

**The Impact of the Aging Population on the
Health Workforce in the United States:
Summary of Key Findings**

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

The expected growth of the older adult population¹ in the U.S. over the next 50 years will have an unprecedented impact on the U.S. health care system, especially in terms of supply of and demand for health care workers. The supply of health care workers may decrease as they age and large numbers retire and/or reduce their working hours. At the same time, older adults consume a disproportionately large share of American health care services, so demand for health services will grow. The aging of the population will also affect the nature of the skills and services the health care workforce must be equipped to provide, and the settings in which this care is provided.

The so-called “baby boom” generation (people born between 1946 and 1964) is already having an effect on the health care system and it is expected to grow as the century progresses. The number of Americans age 65 and older (35 million in 2000) will rise by more than 19 million to 54 million by 2020. From 2000 to 2050, the number of older adults will increase from 12.5% to 20% of the U.S. population.

The New York Center for Health Workforce Studies at the SUNY School of Public Health recently completed a report that assesses the implications of the aging of the population on the supply and demand for a variety of health professionals needed to serve older adults. The report, which was funded by the National Center for Health Workforce Analysis of the Bureau of Health Professions in the federal Health Resources and Services Administration, profiles the broad impact that aging Americans will have on the health workforce in general, and on 18 health professions specifically, by examining salient trends and issues. The report establishes a baseline of information about the health care workforce that serves older adults and identifies key factors expected to affect the ability of the health care system to meet the future needs of older adults in the U.S. More qualitative issues, including how the health care workforce must prepare and change in order to meet the needs of the next generation of older adults, are also considered. The complete report can be found at the Center’s website, <http://chws.albany.edu>.

Key findings related to this new generation of older adults include:

- Older adults will be increasingly racially and ethnically diverse, particularly Asians and Hispanics;
- Older adults will be better educated, have greater access to information, and more socioeconomic resources. These demographics may lead to changing patterns of utilization and different demands for health services than those seen in past generations of older adults;
- Older adults use more and different health services than younger people; and
- The projected demand for health services from older adults is most likely an underestimation of their true need for services, which is influenced by their ability to find or pay for health care services.

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

Key findings related to the health workforce include:

- Most health professionals receive limited training on care to older adults;
- Many health professions are aging rapidly;
- Many health professions lack diversity;
- Future shortages of health workers to serve older adults are likely; and
- Future demand for health care professionals and paraprofessionals to serve older adults will be affected by:
 - Health insurance reimbursement policies;
 - Emerging technologies;
 - New models of care; and
 - Changes in profession-specific scope of practice.

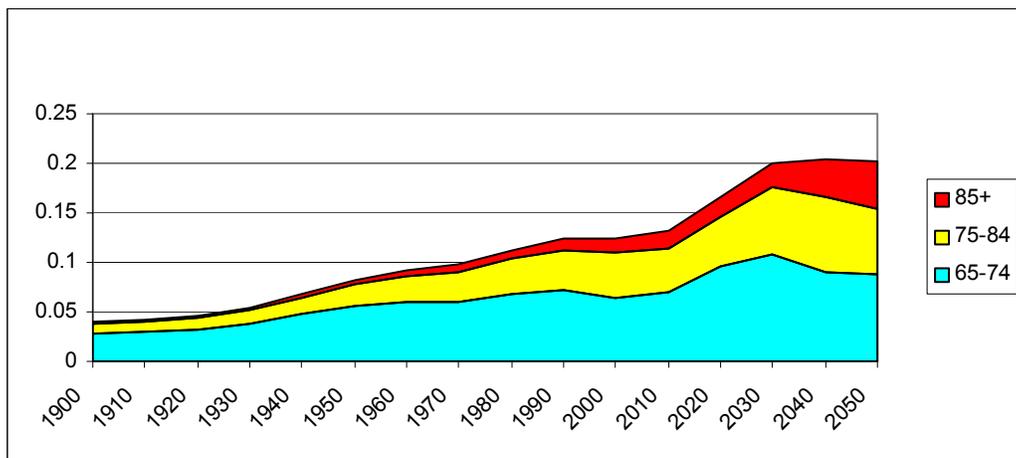
This report is a comprehensive assessment of the broad trends in the health workforce and the aging of the U.S. population. It highlights important areas for policy consideration. This includes issues of potential shortages, lack of diversity in many health professions, need for geriatric training for both generalists and specialists, and better data to monitor supply of, demand for and use of health professionals who serve older adults. The coming demographic changes have the potential to transform the health care delivery system in the U.S. Future research should examine these issues in greater detail to inform planning that assures access to health care for the growing population of older adults.

