effective for facilities to finance. Others, however, are direct-to-patient services that should theoretically qualify for insurance reimbursement. If Medicare or another insurance program covers a face-to-face consultation with a specialist, for example, they should presumably also cover an ITV consultation with the same specialist. Some of these services are, in fact, more likely to be reimbursed. Reimbursement for services provided in non-traditional ways are generally, however, not likely to be reimbursed until they have achieved a certain level of professional and public recognition in the health care industry. This discourages patients and providers for investing in the technologies early on, and lengthens the amount of time before many new technologies become commonplace.

Attitudes about aging are also a barrier to the development and marketing of technologies that serve seniors. In a 2003 Associated Press interview, Russ Bodoff, director of CAST, reports "Companies like to be seen as young, innovative, sexy. Getting older is not something they like to be identified with." This ageism may be further associated with stereotypes about older adults being "techno-phobic" and unsophisticated about innovation. These attitudes may change quickly in the near future, however. Most middle-aged Americans are familiar, if not comfortable, with computer technology. While it is possible baby boom older adults will not adopt some new technologies as quickly as younger people (e.g., they may prove the last to adopt innovations such as cable modems or CD burners), the fact remains that they will be the first generation of older adults to be generally computer literate. Furthermore, it is unlikely that ageist attitudes will persist when technology companies develop a full awareness of the market size and buying power of the baby boom cohort. Adolescents were not fully exploited as a market niche until the large numbers of baby boom children motivated advertisers to design and promote a "youth culture" in the 1950s. Baby boomers are still the largest age cohort of the 20th century, and may prove to be the most financially secure cohort of older Americans to date.

6. Conclusions

There is great potential for technology to transform both health care for older adults and the health care workforce, allowing the health care system to more gracefully absorb the large numbers of soon-to-be older Americans. Present and future technologies may both reduce the

demand for health workers while enhancing the supply by allowing greater productivity. Technologies that now exist or are in development may:

- help older adults remain healthy and independent for longer periods;
- allow caregivers and providers to monitor important health indicators in older patients from remote locations;
- provide health access to older adults in underserved areas;
- allow limited numbers of workers to serve a greater number of older adults;
- enhance quality of care;
- reduce medical and medication errors;
- improve training and retention of health workers, especially in rural areas; and
- lead to greater availability of case management services for older adults.

Although technologies are not likely to totally revolutionize health care and the health workforce over the next decade, they could have dramatic impacts. It is important for policy makers to realize that technologies offer real opportunities to increase the productivity of workers, lessen potential shortages, improve quality of care, and enhance the efficiency and efficacy of diagnostic and treatment protocols and processes.

III. Health Care Professions and Occupations

A. Physicians

Summary

Older adults receive disproportionately more medical care in physicians' offices and hospitals than those younger than age 65. Older adults account for 24% of physician office visits and 30% of visits to physicians in hospital outpatient settings. They also account for 29% of hospital inpatient stays, and 36% of inpatient nights. Consequently, most primary care physicians treat large numbers of older patients. Physicians in almost every medical and surgical specialty also treat geriatric patients.

Geriatricians are physicians who are board certified in either internal medicine or family practice, and who are specially trained in the care of older people. They often work as primary care physicians for older adults. The numbers of geriatricians certified each year is very small (227 of a total of about 24,000 new physicians entering the workforce in 2000).

It is not certain whether it is a more fruitful strategy to produce more geriatric specialists or to increase the geriatric training of all physicians. It is also not clear how the currently limited number of geriatricians can best be used in the provision of services to older adults.

The coverage of geriatric care in the general medical school curriculum is limited, with most geriatric course work offered on an elective basis. Primary care residency programs require a rotation in geriatrics, but this is generally only about four to six weeks in length. Geriatric medicine has been an approved specialty of both family practice and internal medicine, with a Certificate of Added Qualifications (CAQ), since 1985. Many physicians, especially those who graduated many years ago, have never been exposed to any formal geriatric training.

Physicians without special geriatric credentials who are faced with a growing number of older patients sometimes rely on continuing education programs to help them learn about the special needs and treatments for older patients. Geriatric education centers (GECs) are an important source of such training, which is available as traditional coursework, distance learning, workshops, or Internet modules.

Employment of physicians and surgeons is expected to grow by about 18% between the years 2000 and 2010. About 38,000 job openings for physicians will occur annually, with about 18,000 of these annual openings due to physicians retiring or otherwise leaving the field. The remaining job openings will be due to growth in the field, driven in part by the growing numbers of older adults in the U.S. population. The demand for physicians to care for older adults is expected to grow substantially in the next twenty years.

Physicians tend to be older than the civilian labor force as a whole, with 20% older than age 55, and another 30% between the age of 45-54. Many physicians age 50 and older indicate that they

plan to retire or reduce their practice within one to three years. Work hours for physicians decline steadily after the age of 35.

The Medical Profession: Services to Older Adults

Geriatric patients are treated by primary care physicians and by physicians in almost every medical and surgical specialty [Neveleff, 2002]. Primary care physicians provide preventative health services and educate patients about health care and health conditions. They diagnose and treat injury and disease, perform diagnostic tests, and prescribe medications. These physicians play an important role in providing care to older adults. Physicians in all specialties (except pediatrics) serve varying numbers of older patients.

Geriatricians are physicians who are board certified in either internal medicine or family practice, and who are specially trained in the care of older people. Besides the seven or more years of medical school and postgraduate training, they complete an additional year of study related to aging, including preventive medicine, rehabilitation, psycho-social, and legal and economic issues related to geriatric patients. Geriatricians are most likely to work as primary care physicians for older adults, although they may also advise other physicians about age-related issues [ACP-ASIM, 2003].

The American Geriatrics Society defines six critical components of ambulatory geriatric clinical services:

- access to primary care and consultation involving personnel with training and experience in geriatrics;
- availability of an interdisciplinary team to coordinate care and services;
- information systems and quality improvement programs that are geriatric focused and can transfer information across care sites;
- information and materials to enable the older adult to participate in self-management of chronic disease;
- access that is sensitive to the needs of older patients (e.g., handicapped accessible); and
- specialized programs to assess and manage aging-related issues (e.g., incontinence, dementia, end-of-life care) [American Geriatrics Society, 2001].

Either a geriatric specialist or a non-geriatrician physician who has been adequately trained in the needs of older adults can potentially provide care that meets these guidelines. It is not apparent whether quality geriatric care for older adults can best be assured by increasing the numbers of geriatricians, or by focusing on providing solid geriatric training to all physicians.

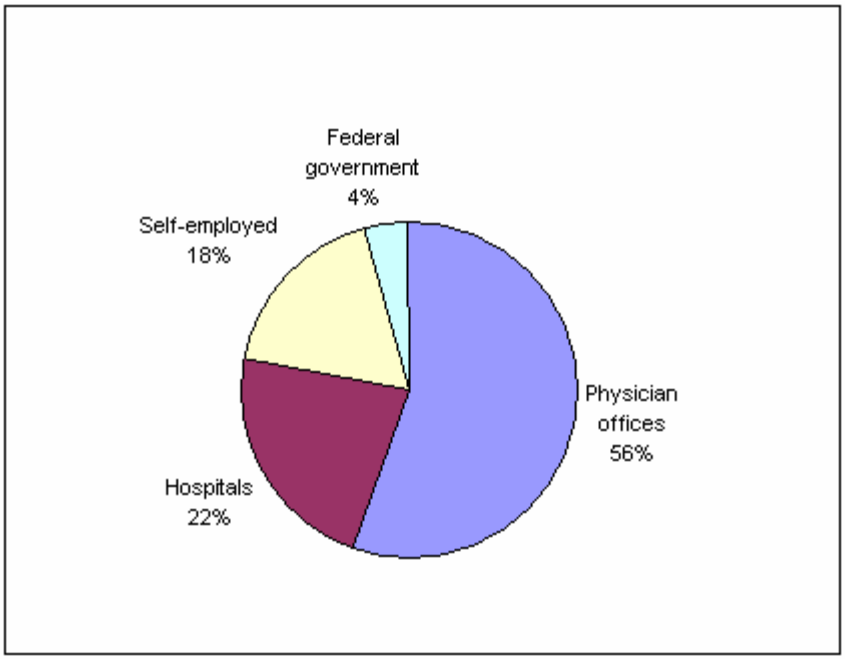
Profile of the Current Physician Workforce

There were about 780,000 physicians and surgeons in the U.S. in 2000, including residents and fellows. Physicians may be either Doctors of Medicine (MDs), or Doctors of Osteopathic Medicine (DOs). Physicians have the most intensive educational and training requirements of any health occupation. In addition to four years of post-graduate medical education, they must complete internship and residency training ranging from three to eight years. All states license physicians and licensure is done by examination. Board certification in a medical specialty is

granted by the American Board of Medical Specialists (ABMS), and requires additional residency training and examination [BLS, 2003a].

The majority of physicians (excluding those in pediatrics) serve at least some older adults. These older people receive disproportionately more medical care in physicians' offices and hospitals than those younger than age 65 [AHRQ, 2000]. Older adults account for 24% of physician office visits and 30% of visits to physicians in hospital outpatient settings. They also account for 29% of hospital inpatient stays, and 36% of inpatient nights. In 2000, 56% of physicians worked in physicians' offices, and 22% worked in hospitals. About 4% of physicians worked for the federal government, while the remaining 18% are self-employed [BLS, 2003b] (Figure 21).

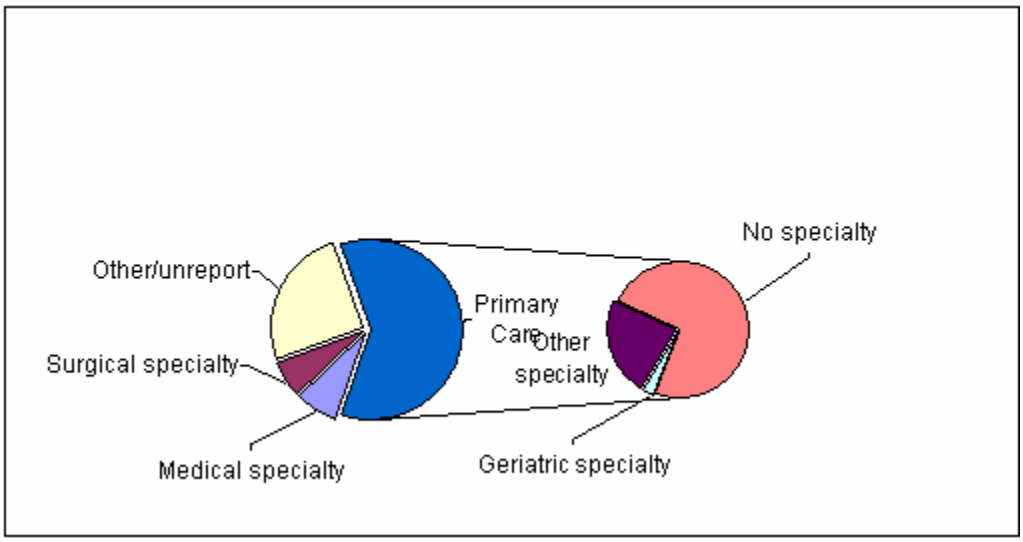
Figure 21: Distribution of Physicians Across Care Settings, 2000



Source: Industry-Occupation Employment Matrix [BLS, 2003]

According to the American Medical Association, 34% of MDs are primary care physicians (16% in internal medicine, 11% in general/family practice, and 8% in pediatrics). Another 12% of MDs are in a medical specialty such as obstetrics or dermatology, while 11% are in a surgical specialty such as orthopedic surgery. Twenty-seven percent are in some other specialty, such as emergency medicine or psychiatry, while 16% have an unreported specialty or are not active in patient care [BLS, 2003a]. Geriatrics is a subspecialty of both internal medicine and general/family practice medicine (see Figure 22). Physicians in most specialties see at least some older patients, and primary care physicians are likely to see large numbers of older adults.

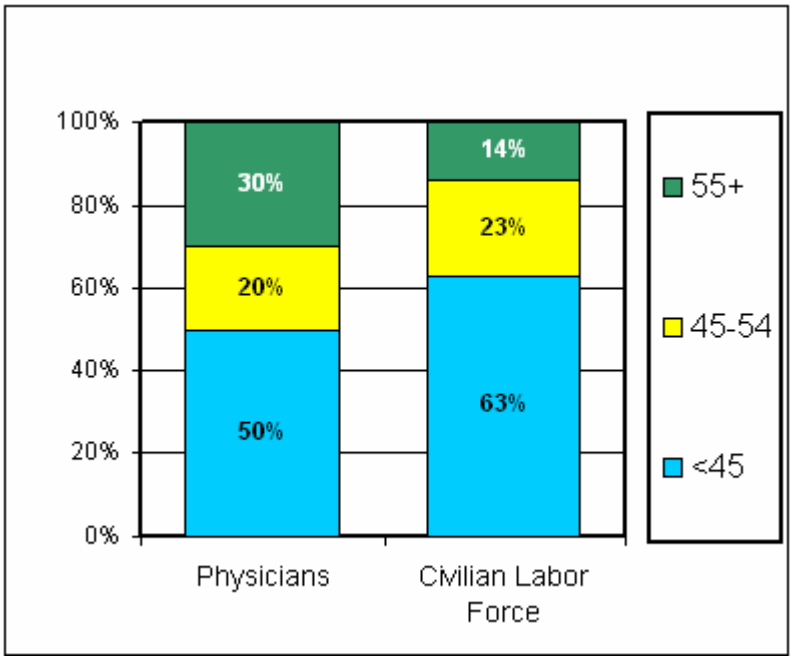
Figure 22: Distribution of Physicians by Specialty



Source: AMA

Physicians tend to be older than the civilian labor force as a whole, with 30% older than age 55, and another 20% between the ages of 45-54 (Figure 23). Due to the lengthy educational and training process, very few physicians (0.7%) are younger than age 25 [BLS, 2001].

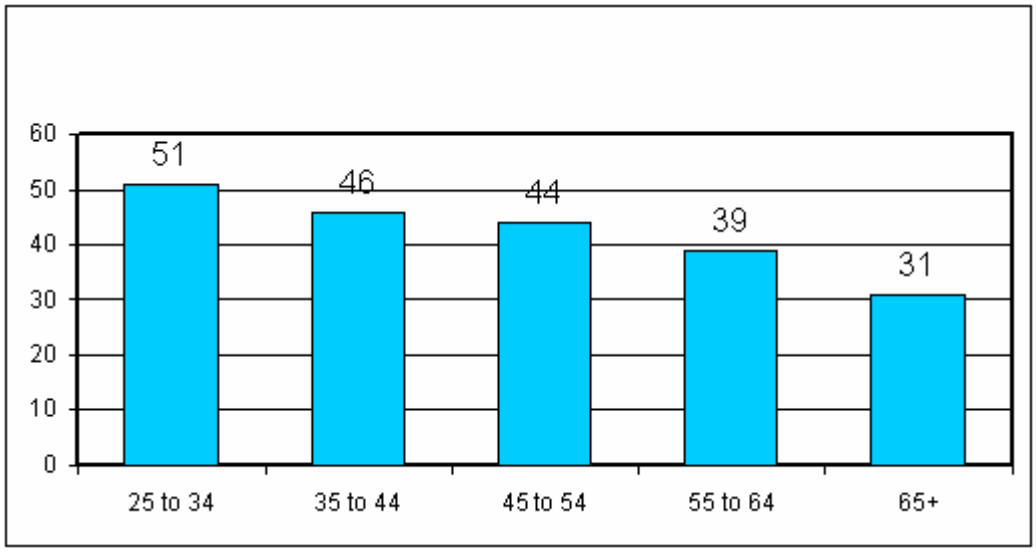
Figure 23: Age Distribution of Physicians in the U.S., 2001



Source: CPS data [BLS, 2001]

Not only will many older physicians retire in the next few years, but physicians tend to reduce their work hours as they age, with physicians older than age 65 only working 31 hours a week on average (Figure 24).

Figure 24: Mean Number of Hours Worked, by Physician Age Group, U.S., 2001



Source: CPS data [BLS, 2001]

Training, Education, and Credentials Related to Aging

General Curriculum. Medical students are exposed to geriatric care in courses and clinical experiences. Entire courses or rotations can be devoted to geriatrics, and geriatrics content can be integrated into other courses and clinical experiences. The adult primary care specialties (specifically general internal medicine [GIM] and family practice [FP]) typically require some geriatrics training. Ninety-three percent of GIM residency programs and 92% of FP residency programs require some geriatrics training.

Many physicians, especially those whose formal training ended before 1985, have never been exposed to organized geriatric training in medical school or residency training [HRSA, 1998], and so continuing medical education (CME) programs are a potentially important source of geriatric education. Continuing education in geriatric care is available to physicians through geriatric education centers (GECs), including forty-five GECs funded by the Health Resources and Services Administration (HRSA). Courses offered through GECs include traditional courses, distance learning courses, workshops, and Internet training modules. Geriatric Education Retreats (GERs) are also available for ten subspecialties of internal medicine.

***Specialization*.** Specialized geriatric training is available in most medical schools. In 2001, academic geriatric units existed in 95 out of 103 allopathic and 10 out of 18 osteopathic medical schools surveyed by the Association of Directors of Geriatric Academic Programs. Only six out of 144 medical schools in the U.S. have departments of geriatric medicine, but every school had an identifiable leader/contact for geriatric medicine [ADGAP, 2003].

Opportunities for specialized geriatric training have expanded in recent years, but student interest in geriatrics remains limited. For example, the number of available geriatric training positions has increased, but in the year 2001-2002 only 375 of 494 geriatric positions offered were filled [AAMC, 2002]. The top five obstacles identified by medical schools in achieving the goals of their geriatric programs were lack of senior research faculty, poor clinical reimbursement for patient care, lack of research fellows, lack of junior research faculty, and lack of institutional financial support [ADGAP, 2003].

Certification. Some physicians take specific training to become certified as geriatric care specialists. Geriatric medicine has been an approved subspecialty of both family practice and internal medicine since 1985, with the first certificates issued in 1988. Only six medical schools in the country have departments of geriatrics, but physicians specializing in internal medicine or family practice may qualify for a Certificate of Added Qualifications (CAQ) in geriatrics by completing training in geriatrics, and by passing a written examination [American Board of Medical Specialties, 2003].

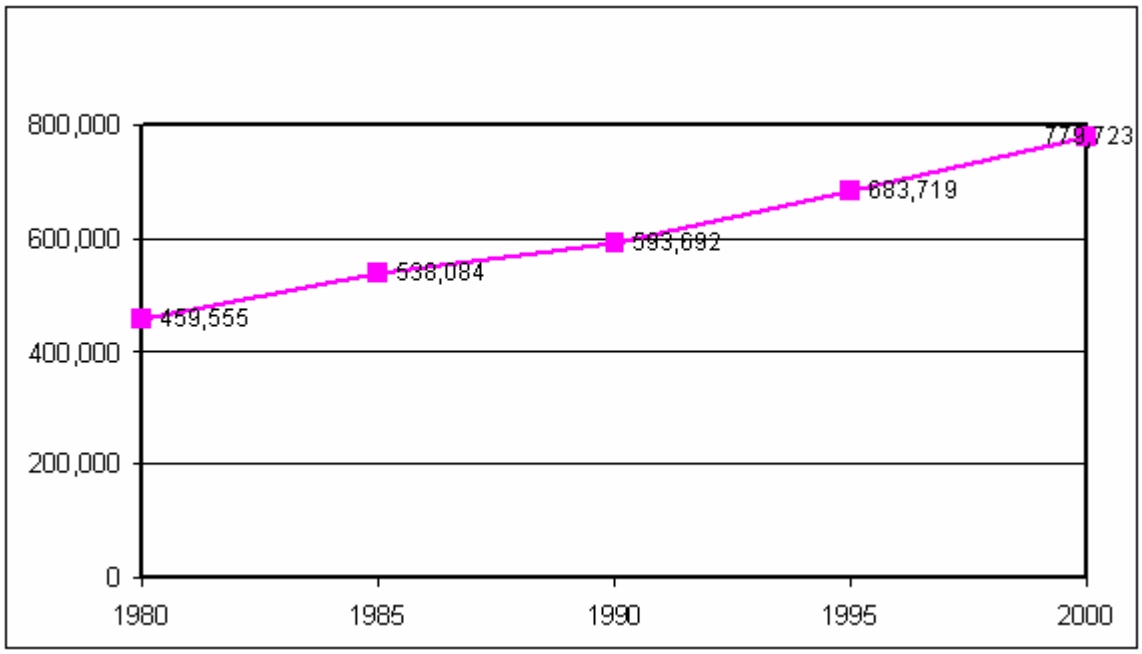
The certification in Geriatric Medicine for internists requires certification in Internal Medicine and formal training in geriatric medicine, plus 12 months of clinical training in geriatric medicine and a one-day examination. About 40% of the examination is devoted to diseases in older adults, another 14% to geriatric syndromes, 11% to geropharmacology, 11% to caring for older adult patients, and 10% to geriatric psychiatry. Specific areas of emphasis may include the biology of aging, geriatric care issues, medical diseases, and neuropsychiatry [American Board of Internal Medicine, 2003]. Certification is valid for a ten-year period.

The certification in Geriatric Medicine for family practice physicians requires certification in Family Practice, and satisfactory completion of an accredited fellowship training program in Geriatric Medicine, followed by an examination. The certification is valid for a ten-year period. Recertification requires completion of three Self-Evaluation Process (SEP) modules (take-home examinations that are a prerequisite for the formal examination), and another formal (half-day) geriatric medicine examination [American Board of Family Practice, 2003].

Supply Trends

The number of actively practicing physicians in the U.S. (including residents and fellows) rose 34% between 1990 and 2000, from about 594,000 to almost 780,000 (Figure 25). In 2000, there were approximately 350 people for every active practicing physician.

Figure 25: U.S. Physician Supply Selected Years from 1980-2000



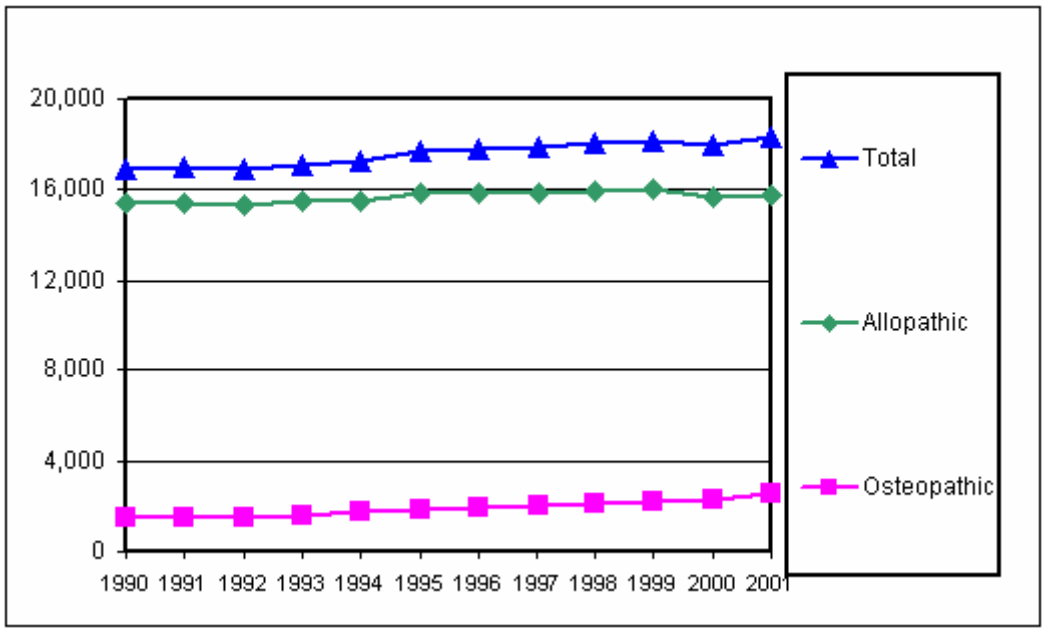
Source: AMA, AOA

A number of factors influence the current and future supply of physicians. The Bureau of Labor Statistics estimates that between 2000 and 2010, about 18,000 job openings for physicians will be created annually by physician retirements and other departures from the profession. In total, about 89,000 physicians will leave the active workforce by 2010. These numbers will only rise after 2010, as even larger numbers of physicians reach retirement age.

Many physicians do not retire at age 65 (almost 6% are age 65 and older), but 54% of physicians who are 50 years old or older plan to either retire within one to three years, reduce their practice, or refuse new patients. According to an unpublished study by the AMA, the average age of retirement among doctors has decreased from 69.8 in 1980 to 67.4 in 1990 (while the average retirement age for all American workers dropped from 64 to 62) [Greene, 2000]. Due to the current economic environment, many states have offered lucrative retirement packages to their workforce, resulting in large decreases in the numbers of practicing physician in the public sector and in academia [Greene, 2000]. Furthermore, physicians tend to decrease their work hours steadily in middle age, and older than age 64 average only a little more than 30 hours a week (compared to more than 50 hours a week among those age 25-34) [see Figure 24].

Educational production. New physicians come from two major sources: U.S. medical schools and foreign medical schools. About 5,500 new physicians a year are graduates of foreign medical schools (also known as international medical graduates or IMGs). The number of allopathic medical school graduates has remained relatively constant over the past ten years (with 15,800 graduated in 2001) while the number of osteopathic medical school graduates has increased slightly (with 2,500 graduated in 2001) (see Figure 26).

Figure 26: Graduates of U.S. Medical Schools, 1990 to 2001

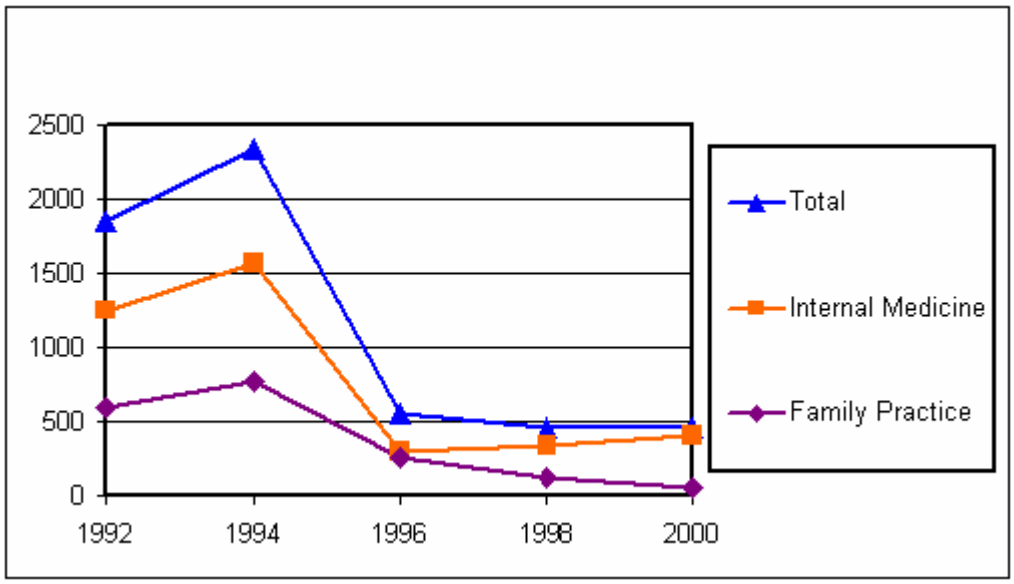


Source: AAMC, AACOM

IMGs are especially important for older adults, because they are more likely to practice in rural areas (where older adults are disproportionately located). Some rural areas are completely dependent upon IMGs for the provision of primary care. IMGs are also more likely than their USMG counterparts to practice in specialties sometimes viewed as less attractive or lower paying, and thus may prove to be an important source of geriatric specialists.

Geriatric specialists. Since 1991, 1,779 specialists in family practice and 3,853 in internal medicine have completed certificates in geriatric medicine. The number of certificates issued is not necessarily a good index of the number of specialists, however, because the requirements for certification have changed. When the certification was introduced, practicing geriatricians were allowed to complete board certification based on an exam alone (i.e., they were "grandfathered" into certification). Since 1994, however, certification has required both training and an examination. Although it appears that interest in geriatrics certification has dropped dramatically since 1994, this is due to the large numbers of geriatric physicians already practicing that received their certification in the years following its introduction (see Figure 27). In 2001-2002, 463 certificates were issued in internal medicine, and another 51 in family practice [ADGAP, 2003].

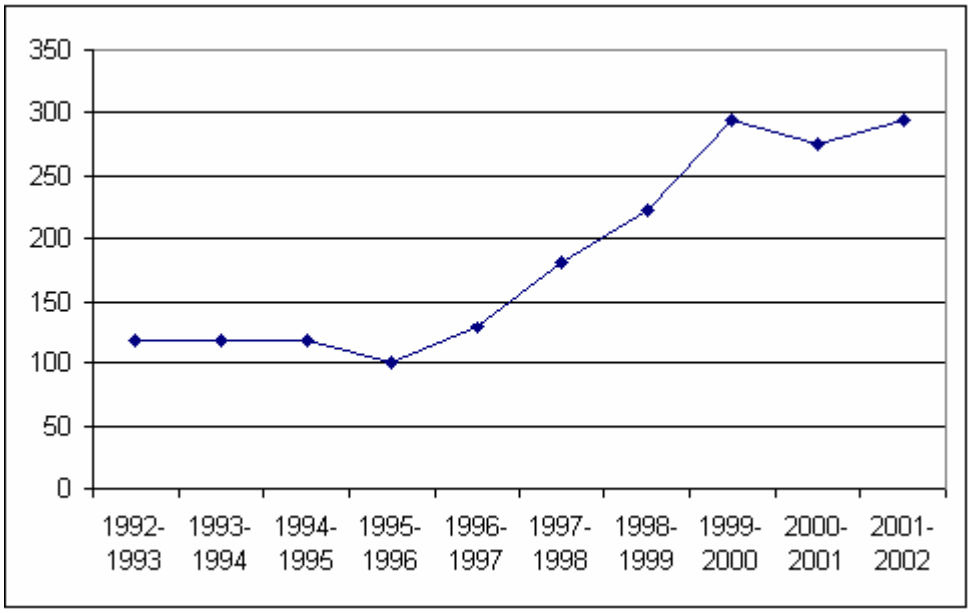
Figure 27: Geriatric Subspecialty Certificates Issued, U.S., 1992 - 2000



Source: ABMS

A better indicator of interest in geriatrics is the number of fellows completing programs in geriatrics, which has risen from 117 in the 1992-1993 academic year to 295 in the 2000-2001 academic year [ADGAP, 2003] (Figure 28).

Figure 28: Number of Fellowships Completed in Geriatrics



Source: ADGAP, 2003

Demand

Employment of all physicians and surgeons is expected to grow by about 18% through the year 2010 (about average for all occupations) due to continued expansion of health care and of the

older adult population. The BLS projects 38,000 job openings annually for physicians and surgeons, although only 20,000 of these will be due to net growth in the profession. The remaining openings will be created by attrition through retirements and other departures from the profession. The growing population of older adults will be an important engine for the growth in the demand for physician services, due to their greater use of services [BLS, 2003a]:

- Individuals older than 65 average 9 visits per year to a physician. Those in younger age groups average 5 visits per year to physicians.

- Older adults are also use more hospital services. They are hospitalized more than three times as often as the younger population, stay 50% longer, and use twice as many prescription drugs.

- Persons with disabilities and chronic conditions are living longer, which will increase demand for related services.

- Many older adults (62% of those age 65-74, 76% of those age 75-84, and 82% of those age 85 and older) suffer from two or more chronic conditions, and as a result they are scheduling visits with an array of physician generalists and specialists [AARP, 2002].

- The number of FTE physicians needed to provide medical care for older adults has been forecasted to be 2.5 - 3.2 times higher in 2030 than in the mid-1980s [HRSA, 1998].

- Patients are more educated about medical services and are more likely to demand and question services. Their higher education levels and greater access to information (e.g., on the Internet and exposure to ads by drug companies) helps to advance the demand for services.

According to the Alliance for Aging Research, the U.S. needs 20,000 geriatric-trained physicians to adequately care for the 35 million older people in this country, although market demand for geriatricians has fallen substantially short of this estimate of need.

Many older adults are unsure what geriatricians are or that they are available for elder care. The need for services is great, but demand may be currently lower than need because the population is unaware that the services are available.

Issues for the Medical Professional and Older Adults

Access. For older adults, access to services depends heavily on socioeconomic status. Those who have higher socioeconomic status have fewer problems accessing the health care that they need. Those in rural areas and poor older adults have limited access to needed health care services.

Furthermore, physicians cannot spend the time needed with older adults to address all of their health care needs, so more services are being delegated (e.g., to NPs, PAs, RNs, etc.). Since patient and caregiver education is an important part of care for older adults, such delegation can relieve physicians of some of the burden of this important, but time-consuming task. More delegation is also preferred by Medicare and HMOs to help reduce costs of care.

Reimbursement. There is evidence that many geriatricians are leaving the specialty due to low Medicare reimbursements. In 2002, for example, there was a cut of about 5.4%. Not only is this a disincentive for geriatricians to remain in the specialty, it also discourages new physicians from seeking geriatric certification [Associated Press, 2002a].

Gap Between Future Demand and Expected Production

The BLS projects that there will be about 196,000 job openings for physicians by the year 2010, about 107,000 of which will be due to growth in the profession. About 23,000 new physicians currently enter U.S. practice each year (from allopathic, osteopathic, and foreign medical schools), which should be adequate to meet projected aggregate demand.

The decline in geriatric specializations, however, may create imbalances between the population needing care and the training of the physicians giving care. The numbers of new geriatricians are declining just as the number of Americans age 65 and older will rise dramatically. With this in mind, the Alliance for Aging Research has petitioned Congress to set goals for increasing the number of geriatric providers in all health care professions and occupations. Their other recommendations include financial incentives—such as loan forgiveness and continuing education funds—to entice professionals into the field of geriatrics [Associated Press, 2002b].

B. Physician Assistants

Summary

Physician Assistants (PAs) are licensed to practice under the supervision of a physician. The two professions work together in coordinating the care of their patients. PAs perform most or all of the services provided by physicians, depending upon the scope of practice specified by the laws of their state, and the specific practice agreements worked out between the physician and the PA. They may work in either general or specialty areas, and may prescribe medications in 47 states and the District of Columbia.

PAs have been playing an important role in recent years as their numbers have increased and their professional practice has become broader and more consistent across states. PAs are potentially a major source of cost-effective medical services for older adults.

Since only about 1% of physicians are geriatricians, the number of PAs in formal geriatric practices is also very small. Almost 46% of PAs report that they are practicing in a primary care specialty (almost 40% of PAs work in family/general practice medicine or general internal medicine). However, primary care physicians see substantial numbers of older patients (older adults average 80% more physician visits annually than those younger than 65), and therefore many PAs working in primary care practices will also see large numbers of older patients. Millions of visits to PAs are made each year for Alzheimer's disease, cancer, congestive heart failure, diabetes, hypertension, osteoporosis, and other age-related disorders. Overall, almost 78% of PAs report that they treat patients who are 85 years of age or older.

The curriculum standards for PA programs include substantial aging-related content, and require clinical experiences in geriatrics. In general, PAs do not specialize in their education, and there is no certification in geriatrics for PAs. The specialty of the supervising physician largely determines the specialty of a PA. Only 1% of PAs reported geriatrics as their primary practice specialty in 2002 [AAPA, 2003a].

Employment of PAs is expected to grow by about 54% between the years 2000 and 2010. BLS estimates that there will be about 43,000 job openings for PAs between 2000 and 2010, with about 12,000 of those due to PAs retiring or leaving the profession. The remaining 31,000 job openings will be due to growth in the field, driven in part by the increasing numbers of older adults in the U.S. population. As the numbers of older adults rise, demand for ambulatory care, inpatient care, and prescription medications will grow. PAs provide all of these services, and can be found working in 61 medical specialties. Currently, about 4,000 new PAs enter the U.S. workforce annually, although not all of those who graduate from educational programs enter clinical practice. A shortage of PAs is not anticipated; rather, there is a potential for minimal to moderate surpluses in some markets.

Physician Assistants: Services to Older Adults

Physician Assistants (PAs) are licensed to practice medicine under the supervision of a physician. The two professions collaborate in the care of their patients. PAs perform most of the services provided by physicians, depending upon the scope of practice specified by the laws of

their state, and the specific practice agreements worked out between the physician and the PA. They may work in either general or specialty areas, and may prescribe medications in 47 states and the District of Columbia.

Four out of every ten PAs work in either general/family practice or internal medicine, and are likely to see at least some patients who are age 65 or older. Approximately 12% of office-based visits to physician assistants are made by patients age 65 and older. According to the American Academy of Physician Assistants (AAPA), in 2002 there were 2.5 million visits to PAs for Alzheimer's disease, 5 million for cancer, 6.5 million for congestive heart failure, almost 11 million for diabetes, and 4 million for osteoporosis. Overall, about 78% of PAs reported seeing at least some patients age 85 or older in 2002 [AAPA, 2003a].

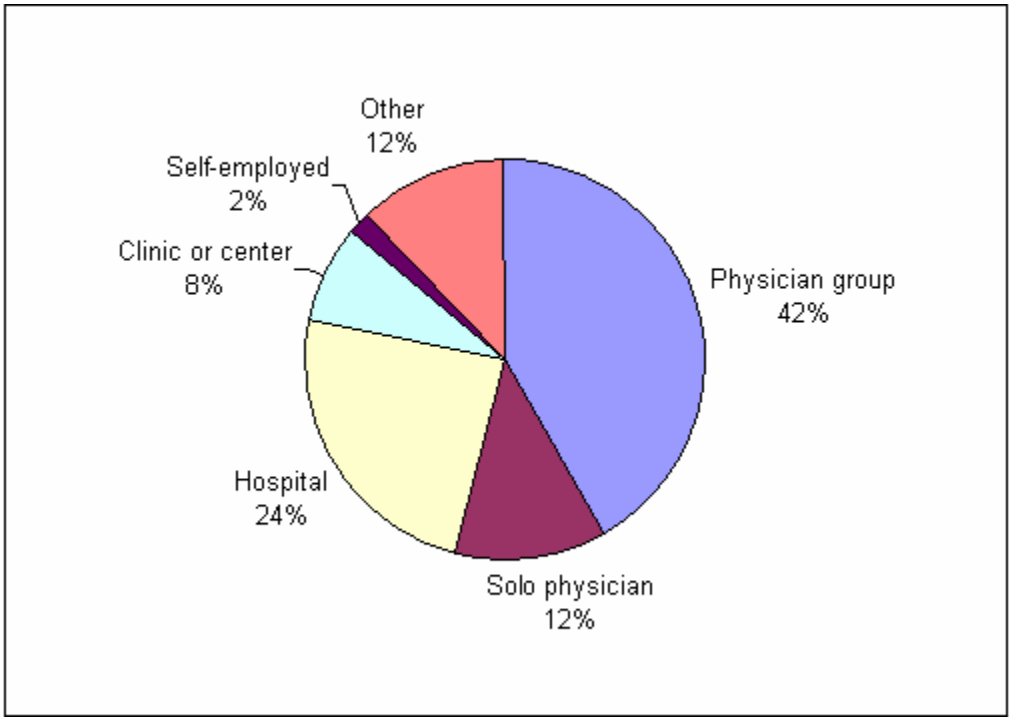
PAs are very involved in primary care for older adults in underserved areas (for example, PAs may be the principal care providers in rural or inner-city clinics, where a physician may be present for only one or two days each week). PAs may also make house calls or go to hospitals and nursing homes to check on their patients and report the patient condition back to the primary physician [BLS, 2003a]. According to an AAPA survey of new students in PA programs, 79% indicated a willingness to work in a medically underserved area after graduation, and 32% indicated that they intended to do so [AAPA, 2003b]. The contributions of PAs to primary care could be particularly important in rural areas, which often have high concentrations of older adults, and where transportation may be a serious barrier to care.

PAs also offer interesting possibilities for serving older adults in institutional settings, especially where more complex care may be needed than can be provided by LPNs, or RNs. A physician practice could assign a PA to a nursing home to provide medical care to older patients with special needs. This could be a cost effective solution to serving the medical needs of older patients. Currently, however, only 7% of PAs report seeing nursing home patients as part of their primary job. Nursing homes and other long-term care settings do not yet use PAs to their full potential.

Profile of the Current Physician Assistant Workforce

PAs held 58,000 jobs in 2000, although the number of PAs in clinical practice reported by the AAPA in the same year was only about 40,500. This is because large numbers of PAs (about 17%, according to the AAPA) hold jobs in multiple practices (BLS, 2003a). By the end of 2001, the PA clinical practice workforce totaled almost 43,000 [AAPA, 2001]. The largest employer of PAs was either group or solo physician practices (about 54%), followed by hospitals (24%), and clinics (8%) (Figure 29).

Figure 29: Distribution of Full-Time Physician Assistants, by Setting (2001)



Source: American Academy of Physician Assistants

In 2002, 43% of PAs reported their primary specialty of practice to be family/general practice medicine, general internal medicine, or pediatrics (Table 6), with the vast majority in family or general medicine. Other common specialty areas were general surgery or surgical subspecialties, emergency medicine, and internal medicine subspecialties. Since older adults average 80% more physician visits per year than the non-older adults, and are hospitalized almost three times as often as the younger population, most of these PAs (excluding those in pediatrics) are serving some number of older adults.

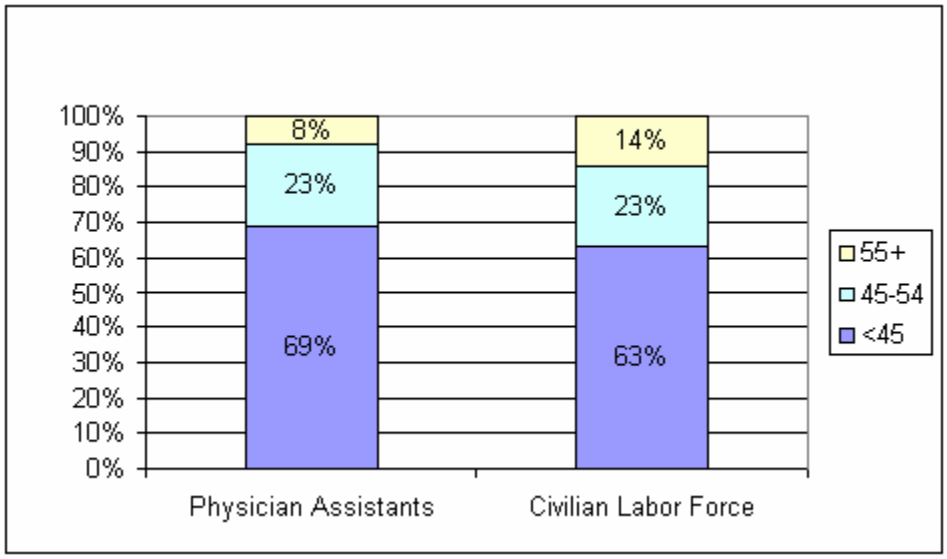
Table 6: Primary Specialty of Practice for PAs, U.S., 2002

Specialty	% of PAs
Family/General Practice Medicine	32%
General Internal Medicine	8%
General Pediatrics	3%
Obstetrics/Gynecology	3%
General Surgery/Surgical Subspecialties	22%
Emergency Medicine	10%
Internal Medicine Subspecialties	9%
Other	13%

Source: AAPA, 2003

PAs are slightly younger than the overall civilian labor force (a median age of 38 versus 40 for the overall labor force as of 2001). In the 2001 Current Population Survey, only 8% of PAs were older than 54 years (a much lower percentage than the civilian labor force overall), while another 23% were between 45 and 54. PAs also appear to be aging less rapidly: while the median age of PAs increased only 3 years between 1991 and 2001, the civilian labor force aged 3.7 years. This suggests that the PA profession is attracting enough younger workers to keep it aging at a slower pace than the general U.S. labor force [AAPA, 2003a] (Figure 30).

Figure 30: Age Distribution of U.S. Physician Assistants Compared to Civilian Labor Force (2001)



Source: CPS data [BLS, 2001]

Training, Education, and Credentials Related to Aging

PAs must graduate from a two-year accredited program that is often offered through colleges or universities, medical schools or teaching hospitals. Most programs now confer a master's degree, and most PA students have prior health care experience. All PAs must pass a certifying exam, administered by the National Commission on Certification of Physician Assistants (NCCPA) for licensure. Continuing education is a requirement for retaining certification, which must be renewed every six years [BLS, 2003b]. Discussions are now underway about making a master's degree the basic educational credential for PAs (currently only about 31% of PAs have master's degrees).

General curriculum. PAs receive moderate levels of training in geriatric care as part of the formal educational process. The curriculum standards for PA programs include instruction in responses to death and dying, advance directives and end of life decisions, performing a physical examination across the life span, and end of life care. PA training also requires "clinical experiences" (although not necessarily a specific rotation) in geriatrics [AAPA, 2003b]. The certification examination for PAs seems to contain little explicit content about aging and older adults, although much of the general content is relevant to treatment of older adults.

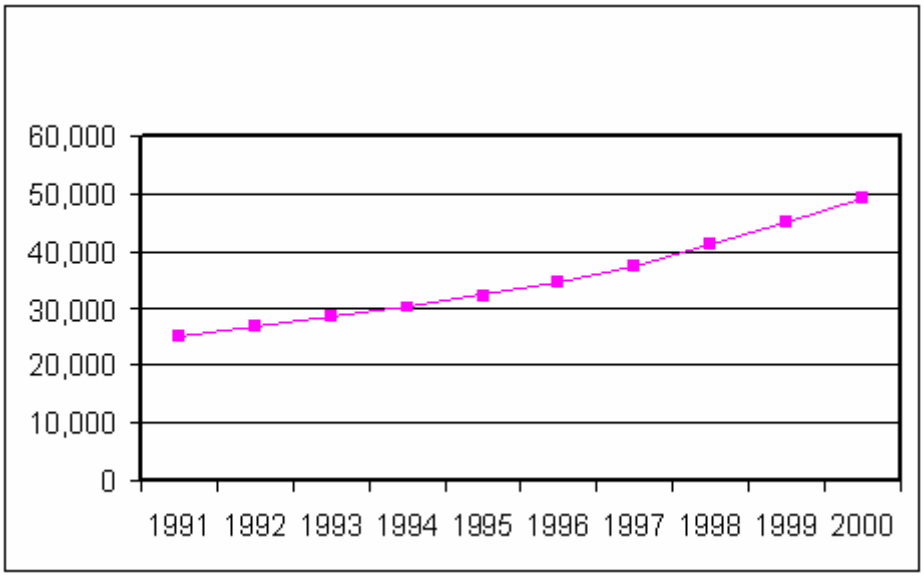
***Specialization and certification*.** There is not currently a specific geriatric track in the profession – however, specialization is not generally a part of the basic educational experience for PAs. PAs work in a variety of settings and can potentially work in any specialty, including geriatrics. PAs typically practice the specialty practiced by their supervising physician, and are, in fact, legally barred from practicing a specialty not practiced by the supervising physician.

Supply Trends

Replacements. As PAs are younger on average than the U.S. civilian labor force, this profession will not be disproportionately affected by retirement in the coming decades. The BLS predicts that about 12,000 job openings for physician assistants will occur between 2000 and 2010 due to the need for replacement of retirees and other professional departures.

Educational Production. The number of total graduates of PA educational programs has more than doubled between 1991 and 2001, from 25,000 to 55,000 (Figure 31), while the number of PAs in clinical practice grew by 57% (from 27,000 to 43,000) between 1996 and 2001 [AAPA, 2002]. The ratio of practicing PAs to patient care physicians has also increased during this period, because the number of PAs is growing faster than the supply of physicians.

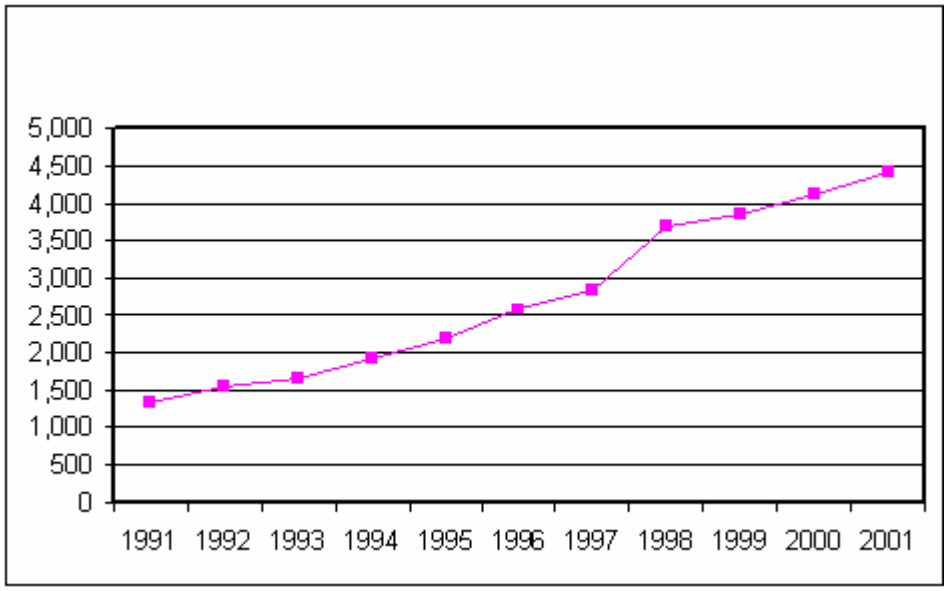
Figure 31: Estimated Supply of Total Individuals Eligible to Practice as PAs, U.S., 1991 to 2000



Source: AAPA

In 2001, there were 135 PA education programs in the U.S. The number of annual graduates of PA educational programs has also increased dramatically, from fewer than 1,500 in 1991 to more than 4,000 today (Figure 32).

