



CHRONIC ILLNESS AND AGING

SECTION I. THE DEMOGRAPHICS OF AGING & CHRONIC DISEASES

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Synopsis

With the increase in older populations around the globe comes an increase in the incidence and prevalence of chronic conditions. Contributing to this situation is a disease process that has changed: The rapid progressive illnesses and deaths of yesteryear (infectious diseases and, more recently, cancers) have been replaced by vastly increased survival rate from such illnesses and a pandemic-like shift from acute to chronic illness, with long years of survival that are often accompanied by a reduced quality of life requiring more and longer home care.

This section describes some of the most recent literature covering the demographics of aging and chronic conditions, and the nature and impact of chronic conditions that disproportionately affect minority subpopulations in the United States.

The Demographics Of Aging

Changes in the Characteristics of the Older Population

During the 20th century, the health status of older Americans changed significantly as a result of several trends:

- ◆ The size of the aging population will reach nearly 20% worldwide by 2050.

U.S. demographics: The rapid aging of the American population is among the major public health challenges we face in the 21st century. The chart below on the *Number of Older Americans* shows the large growth of the population 65 and older from 1900 to 2006 and the even greater projected growth from 2006 to 2050. It also shows the growing numbers of persons 85 and older and their large projected growth to 2050. In 1900, people over 65 years of age were approximately 4% of the population. Today, slightly more than 100 years later this segment represents 12.4% of the population. Between 1930 and 2010 is a slow and steady increase in the older population. In 2010, when the baby boomers (those born between 1945 and 1951) begin turning 65, the

percentage increases sharply from a little over 10% to approximately 17% by 2030. From that year onward, the percentage increases at a more gradual rate, ending in 2050 at approximately 19%. (Federal Interagency Forum, *Older Americans 2008: Key indicators of well-being*, 2008).

- ◆ Worldwide demographics: The older population has increased worldwide as well as in the U.S.

Ten percent of the world's population now is over the age of 60 years. By 2050, it is expected to reach 20%. By 2050, the actual number of people over the age of 60 will be almost 2 billion, at which point the population of older people worldwide will be greater than the population of children up to age 14 years (Ries, Elsner, & Kosary, 2000)

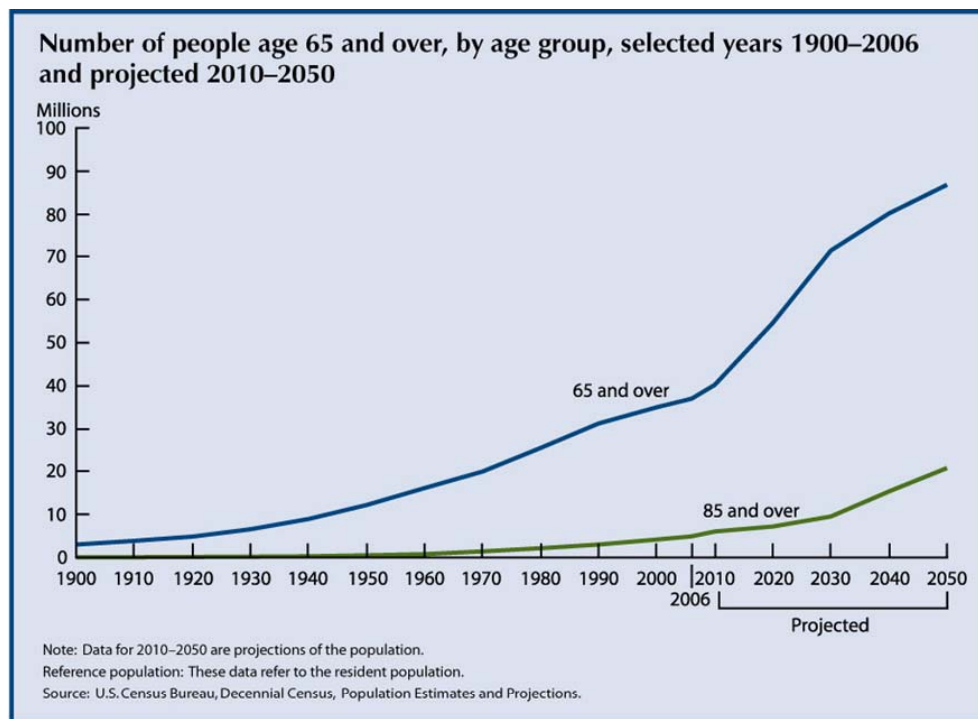


Figure 1. Number of Older Americans: 1900-2050.