Implications of Population Aging for the Health Workforce: Key Findings

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 in five Americans will be age 65 or older.

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



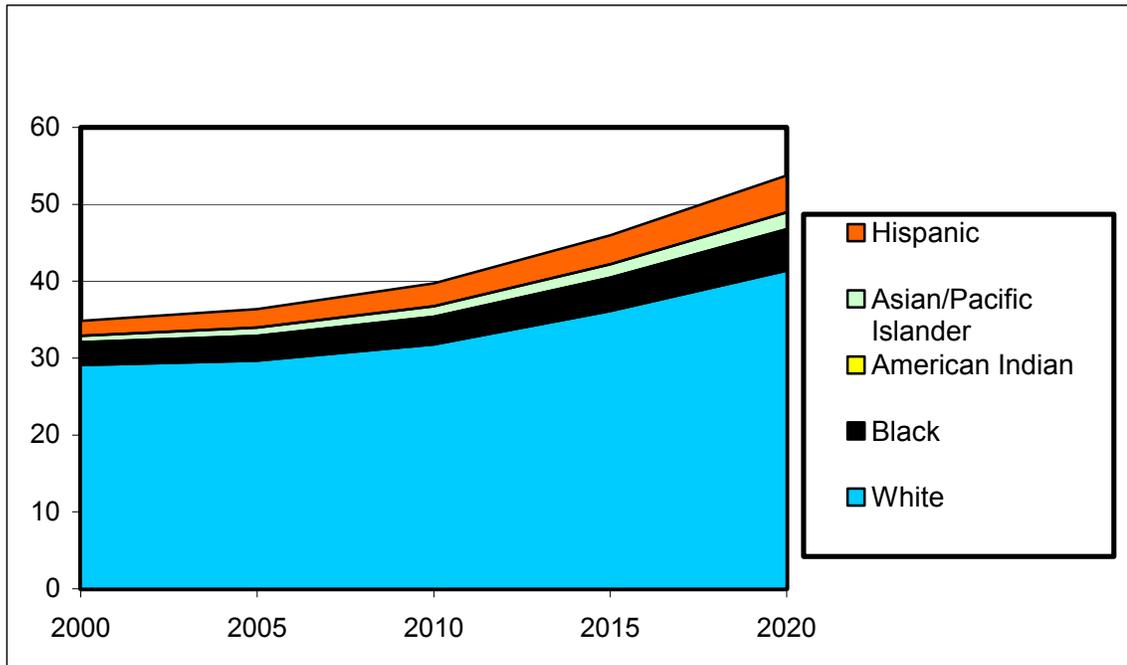
Source: U.S. Bureau of the Census

- 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. Increasing Racial/Ethnic Diversity among Older Adults

- 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.

Figure 2: Racial and Ethnic Distribution of Americans Ages 65 and Older (in millions), 2000 through 2020