Figure 32: Graduates of PA Education Programs, U.S., 1991 to 2001



Source: AAPA

Only about 1% of PAs (about 430) reported geriatrics as their primary area of practice in 2002 [AAPA, 2001].

Demand

The BLS predicts that total employment of PAs will grow from about 58,000 to about 89,000 by 2010, an increase of about 54% (much faster than the average for all occupations) [BLS, 2003b]. About 31,000 of the 43,000 projected job openings will result from growth in the field, as PAs assume a greater role in health care due to several factors:

- PAs provide physician-type services to the population at a lower cost, so they can potentially improve the cost-effectiveness of health care. This may be particularly valuable in specialty care, where the use of PAs for routine tasks allows physicians to concentrate on more complex cases.

- Employment opportunities are expected to be particularly in good in areas or settings that have difficulty attracting physicians, such as rural and inner-city clinics [BLS, 2003a].

- Physicians and institutions are expected to employ more PAs to provide primary care and to assist with medical and surgical procedures (because PAs are cost-effective and productive members of the health care team) [BLS, 2003a].

Issues for Physician Assistants and Older Adults

Scope of practice. Much of the demand for PAs is determined by their legal scope of practice, which varies by state. Between 1992 and 2000, professional practice options for PAs expanded in most states [BLS, 2003a]. Furthermore, professional practice for PAs became more consistent across states during this time. Due to a greater comfort working with PAs on the part of

physicians and other providers, as well as the cost-effectiveness of using PAs for routine medical care, PAs are now positioned to assume even greater roles in the health care system. Depending on the preferences of supervising physicians and their patients, much more of the care received by older adults could be provided by PAs.

Gap Between Future Demand and Expected Production

Educational production of physician assistants currently appears adequate to meet demand over the next decade or more. Shortages in the profession are not anticipated in the near future. PAs have not yet reached their full potential in the treatment of older adults, however, and the use of PAs in new models of care may affect the demand trajectories for the profession:

- PAs could provide far more services in long-term care delivery systems. Not only could PAs provide primary care in such settings, but they also could play an important role in coordination of care, serving as clinical leaders of interdisciplinary delivery teams. They could be on-site, working with nursing staff, with the supervising physician located in a remote central office.

- Similar care models could be set up for special rehabilitation units dealing with the treatment of patients who have broken bones (orthopedic specialty), eating disorders (gastro or internal medicine), etc.

- PAs could also be leaders of special acute-care teams that traveled to facilities as needed to supervise short-term recovery from injury or illness.

- As older adults constitute a growing percentage of those patients seen by PAs, a special education track or a post-graduation certificate might be a worthwhile credential for the profession to introduce (especially if more employment opportunities occur for PAs in long-term care).

C. Advanced Practice Nurses

Summary

Advanced practice nurses (APNs) are registered nurses who are qualified through additional training or education to provide clinical medical care to patients and have acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practices. APNs may be certified as nurse practitioners (NPs), clinical nurse specialists (CNSs), certified registered nurse anesthetists (CRNAs), or certified nurse midwives (CNMs). Nurses are trained in an approach that emphasizes chronic care and patient management, as opposed to the medical model that emphasizes acute care, and so the skills and orientation of APNs are especially well-suited to the care of the older adults. They may also be able to spend more time with patients than physicians, which is important as older patients may require more time per office visit than younger patients.

APNs are employed in hospitals and ambulatory care settings (as well as public or community health settings and non-patient care settings such as nurse education programs). Unfortunately, they are employed in only modest numbers in long-term care settings, where they could make a major contribution to quality of care for older adults. Nevertheless, older adults account for a large proportion of the patient base for many APNs (other than CNMs). Those older than age 65 receive 24% of physician office visits, 30% of hospital-based physician outpatient visits, and 36% of hospital inpatient nights, despite being only 12.7% of the U.S. population [AHRQ, 2000].

All graduates of BSN programs should have basic knowledge and skills in geriatrics, based upon recommendations by the American Association of Colleges of Nursing (AACN). Additional clinical knowledge of geriatrics is required of family practice and adult practice NPs on their certifying examinations. Certifications in gerontological nursing are also available for NPs and CNSs who wish to specialize in the treatment of older patients. Geriatrics education in nursing is receiving increased attention due to initiatives such as the John A. Hartford Foundation Institute for the Advancement of Geriatric Nursing, at New York University, which is focused on developing best practices in geriatric nursing.

APNs are older on average than the overall U.S. civilian labor force, indicating that half of current APNs will reach retirement age by the year 2020. Replacement needs will therefore be high in the near future. Demand for APNs is also likely to grow as the numbers of older people in the population increase. In 2001, about 8,000 advanced practice nursing degrees were awarded by 539 post-RN programs, 43 certified registered nurse anesthetist programs, and 18 certified nurse midwife programs [NCES, 2000]. Production of certified Geriatric Nurse Practitioners and certified Gerontological Clinical Nurse Specialists has declined in recent years, however [NCGNP, 2003; ANCC, 1999; NCSBN, 2003].

Changes in utilization and reimbursement patterns could potentially increase future demand for APNs. Currently, APN services are reimbursed at lower rates than physician services (e.g., NPs are reimbursed at only 85% of physician rates), and this may depress employer demand for APNs. Increases in reimbursement, therefore, could increase demand. APNs may also be used

more effectively in settings, such as home health care and assisted living, where greater numbers of older adults are served, and as part of interdisciplinary care teams because nursing training focuses more strongly on chronic care rather than acute care. Greater visibility of the profession and an expanding scope of practice could also increase demand.

Advanced Practice Nurses (APNs): Services to Older Adults

Advanced practice nurses (APNs) are an important part of the health care delivery system. APNs are RNs who are qualified through additional training or education above the bachelor's degree to provide clinical medical care to patients. They have also acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practices. Their scope of practice varies by state, but APNs may provide some of the same services provided by physicians (including, in many cases, prescribing medication). APNs may also have specialized training in certain fields. They may have more time to spend with patients per visit than other health care providers, and they help to bring high-quality health care to chronically undeserved populations, such as older adults, the poor and rural and inner-city populations [KATU, 2003].

Nurse Practitioners. (NPs) provide the type of basic primary health care services that have traditionally been provided by physicians. In addition to diagnosing and managing illness, NPs can prescribe medication independently in most states [AANP, 2002]. NPs may specialize in a number of areas, including geriatrics. ***Clinical nurse specialists*** (CNSs) are nurse clinicians who specialize in a particular medical or surgical specialty. They may also be certified as NPs, although this is not required. CNSs not only provide direct patient care, but are often involved in the administration of health care delivery systems [NACNS, 2003]. In addition to being qualified as providers and administrators, CNSs may also be educators, consultants, researchers, and case managers. ***Certified registered nurses anesthetists*** (CRNAs) are employed by hospitals in large numbers. As members of surgical teams, they administer anesthesia, monitor patient vital signs, and oversee recovery from anesthesia. CRNAs administer 65% of the anesthetics given to patients annually, and are the sole anesthesia providers in the majority of rural hospitals. ***Certified nurse midwives*** (CNMs) are qualified to provide both obstetrical care and well-patient gynecological care, but their primary area of practice is obstetrics. The typical CNM thus treats few post-menopausal patients, although their preventative gynecological services could potentially be of benefit to older women.

NPs in particular provide a great deal of service to older patients. About 23% of office-based and 47% of hospital-based ambulatory visits to NPs are by patients age 65 and older, and about 15% of older adults have seen an NP for office-based services in the past year [AHRQ, 2000]. To put these numbers into perspective, NPs see as many older people (as a percentage of their patient base) as physicians in office-based practice, and see proportionately a greater number of older adults than physicians on a hospital-based outpatient basis.

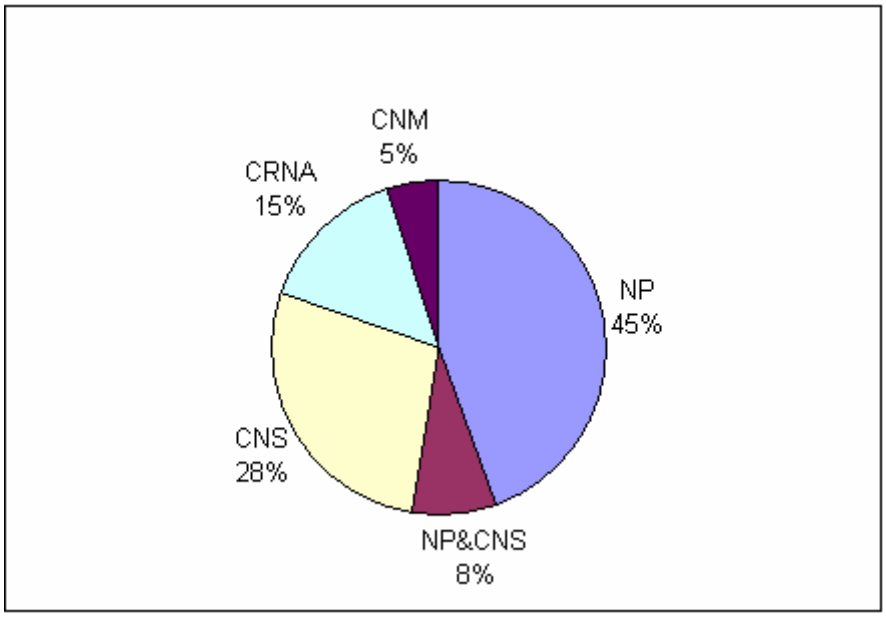
Profile of the Current Advanced Practice Nurse Workforce

In 2000, there were approximately 122,000 active, licensed, advanced practice nurses in the U.S. including 78,500 nurse practitioners, 11,000 clinical nurse specialists, 26,500 certified registered nurse anesthetists, and 6,000 certified nurse midwives [NCSNB, 2000].

Advanced practice nurses are trained in accredited programs that grant either a post-bachelor's certificate or a master's degree. They usually enter advanced training from a nursing (i.e., BSN) background, although NPs do not necessarily have a BSN. A number of different licensing examinations are further required for APNs. About 7% of registered nurses are trained for advanced practice (about 150,000 in the year 2000, although they are not all actively practicing). Also in 2000, most APNs were nurse practitioners (45%), followed by clinical nurse specialists (28%). About 8% were trained as both an NP and CNS. Certified registered nurse anesthetists were 15% of APNs, while certified nurse midwives were 5% (see Figure 33).

NPs who provide basic primary care are likely to treat the greatest number of older patients. CNSs and CRNAs also treat substantial numbers of older adults, while CNMs are likely to treat very few.

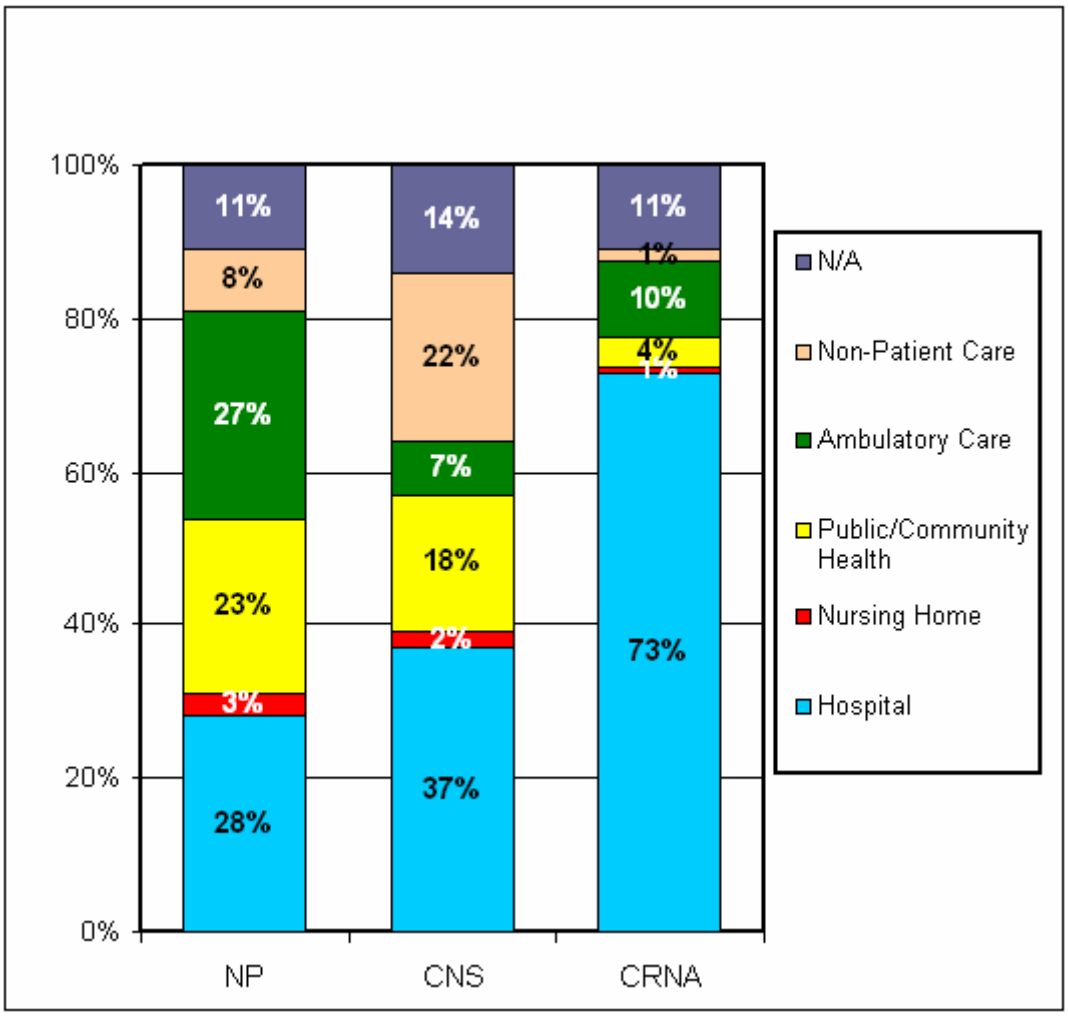
Figure 33: Distribution of APNs, U.S., 2000



Source: USDHHS, 2000

The largest employer of all types of APNs is hospitals, followed by ambulatory care (Figure 34). Those older than age 65 account for 29% of hospital discharges, 36% of hospital inpatient nights, and 17% of emergency room visits. They also account for 24% of office-based and 30% of hospital-based outpatient physician visits [AHRQ, 2000]. Certainly, APNs in hospital and ambulatory care settings will treat very large numbers of older patients. Very small percentages of APNs work in nursing homes, where the large majority of patients are older adults, but NPs are the most likely to do so (with 2.6% of NPs employed in such a setting).

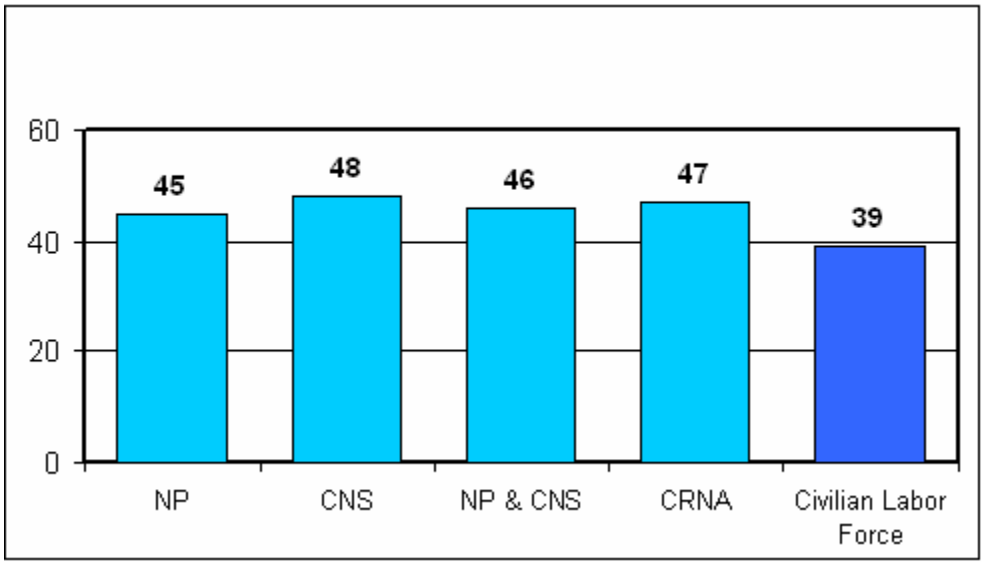
Figure 34: Percentage of APNs by Work Setting, U.S., 2000



Source: USDHHS

All groups of APNs are older on average than the overall U.S. civilian labor force (Figure 35), in large part because most APNs entered advanced practice with many years experience as RNs. Those who were both NPs and CNSs had a median age of 46. While the median age of the civilian labor force in 2000 was 39, the median age of NPs was 45, of CNSs was 48, and of CRNAs was 47. This means that half of NPs will turn 65 by 2020, half of CNSs will turn 65 by 2017, and half of CRNAs will turn 65 by 2018. Undoubtedly, large numbers of APN retirements will occur in the next ten to twenty years.

Figure 35: Median Age of APNs and the Civilian Labor Force, U.S., 2000



Source: USDHHS; BLS

Some APNs have suggested that the country may not see the same rapid aging among APNs in the future. Advanced practice nursing is a relatively new career, and up until this point has drawn entrants largely from the ranks of experienced RNs. Advanced practice nursing is attractive to many nurses because it offers more opportunities outside of the hospital setting, and as it becomes more established as a career option, there will be more direct entry into APN status by younger nurses, ameliorating some of the effects of widespread APN retirements [Center for Health Workforce Studies, 2002d].

Training, Education, and Credentials Related to Aging

General Curriculum. In 1998, the Health Resources and Services Administration (HRSA) recommended that all basic nursing programs include content regarding the health care of the older adult in their curricula, and that programs that prepare adult and family nurse practitioners or clinical specialists also require specific courses in geriatrics/gerontology. It is not apparent to what extent these recommendations have been implemented. The credentialing examinations for both family practice and adult practice nurse practitioners include clinical knowledge of geriatrics, indicating that at least a minimal level of geriatrics proficiency is demanded of new NPs [American Academy of Nurse Practitioners, 2003].

The John A. Hartford Foundation is currently engaged in a number of initiatives to improve the geriatric training of nurses, including the John A. Hartford Foundation Institute for the Advancement of Geriatric Nursing, at New York University (focused on developing best practices in geriatric nursing); a program with the AACN to evaluate and expand geriatric curricula in nursing programs; and several Centers of Geriatric Nursing Excellence (which train geriatric nurses and engage in geriatric nursing research).

Specialization and Certification. Certifications in gerontology/geriatrics are available to NPs and CNSs. NPs may become certified as gerontological nurse practitioners (GNPs) by graduating

from a professional program with a concentration in aging, and passing a credentialing examination administered by the American Nurses Credentialing Center (ANCC). Thirty-eight out of 129 NP programs offer a specialization in gerontological nursing [www.allnursingschools.com, 2003], and about 3,400 NPs hold such certification [National Conference of Gerontological Nurse Practitioners (NCGNP), 2003].

Current guidelines for specialization require GNPs to be able to demonstrate competence in a number of areas, including the assessment of health status among the older adults, the diagnosis of health status among older adults, and planning of care and implementation of treatment among older adults [National Organization of Nurse Practitioner Faculties, 2003]. The credentialing examination includes coverage of assessment, diagnosis, planning, intervention, evaluation, health promotion, scope of practice and ethics, and application of theories to advanced gerontological nursing practice [ANCC, 2003].

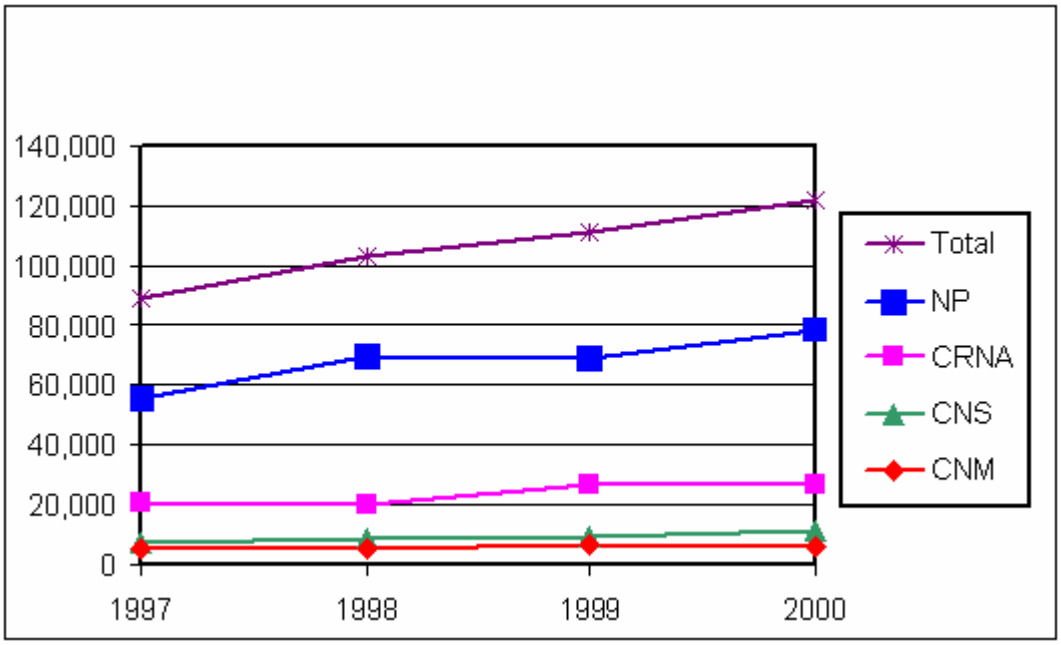
Clinical nurse specialists may also take credentialing examinations in gerontological nursing or in home health nursing. The gerontology credential for CNSs is directed towards preparing the CNS for practice, case management, education, consultation, research and administration, rather than focusing on direct patient care (as does the NP credential in gerontology) [ANCC, 2003]. Twenty-three programs provide gerontological specialty training for clinical nurse specialists [www.allnursingschools.com, 2003], and about 500 to 600 CNSs are estimated to currently hold such certification.

Supply Trends

***Replacement*.** As APNs are older on average than the U.S. civilian labor force overall, high levels of replacement need due to retirements are anticipated. By the year 2020, well over half of current APNs will have reached the age of 65. It is therefore estimated that at least 40,000 job openings for NPs, 5,500 for CNSs, 13,000 for CRNAs, and 3,000 for CNMs will occur by the year 2020 based on replacement needs alone.

Licensure. The number of licensed advanced practice nurses in the U.S. grew dramatically in the past few years. In only four years, the number of active licensed NPs in the US grew by more than 40% (from 55,500 in 1997 to 78,500 in 2000), while the number of active licensed CRNAs increased by 27% (from 21,000 in 1997 to almost 27,000 in 2000) (Figure 36). CNSs also experienced substantial growth (52%), although CNMs grew comparatively little (5%) during the same period.

Figure 36: Total Number of Active Specialty Licenses in Nursing, U.S., 1997-2000

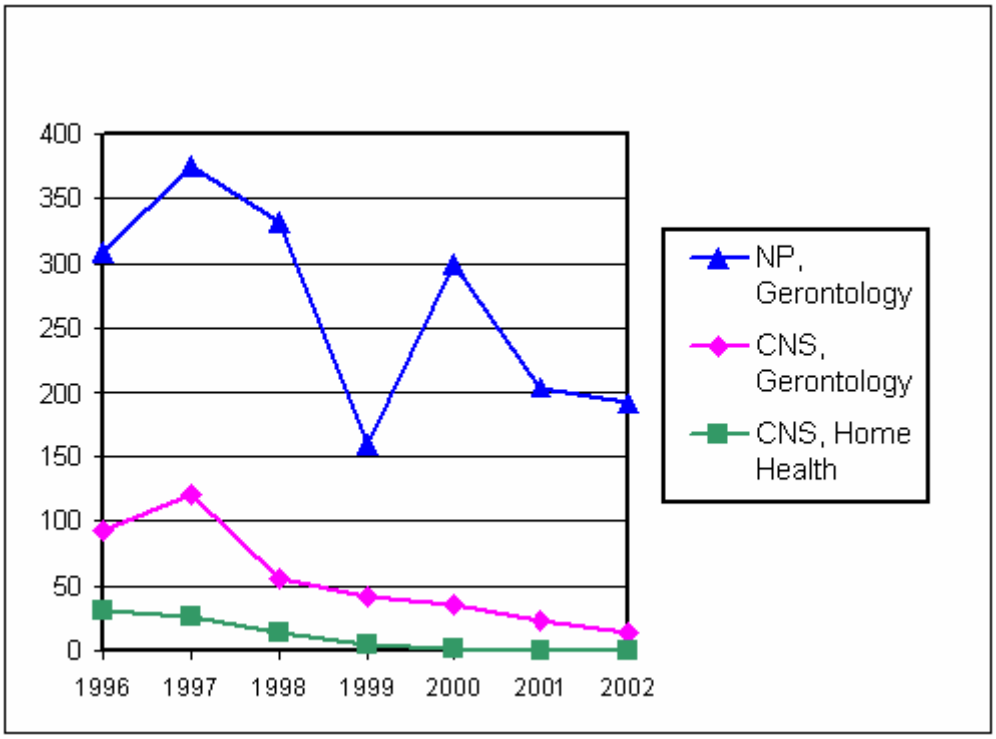


Source: USDHHS

Geriatric/Gerontological Specialization. Although the number of APNs has risen, the number of master's prepared geriatric nurses remains very small. Approximately 3,400 NPs nationally are certified by the American Nurses Credentialing Center (ANCC) as Geriatric Nurse Practitioners [NCGNP, 2003], and only about 600 are certified Gerontological Clinical Nurse Specialists (GCNS) [ANCC, 1999; NCSBN, 2003].

The numbers of APNs taking and passing the certification examinations in gerontology and home health care have declined steadily over the past few years. In 2002, only 191 NPs and 14 CNSs passed the gerontological nurse practitioner examination, and none passed the home health certified nurse specialist examination (Figure 37).

Figure 37: Geriatric Certificates Awarded to APNs, 1996 to 2002



Source: ANCC, 2003

Demand

Demand for registered nurses generally is projected to increase by more than 25% between 2000 and 2010 [BLS, 2003b]. Demand for advanced practice nurses should increase at least this much, and possibly more as non-physician practitioners such as NPs assume a more central role in the provision of health care:

- Older adults account for 24% of all office-based and 30% of all hospital-based ambulatory care physician visits, 36% of all hospital inpatient nights, 17% of all emergency room visits, and 91% of all nursing home residents [AHRQ, 2000]. All of these settings employ APNs, so greater numbers of older Americans will increase demand for APN services.

- Older people use the services of NPs more than people younger than age 65 (perhaps because they require more provider time per office visit than younger patients). Although they were only 12.7% of the U.S. population in 2000, those age 65 and older accounted for 23% of office-based and 47% of hospital-based ambulatory NP visits [AHRQ, 2000]. As the population ages, the demand for APNs may increase, even though it is currently low.

- NPs may be better trained in case management and health education for the chronically ill than the typical physician, because the nursing approach is better suited to chronic and long-term care than the medical approach, which is focused on acute care. Demand for NPs in long term care may increase.

- Many patients do not know or understand the role of APNs, and are therefore unlikely to request them. As more patients become familiar with APNs, there will be more demand for their services [CHWS, 2002d].

Issues for Advanced Practice Nurses and Older Adults

Salary and reimbursement. Lack of reimbursement can be an impediment to access by older adults to the care delivered by APNs. Most APNs provide a great deal of preventative care, which is not reimbursed by Medicare. Between 1996 and 2000, as Medicare regulations were tightened in terms of prohibiting APN preventative care from being billed together with ("incident to") acute care given by physicians in the same office visit, the utilization of NPs by older people in office-based settings has decreased by 23% [AHRQ, 2000].

Access/Models of Care. Long-term care is a setting where expanded APN involvement could potentially improve patient care, because APNs are well-prepared to provide chronic care and patient management services, but such involvement is atypical. Only 3% of NPs and 2% of APNs worked in nursing homes in 2000. Because so few APNs are currently working in long-term care, APN training programs do not provide many opportunities for clinical training in long-term care facilities.

Interdisciplinary teams with APN members could also be potentially important assets in long-term care. Extensive use of such teams, however, has not yet developed in the U.S. Health care institutions usually place physicians in the leadership role even when—as in the case of chronically ill older patients—APNs may be better suited to providing direction for the overall management of care.

***Visibility*.** Currently, the majority of the nation's ambulatory care is received from physicians. People tend to see a physician first, and then their care may be managed by an APN. Many consumers do not know or understand what APNs do, so they are unlikely to seek out their services. There is not enough public awareness, recognition, or appreciation of the role of APNs. If professional visibility increases, demand for APNs may rise.

Gap Between Future Demand and Expected Production

The educational production of APNs has grown or remained stable since 1990, with the number of NPs growing especially rapidly. This growth may be insufficient to meet future demands. Annual replacement needs are likely to accelerate over the next ten to twenty years (with 50% of current APNs reaching age 65 by the year 2020), which would require accelerated production of APNs. It is not conclusive whether increased production will occur, and if the increases will be proportionate to the increased replacement needs.

APNs have also not been used to their full potential in settings containing large numbers of older people (especially in nursing homes and other long-term care settings). APNs, especially NPs, are ideal candidates to integrate into long-term care, especially as case managers and leaders of interdisciplinary care teams. As the number of older Americans rises, and APNs are used more effectively in the treatment of this population, demand for APNs may rise substantially.

Another concern is that the production of APNs specializing in gerontology has decreased markedly in the past five years, despite growing numbers of older patients. Production of such specialists is potentially important if APNs become more involved in long-term care. All APNs, however, must be adequately trained in geriatrics in the future, as they will deal with a progressively greater number of older patients as the population ages.

D. The Nursing Professions and Occupations

Summary

Professional nurses (RNs and LPNs) and direct-care nursing paraprofessionals are employed in large numbers in hospitals, physician offices, nursing and residential care facilities, and home health care services across the U.S. Since older adults constitute 60% of ambulatory care visits; 80% of home care visits; 48% of hospital patients; and 85% of all nursing home residents [Rosenfeld, Bottrell, Fulmer, & Mezey, 1999], a substantial fraction of professional nurses and direct-care paraprofessionals provide services to older adults.

Geriatric education in the RN curriculum is relatively limited for both registered and practical nurses, and direct-care paraprofessionals such as nursing aides and home health aides are often not required to have formal training. Curriculum recommendations have been developed (although not necessarily implemented) for baccalaureate nursing programs, and the credentialing examination for licensed practical nurses includes some aging-related content.

Between the years 2000 and 2010, the demand for registered nurses is projected to increase by 26%, employment of licensed practical nurses by 20%, employment of nursing aides by 24%, and employment of home health aides by 47%. The occupation expected to experience the highest growth of all health professions/occupations is personal and home care aides, projected to grow by almost 63%. As nursing professionals are older, on average, than the U.S. civilian labor force overall, job openings due to replacement needs will also demand large numbers of RNs and LPNs [BLS, 2001].

Currently, about 85,000 degrees in nursing are awarded annually [NCES, 2000], but many graduates of nursing programs neither enter practice as RNs nor remain in practice for their full professional lifespan. Similarly, 35,000 candidates passed the credentialing examination in licensed practical nursing in 2001 [NCSBN, 2002], but many of them will not remain in the profession.

The supply of nursing and home health aides is difficult to assess, as they are not required to attain a degree or licensure, but turnover and retention problems are very serious for this occupation.

Most sources acknowledge a serious nursing shortage, which may become more severe as the population continues to age. Reimbursement issues, working conditions, and regulatory requirements are contributing factors. Various groups have advanced proposals and policy recommendations to address this shortage (e.g., forgiveness of nursing loans), but the efficacy and practicality of such proposals has not been proven.

The Nursing Professions: Services to Older Adults

The occupational title of “nurse” actually refers to several professions and occupations that provide direct patient care. “Nurses” include registered nurses (including advanced practice nurses, discussed in a separate chapter), licensed practical nurses, nursing aides, and home health aides. Nurses work in almost all types of health care environments and provide the majority of

direct patient care in many settings. They also act as liaisons with families and help assess many concerns family caregivers face. Nurses in the nursing home setting manage care for residents with all types of conditions, ranging from fractures to Alzheimer's disease.

Registered Nurses. Registered nurses (RNs) provide direct patient care (such as administering medications), educate and advise patients and their caregivers, and develop and manage nursing care plans. Although many RNs see patients in hospitals or doctors' offices, they may also work in nursing facilities (where they develop treatment plans and supervise licensed practical nurses and nursing aides) or home health organizations (where they care for and instruct patients and their families, and may supervise home health aides).

While much of their time is spent performing administrative and supervisory tasks, registered nurses (RNs) in nursing homes are also responsible for assessing residents' health condition, developing treatment plans, supervising licensed practical nurses (LPNs) and nursing aides, and performing procedures such as starting intravenous fluids [BLS, 2003a].

Registered nurses who have graduated from baccalaureate programs that adequately incorporate geriatrics into the curriculum bring special skills and services to the care of the older adults, including the ability to:

- assess the functional, physical, cognitive, psychological, social, and spiritual status of older adults;
- assess the living environment of older adults;
- analyze the effectiveness of community resources in assisting older adults and their families;
- assess family knowledge of skills necessary to deliver care to older adults;
- adapt technical skills (such as taking vital signs or giving injections) in accordance with changes common in older adults;
- prevent or reduce risk factors that contribute to functional decline in older adults;
- establish and follow standards of care to recognize and report elder mistreatment;
- screen, immunize, and promote healthy activities in older adults;
- recognize and manage geriatric syndromes common to older adults, and recognize the interaction of co-morbid conditions common to older adults;
- use technology to enhance older adults' function, independence, and safety;
- facilitate communication as older adults transition between care settings;

- assist older adults, families, and caregivers to understand and balance "everyday" autonomy and safety; and

- apply ethical and legal principles to the complex issues that arise in care of older adults.

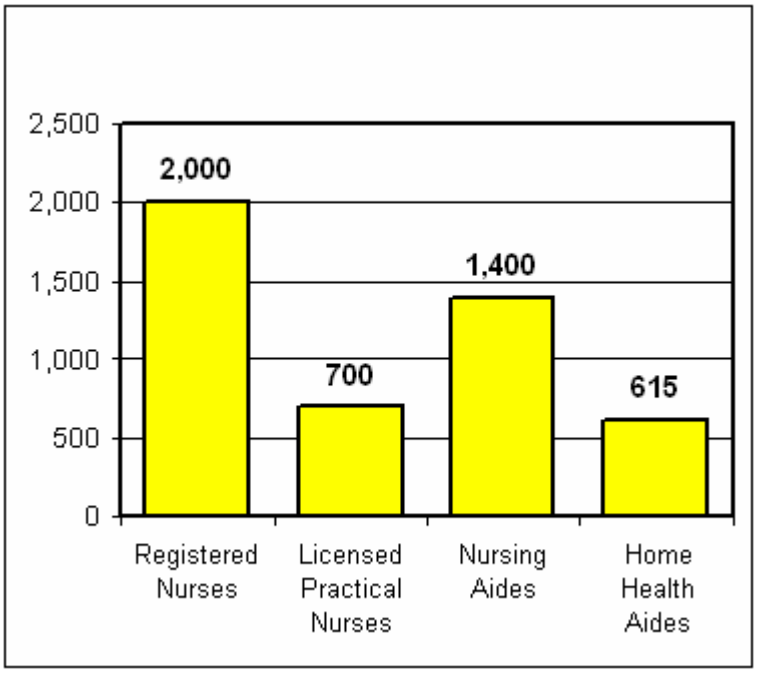
Licensed Practical Nurses. Licensed practical nurses or LPNs (who are also known as licensed vocational nurses [LVNs] in Texas and California) primarily perform basic bedside care. They take vital signs, change dressings, take samples for laboratory work, and attend to the general comfort of the patients. LPNs work under the supervision of RNs or physicians, but experienced LPNs may supervise nursing aides.

Nursing Aides and Home Health Aides. Home health aides and nursing aides are vital to the nation's health care system. Direct care paraprofessionals care for physically and mentally disabled individuals in long-term care settings, such as nursing homes, assisted living facilities, home care, adult day care, and hospice care [Agency for Health Research and Quality, 2002]. Nursing aides provide basic patient care under the direction of licensed nursing staff, while home health aides primarily help older adults and the disabled to continue to reside in their own homes rather than in institutional settings. Both have duties that include assistance in activities of daily living (e.g., feeding, dressing, bathing, toileting, and transferring), as well as instrumental activities of daily living (e.g., shopping, cooking, and cleaning). Home health aides also directly deliver various health services, such as checking vital signs and assisting with medical equipment, under supervision that is typically provided by a registered nurse [BLS, 2003a].

Profile of Current Nursing Workforce

The nursing workforce in the U.S. in 2000 numbered nearly 5 million workers (Figure 38). These included 2 million RNs, 1.4 million nursing aides, 700,000 LPNs, and 615,000 home health aides.

Figure 38: Numbers of Nurses (in millions) by Type, 2000

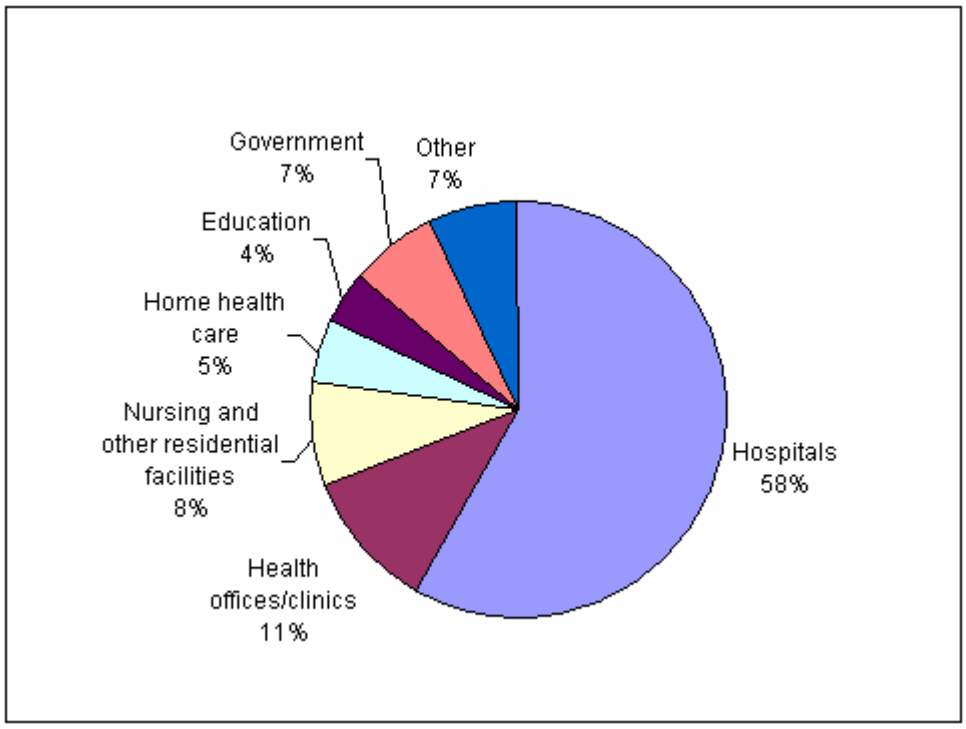


Source: BLS, 2003

Registered Nurses. Registered nurses filled 2 million jobs in the U.S. in 2000, making them the largest health care profession. RNs typically hold either an associate degree in nursing (ADN), a Bachelor of Science degree in nursing (BSN), or a diploma from a hospital-administered nursing school. Management-level nursing positions often require a graduate degree [BLS, 2003a]. In total, 37% percent of all self-reported RNs have an associate degree, 45% have a bachelor's degree, and 10% have a graduate or professional school degree [BLS, 2001].

Fifty-eight percent of RNs are employed in hospital settings, where about 48% of their patients are age 65 and older. The use of RNs in hospital settings has, however, been changing. Increasing numbers of hospital nurses are assigned to non-inpatient bed units, such as outpatient departments, recovery rooms, and labor/delivery [HRSA, 1998]. In 2000, 11% of RNs worked in the offices and clinics of physicians and other health and allied health providers (where about 60% of patients are age 65 and older), 8% worked in nursing, personal care, and non-nursing residential facilities (where about 85% of patients are age 65 and older), and 5% worked in home health care (where 80% of patients are age 65 and older). Four percent of RNs worked in schools, and 7% of RNs worked for local, state, or federal governments [BLS, 2003b] (Figure 39).

Figure 39: Distribution of Registered Nurses by Setting, 2000



Source: OES data (BLS, 2003)

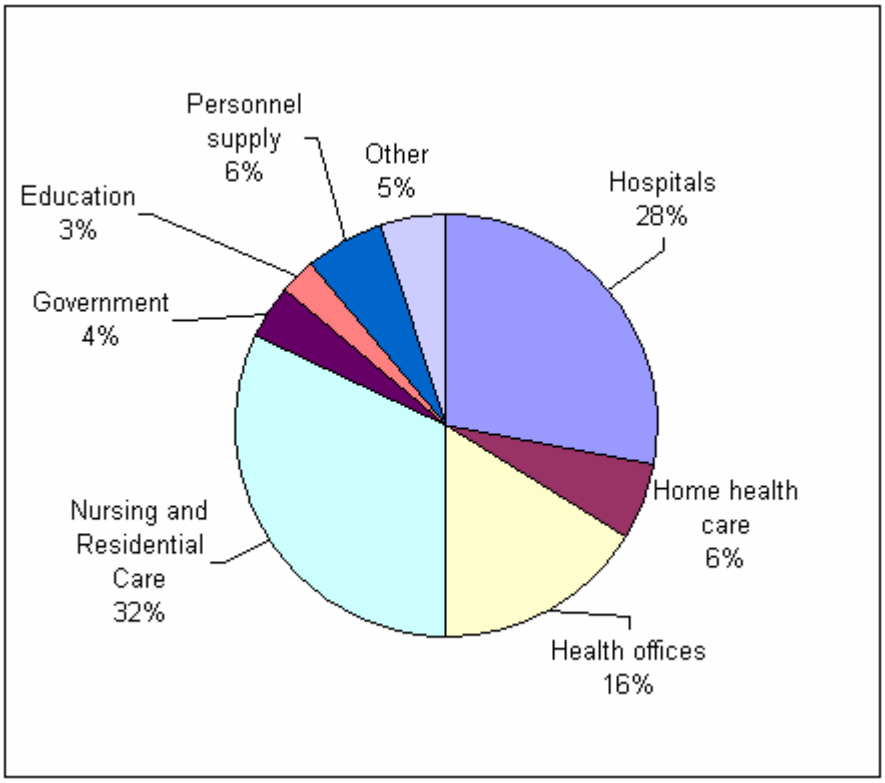
The median age for RNs is 43 years -- higher than the average median age (40 years) for the American workforce overall [BLS, 2001]. Thirteen percent of RNs are age 55 or older, while another 31% are age 45-54. In sum, by 2020 45% of RNs will have reached retirement age. Not only will these older RNs retire in large numbers, but average work hours for RNs also decline slightly after age 55, from a mean of more than 33 hours a week for RNs younger than 55 to a mean of fewer than 31 hours a week for those older than age 55 [BLS, 2001].

Licensed Practical Nurses. Licensed practical nurses filled 700,000 jobs in the U.S. in 2000. In all states, LPNs must complete a state-approved practical nursing program (typically lasting about a year), and pass a licensing examination [BLS, 2003b]. Forty-nine percent of LPNs have an associate degree, and another 5% have a bachelor's degree [BLS, 2001].

Figure 40 shows that in 2001 the most common employment settings for LPNs were hospitals (28%) and nursing/personal care and residential facilities (32%). Sixteen percent of jobs were in physicians' or other practitioners' offices, and 6% in home health care. Six percent of LPN positions were in personnel supply services [BLS, 2001].

The median age of LPNs is 44, compared to 40 for the civilian labor force as a whole. Almost 17% of LPNs are age 55 or older, and another 31% of LPNs are age 45-54. Not only will large numbers of LPNs reach retirement age in the next ten to twenty years, but work hours also decrease for those older than age 55 to 31 hours a week, as compared to 34 for those younger than age 55 [BLS, 2001].

Figure 40: Distribution of LPNs by Setting, 2001



Source: OES data (BLS, 2003)

Nursing Aides and Home Health Aides. In 2000, 1.4 million people were employed as nursing aides, and another 615,000 as home health aides. Direct care workers are collectively the largest group of health care workers in the U.S. In addition to these workers in the formal health care system, there are two or three times that number of people who provide similar services outside the formal long-term care system on either a paid or volunteer basis.

There is no formal education for nursing aides. In fact, 17% of nursing aides have not completed a high school diploma or equivalency (although 39% have completed at least some college). Training is required for aides in certain settings, however. The Centers for Medicare and Medicaid Services (CMS), for example, require a specified number of hours of training for nursing home aides[9]. Some nursing homes and hospitals offer their own training. Nursing aide training is also offered in high schools, vocational-technical schools, and some community colleges.

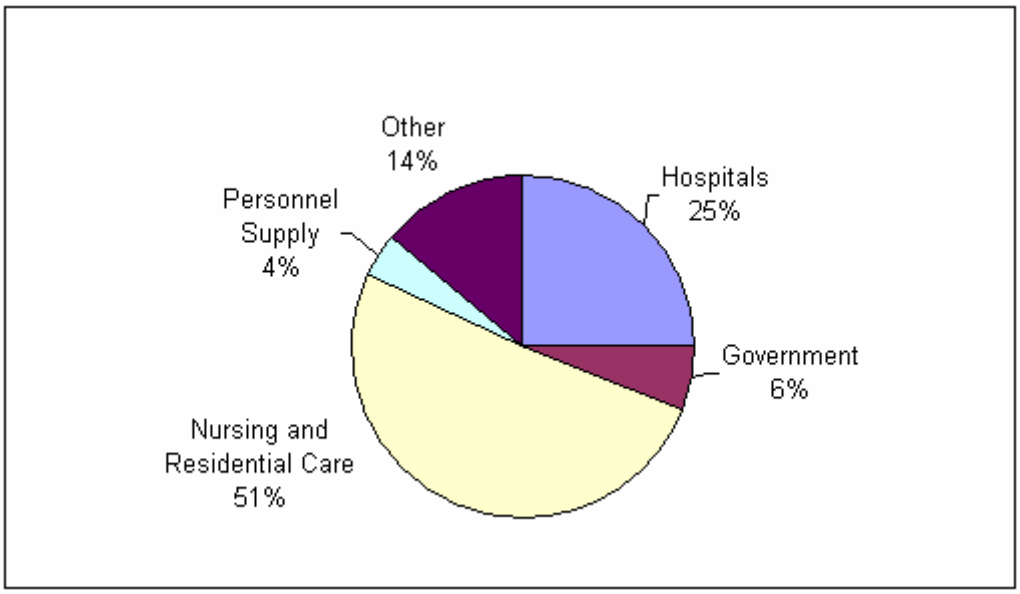
[9] A nursing aide is deemed to satisfy the requirement of completing a nursing aide training and competency evaluation program if, before July 1, 1989, he or she completed a nursing aide training and competency evaluation program of at least 60 hours and made up at least the difference between the number of hours in the program he or she completed and 75 hours in supervised practical nursing aide training, or in regular in-service nursing aide education.

A nursing aide is deemed to satisfy the requirement of completing a nursing aide training and competency evaluation program if, before July 1, 1989, the individual was found competent (whether or not by the state) after completing nursing aide training of at least 100 hours duration [CMS, 2000].

Home health aides must be able to pass a federally mandated competency exam in order for their employers to receive reimbursement from Medicare. Training is available for home health aides who wish to take the examination, and the National Association for Home Care offers a national certification.

Figure 41 shows that in 2000 the setting in which the largest number of nursing aides was employed was nursing and residential care facilities (51%). Another 25% worked in hospitals, and about 6% worked in local, state, or federal government. About 4% of nursing aides worked for personnel supply services.

Figure 41: Distribution of Nursing Aides* by Setting, 2000

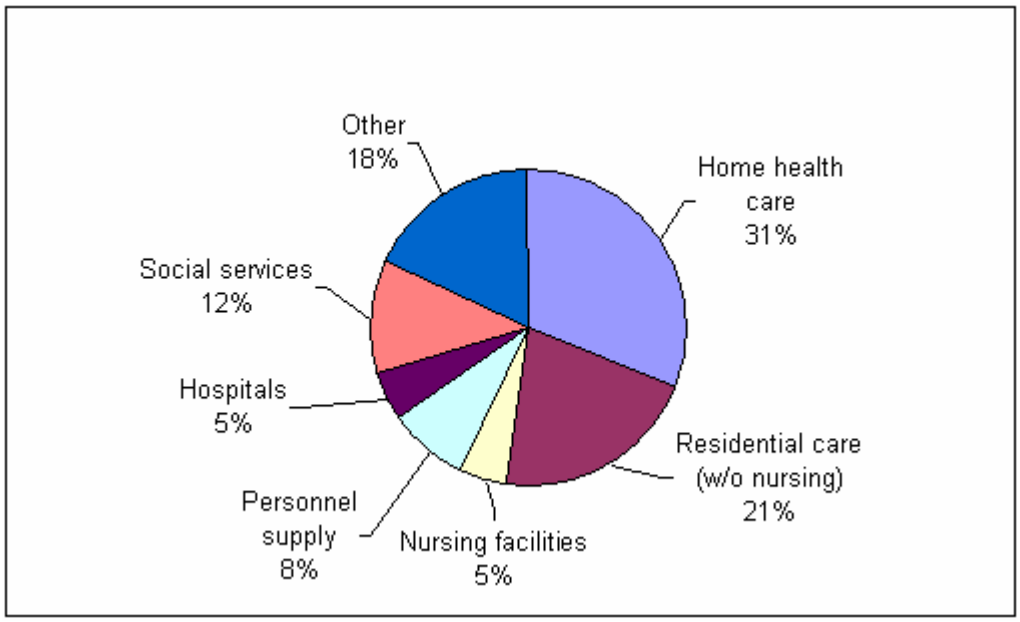


Source: OES data (BLS, 2003)

*Nursing aides in OES includes orderlies and attendants.