Source: Federal Interagency Forum, *Older Americans 2008: Key indicators of well-being*, 2008.

- ◆ Improved medical care and prevention have resulted in a vastly increased life expectancy over the 20th century.

The primary reason for the increase in the older population is the fact that people are living longer. Improved medical care and prevention efforts have contributed to dramatic increases in life expectancy in the U.S. over the past century. At the turn of the

19th century, the average expected lifespan was 46 years—the average length of time one could expect to live if one were born in 1900. Today, the average life expectancy is 77.9 years. Approximately four out of five individuals can now expect to reach age 65, at which point there is a better than 50% chance of living past age 80 (National Center for Health Statistics, 2000). According to the U.S. Census Bureau, life expectancy at birth is projected to increase from the current 77.9 years to 82.6 by 2050.

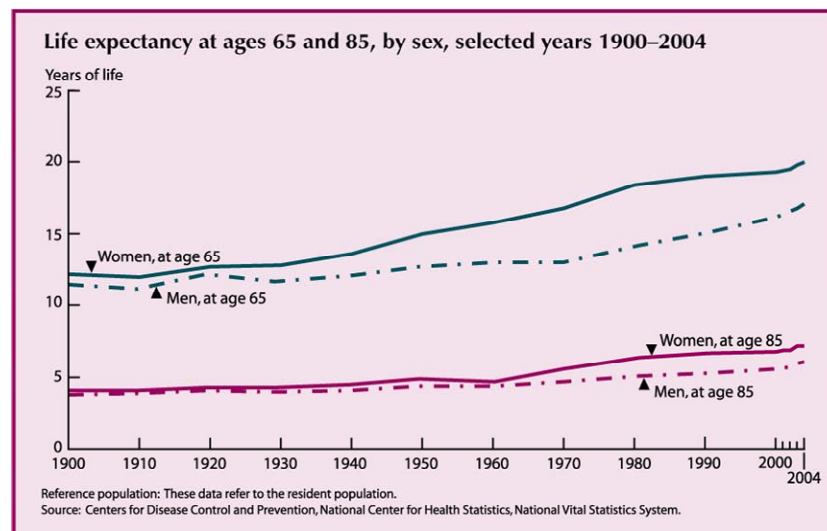


Figure 2. Life Expectancy in men and women over 65.

Source: Federal Interagency Forum, *Older Americans 2008: Key indicators of well-being*, 2008.

- ◆ Mortality rates from the young old to oldest old are decreasing.

The older population itself is aging. Mortality rates in adulthood have declined significantly, resulting in an unprecedented number of people who are reaching advanced old age and are more likely to require long-term care (Administration on Aging, 2005). The number of people aged 65 to 74 years has increased 8-fold, the number aged 75 to 84 has increased 12-fold, and the number older than 84 years has increased by a factor of 23.

- ◆ The old-age dependency ratio is increasing dramatically.

One consequence of the growth of the aged population is the dramatic increase in the old-age dependency ratio. This ratio represents the size of the population that is aged (either 65 years or 85 years plus) relative to the size of the population that is in the age range of the labor force—conventionally expressed as the population aged 15 to 64 years.

The old-age dependency ratio represents 1) the relative balance between the entitlement claims of the aged (social security) and the taxes placed on the earnings of the younger working-age generations, and 2) the balance between the demands for formal and informal care posed by a large aged population and the formal and informal elder care labor resources available from younger generations. The chart below shows the growth in old-age dependency ratios for the populations aged 65+ and 85+ over the next 50 years, based on the “middle case” or most likely projections regarding the aging population. This ratio is important because as it increases, there is increased strain on those in the labor force to support those who are economically dependent.