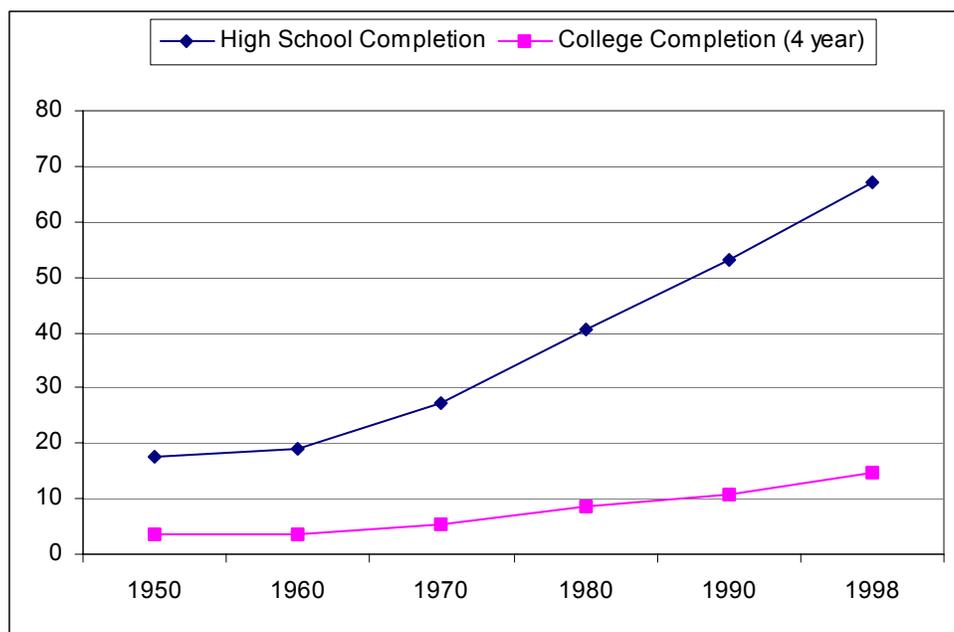
Source: U.S. Bureau of the Census

3. Better Education and Greater Socioeconomic Resources among Older Adults

- Older Americans are more likely to be high school (67%) and college (15%) graduates than in the past, and access to information is more available than ever before, so older adults will 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 incomes² (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.

² Defined as 400% or more of the poverty threshold

Figure 3: 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

4. More and Different 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 ages 20 to 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 adults age 65 and older have an activity limitation, compared to about 6% of those ages 18 to 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].

- 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.
- 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.

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

- Transportation to health care services is more of an issue for 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.

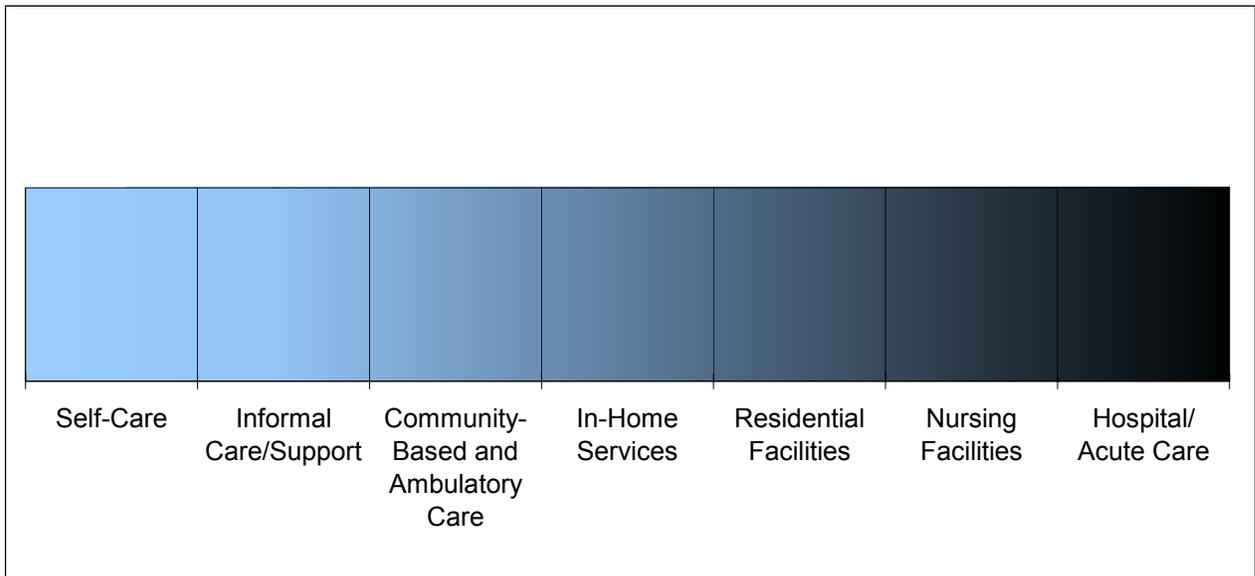
6. Resources to Pay for Services for Older Adults

- 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 health care 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.)