In contrast, only 5% of home health aides were employed in nursing facilities, and only 5% worked in hospitals. However, 21% of home health aides worked in residential care (without nursing) and 31% worked in home health care, the largest setting for this workforce in 2000 (Figure 42).

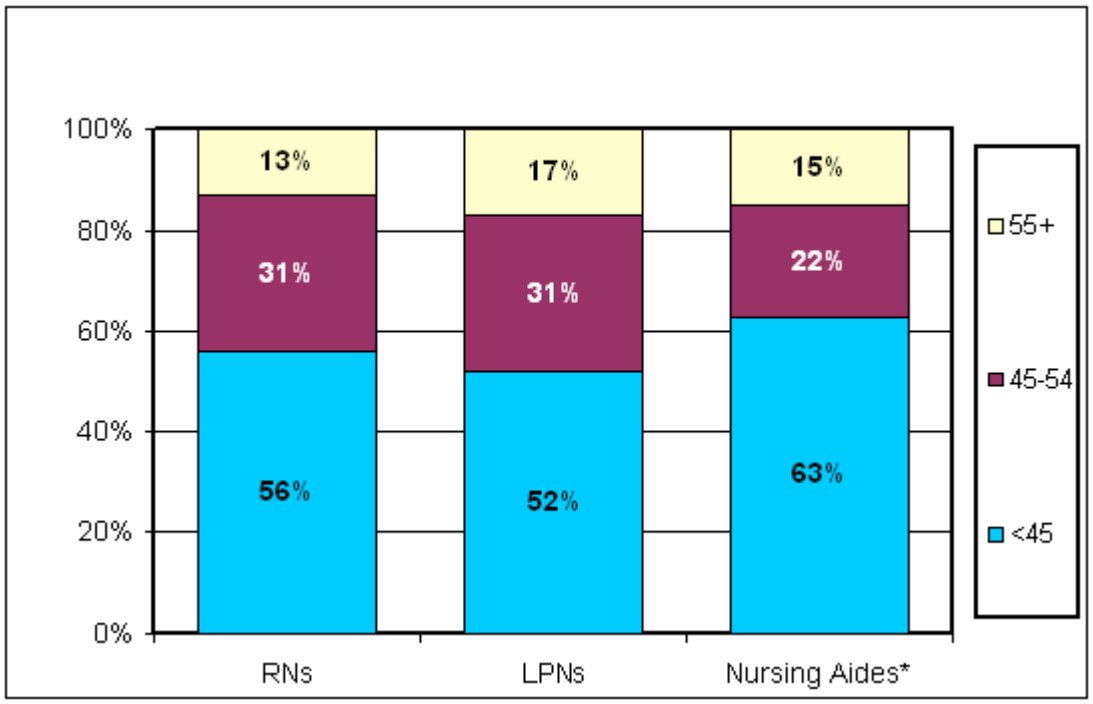
Figure 42: Distribution of Home Health Aides Across Care Settings, 2000



Source: OES data (BLS, 2003)

Nursing aides were about the same age, on average, in 2001 as the civilian labor force overall. The median age of nursing aides was 39, compared to 40 for the civilian labor force. Sixty-three percent of nursing aides were age 45 or younger, while only 15% were age 55 and older, and 22% were age 45-54 (Figure 43). LPNs had an older workforce compared to nursing aides and RNs in 2001. A full 17% of LPNs were age 55 and older and an additional 31% were between 45 and 54. Slightly more than half of LPNs were age 45 or younger. Thirteen percent of RNs were age 55 and older, 31% were age 45-54, and 56% were age 45 or younger.

Figure 43: Age Distribution of Nurses in the U.S., 2001



Source: CPS data (BLS, 2001)

*Nursing aides in the CPS include orderlies and attendants.

Training, Education, and Credentials Related To Aging

Registered Nurses. Most nurses practicing today have limited preparation in the principles of geriatric nursing care. Only 23% of baccalaureate nursing programs require a course in geriatric nursing as part of the general curriculum [Rosenfeld et al., 1999]. Geriatrics in the nursing core curriculum has received greater attention recently, however. The Association for Gerontology in Higher Education (AGHE), the National League for Nursing (NLN), and the Bureau of Health Professions have identified core curriculum and terminal objectives for entry-level professional nurses in the area of geriatrics. The American Association of Colleges of Nursing (AACN) recommends thirty aging-related competencies to be included in the general baccalaureate nursing curriculum, which they deem necessary for nurses to provide high-quality care to older adults and their families [AACN, 2000]. These include:

- aspects of critical thinking about aging (e.g., recognizing one's own values and attitudes about aging);
- communication with older adults;
- assessment of older adults;
- use and adaptation of technical skills for older adults (e.g., taking vital signs, giving injections, using assistive devices);
- disease prevention and risk reduction among older adults;
- management of geriatric syndromes and co-morbid conditions;
- use of technology to enhance the function of older adults;
- aging-related ethics;
- knowledge of diversity among older adults;

- knowledge of international models of geriatric care; and
- ability to evaluate health care systems and policies; and management and coordination of care for older adults.

Licensed Practical Nurses. The credentialing examination for LPNs assesses knowledge of a number of age-related issues, including the aging process, end of life issues, grief and loss, assistive devices, mobility issues, and palliative care [National Council of State Boards of Nursing, 2001].

LPNs may also attain a certification in long-term care through the National Association for Practical Nurse Education and Service (NAPNES). The certification is designed for those specializing in long-term care for any patients (not necessarily older adults) with chronic diseases or conditions. The examination focuses on the ability of practical nurses to meet the physiological and psychological "integrity needs" of chronically ill patients, as well as their knowledge of practice issues in the long-term care specialty and their leadership and management skills in long-term care settings. Successful applicants may use the initials CLTC (Certified in Long-Term Care) after their title.

Nursing Aides and Home Health Aides. As previously noted, no formal education or training is required of direct care paraprofessionals. Consequently, turnover rates for these workers are highest in the first three to six months of employment (due in part to inadequate training and support). When these workers receive training, classroom teaching often does not resemble typical on-the-job demands. Additionally, current clinical training does not adequately prepare paraprofessionals to handle challenging clients and families, interpersonal communications, problem solving, and critical thinking skills [AHRQ, 2002].

The federal government has enacted guidelines for home health aides whose employers receive reimbursement from Medicare. These home health aides are required by federal law to pass a competency test covering 12 areas: communication skills; documentation of patient status and care provided; reading and recording vital signs; basic infection control procedures; basic body functions; maintenance of a healthy environment; emergency procedures; physical, emotional, and developmental characteristics of patients; personal hygiene and grooming; safe transfer techniques; normal range of motion and positioning; and basic nutrition [BLS, 2003a]

Most groups advocate certification of long-term care paraprofessionals. However, workers are generally not differentiated in the workplace based on certification status. Also, since the education programs required for nursing aide and home health aide certification do not necessarily deal with caring for older adults, certification does not automatically equate to geriatric competence.

Supply Trends

Registered Nurses

Educational Production: The RN population increased by more than 1 million between November 1980 and March of 2000. In March of 2000, an estimated 2,694,540 people held licenses to practice as RNs in this country, an increase of 62% since 1980. The years between

1996 and 2000, however, marked the slowest growth in the RN population over the 20-year period between 1980 and 2000. The number of new RNs passing the RN licensing test (NCLEX) annually declined 26% between 1995 and 2000 [HRSA, 2002].

On average, the RN population grew only about 1.3% each year between 1996 and 2000 compared with average annual increases of 2% to 3% in earlier years. This slowdown in growth reflects fewer new entrants to the nurse population during this period, coupled with a larger volume of losses from the nurse population than in earlier years. In addition, between 1992 and 2000, the number of RNs not employed in nursing increased about 28% [USDHHS, 2001b].

In July 2002 the Nursing Reinvestment Act was signed into law. This legislation includes scholarships for nursing students who consent to practice in nursing shortage areas following graduation, grants for the establishment of best practices in nursing administration and the development of career ladders in nursing (McCann, 2002). This initiative may increase educational production of RNs, although there is currently not adequate funding for the program.

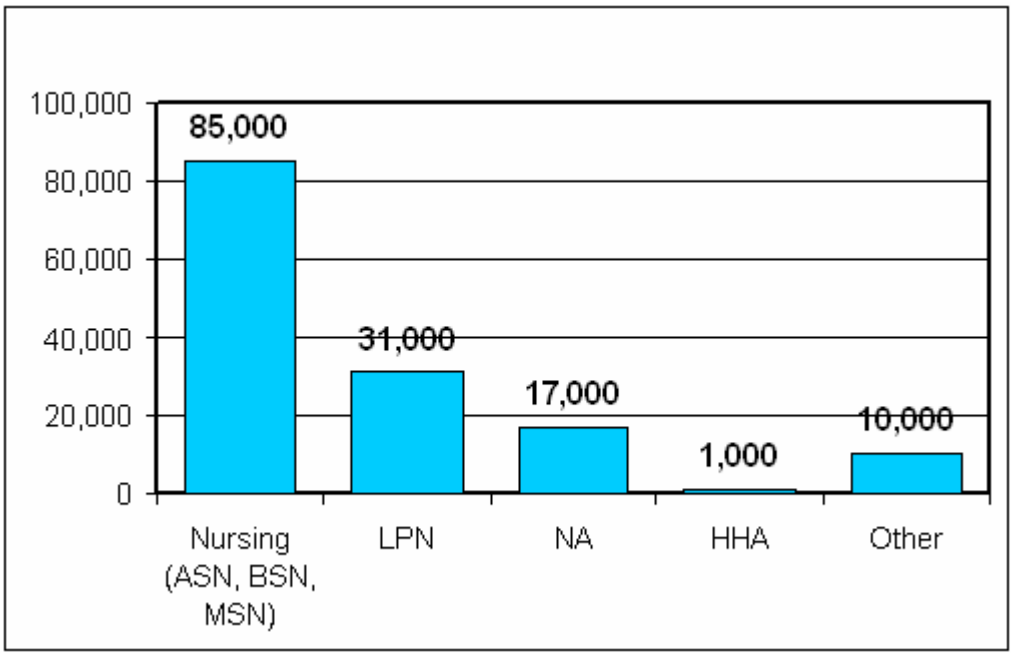
Replacement: The large numbers of RNs that entered the labor force in the 1970s are now older than age 40 and are not being replenished by younger and more recent cohorts of RNs. The reduction in younger-age RNs and the aging baby boom RNs will mean that the average age of working RNs (currently 41.9 years) will continue to rise, rising another 3.5 years to 45.4 years by 2010. At about the same time, unless educational production increases, the size of the RN workforce will begin to decline as RNs start to retire from nursing in ever greater numbers. Eventually the decrease in the supply of RNs could lead to shortages of RNs, the severity of which will depend on how demand for RNs will change in the future [Buerhaus, et al., 2000].

By 2010, 13% of current RNs will reach the age of 65, and by 2020 fully 44% of current RNs will turn 65. The BLS projects that about 443,000 job openings for RNs will occur between 2000 and 2010 as a result of replacement needs. In addition to retirements, these replacement estimates include RNs who will change jobs or leave the profession, which is a common problem in nursing overall.

Licensed Practical Nurses

Educational Production: The supply of active LPNs has remained relatively stable since 1995, even as the numbers of older people have slowly but steadily been growing. Educational programs are at best a rough indicator of the supply of new LPNs, because LPNs are not necessarily required to have post-secondary education. Nine hundred and forty post-secondary programs in practical nursing awarded 31,000 degrees or certificates in 2001 [National Center for Education Statistics, 2001] (Figure 44).

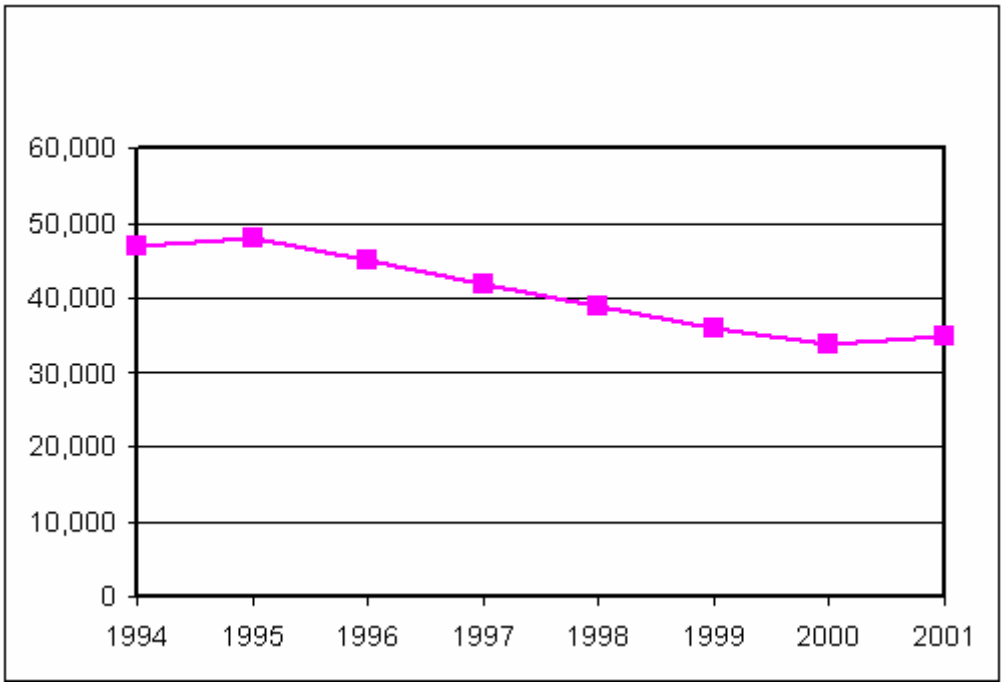
Figure 44: Educational Production of Nurses, U.S., 2001



Source: IPEDS, 2001

A better measure of LPN supply is the actual licensure of new LPNs. The number of successful candidates passing the LPN exam (NCLEX-PN) has dropped by 28% between 1995 and 2001 (from 48,000 to 35,000) (Figure 45). The shortcoming of licensure data is that not all successful candidates for licensure will actually become professional LPNs—many are already in the process of attaining their RN credentials, and will spend only a short time practicing as LPNs. For this reason, declines in licensure may actually overstate the decline of active LPNs. Between 1995 and 2001, for example, the number of candidates passing the licensure exam dropped by 13,000 [NCSBN, 2002], while the actual supply of working LPNs dropped by only 4,000 [BLS, 2000; BLS, 2002].

Figure 45: Number of Candidates Passing the LPN Licensure Examination (NCLEX-PN), 1995 to 2001



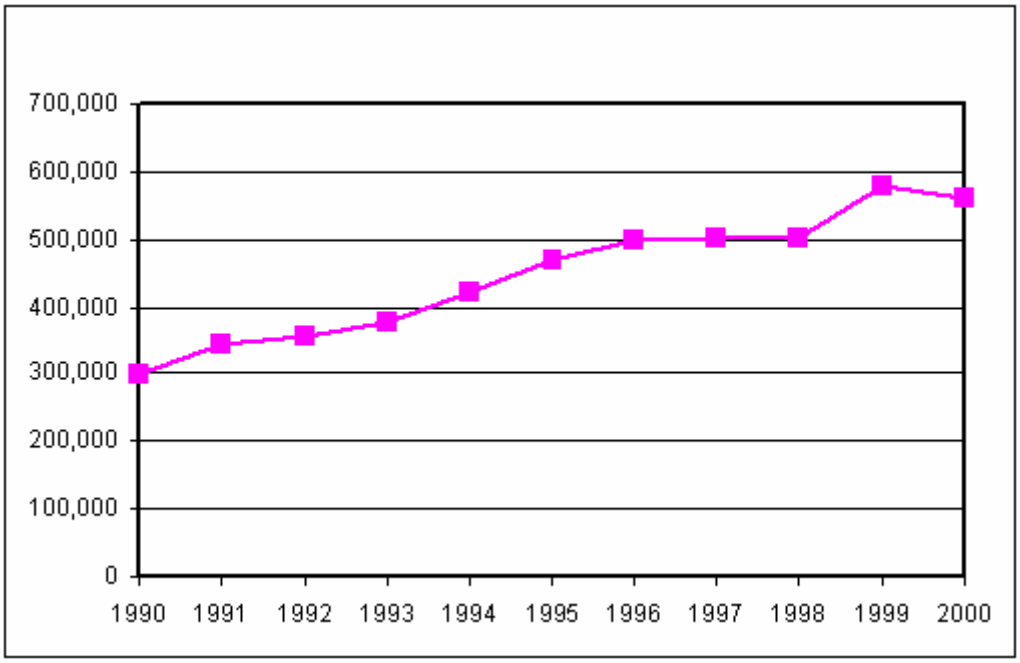
Source: NCSBN

Replacement: Almost 17% of LPNs will reach retirement age by the year 2010, and 48% will reach this age by 2020. The BLS projects that 180,000 job openings due to replacement will occur between 2000 and 2010, including both retirement and other sources of attrition. Job turnover among LPNs is a serious problem, with recent estimates for nursing home turnover of LPNs between 27% and 50% [Decker et al., 2001]. Replacement openings account for 56% of projected LPN job openings by 2010.

Nursing Aides and Home Health Aides.

Supply of both nursing aides and home health aides has grown substantially since 1985. Growth in both occupations has slowed since 1995, however, and there is some evidence that growth has not been keeping pace with demand (due in large part to high turnover rates associated with low wages and difficult working conditions) (Figure 46).

Figure 46: Home Health Aides, U.S., 1990 to 2000



Source: BLS

In recent years, long-term care providers across the country have been reporting that they are unable to attract and retain sufficient numbers of paraprofessional workers. Some nursing home aides work "short" on a regular basis, while some home health agencies are turning away clients in need of care. The shortage of certified nurse aides, home health aides, and other paraprofessional workers is starting to receive as much attention as the more widely publicized shortage of nurses.

Demand

Industries that serve older adults are expected to expand substantially in the next 10 to 20 years. Employment in home health care is projected by BLS to grow rapidly in response to the growing number of older adults with functional disabilities, consumer preference for care in the home, and technological advances that make it possible to bring complex treatments into the home (although changes in Medicare funding of home health care may depress some of this growth). Employment in nursing and residential facilities is also expected to grow faster than average due to increases in the number of older adults who require long-term care. In addition, the financial pressure on hospitals to discharge patients as soon as possible may produce more long-term care admissions. The growing demand for long-term rehabilitation for stroke and head injury patients and treatment for Alzheimer's victims will create a greater demand for more nursing home workers who are qualified to provide these types of services [BLS, 2002]. These types of care will require a workforce able to perform complex procedures [BLS, 2003a].

Furthermore, a growing number of new nurses will be moving towards home health care, long-term care, and ambulatory care [BLS, 2002], indicating a noteworthy shift in the locus of labor market demand. Also, because older adults use health care services at a higher rate than younger

adults and the rate of utilization increases with age, older people represent more than 48% of hospital patients, 80% of home care patients, and 85% of all residents of nursing homes [AACN, 2000]. The increased demand for long-term care will drive demand for more nursing personnel [Decker, et al., 2001].

Registered Nurses. Registered nurses are one of the 10 occupations projected to have the largest numbers of new jobs. The BLS projects that more than 1 million job openings for RNs will occur between 2000 and 2010, 560,000 of which will be due to growth in the profession. Overall, employment of registered nurses is expected to grow by 26% (faster than the average for all occupations through 2010). Demand for RNs will be driven by the aging and growth of the population and by trends in health care financing [HRSA, 2002]. The highest growth in RN employment is expected to be in home health care, where the number of positions filled by RNs is expected to grow by more than 70% between 2000 and 2010 [BLS, 2003b].

Licensed Practice Nurses. The BLS projects growth of 20% in the employment of practical nurses (about average for all occupations) between 2000 and 2010, with about 320,000 job openings overall. Although many of these job openings will occur as a result of replacement (as LPNs change jobs or retire), about 140,000 will occur as a result of growth. The number of jobs for LPNs in hospitals is actually expected to decline by 11%, while opportunities for LPNs will grow the most (70%) in home health care [BLS, 2003b].

Nursing Aides and Home Health Aides. Overall employment of nursing and home health aides is projected to grow faster than the average employment rate through the year 2010 (24% for nursing aides and 47% for home health aides). The projects 498,000 job openings for nursing aides (323,000 due to growth in the occupation) and 370,000 job openings for home health aides (291,000 due to growth) between the years 2000 and 2010. The demand for nursing aides is expected to swell in residential care, where growth of 70% is projected. Likewise, employment of home health aides will increase the most in home health care (70%) and residential care (53%). In addition:

- Demand for home-based care is expected to increase, due in large part to cost containment efforts focused on moving patients out of in-patient health care facilities and into their homes.

- Consumer preference for care in the home and improvements in medical technologies for in-home treatment will also contribute to the employment growth for home health aides [BLS, 2003a].

- Demand for nursing aides will not grow as fast as demand for home health aides, because nursing aides are mainly concentrated in the relatively slower-growing nursing home sector.

- Greater emphasis on rehabilitation and long-term care for older adults, as well as emerging medical technologies, will contribute to employment growth for nursing aides [BLS, 2003a].

- Medical technologies applicable to home care may also affect the demand for home health care services, and thus for home health aides [BLS, 2003a].

- Nursing home utilization rates (per 100 or 1,000 age 65 and older) have begun to decrease among older adults, but the actual number of nursing home admissions continues to rise with the aging of the population.

Issues for the Nursing Professions and Older Adults

- In the past few years there has been greater recognition of the importance of staffing ratios in nursing homes and other health facilities [Harrington et al., 2000], but at the same time there has been a decrease in the payment levels in government financing programs. Currently, more than 75% of patients in the nation's nursing facilities are using Medicare and Medicaid. Some researchers argue that Medicare and Medicaid payments directly affect nursing staffing: the lower the reimbursements are, the lower the levels of nursing staff will be [Decker et al., 2001].

Registered Nurses

Retention: Recruiting and retaining qualified personnel to provide direct care in long-term care settings remains a critical problem. Interest in nursing as a career, in general, is flat or waning, and nursing shortages in long-term care are further confounded by the fact that interest in nursing geriatric populations is low relative to other areas of nursing practice [Decker, et al., 2001]. Also, as noted earlier, wages are lower for registered nurses in nursing homes and home health care than in hospitals, so there is little incentive for RNs to stay in long-term care.

Difficulties in recruiting and retaining registered nurse workforce in long-term care are attributed to a variety of other factors, including:

- lack of nursing faculty to train nurses, thereby limiting production;
- the complex and challenging regulatory environment in which long-term care facilities and providers operate and which requires significant hours spent in documentation about patients and staffing;
- professional isolation of RNs who may not be working with professional peers on a regular basis in certain long-term care settings;
- inflation-adjusted earnings for RNs in long-term care have not increased since 1991;
- lack of nurse training in geriatric care especially about cognitive impairments and senility; and
- lack of comparable benefits with other sectors that compete for RNs [ASPE, 2003].

Finally, a level of satisfaction with a job is an important indicator when considering retention of nurses. In the 2000 Registered Nurse Sample Survey, RNs who worked in nursing homes reported the lowest level of job satisfaction, at only 65%, followed by only 67% satisfaction level of RNs in hospitals [HRSA].

Faculty Shortages: The average age of nursing faculty in baccalaureates and graduate nursing programs in 2001 was 51 years, meaning that substantially large numbers of faculty retirements can be expected in the next ten to twenty years. Furthermore, some programs have already reported growing difficulty in filling vacant faculty positions [AACN, 2002; Buerhaus et al., 2000]. Obviously, the ability of RN education programs to produce a steady supply of new RNs would be seriously compromised by a faculty shortage. The potential for such a shortage merits greater attention in terms of both research and policy [Kovner, 2002].

Licensed Practical Nurses

Retention: As noted above, long-term care facilities are not able to offer wages and benefits comparable to those offered by acute care settings. LPNs as well as RNs thus have economic incentives to leave long-term care. Turnover rates for LPNs in nursing homes have recently been estimated at between 27% and 50% [Decker et al., 2001]. This strongly implies a need for long-term care facilities to expand their attractiveness to LPNs, but this is complicated by the constraints related to reimbursement discussed previously.

Career Ladders: The establishment of successful career ladders in nursing is one potential way to recruit more young people into the profession. The idea is that advanced practice nursing programs actively recruit RNs, that RN programs actively recruit LPNs, and that LPN programs actively recruit nursing and home health aides. As well as targeted recruiting, offers of tangible benefits such as advanced standing help to make such ladder programs attractive to nurses and aides at almost all levels of nursing.

The effect of such career ladder initiatives on the supply of LPNs is not definite. The opportunity to move easily into a better paid and more highly regarded position as a RN makes LPN training more attractive to young people. As previously noted, however, large numbers of qualified LPNs may move beyond practical nursing fairly quickly to get their credentials as RNs. In theory, this may be partially compensated for by a movement of nursing and home health aides into practical nursing programs. Because of the low educational requirements, there will always be a pool of potential new paraprofessionals to take the place of those who become LPNs.

Nursing Aides and Home Health Aides

Working conditions: Recruitment and retention problems among paraprofessionals are due in large part to the working conditions of the occupation. Nursing and home health aides have more direct contact with patients than do LPNs and RNs. Meeting the needs of frail and older patients is often physically and mentally demanding, whether in an institutional or home setting.

The work environment is such that home health aides and nurse aides have among the highest injury rates of any occupation (higher than coal miners or construction workers).Care demands are growing as longevity increases, although technological developments may help to reduce the burden on workers.

Low job satisfaction among direct care workers contributes to recruitment and retention problems. Direct care workers have few opportunities to participate in professional growth

activities such as continuing training or advancement. Current staffing shortages do not allow employees the opportunity to attend educational forums. Consequently, workers with a minimum of education are providing care and using technology for which they may not be trained.

RNs and NPs, who are often nurse supervisors in long-term care settings, are not necessarily trained to manage in long-term care facilities. Most baccalaureate programs have begun teaching a semester of management to nursing students, but this is still not offered for associate's level degrees. Furthermore, management skills may not easily be employed in the workplace due to staffing or managerial conditions (e.g., due to shortages, there may only be one nurse supervisor on duty with many aides).

Reimbursement: High turnover rates among nursing aides and home health aides are also attributable to economics:

- Long-term care paraprofessionals are among the lowest paid workers in the country, earning between $6.50 and $8.00 per hour, on average. Many workers live below the federal poverty level.

- The majority of these workers are either not offered health insurance by their employer or cannot afford high premiums.

- Employers have limited control over wages and benefits because the government is the major payer of nursing home and home health care services. In 1998, 53% of home health care expenditures and 60% of nursing home expenditures were paid through public funds, mostly from Medicare and Medicaid. Hence, wages and benefits for care aides are largely influenced by public health care reimbursement policies [Yamada, 2002].

Gap Between Future Demand and Expected Supply

By the year 2010 (and especially by the year 2020), there may not be enough nursing care providers for the number of older adults needing care. The supply of potential nursing caregivers relative to number of persons age 85 and older in need of care is decreasing, and expected to decrease by 40% between 2010 and 2030. Indeed, projections from different studies clearly illustrate that the supply of nursing services professionals will decline at the same time that the need and demand for nursing care services will be rising significantly.

Registered Nurses: A nursing shortage of about 6% was believed to exist as early as 2000 [HRSA, 2000]. By the year 2020, the supply of RNs is projected to fall 20% below predicted requirements [Buerhaus et al., 2000]. Many states already report current and projected shortages of RNs, primarily due to an aging RN workforce and recent declines in nursing school enrollments [BLS, 2001]. In the recent assessment of the adequacy of health care personnel in various states, the USDHHS identified four occupations that most frequently posed supply problems: registered nurses, primary care practitioners, physical therapists, and licensed practical nurses. Twenty-eight states identified particular needs for RNs, primary care practitioners, physical therapists, and LPNs; forty-one states were concerned about the deficits in rural health care providers. Shortages in rural areas disproportionately affect the aged, because they tend to

experience higher rates of chronic illness and disability and they are overly concentrated in rural populations [HRSA, 1998].

A shrinking RN workforce will directly affect not only the nursing profession, but employers, physicians, nursing educators, the public, and policy makers [Buerhaus et al., 2000]. An appropriate mix of supply side and demand side responses by these stakeholders could address this potential nursing shortage, including:

- preparing for an older workforce;
- developing ways to better use scarce RNs;
- rethinking minimum hospital nurse staffing regulations;
- preparing for smaller enrollments;
- preparing RNs for their future roles [Buerhaus et al., 2000];
- improving the image of nursing;
- reducing the costs of nursing education;
- eliminating stigmas and barriers facing men and minorities;
- developing ways to keep older RNs in the workforce longer; and
- allowing more foreign-educated RNs in the U.S. [Buerhaus et al., 2000].

Licensed Practical Nurses: The BLS predicts that about 320,000 job openings for LPNs will occur between 2000 and 2010, with about 140,000 of these openings due to net growth. The supply of active LPNs has decreased slightly, however, since 1995, while the number of potential LPNs produced annually (as measured by number of candidates successfully passing the licensure exam) has declined by 28%. Plainly, these reductions in the potential and actual supply of LPNs are ill-timed. Recruitment and retention of LPNs must expand in order to avert a shortage in the near future.

Nursing Aides and Home Health Aides: Although the supply of both nursing aides and home health aides has grown since 1995, these increases have been moderate relative to projected demand. The BLS projects 498,000 job openings for nursing aides, and 370,000 job openings for home health aides between 2000 and 2010. Problems with recruitment and retention of qualified workers continue to threaten the supply of direct care paraprofessionals.

A recent nationwide survey found that 42 states named recruitment and retention of paraprofessional aide workers was a major workforce issue in 1999 [Yamada, 2002]. At least 40 states have begun to address the crisis in nursing aide supply, either through legislation or official task forces charged with assessing the problem [Paraprofessional Healthcare Institute, 2001].

One policy initiative which has been proposed is to reduce the demand for paraprofessional workers by creating incentives for unpaid (i.e., family) caregivers. This involves expanding reimbursement eligibility and training to unpaid workers, and expanding the current childcare tax credit to include an adult day care credit. The baby boom generation, however, will have fewer potential caregivers than past generations of older adults, due to their lower rates of marriage and fertility. The potential impact of incentives to family caregivers is thus limited.

E. Oral Health Professions: Dentists, Dental Hygienists, and Dental Assistants

Summary

Three oral health professions—dentists, dental hygienists, and dental assistants—provide a variety of important services to older Americans and the public at large. Older adults generally have different oral health needs than younger populations. Older adults are at the greatest risk of dental caries (especially root caries). Gum disease is also a serious problem among older adults – about 40% of ambulatory older adults have gingivitis, and as many as 60% may suffer from some level of periodontal illness. Although larger numbers of older adults are retaining their teeth, complete or partial edentulism (tooth loss) remains a serious problem for older Americans. Older adults are also at higher risk of oral cancer than younger people – more than half of oral cancer deaths are among those age 65 and older. Treatment of oral conditions is critical to the overall health of older adults, as oral pain may compromise nutritional status among older people [DeBiase and Austin, 2003].

The need for oral health services by older adults is patently high, but their use of such services is limited by a number of factors that may suppress the demand for oral health services by this population, particularly the lack of coverage by Medicare. Lack of dental insurance in 9 out of 10 older Americans is a major suppressant of dental use by older adults.

Between the years 2000 and 2010, 43,000 job openings will occur for dentists, 76,000 for dental hygienists, and 136,000 for dental assistants. For dentists, most of these openings will occur due to replacement needs, as large numbers of currently practicing dentists reach retirement age. Growth in demand is expected to account for a larger share of the projected job openings for dental hygienists and assistants.

Educational programs in oral health are currently producing about 4,500 dentists, 6,000 dental hygienists, and 5,000 dental assistants annually [NCES, 2001]. It is therefore possible that production of dentists may be sufficient to meet BLS projected demand (despite a general perception of a dentist shortage). The production of dental hygienists and dental assistants may, however, be inadequate (although dental assistants are not required to graduate from a formal educational program and often learn on the job).

Although older adults have special needs, characteristics, and problems in relation to their oral health, the coverage of geriatric care in the general dental curriculum is limited. Advanced fellowships and masters' level training programs in geriatrics are available, but only about 100 dentists (out of more than 150,000) have completed such training in the past twenty years.

Demand for oral health practitioners to treat older adults may rise above projected levels if barriers to access involving reimbursement and the access of frail older adults to providers and services are addressed. The distribution of oral health professionals may also change substantially, with more preventative services performed by hygienists.

The Oral Health Professions: Services to Older Adults

Older adults have different oral health needs than younger populations. Older adults are at the greatest risk of dental caries (especially root caries). Gum disease is also a serious problem among older adults – about 40% of ambulatory older adults have gingivitis, and as many as 60% suffer from some level of periodontal illness. Although larger numbers of older adults are retaining their teeth, complete or partial edentulism (tooth loss) remains a serious problem for older Americans. Older adults are also at higher risk of oral cancer than younger people – more than half of oral cancer deaths are among those age 65 and older. Treatment of oral conditions is critical to the overall health of older adults, as oral pain may compromise nutritional status among older people [DeBiase and Austin, 2003].

Three professions provide most oral health services to older adults: dentists, dental hygienists, and dental assistants. **Dentists** have the broadest scope of practice. They:

- diagnose, prevent, and treat teeth and tissue problems and diseases;
- perform corrective surgery on gums and supporting bones to treat gum diseases;
- fit dentures to replace missing teeth;
- provide instruction and education related to oral health and hygiene;
- administer anesthetics; and
- write prescriptions for antibiotics and other medications.

Of special importance for older adults are diseases of the gums, e.g., gingivitis, which creates structural problems for natural and replacement teeth.

Dental hygienists provide a variety of services for their patients. Depending on the statutes and regulations in the state(s) where they are licensed to practice, they may:

- clean and polish teeth;
- administer fluoride treatments;
- evaluate patients for disease or abnormalities;
- take and develop dental x-rays; and
- provide oral health education to patients.

In some states, they may also administer anesthetics; place restorations; place antimicrobials; and prepare clinical and laboratory tests and x-rays, although they may not interpret them.

The majority of states require that dental hygienists practice only under the supervision of a licensed dentist. Scope of practice for dental hygienists is an important issue because they often provide more preventative care than dentists. These preventative services are important for early diagnosis and treatment of oral conditions that might progress to more serious disease, leading to greater cost-effectiveness in oral health. The services of dental hygienists could potentially improve the access of underserved populations (such as older adults) to oral health services.

Dental assistants have the most limited scope of practice. They primarily provide instrumental assistance to dentists and dental hygienists, and their direct contact with patients is limited to the

provision of oral health education, and very routine care such as the removal of sutures. In the treatment areas, they prepare patients for treatment, prepare dental instruments for use, and may process x-rays and radiographs. They may also carry substantial responsibilities in the office: answering phones, scheduling patients, and processing paperwork.

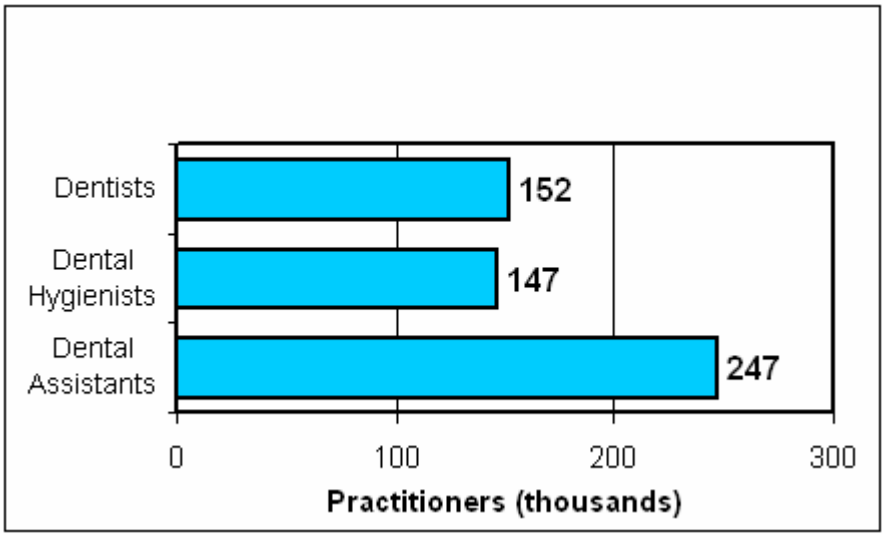
Profile of the Current Oral Health Workforce

There were approximately 152,000 dentists in the U.S. in 2000 [BLS, 2003b] (Figure 47). Dentists must complete a post-baccalaureate course of study at an accredited dental school (typically four years). Most dental schools award a Doctor of Dental Surgery (DDS), although some award a Doctor of Dental Medicine (DMD). Dentists must also pass written and practical examinations administered by states or regional testing agencies, as well as by national boards.

Dental hygienists numbered 147,000 in the U.S. in 2000 [BLS, 2003b]. Dental hygienists must graduate from an accredited school of dental hygiene. Most such schools award an associate degree, although some grant a bachelor's degree. A small number of universities offer a master's degree in dental hygiene, primarily to educate new faculty members and to support research studies. Dental hygienists must also pass written and practical examinations administered by states or by regional testing agencies, as well as by national boards.

Finally, there were 247,000 dental assistants in the U.S. in 2000 [BLS, 2003b]. Dental assistants may complete a certificate program (typically one year in length) from one of 248 dental assistant training programs in the U.S. Most, however, learn their skills on the job. Some states require licensure or registration for dental assistants, and exams may be required for such licensure or registration. Most states also maintain continuing education requirements for dental hygienists [BLS, 2002].

Figure 47: Numbers of Oral Health Professionals in the U.S., 2000



Source: BLS, 2003

The vast majority of these professionals serve older patients in dental offices or clinics. Very small percentages of these professionals work in hospitals or other health care settings. Such

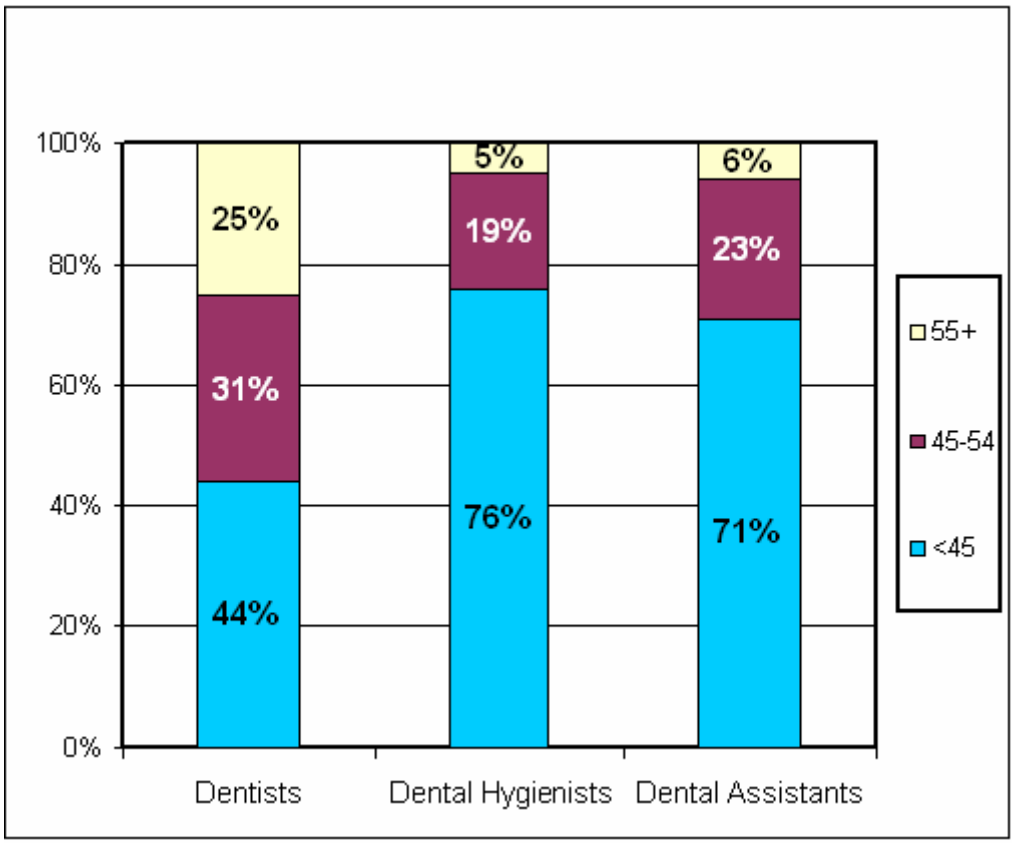
institutions serving older adults generally contract with oral health professionals to visit their facilities, but the services rendered in these settings are often very limited. The typical nursing home cannot supply the equipment necessary to provide their patients with an array of regular dental services, and while mobile units are available, they limit the scope of available services. Furthermore, Medicare does not reimburse for routine oral health services, limiting the ability of many older adults to access these services, even if they are available.

Dentists have been aging along with the general U.S. population. Many currently active dentists are nearing retirement age, and their retirements will cause most of the job openings in the field. The median age of dentists rose from 41 years in 1989 to a striking 47 years in 2001. More than 6% of dentists are already themselves age 65 or older, and another 31% are age 55-64, and therefore likely to retire by 2010. Another 44% of dentists are age 45-54, and likely to retire by 2020 (see Figure 48). More dentists are retiring than are coming into the system, and this could present long-term supply problems [BLS, 2001; NCES, 2001].

As with so many of the health professions, dental hygienists as a whole have been aging, with their median age moving upward from 33 years in 1989 to 38 years in 2001. While hygienists remain younger than the general U.S. civilian labor force, they have been aging faster (the median age of the civilian labor force rose only 3.0 years between 1989 and 1999). About 5% of dental hygienists are older than age 54, and likely to retire by 2010. Another 19% of dental hygienists are age 45-54, and could retire by 2020. Very few dental hygienists (0.6%) continue practicing after their 65th birthday [BLS, 2001]. Projected retirements of dental hygienists are not very striking compared to the projected retirements of dentists, but many of the services once provided by retired dentists might be taken up by dental hygienists.

Dental assistants are a younger group on average than the other two oral health professions, with a median age of 34. This is not surprising, as the BLS notes that the position of dental assistant is often a stepping-stone towards a better-paid job as an instructor in a dental assistant training program or as a salesperson for a dental supply company. Few dental assistants (6%) are older than age 54, and only 23% are older than age 44. If we assume that most dental assistants will have retired or left the profession by the age of 65 (as with dental hygienists, only 0.6% of dental assistants are currently age 65 or older), then 13,750 dental assistants will be lost by 2010, and 57,500 will be lost by the year 2020.

Figure 48: Age Distribution of Oral Health Professionals in the U.S., 2001



Source: CPS data (BLS, 2001)

Training, Education, and Credentials Related to Aging

Geriatric education in oral health programs is warranted because older adults require special consideration in terms of their oral health care needs. They experience different patterns and prevalence rates of oral diseases, may have characteristics that affect the amount and types of dental treatment and the method by which it is performed; and may have unique problems accessing the health care delivery system [DeBiase and Austin, 2003].

Comorbidity (the presence of multiple and potentially confounding medical conditions) is a particular characteristic of older adults requiring special consideration by dentists, dental hygienists, and dental assistants. Cardiovascular disease, dementia, depression, osteoarthritis, osteoporosis, diabetes, and sensory deficits all affect what constitutes appropriate oral health treatment for older adults. The multiple prescriptions consumed by many older Americans also affect oral health treatment. Poor oral health may also aggravate nutrition problems faced by many older people. Effective patient instruction for older patients, who may communicate more slowly, may require skills not necessary with younger populations [DeBiase and Austin, 2003].

General Curriculum: The current accreditation guidelines for dental and dental hygiene education programs require graduates to be competent in providing general dental care to geriatric patients. Furthermore, an "appropriate patient pool," including geriatric patients, must be available to students so that they can gain broad patient experience [ADA, 2003].

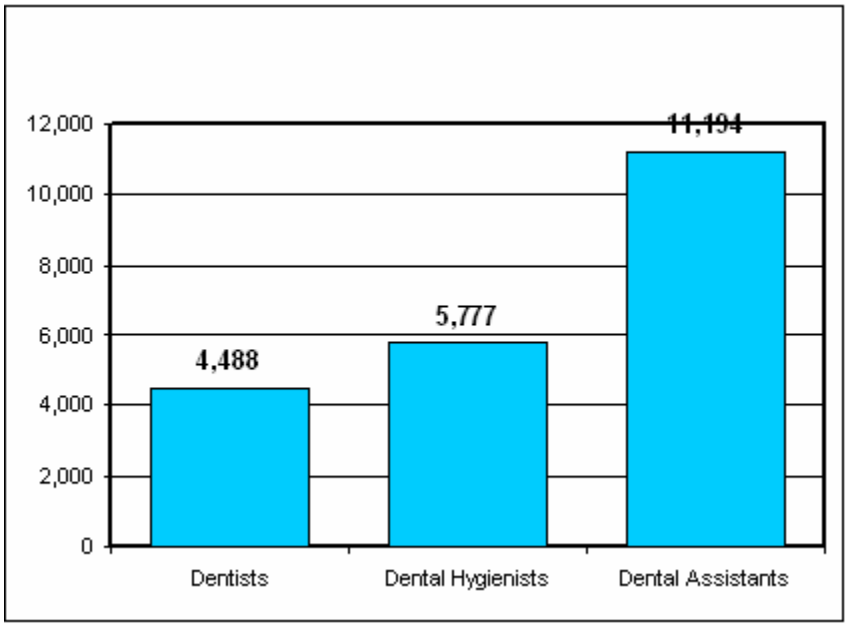
The examinations for dental hygienists must include case-based items focusing on a geriatric patient. Knowledge and skills addressed by case-based items include assessment of patient characteristics, interpretation of radiographs, planning and management of dental hygiene care, performance of periodontal procedures, use of preventative agents, and provision of supportive treatment services [ADA, 2003].

Specialization: Some dental schools offer certificate programs in geriatric dentistry, advanced geriatric dentistry fellowships, or masters' level training programs. The curriculum and/or requirements are not standardized across programs by any credentialing agency. During the last two decades, only about 100 dentists (about 5 per year) completed such programs. Specialized knowledge about geriatric oral health is available from other sources (e.g., continuing education programs, clinical rotations in long-term care), but the number of dental personnel who achieve advanced clinical competencies in geriatrics through such training mechanisms is unknown.

Supply Trends

Educational Production: Figure 49 shows that in 2000, accredited postsecondary schools with oral health programs produced 4,488 dentists, 5,777 dental hygienists, and 4,792 dental assistants [NCES, 2001; ADA, 2003].

Figure 49: Annual Educational Production of Oral Health Professionals in the U.S., 2001



Replacement: Due to the aging of dentists as a group, the current supply of dentists will be seriously depleted by retirements over the next ten to twenty years. The BLS projects that 34,000 job openings for dentists between the years 2000 and 2010 will occur as a result of replacement needs. This constitutes almost 80% of all job openings for new dentists during this time period. Dental hygienists and dental assistants are substantially younger than dentists as a group (and in fact younger than the U.S. civilian labor force overall). Although non-retirement departures from these occupations are common, replacement needs will account for less of the future demand for these workers than for dentists. BLS projects that 22,000 job openings for dental hygienists and

44,000 job openings for dental assistants will occur between 2000 and 2010 due to replacement needs.

Demand

Employment of oral health workers is projected to grow substantially through 2010. While the BLS projects that employment of dentists will grow by 6%, employment of dental hygienists and dental assistants is projected to grow by 37%. Including both increases in demand and replacement needs, there will be job openings for 43,000 dentists, 76,000 dental hygienists, and 136,000 dental assistants between 2000 and 2010.

There are a number of reasons why the need for oral health services for aging Americans may be especially pronounced:

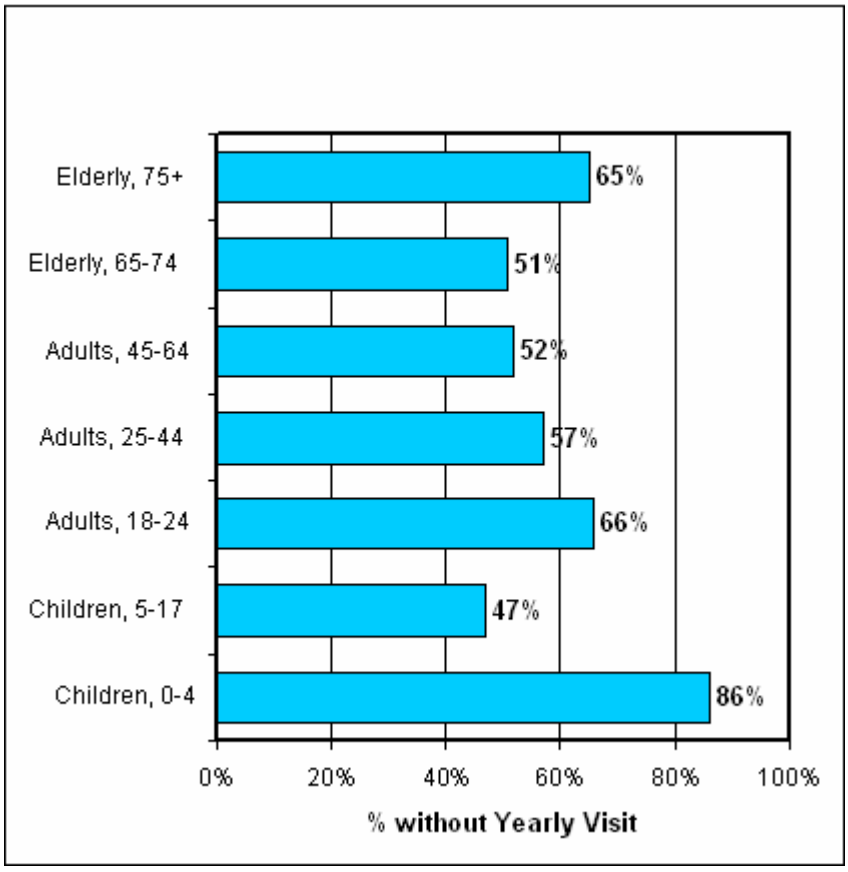
- As members of the baby-boom generation advance into middle age, larger number will need maintenance on complicated dental appliances and prosthetics, such as bridges.
- Older Americans are retaining more of their teeth than in the past, and are thus more likely to experience destructive periodontal disease [BLS, 2003a; USDHHS, 2000].
- While the percentage of individuals older than age 65 without any teeth has declined tremendously over past 20-30 years, it is still higher than for those younger than 65. This requires greater attention by oral health professionals.
- Older adults often have additional medical conditions that cause a higher level of maintenance to be necessary in order to maintain their oral health.