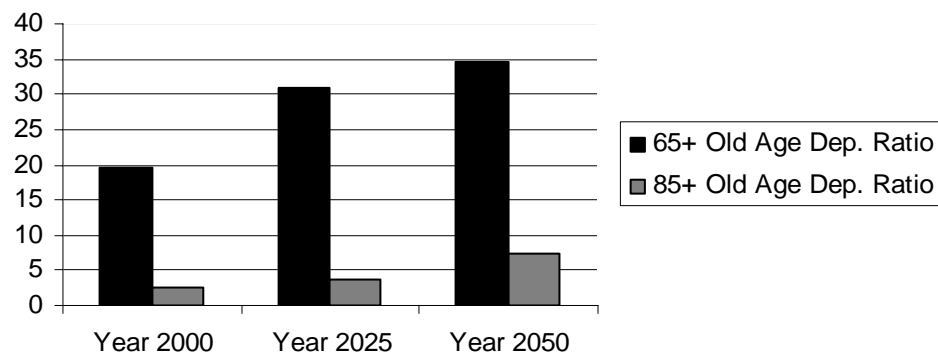


Figure 3. Old Age Dependency Ratio: U.S. Census Middle Series Projections.
 Source: Calculated from the Projected resident population of the United States as of July 1, 2050, Middle Series. Washington, DC: National Projections Program, Population Division, U.S. Census Bureau, 2000.

- ◆ The aging population is becoming more racially and ethnically diverse.

The 2007 CDC report, *The State of Aging and Health in America*, highlights the growing ethnic and racial diversity of the older adult population (CDC & The Merck Company Foundation, 2007). The figure below of Racial and Ethnic Composition shows the strong projected growth of the minority older population, which will reach 39% of the 65 and over population in 2050. African American elders are project to grow to 12% in 2050 and Hispanic elders are projected to grow to 18%.