7. 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.

Figure 4: Models of Care for the Elderly (Ranging from Least to Most Intensive)



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

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
<i>General Health Care</i>				
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%
<i>Therapy</i>				
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%
<i>Oral Health</i>				
Dentists	6%	Not available	24%	70%
Dental Hygienists	37%	Not available	24%	70%
Dental Assistants	37%	Not available		71%
<i>Mental /Behavioral Health</i>				
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%
<i>Medication and Nutrition</i>				
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]

- The scope of practice for many professions/occupations may change as a response to greater demand due to an aging population. Many helper professions and occupations (e.g., pharmacy technicians, dental hygienists, therapy assistants, nursing 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 Alzheimer’s patients don’t wander away from 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.

8. General Supply Trends

- 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 have older workers 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 average.
- Relatively new occupations tend to be younger than average. The therapy professions, for example, largely did not exist 50 years ago. Few baby boomers were aware of these professions as a career option. Therefore, 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 health care entrants into occupations and into geriatric settings and specializations. Some health 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 health professions and 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.

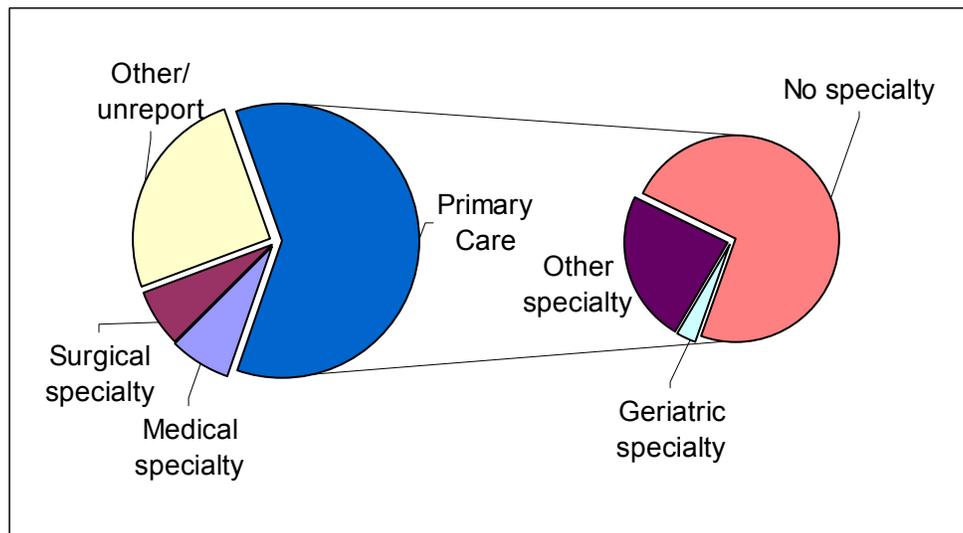
9. Training Needs

- Workers in some health professions and occupations will need better training in geriatric issues. The current standards for geriatric education vary, but future increases to the geriatric content available to providers as part of their training may include:
 - geriatric content provided as part of the required curricula in educational and training programs;
 - geriatric content included on licensure examinations;
 - availability of continuing education in geriatrics; and
 - establishment of or increases in specialty geriatrics programs and credentials.
- Many health professions and occupations do not yet offer formal credentials focused on the needs of older adults.
- 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).
- A majority of health workers in most health care settings deal with substantial numbers of older adults whether or not they are specialists. All health worker educational programs should include basic competencies in serving older adults.

10. Specific Professions/Occupations

- **Physicians.** Demand for physicians is expected to rise dramatically, in part due to the aging of the population. In addition, the numbers of new geriatricians 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.