The need for oral health professionals does not, however, necessarily translate into demand. Older people, who often have the most severe oral health problems, are also unlikely to be seeing a dentist on a regular basis (See Figure 50).

Lack of dental insurance in 9 out of 10 older Americans is a major factor leading to 42% of older people becoming edentulous. The oldest old, those 85 and older, are the least likely to see a dentist on an annual basis, with only 35% receiving this important preventative care [Agency for Healthcare Research and Quality, 2003].

It is also the case that the diversity of settings in which older Americans live, and their potentially limited mobility, constrains the provision of dental care to this population. If more older adults are in home settings, adult day care programs, and assisted living facilities, it will present a significant challenge to provide oral health services.

Figure 50: Percent of Different Age Groups Not Utilizing Oral Health Services Regularly, 1999



Source: MEPSnet [Agency for Healthcare Research and Quality, 2003].

A careful distinction must be made among the three professions when discussing issues of supply and demand, because the distribution of professionals in the oral health care field may change dramatically. In the immediate future, dental hygienists may provide many of the routine services previously provided by dentists only [BLS, 2003a]:

- Older dentists, who are less likely to employ dental hygienists, will leave and be replaced by recent graduates, who are more likely to do so.

- As dentists' workloads increase, they are expected to hire more hygienists to perform preventive dental care such as cleaning, so that they may devote their own time to more profitable restorative and aesthetic procedures [BLS, 2003a].

Issues For the Oral Health Profession and Older Adults

For some segments of the American population, oral health services have never been better. Advances in technology and provider education have enabled people to retain and maintain their natural teeth longer than ever before, and in many cases where natural teeth are lost, provide aesthetic, functional replacements. There are, however, notable gaps in the provision of services, especially preventive services. Access to services continues to be a major problem for older adults, especially low-income older adults and those in nursing homes.

Reimbursement Policies. Public funding for oral health care for older adults is widely agreed to be inadequate [USDHHS, 2000]. Medicaid does provide partial coverage for routine dental care for low income and disabled older adults in some states. However, this coverage is limited to only those services deemed "medically necessary" [Vargas et al., 2001]. Almost universally, Medicaid programs identify access to dental care as a significant and persistent problem. [Tinanoff, 1998]. Similarly, Medicare does not cover routine dental care. Medicare reimbursement applies only to "medically necessary dental care," severely limiting the services it covers [USDHHS, 2000]. As a result, Medicare and Medicaid account for only about 4% of all dental expenditures in the U.S. [USDHHS, 2000].

Insurance coverage is one of the strongest predictors of access to, and utilization of, oral health care services. More than 100 million Americans have no dental insurance [CDC, 2000]; and only 17% of older adults had private dental insurance (as of 2000), so most dental expenses are paid out-of-pocket. Private insurance companies pay for only 10% of all dental expenditures, while the patients themselves pay for 79%. And since dental insurance is usually acquired as part of an employment benefits package, many older adults lose their coverage upon retirement [Vargas et al., 2001].

There is no federal or state insurance program devoted entirely to oral health that covers routine dental services for older adults. While government assistance is available for some oral health services, both at the federal and state levels, this assistance is limited in its scope and reimbursement levels are low. Low reimbursement levels are a particular problem in that they can make providers disinclined to participate in some public programs [USDHHS, 2000], although some states have raised Medicaid payments for dental care to encourage dentist participation. Furthermore, the coverage of state programs varies, so that some include preventative care while others are limited to the immediate relief of pain [Tinanoff, 1998].

Access. Availability of providers and services can also be a problem for older adults, especially those with functional limitations. Ambulatory older adults can use the standard system for delivery of oral health care services by going to an office, but "frail older adults" cannot. Provision of oral health care services to nursing home residents is particularly problematic. Patients must be offered oral health services, but many are not able or willing to pay the out-of-pocket costs associated with this care. These facilities often find the equipment necessary to provide on-site dental services to residents is too expensive. Mobile dental offices have been considered as an alternative, but they are also expensive. Affordable oral health care is simply not available for the majority of institutionalized older adults.

Special-needs Populations. There are manifest social disparities in the oral health of older adults, especially by race and socioeconomic status. Those living in poverty, belonging to racial/ethnic minority groups, or those who are frail and functionally dependent can be considered special-needs populations. They experience poorer access to dental care than the general older population, and deserve special concern when considering the delivery of dental services, and when describing geriatric education and training programs for today and the future [USDHHS, 1998].

The prevalence of dental caries has been declining across all age groups in the U.S., but has not consistently declined in the most socially disadvantaged groups of older adults. In fact, the percentage of African-American older adults and the poor with untreated dental caries actually increased between 1971-1974 and 1988-1994 [Vargas et al., 2001]. Older adults with incomes below the poverty level are twice as likely to be without their natural teeth as are persons with income at or above the poverty line. Additionally, 11% of older adults living below poverty report having unmet dental needs, whereas only 4% of those living at or above the poverty line report any unmet needs. The greater need for dental care among older adults at the lower socioeconomic levels is coupled with a lower level of private dental insurance coverage, leaving this group at a significantly higher disadvantage than those with higher socioeconomic status [Vargas et al., 2001].

Gap Between Future Need and Expected Production

The BLS projects that job openings for 43,000 dentists, 76,000 dental hygienists, and 136,000 dental assistants will occur between the years 2000 and 2010. In 2000, accredited postsecondary schools with oral health programs produced 4,488 dentists, 5,777 dental hygienists, and 4,792 dental assistants [NCES, 2001; ADA, 2003]. Production of dentists may therefore be sufficient to meet BLS projected demand, but the production of dental hygienists and dental assistants may be inadequate (although dental assistants are not required to graduate from a formal educational program).

Although some analysts believe that there is potential for a dental shortage in the future [USDHHS, 2000], a problem of equal or greater magnitude may be the distribution of oral health professionals. Some people (e.g., those in rural areas) have very limited access to dental care, while others may have no difficulty obtaining oral health care. Improved access to oral health care for older adults would further increase demand for oral health workers, and could lead to pronounced shortages:

- Periodic reviews of Medicaid dental coverage can focus on the role of Medicaid in improving oral health among older adults, whether the coverage reflects modern dental practice and how dental coverage can influence the willingness of dentists to serve Medicaid patients. [Tinanoff, 1998].

- Since dental assistants and dental hygienists influence the productivity of dentists, carefully coordinated professional practice changes could provide a key to addressing access problems by enhancing the productivity of restorative services. Access to preventive services could be improved by regulatory changes permitting hygienists to practice with public health venue supervision or independently. This could potentially maximize oral health care needs of the underserved.

- The access of nursing home residents to oral health care could be improved by the use of dental hygienists, who can provide basic preventative care, identify oral health problems among patients, and make appropriate referrals. Both families and individual older adults must also understand the importance of oral health to overall health, including an expectation of a certain level of personal oral health care for older adults in nursing homes.

F. Chiropractors

Summary

Chiropractors are licensed health care professionals who provide care to patients with health problems associated with the body's muscular, nervous, and skeletal systems. They focus on a holistic approach, offering health care without drugs or surgery. Chiropractic adjustments, a form of spinal manipulation, are the primary focus of chiropractic care.

Chiropractic care is extremely important for maturing and older adults because of the dramatic changes that occur in the spine with aging. Approximately one-fifth of chiropractors' patients are older than age 65, and one-third of patients are older than age 50. Although the primary focus of chiropractic care is spinal manipulation, chiropractors often use special care strategies such as lower force techniques and exercise with older adults.

Chiropractors receive specialized training in geriatric care (a minimum of 30 hours at all accredited chiropractic colleges), and knowledge of geriatrics is required on their certification examination. Chiropractors may also specialize in aging by earning a Healthy Aging certification, including online training and continuing education at Geriatric Education Centers.

Employment of chiropractors is projected to grow 23% by the year 2010, driven in large part by the aging of the U.S. population. The BLS projects that 21,000 job openings for chiropractors will occur between 2000 and 2010, 12,000 of which will be due to growth in the profession and 9,000 of which will be due to replacement needs as chiropractors retire or otherwise leave the profession. Currently, the 17 colleges of chiropractic in the U.S. are collectively graduating about 3,800 students per year. This is adequate to meet projected demand over the next ten years.

There is potential, however, for chiropractors to assume a larger role in providing primary care to older adults in underserved areas. Medicare coverage for chiropractic services is fairly restrictive, however, regarding both the amount and type of care for which chiropractors can be reimbursed. Changes in Medicare reimbursement would have a significant impact on the use of chiropractic services by older adults, and therefore on the future demand for chiropractors.

Chiropractors: Services to Older Adults

Chiropractors are licensed health care professionals who provide care to patients with health problems associated with the body's muscular, nervous, and skeletal systems. They focus on a holistic approach, offering health care without drugs or surgery. Chiropractic adjustments, a form of spinal manipulation, are the primary focus of chiropractic care. Chiropractors may also, as necessary, order additional laboratory testing and/or X-rays to assist in clinical decision-making [American Chiropractic Association, 2002; BLS, 2003a].

Chiropractic care is extremely important for the maturing and the older adult because of the dramatic changes that occur in the spine with aging. According to a survey conducted through 96 various chiropractic offices in 32 states and two Canadian provinces, more than half of people older than age 55 seek chiropractic care for mild to moderate complaints, without visiting their primary care physician providers [Myerowitz Chiropractic Center, 2002].

Currently, chiropractors see between 12% and 15% of the U.S. population, although this varies by state. Approximately one-fifth of chiropractors' patients are older than age 65, and one-third are older than age 50, even though older patients sometimes tend to use fewer chiropractic services due to limitations in reimbursement. In general, older adults use chiropractic services that employ lower force techniques, as such special care strategies are more appropriate for older patients. Older patients also often have more stiffness and extremity-related complaints. These conditions require the incorporation of different care plans, often including exercise, stretching, soft tissue work, etc.

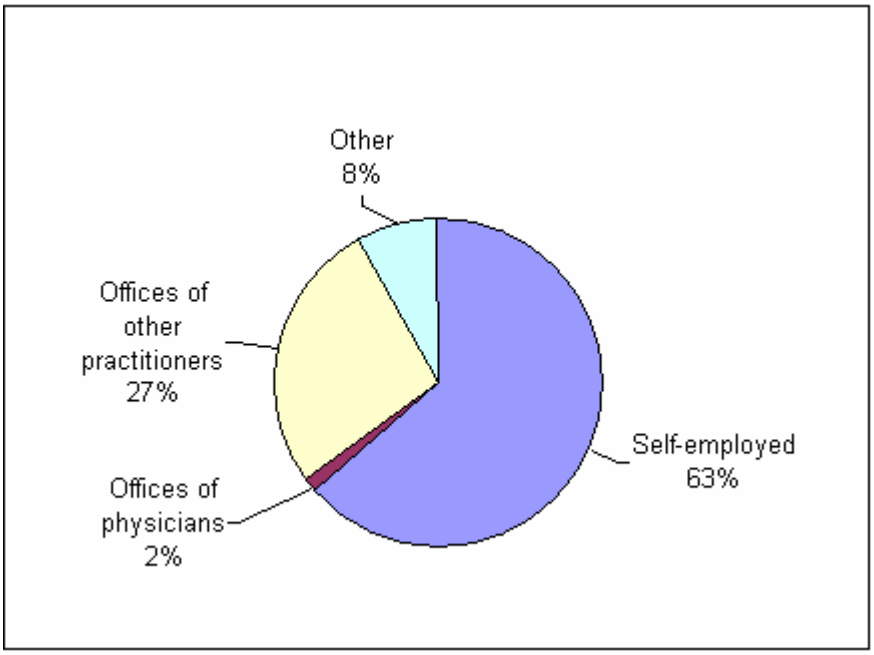
Profile of the Current Chiropractic Workforce

Chiropractic is the fastest-growing and second-largest primary health care profession. There are approximately 50,000 doctors of chiropractic (DCs) in active practice throughout the United States, from rural areas to inner cities. More than 10,000 students are currently enrolled in chiropractic educational programs accredited by the Council for Chiropractic Education [International Chiropractors Association, 2002].

Chiropractors must complete a four-year educational program at a chiropractic college following at least two (or often four) years of undergraduate education. Chiropractic education programs award the Doctor of Chiropractic (DC) degree. Chiropractors are required to be licensed in all fifty states and the District of Columbia, and licensure is by examination. Most states also require continuing education for maintenance of licensure.

Chiropractors are predominantly self-employed, although they also work in large numbers in the offices of other non-physician health practitioners (Figure 51).

Figure 51: Distribution of Chiropractors by Care Setting, U.S. 2000



Source: OES data (BLS, 2003)

Training, Education, and Credentials Related to Aging

General Curriculum. For more than two decades, a minimum of 30 hours of training in geriatrics has been required at all accredited chiropractic colleges. The credentialing exam for the profession has specifically included questions on the care of older adults since the 1970's. Nonetheless, concerns within the profession about the importance of geriatric training (and the adequacy of existing requirements) have been expanding. According to an evaluation by MGT of America [2000], all chiropractors should have:

- skills to treat the musculoskeletal problems, stiffness, and loss of range of motion and functional capacity present in seniors;
- preparation to assess, treat, and refer patients as appropriate to their health status, lifestyle, and presence of disease;
- skills necessary to coordinate teams of interdisciplinary care providers and community resources; and
- knowledge of issues that affect the care of seniors, such as living arrangements; functional abilities; concurrent pathologies; drug-related symptoms; healing times; and response to interventions.

In 1998, the U.S. Bureau of Health Professions funded the development of a model curriculum in geriatrics for chiropractors. The resulting model includes resources and teaching materials, specific learning objectives, geriatric curriculum competencies, and an outline of core subjects, which include:

- sociology of aging;
- normal aging/wellness;
- pathophysiology/chronicity;
- psychological/cognitive issues/mental issues;
- injury/fall prevention;
- pharmaceutical use/misuse;
- nutrition;
- exercise;
- socioeconomic issues;
- comprehensive geriatric assessment; and
- chiropractic geriatric adjusting techniques/patient management.

Specialization. There is no separate track for chiropractic students wanting to specialize in care of older adults. A 100-hour certification in Healthy Aging has been developed for chiropractors, 40 hours of which is online. This includes interdisciplinary team training and cultural competency modules drawing from existing Geriatric Education Center materials and resources.

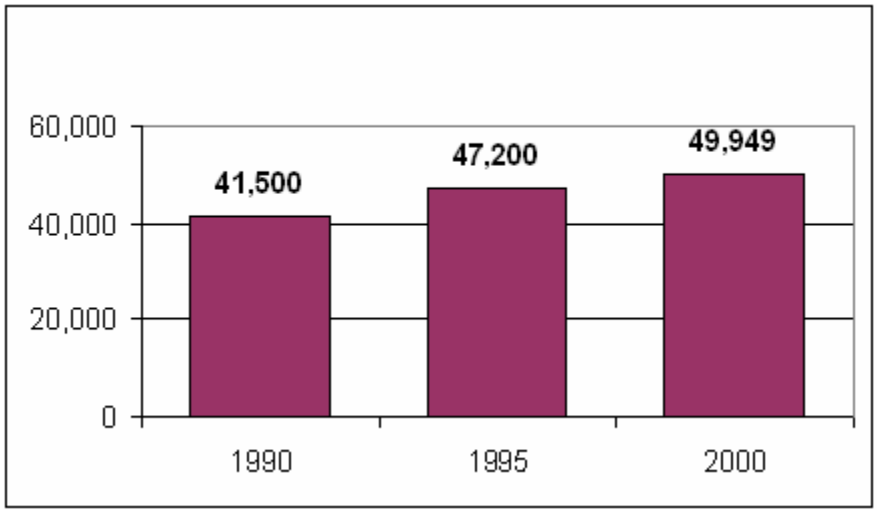
The American Chiropractic Association has recently developed a "Council on Aging" to address chiropractic issues related to aging, including a mechanism for tracking the new Healthy Aging certification programs as they are developed and implemented.

Interestingly, continuing education programs in aging have been offered by several chiropractic colleges as 12-hour weekend seminars for decades. Some colleges have tried to launch longer certification programs on aging over the past few years, but these programs have not been financially viable and have been discontinued.

Supply Trends

Between 1990 and 2000, the number of practicing chiropractors in the U.S. grew approximately 20%, from about 41,500 to almost 50,000 (Figure 52).

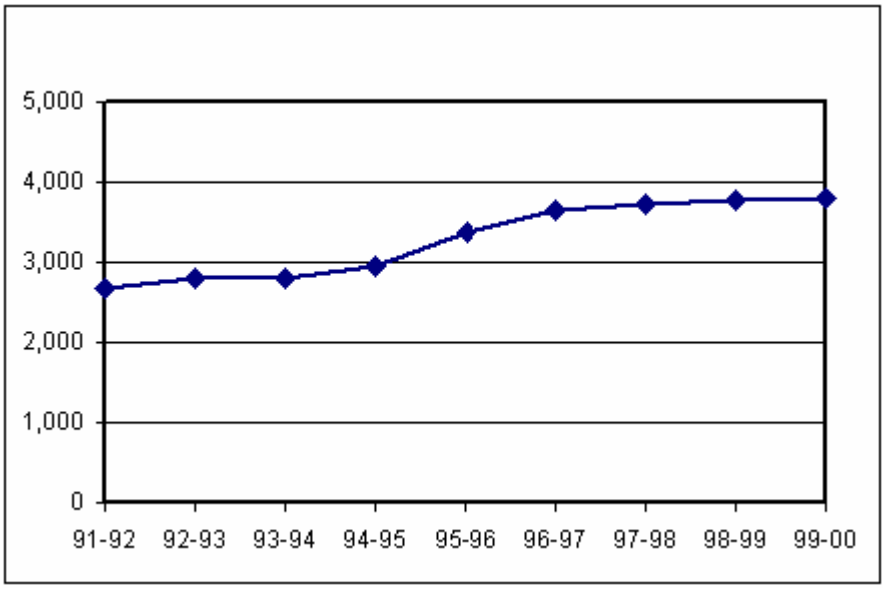
Figure 52: Active Chiropractors in the U.S., 1990 to 2000



Source: Bureau of Health Professions, BLS

Educational Production. There are 17 accredited colleges of chiropractic in the U.S., graduating anywhere from 100 to 550 per year per school. In 2000, 3,811 students graduated from these programs, a 41% increase since 1991 [NCES, 2001] (Figure 53).

Figure 53: Chiropractic Graduates, 1991 to 2000



Source: National Center for Education Statistics

Replacement. The BLS projects that 9,000 job openings for chiropractors will occur between 2000 and 2010 as a result of chiropractors retiring or otherwise leaving the profession. Replacement openings will account for almost 43% of all new job openings in chiropractic during this period.

Demand

The BLS projects growth of 23% in chiropractic medicine by the year 2010 (faster growth than for all occupations overall) [BLS, 2003b]. Overall, 21,000 job openings for chiropractors will occur between 2000 and 2010, 12,000 of which will be due to net growth in the profession. Other contributing factors include:

- Health problems relating to spine function and mobility tend to increase as people age, so the growing population of older adults will increase demand for chiropractic services.

- In recent years, chiropractic has been positioning itself as a primary care profession, with potential to work in underserved areas. If chiropractic moves into providing primary care health services to older adults in HPSAs, Native American reservations, inner-city environments, etc., the demand for chiropractors will grow.

- Demand for chiropractic treatment is related to the ability of patients to pay, either directly or through health insurance. More insurance plans now cover chiropractic services, which may result in expanded use of these services [BLS, 2003a].

Chiropractic is included in Medicare coverage, although only for spinal adjustment. Medicare reimbursements amount to approximately 8% of all revenues received by chiropractors [MGT, 2000]. Proposed expansions to Medicare coverage of chiropractic services (see below) may significantly increase demand by older adults for chiropractic services.

Improved coverage of chiropractic services under the Department of Veteran Affairs, passed by Congress in January 2002, may also increase demand for chiropractors.

Issues For Chiropractors and Older Adults

Reimbursement. Medicare does cover some chiropractic services, but coverage has been fairly restrictive regarding both the amount of care and the types of services for which chiropractors can be reimbursed. Services are limited to spinal adjustments and visits are limited to twelve per year. Reimbursement rates are also low, making geriatric practice not very profitable for chiropractors. While many insurance or HMO plans include chiropractic, much chiropractic care is paid for out-of -pocket.

In June 2001, a bill (H.R. 2284, the Medicare Chiropractic Improvement Act) was introduced to Congress. This bill, which is currently in committee, would require Medicare to reimburse Doctors of Chiropractic for the full scope of services they are licensed to provide under state law. This would not add to the range of services Medicare currently reimburses; it would, however, extend reimbursement coverage for such services to chiropractors. Patients would not have to be seen by a primary care physician for x-rays and other diagnostic services and then seen by a chiropractor for treatment (which currently results in double-billing for the same condition). If passed, these changes in Medicare reimbursement policies would have a significant impact on use of chiropractic services by older adults.

Gap Between Future Demand and Expected Production

The BLS projects that 21,000 job openings for chiropractors will occur between the years 2000 and 2010, with 12,000 of these jobs due to net growth and the rest due to replacements. Educational programs in chiropractic currently produce about 3,800 new chiropractors per year, which is more than enough to meet this demand.

Demand for chiropractors may exceed current projections, however, as a result of recent and proposed changes to reimbursement (especially Medicare reimbursement) for chiropractic services. Furthermore, chiropractors are aware of the potential of chiropractic as a primary care profession, especially in areas that are underserved by MDs and DOs.

G. Podiatrists

Summary

Podiatrists are licensed professionals trained to diagnose and treat disorders, diseases, and injuries of the feet, including a number of foot complaints associated with aging, including corns, bunions, arch problems, arthritis, and problems associated with diseases such as diabetes. In addition to routine foot care and treatment of chronic foot conditions, podiatrists treat acute conditions such as ankle and foot injuries.

Older adults disproportionately suffer from problems that podiatric doctors can address. More than 18% of people older than age 65, for example, have diabetes. Fifty percent of those older than age 65 suffer from arthritis. Impairment of the lower extremities is a leading cause of activity limitation in older people, and may impair balance (multiplying the risk of falls) as well as functional mobility. Care for bedridden patients costs much more than care for ambulatory patients, making podiatric care an important part of cost-effective health services for older adults.

There were about 18,000 podiatrists in the United States in the year 2000. Most of these were employed in the offices of physicians (52%) or offices of other health practitioners (23%), although many (21%) work in hospitals. Fifty-two percent of podiatrists are affiliated at some level with nursing homes. Podiatrists provide 39% of all foot care, with physicians, orthopedic physicians, and physical therapists providing most of the rest.

Employment of podiatrists is expected to grow about 14% between 2000 and 2010, with about 6,000 job openings occurring during this period [BLS, 2003b]. Half of these openings will be related to the replacement of currently practicing podiatrists, as they change jobs or leave the profession, and the other half to growth of the profession. Since podiatrists are substantially older on average than the civilian labor force overall, many of the replacements will be due to retirement.

Educational programs in podiatric medicine currently graduate about 560 students per year, leaving some question as to whether supply will be sufficient to meet demand in the future. Courses in geriatrics are not typically required in schools of podiatric medicine, although clinical rotations in geriatrics are available. There is some evidence that low student interest in geriatrics as a specialty has much to do with low recognition of geriatrics within the profession.

Podiatrists: Services to Older Adults

Podiatrists are also known as doctors of podiatric medicine (DPMs). They diagnose and treat disorders, diseases, and injuries of the foot and lower leg. Podiatrists also set fractures, perform surgeries of the foot, and order physical therapy. They design and fit orthopedic devices and prescribe medication [BLS, 2003a].

The problems podiatrists treat include corns, calluses, ingrown toenails, bunions, heel spurs, and arch problems; ankle and foot injuries, misalignments, deformities, infections, and foot complaints associated with diseases such as diabetes [BLS, 2003a]. Podiatrists also provide acute

care, such as treatment of foot and ankle injuries (of which about 60% are sprains or strains of the ankle).

Many of these problems are associated with aging. More than 18% of people older than age 65, for example, have diabetes. Fifty percent of those older than age 65 suffer from arthritis. Impairment of the lower extremities is a leading cause of activity limitation in older people, and may impair balance (multiplying the risk of falls) as well as functional mobility. Table 7 illustrates some of the treatments that podiatrists provide for common age-related disorders.

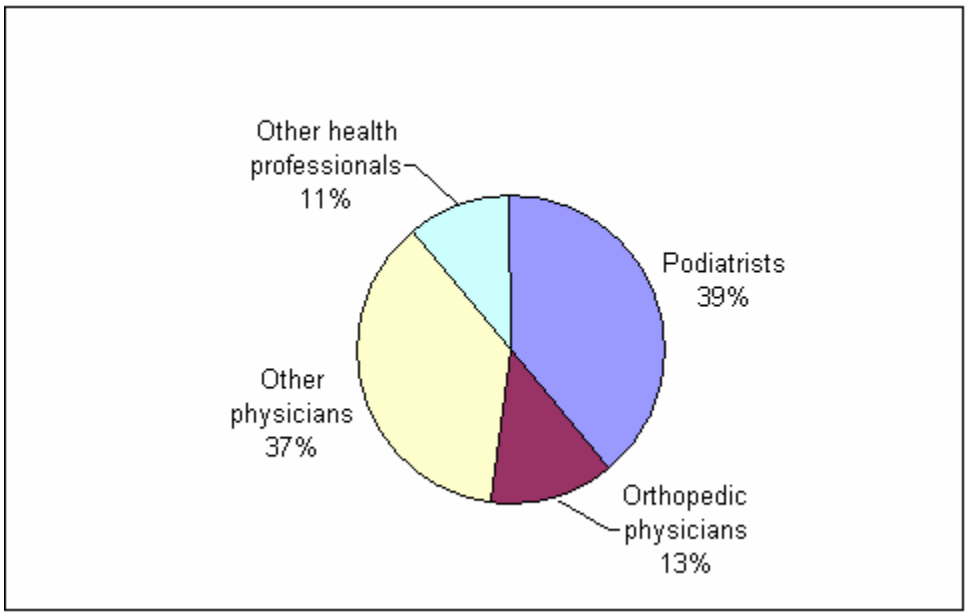
Table 7: Podiatric Disorders Often Associated with Aging and Available Treatments

Disorder	Available Treatment
Arthritis	Patient education Physical therapy/exercise Medication Orthoses Braces Surgical intervention
Bunions	Padding and taping Medication Physical therapy (e.g., ultrasound therapy) Orthoses Surgery
Diabetes (Amputation prevention)	Regular foot screenings
Diabetes (Treatment of ulceration)	Application of wound-healing technology
Back problems due to irregular walking pattern	Use of rigid, soft, or semi-rigid orthoses

Source: American Podiatric Medicine Association, 2003

About 19% of the U.S. population (52 million people) has foot problems each year. Podiatrists provide 39% of all foot care services (compared to orthopedic physicians at 13%, other physicians (primary care or specialists) at 37%, and physical therapist and others at 11%) (Figure 54). They treat about 5% of the U.S. population every year. Fifty-six percent of older adults have seen a podiatrist professionally in their lifetime.

Figure 54: Providers of Foot Care Services to U.S. Population



Source: American Podiatric Medicine Association, 2003

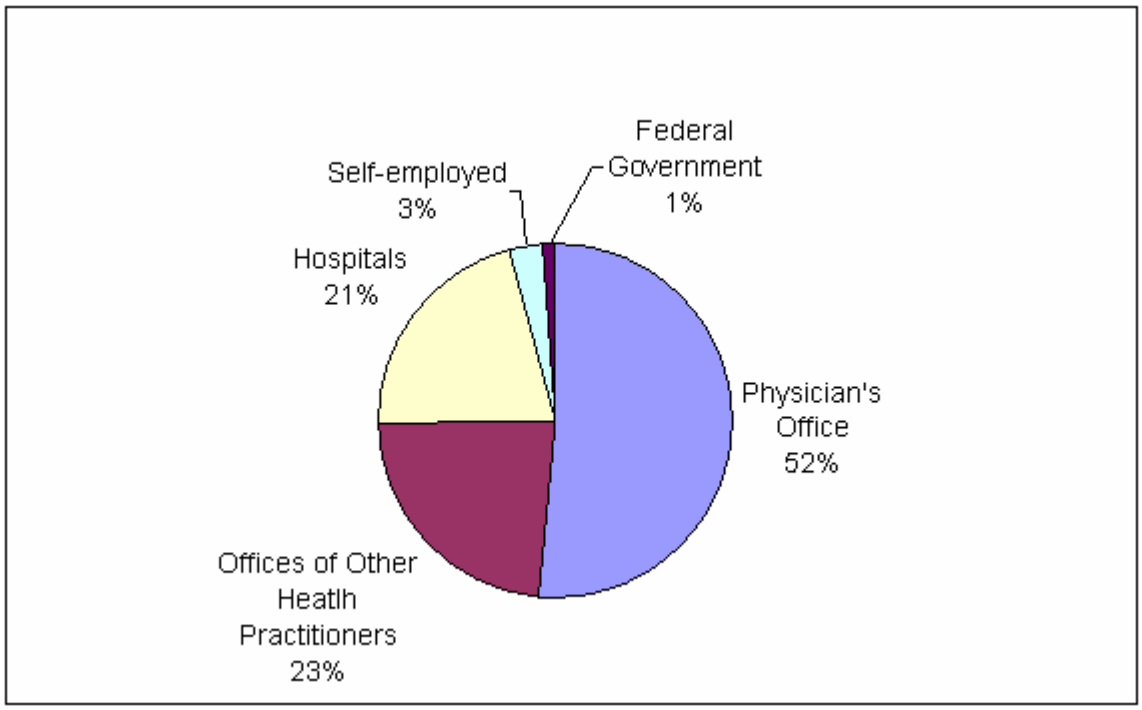
The services provided by podiatrists may help prevent loss of mobility in older adults. Research has shown that impairment of the lower extremities may impair both functional mobility and balance in older adults, and is a leading cause of activity limitation in older people. Loss of mobility compromises quality of life for older adults, as well as growing medical costs. Loss of balance may increase the risk of falls, which may result in potentially dangerous injuries and expensive medical treatment.

Profile of the Current Podiatrist Workforce

All states and the District of Columbia license podiatrists. There were about 18,000 podiatrists in the United States in the year 2000. Podiatrists must complete a four-year post-baccalaureate educational program, which in most states must be followed by a residency of at least one year. Most states require written and/or oral examinations for licensure, and many require continuing education as a condition for maintaining licensure.

Most podiatrists work in offices of physicians or other health practitioners, while a significant percentage (21%) work in hospitals. Figure 55 shows that only a small fraction (3%) of podiatrists is self-employed.

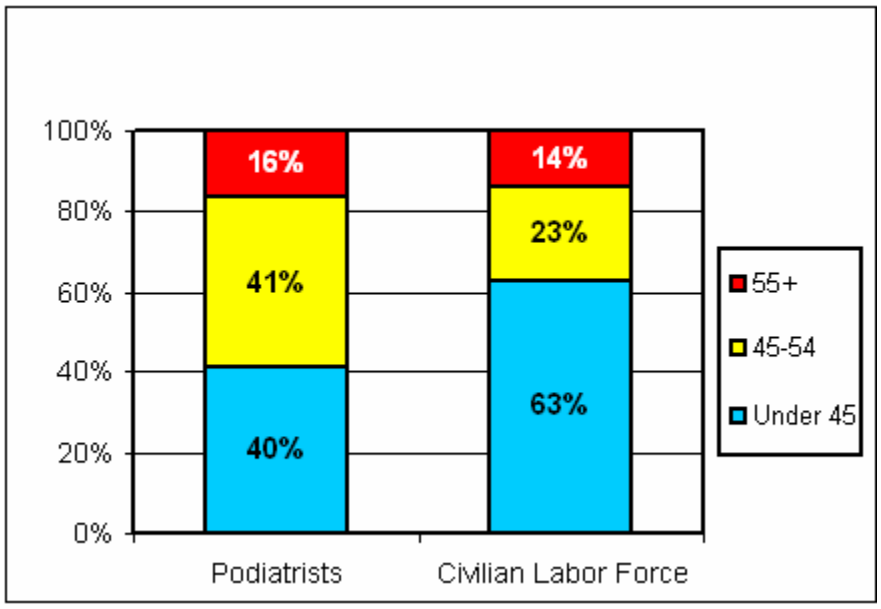
Figure 55: Distribution of Podiatrists by Employment Setting, U.S., 2000



Source: BLS, 2003a

The podiatrist work force is substantially older on average than the civilian labor force overall (Figure 56), with almost twice the percentage of podiatrists in the 45-54 age range. Almost 60% of the podiatrist workforce will reach retirement age by the year 2020, just as the numbers of older adults are growing dramatically.

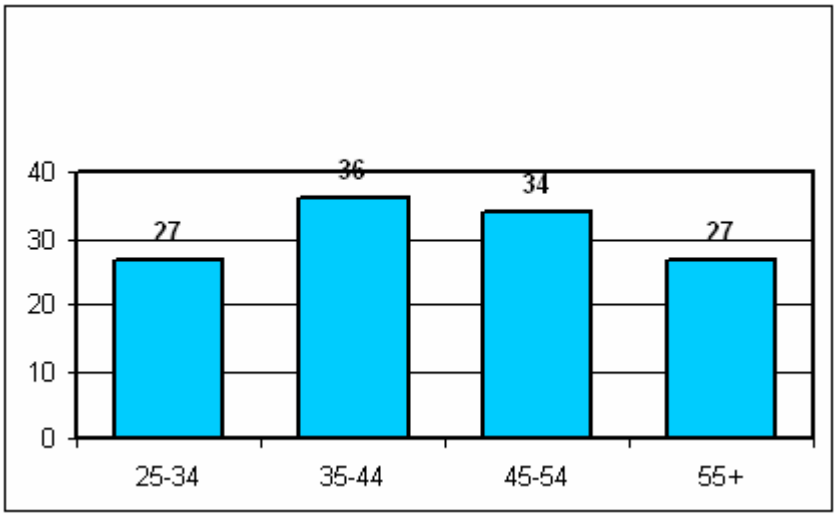
Figure 56: Age Distribution of Podiatrists Compared to Civilian Labor Force, U.S., 2001



Source: CPS data (BLS, 2001)

As is true for many health professions, the number of hours worked weekly by podiatrists tends to decline with age. Although young podiatrists tend to work relatively few hours (an average of 27 per week for those age 25-34), this is probably because many in this age group are still completing residencies and internships that may be combined with classroom education. Those age 35-44 work an average of 36 hours per week (unlike physicians, podiatrists do not typically need to be "on call" for after-hours emergencies), but average hours worked start to decline after the age of 44. Podiatrists age 55 and older work an average of only 27 hours per week (Figure 57).

Figure 57: Mean Number of Hours Worked per Week by Podiatrists, by Age, 2001



Source: CPS data (BLS, 2001)

Training, Education, and Credentials Related to Aging

Courses in geriatrics are not a part of the required podiatric medicine curriculum; nor are clinical rotation in geriatrics. Clinical rotations in geriatrics are available, however, and the Council on Podiatric Medical Education (CPME) has set standards for geriatric rotations.

According to CPME, clinical rotations in geriatrics should develop the student's knowledge of the geriatric assessment process and the interdisciplinary approach to the geriatric patient; understanding of foot care for the geriatric patient as well as an understanding of health promotion, wellness and prevention of disease; knowledge of the biological and psychosocial issues facing older adults and methods of managing older adults in both institutional and private office settings; and understanding ethical considerations in the medical management of the geriatric patient.

Supply Trends

Educational Production. Podiatry is a small profession, and there are only seven educational programs in podiatric medicine in the country. Approximately 500-700 applicants apply to podiatric medical school each academic year, of which 85% are usually accepted. First year enrollment totals range from 600-700 per year. Total enrollment for all seven colleges

of Podiatric Medicine in 1999-2000 was 2,258 [American Association of Colleges of Podiatric Medicine, 2003]. In 2001, these seven programs graduated 569 new DPMs [NCES, 2002].

Replacement. On average, podiatrists are substantially older than the U.S. civilian labor force overall, and replacement needs will be high in the profession. The BLS estimates that there will be about 6,000 job openings for podiatrists between 2000 and 2010, fully half of which will be to replace practitioners retiring or leaving the profession.

Demand

The BLS predicts job growth of about 14% in podiatric medicine by the year 2010 (about average for all professions). It is expected that per capita use of podiatrists will swell as the population ages, due to older adults' greater prevalence for foot problems. The BLS predicts that 6,000 job openings for podiatrists will occur between 2000 and 2010, with 3,000 of these due to increased demand for the profession (the other half occurring due to replacement needs). The replacement need between 2010 and 2020 is likely to rise to 7,000 as Podiatrists now between 45 to 55 years old reach age 65 [BLS, 2001].

Issues For Podiatrists and Older Adults

Reimbursement is an important issue for Podiatrists. Medicare (Part B) and most private health insurance programs cover acute medical and surgical foot services, as well as diagnostic x rays and leg braces. Details of coverage vary among plans. However, routine foot care—including the removal of corns and calluses—is ordinarily not covered by insurance, unless the patient has a systemic condition (e.g., diabetes) that has resulted in severe circulatory problems or areas of desensitization in the legs or feet [APMA, 2003]. Like dental services, demand for podiatric care is more dependent on disposable income than other medical services [BLS, 2003b].

Gap Between Future Demand and Expected Production

The BLS projects that job growth plus net replacement will create 6,000 new job openings in podiatry between 2000 and 2010, yet colleges of podiatric medicine are only producing 569 graduates annually. Any potential gap could grow even larger by the year 2020, when approximately 10,000 of the current 18,000 podiatrists will have reached the age of 65 [BLS, 2001].

Much of the potential for a shortage of Podiatrists over the next decade will depend, however, on use of services by older adults. Little is currently known about how older adults use podiatry services, and current patterns of use could change if the Medicare system changes in the next twenty years.

H. Optometrists

Summary

Optometrists provide most of the primary vision care in the United States. They perform eye examinations and diagnose and treat vision problems and eye diseases. The need for optometric services rises with age, beginning around age 40-50. The incidence of glaucoma increases at this point in life, and general visual acuity begins to decline.

Optometrists tend to work in health offices or in retail or wholesale industries (where they are often involved in the sale of eyewear and contact lenses). Older adults constitute a large proportion of the patient or customer base of optometrists in almost all of these settings. About 15% of optometry visits are by older adults, and about 15% of expenditures on corrective lenses are also by older adults.

Most recent optometry graduates have received specialized training in treating the geriatric patient, as either an elective or required formal course. One-year postgraduate clinical residency programs are also available for optometrists who wish to specialize in geriatric optometry [BLS, 2003a].

Employment of optometrists is expected to grow about 19% through 2010 (about as fast as the average for all occupations). Much of this growth will be driven by the vision care needs of aging baby boomers. The BLS predicts that there will be 12,000 total job openings for optometrists between 2000 and 2010, but that only 6,000 of these represent net growth in the field [BLS, 2003b]. About 1,432 optometry degrees are currently conferred every year, which should be more than sufficient to meet projected demand over the next ten years. A shortage of optometrists is not expected in the next ten years, but may become more of a concern between 2010 and 2020 as larger numbers of optometrists reach retirement age.

Optometrists: Services to Older Adults

Optometrists provide most primary vision care in the United States. They perform eye examinations and diagnose and treat vision problems and eye diseases. They develop treatment plans, provide vision therapy, and prescribe eyeglasses, contact lenses, and medications. Although they do not perform eye surgery, they provide preoperative and postoperative care for eye surgery patients.

The four most common eye pathologies in older adults are macular degeneration (which affects the part of the eye that controls “central vision”), glaucoma (which causes “slow damage” to the optic nerve), diabetic retinopathy (which causes blood vessels in the eye to leak), and cataracts (which cloud the eye). Optometrists diagnose and treat all of these conditions.

Optometrists treating older adults may be part of an interdisciplinary care team including other health and social services directed toward enhancing the physical, psychological, and social functioning of older persons [HRSA, 1998].

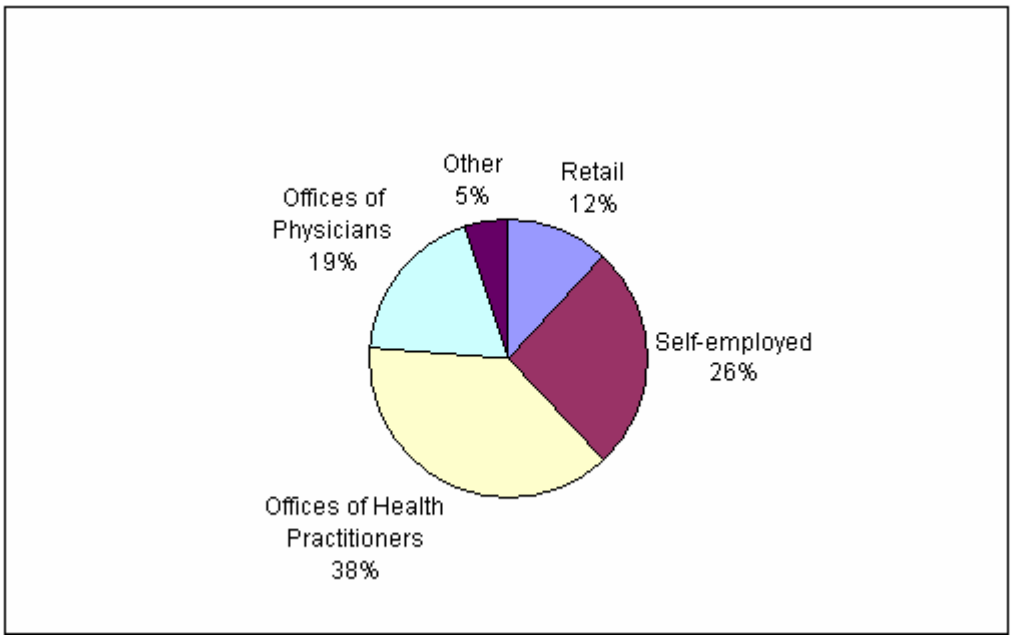
Profile of Current Optometrist Workforce

Optometrists held about 31,000 jobs in the U.S. in the year 2000. Optometrists largely practice in their own offices or the offices of other optometrists, physicians, or other health practitioners. A substantial number of optometrists also work in retail or wholesale industries, where they are presumably involved in the sale of eyewear and contact lenses. Older adults account for 15% of optometry office visits, and 15% of expenditures on corrective lenses, meaning that they are slightly over-represented as consumers of optometry.

Optometrists must be licensed in all fifty states and the District of Columbia. The Doctor of Optometry (OD) degree is required for licensure, and applicants must pass both a written and clinical examination. Continuing education is required for renewal of licensure in all states. The OD is a four-year postgraduate degree that follows at least 3 years of pre-optometric undergraduate study.

Figure 58 shows that in 2000, 57% of optometrists work in the offices of physicians or other health professionals. Another 26% were self-employed.

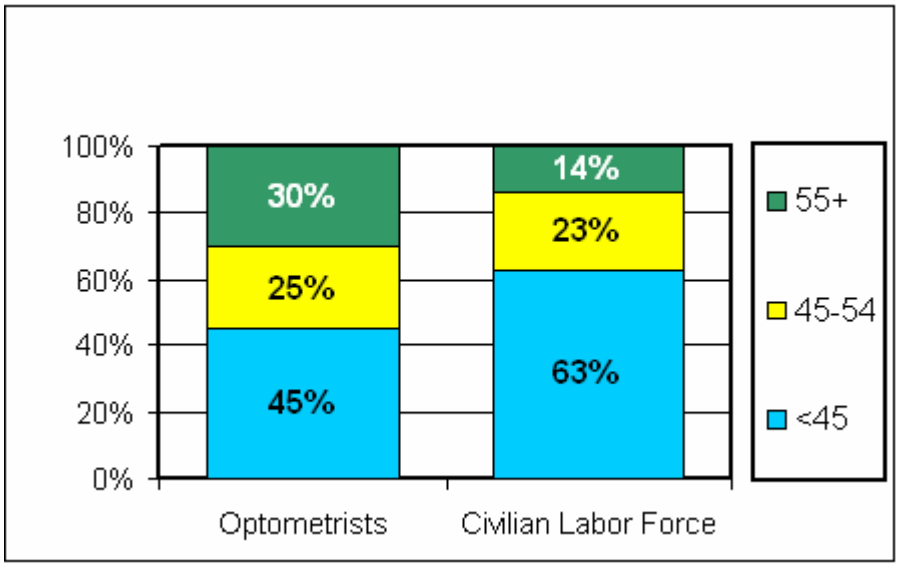
Figure 58: Distribution of Optometrists Across Employment Settings



Source: Industry-Occupation Employment Matrix [BLS, 2003]

The optometry workforce is substantially older on average than the civilian labor force. In 2001, 30% were age 55 and older, and would reach the traditional retirement age of 65 by the year 2010. Another 25% were age 45-54. Overall, about 55% of optometrists are likely to reach retirement age by the year 2020, compared to only 37% of the U.S. labor force (Figure 59).

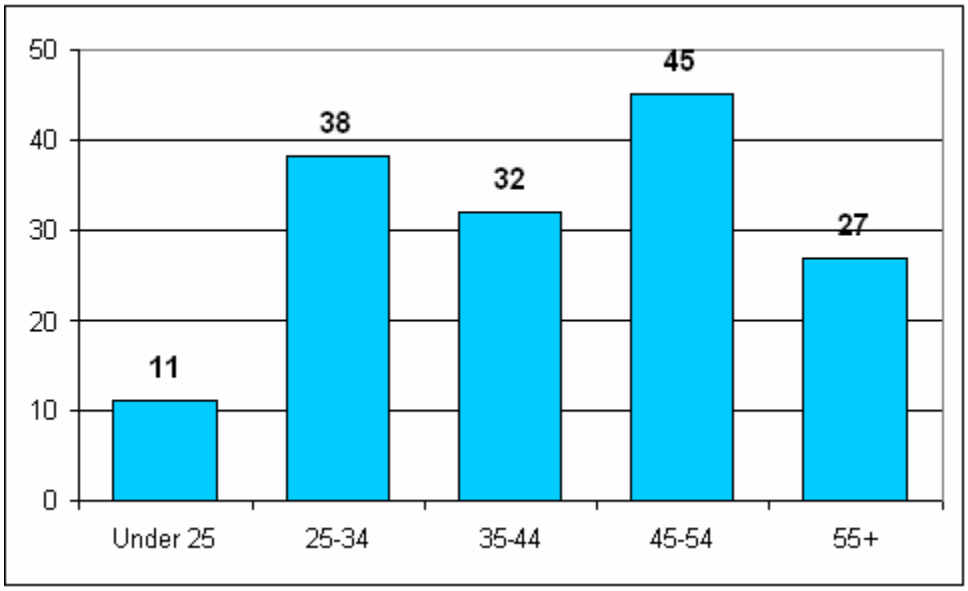
Figure 59: Age Distribution of Optometrists, U.S., 2001



Source: CPS data [BLS, 2001]

Optometrists are practicing more often on a part-time basis: thirty-six percent of optometrists reported they usually work fewer than 40 hours a week (compared to 34% of the U.S. civilian labor force), and 29% reported working 30 or fewer hours per week (compared to 27% of the U.S. civilian labor force). Although optometrists age 45-54 reported in 2001 that they worked 45 hours a week on average, the number of hours worked among those age 55 and older was only 27 hours a week (see Figure 60). In addition, just over half (52%) of currently enrolled optometry students are women, who tend to work fewer hours. Female optometrists worked 34 hours per week while male optometrists worked 36 hours per week [BLS, 2001].

