Trends

Trends In The Health Of Older Americans, 1970–2005

Although the picture is favorable, some negative trends may affect the future health of the elderly.

by Ellen Kramarow, James Lubitz, Harold Lentzner, and Yelena Gorina

ABSTRACT: The health of Americans age sixty-five and older has improved on nearly all major indicators: longevity, self-reported health, and functioning. Both health care services use and health spending have risen. The increased use of restorative procedures and prescription medicines suggests that medical advances have had an important role in the better health of older Americans. Factors that might limit prospects for future improvements include rising rates of obesity and diabetes, particularly among the middle-aged. [Health Affairs 26, no. 5 (2007): 1417–1425; 10.1377/hlthaff.26.5.1417]

The health of older Americans is increasingly central to public policy debates over spending for health. Because the proportion of the population age sixty-five and older will increase from 12 percent in 2004 to 20 percent in 2030, the health of this group and their use of health care services will have great impact on future government expenditures. Population-level information on the health of the elderly is needed to evaluate the impact of Medicare and Medicaid and to identify the need for possible changes. This paper brings together data from many federal sources on the health and health care use of older Americans. Most of the data are available online in tables on the Trends in Health and Aging (THA) Web site (http://www.cdc.gov/nchs/agingact.htm). The THA site contains trend data from a variety of national systems including vital records, the U.S. census, population-based health surveys, and surveys of health care providers. The trends show many positive signs of improving health among older people, but there are reasons to be concerned about whether or not the trends will continue.

The Trends

- Mortality and life expectancy. Declines in adult mortality over the past half-century have contributed to the steady increase in life expectancy at birth, from 68.2 years in 1950 to 77.8 years in 2004. Life expectancy at ages sixty-five and eighty-five has also increased from 13.8 years and 4.7 years, respectively, in 1950 to 18.7 years and 6.8 years, respectively, in 2004.2 Chronic illnesses cause most deaths among older Americans. In 2004, heart disease, cancer, and cerebrovascular disease (stroke) were the cause of about 60 percent of all deaths of people age sixty-five or older. Key to the reduction in mortality among older adults in the latter part of the twentieth century were sharp decreases in deaths from circulatory diseases,

Ellen Kramarow (ebk4@CDC.gov) is a health statistician at the National Center for Health Statistics (NCHS), Aging and Chronic Disease Statistics Branch, in Hyattsville, Maryland. James Lubitz is acting chief of that branch; Harold Lentzner is a consultant there; and Yelena Gorina is a health statistician there.
especially heart disease and stroke, with rates declining even among those age eighty-five and older. Older men remain at greater risk of dying from heart disease than older women (Exhibit 1).\(^1\)

The declines in heart disease death rates varied among subpopulations. The dramatic declines among older whites, especially men, did not occur among older blacks, whose rates were initially lower but declined more slowly. By 2004, age-adjusted heart disease death rates for older blacks were 17 percent higher than those for whites.

Death from stroke among the elderly also declined dramatically. In the 1970s and 1980s the death rate was cut in half for both men and women and fell for all major racial and ethnic groups. However, the age-adjusted death rates for older black men remain higher (448.5 per 100,000 for black men versus 336.1 per 100,000 for white men).

Not all causes of death have shown such dramatic declines. After decades of increases, death rates from cancer began to decrease only in the late 1990s as effects from declining smoking rates become evident. Deaths from diabetes mellitus increased over the past two decades, as did deaths from Alzheimer’s disease, reflecting in part improvements in diagnosis and reporting. Death rates from chronic bronchitis, emphysema, and other chronic lower respiratory conditions have also increased, especially among women.\(^3\)

### Chronic diseases and risk factors.

Data from the National Health Interview Survey (or NHIS, which provides annual estimates of a broad range of health measures based on a large sample of the civilian, noninstitutionalized population) show that nearly one-third of older people in 2004–05 reported ever being diagnosed with some form of heart disease, and about half reported being diagnosed with arthritis. Older women reported higher levels of arthritis than men, while men reported higher levels of heart disease.