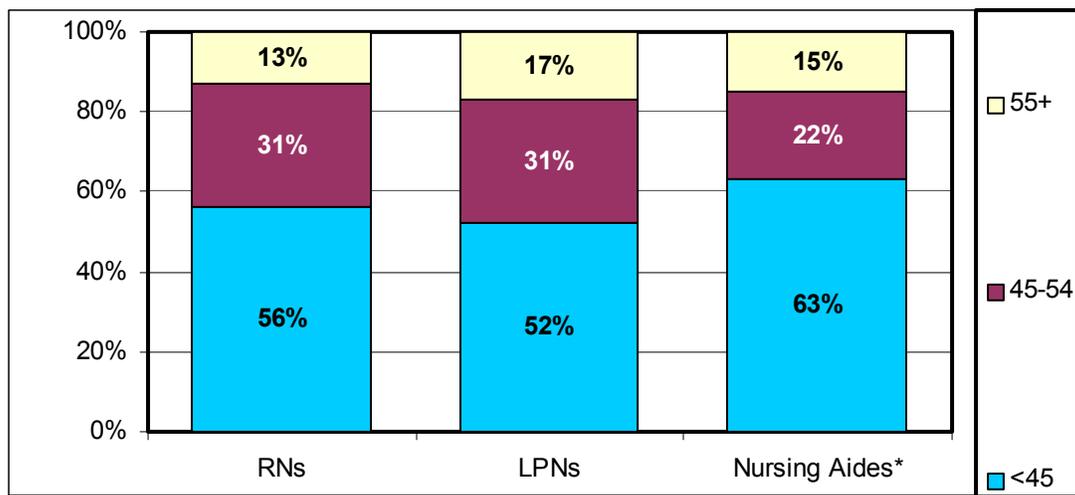
Figure 5: Distribution of Physicians by Specialty



Source: AMA

- 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 10 to 20 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. 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].

Figure 6: Age Distribution of Nurses and Aides in the U.S., 2001

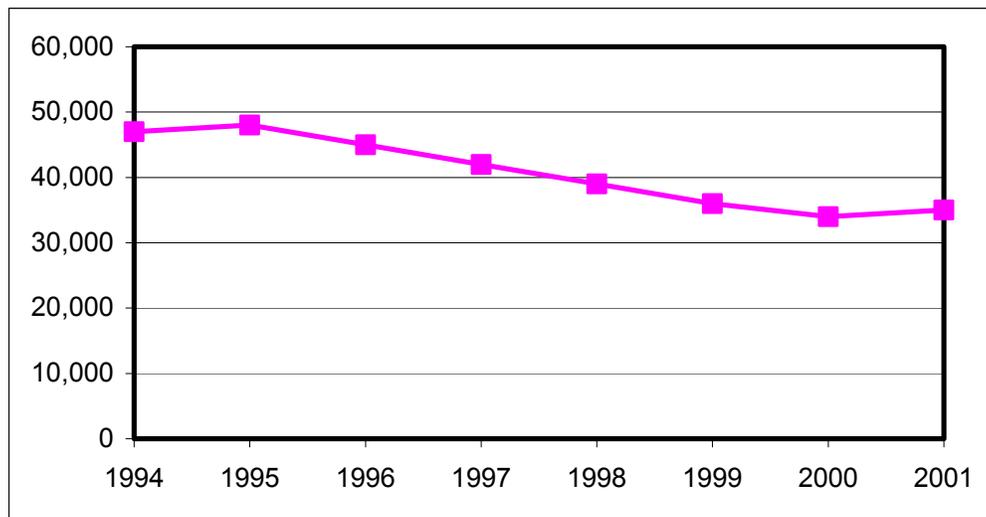


Source: CPS data (BLS, 2001)

*Nursing aides in the CPS include orderlies and attendants.

- 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 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.