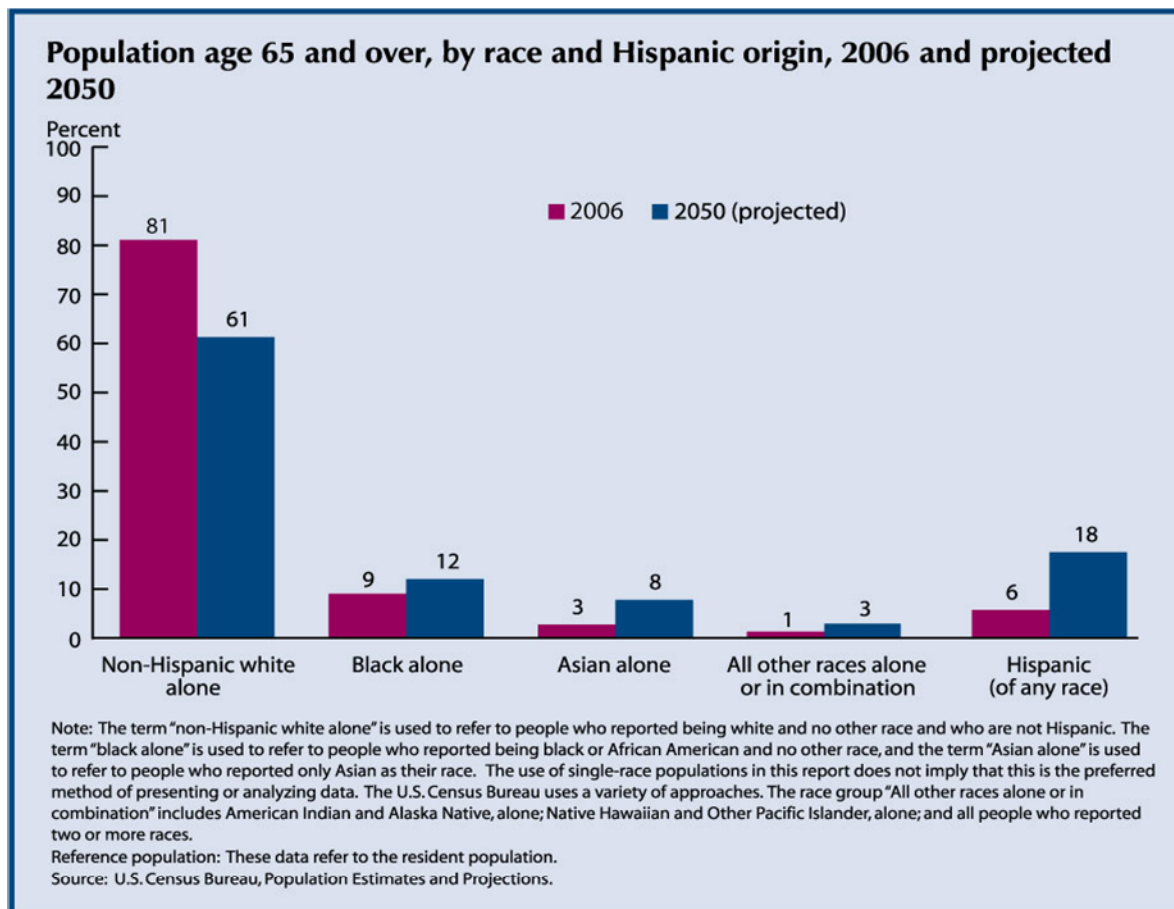


Figure 4. Racial and ethnic composition of people over 65.

Source: Federal Interagency Forum, Older Americans 2008: Key indicators of well-being, 2008.

- ◆ There is growing evidence of disparities in health outcomes among older adults, depending on race, ethnicity, and economic status.

The health status of racial and ethnic minorities of all ages lags far behind that of nonminority populations. Older minority adults may feel the disparity in health care more acutely because they are likely to have chronic illnesses and require interaction with health systems that have fewer resources for prevention, screening, and treatment. Many live in poverty, which makes access to health care even more difficult at a vulnerable time when they are experiencing multiple chronic conditions that may require frequent treatment and monitoring to control symptoms and advancing disease (CDC & The Merck Company Foundation, 2007).

The chart below of Respondent-Assessed Health Status shows that the percentage of persons over 65 who report good to excellent health declines with age. Regardless of

age, older non-Hispanic white men and women are more likely to report good health than are their non-Hispanic black and Hispanic counterparts. Non-Hispanic blacks and Hispanics are similar to one another in their positive health evaluations, although among men age 85 and over, Hispanics report the lowest health ratings. Poorer self-rated health among older persons is consistently found to be an independent predictor of mortality (Idler & Benyamini, 1997).