Figure 60: Average Hours Worked Per Week by Optometrists, by Age, U.S., 2001



Source: CPS data [BLS, 2001]

Training, Education, and Credentials Related to Aging

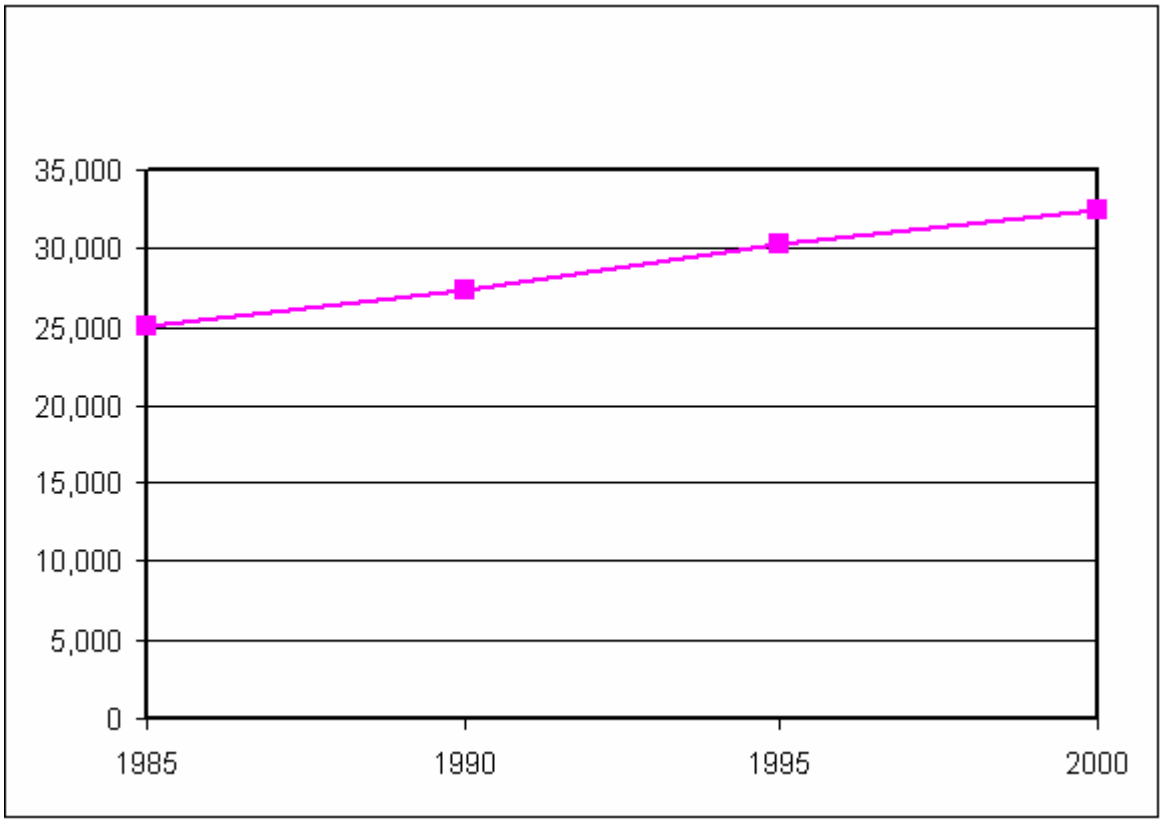
General Curriculum. Optometrists graduate from four-year postgraduate programs leading to the Doctor of Optometry (OD) degree. Geriatric content in OD programs has been expanding in recent years. In 1998, 94% of optometry programs reported offering a formal course in geriatric optometry (up from 69% in 1986), and 84% of programs required such a course (up from 50% in 1986) [HRSA, 1998].

Specialization and Credentialing. One-year postgraduate clinical residency programs are available for optometrists who wish to specialize in geriatric optometry [BLS, 2003a]. The American Optometric Association does not offer a separate credential or a section membership in geriatric optometry.

Supply Trends

The national supply of optometrists rose through much of the 1990s (Figure 61), although production of new optometrists has begun to plateau. Current numbers of optometrists are believed to be adequate to meet the needs of the public. This is likely to continue until the retirement of baby boomer practitioners starts to increase (around 2012).

Figure 61: Estimated Optometrists in the U.S., 1985 to 2000

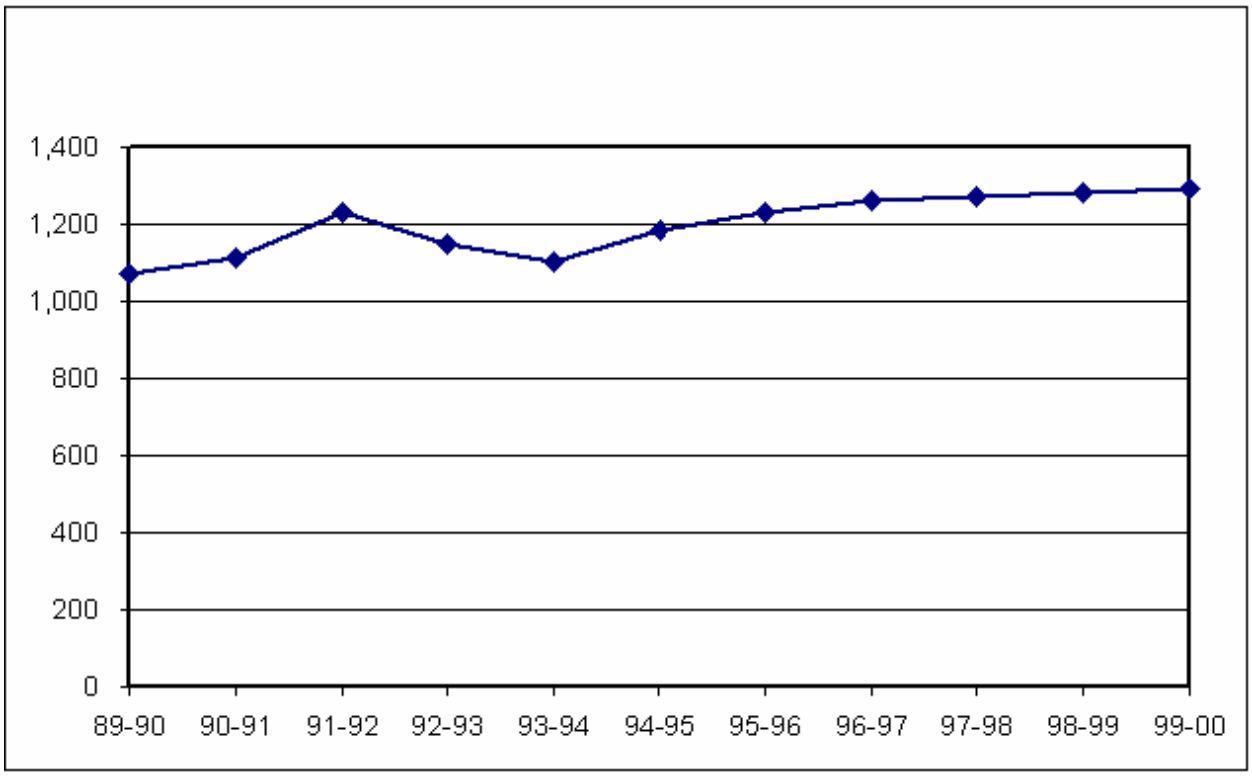


Source: National Center for Health Statistics; White et al.

Education production of optometrists has followed a similar pattern, with 26% growth in the annual number of graduates between 1985 and 2000. In 2000, there were 18 educational programs in optometry, which awarded 1,293 OD degrees that year (Figure 62).

If educational program enrollment remains the same, then the current oversupply will begin to shrink. The number of applicants to educational programs has been decreasing, as has the number of individuals sitting for entrance exams to OD programs.

Figure 62: Degrees Awarded by OD Programs in the U.S., 1989-1990 to 1999-2000



Source: National Center Education Survey

Replacement. About 30% of currently active optometrists will reach retirement age by the year 2010, and another 25% by the year 2020. The BLS projects that between 2000 and 2010, about 6,000 job openings for optometrists will occur due to the need to replace existing optometrists [BLS, 2003b].

Demand

Employment of optometrists is expected to grow about 19% through 2010 (about as fast as the average for all occupations). Much of this growth will be driven by the vision care needs of the aging baby boomers. The BLS predicts that there will be 12,000 total job openings for optometrists between 2000 and 2010, but that only 6,000 of these represent net growth in the field [BLS, 2003a]. Other factors affecting demand include:

- The need for optometric services rises with age, beginning around age 40-50. The incidence of glaucoma increases at this point in life as well, and visual acuity declines.

- The four most common eye pathologies in older adults are macular degeneration, glaucoma, diabetic retinopathy, and cataracts. Thus, the need for professionals who can treat these conditions is likely to grow markedly over the next few decades.

- As the numbers of older Americans grow, the numbers of Americans age 40 and older that suffer from blindness could rise from about 1 million today to 1.8 million by 2020 [National Eye Institute and Prevent Blindness America].

- An additional 3.4 million Americans – many of them older adults – will suffer from impaired vision severe enough to cause functional limitations [National Eye Institute and Prevent Blindness America].

- The baby boom cohort may be more likely than previous cohorts to need the services of optometrists because many use computers extensively, advancing their risk of vision problems.

- New technologies are being developed (e.g., those for retina therapy), and new treatments are becoming available for some conditions (e.g., for macular degeneration). If these technologies lead to new services by optometrists, it is likely demand for optometric services will grow.

Issues for Optometry and Older Adults

A number of issues for the profession may potentially impact demand for services by older adults and availability of services. The most prominent of these issues are reimbursement and access to services.

Reimbursement. As is true for all health services and professions, demand is driven in large part by the availability of insurance and third party reimbursement. Routine eye examinations are not currently covered by Medicare, although (for high-risk patients only) screenings for glaucoma and macular degeneration are covered. Optometry is very dependent on the third-party payer system. Some sort of insurance (full or partial) covers about 73% of optometry patients, and Medicare accounted for 17% of optometrists' revenues in 2000. Reimbursement is thus a key issue when talking about older adults, especially with patients who have multiple problems and require greater coordination of care.

Access. Currently, the availability of optometric services to those who cannot easily make visits to offices is quite limited, mostly because the equipment needed is expensive and not very mobile. There are some doctors of optometry who provide services in extended care facilities and clinics with mobile equipment, but this is quite rare. The profession is aware of the needs of this patient base, however, and has taken steps to address those needs. The American Optometric Association has a Geriatrics and Nursing Facility Committee devoted to the development and implementation of programs addressing the special needs of the geriatric population, particularly those in nursing homes.

Gap Between Future Demand and Expected Production

Currently, there is a sufficient supply of optometrists to meet demand, although around the year 2012, the baby boom generation optometrists will start to reach retirement age and leave practice. The supply may begin to decline sooner if enrollments in schools of optometry do not rise. Concerns have been expressed among some practicing optometrists about the harm that an oversupply could do to the profession, but these fears do not seem founded at this point. The average income of optometrists has continued to rise, despite the surplus [CHWS, 2003].

It is anticipated that productivity gains will occur in the profession through the use of new types of equipment, instruments, and treatments. For example, refraction systems are now available with automatic computation programs that analyze massive amounts of measurement data and compute the best fit for the patient. Such new technologies will allow each optometrist to see more patients while providing the same levels of service. This is likely to limit growth in the numbers of optometrists demanded by the job market [BCOO, 2000].

I. The Therapy Professions: Physical Therapists, Occupational Therapists, Respiratory Therapists, Speech-Language Pathologists, and Audiologists

Summary

The therapy professions (physical therapy, occupational therapy, respiratory therapy, speech-language pathology, and audiology) provide services that help restore physical functioning to patients after losses due to disease, injury, or aging; and that aid patients in dealing with the loss of such functions (e.g., through the use of compensatory skills or assistive devices). Therapists tend to work in hospitals, home health care, and specialty outpatient centers. Smaller numbers of therapists also work in nursing or residential care facilities.

Physical therapists, occupational therapists, and respiratory therapists sometimes work with therapy assistants, who perform components of therapy procedures and related tasks under the supervision of a therapist. Therapists also work with therapy aides, who move patients, prepare equipment, and perform clerical tasks. These helper occupations may perform a higher proportion of therapy tasks in the future as demand for therapy services grows in the future.

Older adults consume a high percentage of therapy services, especially physical therapy and audiology, due to higher rates of physical/mobility limitation and hearing/communication impairment. Geriatrics is part of the required curriculum for all therapy professionals. Physical therapists may also specialize in geriatric physical therapy, and a geriatric certification is also being considered for audiologists.

Employment of therapy professionals is projected to grow between 33% and 45% between 2000 and 2010, with the largest growth for speech-language pathologists and audiologists. Large numbers of job openings will also occur due to the need to replace existing professionals. Overall, however, therapists are younger than the U.S. civilian labor force as a whole, so the aging of the population will not deplete these professions as much as many other health professions.

Currently, about 6,000 physical therapists, 9,000 occupational therapists, 9,000 respiratory therapists, 7,000 speech-language pathologist/audiologists, 2,000 speech-language pathologists, and 500 audiologists are produced annually by their respective education programs. Whether this production will be adequate to meet the demands of future older adults will depend in large part on issues such as Medicare reimbursement. There have been recent and proposed changes to Medicare affecting almost all of the therapy profession, and the impact of these changes is not yet apparent. The expanding numbers and roles of therapy assistants will also affect future supply trajectories for the primary professions.

The Therapy Professions: Services to Older Adults

Physical Therapists: Physical therapists (PTs) provide services that help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease. They restore, maintain, and promote overall fitness and health.

Their patients include accident victims and individuals with disabling conditions such as low back pain, arthritis, heart disease, fractures, head injuries, and cerebral palsy [BLS, 2003a].

Physical therapists often consult and practice with a variety of other professionals, such as physicians, dentists, nurses, educators, social workers, occupational therapists, speech-language pathologists, and audiologists [BLS, 2003a]. They are an integral part of most interdisciplinary health care teams with particular responsibility for evaluating and treating the impairments that contribute to mobility restrictions and subsequent functional limitations.

Physical therapists work with physical therapist assistants (PTAs) and physical therapist aides. PTAs, who usually hold associate's degrees from PTA programs, perform components of physical therapy procedures and related tasks under the supervision of a physical therapist. Physical therapy aides are usually trained on the job, and move patients, prepare equipment, and perform clerical tasks.

Occupational Therapists: Occupational therapy (OT) is a health and rehabilitation profession that helps people regain, develop, and build skills that are important for independent functioning [AOTA, 2002]. OTs work with people of all ages who because of illness, injury, or developmental or psychological impairment need specialized assistance in learning skills to enable them to lead independent, productive, and satisfying lives. OTs also promote health and wellness among the non-disabled population [Fisher, Cooksey, and Reed, 2001].

Occupational therapists work with certified occupational therapist assistants (COTAs) and occupational therapist aides. COTAs, who usually hold associate's degrees from COTA programs, perform components of occupational therapy procedures and related tasks under the supervision of an occupational therapist. Occupational therapy aides are usually trained on the job, and move patients, prepare equipment, and perform clerical tasks.

OT services typically include customized treatment programs aimed at improving abilities to carry out activities of daily living (ADLs); comprehensive evaluation of home and job environments and recommendations on necessary adaptation; assessments and treatments for performance skills; recommendations and training in the use of adaptive equipment to replace lost function; and guidance to family members and attendants in safe and effective methods of caring for individuals.

The services provided by occupational therapists enable older Americans remain in their homes and care for themselves. They also fill an important role in adult day-care programs. The functional approach used by occupational therapy helps older people overcome multiple disabilities associated with aging and enables them to perform self-care, work, and leisure activities. Occupational therapy personnel use their expertise to analyze activities and facilitate problem solving. Occupational therapy personnel may also serve as administrators, activity coordinators, and consultants within adult day-care and assisted living settings.

Respiratory Therapists. Respiratory therapists evaluate, treat, and care for patients with breathing disorders. Respiratory therapists assume primary responsibility for all respiratory care treatments, including the supervision of respiratory therapy technicians. In some hospitals,

therapists perform tasks that fall outside their traditional role, such as cardiopulmonary procedures (e.g., electrocardiograms and stress testing) and drawing blood samples from patients. Therapists also keep records of materials used and charges to patients. Respiratory therapists sometimes work with respiratory therapy technicians, who perform many of the same tasks, but have lower levels of training and experience [BLS, 2003a].

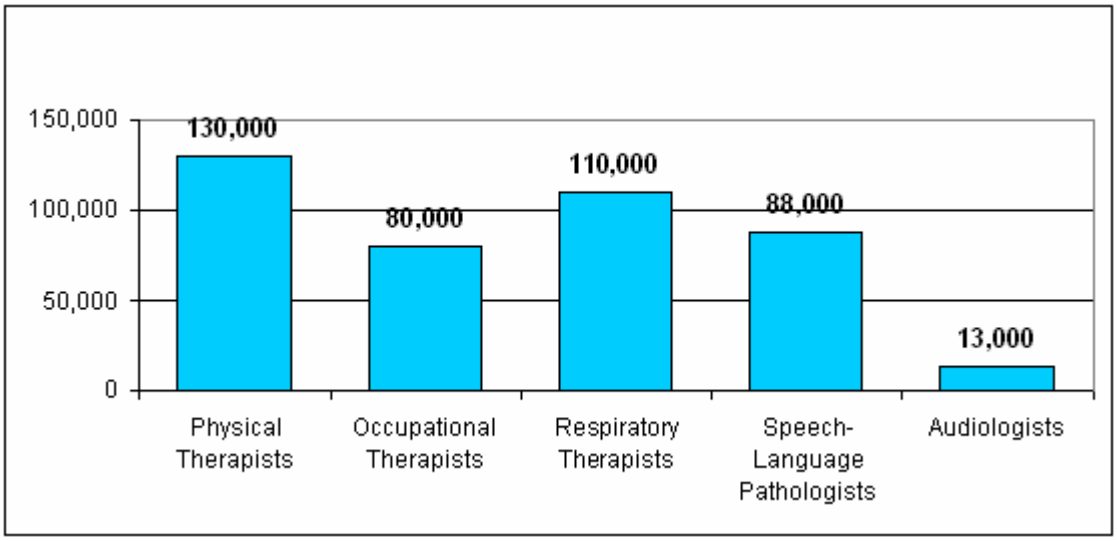
Speech-language Pathologists. Speech-language pathologists (SLPs) work with people who have difficulty speaking or who have problems with other oral motor tasks such as eating and swallowing. Two of the primary causes for speech-language and oral motor difficulties are stroke and hearing loss, which disproportionately affect people age 65 and older. SLPs assist patients in developing/recovering their communication skills, and teach them how to use assistive technologies and alternate communication methods. Additionally, they counsel patients and their families in dealing with and managing communication difficulties.

Audiologists. Audiologists (many of whom are also trained as SLPs) work with people who have hearing or balance problems. They evaluate patients for hearing loss, and provide patients with assistive technologies (e.g., hearing aids or cochlear implants) and alternative skills (e.g., lip reading or sign language). Audiology services are critical for older adults because older people are disproportionately affected by hearing loss. In 2001, approximately 33% of people 70 years of age and older were hearing-impaired [Desai, et al., 2001].

Profile of the Current Therapy Workforce Serving Older Adults

Figure 63 shows that there were approximately 420,000 therapy professionals in the U.S. in 2000. As with many health professions, their patients are disproportionately older adults.

Figure 63: Estimated Numbers of Therapy Professionals in the U.S., 2000



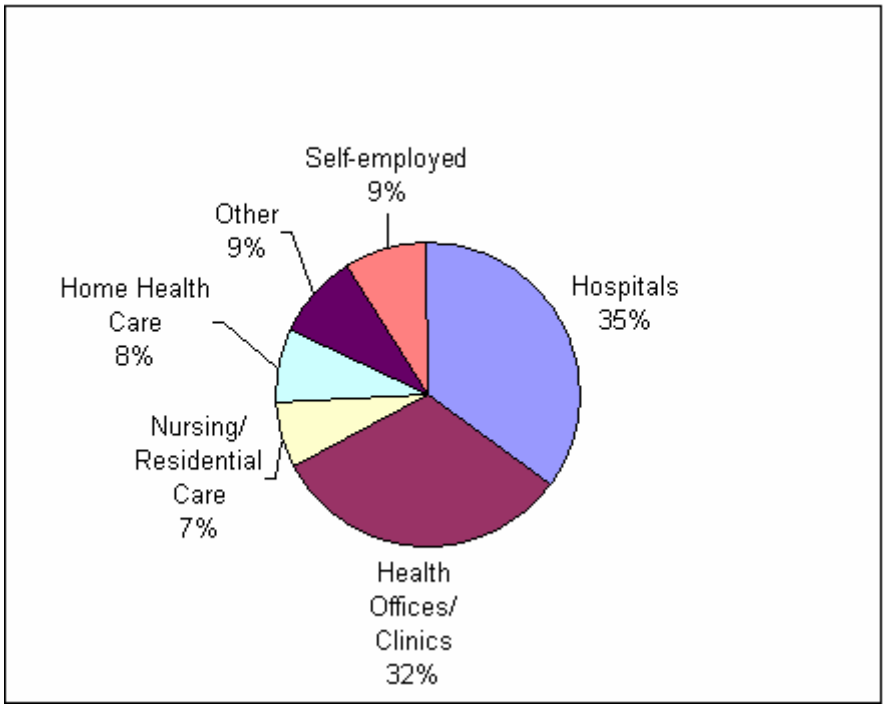
Source: BLS, 2003

Physical Therapists. There were approximately 130,000 physical therapists working in the U.S. in 2000. Physical therapists must be formally trained through an accredited program, and educational programs offering a degree in physical therapy must offer at least a master's degree.

All states also require licensure for physical therapists, which is awarded through examination. Some states also require continuing education to maintain licensure [BLS, 2003a].

Figure 64 shows that the settings that employ the most PTs are hospitals (35%) and health offices/clinics (32%). Older adults average 80% more physicians' visits per year and are hospitalized almost three times as often as those younger than age 65, so the PTs who work in these settings are likely to treat large numbers of older adults. Seven percent work in nursing facilities and 8% work in home health care, where approximately 80-85% of patients are older adults. Another 9% are self-employed, and probably have independent practices. In 1998, it was estimated that 39% of the patients treated by PTs were older than age 65 [USDHHS, 1998], and this percentage is likely to have increased since then.

Figure 64: Distribution of Physical Therapists by Work Setting, U.S. 2001



Source: OES (BLS, 2003)

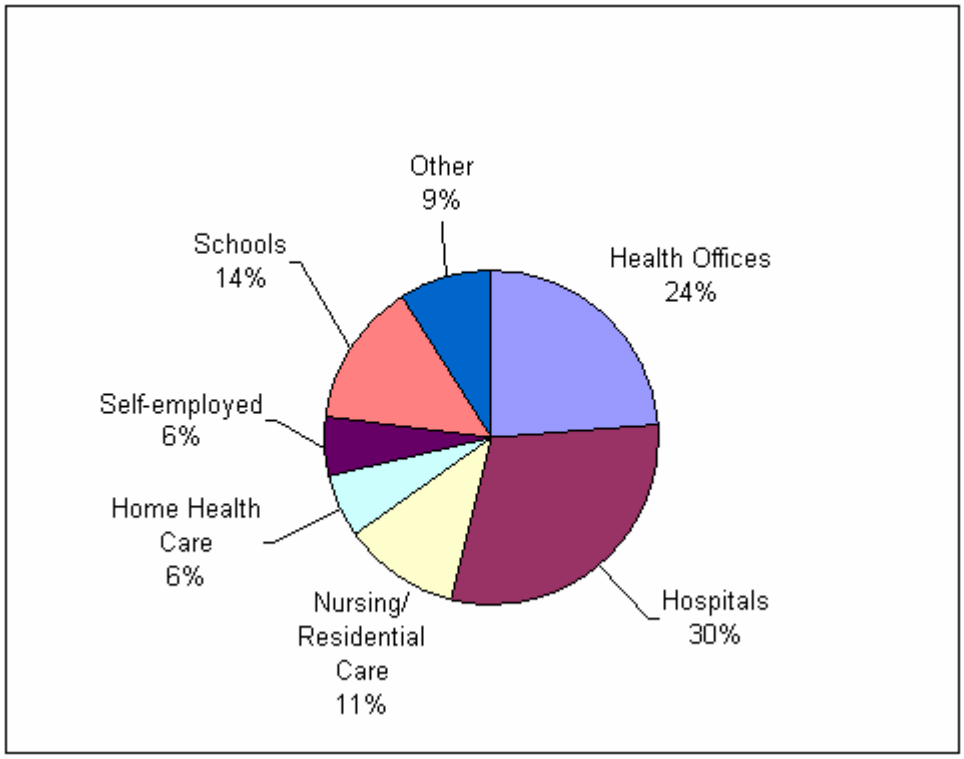
The settings in which geriatric PT is practiced are likely to change over the next ten years. Nursing homes will continue to expand as sites for short-term and sub-acute rehabilitation, with employment of PTs in such settings growing by 29% between 2000 and 2010. Employment of PTs in home care will rise by more than 60% in the same period [BLS, 2003b].

PTs are younger on average than the civilian labor force overall. In 2001, their median age was 37, compared to 40 for the civilian labor force. Only 1% of PTs are older than age 64, and only an additional 5% are age 55-64. Therefore, only a small number of PTs can be expected to retire by 2010. Between 2010 and 2020, however, those physical therapists currently age 45-54 (22%) will reach their 65th birthdays. Retirements of PTs may become a more important issue at that time.

Occupational Therapists. In 2000, there were approximately 80,000 positions occupied by OTs in the U.S. [BLS, 2003b], although data from state licensing authorities and professional associations suggest that there are currently 96,000 persons in the U.S. qualified as OTs. An oversupply of occupational therapists in the 1990s has presumably resulted in more trained OTs than there are currently jobs for OTs.

Figure 65 shows that OTs are most likely to work in hospitals (30%), offices of physicians and other health practitioners (24%), while 11% work in nursing and residential facilities. Six percent of OTs work in home health care and 6% are self-employed. OTs (14%) who worked in elementary or secondary schools would not be expected to serve older patients.

Figure 65: Distribution of Occupational Therapists by Work Setting, U.S.,2001



Source: OES data (BLS, 2003)

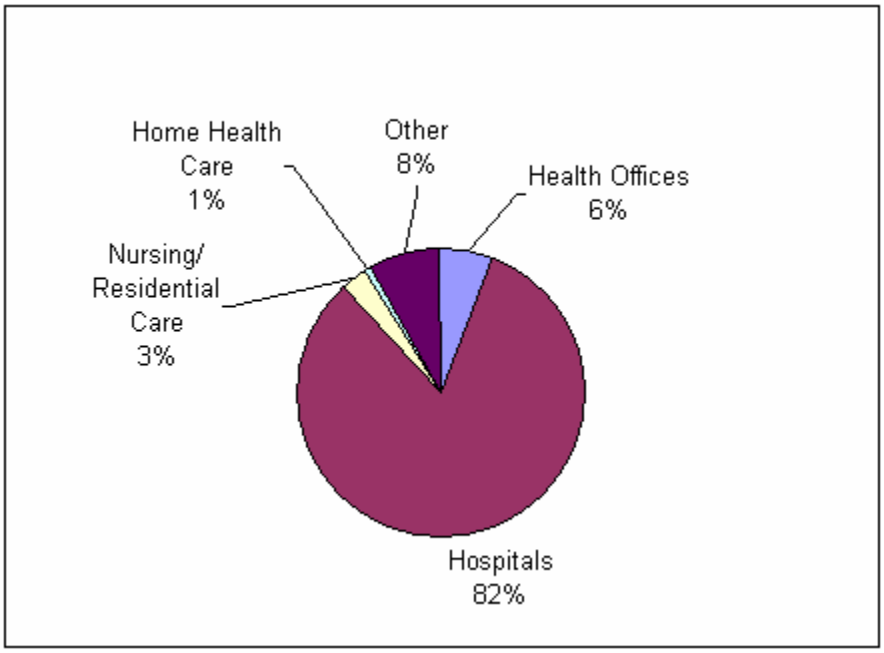
OTs are younger than the U.S. civilian work force as a whole, with a median age of 36, compared to 40 for the civilian labor force. Eighty-two percent of OTs are younger than 45. Only 4% of OTs are age 55 and older. The fact that OTs are a are a relatively young profession means that they will be less affected by retirements over the next twenty years than many other health professions.

Respiratory Therapists. There were approximately 110,000 respiratory therapist jobs in the U.S. in 2000. Respiratory therapists train at medical schools, colleges and universities, and trade schools/vocational-technical institutes. Educational programs vary in length: some programs award associate or bachelor's degrees and prepare graduates for jobs as registered respiratory therapists (RRTs), while other programs award certificates which lead to jobs as entry-level

certified respiratory therapists (CRTs). Most states license respiratory care personnel and licensure is awarded by examination.

Respiratory therapists overwhelmingly (82%) work in hospitals (Figure 66). Another 8% work in unspecified health settings. Only 3% work in nursing and personal care facilities. Hospitals are expected to continue to employ more than 8 out of 10 respiratory therapists, but a growing number of therapists will work in respiratory therapy clinics, nursing homes, home health agencies, and firms that supply respiratory equipment for home use. The largest projected percentage growth for RTs is in home health care, where employment of respiratory therapists is expected to increase by more than 70% by 2010 [BLS, 2003b].

Figure 66: Distribution of Respiratory Therapists by Work Setting, U.S., 2001



Source: OES data [BLS, 2003]

In 2001, RTs had the same median age (40 years) as the civilian labor force overall. A larger percentage of RTs are younger than age 45, however, than the civilian labor force (73% versus 63%), and a smaller percentage of RTs are age 55 and older (3% versus 14%). Retirements among respiratory therapists are therefore expected to be less problematic than for most health professions, with only 27% of RTs reaching retirement age by 2020.

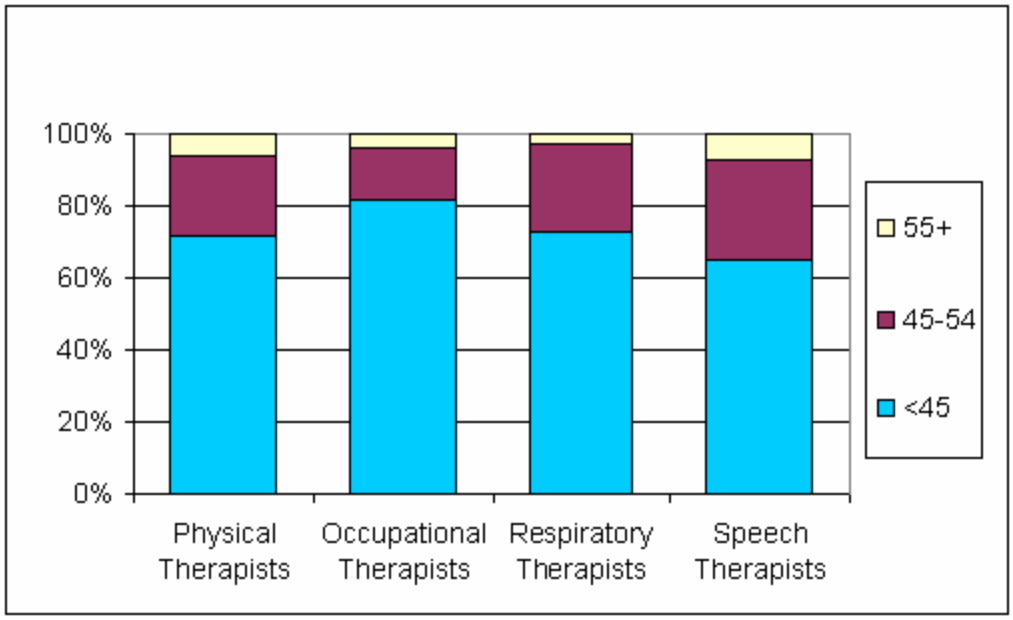
Speech-Language Pathologists and Audiologists. There were approximately 88,000 speech-language pathologists and 13,000 audiologists in the U.S. in 2000. Most states regulate speech-language pathology and audiology, and almost all of these require a master's degree for speech-language pathologists. Other requirements for licensing, which vary by state, include an examination, clinical experience, and continuing education requirements.

About 53% of jobs for speech-language pathologists are in educational settings—preschools, elementary and secondary schools, or colleges and universities. Undoubtedy, these SLPs will

have little contact with older adults. Others work in hospitals and health offices. About 6% of SLPs work in either nursing homes or home health care, where the majority of patients will be older than age 65. Audiologists are more likely to work with older adults than SLPAs. Fewer audiologists work in educational settings (about 28%) and more work in health offices (about 37%). Fewer also work in home health care or nursing homes, however [BLS, 2003a].

Speech therapists have the same median age (40) as the civilian labor force. However, only 7% of speech therapists are age 55 and older (Figure 67) compared to 14% of the civilian labor force. Thirty-five percent of speech therapists will reach the age of 65 by the year 2020, which may create problems related to their retirement.

Figure 67: Age Distribution of Therapy Professionals in the U.S., 2001



Source: CPS data [BLS, 2001]

Training, Education, and Credentials Related to Aging

Physical Therapists. The physical therapy profession has a long track record of attention to geriatric issues. In 1990, the American Physical Therapy Association (APTA) department of accreditation, with funding from the AOA, identified the geriatric content important for physical therapy general curricula. Their initiative includes curriculum assessment, remediation suggestions, and the training of geriatric specialists as on-site team members [USDHHS, 1998].

Geriatric physical therapy was approved by APTA as a specialty area in 1989, and the first exam was given in 1992. An examination and patient care hours are the basis for certification. There are currently 488 Board Certified Geriatric Clinical Specialists in the U.S. (www.apta.org), with

the expectation of 50 new specialists annually. Board Certified Geriatric Specialists work in a variety of settings, most frequently nursing facilities with active rehabilitation programs and home care [USDHHS, 1998].

Relatively few graduating students, however, have specialized in geriatrics. The typical PT student has a low intention of working in geriatrics, due in large part to negative stereotypes about older adults as patients. Such biases are a particular concern because recent work suggests that the accuracy of clinical judgments about older patients is negatively affected by stereotypical beliefs about older adults [USDHHS, 1998].

Clinical experiences with older adults decrease age bias among students, but low student interest in geriatric clinical internships and inadequate numbers of qualified geriatric clinical sites (in terms of knowledgeable practitioners, number of PTs on staff, variety of patients and geographic accessibility) prevent greater student participation in such experiences [USDHHS, 1998].

Occupational Therapists. Occupational therapy professional education programs address a variety of content areas directly relevant to geriatric care, although geriatrics itself is not one of the content areas [Fisher et al., 2001]. The AOTA's Accreditation Council for Occupational Therapy Education (ACOTE) is the recognized accrediting body for OT educational programs. Current ACOTE Standards require broad-based curricula content that covers pediatrics to geriatrics. OT students receive a strong foundation in the biological, physical, social, and behavioral sciences to support an understanding of occupation across the life span. OT students must also complete a minimum of the equivalent of 24 weeks of full-time Level II fieldwork in which they are exposed to a variety of clients across the life span (including older adults), and in a variety of settings. The current ACOTE Standards were adopted in December 1998 and a review process will begin anew in 2003, including an evaluation of the adequacy of curricula content on the needs of older adults. [AOTA, 2002].

The ACOTE accreditation process thoroughly assesses compliance with the ACOTE educational curriculum standards in regard to meeting the needs of older adults on an ongoing basis. Any programs not sufficiently in compliance with standards related to care needs of older adults are cited and required to submit a Plan of Correction until the curriculum content is deemed adequate to meet the standards [AOTA, 2002]. Furthermore, the recognized entry-level exam for the profession of occupational therapy, administered by the National Board for Certification in OT (NBCOT), contains practice related items on the certification examinations pertaining to the care needs of older adults [AOTA, 2002].

Specialization in the care of older adults by OT practitioners occurs after entry-level certification. Occupational therapists with an interest in that field may pursue a post-professional graduate program with a concentration in gerontology. At this point, there is not a separate credential for those occupational therapists specializing in gerontology [AOTA, 2002].

Respiratory Therapists. The curriculum standards of the Committee on Accreditation for Respiratory Care (CoARC) include instruction in geriatrics and "alternate site care, as deemed appropriate by the program's committees of interest." These sites include home care, skilled nursing facilities, and hospice. The American Association for Respiratory Care (AARC) has also issued a position statement that "…encourages respiratory care educators/managers to include: a gerontology module in respiratory care training program curricula, and clinical training at long term care and rehabilitation facilities to provide students with the opportunity to learn how to appropriately plan for and provide respiratory care services for geriatric patients, and topics

focused on the geriatric patient and his/her special health care needs in departmental continuing education programs to assure the desired quality of care for this patient population, and to meet the requirements of health care organization accreditation for age-specific professional training." There is not currently a national certification in geriatric respiratory therapy, although there is such a specialty certification offered by the National Board for Respiratory Care (NBRC) in neonatal/pediatric care.

Speech-Language Pathologists and Audiologists. Ideally, education programs for SLPs and audiologists will include study of a) the influence of age-related life changes upon communication function; b) the demographics of communication disorders among the older population; c) the causes, nature, and prevention of communication disorders found in older adults; d) the impact of communication disorders upon older adults and those in their communication environments; e) the specific nature, prevalence and impact of communication disorders upon various subgroups of older persons including minorities, multicultural or developmentally disabled individuals; f) the applications of technology to communication assessment and treatment; and g) the efficacy of current and emerging management approaches with communicatively impaired older persons [USDHHS, 1998].

There is currently no certification program in geriatric speech-language pathology or audiology. In November 2000, however, a special task force of the American Board of Audiology (ABA) met to discuss the development of a program of advanced certification with specialty recognition. Geriatric audiology was one practice area discussed for potential specialty recognition, but this certification has yet to be implemented.

Supply Trends

Physical Therapists. In 2001, 9,106 degrees in physical therapy were awarded by 292 programs [NCES, 2001]. The BLS projects that 44,000 job openings will occur between 2000 and 2010 as a result of replacement needs (PTs retiring or leaving the profession). Replacement need constitutes 43% of all projected job openings during this period.

Occupational Therapists. Between 1998 and 2000, an oversupply of trained and licensed occupational therapists existed relative to employer demand. Supply grew substantially during the period 1990-1999 in response to rising demand for occupational therapy in post-acute care settings, primarily skilled nursing facilities. Occupational therapy professional and technical level educational programs grew in number from 134 to 278 during this period, with total enrollments growing from 10,596 to 25,503 students. Medicare reimbursement changes in 1998 had a depressing effect on demand, resulting in a relative oversupply of practitioners in the 1998 to 2000 time period and an adverse impact on interest in the field by prospective students [AOTA, 2002].

This situation has changed quickly, however, and subsequent legislative and regulatory adjustments have stabilized the marketplace and demand appears to be steady and rising in some geographic areas. Due to the growing demand in emerging practice arenas, concern now exists about the sufficiency of supply over the next decade. The American Hospital Association (AHA) is already reporting workforce shortages in occupational therapy [AHA Commission on Workforce for Hospitals and Health Systems, 2002; AOTA, 2002].

In 2001, 6,148 degrees in occupational therapy were awarded by 219 academic programs. No new occupational therapy educational programs have started since September 2000. At the same time, remaining educational programs have seen a dramatic decline in the number of student applicants. This has resulted in the closure of 20 educational programs since January 2001 and the inactivation of 14 others. The vast majority of these programs have been at the assistant level. Overall enrollments declined by 22% between 1999 and 2001 [AOTA, 2002].

Since the occupational therapy profession is relatively young, retirements and other departures from the profession will deplete the profession only slightly between 2000 and 2010. The BLS projects 27,000 job openings due to replacement needs during this time period. Replacement need constitutes 41% of all projected job openings during this period.

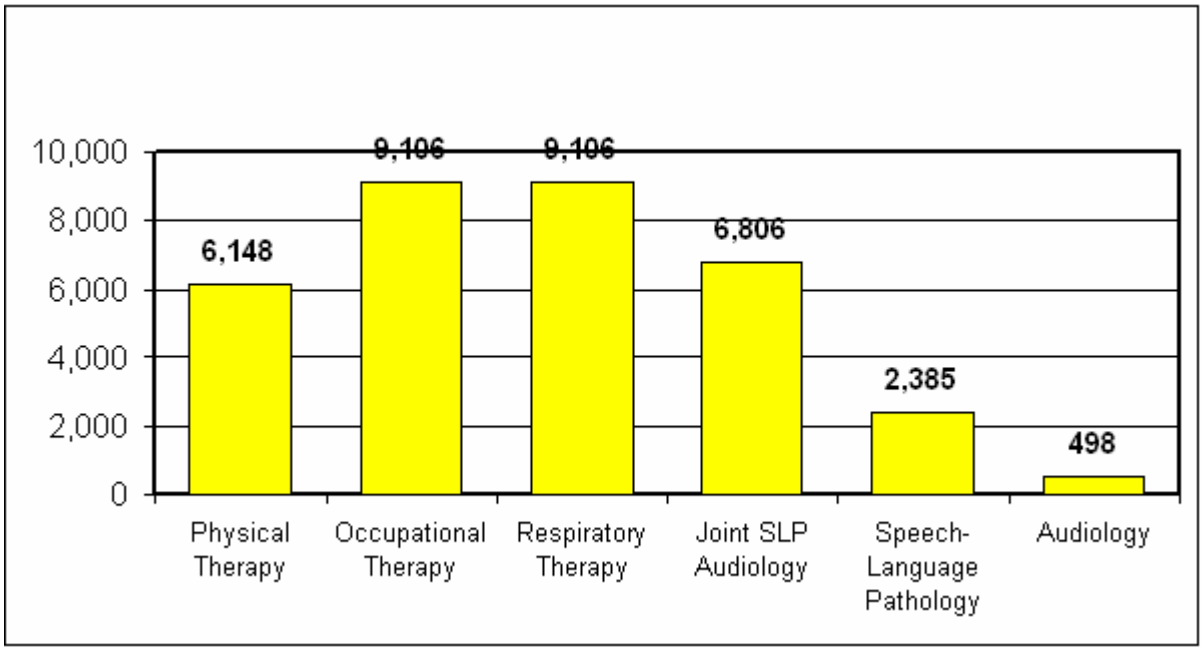
Respiratory Therapists. According to the Committee on Accreditation for Respiratory Care (CoARC), there were 334 accredited RRT programs and 102 accredited CRT programs in the United States in 2000. In 2001, 490 respiratory therapy programs awarded 5,354 degrees (presumably, however, not all of these programs were CoARC accredited) [NCES, 2001].

The depletion of the profession due to retirements and other departures is expected to be only moderate between 2000 and 2010. The BLS projects that 29,000 job openings will occur due to replacement needs during this period. Replacement need constitutes 42% of all projected job openings during this period.

Speech-Language Pathologists and Audiologists. In 2001, 2,385 degrees were awarded in speech-language pathology by 111 programs and 498 degrees were awarded in audiology by 48 programs. Additionally, 274 joint programs in speech-language pathology/audiology awarded 6,806 degrees [NCES, 2001].

About 34,000 job openings are projected for speech-language pathologists between the year 2000 and 2010 as a result of retirements and other departures from the profession. This accounts for only one-seventh of all projected job openings. Replacements needs are expected to be negligible among audiologists [BLS, 2003a] (Figure 68).

Figure 68: Annual Educational Production of Therapy Professionals in the U.S., 2001



Source: IPEDS (National Center for Educational Statistics, 2001)

The education programs of the therapy professions are trying to expand enrollments, but many new entrants are discouraged by the intensity of the training and the difficulty finding clinical training programs. Subsidies for schools might help, especially since the salary ceilings in these professions are relatively low (e.g., $50,000 is the top expected salary for audiologists).

Demand

The transition of the baby boom generation into middle age (a period when the incidence of heart attack and stroke multiplies) is likely to add to the demand for all types of therapy services. The expanding prevalence of other age-related chronic diseases will also require more and better-trained therapy personnel [USDHHS, 1998].

Physical Therapists. Physical therapists spend much of their time with patients 65 and older. The BLS projects that 77,000 job openings for PTs will occur between 2000 and 2010. About 44,000 of these will occur due to growth in the field as a result of increased demand [BLS, 2003a] due to a variety of factors, including:

- Total knee replacements and other forms of joint care are reducing the need for long-term physical therapy. Therefore, as the aging population is growing, demand is remaining relatively constant in the short-term due to declining per capita use of services.

- The demand for physical therapists should continue to rise as a result of growth in the number of individuals with disabilities or limited function requiring therapy services.

- The rapidly growing population of older adults is particularly vulnerable to chronic and debilitating conditions that require therapeutic services.

- The baby-boom generation is entering the prime age for heart attacks and strokes, swelling the demand for cardiac and physical rehabilitation [BLS, 2003a].

Occupational Therapists. Employment of OTs is projected grow faster than the average for all health professions, due to the rapid growth in the number of middle-aged and older individuals who use more therapeutic services than younger age groups [BLS, 2003a]. The BLS projects that 46,000 job openings for OTs will occur between 2000 and 2010. About 27,000 of these will occur due to growth in the field as a result of increased demand [BLS, 2003a]. A number of emerging trends may influence future demand for OTs:

- OTs in traditional settings (i.e., nursing homes, extended care facilities, hospitals, etc.) will be augmented by OTs in non-traditional settings (i.e., home safety, driving safety, etc.). The addition of non-traditional work environments will continue to expand the utilization of OTs.

- Greater numbers of OTs are working with the growing older driver population who are experiencing age, illness, or injury-related declines in the requisite skills needed for safe driving. Estimates project that between now and 2020, almost one in five potential drivers will be 65 years or older, and nearly half of these individuals will be more than 75 years old [AOTA, 2002].

- As public and private payment sources adapt to the evolving needs of the aging population, and if baby boomers continue to demonstrate a willingness to pay out-of-pocket for services they desire, demand for OT services will likely grow [AOTA, 2002].

- New demand for OT services is emerging in areas such as low vision rehabilitation due to vision loss being experienced by many older adults secondary to age-related diseases of macular degeneration, diabetic retinopathy, and glaucoma.

- Legislation enacted by Congress in 1999 facilitates access to vision rehabilitation services by allowing optometrists the ability to directly refer Medicare Part B patients to OTs [AOTA, 2002].

- Demand for OTs is still depressed by Medicare limitations on OT services in home health care settings. Under current law, a patient must need skilled nursing services, PT, or SLP services before being allowed access to OT services. On June 6, 2001, the Medicare Occupational Therapy Coverage Eligibility Act of 2001 (H.R. 2071) was introduced into Congress, but has remained in the Subcommittee on Health since June 20, 2001. If eventually passed, this bill will make occupational therapy a qualifying service for Medicare home health services. This would increase demand for OT services.

Respiratory Therapists. Job opportunities for respiratory therapists are expected to remain numerous. Employment of respiratory therapists is expected to rise faster than the average for all occupations through the year 2010, because of substantial growth of the middle-aged and older

population. The BLS projects that 50,000 job openings for OTs will occur between 2000 and 2010. About 29,000 of these will occur due to growth in the field as a result of increased demand [BLS, 2003b]. A few emerging trends may influence future demand for RTs:

- Older Americans suffer most from respiratory ailments and cardiopulmonary diseases such as pneumonia, chronic bronchitis, emphysema, and heart disease. As their numbers grow, the need for respiratory therapists will increase, as well [BLS, 2003b].

- The Balanced Budget Act of 1997 (BBA) allowed the Health Care Financing Administration (HCFA), now the Centers for Medicare and Medicaid Services (CMS), to eliminate reimbursement for respiratory therapy services in nursing homes. Whether the elimination of reimbursement for nursing home RT services has resulted in reduced labor market demand for RTs or greater hospital demand is uncertain.

Speech-Language Pathologists and Audiologists. The BLS projects that the speech-hearing professions will grow much faster than the most professions through 2010. The primary driver of this growth will be the aging of the baby boom generation [BLS, 2003a]. The BLS projects that 57,000 job openings for OTs will occur between 2000 and 2010. About 34,000 of these will occur due to growth in the field as a result of increased demand [BLS, 2003b]. A number of emerging trends may influence future demand for SLPs and other "sensory specialists:"

- Sensory specialists, such as opticians and speech-language pathologists and audiologists, will be needed in the future to care for and counsel the growing number of older adults who will suffer from vision and hearing impairments.

- In many cases of sensory impairment, the causes can be prevented or the progress of the impairment can at least be slowed with treatment, but only if the appropriate health professionals are accessible at the right time.

Gap Between Future Demand and Expected Production

The future job market for therapy professionals will be influenced by a number of factors, especially reimbursement. Strong growth is currently projected for each of these professions [BLS, 2003a], and there is some indication that shortages of OTs may already be developing, despite the recent oversupply.

Another variable that will influence demand for therapists is the role played by therapy assistants in the provision of therapy services. Due to rising health care costs, third party payers are beginning to encourage therapist assistants and aides to take more hands-on responsibility for the delivery of services. Having assistants and aides work more closely with clients under the guidance of a therapist should help to control the costs of therapy [BLS, 2003a], and help to reduce the magnitude of any shortages of therapists that might arise in the future.

The small numbers of therapy students specializing in aging practice is also a concern. Although most therapists working in general settings have a large proportion of older adult clients, the apparent disinterest in working with older adults and in settings such as long-term care may create gaps in supply and demand for therapists with special skills and interests in serving older

adults. A separate geriatric therapist credential, requiring special training and experience, may entice some students to consider deeper involvement in geriatric care.

J. Pharmacists

Supply

Licensed pharmacists provide services to older Americans and their caregivers that include dispensing of prescription medications and information about medications and other medical products. They also advise physicians and other health professionals about medications and review patient medication use for nursing homes and other facilities.

Currently, about 217,000 active licensed pharmacists practice in the U.S., or about one pharmacist for every 1,500 people in the United States. The services of pharmacists are not, however, distributed evenly across the population. Persons 65 and older, who represent 12% of the U.S. population, use 34% of the prescriptions in the U.S. (20.6 prescription medications a year on average, compared to 5.7 for those younger than 65). There is currently one pharmacist for every 175 older adults.

A number of factors are expected to accelerate the need for pharmacy services:

- the growing numbers of older adults in the population;
- more retirements of aging pharmacists;
- availability of new medications and greater awareness about available medications;
- increasing demand as currently underserved older adults obtain drug coverage in their health insurance;
- improved access to community pharmacists in rural areas; and
- expanding roles of pharmacists in clinical care, including roles on interdisciplinary care teams in some hospitals, nursing homes, and assisted living facilities.

If the production of licensed pharmacists continues at current levels, pharmacy education programs will not produce enough new pharmacists to meet the increased demand due to greater numbers of older adults and pharmacist retirements. As noted above, however, even higher ratios may be necessary to meet the needs of tomorrow's older adult population.

Two models of service to older adults are emerging in the pharmacy profession, each requiring different levels of training related to the needs of older adults. Demand is growing for pharmacists certified in geriatrics to serve in a consulting capacity on interdisciplinary clinical care teams. At the same time, the proportion of the community pharmacist client base that is older adults is expected to expand, creating a need for more general pharmacy education about the special needs and problems of older adults.