Figure 7: Number of Candidates Passing the LPN Licensure Examination (NCLEX-PN), 1995 to 2001



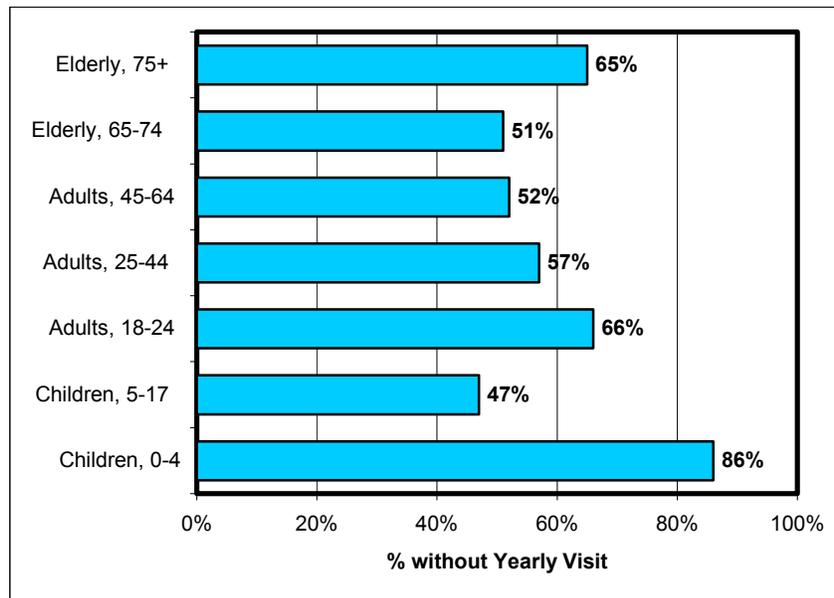
Source: NCSBN

- 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 accessing 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.

Figure 8: Utilization of Oral Health Services by Age, 1999



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

- 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 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].

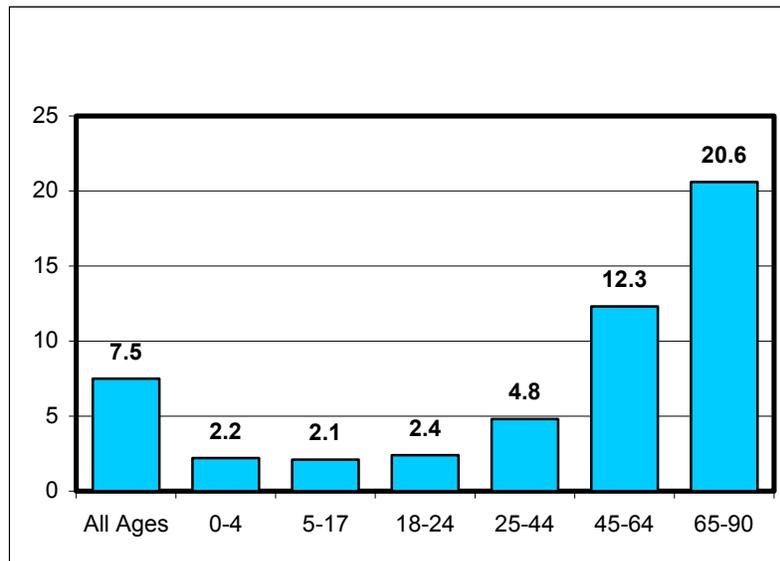
- **The Therapy Professions.** The future job market for therapy professionals will be influenced by a number of variable factors, especially reimbursement. Strong growth is currently projected for each of these professions [BLS, 2003a], and there is some indication that shortages of occupational therapists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

Figure 9: Average Annual Prescriptions per Person (Including Refills) by Age Group, 1999



Source: MEPSnet/HC

- Registered Dietitians.** The future supply of dietitians will depend, in part, 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 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.

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 - G. Podiatrists
 - H. Optometrists
 - I. The Therapy Professions: Physical Therapists, Occupational Therapists, Respiratory Therapists, Speech-Language Pathologists, and Audiologists
 - J. Pharmacists
 - K. Registered Dietitians
 - L. Clinical Psychologists
 - M. Professional Social Workers
 - N. Nursing Home Administrators
- IV. Appendix A: Key Data Sources
 - A. Bureau of Labor Statistics (BLS)
 - B. Integrated Postsecondary Education Data System (IPEDS)
 - C. Professional Associations and Credentialing Organizations
 - D. The Aging of America Symposium
 - E. Other Research
- V. Appendix B: Project Staff
- VI. References