Respondent-Assessed Health Status in people over 65

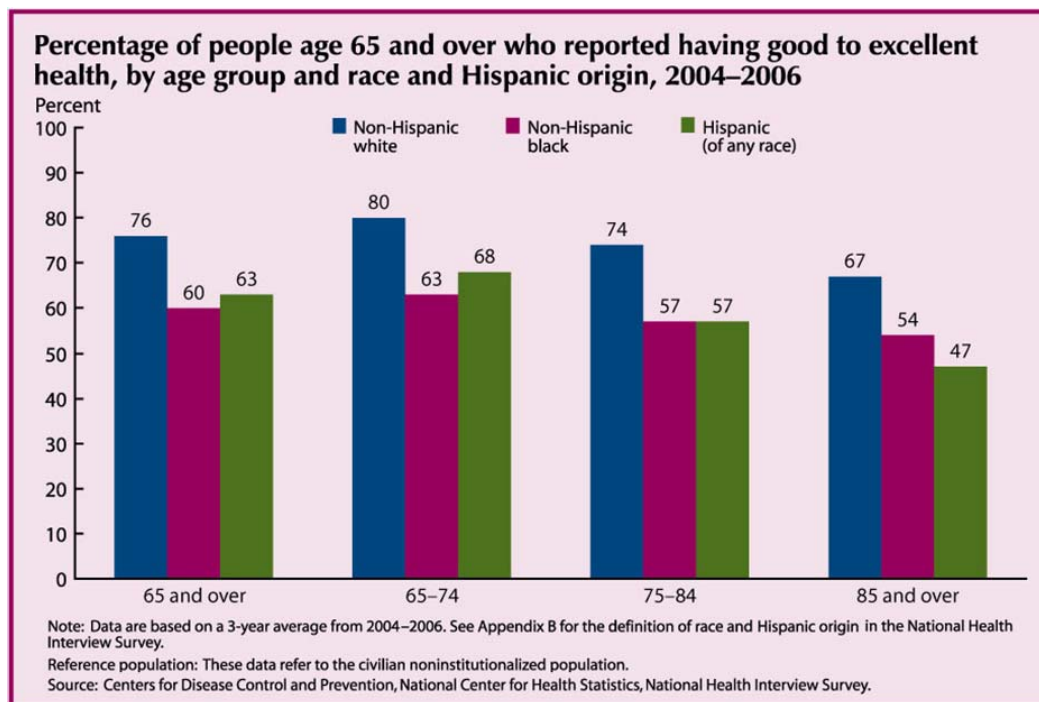


Figure 5. Respondent-assessed health status in people over 65.

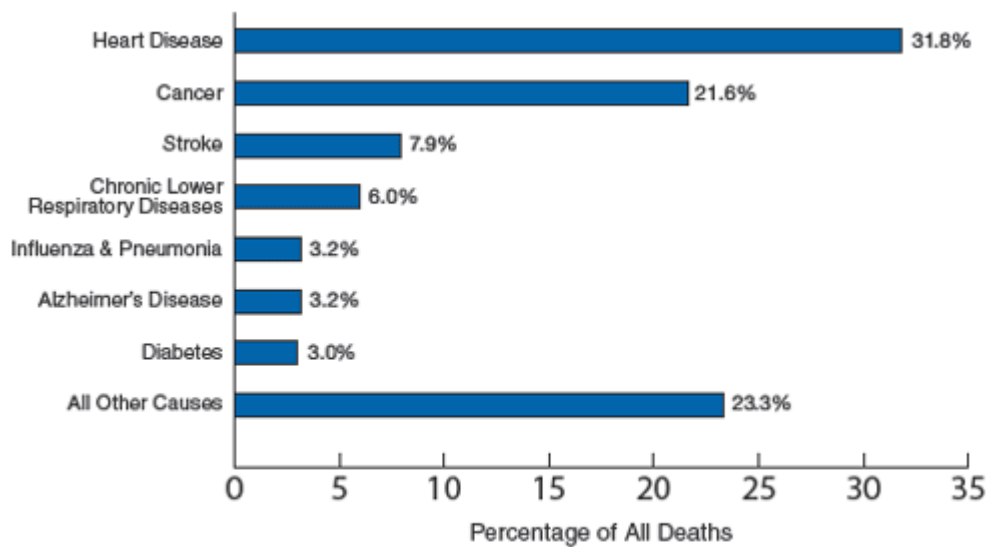
Source: *Federal Interagency Forum, Older Americans 2008: Key indicators of well-being, 2008.*

Other indicators of well-being, such as income, living arrangements, education, and health behaviors, also influence one's ability to manage chronic illness successfully and should be addressed when working with individuals diagnosed with chronic illnesses and their families. These factors, coupled with the ageism and stigma present in American society, can present significant barriers to the prevention and maintenance of chronic illnesses in older adults (Federal Interagency Forum, 2008)

Chronic Diseases and Aging

- ◆ Chronic diseases are the leading causes of death among older adults.

Although improved medical care and prevention efforts contributed to dramatic increases in life expectancy in the U.S. during the 20th century, they also produced a major shift in the leading causes of death and disability in all age groups, including older persons. The causes of death shifted from infectious diseases and acute illnesses to chronic and degenerative diseases (CDC, 2003). In 2002, the top three causes of death for U.S. adults aged 65 or older were heart disease (32% of all deaths), cancer (22%), and stroke (8%). These accounted for 61% of all deaths in this age group.



Source: CDC, National Center for Health Statistics. Data Warehouse, Trends in Health and Aging.

Figure 6. Causes of death among U.S. adults aged 65 and older, 2002.

- ◆ The pain and disability associated with chronic diseases can diminish quality of life.