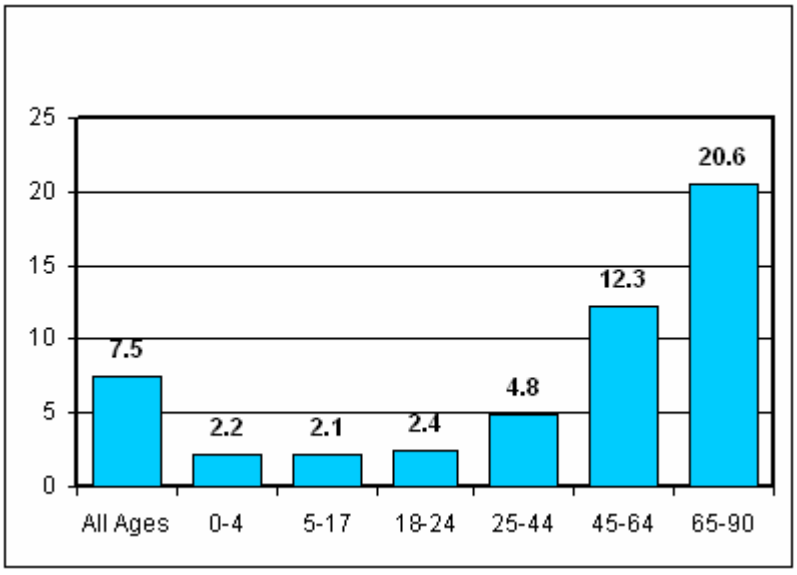
The Pharmacy Profession: Services to Older Adults

Licensed pharmacists dispense medications to older adults and provide their patients with information and counseling about medications and other health-related supplies [AACP, 2001]. They also advise physicians and other practitioners on the selection, dosages, interactions, and side effects of medications [BLS, 2003a]. In addition, pharmacists may provide specialized services to assist older patients in the management of chronic conditions such as diabetes, asthma, or high blood pressure [AACP, 2001].

Consultant pharmacists, i.e., pharmacists who visit nursing homes and other senior residences to review medications and prescriptions, are also seeing increased demand. These specially trained pharmacists can catch many drug related problems before they arise. Pharmacist involvement in other settings often used by older adults, such as home health care, is also expanding. Pharmacists who work in home health care monitor drug therapy and prepare infusions—solutions that are injected into or inhaled by patients—and other medications administered in the home [BLS, 2003a].

In 1999, older adults (age 65 and older) averaged 20.6 prescriptions per year, compared with 12.3 prescriptions per year for adults age 45-64 and fewer than 5 prescriptions per year for people age 44 or younger (Figure 69). Older adults with health insurance consume even more prescriptions -- more than 24 per year on average. Persons 65 and older consume 34% of the prescription medications consumed by the U.S. population as a whole, although they represent only 12% of the population.

Figure 69: Average Annual Prescriptions per Person (Including Refills) by Age Group, 1999



Source: MEPSnet/HC

The role of pharmacists in health care has expanded substantially in the past ten years. In the 1990s, approval of new prescription drugs rose to about 33 per year, up from about 24 per year from 1984 through 1991 [HRSA, 2000]. As the drug delivery system becomes larger and more complex, the services of pharmacists have become more important. Pharmacists must maintain a

current knowledge of new drug development, as well as keep abreast of new uses of existing drugs [HRSA, 2000].

More than ever before, pharmacological interventions play a central role in preventing, treating, and managing illnesses. Pharmacists now frequently participate on clinical care teams, along with physicians, nurses, and other health professionals. Hospitals and physician offices will employ more pharmacists in the future as their role in clinical care broadens. Nursing facilities, for example, are required by federal mandate to have the drug regimens of their patients reviewed by a pharmacist monthly. Many nursing facilities contract with pharmacists for these services, but large facilities are more likely to have pharmacists on staff. In ambulatory care settings, pharmacists offer disease management programs to patients with chronic conditions in which they provide assessment and monitoring. The interventions of pharmacists not only prevent potentially tragic medication errors, but also contribute to the cost-effectiveness of care [HRSA, 2000].

For the many older adults who suffer from chronic illnesses, consultant pharmacists play a vital role in ensuring optimal drug therapy [ASCP, 2002]. Although not classified as a distinct disease, adverse drug reactions are one of the leading causes of death in the U.S. Older adults with multiple prescriptions are at particularly high risk of such reactions. They are also more vulnerable to certain side effects (e.g., loss of coordination as a side effect of medication is more likely to lead to falls resulting in broken bones and other injuries among older adults).

Pharmacists certified in geriatrics bring important special skills to the treatment of older patients. They are trained to identify patients at risk of drug interactions, and they are more knowledgeable about the risks related to and side effects of certain medications on older adults. They also specialize in communicating with and counseling older adult drug consumers. Geriatric pharmacists serve older adults in a number of practice environments, including nursing homes and other residential facilities; adult day service programs; home health care agencies; hospice and palliative care settings; Medicaid waiver programs; senior centers; educational organizations; local agencies on aging; and community-based pharmacies (ASCP). Pharmacists reporting specialties in long-term care and home health also work with substantial numbers of older adults.

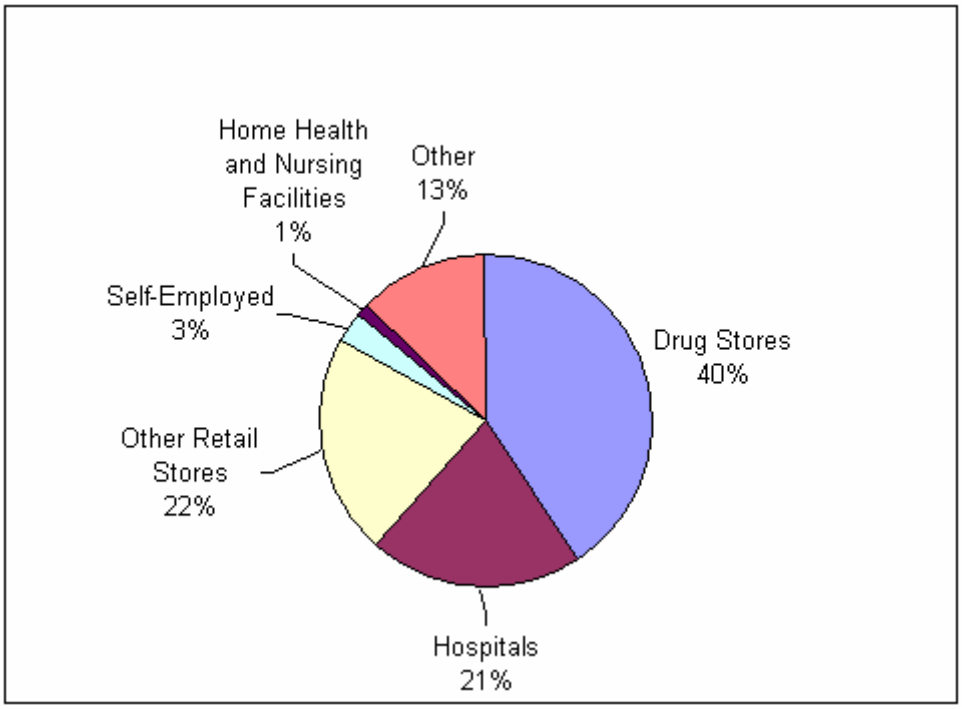
Profile of the Current Pharmacy Workforce

There are approximately 217,000 active licensed pharmacists in the U.S. The pharmacy profession is licensed in all states. Licensure requires graduation from an accredited college of pharmacy, an internship, and an examination. Some states also have continuing education requirements for license renewal.

Until recently, the entry-level pharmacy degree was the Bachelor of Science (BS). In 2001, 62% of self-reported pharmacists held a bachelor's degree, with the remainder holding a master's, professional, or doctoral degree [BLS, 2001]. The BS in Pharmacy has been gradually replaced as the entry-level degree by the Doctor of Pharmacy (PharmD) degree, which requires six years of postsecondary study. By 2005, the BS in Pharmacy will no longer be awarded. It is expected that the transition from BS to PharmD programs in pharmacy will result in better preparation of pharmacists to meet the new demands of a drug-centered health care system.

The majority of pharmacists work in drug stores (40%) or hospitals (21%), with about 22% working in grocery stores, department stores, and other retail settings. Smaller numbers of pharmacists work in physicians' offices, nursing facilities, home health care, and other health services (Figure 70). Older adults are estimated to make up a large percentage of pharmacy patients in all of these settings due to their greater consumption of prescription medication generally.

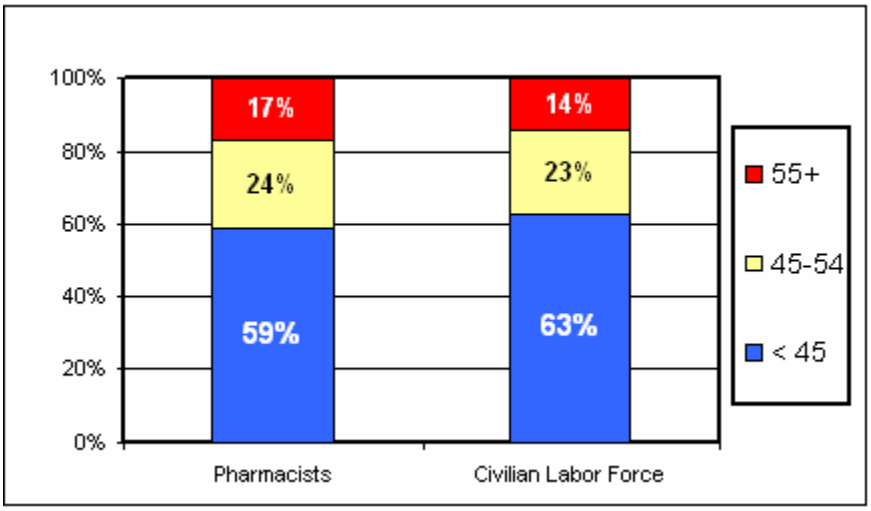
Figure 70: Distribution of Pharmacists by Employment Setting, 2000



Source: OES data [BLS, 2000]

In 1989, pharmacists had a median age only slightly greater than that of the civilian labor force (36.7 as opposed to 35.7). Over the past decade, however, the gap has widened somewhat, with the median age of pharmacists growing to 41.3, a 4.5-year increase in ten years, while that of the civilian labor force grew by only three years, to 38.7. This may, in part, be a reflection of the longer education programs required for pharmacists. Figure 71 reflects this tendency. In 2001, 17% of pharmacists, but only 14% of the civilian workforce, were age 55 or older.

Figure 71: Age Distribution of U.S. Pharmacists, 2001



Source: CPS data [BLS, 2001]

The percentage of active pharmacists who are female has also grown in recent years (from 29% in 1989 to 48% in 2001 [BLS, 1989; BLS, 2001]), and 65% of 2001 pharmacy graduates were female [NCES, 2001]. Although the entry of large numbers of women into the pharmacy workforce has reduced the severity of recent pharmacist shortages, women tend to work fewer hours than men. Female pharmacists work about 34 hours a week on average, versus almost 37 hours a week for male pharmacists [BLS, 2001]. They have also been found to change jobs more frequently than male pharmacists [HRSA, 2000].

Training, Education, and Credentials Related To Aging

Geriatrics in General Pharmacy Education. Given the large numbers of older adults served by most pharmacists, some (e.g., the American Society of Consulting Pharmacists [ASCP, 2002]) argue that there is a need for a more focused geriatric education in pharmacy. The needs of older adults are different than those of the general population given the large numbers of medications they consume, and the physiology of aging. The ASCP has developed standards, guidelines, and policies relevant to geriatric pharmacotherapy and senior care pharmacy, including a policy statement on the inclusion of geriatrics in the pharmacy school curriculum. Age-related changes, disease-related changes, drug therapy management, physical assessment, and counseling and communication are areas that they advocate introducing into the core curriculum with an age-related focus.

Although these recommendations have not been implemented by all schools, 48% of pharmacy programs report that they include geriatric pharmacotherapy in their general curriculum as part of their therapeutic sequence, 12% offer a special section within a course, and 40% of schools adopt both strategies [ASCP, 2002].

Geriatric Specialization in Pharmacy. Specialized training in geriatrics will enhance the knowledge of pharmacists relative to delivering safe pharmaceutical care from both the medical and psychosocial perspectives [HRSA, 1998]. Geriatric pharmacy education focuses on defining issues related to the use of prescription and non-prescription drugs by older adults, including

appropriate prescribing habits, appropriate product selection, inappropriate patient behavior (e.g., noncompliance), unexpected adverse reactions to the prescription regimens or dosages, and appropriate outcomes assessment by caregivers. Ideally, education programs also target such pharmacist services as the provision of drug-related information to patients and/or caregivers, and assessment of patients to ensure maximum compliance with therapy instructions [HRSA, 1998].

There is currently no standardized curriculum for geriatric specializations in pharmacy schools. Some schools have pharmacy departments that specialize in different areas and this can determine the focus for a curriculum, but there is no national program that must be followed by pharmacy schools. Currently, about 25% of programs offer a specialization in geriatrics through a geriatrics track, a certificate program, or a gerontology center [AACP, 2003]. Most pharmacy programs also offer advanced practice experiences in geriatrics (usually as an elective rotation) [AACP, 2003]. There are some geriatric residency programs and fellowships[10] for pharmacy students, but these are not sufficient to provide enough geriatric pharmacists to meet demand. Only about 2% of pharmacists completing residencies complete them in geriatric care [Knapp, 1999].

Certification in Geriatric Pharmacy. A voluntary exam-based certification program now exists for geriatric pharmacists, through the Commission for Certification in Geriatric Pharmacy (CCGP), a commission created by the American Society of Consultant Pharmacists (ASCP). The exam tests candidate knowledge of the principles of geriatric pharmacotherapy and the provision of pharmaceutical care to older adults. The first examinations were given in 1997, and by June 2003 the CCGP website listed more than 700 geriatric pharmacists certified through the program. Although this program is promising, this currently represents less than one percent of all pharmacists. There is also tremendous variation in the number of these certified geriatric pharmacists (CGPs) by state. Montana and Hawaii have no CGPs at all.

Supply Trends

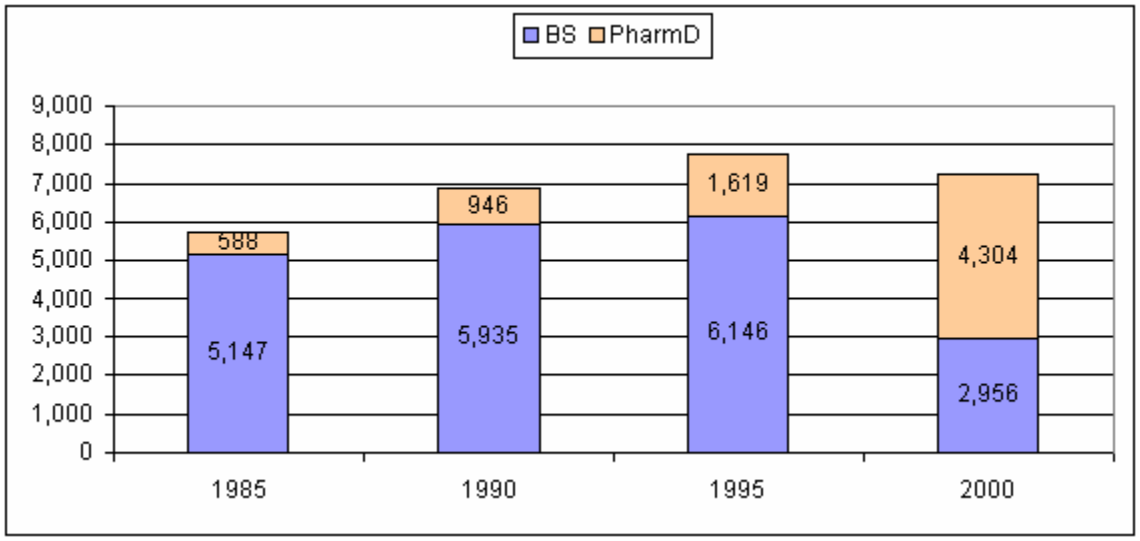
Replacements. Currently, 17% of pharmacists (33,000) are age 55 and older, and will reach the traditional retirement age of 65 by the year 2010 (see Figure 71). Another 24% of pharmacists (48,000) are age 45-54, and will reach retirement age by the year 2020 [BLS, 2001]. The average number of hours worked also declines with age among pharmacists. Those 55 and older work on average only about 33 hours a week, compared to an average of almost 36 hours a week for those younger than 55 [BLS, 2001]. Overall, the BLS projects that about 65,000 pharmacy jobs will open between 2000 and 2010 just to replace pharmacists who have retired or left the profession.

Educational Production. Data from the past year or two indicate that educational production of pharmacists may be growing, although the number of new pharmacy graduates had been in decline from about 1994 to 2001 (Figure 72). About 7,600 new pharmacy degrees were awarded in 2002, up from 7,000 in 2001 [AACP, 2002]. (This figure includes only first professional degree, or new entrants to the field of pharmacy). The numbers of applicants to pharmacy

[10] Pharmacy residencies are postgraduate training programs in pharmacy practice. Pharmacy fellowships are highly individualized programs designed to prepare participants for specific practice settings [BLS, 2003]. Only about 10% of pharmacy graduates appear to enter fellowship programs.

schools had also been in decline since the 1993-1994 academic year, but the 2000-2001 school year marked a 9.1% increase in applications to first professional degree programs [AACP, 2001]. This was followed by a 24.6% increase for the 2001-2002 school year [AACP, 2002]. These trends, combined with the fact that attrition rates among students have reached the lowest levels since data collection began in 1982 [AACP, 2002], may indicate that educational production of pharmacists will rise in the short-term. Whether these trends will continue in the future, however, is not certain.

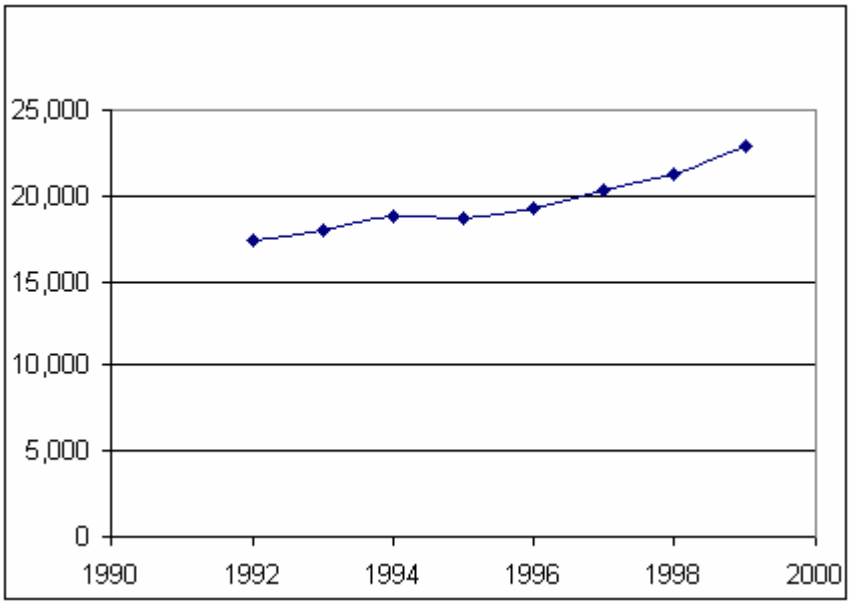
Figure 72: Graduates of Pharmacy First Professional Degree Programs, U.S., 1985 to 2000



Source: AACP

Productivity. Pharmacists today are more productive on average in terms of prescriptions filled than pharmacists a decade ago. The number of prescriptions filled per community pharmacist increased 31% between 1992 and 1999 [HRSA, 2000], as shown in Figure 73. Reasons for greater output per pharmacist include greater availability of pharmaceutical technology, and greater use of the "helper" professions and occupations: pharmacy technicians and pharmacy aides.

Figure 73: Estimated Average Prescriptions per Community Pharmacist



Source: HRSA, 2000

Practice in Aging. About 42% of self-identified geriatric-care pharmacists responding to the 1993 Glaxo Pharmacy Specialty Survey reported having advanced degrees, while 36% held entry-level pharmacy degrees (BS and PharmD), and 22% did not report their educational background. Forty-one percent of these respondents practiced in an institutional setting, 24% in a community setting, and 19% in a consulting capacity. Common sources of occupational information such as the BLS and Current Population Survey do not include information on specialties within occupations, so these 1993 figures on the educational backgrounds of geriatric pharmacists and the settings in which they work are the most recent statistics currently available. ASCP is conducting a survey of senior care pharmacists that is anticipated to produce updated information about these specialists in 2004.

A number of pharmacists describe themselves as home health care pharmacists or long-term care pharmacists. Home health care pharmacists work directly for home health programs, in independent home health care pharmacies (providing pharmacy services to home health programs), or managed care organizations. In the Glaxo study [1993], 23% of home health care pharmacists specialized in nutrition, 11% in infectious disease, 9% in IV drug therapy, and 7% in pain management. Long-term care pharmacists work as independent long-term care consultants (38%), practice in community settings (35%), or practice in institutional settings (27%).

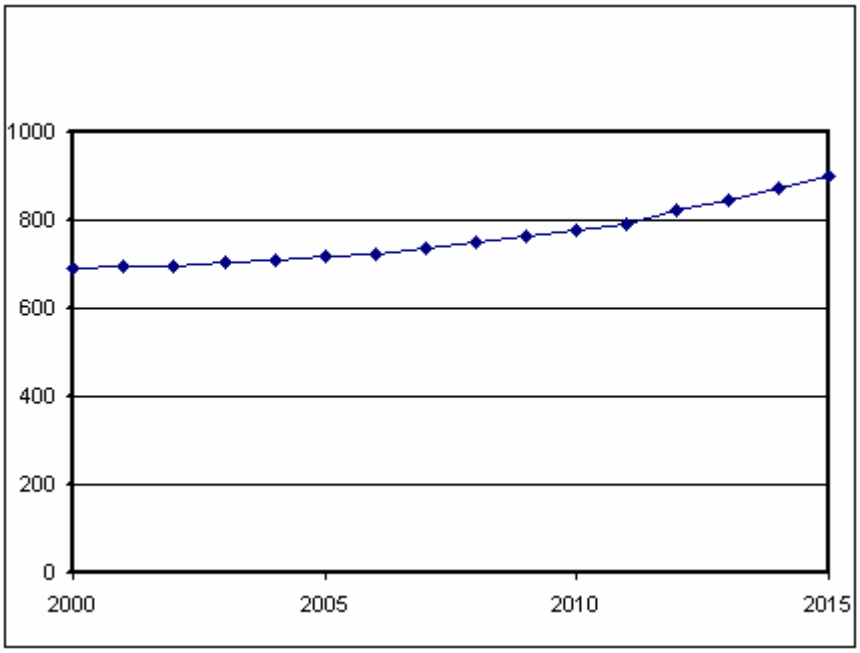
The Argus Commission of the Association of American Colleges of Pharmacy (AACP), consisting of the five most recent past-presidents of the AACP, recently encouraged AACP to provide its member schools with the information necessary to raise their production capacity. In this way, more pharmacists may be educated in general. Such expansion may be essential to prepare sufficient numbers of pharmacists to provide high quality services to older adults. The commission also noted the necessity of educating pharmacists to practice in efficient environments with appropriate supervision of drug distribution systems. This will allow for a more effective and efficient use of pharmacists in the workforce [Knapp, 2001].

Demand

The demand for pharmacists is expected to grow substantially in coming decades. The BLS projects growth of 24% in total positions between 2000 and 2010 (faster than the average for other occupations). Overall, the profession is expected to experience a growth of 53,000 new job openings in addition to the 65,000 needed for replacements between 2000 and 2010. The expanding population of older adults will be a primary driver of this growth. Other factors include:

- The growth rate for prescriptions in the latter half of the 1990s far outpaced the growth in the number of pharmacists.
- Between 2000 and 2010, the “baby boom” population will be in an age group (45-64) where medication use is known to accelerate.
- During the 1990s, third party insurance coverage increased from 44% of the cost of prescriptions in 1992 to 78% in 1999.
- An indication of the growing demand for pharmacists’ services (and pharmacist productivity) can be seen in the numbers of prescriptions processed, which increased by 44% in community pharmacies from 1992 to 1999 [HRSA, 2000].
- Baby boomers are accessing overall health care services, including pharmacy, more frequently than previous generations, and they are better educated and informed about their health needs.
- Today’s aging baby boomers requesting medications based on information they receive from commercials, pamphlets, and the Internet. They are entering the doctor's office more likely to ask for specific drugs, which increases the need for pharmacists to fill prescriptions.
- By 1998, drugs introduced in the previous five years accounted for almost two-thirds of retail drug expenditures [HRSA, 2000]. Some of these medications replace earlier, less effective drugs, but others represent totally new therapies. More conditions are now treatable with drug therapies than ever before.
- Based on the average prescription use among older adults in 2000, and the projected numbers of older adults, these Americans will consume about 900 million prescriptions annually by the year 2015 (See Figure 74).

Figure 74: Projected Prescriptions (in millions) in the U.S., People Age 65 to 90



Source: Census and MEPSnet.

Issues for Pharmacists and Older Adults

Degree Requirements for Licensure. The transition from the 5-year BS to the 6-year PharmD as the required entry-level degree may result in a short-term decline in the number of pharmacy program applicants (especially minority applicants and those from disadvantaged backgrounds) as programs ramp up their academic requirements. It will also result in a temporary one-year reduction in the number of graduates as programs make the transition from 5-year to 6-year programs.

Faculty Recruitment/Retention. In order to train enough new pharmacists to meet future demand, it will be necessary to recruit and retain sufficient pharmacy faculty. The supply of pharmacy faculty may be one of the first areas where pharmacy shortages are felt, due to the relatively low salaries of pharmacy faculty relative to pharmacists with advanced academic credentials working for pharmaceutical companies. The median salary for all pharmacists in 2000 was about $71,000. Average starting base salaries of full-time pharmacists were almost $68,000 [BLS, 2003b]. In contrast, assistant professors of pharmacy averaged only about $62,000 in the 2002-2003 (an increase of 4% from their salaries in the 2001-2002 year [AACP, 2003]). Greater incentives may be needed in the future to draw pharmacists into teaching.

Direct-to-Consumer Marketing/Sales. Pharmaceutical companies are now targeting consumers directly in their advertising, directly stimulating consumer demand for drugs and pharmacy services. At the same time, however, companies have emerged which allow customers to order prescription medications by mail, phone, or Internet, and which deliver the medications directly to the customer. Assuredly, a continuation of this trend will reduce direct patient contact with a pharmacist, and may eventually result in decreased demand for community pharmacists.

***Interdisciplinary Care Teams*.** While direct-to-consumer sales and other trends may gradually reduce the demand for community pharmacists, new roles are appearing for pharmacists as a part of interdisciplinary care teams in clinical settings. Hospitals, nursing homes, home health services, and even physicians' offices may employ more pharmacists, either directly or as consultants to help design and evaluate pharmaceutical interventions. The role of pharmacists within these settings is also expanding so that pharmacists are more involved with direct patient care, sometimes making rounds with physicians in long-term care facilities. This may not only increase the demand for pharmacists in these settings, but also require different kinds of training for clinical pharmacists.

Technology. Although the workload of community pharmacists in terms of number of prescriptions processed per pharmacist has grown dramatically (44% between 1992 and 1999 [HRSA, 2000]), recent technological developments provide some potential to make the work of pharmacists even more efficient. Computers and databases have reduced the paperwork needing manual processing. Automated systems "can count pills, place them in containers or packaging, label the product, and deliver it to an appropriate check point for pharmacists' final review" [HRSA, 2000]. The National Council for Prescription Drug Programs has proposed a Pharmacy ID card that would allow pharmacists immediate access to the information needed to submit electronic orders and claims. Electronic medication order systems reduce errors and may eventually automatically alert pharmacists and physicians about potential medication errors and interactions [HRSA, 2000].

Helper Occupations/Professions. Pharmacists seldom work alone, but are usually assisted by pharmacy technicians and pharmacy aides. Pharmacy technicians currently perform routine tasks such as checking prescription information, counting tablets, and labeling bottles. Pharmacy aides typically perform clerical duties: answering telephones, operating cash registers, or stocking shelves. Pharmacy technicians are not currently required to have formal training or certification, although such training and certification is available and is generally preferred by employers. Pharmacy aides have no formal training.

In 2000, there were 190,000 pharmacy technicians and 60,000 pharmacy aides in the U.S. (about one pharmacy technician and one pharmacy aide for every three pharmacists) [BLS, 2003b]. If pharmacy technicians are properly trained, certified, and supervised, they can substantially enhance the productivity of pharmacists. The National Association of Boards of Pharmacy recommends that pharmacists develop greater proficiency in using these technicians to expand overall productivity [HRSA, 2000]. If adequately trained pharmacy technicians and pharmacy aides are produced in sufficient numbers, they may help to offset any shortage of licensed pharmacists.

***Reimbursement*.** The reimbursement structure has changed the role of the pharmacist and the services they provide. Previously, pharmacists would speak regularly with and counsel patients. Because these communication and counseling services are not reimbursed, community pharmacists now often work in high-output environments, where there is little or no interaction with patients [HRSA, 2000]. On the other hand, pharmacists are now more involved in patient care within health care settings such as hospitals, long-term care facilities, and even large

physician practice groups. Also, some states require pharmacists to ask patients if they need information about their prescriptions.

Up until 2003, Medicare offered no outpatient prescription drug coverage. Many Medicare recipients found drug coverage from other sources, such as retiree health benefits through employers, Medicare Risk HMOs, Medicaid, and individually purchased coverage. Approximately 27% of Medicare beneficiaries, including older adults and the disabled, lacked this type of coverage, with a consequent detrimental effect on their access to drugs [Kreling, et al., 2001].

On November 25, 2003, however, the United States Senate passed the Medicare Prescription Drug and Modernization Act, which was promptly signed into law by President George W. Bush. As a result of this legislation, Medicare beneficiaries can now buy a discount card that is expected to provide 10 to 15% savings on the purchase of their prescription drugs (with additional assistance available for low-income seniors). Beginning in January 2006, Medicare beneficiaries can choose to remain in a traditional Medicare program with no drug benefit, enroll in a stand-alone drug program, or enroll in a private health plan that offers drug coverage.

Although the annual deductible for Medicare Part B will increase annually beginning in 2005, and heavy users of prescription drugs (those spending more than $2,250 annually) may still have to pay as much as $3,600 out of pocket per year, this will certainly improve older adults' access to prescription medications.

It is too early to assess how this legislation will affect market demand for pharmacists, but it is unquestionable that the potential for greater utilization of prescription medication by older adults could exacerbate the existing shortage of pharmacists further.

Rural/Urban Disparities. In many cases, particularly in rural areas, pharmacists are responsible for dispensing medications, as well as educating patients, monitoring drug usage, and providing pharmaceutical care to patients. Because pharmacy chain stores tend to be concentrated in urban areas, however, the disparity in pharmacist supply between urban and rural areas is growing [National Association of Chain Drug Stores, 1999].

Over-the-Counter Medications. There has been a recent movement by the pharmaceutical industry and the Federal Food and Drug Administration (FDA) to expand the numbers of medications available over the counter, including medications formerly only available with a prescription. The decision to deregulate a drug in this manner lies with the (FDA). Proponents have suggested that growing over-the-counter availability will reduce drug costs, especially for medications that are not fully covered by insurance. Opponents fear that such a strategy will increase the numbers of illnesses and deaths from adverse drug reactions and interactions. They also note that some medications previously covered by health insurance will no longer be covered if they shift to over-the-counter status. Nevertheless, a move to dispense more of the most popular prescription drugs without a prescription could potentially mitigate the expected shortage of pharmacists.

Gap Between Future Demand and Expected Production

The BLS projects that pharmacy positions will grow by 53,000 jobs between the years 2000 and 2010. Another 65,000 job openings will occur due to replacements [BLS, 2003b]. Thus a total of 118,000 new pharmacists would be needed to fill all positions opening up between 2000 and 2010. Currently, 7,600 pharmacists earn first professional degrees each year, meaning that only about 76,000 new pharmacists will be produced between 2000 and 2010 [AACP, 2003], and some of these may choose not to practice or to practice part time. Although pharmacy enrollments have expanded noticeably since the 1999-2000 academic year, it is uncertain that these increases will be sufficient to ensure an adequate supply of pharmacists over the coming decade.

The country may face a critical shortage of pharmacists unless educational production can be enlarged, or unless ways are found to further advance the productivity of pharmacists (e.g., by using more pharmacy technicians or by adopting new technologies) [HRSA, 2000]. Such a shortage would disproportionately affect older adults, due to their much higher use of prescription medications and their greater risk of complications from such medications.

The potential for such a shortage is no surprise to those in the pharmacy profession, and some proposals have been advanced by both professional organizations in pharmacy and the U.S. Congress to address this problem. In 1999, the National Association of Boards of Pharmacy (NABP), which includes all state boards of pharmacy, identified several strategies as perhaps lessening the effects of the shortage. For example, the development of an accurate and continuous method to track supply and demand side workforce issues will allow the profession to keep up with workforce trends and allow them to prepare for any potential problems. Other strategies include the elimination of unnecessary delays in offering testing to pharmacists for state licensure, and supporting the development of a standardized prescription drug benefit card that may be used by all insurance and third party payers [PWC, 2001].

Legislation has also been passed by the U.S. Senate (the Pharmacy Education Aid Act, S648) to establish a loan repayment program for pharmacists willing to provide services in a pharmacy shortage area or teach in a school or college of pharmacy. If enacted, this bill would also authorize grants to pharmacy education programs for distance education initiatives. The bill has not yet passed the U.S. House of Representatives.

Some specific concerns related to the access of older adults to pharmacy care have been identified that appear to need special attention:

- Since more than one-third of prescriptions are filled by older adults, any shortage of pharmacists will have serious implications for the aging population. This will be especially true after 2015 when the numbers of older adults will begin to grow dramatically.

- It is important to address concerns raised about the adequacy of the geriatric content in the general pharmacy curriculum. This is especially true if a significant growth in the numbers of formally-trained geriatric pharmacists does not occur.

- There are currently only 700 certified geriatric pharmacists in the U.S., to serve 35 million older adults. Because of the special needs of older consumers (e.g., greater use of multiple medications, greater physiological susceptibility to side effects), an increase in the number of geriatric pharmacists may be desirable in the next ten to twenty years.

K. Registered Dietitians[11]

Summary

Registered dietitians (RDs) provide a number of important services to older Americans including evaluating nutritional needs, developing patient nutritional care plans, and educating patients and caregivers about nutrition. Of the 50,000 jobs held by RDs in the U.S. in 2000, about 35% were in hospital settings; 9% in nursing and personal care settings; and 15% in offices of physicians and other health practitioners and other health settings. Eleven percent of RDs were self-employed for their primary job.

The significant growth of older adults projected within the U.S. population will be a primary driver of increased demand for dietitian services in the coming decades. Older adults, for example, account for about 39% of hospital stays and the vast majority of nursing home admissions. Employment of dietitians is expected to rise 15% in the coming decade (about average growth compared to other professions and occupations).

It is also possible that future generations of older adults will demand more dietitian services than the present generation of older adults. If the growth of assisted living and personal care facilities continues, many of which employ dietitians, additional numbers of older adults will use the services of dietitians than in the past. Greater awareness of the role of nutrition in maintaining health may also motivate older adults to seek the services of dietitians in the future. Considering their current numbers (approximately one for every 5700 people in 2000), this could result in increased demands for dietitian services. Finally, recent extensions of Medicare benefits for medical nutritional therapy by independent dietitians may result in greater demand for dietitian services, requiring higher ratios of registered dietitians to older adults than is currently sufficient. All these factors are expected to expand future demand for dietitian services.

The educational production of dietitians grew fairly steadily between 1992 and 1998, although it has leveled off in recent years. The adequacy of the future supply of registered dietitians depends upon whether educational production of dietitians remains stable or begins to decline.

A greater concern, which cannot be addressed based on existing studies, is whether information on the specific needs of older adults should play a more prominent role in the education of RDs. For illnesses like diabetes, this is decidedly important, but determining whether more general attention to the dietetic and nutritional needs of older adults is needed in the general education of RDs will require additional study.

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[11] "Some RDs and DTRs [Dietary Technicians, Registered] call themselves nutritionists. However, the definitions and requirements for the term 'nutritionist' vary [across states]. Some states have licensure laws that define the scope of practice for someone using the designation nutritionist" [ADA, 2003]. In this chapter the term 'Registered Dietitian' (RD) is used to represent licensed dietitians.

Registered Dietitians: Services to Older Adults

Registered dietitians (RDs) provide a number of important services to older Americans, including:

- providing nutritional education and counseling;
- planning nutrition programs for older adults with chronic illnesses;
- monitoring the dietary intake of patients in their charge; and
- managing food services for institutions such as hospitals and nursing homes.

Good nutrition is important to maintaining good health among older adults, and becomes a medical necessity when older patients suffer from chronic diseases such as diabetes. Unfortunately, only 21% of those age 65 and older consume a diet rated as "good" by the Healthy Eating Index[12] (compared to 13% of those age 45-64), while 67% of older adults consume diets that "need improvement," and 13% consume "poor" diets [Federal Interagency Forum on Aging Related Statistics, 2000].

RDs work in a variety of practice areas, including clinical, community, management, and consultant dietetics. Clinical dietitians are RDs responsible for providing nutritional services to older adults in institutions such as hospitals, nursing homes, and assisted living facilities. They may also manage food service departments in such facilities. ***Community dietitians*** are RDs working in places such as home health agencies, who evaluate individual patient needs, develop patient nutritional care plans, and instruct individuals and their families on how to maintain these plans. These dietitians provide instruction on both grocery shopping and food preparation to older adults and individuals with special needs [BLS, 2003a]. ***Management dietitians*** are RDs who oversee food service programs in large facilities, and ***Consultant dietitians*** are RDs who independently contract with facilities or work in private practice. None of these specialty practice areas is directly related to older adults.

Most dietary services to older adults are provided in institutional settings. In nursing homes or hospitals, dietitians ensure appropriate diet and nutrition for patients/residents. However, when patients return home, they still require proper nutrition, or they may have to return to the hospital or nursing home. It is the role of the dietitian to ensure that patients understand how to maintain a proper diet, even after they leave institutional settings [HRSA, 1998].

Profile of Current Registered Dietitian Workforce

In 2000, there were about 50,000 registered dietitians employed in the U.S. [BLS, 2003b]. RDs must fulfill a variety of requirements to hold their professional title, which is legally protected in 41 states. They must:

- complete a minimum of a bachelor's degree at an accredited university or college and course work approved by the Commission on Accreditation for Dietetics Education (CADE) of The American Dietetic Association (ADA);

[12] "The Healthy Eating Index (HEI) is a summary measure of dietary quality. The HEI consists of 10 components, each representing a different aspect of a healthful diet based on the U.S. Department of Agriculture's Food Guide Pyramid and the Dietary Guidelines for Americans." (FIFARS, 2000, p. 36).

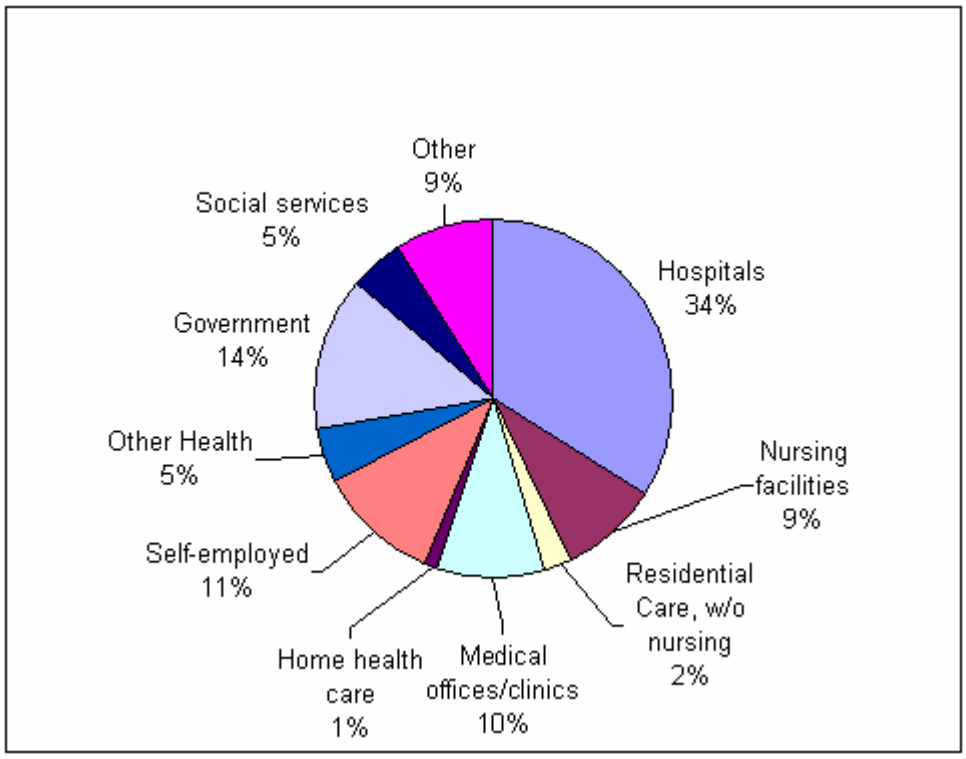
- complete a CADE-accredited supervised practice program of six- to twelve-months duration; and

- pass a national examination administered by the Commission on Dietetic Registration (CDR), and they must complete prescribed continuing professional educational requirements to maintain registration.

According to personal correspondence with CDR, Dietary Technicians, Registered (DTRs) provide services similar to those provided by RDs. There were about 4,800 registered DTRs in the U.S. as of July 1, 2003. DTRs are required to hold an associate degree from an accredited program, and they work in many of the same settings as RDs [ADA, 2003].

Figure 75 shows that the most common setting for employment for RDs is hospitals (which employ 34% of these professionals). Other common employment settings for RDs are nursing and personal care facilities (9%); home health care services (1%); non-nursing residential care facilities (2%); other health care settings, including medical offices (15%); government (14%); and social services (5%) [BLS, 2001]. Another 11% of RDs are self-employed.

Figure 75: Distribution of Registered Dietitians Across Care Settings, 2001

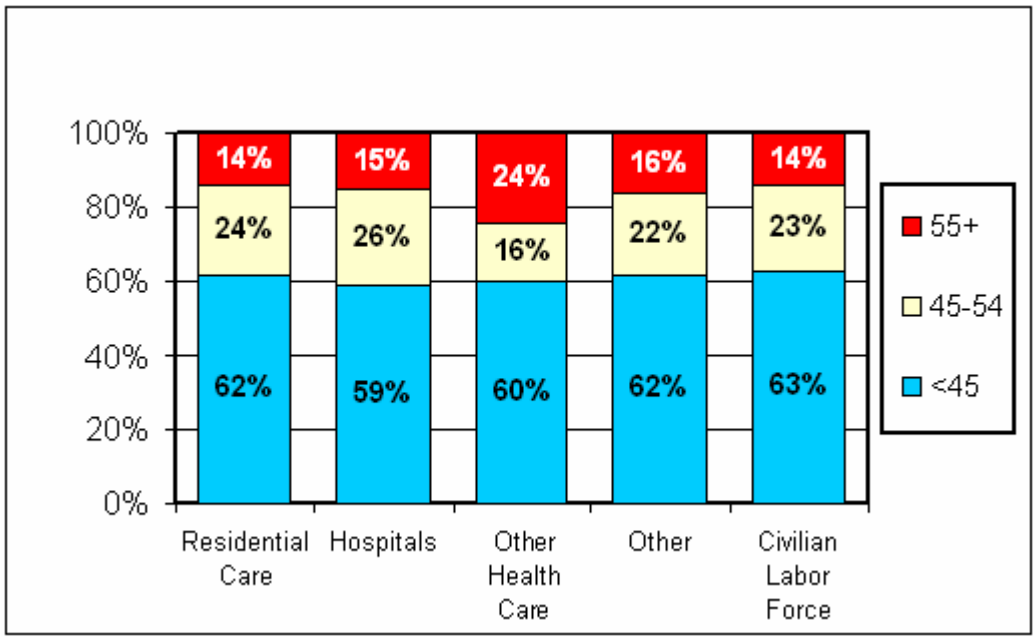


Source: CPS data [BLS, 2001]

The median age for RDs in the U.S. in 2001 was 41. Sixteen percent of RDs in the Current Population Survey [BLS, 2001] were age 55 and older, and many of these will retire by the year 2010. Another 23% were age 45-54, and may retire by the year 2020 (Figure 76). By the year 2025, fully half of all current registered dietitians will turn sixty-five and be candidates for

retirement and replacement. This problem will be especially severe in specialty outpatient facilities and home health care settings, where 24% will turn 65 by 2010.

Figure 76: Age Distribution of Registered Dietitians Across Care Settings, 2001



Source: CPS data [BLS, 2001]

Training, Education, and Credentials Related to Aging

General Curriculum. Dietitians are trained to manage the nutritional requirements of all segments of the population, from special-needs infants and children, to young adults and adults, to older adults. Different dietetic concerns exist for each of these groups, dependent in part on certain diseases they may have and the dietary interventions that may be necessary.

The Foundation Knowledge, Skills, Competency Requirements for Entry-Level Dietitians issued as curriculum requirements by CADE refers to knowledge of nutrition "across the life course," and also for chronic diseases such as hypertension and diabetes (which often affect older adults) but makes no specific mention of geriatric issues. Thus, while dietitians are educated and trained in providing care to all age groups, including older adults, little specific information on the provision of services to older adults currently exists in their educational curricula.

Specialization/Certification. Although approximately 12% of practicing RDs report long-term care as their primary practice area [Rogers, et al., 2003], there is currently no special certification through CDR related to aging or geriatrics. Certifications are offered in only two areas: pediatric nutrition and renal nutrition. All supervised educational practice programs for dietitians must offer at least one emphasis area, however, and CADE offers competency statements for four emphasis areas, including nutrition therapy (which is closely related to the care of older adults).

Supply Trends

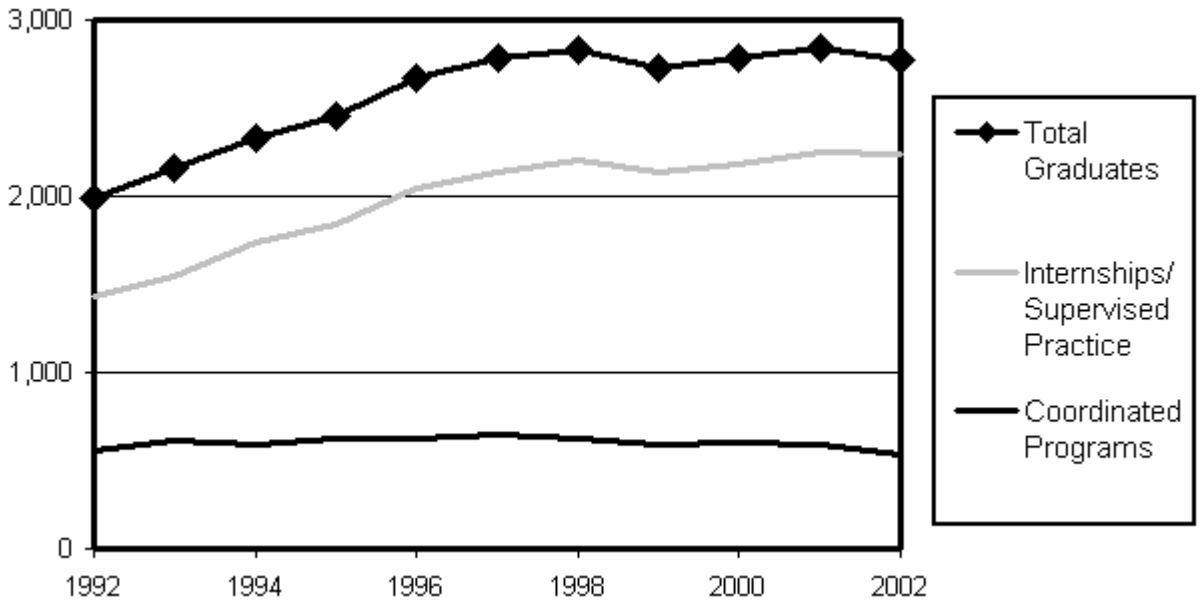
Replacements. The BLS projects 14,000 job openings for dietitians and nutritionists between 2000 and 2010 as a result of replacements for those leaving the profession. Many of these replacements will occur because of the retirement of existing dietitians and others will occur as dietitians change jobs or professions.

Education Programs. The number of CADE-accredited baccalaureate or associate educational degree programs has increased from 444 in 1985 to 543 in 2001. Interestingly, enrollment in these programs decreased from 18,000 in 1996 to 14,000 in 2001.

Many of those enrolled in dietetic education programs do not become dietitians, but enroll in the programs simply because they want to study nutrition. Although 14,000 students were enrolled in accredited nutrition programs in 2001, only about 2,600 to 2,700 new RDs are registered each year [CDR, 2003]. Figure 77 shows that production of potential new dietitians grew by 41.8% between 1992 and 1998, but declined slightly between 1998 and 1999 and between 2001 and 2002 [ADA, 2003].

Whether or not the downward trend in enrollments in dietetics programs portends future declines in new entrants to the profession in the future is indistinct. If numbers of graduates remain at 2001-2002 levels, the national supply of dietitians will continue to rise. If the recent decline in educational production continues, the national supply will begin to decrease around 2014.

Figure 77: Graduates of Dietetics Educational Programs, U.S., 1992 to 2002



Source: ADA

Demand

The demand for dietary and nutrition services among older adults is expected to rise significantly over the next several decades, driven primarily by the growing numbers of older people, and

compounded by the greater use of nursing, personal care, and assisted-living facilities. The BLS estimates that there will be approximately 21,000 job openings (new and replacement) for registered dietitians by 2010. About 7,000 of these openings will be due to growth in demand (15% growth in the profession overall).