Data on hypertension measured during 2001–2004 in the National Health and Nutrition Examination Survey (or NHANES, which collects information on the health and nutrition of the U.S. household population) show that 64 percent of older men and 77 percent of older women reported either taking medica-

---

### EXHIBIT 1

**Deaths Per 100,000 U.S. Population Age Sixty-Five And Older, By Sex, For Selected Disease Causes, 1970–2004**

<table>
<thead>
<tr>
<th>Year</th>
<th>Heart Disease (men)</th>
<th>Heart Disease (women)</th>
<th>Cancer (men)</th>
<th>Cancer (women)</th>
<th>Stroke (men)</th>
<th>Stroke (women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOURCE:** National Center for Health Statistics, National Vital Statistics System.

**NOTE:** Estimates are age-adjusted to the 2000 standard population.
tion for high blood pressure or having measured elevated blood pressure. The levels of elevated blood pressure (with or without medication) have declined for older men but have increased for older women. The prevalence of diabetes has also increased among older people, from 18 percent in 1988–1994 to 25 percent in 2001–2004. In contrast, the prevalence of high cholesterol among both men and women (with or without medication) has declined steadily.

After remaining roughly stable or gradually increasing in the 1970s, the proportion of noninstitutionalized older women and men who are obese (with a body mass index, or BMI, greater than or equal to 30) increased among older men from 19 percent in 1988–1994 to 26 percent in 2001–2004, and among older women from 23 percent in 1988–1994 to 31 percent in 2001–2004.5

■ Self-rated health. Research has shown that self-assessments can be good predictors of future well-being; people who report better health have much lower mortality and are at lower risk of deterioration in physical functioning.6 The proportion of older people reporting fair or poor health declined between 1982 and 2005 (from 34.8 percent to 27.3 percent for women and from 35.3 percent to 26.1 percent for men). Older non-Hispanic blacks and Hispanics were more likely than non-Hispanic whites to report fair or poor health. In 2005, 42 percent of older non-Hispanic black women and 41 percent of Hispanic women reported fair or poor health, compared with 25 percent of older non-Hispanic white women. Corresponding rates for men were 39 percent for non-Hispanic blacks and Hispanics and 24 percent for non-Hispanic whites, with the disparities persisting even among the oldest old (Exhibit 2).

■ Health of the obese. The long time series and large sample size of the NHIS allowed us to examine the joint relationship of weight and self-perceived health. Although obese older people are more likely than people of normal weight to report being in fair or poor health (33 percent versus 24 percent in 2005), over time, a decreasing proportion perceive their health this way. For example, 44 percent of older obese people in 1982 reported fair or poor health, compared with 33 percent in 2005. There was a similar trend for people ages 45–64 (Exhibit 3).7

■ Functional limitations. Another important aspect of health of the elderly is the ability to carry out routine household activities such as house cleaning or shopping (instrumental activities of daily living, or IADLs), or personal care such as using the toilet, dressing, or bathing (activities of daily living, or ADLs). Older people who need help with these activities are at risk of losing their ability to live independently in the community and often need care at home or in a long-term care facility.

The proportion of older Medicare benefi-
ciaries who are the most disabled—that is, have difficulty performing three or more ADLs—declined from 1992 to 2003, while the proportion with physical limitations only increased. These results hold for men and women and for people age eighty-five and older (Exhibit 4).

Use of preventive and screening services. Medicare has covered pneumonia vaccinations since 1981 and influenza vaccinations since 1993. Estimates for 1993–2005 show that the percentage of beneficiaries vaccinated against both illnesses has increased (Exhibit 5). In 2004–05, 62 percent of people age sixty-five or older reported receiving an influenza vaccination within the past year. The proportion of seniors who had ever received a pneumococcal vaccine increased from 29 percent in 1993–94 to 57 percent in 2004–05.

Vaccination rates varied widely across racial/ethnic groups. About two-thirds of older non-Hispanic whites had received an annual flu shot in 2004–05, compared to slightly less than half of older non-Hispanic blacks and Hispanics. Sixty-one percent of older non-Hispanic whites but only 40 percent of older non-Hispanic blacks and 31 percent of older Hispanics had ever been vaccinated against pneumonia.