Death is only part of the picture of the burden of chronic diseases among older Americans. These conditions can cause years of pain, disability, and loss of function and independence before resulting in death. One out of 10 Americans, or approximately 25 million people, report that they have physical limitations as a result of one or more chronic illnesses. Although chronic diseases affect people of all ages, the risk of chronic illness increases with age, and people aged 65 years or older are more apt to have multiple chronic illnesses. At least 80% of people older than 60 are living with one chronic illness, but 50% older than 60 are living with two chronic illnesses (CDC, 2003). Because chronic diseases can lead to limitations in daily activities, they often reduce the

health-related quality of life for seniors. The chart below shows the percentage of men and women over 65 reporting selected chronic conditions. Over half of men and women reported hypertension with arthritis and heart disease as the next most common conditions.

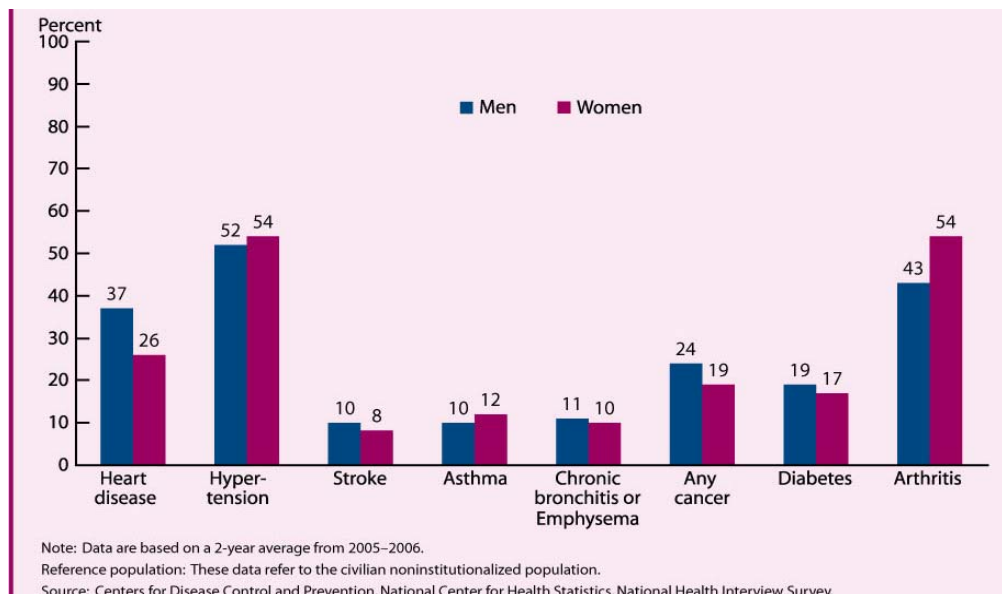


Figure 7. Percentage of people age 65 and over who reported having selected chronic conditions, by sex, 2005-2006.

Source: Federal Interagency Forum, Older Americans 2008: Key indicators of well-being, 2008.

- ◆ Poor health or functional limitation is not an inevitable result of chronic illness.

Some evidence from large national health surveys indicates that the older population today is generally healthier than were previous cohorts. Rates of disability are declining or stabilizing, and recovery from acute disabilities is improving (NCHS, 2006). The possibility of a longer period of active life expectancy versus a dependent life expectancy is projected (Katz et al., 1983). Dependent life expectancy is defined as the period during which a person must rely on others for assistance with most activities of daily living (ADLs). As life expectancy has increased beyond age 65, only about a quarter of those years are spent in a dependent state (Manton & Land, 2000; WHO, 2002). The chart below on Functional Limitations shows the percentage of Medicare enrollees age 65 and over who have limitations in ADLs and instrumental activities of daily living (IADLs) from 1992 to 2005. It shows a decrease in the level of ADL and IADL limitations during these years.