Older adults may currently be under-consuming dietary and nutritional services, but there are reasons to believe that future generations of older adults will use more dietitian services than the present generation, including:

- increased demand for meals and nutritional counseling in nursing homes, assisted living facilities, community health programs, and home health care agencies, particularly in those states that require a minimum level of nutrition in nursing homes;

- greater incidence of chronic disease, creating more diverse sets of nutritional and health needs in different population subgroups;

- greater incidence of obesity among older adults (with about 60% of older men and 50% of older women being overweight or obese [CDC/NCHS, 1997]);

- growing public awareness of the relationship between health and nutrition, including with older adults;

- state regulations mandating that information regarding nutritional services be provided to all residents of nursing homes and long-term care facilities;

- the new medical nutrition therapy (MNT) benefit extended by Medicare to diabetic and renal disease patients, allowing dietitian services to be provided without a referral;

- increased numbers of assisted living beds (115% between 1991 and 1999), and nursing home beds (15.7% between 1985 and 1999) [AARP, 2003], which is expected to accelerate growth after 2011, and every new facility may potentially contract the services of a dietitian;

- the potential for new regulations (e.g., licensure regulations, Medicare regulations, nursing facility regulations) stipulating changes in the numbers or duties of dietitians;

- likely decreases in the numbers of family caregivers available to help older adults with nutrition-related tasks, due to lower fertility and lower rates of marriage among the baby boom cohort, as well as higher rates of female labor force participation among their children; and

- expansion of the potential roles for dietitians in products and services for older adults (e.g., food products and restaurants oriented towards older adults).

There are also factors that may reduce the demand for dietitian services, including:

- new technologies that facilitate active monitoring of dietary intakes of older adults and the supplies of different food stuffs in institutional and personal pantries; and
- potential for dietary technicians, registered (DTRs) to replace registered dietitians in many long-term care roles and settings [ADA, 2002].

It is also possible that changes in reimbursement and referral practices will raise the percentage of non-institutionalized older adults who receive services from independent dietitians, which could dramatically change the dominant facility-based model of dietitian practice.

Issues Affecting Supply and Demand for Dietitians

According to the American Dietetic Association, the current demand for dietitian services equals the current supply of dietitians. Yet current and projected demand by employers for dietitians to fill vacant positions (as distinct from the need by patients for dietary services) may be understated for a number of reasons, including: lack of visibility of the profession, the referral process, and limitations on insurance reimbursement. These reasons are explained more fully below.

Professional Visibility. Dietitians are one of the least known health professions, despite the fact that they provide important services to both older adults and the general population. Consumers have traditionally relied more upon family members or even the media, than on professional dietitians for nutrition advice. There is some evidence that dietitians are engaging in more public outreach activities than ever before, so public knowledge of potential roles of dietitians and their value to patients and consumers may improve in the future. The current concerns in the U.S. about obesity may contribute to the professional visibility of RDs.

Referral Processes. Even people who are familiar with dietitian services are unable to obtain reimbursement for those services without employer or physician approval and/or referral (with the exception of medical nutrition therapy [see section on reimbursement]). For example, many dietitians are employees of hospitals (35%) and nursing homes (9%), where their patients are assigned by the facility. The facility also determines the level of service that the dietitian should provide to each patient.

In hospital settings, the dietitian obtains patients' dietary histories for inclusion in the medical record. This information is usually obtained before discharge from the hospital. However, the dietitian may not provide any further services without orders from the attending physician, who is responsible for the patient's care. Therefore, use of dietetic services in a hospital depends on the need perceived by the physician. Furthermore, the level of patient-dietitian interaction is frequently minimal because the proportion of overall care provided by the dietitian is limited.

Generally, physicians spend limited time in offering nutritional support services, and have limited knowledge of nutrition, except for some specialties. It is important for physicians to recognize the potential contributions of RDs to patient health and well-being so that appropriate referrals can be made.

Reimbursement. Limitations on insurance reimbursement for dietetic services also constrain the profession [BLS, 2003a]. A request by a nurse for a patient to see a dietitian at the patient's

request still requires final approval by a physician before reimbursement is authorized. This is important because if a patient receives "unneeded" services from a dietitian, there may be problems with the reimbursement from insurance companies. Some dietitians report, however, that if the reviewing physician is not sufficiently knowledgeable about nutrition, this review process can prevent the provision of important nutritional services [Center for Health Workforce Studies, 2002].

On January 1, 2001, The Centers for Medicare and Medicaid Services (CMS) extended Medicare coverage to include services provided by independent dietitians for diabetic and renal disease patients, without a referral requirement. This marks the first instance that independent (non-referral) dietary services would be reimbursed under a government program. The dietitian must be independent, and not part of a physician's office team. Demand for dietetic services may potentially expand due to the introduction of this new Medicare medical nutrition therapy (MNT) benefit [Rogers et al., 2003], and more openings may occur for dietitians in private practice. However, since complete knowledge of all the coverage offered by Medicare is atypical among older adults, demand may be initially slow to increase as a result of the MNT benefit.

Gap Between Future Demand and Expected Production

The future supply of dietitians will depend on, among other things, future educational production. The BLS projects 21,000 job openings by the year 2010, with 7,000 of them resulting from net growth in the profession. If registrations of new dietitians stabilize at current rates, the supply *will* continue to grow. If rates of graduation from educational programs continue to decline, however, the supply will eventually decline.

It is also not clear how the recent introduction of the Medicare MNT benefit will affect future demand. Historically, changes in Medicare reimbursement have had significant impacts on demand trajectories for affected health occupations. The new availability of non-referral services from independent dietitians may result in a greater demand for nutritional services than anticipated. In particular, there may be more demand for dietitians in non-institutional settings (e.g., private practice, home health care) as a result of this innovation.

There is a potentially important role for dietitians in preventative treatment for older adults (e.g., nutritional counseling), but this requires more specific geriatric training as part of the general curricula in accredited RD programs. A specialization, certification, or emphasis area in geriatrics or long-term care – with nationally administered standards and requirements – might be valuable in preparing dietitians for such a role, but such a credential would only be successful if it enhanced the marketability of dietitians working with older adults.

L. Clinical Psychologists

Summary

About 20% of older Americans suffer from a diagnosable mental disorder, including anxiety disorders, severe cognitive impairment, and mood disorders. These mental illnesses, disorders, and impairments, whether they occur in isolation or in conjunction with other physical problems, can dramatically reduce the quality of life, and can even be life threatening. Older adults have the highest rates of suicide in the U.S. -- especially white males older than age 85, who have suicide rates six times those of the general U.S. population. Despite this situation, mental and emotional disorders are under-diagnosed and under-treated in older adults. Older adults are about half as likely as younger adults to see a mental health provider.

Older adults have been found to benefit as much from psychotherapy services as young people, although psychologists trained in the special circumstances and conditions related to advanced age may be particularly well prepared to treat older adults. Because of cognitive changes related to aging, and age-related challenges in the functions of everyday life, neuropsychological assessments are more often needed by older people than by younger adults.

Clinical psychologists are one of the key professions that diagnose mental and emotional disturbances, treat such disturbances through the use of psychotherapy, and help people deal with stressful or traumatic personal events. (Psychiatrists and clinical social workers are other professionals trained and authorized to deal with these problems.) In 2000 there were 182,000 psychologists working in the U.S., including 77,000 clinical psychologists.

Geriatric training in psychology may occur at three levels: general exposure to aging, (e.g., in the basic clinical psychology curriculum); general training in geropsychology; and specialist training in clinical geropsychology. The American Psychological Association (APA) has issued guidelines for basic levels of proficiency for all psychologists in working with older adults. The APA has also formally recognized Clinical Geropsychology as a special proficiency in professional practice.

Employment of psychologists is expected to grow 18% between 2000 and 2010, with 33,000 job openings occurring due to growth of demand, and 42,000 occurring due to replacement needs (primarily of retirees). Psychologists (especially those who have met the minimum educational requirements for clinical practice) tend to be older than the civilian labor force as a whole: about 74% of psychologists with doctoral or professional degrees are age 45 and older.

In 2001, about 1,900 doctorates in clinical psychology and 300 doctorates in counseling psychology were awarded by accredited psychology education programs in the U.S. Since 1995, the number of clinical psychologists has risen dramatically, although an oversupply has not occurred due to the increasing demand for clinical services. There is a potential for a shortage of trained geropsychologists, however. The APA has estimated that 5,000 clinical geropsychologists will be needed by the year 2020, but there are currently fewer than 3,000 such professionals in the U.S.

A number of obstacles prevent older Americans from receiving needed psychological services, including: limited Medicare reimbursement, the absence of prescriptive authority, inadequate recognition by the larger health care workforce of the psychological needs of older adults, and a widespread stigma associated with mental health problems among older Americans. Changes in these factors could dramatically affect the future demand for clinical psychologists and geropsychologists.

Clinical Psychologists: Services to Older Adults

Clinical psychologists treat mental and emotional disturbances, and help people deal with personal crises (including illnesses, injuries, and chronic conditions). They administer diagnostic tests and provide individual, family, or group psychotherapy and counseling. Clinical psychologists may also administer community mental health programs.

Psychological services to older adults are important because large numbers suffer from mental or emotional disorders such as depression, anxiety disorders, and dementia. Approximately 20% of those age 65 and older have a diagnosable mental disorder [Gatz and Smyder, 1992; Jeste et al., 1999]. Depression (the most prevalent mental health problem) is most common among the oldest old—23% of both men and women age 85 or older suffer from severe depressive symptoms [FIFARS, 2000]. While persons 65 and older are only 13% of the U.S. population, they account for 20% of all suicides [APA, 2003].

Most clinical psychologists provide some services to older adults, but older adults are a very small percentage of the average psychologist's clientele. Geropsychologists specialize in the mental health problems of older adults and have special skills which may include:

- providing assessment services using tests standardized for older adults;
- treating patents with chronic health problems that have significant behavioral components and that respond well to behavioral medicine/health psychology interventions;
- helping with problems more common in older adults (e.g., sleep disorders, pain management, exercise inducement, sexual dysfunction, etc.);
- working with patients with multiple health problems necessitating complex medical regimens. Because adherence to such regimens declines with the complexity of the regimen, issues of adherence are especially important to address; and
- helping older adults with psychological issues and difficult decisions (e.g., decisions regarding advance directives and complex medical treatments) [APA, 2003].

Service settings for older adults are far more diverse than those for younger adults. In addition to traditional office-based services, older adults may need assessment and/or therapy in primary care medical settings, in the home, at the hospital bedside, in hospice care programs, or in long-term care settings such as nursing homes. For mental health disorders such as anxiety and depression, psychotherapy services are as effective in older persons as in younger persons. However, the American Psychological Association (APA) recommends that adaptations be

considered to match therapies to the pace and style of learning of older adults, as well as the problems they present [APA, 2003].

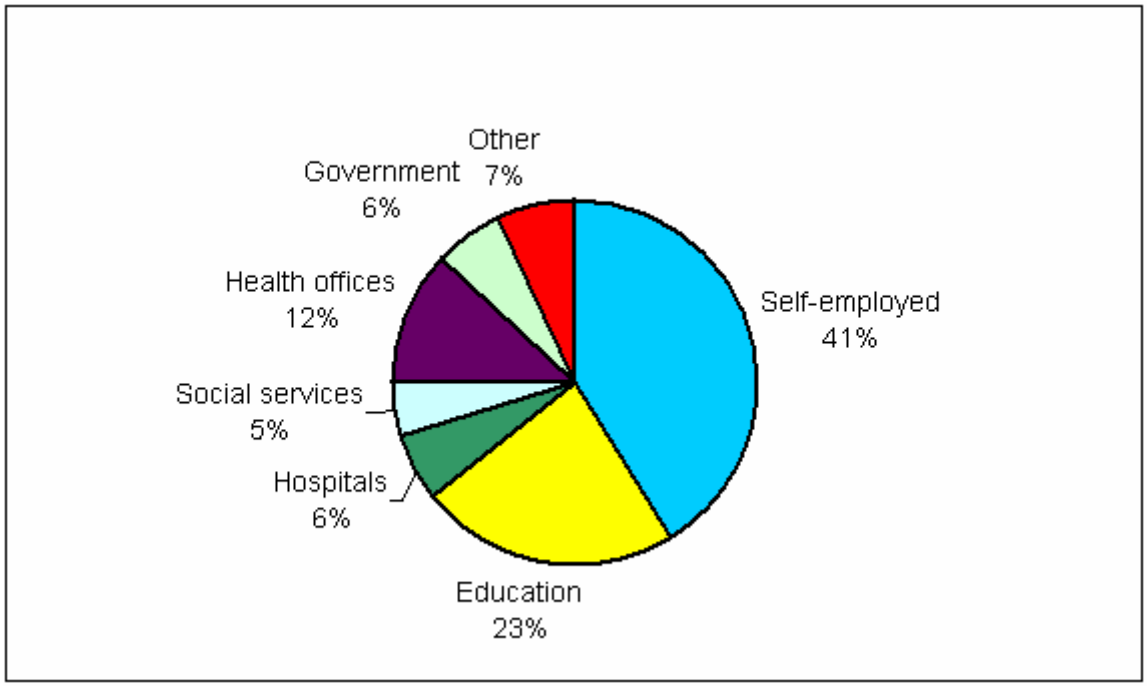
Estimates of mental health service use by older adults range from approximately 2% of private services, to between 4 and 7% of community health services, to about 9% of inpatient care [Hatfield, 1999]. Utilization of mental health professionals by older adults varies considerably across settings. For example, for decades older adults have made up a disproportionately large percentage of psychiatric inpatients, but have been underrepresented in outpatient community mental health settings (although use of outpatient mental health clinics by older adults has recently begun to grow). In long-term care facilities, as many as 76% of older adults who need services do not get them, and only one-fourth to one-third of facilities use psychologists' services for patient care [Qualls, et al., 2002].

Profile of Current Clinical Psychologist Workforce

Psychologists held about 182,000 jobs in the U.S. in 2000, although this includes psychologists not involved in patient care. There were 77,000 clinical psychologists practicing in the U.S. in 1999. Clinical psychologists must complete a PhD or PsyD degree program, including a clinical internship. Any psychologist offering patient care must meet licensing requirements in one of the fifty states or the District of Columbia. One to two years of professional experience and an examination are additional requirements for licensing.

Figure 78 shows that the largest employment settings for psychologists are private practice and educational institutions, neither of which is likely to contain large numbers of older adults. Smaller numbers of psychology jobs are in hospitals, social services, and medical offices. These settings are more likely to be points of access for older patients.

Figure 78: Psychologists across Employment Settings, U.S., 2000

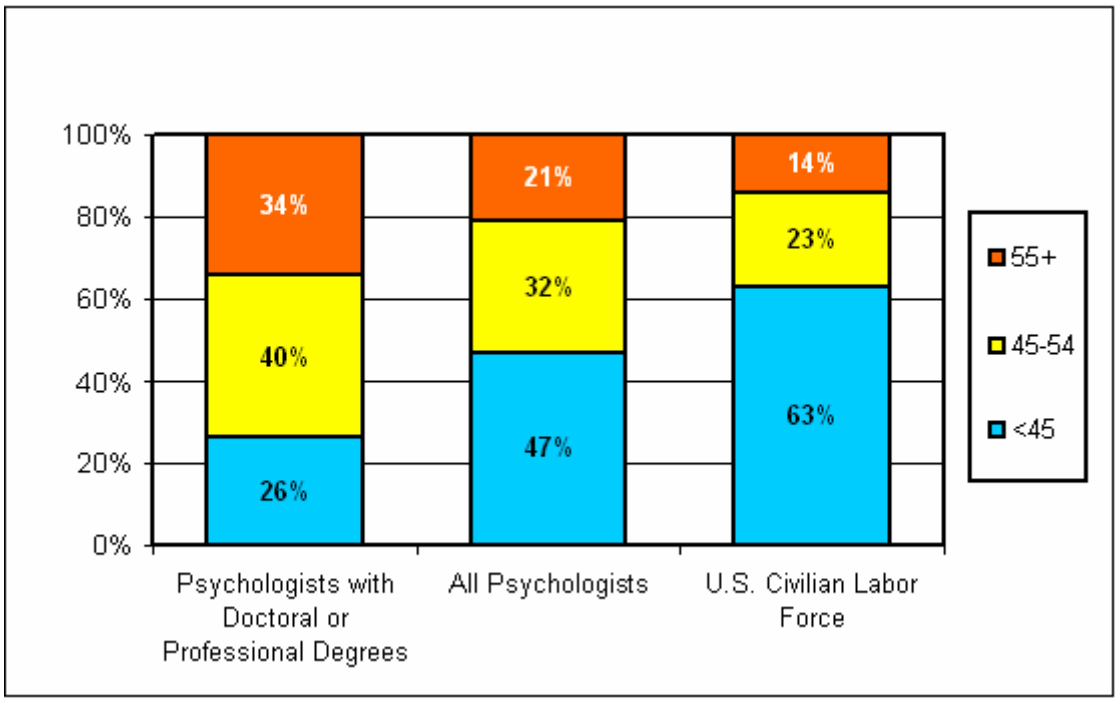


Source: OES Data, [BLS, 2003]

Twenty-one percent of psychologists are age 55 or older, and another 32% are age 44-54. This is older than the age distribution of the U.S. civilian labor force, but the disparity become more dramatic when we look only at those psychologists with a doctorate or professional degree (required of those in clinical practice). More than 34% of these psychologists are age 55 and older, while another 40% are age 45-54 (Figure 79). In sum, close to two-thirds of doctoral-educated psychologists will reach retirement age by the year 2020 [BLS, 2001].

The median age of all psychologists was 46 in 2001, and 51 for psychologists with doctoral degrees. This compares to a median age of 40 for the entire U.S. civilian labor force. Psychologists (particularly clinical psychologists with doctoral degrees) are likely to retire in large numbers over the next twenty years.

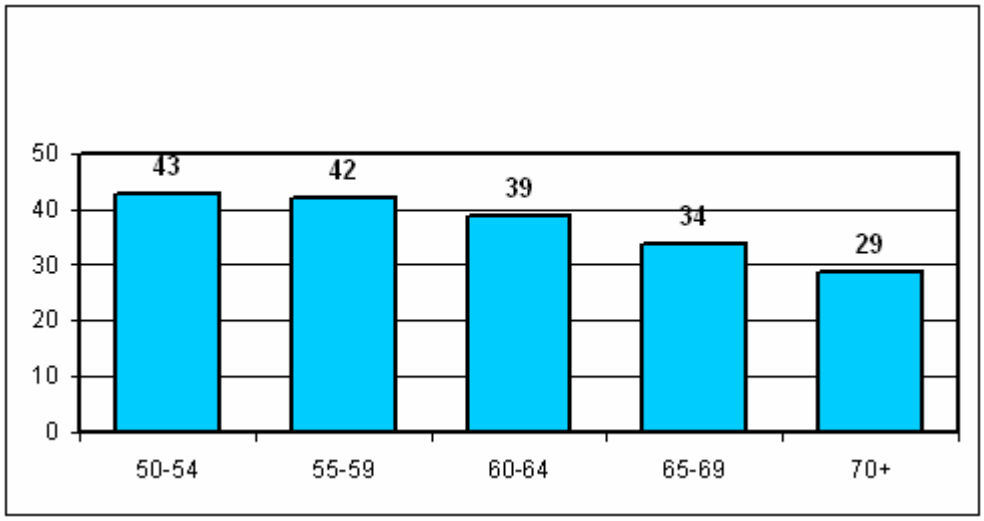
Figure 79: Age Distribution of Psychologists, U.S., 2001



Source: CPS data [BLS, 2001]

The aging of the clinical psychology workforce will lead not only to more retirements, but also fewer hours worked among those who remain in practice. Figure 80 shows how the mean number of hours worked by practicing psychologists declines steadily as they age beyond 50 years old.

Figure 80: Mean Number of Hours Worked by Practicing Psychologists, U.S., 2000



Source: APA, 2003

Training, Education, and Credentials Related to Aging

Most psychologists report that they lack formal training in geropsychology, and perceive themselves as needing additional training [Qualls, et al., 2002]. While the APA acknowledges that not all older adults require the services of geriatric specialists within psychology, they note that geropsychologists may be better prepared to render appropriate care as regards circumstances and clinical problems unique to old age. As the APA Ethics Code requires psychologists to practice only within their scope of competence, and they recommend that all psychologists who work with older adults should have some formal preparation in aging-related issues.

Levels of training related to older adults are characterized by the APA as follows: general exposure to aging (Level 1); generalist training in clinical geropsychology (Level 2), and specialist training in clinical geropsychology (Level 3).

General Curriculum. Among currently practicing psychologists, 28% have had at least some graduate training in geriatrics, and 76% have had informal experience. Only 19% reported any internship experience with older adults, and only about 10% of clinical or counseling psychology doctoral programs offer formal training on issues and treatments of older adults [Blieszner, 1994].

There is a formal accreditation requirement for coverage of “lifespan development” in graduate course work in clinical and counseling psychology. The interpretation of this requirement is highly variable, however, and generally emphasizes development early in the life span. The APA accreditation process demands that the adequacy of programs in providing lifespan development training be documented. In addition, programs are required to demonstrate how they are meeting public needs and changes in the profession. Items on clinical geropsychology are also being drafted for addition to the written national licensing exam [APA, 2003].

The APA has identified thirteen dimensions as important in developing proficiency in working with older adults [APA, 2003]. These dimensions are those in which "some familiarity (is) optimal for proficient practice with an older adult population." They are:

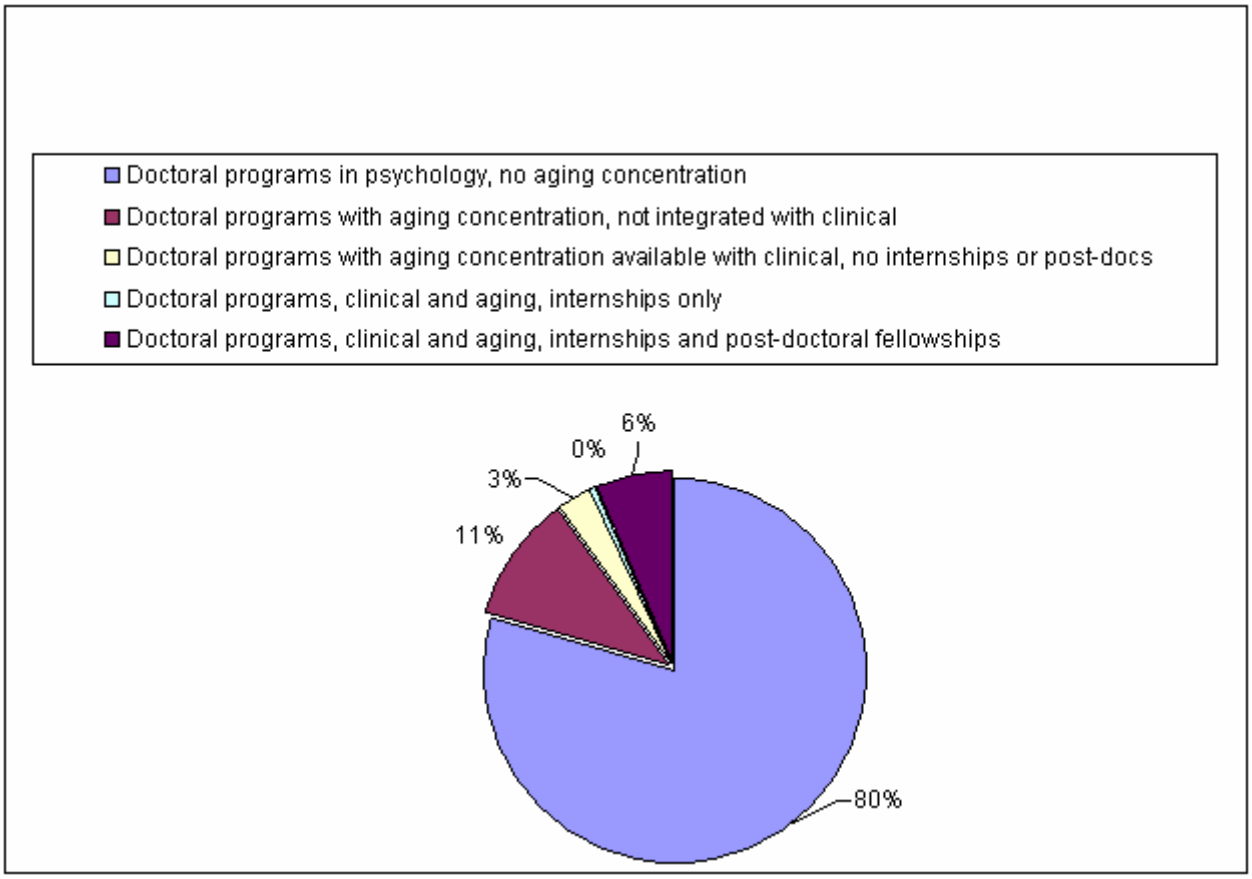
- research and theory in aging;
- cognitive psychology and change;
- social/psychological aspects of aging;
- biological aspects of aging;
- psychopathology;
- problems in daily living;
- sociocultural and socioeconomic factors;
- assessment (including methodology of and specific issues in assessment of older adults, and assessment of therapeutic and programmatic efficacy);
- treatment of older adults (including individual, group, couples, and family psychotherapeutic interventions and environmental modifications; specific applications of psychotherapeutic interventions for the aging; and provision of services in specific settings);
- prevention and crisis intervention services;
- consultation;
- interfaces with other disciplines (including appropriate referral to other disciplines, and work within multidisciplinary teams and across a range of sites); and
- special ethical and/or legal issues in providing services to the aged.

Specialization. The American Psychology Association has formally recognized training in Clinical Geropsychology as a proficiency in professional practice. There also is a section in the APA for Clinical Geropsychologists (Division 12, Section II), and there are "centers of excellence" around the country for graduate training in Clinical Geropsychology.

Some doctoral programs offer a separate educational track in clinical geropsychology. It is more common at the internship level and even more common at the Postdoctoral level. Division 12, section II-Clinical Geropsychology of APA has developed a directory of programs offering internship and postdoctoral training in geropsychology, either as a separate track or as a substantial part of training in the program. The APA identified 94 programs in the U.S. offering graduate training in the psychology of adult development and aging [APA, 2000]. Forty-five of these programs offered a clinical (or related, e.g., health psychology, counseling) specialization integrated with their adult development and aging specialization. Twenty-nine of these 45

programs offered internships, and 20 offered post-doctoral opportunities, although these are almost all dependent upon the research funding obtained by individual faculty members (see Figure 81).

Figure 81: Doctoral Programs in Psychology Offering Aging Concentrations, 2000



Source: APA, 2000

The advantage of a separate educational track is that it allows for the development of centers of excellence in training, model curricula, and programs where collaborative efforts among a number of staff interested in Geropsychology can occur. A separate track may, on the other hand, perpetuate the continued identification of Geropsychology as a specialty, rather than underscoring the reality that all psychologists will need training in working with older adults as they become a more demographically prominent group.

The APA recommends that both kinds of training exist. That is, some specialty programs should be available to help move the field of geropsychology forward, but there should also be more extensive coverage of the needs of older adults in mainstream training in all graduate psychology programs [APA, 2003].

The APA recommends that a clinical geropsychologist complete at least 100 hours of direct patient contact time with those 65 years of age and older in a “generalist” level (Level 2) of

training. To complete a specialist (Level 3) level of training related to older patients, 2,000 hours of practice with older adults are recommended [APA, 2000].

Certification. There is no current credentialing mechanism in Psychology that is specific to Clinical Geropsychology [APA, 2003]. Some programs do issue their own local certificates indicating more specialized training in gerontology.

Other Professional Initiatives. The APA has made tremendous strides in collecting and disseminating information on clinical practice in psychology with older adults. The APA includes an Office on Aging, which acts as a coordination point for APA activities pertaining to aging.

The APA has also recognized a need for data on psychologists' work with older adults (including data on current practice patterns, background training to provide services, desire to provide additional services, and preferences for continuing education training). To this end, the Division Services Office of the American Psychological Association has provided an Interdivisional Grant to Division 12/ Section 2 (Clinical Geropsychology) and Division 20 of APA to conduct a survey of randomly sampled practicing psychologists [Qualls, et al., 2002].

Supply Trends

Educational Production. The number of clinically trained and practicing psychologists grew dramatically throughout the 1990s. The sharpest increases in clinical psychology graduates took place after 1995. The number of accredited doctoral programs in clinical, counseling, and school psychology doubled in the past twenty years to 329 programs in 2000. In 2001, 1,893 doctoral degrees were awarded in clinical psychology by 108 programs. Another 293 doctorates in counseling psychology were awarded by 49 programs [NCES, 2001].

In sum, about 2,200 new clinical or counseling psychologists are currently being produced annually. This growth has caused the supply of psychologists to grow faster than the population in the past twenty years. This does not necessarily represent an oversupply, however, because the demand for clinical psychologists has also become larger over this period.

Replacement. Due to the aging of the psychology profession, large numbers of psychologists are expected to retire in the next ten to twenty years. As clinical psychologists are especially likely to have doctoral degrees, and psychologists with doctoral degrees are older on average than psychologists in general, the problem is expected to particularly acute among clinical psychologists.

The BLS projects that 42,000 job openings for psychologists will occur between the years 2000 and 2010, due to replacement needs (i.e., psychologists retiring or otherwise leaving the profession). Fifty-six percent of all job openings in psychology during this time will be due to such replacement needs.

Demand

The BLS predicts growth of 18% in jobs for psychologists between 2000 and 2010 (about average growth for all occupations). This includes non-clinical psychologists, however. About 75,000 jobs per year will open between 2000 and 2010, but only about 33,000 of these annual openings will be due to net growth in the field (another 42,000 job openings will occur annually due to departures from the field).

While the demand for psychologists in general appears likely to balance with supply, there is a potential for a shortage of trained geropsychologists. Based on an estimated 10% of older adults requiring mental health services, the American Psychological Association has estimated the need for 5,000 doctoral level clinical or counseling geropsychologists to be working full time with older adults by 2020 [Qualls et al., 2002]. Estimates prepared for the 1995 White House Conference on Mental Health and Aging projected a greater need, 7,500 psychologists working full time with older adults by the year 2000, based on the assumption of 22% of the older population needing an average of 4.5 hours of services [Gatz & Finkel, 1995]. Yet data from the Qualls survey suggest that at most, there are 3,000 FTE geropsychologists presently offering services [Qualls et al., 2002].

Factors that may increase demand for psychological services for older adults include:

- greater numbers of older adults (especially those older than age 85) who are disproportionately affected by mental health problems such as depression and dementia;
- growing demand for chronic care which will increase demand for psychologists' services, because chronic care settings are important points of access for older adults;
- greater use of psychological services by baby boomers throughout their lifetimes than the current cohort of older adults;
- declining stigma associated with mental health services which is resulting in more services being sought by all age groups; and
- improving Medicare coverage of psychology services including dementia.

Expanded need for psychological services does not necessarily equate to increased demand for such services, however. Among older adults, the need for services has been much higher than demand.

- A recent study showed that older adults were less likely to have used mental health services than their younger counterparts. Younger persons were about twice as likely to have seen a mental health provider than older adults: 43% vs. 22% [Robb et al., in press].
- Up to 63% of older adults with some sort of mental disorder do not receive treatment from a psychologist. Typically, patients seek treatment through their primary care provider, who often prescribes medication for them rather than referring them to psychologists.

- Most community-dwelling older adults continue to seek assistance for mental health problems from primary care physicians who may not have adequate ability to recognize disorders such as depression or provide appropriate referrals [Qualls, et al., 2002]. This may keep demand for psychology services for older adults low, although need is high.

- Mental disorders experienced by older adults may differ from those experienced by younger people, which can complicate appropriate diagnosis, treatment, and referral. For example, an older person who is depressed may be more likely to report physical symptoms, such as insomnia or aches and pain rather than feelings of sadness or worthlessness [AoA, 2003]. This may also result in a mismatch between need and demand for psychology services for older adults.

Issues for Clinical Psychologists and Older Adults

Medicare. Many mental health or aging service providers have given inadequate attention to the mental health problems of older patients. Medicare and Medicaid provide limited benefits for mental health services. Prescription drugs, which are often an important component of mental health treatment, may be too expensive for older adults on fixed incomes. In addition, transportation may not be available to get to counseling or support group appointments [U.S. Administration on Aging, 2003]. Currently, the major issues with Medicare are:

- lower rates of reimbursement for mental health services than for physical health services. Psychologists can be reimbursed directly, but only for certain services;

- obstacles to providing care for older adults at times of high need (e.g., during hospice or palliative care), because psychologists are not typically a member of the core team (usually consisting of a physician, a nurse and a social worker) for geriatric care; and

- the role of primary care physicians as gatekeepers, who may not make needed referrals, either because they do not understand what psychologists do or because they do not identify problems requiring the intervention of a psychologist.

Interdisciplinary (Interprofessional) Teams. Interdisciplinary teams provide care in which several disciplines coordinate assessment and treatment so that problems can be dealt with consistently and comprehensively. Interdisciplinary teams are characterized by a nonhierarchical organization in which responsibility for the effective functioning of the team is shared by all team members.

Because complex, chronic problems are often presented by older adults, interdisciplinary/ interprofessional care is generally needed to enable a coordinated, collaborative treatment plan and implementation that responds to all the behavioral health, mental health, and physical health problems of older adults [APA, 2003].

There is potential for a greater role for psychologists in such teams, which may increase the demand for psychologists to treat older adults. This will only occur, however, if other health care professionals recognize the potential contributions of psychologists to such teams, and if these professionals make the participation of psychologists a priority.

Prescriptive Authority. A longstanding issue for the psychology profession is the right to prescribe medications. Currently, medication may only be prescribed by a handful of professionals, such as medical doctors (including psychiatrists), physician assistants, and nurse practitioners. Clinical psychologists diagnose and treat mental health problems that are now treated (by other professionals) with medications, and psychologists have argued that they may appropriately write prescriptions for conditions that fall within their scope of practice. Currently, psychologists who recognize a need for medication among their patients must refer their patients to a psychiatrist or other medical professional for prescriptions, resulting in additional costs for patients.

Because psychiatrists may be in short supply in certain geographical areas (especially rural areas) and in certain care settings (e.g., nursing homes and home health care) where large numbers of older patients are found, extending prescriptive authority to psychologists may potentially expand the access of underserved patients to appropriate mental health treatments. Such prescriptive authority would also increase the demand for psychologists, especially among older adults.

The extension of prescriptive authority for psychologists would also have important implications for psychologist training. Due to the physiological effects of many prescription medications, more physiological training would be required of clinical psychologists. A special focus on geriatric care would be especially needed in such training, since older adults use more medications and thus face a greater likelihood of drug interactions.

Cultural Competence. There is greater ethnic and cultural diversity in the baby boom cohort, and so culturally competent services will be even more important as this generation ages. Language barriers, for example, can impede the diagnosis and treatment of mental and emotional disorders. Also, psychologists must have a historical understanding of the culture in which older adults were raised (as opposed to the culture of today) in order to adequately understand the attitudes and values of patients.

Gap Between Future Demand and Expected Production

Due to the diversity of specializations and settings in which psychologists work, it is difficult to determine how many *clinical* psychologists (as opposed to other types of psychologists, e.g., industrial-organization psychologists, research psychologists) will be demanded by the future labor market relative to how many are being produced:

- Thirty-four percent of psychologists with doctoral degrees will reach retirement age by 2010 (if clinical psychologists with doctoral degrees are not substantially older or younger than their non-clinical colleagues, this is approximately 27,000 retirements of clinical psychologists by 2010).

- If current annual educational production of clinical psychologists continues at current rates, about 22,000 clinical psychologists will be produced between 2000 and 2010. This is not sufficient to replace aging clinical psychologists, irrespective of whether demand changes or remains constant.

- Few clinical psychologists receive special training in geropsychology, so sufficient production of clinical psychologists would still not guarantee adequate availability of clinical geropsychologists.

- Shortages of clinical psychologists are most likely to occur in inner city or rural areas where there is not enough population or financial base to sustain a viable practice.

M. Professional Social Workers

Summary

Professional social workers (those with at least a baccalaureate degree in social work) provide a wide range of health-related services to older Americans and their caregivers including counseling, psychotherapy, education, managing care, and promoting activity and independence. Large numbers of social workers are employed in residential care facilities (8%), nursing and personal care facilities (3%), and home health care services (1.5%) [BLS, 2003b]. The services provided by social workers have been demonstrated to improve health outcomes and help control health care costs [Rizzo and Rowe, 2003].

The projected 54% growth of the number of older adults in the U.S. between 2000 and 2020 is likely to be a primary driver of increased demand for social work services in coming decades. The social work profession is expected to grow faster than the average for all professions: 39% among mental health social workers, 32% among medical and public health social workers, and 27% among child, family, and school social workers, compared to 15% for all professions and occupations. The employment settings projected to experience the largest growth are those associated with large numbers of older adults: residential care, home health care, and health services [BLS, 2003b].

Much of the future need for new social workers will be due to the retirement of existing social workers. The age distribution of social workers varies by education and setting, but 53% of social workers with master's degrees and 33% of those with bachelor's degrees will reach retirement age by the year 2020. Losses will be particularly great in health care settings, where 56% of social workers with master's degrees are age 45 or older [BLS, 2001c].

Social work programs currently confer about 15,000 bachelor's degrees and 16,000 master's degrees annually. It is difficult to determine from these data how many new social workers are entering the field, however. Many new graduates of social work master's programs were already active social workers practicing with bachelor's degrees, and therefore do not represent new entrants to the field. Furthermore, many graduates of baccalaureate programs in social work do not enter practice as professional social workers, but enter other occupational fields instead.

Different settings demand different educational levels from social workers: health care settings, for example, employ a greater percentage of social workers with master's degrees than do general social service settings. Residential care settings in particular employ large numbers of social workers with bachelor's degrees, and there is some evidence that most social workers working with older adults are educated at the baccalaureate level.

A relatively small percentage of social workers serving older adults are formally trained in gerontology (2.5% to 5%). Some researchers have concluded that "social work education has neglected gerontology at the same time that the demand for aging-competent practitioners has increased" [Rosen and Zlotnick, 2001, pg. 81]. Gerontological social workers are not only trained in the unique needs of older adults, but some of their services (geriatric evaluation and management [GEM] or comprehensive geriatric assessment [CGA]) have been demonstrated to improve health care outcomes for older adults.

The Social Work Profession: Services to Older Adults

Older adults face many general health, mental health, cognitive, and social problems that professional social workers are well suited to address. Sixty-two percent of 65 to 74 year olds, 76% of 75 to 84 year olds, and 82% of those age 85 and older suffer from two or more chronic illnesses [AARP, 2002]. Cognitive impairment affects 5% to 15% of people older than age 65, and about 40% of people older than age 85 [Alliance for Aging Research, 2002]. Depression and other mental illness are also serious problems among older adults: 23% of those age 85 and older suffer from severe depressive symptoms [Federal Interagency Forum on Aging Related Statistics, 2000]. These conditions often necessitate care by family members at home or in residential settings, and require a degree of coordination not necessary when working with younger populations. The clinical, social, and case management, as well as advocacy skills of professional social workers (discussed below) are potentially valuable in fulfilling these needs.

Social workers provide services to older adults in many health and social service settings. Most of these settings include at least some clients who are age 65 and older. Currently, nursing homes in the U.S. with more than 120 beds are required to employ a full-time social worker. Additionally, as hospitals continue to reduce the length of stay for patients in an effort to control costs, there will be greater need for social services provided in the home. This will result in more home-based social work intervention programs. Social workers also provide aging-related services such as case management, referrals, counseling, and advocacy in Department of Veterans Affairs Medical Centers, agencies in the Mental Retardation/Developmentally Disabled network, agencies specializing in services for older adults and/or disabled, family-service organizations, and community programs, to name a few [Noelker, 2001].

Table 8 contains a list of thirty-two skills and services identified by professional social workers in a Council of Social Work Education (CSWE) survey as necessary for all social workers, for MSWs only, and for geriatric specialists [CSWE, 2003]. The table illustrates the diversity of skills that social workers can bring to the care of older adults, as well as perceived differences in the role of appropriate for BSW-trained, MSW-trained, and geriatric-trained social workers.

These services include both the direct provision of clinical and health care services (e.g., assess psychosocial factors that have an effect on physical health; set measurable objectives based on symptom management; identify and treat mental disorders; gather information regarding physical status) and the management and coordination of health care services (e.g., collaborate with other health professionals; develop service plans; reevaluate care plans; assist with transitions to and from institutional settings).

Table 8: Skills/Services Provided to Older Adults by SWs with Different Training/Education
(classified as skills for all SWs, MSWs only, or geriatric specialists by 820 SWs surveyed by CSWE)

All social workers[a]	• Use case management skills (e.g., brokering) to link older adults to resources and services • Gather social history (e.g., social supports, financial status, cultural background) • Collaborate with health, mental health, and allied health professionals in delivering services • Engage family caregivers in maintaining their own mental and physical health • Assist individuals and families in recognizing/dealing with issues of grief, loss, and mourning • Assist families that are in crisis situations regarding older adult family members • Identify factors that contribute to the greatest possible independence of the older client • Enhance the coping capacities of older persons • Incorporate knowledge of elder abuse in interventions with clients and their families • Assess psychosocial factors that have an effect on the physical health of older persons • Use empathetic interventions (e.g., life review, support groups, and bereavement counseling • Demonstrate awareness of cognitive limitations of clients when interviewing older adults • Develop service plans incorporating appropriate living arrangements/psychosocial supports • Assist older person with transitions to and from institutional settings
All/MSW[b] only	• Gather information regarding mental status and coping abilities • Develop service plans including intergenerational approaches to the needs of older persons • Conduct a comprehensive biopsychological assessment of an older person • Set measurable objectives based on functional status, symptom management, etc. • Reevaluate care plans for older adults on a continuing basis, adjusting plans as needed • Assess and intervene with alcohol and substance abuse problems in older adults • Assess organizational effectiveness in meeting needs of older adults and their caregivers
MSW only[c]	• Identify and treat mental disorders and mental health needs in older adults • Demonstrate ability to use relevant diagnostic classifications with older persons
MSW/ Geriatric specialist[d]	• Adapt psychoeducational approaches to work with older adults • Assess short-term memory, coping history, changes in behavior, etc. of those who are aging • Adapt assessment protocols and intervention techniques for older adults • Assess for dementia, delirium and depression in older adults • Provide clinical services for mental health and cognitive impairment issues in older adults
Geriatric specialist[e]	• Conduct long-term care planning (e.g., financial, legal, housing, medical, and social needs) • Identify legal issues (e.g., advance directives, living wills, powers-of-attorney, wills) • Gather information on physical status (e.g., disabilities/illness, nutrition status, ADLs/ IADLS) • Provide information to family caregivers to assist them in caregiving roles

[a] Classified by at least 50% of social workers as a general social work skill
[b] Classified by roughly equal proportions of social workers as either a general social work skill or a skill necessary for MSWs only
[c] Classified by at least 50% of social workers as skill necessary for MSWs only
[d] Classified by roughly equal proportions of social workers as either a skill necessary for MSWS only or a skill necessary for geriatric specialists only
[e] Classified by at least 25% of social workers as a skill necessary for specialists only

Some of these services are also provided by other professionals (e.g., clinical psychologists and psychiatrists may also diagnose mental disorders and provide clinical counseling). Other

services, such as advocacy or connecting older adults and their families with appropriate services and resources, are provided primarily by social workers. Social workers may provide their services either as independent professionals or as members of interdisciplinary care teams.

A number of research studies have confirmed the efficacy of social work services in improving health outcomes for older adults and reducing health care costs. Case management services have been found to reduce hospitalizations and length of stay, improve quality of life, and have a positive impact on social functioning and symptomatology [Solomon,1992]. Another study finds that 69% of older clients participating in a social work intervention do better than the average client in a comparison group [Gremier and Gorey, 1998]. An evaluation study of comprehensive geriatric assessment (CGA) finds that CGA programs improve survival and functioning in older people [Stuck, Siu, Wieland, Adams, and Rubenstein, 1993], and another study finds that geriatric assessment and management (GEM) reduces nursing home placement, improves function, and decreases mortality [Applegate, Deyo, Kramer, and Meehan, 1991]. Social work services have also been found to reduce levels of unmet needs in the areas of nursing, medication, and physical therapy [Oktay, et al., 1992].

Profile of Current Social Work Workforce

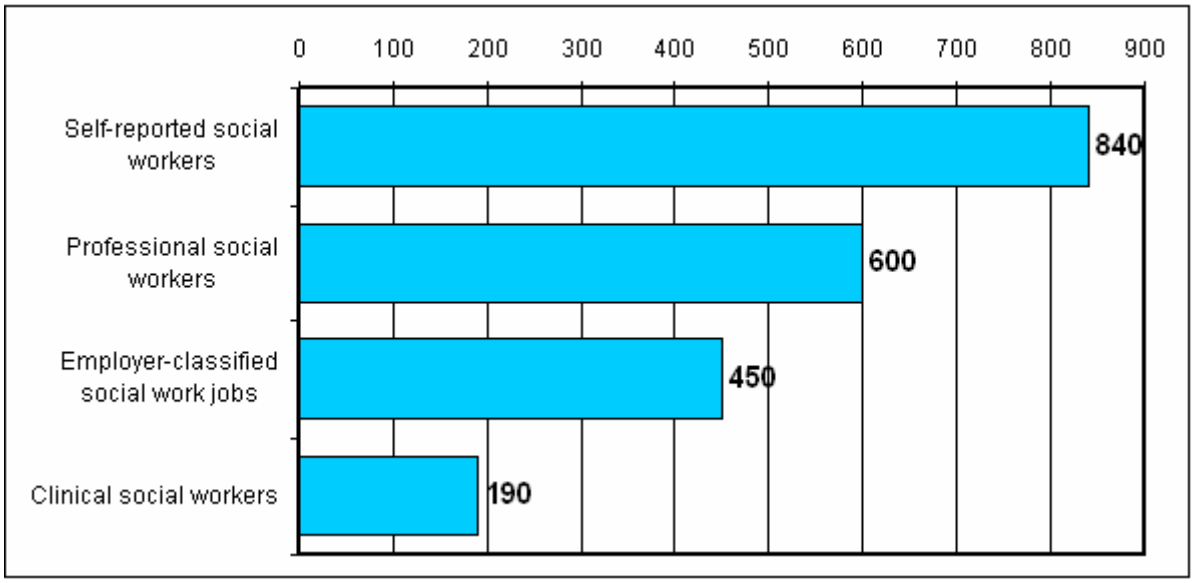
A major challenge in understanding the social work workforce and related issues is that the term "social worker" is not standardized. Professional associations, government agencies, employers, and individual workers all use the title "social worker," but they are often using different definitions (Table 9). Although in most states, the law limits the professional title "Social Worker" to people with appropriate education and credentials, several states allow almost anyone to call himself a social worker. Even in states where "social worker" is a protected title, many people without the formal license refer to themselves in casual conversation as social workers. The remainder of this report will focus primarily on "professional social workers" as defined below by NASW.

Table 9: The Social Work Workforce in the U.S., 2000

The Social Work Workforce in the U.S., 2000			
Self-reported Social Workers	Individuals who, regardless of educational preparation, self-report their occupation as "social worker"	840,000	Current Population Survey (BLS)
Professional Social Workers	**Individuals who self-identify as social workers who have attained at least a bachelor's degree**	**600,000**	**Current Population Survey (BLS)**
Employer-classified social work jobs	Jobs classified by employers, regardless of educational requirements, as "social worker"	450,000	Bureau of Labor Statistics (OES)
Clinical Social Workers	Professional social workers who provide a full range of mental health services (must have a master's degree in clinical social work)	190,000	*Mental Health, United States, 2000*

As Figure 82 shows, the largest cohort, by far, of social workers in 2000 was self-reported social workers (840,000), individuals who may or may not have had educational preparation for the job. Similarly, another 450,000, regardless of educational requirements, fell into the cohort of employer-classified social workers. Professional social workers (self-reported with bachelor degrees, and those with bachelor degrees or higher) numbered 600,000 and clinical social workers numbered 190,000.

Figure 82: Estimated numbers of social workers in the U.S., by definition (in thousands), 2000



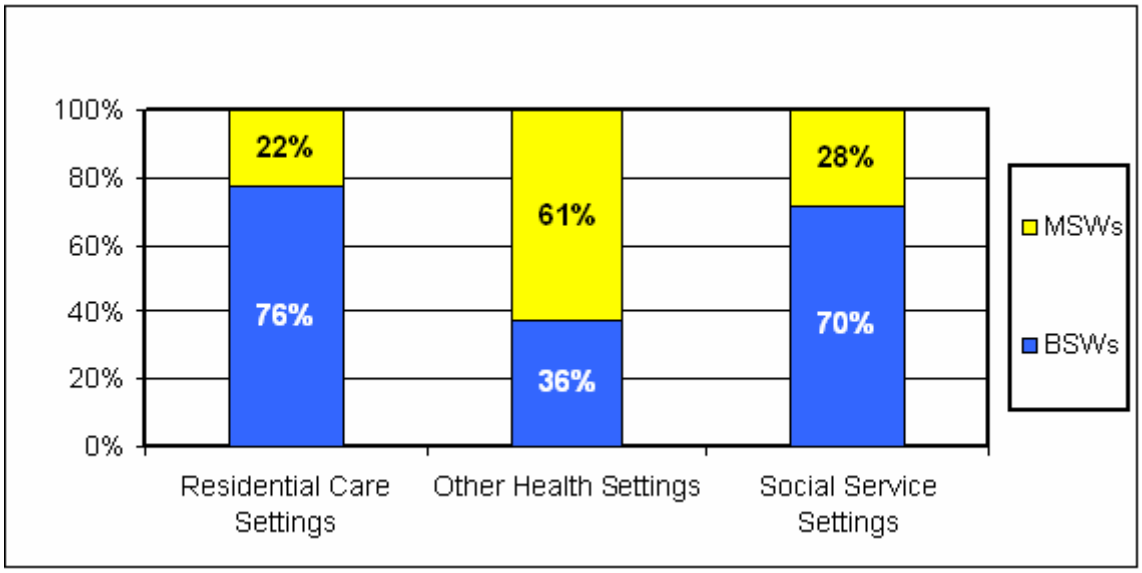
Source: NASW

Sources of Data. As previously noted, the definition of professional social worker varies across settings and states, but it also varies across sources of information about the social work profession. The BLS, for example, asks employers to count the numbers of their employees with the job title Social Worker. This may include persons with any educational credentials, or even no credentials at all. Similarly, the primary limitation of the Current Population Survey (CPS), also done by the BLS, is that individuals self-report their occupations, allowing anyone to claim the title of social worker regardless of their actual training, qualifications, or job duties. More than 26% of the self-reported social workers in the CPS lack even a bachelor's degree, and so do not meet the definition of professional social worker used by the National Association of Social Workers (NASW) and CSWE. Finally, membership data are available from the leading professional association of social workers, NASW. Although NASW data provide information on the primary practice setting of members, the limitation of these data is that not all social workers belong to NASW. Furthermore, membership in NASW is not random. Ninety-one percent of NASW members have master's degrees, compared to only 36% of degreed social workers in the CPS. Older adults are predominantly cared for by social workers with bachelor's degree, making NASW data insufficient for assessing the geriatric social work workforce.