Mammography rates have dramatically improved. Between 1987 and 2003, the proportion of women reporting a mammogram in the past two years increased from 32 percent to 76 percent for women ages 50–64 and nearly tri-

EXHIBIT 3
Percentage Of Noninstitutionalized Americans Reporting Fair Or Poor Health, By Weight Status And Age, 1982–2005

EXHIBIT 4
Functional Status And Health Care Expenditures (In 2003 Dollars) Among Medicare Beneficiaries Age Sixty-Five And Older, 1992 And 2003

NOTE: Physical limitations include difficulties in at least one of the following five activities: stooping, lifting, reaching, grasping, and walking, but no limitations in activities of daily living (ADLs) or instrumental activities of daily living (IADLs).
pleased from 22.8 percent to 67.7 percent for women age sixty-five and older.8

■ Hospital use. Over the past several decades there has been a profound change in patterns of hospital use by older Americans. An increasing number of important medical procedures are performed on an outpatient basis. The average length of hospital stay has steadily declined. Long stays of two or more weeks for conditions such as heart attack, stroke, or hip fracture, common in the 1970s, have been reduced to less than a week, reflecting an overall decrease in average length-of-stay from 12.6 days in 1970 to 5.6 days in 2004.

Two groups of procedures have become very important in improving functioning and quality of life in recent years: the cardiac revascularization procedures of angioplasty and bypass surgery, and joint replacements (knee and hip). The rate for bypass surgery increased during the 1980s and 1990s. Coronary angioplasty was introduced in the late 1970s, and between 1995 and 2004 alone, the rate increased 195 percent (Exhibit 6), with the largest percentage increases occurring among people age eighty-five and older.

Rates of total knee and hip replacement—two procedures designed to restore functioning and relieve pain—also rose dramatically. For older people, total knee replacement grew nearly threefold between 1980 and 1990 and more than doubled again over the next ten years. Hip replacement among older people increased in the 1980s but leveled off somewhat in the 1990s. There have also been sizable increases in rates of hip replacement among people ages 45–64.

For other restorative procedures there was a dramatic shift from inpatient to outpatient, especially after the introduction of the Medicare inpatient prospective payment system (PPS) in 1983. Until then, cataract extraction, for example, was done on an inpatient basis; by 1996, only 1 percent of the 2.4 million cataract procedures were done in the hospital.9

■ Prescription drug use. The use of prescription medicines by people age sixty-five and older has increased considerably in recent years. The mean number of prescribed medicines per community-dwelling Medicare beneficiary (including original prescriptions and refills) rose from 18.9 per person in 1992 to 29 per person in 2002. Examples of medicines with large increases in use include cholesterol-lowering drugs, which increased threefold from 1995–96 to 2002–03, and antidepressants, whose use nearly doubled over the same period.10

■ Health spending. Health spending has increased more for people in better health than for people with more extensive health needs. ...
it has for those in poor health. People age sixty-five and older make up about 12 percent of the population but account for about one-third of health care spending. Among older Medicare beneficiaries, average spending (in constant dollars) rose about 27 percent from 1992 to 2003. Spending for the youngest age group grew the most (32 percent for those ages 65–74 and 33 percent for those ages 75–84, compared with a 7 percent increase for the population age eighty-five and older).

Average spending for Medicare beneficiaries age sixty-five and older with three to six ADL limitations was $29,433 in 2003, compared with $6,683 for beneficiaries without any limitations. However, spending growth was greatest among the less disabled. From 1992 to 2003, average spending for beneficiaries with no limitations grew more than twice as rapidly as spending for people with three to six ADL limitations. Also, total health care spending for older people with physical limitations only but no ADL or IADL limitations nearly doubled from 1992 to 2003 (Exhibit 4).

**Will The Trends Continue?**

Overall trends in the health of older Americans have been positive. Life expectancy at age sixty-five continues a steady increase that began in the middle of the twentieth century; death rates, especially from circulatory disease continue their remarkable decline. Data show that elders’ own ratings of their health have improved and that they are reporting fewer functional limitations. Although we cannot link improved functioning at the population level directly to particular medical interventions, our data show large increases in interventions that are designed to enable older people to maintain or regain functioning and improve quality of life. In the case of the surgical procedures, advances in medicine have allowed them to be safely performed on older people. It is possible that new medical technologies will lead to further declines in disability and improvements in overall health.

However, this favorable picture must be tempered by some cautions.