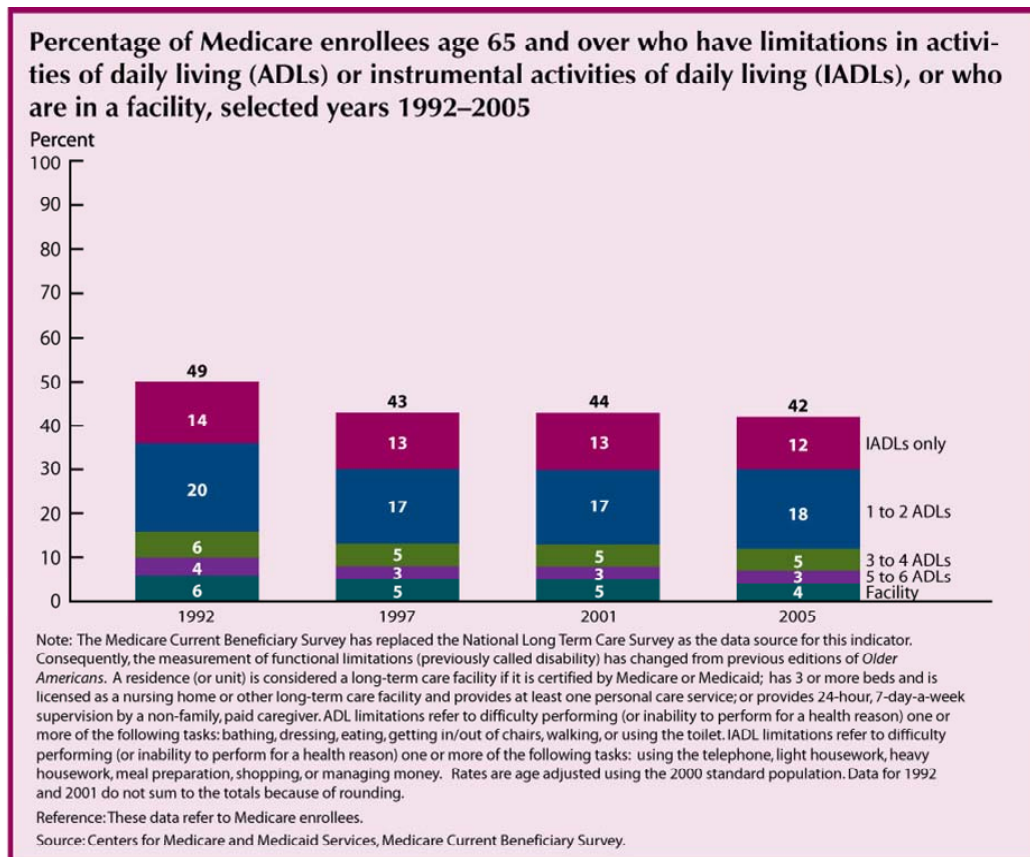


Figure 8. Functional limitations of people over 65.

Source: Federal Interagency Forum, *Older Americans 2008: Key indicators of well-being, 2008*.

- ◆ Facilitation of an independent longer life is possible.

A longer active life, as opposed to a longer life characterized by dependency and disability, can only occur with adequate management of the chronic illnesses that often accompany old age and management of social and health behaviors throughout life, such as diet, smoking, alcohol consumption, physical activity, and a healthy environment in which to live and work. All these factors play a role in the development and progress of chronic conditions. The capacity to manage these conditions and maintain health is also influenced by current health behaviors, social supports, and access to health care (Putnam et al., 2003). The level of disability people experience at different ages is correlated with whether they smoke, exercise, and maintain their weight within recommended ranges. People who are in the higher-risk group because of difficulty adhering to a healthy lifestyle experience greater disability at an earlier age (CDC & The Merck Company Foundation, 2007).

- ◆ Chronic diseases are responsible for a large percentage of health care costs.

An increased public health focus on ways to prevent or delay disease and disability among older adults is aimed in part at reducing the ever-increasing costs of health care—attributable in large part to the increasing size of the older population. An important statistic is that more than two-thirds of health care costs are currently devoted to the treatment of chronic illnesses. Among older Americans, treatment of these illnesses accounts for almost 95% of health care expenditures in the U.S. (Hoffman, Rice, & Sung, 1996).