Employment Settings. The extent to which professional social workers serve older adults is dependent upon the setting in which they work. Occupational setting tends to vary by education,

with social workers with master's degrees being more prevalent in certain settings, and social workers with bachelor's degrees being more likely to work in other settings (Figure 83).

Figure 83: Percent of Social Workers with BSWs and MSWs, by Setting



Source: CPS data (BLS, 2001c)

In terms of setting, these educational divisions carry implications for the level of training necessary among new social workers in order to ensure an adequate supply of social workers to serve the needs of older adults (Table 10).

Table 10: Percentages of Professional Social Workers by Care Settings and Education, 2000

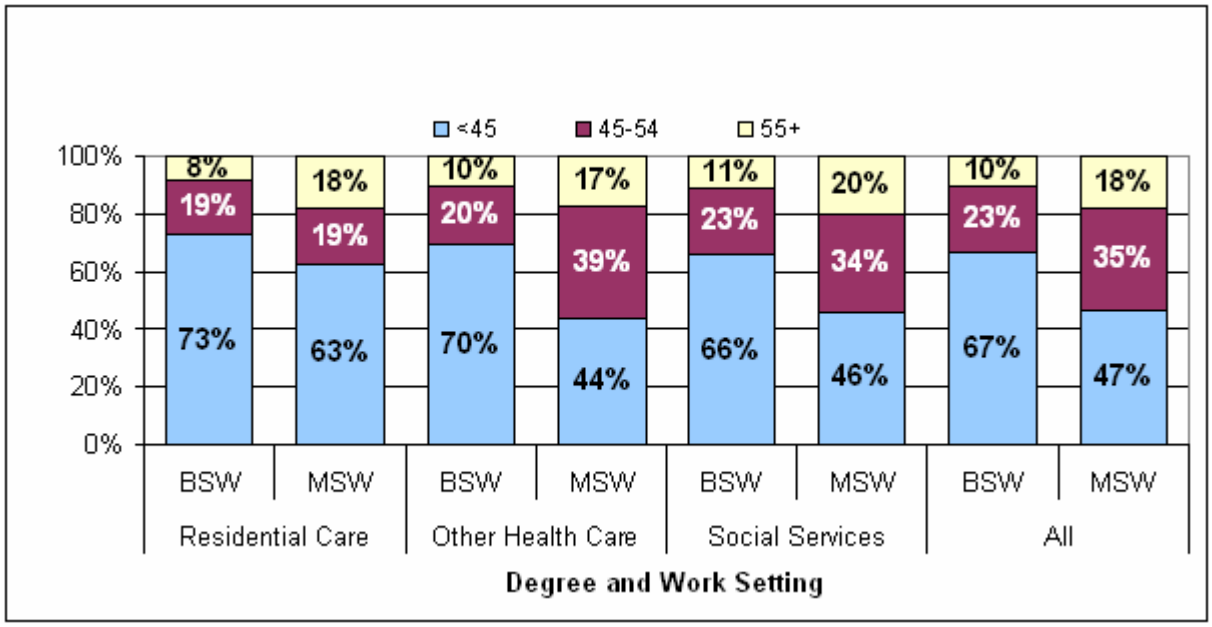
Care Setting	BSWs	MSWs	All Professional Social Workers
Residential Care	13%	6%	10%
Other Health Care	10%	29%	17%
Social Services	38%	29%	35%
Education	4%	13%	7%
Government	35%	22%	30%
Other	1%	1%	1%
Total	**100%**	**100%**	**100%**

Source: CPS data [BLS, 2001c]

The majority of social workers are employed in settings where they are likely to serve mixed-age populations, namely government and general social services, which employ 55% of degreed social workers. It is worth noting, however, that BSWs are disproportionately employed in these settings. Many MSWs are employed in health care settings (other than residential care), and are likely to encounter large numbers of older adults in these settings. However, residential care settings, where as many as 85% of clients may be older adults, are more than twice as likely to employ BSWs as MSWs.

Age Distribution. The median age of professional social workers in 2001 was 36 years old for those with a bachelor's degree, and 45 years old for those with a master's degree. The median age for social workers reporting that they held a graduate degree *and* worked in a health care setting was 43. In contrast, the median age of the general U.S. civilian labor force was 39.3 years in 2000. Professional social workers are thus slightly older than the general labor force. To put these figures into perspective, over the next twenty-five years, fully half of all current social workers will themselves turn sixty-five and be candidates for retirement (Figure 84).

Figure 84: Age Distribution of Professional Social Workers, by Degree and Work Setting, 2000



Source: CPS data [BLS 2001c]

The oldest group of social workers is MSWs working in health care settings, indicating that retirement replacement will be most critical among this group. Fifty-six percent of this group will reach retirement age by 2020. The fact that social workers in health care settings are likely to serve large numbers of older adults implies that supply may become a critical issue in these settings: large numbers of social workers will be retiring at the same time that the client population begins to grow substantially.

Training, Education, and Credentials Related to Aging

Professional social workers are defined by NASW as those who have received at least a bachelor's degree in social work from an educational program accredited by CSWE. MSWs generally practice in health and behavioral health settings and provide clinical counseling, administration or supervision, while BSWs provide a variety of direct services, such as case management. Although not all MSWs are clinical social workers, social workers in clinical practice (health and mental health settings) must have at least an MSW.

A PhD/DSW degree is also available from some educational programs. These advanced degree holders, who are typically involved in research and academic pursuits, represented only about

2% of professional social workers participating in the 2001 Current Population Survey [BLS, 2001c].

General Curriculum. Although it is estimated that older adults consume a sizable proportion of social work services, many of those serving older adults do not consider gerontology or geriatrics as their primary practice area nor do they have specialized geriatric education or training. The lack of formal geriatric social work education is not surprising given that only three of the 432 BSW programs and 59 of the 150 MSW programs in the U.S. offer a concentration in aging.

The lack of formal training to work with older adults appears to exist among most social work generalists [Rosen & Zlotnik, 2001]. Standardized aging-related content has yet to be developed in the general curriculum for social workers, although the CSWE has established some academic course and field practice requirements and guidelines that all accredited schools of social work must follow [Geriatric Interdisciplinary Team Training Program, 2003].

The need to improve the geriatric training of social workers, whether or not they work with predominantly older adult populations, is now receiving more attention. The Hartford Foundation and the CSWE have both begun to work towards strengthening social work curricula and faculty development in aging and gerontology. CSWE's Strengthening Aging and Gerontology Education for Social Work (SAGE-SW) has a goal of developing basic competencies in aging for all social work students, both in BSW and MSW programs. They provide teaching resources to assist social work faculty in integrating aging content into their existing courses, and also in developing specialty courses in aging. The Hartford Foundation's Gerontological Social Work Initiative also focuses on expanding the number and quality of courses addressing the special needs of older adults in both BSW and MSW programs.

Specializations. A growing percentage of professional SWs at the master's level have some sort of specialization or specialized training. As of 2000, some 2.4% specialized in geriatrics. Specialized training in aging-related issues and skills (such as comprehensive geriatric assessment [CGA] and geriatric evaluation and management [GEM]) can improve quality of care and health outcomes for older adults [Stuck, et al., 1993; Applegate, et al., 1991]. But in 2000, only 5% of NASW members reported aging as their primary area of practice [Practice Research Network, 2000]. This figure is not necessarily representative of all professional social workers in the U.S., because differences in definition may underestimate the number of social workers whose practice includes work with older people and their families [Klein, 1995]. Also, MSWs are over-represented in NASW membership relative to BSWs (91% versus 38% in the CPS), while BSWs are more likely to work with older adults.

The CSWE reports fifty-nine MSW programs with a concentration in aging or gerontology (out of 150 MSW programs), and only three BSW programs with such a concentration. Low levels of student interest have kept the production of geriatric social worker at minimal levels. Factors which inhibit interest among students include: the desire of many students to work in a clinical mental health environment where geriatricians may be in low demand, lack of mentorship in the area of aging, low financial benefits, and a sense among students that work with children and families is more rewarding [Scharlach et al., 2002].

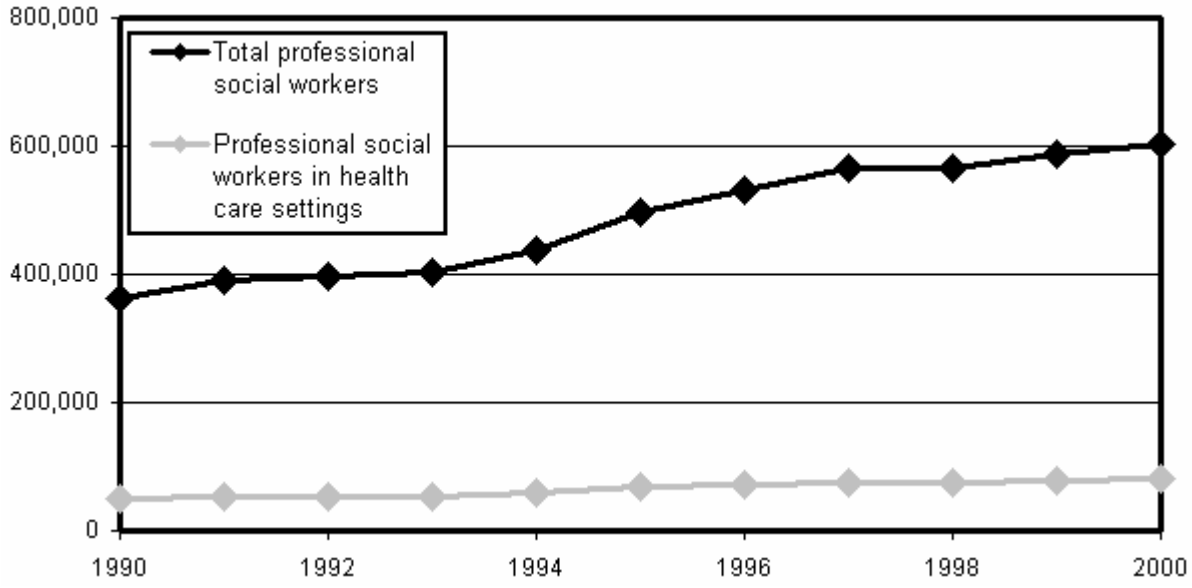
Certification. There is currently no certification available through the American Geriatric Society or any other national professional organization. There are geriatric certificates available from individual educational programs, but standards and requirements for these certificates differ across schools.

Substantial continuing education content—including geriatric—is, however, available for social workers. Many of those who work with older adults receive most of their information from continuing education classes not associated with the schools where they obtained their degrees. Many of these courses are offered by geriatric education centers, such as those funded by the Department of Veteran Affairs and HRSA, which serve as the primary location for education on the geriatric population. Unfortunately, no data are available on what proportion of professional social workers have received geriatric continuing education are available, so no assessment of the level of preparedness in aging-related service is possible.

Supply Trends

The estimated national supply of professional social workers grew 65.8% between 1990 and 2000 (Figure 85). The numbers of social workers employed in health care settings (where the projected future demand is highest) are still relatively low, however -- between 14% [BLS, 2003b] and 17% [BLS, 2001c]. Thus, there is the potential for a shortage of social workers in health care even if there is no such shortage overall.

Figure 85: Estimated Supply of Professional Social Workers, U.S., 1990 to 2000



Source: BLS, 2003

The number of social workers graduating with bachelor's degrees increased by about 50% between 1995 and 2000, while the number of social workers graduating with master's degrees rose by about 25% during the same period. In 2000, social work programs graduated about 15,000 new BSWs and 16,000 new MSWs [NCES, 2000]. If educational production continues at

recent levels, the numbers of new social workers will exceed the needs for replacement and new workers so that the numbers of professional social workers will continue to rise.

The majority of these graduates, especially MSW graduates, go into areas other than aging. One study of social workers in aging services departments in California found that only 42% of adult protective services employees and 36% of case management employees held MSWs. Only about 12% of all other adult services workers held MSW degrees [Scharlach, et al., 2002].

Medical and public health social workers were the highest paid group of social workers in 2000 according to the BLS, but salaries also vary across employment settings (Table 11). Medical/ public health social workers in nursing and personal care facilities had a median salary of only $31,580, compared to those in hospitals, who had a median salary of $40,020 [BLS, 2003b]. Social workers working in residential care facilities are also among the lowest paid. This stands in stark contrast to the salaries for school social workers, who have the highest median salaries. These data suggest that social workers have little monetary incentive to work in settings which serve large numbers of older adults.

Table 11: Median Salaries for Social Workers, by Type and Setting (2000)

Setting	*Category of Social Worker*		
	Medical and Public Health Social Workers	**Child, family, and School Social Workers**	**Mental health and substance abuse Social Workers**
Elementary and Secondary Schools	N/A	$41,700	N/A
Hospitals	$40,020	N/A	$33,150
Local Government	$35,300	$35,780	$33,950
Health and Allied Services, nec	$36,230	N/A	$28,270
State Government	N/A	$32,860	N/A
Nursing and Personal Care Facilities	$31,580	N/A	N/A
Residential Care Facilities	N/A	$26,170	$26,620
Individual and Family Services	$29,730	$27,170	$28,160
All Settings	**$34,790**	**$31,470**	**$30,170**

Source: Occupational Outlook Handbook [BLS, 2003]

Demand

The BLS projects employment growth of 39% for mental health and substance abuse social workers, 32% for medical and public health social workers, and 27% for child, family, and school social workers between 2000 and 2010. The largest areas of projected growth for mental health and substance abuse workers include residential care (87% growth), home health care services (70%), health and allied services (58%), and physician offices (57%). The largest area of predicted growth for child, family, and school social workers include residential care (70%), home health care services (70%), health and allied services (58%), physicians' offices (57%), and offices of other practitioners (51%). These are all settings in which large numbers of older adults are found, and the projections suggest that social worker contact with older adults will grow.

According to the BLS, the total number of social workers will need to increase by 19,000 between 2000 and 2010, with a total of 73,000 job openings in social work occurring during this period when one includes the replacement of retirees and departures. The age distribution of social workers varies by education and setting, but, as previously noted, 53% of social workers with master's degrees and 33% of those with bachelor's degrees will reach retirement age by the year 2020 (Figure 84). Losses will be particularly severe in health care settings, where 56% of social workers with master's degrees are age 45 or older [BLS, 2001c].

Various social and demographic changes affecting older adults may enlarge their need for social work services. Other factors, discussed below, will affect whether this need is translated into demand for additional social workers:

- The percent of divorced older adults has increased substantially: 5% of men and 6% of women age 65-74 in 1980, versus 10% of men and 11% of women this age in 2000 [AARP, 2003]. Consequently, fewer older adults will have spouses to care for them.

- Rates of childlessness among older adults (currently 13% of women age 55-74) are expected to rise as the baby boomers reach their older years [AARP, 2003]. Fewer older adults will consequently have adult children to care for them.

- Female labor force participation today is almost three times that in 1950 [AARP, 2003], meaning that women have less time to devote to caring for their parents. This will create a greater need for formal services to replace those traditionally provided by kin.

- The percentage of older adults from non-white minority groups (currently 20%) will rise to 31% by 2030 [AARP, 2003]. Older adults from non-white minority groups are more likely to be socioeconomically disadvantaged than the general population and will require culturally sensitive care and services. Therefore, the amount of traditional social work services (i.e., services targeted at disadvantaged populations) needed by older adults may grow.

- The consumption of mental health services expanded in recent years. (Baby boom men and women are using inpatient mental health services 38% and 15% more than their

predecessors did at their age). This, too, will raise demand for social workers, especially clinical social workers.

- The prevalence of chronic disease and depression, which rise with age, will grow in the population as a result of greater longevity.

- Increases in the percentages of older adults raising grandchildren (particularly common in the African-American community, where many older adults already face socioeconomic and cultural disadvantages) will also divert resources away from older adults.

Greater need for social workers does not necessarily translate into increases in demand. Much of the demand for social work services by older adults is driven by reimbursement. Medicare reimbursement rates for all forms of mental health services are lower than those for other health care. Mental health services are covered under Medicare Part B (the program that helps reimburse for physician services, outpatient hospital care, and other medical services not covered by Part A), but lower co-payments for a variety of services (20% versus 50% for mental health services) are disincentives to those who might seek care from social workers. Social work outreach services (e.g., identifying older adults in need of care, early detection of problems, illness prevention, and initiating care and services) are typically not reimbursed at all, so these services are often delayed until medical emergencies exist. Current CMS reimbursement policies, therefore, suppress both supply and demand, and the Medicare payment system has been characterized by some social workers as a major contributor to reductions in the number of professional social workers employed in home health care [Center for Health Workforce Studies, 2002].

In the past, changes in public reimbursement policies have significantly affected demand for social workers, both positively and negatively. Recently the effects have been negative (e.g., reductions in Medicare funding led to cuts in the number of social worker jobs nationally) [Barth, 2001]. In addition, changes in regulations have permitted employers to substitute individuals with no formal social work training and/or lower paid human service workers in social work jobs [Barth, 2001; BLS, 2002]. This practice can reduce labor market demand for professional social workers without necessarily reducing the underlying need for social work services.

Issues for the Social Work Profession and Older Adults

Adequacy of Aging-Related Training. A relatively small percentage of social workers serving older adults are formally trained in gerontology, and most generalist social workers receive little or no training in aging-related issues. This is potentially problematic because the proportion of the social worker client base that is older adults is expected to rise. There is growing concern as to whether a) sufficient geriatric social workers will be available to meet specific needs of older adults; b) generalist social workers will have adequate understanding of the special needs of older clients; and c) older patients will have sufficient access to professional social work services.

Access to Care. One of the major problems in access to social work services is related to points of access. Although most social workers are employed in some type of social service agency,

older adults appear most likely to encounter social work services during a hospitalization, while in a nursing home, or through home health care. Thus, while older adults are referred to social work services at a higher rate than other age groups, they do not have ready access to the services until they reach a critical level of need. Part of this issue may be a lack of awareness on the part of older adults and their families about the services that professional social workers offer.

Another potentially important access point to professional social work services for older adults is assisted living facilities. The presence of social workers in such residential facilities is limited at this time, but there is a strong potential for social workers to provide valuable services in these facilities. Currently, however, unless assisted living residents seek out social work services independently, or a primary care provider refers them, they will have limited access to social workers. Based on the projected growth in the 75 years and older population, the number of assisted living beds nationwide is expected to nearly double between 2000 and 2030 (from 987,000 beds to 1.9 million beds) [Kraditor et al., 2001]. If the rate of social work employment in assisted living facilities does not significantly increase**,** access to social workers by assisted living residents is likely to remain problematic.

Access to professional social work services is particularly problematic for those in long-term care facilities. As previously noted, because of relatively low salary levels, the demand for professional social workers in non-hospital settings (e.g., nursing homes, home health programs) often exceed the supply. CMS rules describe social work services that are to be provided by the nursing home, if not internally, then through a certified consultant. Some social workers report, however, that the funds for social work services are lumped together with payments for other services, and Medicare currently does not distinguish when making these payments. Furthermore, they report that compliance is sometimes not monitored due to shortages in staffing [CHWS, 2002f].

Assuring adequate social work services in nursing homes and home health programs continues to be challenging: many social workers report that they are not able to provide the proper social work services, because they are required to fill various other roles. Discontent contributes to relatively high turnover rates among social workers in this setting.

Diversity. Over the next fifty years, the non-white older adult population is expected to grow dramatically (from 8% to 12% African-American, from 6% to 16% Hispanic, and from 2% to 7% Asian). By 2050, only 64% of older adults will be non-Hispanic white, as opposed to 84% today [FIFARS, 2000]. As the percentage of minority older adults increases, the need for culturally sensitive services will also grow. Although African-Americans are disproportionately represented among social workers (depending upon the definition of social worker used), Asians and Hispanics are underrepresented in the social work profession [BLS, 1999]. The (self-reported) percentages of social workers from these ethnic groups must increase by 42% and 105%, respectively, in order to achieve representation consistent with their distribution of the U.S. population. This is a particular concern in regard to the Hispanic older adults, who will be the fastest-growing segment of older adult population in the coming decades.

Social workers are trained to provide culturally sensitive services to members of racial or ethnic groups to which they do not belong, but this requires that they are well versed in the culture and competent in the primary language of their patients/clients. As the numbers of minority older adults grow, there will be a greater need to attract minority social workers (especially Hispanics and Asians) to the profession and to facilities serving older adults. There will also be a need to ensure that non-minority social workers specializing in care of older adults are adequately prepared to address the needs of older clients from other cultures.

Gap Between Future Demand and Expected Production

Although the social work profession will continue to grow in the coming years, it is not evident that the social work needs of older adults are currently being met. If barriers to professional social work care for older adults are addressed in the coming decades, it may be necessary to employ many more social workers than is currently the case.

Furthermore, it is not inevitable that the number of social workers working with older adults who are adequately trained in age-related issues will be sufficient to meet the social work needs of the growing population of older adults. In order to ensure that the needs of older adults will be met, it is important that all social workers receive sufficient geriatric content in their general social work curriculum. It is also important to produce adequate numbers of social workers specifically trained in gerontological or geriatric social work.

Specialized gerontological content in social work programs could potentially improve social work care for older adults, but students are unlikely to specialize in gerontology unless more incentives are developed. Expanding the amount of gerontological content in the general social work curricula would also improve the preparation of social workers for an aging clientele. Ninety-three percent of social workers are employed in settings where they are expected to have at least some older patients/clients. The need for these social workers to be trained in the special needs of aging persons is crucial to ensure the provision of appropriate services to this large and growing population.

Programs (e.g., mentoring programs and internship opportunities in geriatric settings) must be developed by social work programs to encourage social work students to work with older adults. If this is not done, too many new social workers who graduate in the future may be drawn to settings that serve relatively few older adults (e.g., schools, youth centers, substance abuse centers).

A tremendous need exists for better data on social workers who work with older adults, and on gerontological social work specialists. Such data may help to better assess the ability of the social work profession to meet the needs of older adults and to develop and monitor innovative policies and programs to draw social work students into this important and growing specialty.

N. Nursing Home Administrators

Summary

Nursing home administrators (NHAs) play a central role in the quality of life of nursing home residents. They are responsible for overseeing all aspects of life in a nursing home, for supervising and managing staff, for managing the finances of the facility, for guaranteeing the safety of their patients and resident, and for assuring compliance with many government regulations and reporting requirements.

Approximately 30,000 to 35,000 NHAs were licensed in the U.S. in 2000, but only an estimated 17,000 to 18,000 were actively employed as nursing home administrators. Nursing homes have been waning in popularity as a work setting over the past decade, but have continued to grow slowly in number due to increasing demand for nursing home services. This slow growth is expected to continue as the numbers of older adults continue to rise over the next ten to twenty years.

The BLS projects that there will be 123,000 job openings for medical and health services managers (some 12% of whom are NHAs) between 2000 and 2010. Most of these openings (81,000) will occur due to growth in demand, while the remainder will occur due to replacement needs. Assuming that the percentage of such professionals working in nursing homes does not substantially change, almost 15,000 job openings will occur for nursing home administrators and similar positions in nursing homes, and almost 10,000 of these will be due to increased demand.

While the number of licensed NHAs is nearly twice the number of active NHAs, there remains a potential for a shortage. Large numbers of NHAs report a desire to leave the profession (which is somewhat older on average than the civilian labor force overall and will experience significant numbers of retirements over the next twenty years). While demand for NHAs will continue to grow in proportion to the growth of the older adult population, substantially smaller numbers of candidates are sitting for the national licensure examination (only about half of which are likely to actually become NHAs). About 1,500 new NHAs per year will be needed between 2000 and 2010 to account for both demand growth and replacement needs. Recent estimates suggest that only about 1,150 new NHAs will enter the workforce each year, and that number may decline.

Nursing Home Administrators: Services to Older Adults

Nursing home administrators (NHAs) play a central role in the quality of life of nursing home residents. These administrators are responsible for overseeing all aspects of life in a nursing home, including health care, housing, nutrition, social services, security, and recreation. Nursing home administrators are also responsible for supervising and managing staff, managing the finances of the facility, and for assuring compliance with many government regulations and reporting requirements. One of the fundamental goals of their work is to provide their residents with the highest quality of life possible given their individual conditions and needs [CHWS, 2001]. Specific duties within these areas of practice include:

- resident care management: quality of care, social services, food services, medical services, recreational/activity programs, medical records, pharmaceutical programs, and rehabilitation programs;

- personnel management: communication, recruitment, training, evaluation, retention, personnel policies, employee safety/health;

- financial management: budgets, resource allocation, audits, reporting;

- environmental management: building and equipment maintenance, sanitation, resident safety and security; and

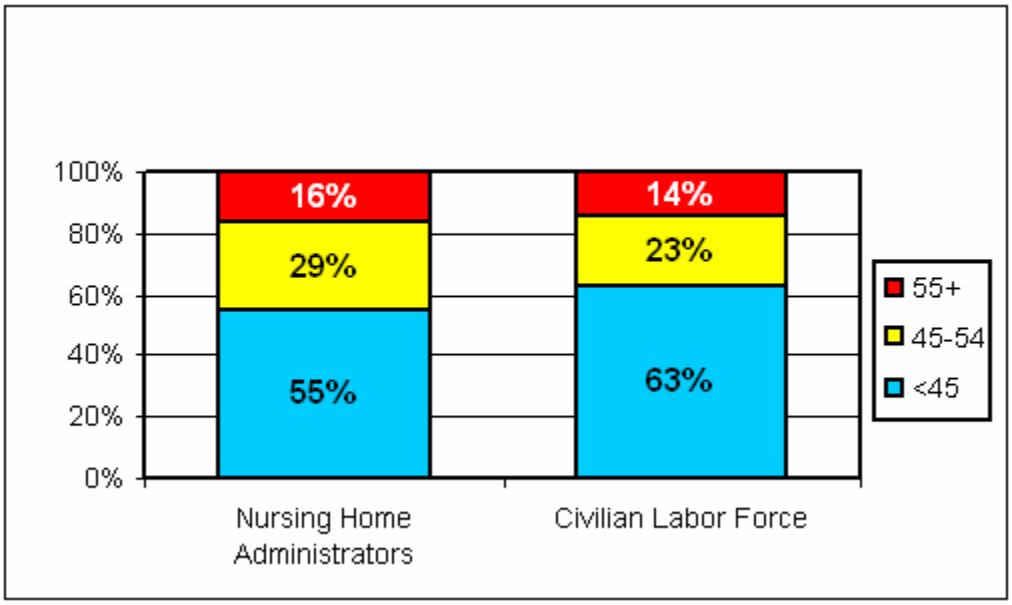
- governance and management: policies and procedures, strategic planning, outcome evaluation, resident satisfaction, resident rights, risk management, public relations, service integration.

Profile of the Current Nursing Home Administrator Workforce

The number of NHAs practicing in the U.S. is uncertain. Licensure rosters from all 51 jurisdictions provide an estimate of 30,000-35,000 NHAs eligible to practice, but it is not known how many of these licensees are still active. Many NHAs have licenses in multiple states, but there are no good estimates of the number of such individuals. There are currently about 17,000 to 18,000 nursing homes in this country, each of which must have a licensed administrator [AARP, 2003; CHWS, 2001]. According to the BLS, "medical and health services managers" filled about 18,000 jobs in nursing homes in 2000. This number would include NHAs, but might also include some other administrative professionals in nursing homes.

National data on medical and health services managers working in nursing homes in 2001 are also available through the Current Population Survey. Sixteen percent of these professionals are age 55 and older, while another 29% are age 45-54 (Figure 86). Their median age was 43 [BLS, 2001]. Data from New York state show that nursing home administrators in larger nursing homes tend to be older [CHWS, 2001]. The age distribution suggests that substantial numbers of NHAs may leave the profession in the next ten to twenty years. Forty-five percent of NHAs will reach retirement age by the year 2020.

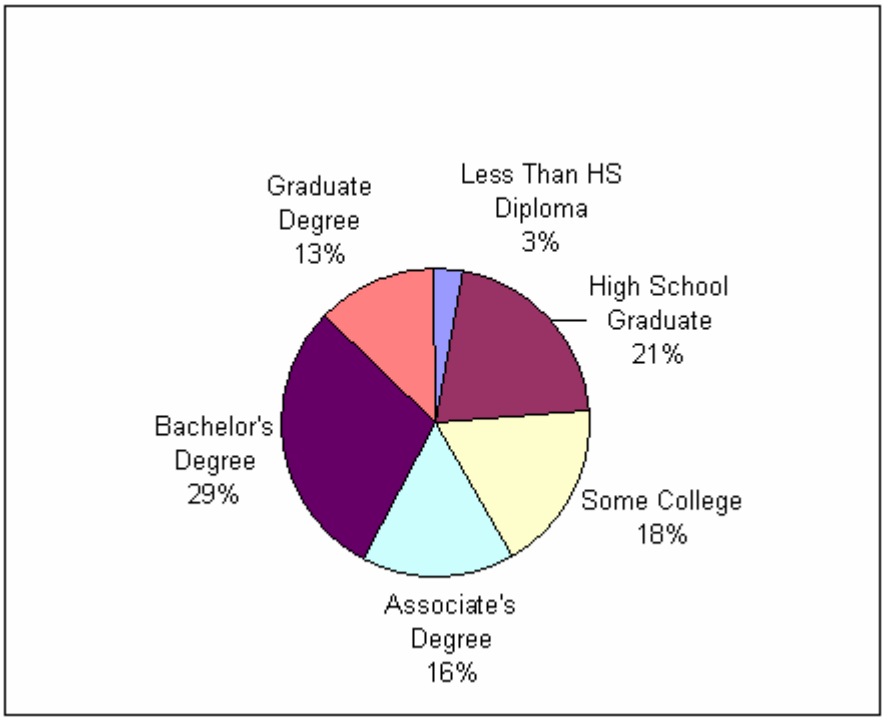
Figure 86: Age Distribution of Medical and Health Services Managers Employed in Nursing Homes, U.S., 2001



Source: CPS data [BLS, 2001]

Nursing home administrators have a range of educational backgrounds, and their backgrounds vary dramatically from state to state, due in part to differences in licensure requirements in each state. According to national CPS data, 58% of medical and health services managers employed in nursing homes nationally have less than a bachelor's degree, while 13% have graduate degrees [CPS] (Figure 87). The proportion of administrators with less than a bachelor's degree ranges between states from about 6% to 60%, whereas 11% to 45% of NHAs reported having a graduate degree.

Figure 87: Educational Attainment of Medical and Health Services Managers Employed in Nursing Homes, U.S., 2001



Source: CPS

Training, Education and Credentialing Related to Aging

Unlike most other health professionals, NHAs are not required to complete any particular field of study in most states. The majority of nursing home administrators have educational backgrounds in health administration, business, or nursing. However, a number of them have backgrounds in a variety of other fields, including liberal arts, nutrition, and social work [CHWS, 2001].

Every state has an NHA licensure board, and they all use the same national licensing exam (administered by the National Association of Boards of Examiners of Long Term Care Administrators [NAB]). No consensus exists, however, on educational requirements for licensure. Some states only require a high school education to become an NHA. One state (Connecticut) used to require a master's degree, but recently dropped that standard due to an insufficient applicant pool.

Supply Trends

A cursory review of the available figures suggests a surplus rather than a shortage: national need is presumably for no more than 18,000 NHAs, while at least 30,000 are licensed. Yet another view of the data is that only about half of licensees will be actively employed as NHAs, so we must either a) continue to license twice as many NHAs as we have nursing homes or b) make

nursing home administration more attractive as a career so that more of those qualified for such positions enter or remain in them.

Recent years have seen a decline in the number of candidates taking the license exam. The number of license exams administered nationally in 2001 is 36% fewer than in 1998 and 43% fewer than in 1988 [AP, 2002]. This decrease in the number of people interested in becoming nursing home administrators could ultimately lead to shortages of administrators and poorer care for nursing home residents [AP, 2002].

Educational Production. Although there are some educational programs in long-term care administration, NHAs are not required to graduate from such a program for licensure. It is therefore very difficult to use educational production as an index of supply. (Anecdotal evidence, however, points to a decline in enrollments in programs designed specifically to produce NHAs. In Dallas, for example, the University of Texas Southwestern Medical Center closed its long-term care administration program in 2002 due to a lack of applicants. Other schools have scaled back similar programs, and/or report falling enrollments [AP, 2002].)

Licensure and examination data are more appropriate for this purpose. There is only one nationally recognized exam (administered by the National Association of Boards of Examiners of Long Term Care Administrators), which approximately 2,300 individuals took in 2001. This is down from approximately 3,800 candidates five years before. If the current ratio of licensees to active NHAs persists, this means that only about 1,150 candidates per year will actually become NHAs.

Replacements. Replacement need for the NHA profession is expected to be significant. Not only are NHAs aging slightly faster than the U.S. population, with a median age of 43 (versus 40 for the civilian labor force overall), but the profession is plagued by high rates of turnover. In a 2000 survey of NHAs in New York state, nearly one-third of active nursing home administrators indicated they were planning to leave the profession within the next five years. Many of these were age 60 or older, but more than 20% of NHAs younger than age 60 also reported an intention to leave the profession within this time period [CHWS, 2001].

The BLS reports that about 32,000 jobs will open for medical and health services managers (about 12% of which currently work in nursing homes) between 2000 and 2010 as a result of replacement needs. This is 3,800 estimated openings for NHAs over a ten-year period due to replacements. However, replacement need is a relatively minor factor in future demand for medical and health services managers. Increased demand will account for most future employment opportunities for such personnel.

Demand

The BLS projects that 123,000 job openings will occur for medical and health services managers between 2000 and 2010. Most of these (81,000) will occur due to growth in demand, while the remainder will occur due to replacement needs. Twelve percent of medical and health services managers are employed in nursing homes [BLS, 2003a].

Assuming that the percentage of such professionals working in nursing homes does not substantially change, almost 15,000 job openings will occur for nursing home administrators and similar positions in nursing homes. Almost 10,000 of these will be due to increased demand:

- Eighty-five percent of nursing home residents are age 65 and older [Rosenfeld, Bottrell, Fulmer, & Mezey, 1999], and this population is expected to swell from 34.5 million in 1999 to 53.7 million by the year 2020 [Bureau of the Census, 2000a].

- The growth in the number of those age 85 and older (who are most likely to be in nursing homes), will be even more dramatic. The number is expected to increase from 4 million to more than 6.7 million in 2020 [Bureau of the Census, 2000b].

- Nursing home residents per 1000 people age 65 and older declined, however, from 46.2 in 1985 to 42.4 in 1995. The same trend can be seen for those who are 85 and older: the rate declined from 219.4 in 1985 to 198.6 in 1995 [Bishop, 1999].

- The numbers of nursing home have also been growing more slowly in recent years [Harrington, et al., 1999].

- The proportion of nursing home residents who are older adults has been declining in recent years, with greater numbers of people being discharged from hospitals to nursing homes to receive sub-acute care and rehabilitation as follow up to hospital treatments for serious injuries and illnesses. Most of these patients are temporary residents of the nursing home, there to take advantage of the skilled nursing services available at lower cost than in a hospital.

- Recent growth in home health care (National Association for Home Care, 2000) and assisted living [Hawes, Rose, & Phillips, 1999] suggests that people with relatively minor functional disabilities, who used to reside in nursing homes, now reside and receive care in their own homes or more "home-like" settings (e.g., assisted living facilities).

- As people with less severe functional impairments choose other care settings, those who remain in nursing homes are more severely disabled than in the past, with more complex care needs [CHWS, 2001].

Issues For Nursing Home Administrators and Older Adults

Nursing homes across the nation face many serious challenges that will require strong leadership and highly effective administration. The current environment (e.g., strict regulation, rising consumer expectations, constrained resources, and the public's general distaste for nursing homes) not only makes effective management difficult, but also discourages some well-qualified professionals from entering the field [CHWS, 2001]. Several especially challenging issues are described briefly below.

Regulation. Nursing home administration carries a great deal of responsibility. Due to stringent regulation of nursing homes, much paperwork and many reports must be filed with governmental agencies. NHAs also face the possibility of civil liability or even criminal indictment if negative patient outcomes (e.g., falls, medication errors) result from care delivered by nursing home

employees. This tends to discourage people from entering the profession. The growth of assisted living has provided an alternate career path for medical and health services managers, and the level of interest in nursing home administration has waned.

Staffing. Nursing homes across the nation have been reporting serious shortages of workers [NYAHSA, 2000]. One study found that 90% of nursing facilities failed to meet the regulated nursing hours requirement [NYASHA, 2000]. Another study found that 92% of nursing homes reported labor shortages, and more than half of them also reported retention difficulties [NYAHSA, 2000]. These numbers for nursing homes were higher than for other long term care providers such as home health agencies and adult day care centers [CHWS, 2001]. In particular, many nursing homes identify direct care staff (e.g., nurse aides) as the hardest positions to fill [Contemporary Long Term Care, 1999]. Quality of care is difficult to achieve in the face of staff shortages, and this can lead to low morale among NHAs who are committed to quality.

Nursing homes also typically have very few administrative staff, often leaving the NHA directly responsible for virtually all day-to-day management functions, especially in small nursing homes. This burden extracts a toll on the NHA and contributes to the high turnover that has been observed across the country. Other factors have also contributed to the labor shortages and retention difficulties, including:

- competition with other industries/facilities;
- a limited labor pool; and
- poor wages, benefits, and working environment [NYAHSA, 2000].

While these factors can prove disheartening to NHAs, studies also show that management styles (e.g., staff involvement, recognition, level of teamwork) can significantly influence nursing home staff turnover and retention. Effective administrators can improve staffing problems, even though these problems add another layer of challenge to their position. [Wing and Salsberg, 2001]

Funding. Funding limitations pose another challenge to nursing homes. Medicare provides coverage for nursing homes only under limited conditions (i.e., a recent hospitalization of at least three days), and reimbursement limited to100 days. Co-payments of $105 a day (as of 2003) are initiated after the first 20 days. Medicaid will cover some nursing home services for qualifying adults, but only after they have exhausted their own resources. In 1996, Medicaid paid for 44% of expenditures for nursing home care, private sources paid for 33%, and Medicare paid for 19%.

Thus, although they provide important services for older adults, nursing homes do not receive the degree of financial support from public programs that many people might imagine. In addition, current federal policy states that the government will not “bail out” failing nursing homes, and administrators always face the pressure of keeping their facility adequately financed. These funding issues directly impact on staffing issues, as they often put nursing homes at a competitive disadvantage relative to other industries that draw from the same labor pool.

Gap Between Future Demand and Expected Production

The noticeable declines in people taking the NHA licensing exam, coupled with the very high rates of turnover for NHAs, are cause for concern in light of the projected growth in the numbers of older adults. Several steps that could potentially help recruit new nursing home administrators are as follows:

- clearly identifying entry points and prerequisites for licensure;
- standardizing the educational requirements and paths to licensure;
- removing unnecessary barriers and restrictions to licensure for otherwise qualified candidates;
- pay increases or more reimbursement for administrative support; and
- improving the work environment of NHAs [CHWS, 2001].

IV. Appendix A: Key Data Sources

Any conclusions drawn from any source of data are only as sound as the data themselves. While the authors of this report did not collect original data, much of the report is compiled from the same few reliable sources, supplemented with miscellaneous other data. Even data from two reliable sources are not, however, necessarily consistent. Some excellent data sets can include or exclude certain groups of subjects or certain types of information, making the data better for some purposes and less effective for others. In other words, every collection of data has different strengths and limitations.

Data for these chapters have generally been taken from the BLS (which is responsible for several data collection initiatives), from the Integrated Postsecondary Education Data System managed by the National Center for Health Statistics, and from professional organizations and associations that collect information on their respective members. Some data are also taken from the work of other authors who have done original data collection.

A. Bureau of Labor Statistics (BLS)

The Bureau of Labor Statistics is a goldmine of workforce information. In their own words, "The Bureau of Labor Statistics is the principal fact-finding agency for the federal Government in the broad field of labor economics and statistics. The BLS is an independent national statistical agency that collects, processes, analyzes, and disseminates essential statistical data to the American public, the U.S. Congress, other federal agencies, state and local governments, business, and labor. The BLS also serves as a statistical resource to the Department of Labor."

"BLS data must satisfy a number of criteria, including relevance to current social and economic issues, timeliness in reflecting today's rapidly changing economic conditions, accuracy and consistently high statistical quality, and impartiality in both subject matter and presentation" [BLS Mission Statement, 2003].

All BLS data do not come from the same survey. One source of BLS data is the Current Population Survey (which is collected by the U.S. Bureau of the Census for BLS). Another important source of data is the Occupational Employment Statistics (OES) program. OES data are used to create employment projections. A number of BLS surveys (including OES and CPS data) are combined to create Industry-Occupation Employment Matrix Data. Another key source of workforce information (although the information is primarily qualitative rather than statistical) is the *Occupational Outlook Handbook*, published every other year by the BLS.

Current Population Survey (CPS)

The BLS describes the CPS as follows:

"The Current Population Survey (CPS) is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the BLS. The survey has been conducted for more than 50 years.

"The CPS is the primary source of information on the labor force characteristics of the U.S. population. The sample is scientifically selected to represent the civilian noninstitutional population. Respondents are interviewed to obtain information about the employment status of each member of the household 15 years of age and older. However, published data focus on people age 16 and older.

"Estimates obtained from the CPS include employment, earnings, hours of work, and other indicators. They are available by a variety of demographic characteristics including age, sex, race, marital status, and educational attainment. They are also available by occupation, industry, and class of worker." [BLS, 2003a, *CPS Overview*].

CPS data are most valuable when data from the monthly surveys are combined into one annual file. Such a file contains information on about 800,000 members of the civilian labor force. The greatest benefit of CPS data is that it allows researchers to examine the relationship between characteristics of individual workers (for example, one might test whether registered nurses employed in nursing homes are older on average than those in hospitals, and therefore more likely to retire).

One of the greatest limitations of CPS data for the purposes of this report is that there is no information on any educational specializations or specialty credentials that workers might have, and no information on what sort of clienteles they serve. Rough conclusions can sometimes be drawn by examining the settings in which workers are employed (e.g., one might conclude that a nurse in a nursing home serves a predominantly older clientele, while a nurse in an elementary school is very unlikely to see older patients).

Another limitation of CPS data is that the occupational and industry classifications are not necessarily consistent with those used in other BLS surveys. For example, OES data (see below) break out "home health care" as an industry classification, but CPS data include home health care as "health care not elsewhere classified." Similarly, the CPS data do not include chiropractors as an occupation, while OES data do.

Employment Projections Data.

The **Occupational Employment Statistics** (OES) program conducts a yearly mail survey of approximately 400,000 establishments per year, designed to produce estimates of employment and wages for more than 700 specific occupations. The OES program produces these occupational estimates by geographic area and by industry. The BLS produces occupational employment and wage estimates for more than 400 industry classifications at the national level.

OES data are less useful than CPS data in one very important way: they are not "microdata," and therefore they cannot be used to analyze characteristics of individual workers. Another limitation of OES data is that data from self-employed persons are not collected and are therefore not included in the estimates. This is an especially important issue in the health professions, where many providers operate private professional practices. Finally, OES data are employer-reported, and so occupations are employer-defined regardless of the task sets and qualifications of workers. This leads to some employees being classified in occupations in which they are not

credentialed (e.g., an employee who has not attained a high school diploma being classified by their employer as a "physical therapist," which requires a master's degree for licensure).

2000-2010 Industry-Occupation Employment Matrix data.

The National Industry-Occupation Employment Matrix provides 2000 estimates of employment within occupations by industry classification, as well as projections of 2010 employment within occupations by industry classification. The National Employment Matrix data are developed primarily from the Occupational Employment Statistics (OES) survey, the Current Employment Statistics (CES) survey, and the Current Population Survey (CPS), and present employment for more than 260 detailed industries and almost 700 detailed occupations.

The National Employment Matrix data overcome some of the disadvantages of CPS and OES data by using them both. The information available in the matrix is limited, however, to 2000 employment of the selected occupation by industry, 2010 projected employment for the selected occupation by industry, percent change in employment (2000 to 2010), and numeric change in employment (2000 to 2010).

Occupational Outlook Handbook.

The Occupational Outlook Handbook, published by BLS, is not a dataset, but a largely qualitative analysis of occupations and professions that includes discussion of the nature of the work, working conditions, employment estimates, training and qualification, job outlook (2000 to 2010), and earnings. The Handbook is an excellent source for understanding what various health professions and occupations do, as well as how they must be trained and credentialed.

B. Integrated Postsecondary Education Data System (IPEDS)

The Integrated Postsecondary Education Data System was established and is managed by the National Center for Education Statistics as its core postsecondary education data collection program. It is a single, comprehensive system that collects data from every accredited postsecondary educational institution in the U.S.

IPEDS consists of institution-level data that can be used to describe trends in postsecondary education at the national level, including enrollments of students, (undergraduate, first-time freshmen, graduate and first-professional students) by race/ethnicity and gender, and completions (awards) by type of program, level of award, race/ethnicity, and gender.

In particular, the completions (i.e., graduations) data are a potential source of information about the numbers of newly minted health professionals being produced each year, and the number of programs producing them. The utility of the data is limited, however, by the fact that not all occupations require an educational background (or at least a specific educational background). Nursing home administrators, for example, are required to have a certain level of educational attainment in most states, but are not required to have earned a specific degree. Furthermore, in some health careers, one may enter a particular profession at more than one educational level.

Another problem with IPEDS data is that specific academic programs included are not necessarily accredited by the professional organization that determines whose graduates may enter the profession. Licensure for many professions requires that they have graduated from an accredited program. (Typically, however, professional organizations have some arrangement for programs seeking accreditation.)

Finally, all graduates do not necessarily work in the field in which they have graduated, particularly at the associate or baccalaureate level. New graduates do not necessarily equate to new entrants to the field, no matter how closely structured the educational requirements of that profession may be.

C. Professional Associations and Credentialing Organizations

Supply data from IPEDS can be supplemented using data available from the professions and occupations themselves, specifically through professional associations and credentialing organizations (which are often affiliated with the professional associations). Professional associations often collect data on their membership, and credentialing organizations regularly compile data on licensure, certification, or the professional credential(s) they oversee. These data sometimes contain some indication of specialization or primary area of practice within the profession.

Unfortunately, the quality of data from professional associations varies. Some associations use more scientific methodology than others (e.g., random probability sampling versus a self-selecting sample). Some associations are the primary professional association to which almost all active members of the profession or occupation belong, while others are one of two, three, or more national associations. Membership in professional associations is rarely compulsory, and so the rosters of even the most inclusive professional associations do not contain every qualified active worker in that profession/occupation. This can be particularly problematic because there can be systematic bias in terms of who belongs to an association and who does not (e.g., association membership may be disproportionately composed of older members of the profession, or those with higher levels of education, or those who work in particular settings).

Licensure statistics from credentialing associations are often more complete because credentialing is more likely to be compulsory (although some associations offer voluntary credentials which may enhance a professional's marketability without being a requirement for practice). Licensed or certified health workers are not necessarily active, however. Licensed workers may have retired, or be working in another field, or have moved to a higher level of the profession (e.g., a licensed practical nurse may have become a registered nurse while retaining her LPN credential). In some professions and occupations, licensure must be renewed on a regular basis (i.e., annually or biannually), minimizing this problem. In other professions/occupations, licensure renewal is either not required or required only once every several years. Some professions/occupations are known to have many more qualified workers than are actually employed in the profession/occupation.

D. The Aging of America Symposium

In June 2002, the Center for Health Workforce Studies hosted a symposium for health professionals and health researchers called "The Aging of America: Implications for the Health Workforce," in Arlington, Virginia. This symposium gathered health workers from each profession/occupation included in the report for special discussion sessions about the implications of aging in their profession.

The symposium yielded a bounty of information, much of it qualitative in nature, about the implications of an aging America from the viewpoint of those serving older adults. In many cases, the number of representatives of each occupation was small. Feedback from a very limited number of professionals does not necessarily reflect the views of a majority of workers in that field, but such is the nature of qualitative research. Notes and audio recordings from the symposium have been used liberally to round out the picture presented by such quantitative sources as the BLS and IPEDS.

E. Other Research

There are a number of other sources, usually specific to one occupation/profession, which have contributed to this report. Often, these other sources take the form of research reports compiled by health workforce researchers or by professional associations. For example, in 2000, the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services published a detailed report on the pharmacist workforce. Another HRSA-commissioned report, prepared by the Center for Health Workforce Studies, examined the direct care paraprofessional workforce in long-term care settings.

Such research reports are invaluable because they often produce more detailed information than is available from any of the previously discussed sources. The quality of these types of reports, however, may vary. They are also rarely replicated often enough to ensure continual availability of current data, especially in a dynamic field such as health care, where labor market conditions can change quickly and dramatically.

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