**Racial/ethnic disparities.** First, although all groups of the elderly have benefited from these trends, great disparities persist. African Americans generally lag behind other groups on most measures of health.
Life expectancy trends. Second, men continue to have lower life expectancy than women. While the most recent estimates show U.S. life expectancy at birth (and at older ages) continuing to increase, the trend in death rates for certain groups (for example, the leveling off of death rates for older white women in the 1990s) suggests caution in predicting that death rates will continue to decline for all population subgroups. Demographers continue to debate the future course of life expectancy.

Cognitive functioning and quality of life. Third, one aspect of health that we did not report on is cognitive functioning, a crucial determinant of quality of life and the need for long-term care. Because of measurement issues, experts do not agree on whether or not the cognitive functioning of elderly Americans is improving. This is an important gap in our knowledge of elderly health trends.

Impact of obesity. Fourth, rising levels of obesity in the elderly may affect health and health care spending. In general, obese older people are more likely than the nonobese to have certain chronic conditions and to report higher levels of disability and poor health. In addition, most recent studies show higher health care spending among the obese. However, there is no consensus as to the long-term consequences of obesity for overall mortality. Of interest are the findings of one recent study that showed that the negative effects of obesity on mortality have decreased over time. A partial explanation for this phenomenon may be that except for diabetes, cardiovascular risk factors decreased the most among the overweight and obese. The trends in Exhibit 3, showing declines in self-perceived poor health among the obese, support this hypothesis.

Health of middle-aged people. Fifth, recent evidence of declines in the health of middle-aged people may portend declines in this cohort’s health and increased health care spending as they age. Middle-aged people today report higher levels of certain chronic conditions and have higher levels of obesity than the preceding generation. For example, in 1976–1980, 14 percent of men ages 55–64 were obese, compared with 36 percent in 2001–2004. Thus, the prospect of higher obesity prevalence among the elderly in the future, as obesity rates rise in younger age cohorts, does not bode well for future Medicare spending.

Health, health spending, and health perceptions. The recent trends in health and health care use among the older U.S. population should spur a reconsideration of how we perceive the relationship between health and spending. Some experts have suggested that declining disability of the elderly will alleviate pressure on future health care spending; others have demonstrated that longer life due to better health, by itself, does not have much effect on medical care spending in old age. Indeed, improvements in health status may partly reflect better access to new costly technologies and procedures to alleviate chronic medical conditions. The largest increases in relative health spending have occurred among healthier elderly people. More research is needed to understand these spending patterns and to plan effective policies for Medicare’s future.

Chronic conditions and self-reported health. Recent trends also suggest a reconsideration of the interrelationships between risk factors, health conditions, functioning, and reported health status. Rising levels of chronic conditions have been accompanied by higher levels of reported good health and functioning. It will be important to study whether this reflects changing reporting patterns at older ages or whether people with chronic conditions are able to function at higher levels than people with similar conditions could in the past. Studies show that the association between self-rated health and functioning...
among the elderly is weaker than at younger ages and that people living with chronic conditions often experience a “response shift”—that is, a tendency to change their expectations to match their reduced ability.\(^3\) Also, as clinical treatment thresholds change, more people are treated at earlier stages of disease, leading to increases in the “treated prevalence” of diseases such as hypertension, diabetes, and depression.\(^4\) People diagnosed at earlier stages might report better health. Close monitoring of health trends is vital to directing policy initiatives and to evaluating national programs that affect the health and well-being of older Americans.

**NOTES**

3. Trends are evaluated from 1970, when deaths were classified in the International Classification of Diseases, Eighth Revision (ICD-8); through ICD-9, 1979 to 1998; and five years into the new tenth revision (ICD-10), through 2004. Interpretation of mortality trends over a long period is complicated by revisions in classification. However, profound changes—for example, the drop in deaths from circulatory diseases in the second half of the century—are apparent across these changes in classification.
5. BMI is a measure that adjusts weight for height. It is calculated as weight in kilograms divided by height in meters squared.
7. In the National Health Interview Survey, height and weight are self-reported, not measured as in the National Health and Nutrition Examination Survey. In validation studies of self-reported weight and height, participants tend to underestimate their weight and to overestimate their height. See, for example, I. Niedhammer et al., “Validity of Self-Reported Weight and Height in the French GAZEL Cohort,” *International Journal of Obesity and Related Metabolic Disorders* 24, no. 9 (2000): 1111–1118.
14. D.M. Cutler and M. McClellan, “Is Technological Change in Medicine Worth It?” *Health Affairs* 20,