Although the cost of providing health care for people aged 65 or older is three to five times greater than the cost of providing care to younger people, some of the chronic health problems reported in people aged 55 to 64 years suggest the likelihood of greater functional decline as they age. In 2003, 42% of adults in this age group were told they had high blood pressure, and 56% of them did not meet recommended guidelines for physical activity. Importantly, 12.5% were diagnosed with Type 2 diabetes, an important etiology of which is obesity. These statistics suggest that finding ways to prevent or delay disease and disability among older adults could not only improve their quality of life but stem the tide of rising health care costs as well.

- ◆ Psychosocial problems and the impact of chronic conditions are interrelated.

In multiple reports on a broad range of illnesses and conditions over more than two decades, the Institute of Medicine (IOM) has issued strong findings about the important role of psychological/behavioral and social factors in health and has recommended that more attention be paid to these factors in the design and delivery of health care.

Health and disease are determined by dynamic interactions among biological, psychological, behavioral, and social factors. (IOM, 2001, p. 16)

Because health...is a function of psychological and social variables, many events or interventions traditionally considered irrelevant actually are quite important for the health status of individuals and populations. (IOM, 2001, p. 27)

- ◆ The American health care system has become more fragmented and challenged by the increasing numbers and complexity of cases of chronic illness.

The American health care system, often characterized by fragmentation and lack of coordination of services, has increasingly been challenged by the costs of caring for the rapidly expanding chronically ill population.

Chronic conditions are costly, especially if managed poorly. Currently more than two-thirds of health care expenditures are for treating chronic illnesses; among older Americans, almost 95% of health care expenditures are for chronic diseases (CDC & The

Merck Company Foundation, 2007; Hoffman et al., 1996). In addition, the 23% of Medicare beneficiaries who have five or more chronic conditions accounts for 68% of all Medicare spending (Anderson, 2005).

In this stressful environment, with increasing numbers of patients with complex chronic conditions, many providers fail to follow evidence-based guidelines and are not well versed in self-care management strategies (Centers for Medicare & Medicaid Services, 2004). Patients with chronic conditions visit their health care providers, fill prescriptions, and are hospitalized more often than the general population. And they are more likely to experience poorly coordinated care, which can lead to adverse drug interactions, unnecessary or duplicate tests or procedures, and conflicting information from multiple providers. This lack of coordination often results in poor clinical outcomes, repeated hospitalizations, excessive use of prescription drugs, medical errors, dissatisfaction with care, and higher costs. The current long wait times in emergency rooms is clear evidence of the system's difficulty in managing the number of patients and their conditions. Too often emergency rooms are overwhelmed by people who are not being adequately treated in primary care settings because they lack insurance or are in crisis related to their chronic diseases, or both (Blaum et al., 2001; Chen, Brown, Archibald, Aliotta, & Fox, 2000).

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Curriculum Resources



Web resources

Health Statistics Web sites

- ◆ Centers for Disease Control and Prevention, Center for Health Statistics, *Trends in Health and Aging*. Available at <http://www.cdc.gov/nchs/agingact.htm>
- ◆ Centers for Disease Control and Prevention & the Merck Company Foundation. *The State of Aging and Health in America 2007*. White house Station, NJ: The Merck Company Foundation. Available at <http://www.cdc.gov/aging>.
- ◆ Federal Interagency Forum on Aging Related Statistics. (2008). *Older Americans Update 2008: Key Indicators of Well-Being*. Washington D.C., U.S. Government Printing Office Available at <http://agingstats.gov>

General Web sites

- ◆ World Health Organization.
Preventing Chronic Diseases: A vital investment. This report and website contains information on global issues related to the prevalence, impact, and prevention of chronic diseases across the life span. Contains fact sheets, country-based information, technical papers on projections of morbidity, mortality, and impact of chronic diseases. Also has a short video (7 minutes) related to the myths of chronic diseases and their prevalence around the world. Excellent resource for faculty and students interested in global health issues to view chronic diseases among older persons in a larger context. May be useful to assign students to review the information and compare and contrast with what is known in the American context. Available at http://www.who.int/chp/chronic_disease_report/en/index.html