

# Work, Health, and Income Among the Elderly



Gary Burtless, Editor

STUDIES IN SOCIAL ECONOMICS

*Gary Burtless, Editor*

**Work, Health, and Income  
among the Elderly**

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## Foreword

Living conditions among America's elderly have improved dramatically in this century. Death rates have fallen and continue to fall at a rapid pace. Real income has risen because of increases in the availability and level of social security and private pension benefits. Health insurance under the medicare and medicaid programs has made expensive medical care affordable for most older Americans. And poverty among the elderly has dropped sharply in the past quarter century, especially in comparison with poverty among the nonaged population.

In spite of these gains, the problems of the elderly and programs to aid them continue to attract wide public attention. Some aged Americans live in deprived or squalid circumstances over which they exercise little control. In more recent years the public and private programs intended to help the elderly have run into financing difficulties as the rising costs of pensions and medical care threaten to outpace the growth in resources used to pay for them. In an effort to trim government spending, social security retirement benefits were twice cut back in the past decade and medicare reimbursement procedures have been drastically overhauled. Some observers fear that these reforms threaten the improvements in income and health that the aged have enjoyed in recent decades.

The papers in this volume examine a range of issues affecting the current and future living conditions of the elderly. A topic of central interest is the health of the elderly and the implications of declining mortality rates for the future health and work capacity of older Americans. Improvements in medical technology and public health have resulted in marked gains in longevity, especially at older ages. Do these gains imply that the United States faces sharply higher outlays on programs that aid the elderly? Do they suggest that Americans retain their ability to work at even higher ages? A related topic is the effect of social security and pensions on living standards and work incentives among the elderly. Are benefits high

enough to keep older workers from suffering deprivation when they are forced to retire? Are they so high that they encourage premature retirement? In addressing such questions, the authors of these papers provide important original contributions.

The research reported in this volume was supported by a grant to the Brookings Institution from the U.S. Department of Health and Human Services. The volume is the third in a series supported by this grant. The earlier volumes were *Economic Effects of Social Security*, by Henry J. Aaron, and *Retirement and Economic Behavior*, edited by Henry J. Aaron and Gary Burtless. The papers in this volume were presented at a conference held at Brookings on May 2, 1985. The introduction contains a nontechnical summary of each paper and its main conclusions.

Gary Burtless is a senior fellow in the Brookings Economic Studies program. Alice M. Rivlin, director of that program, played an invaluable role in organizing the conference at which the papers in this volume were presented. Thomas A. Gustafson, Anthony J. Pellechio, and Daniel H. Weinberg, at the Department of Health and Human Services, assisted with the selection of topics and participants for the conference.

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*November 1986*  
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## **Introduction and Summary**

The problems of the aged have attracted growing attention over the past decade for two reasons. First, the cost of programs that help the elderly has risen sharply. Outlays on social security, medicare, and medicaid constitute a rising share of federal government expenditures. In an era of limits on government growth, the administration and Congress have been forced to tackle the politically difficult issue of reducing the rise in outlays. In 1983 Congress for the first time permitted the taxation of social security benefits and also raised the normal retirement age under social security from 65 to 67, though the full effect of the second reform will not be felt until the next century. The system of reimbursing bills for hospital care under medicare was changed in 1984. Again, the purpose of the reform was to limit growth in outlays. The debate over these reforms has forced Americans to think carefully about the income and health needs of the elderly and about the most efficient way to meet them.

Second, the public has gradually become aware of the enormous *future* costs of programs for the aged. Even if social insurance and public assistance programs become no more generous than they are now, they will be far more burdensome in the next century, when the baby boom generation begins to retire. Because of the decline in births and in the growth of productivity, the cost of programs for the aged will represent an increased claim on national output, even under favorable assumptions about economic performance. To the drumbeat of bad demographic and economic news, young Americans have become pessimistic about their own chances of ever drawing social security benefits. Even though fears about the solvency of social security and medicare are often wildly exaggerated, the new climate of public opinion has encouraged economists and other policy analysts to consider fundamental reforms in these programs. One suggested reform, for example, is to privatize social security retirement benefits for younger workers.

The papers in this volume discuss fundamental questions that are relevant to the debate over reforms in public programs for the aged. How healthy are the elderly? Have increases in longevity been associated with improvement or deterioration in average health? Have longer life spans placed a growing burden on the nation's hospitals and doctors? Are the elderly more capable of working? Or are more of them ill, disabled, and otherwise incapacitated? What kinds of retirees will be most affected by raising the normal retirement age? How will a change in social security benefits affect the work habits of the elderly?

The answers to these questions are difficult to obtain because the data needed to address them are not routinely collected and may not be collected at all. Therefore analysts must be imaginative and resourceful in teasing answers out of data that do exist. The papers approach these questions in different ways. Some survey relevant economic theory and then try to make sense out of the recent historical statistics. Others focus on a specific source of information, such as the Retirement History Survey (RHS), and develop sophisticated econometric models to explain one or more of the important relationships in the data. None of the papers is intended to be a thorough synthesis of the existing literature on a particular topic. All represent original contributions at the frontier of knowledge. And in most cases they offer pointed suggestions for new data collection that would substantially improve current understanding of basic issues.

### **Declining Old-Age Mortality and the Health of the Aged**

Mortality rates among the aged, particularly among men and women over 75, have declined dramatically in the past two decades. This trend has led to corresponding, substantial increases in longevity, notably for the very old, that may have important implications for future public policy. James M. Poterba and Lawrence H. Summers examine the reasons behind the rapid drop in mortality and consider its consequences for policy, especially health care policy. If mortality rates continue to drop at their current rate, the population over 65 will grow faster than previously expected. In particular, the very elderly—people over 85—will become a much larger fraction of all the elderly. Under a pessimistic view, this change could lead to sharply rising health and support outlays because the very elderly often require a great deal of medical and other help for daily sustenance. But an optimistic view is also possible. Mortality could be falling because of

general improvements in the health of the aged. Under this interpretation, health outlays might be no higher—and might actually be lower—as a consequence of reduced mortality.

In the first substantive section of their paper, Poterba and Summers present some basic data showing the extent of the mortality decline in recent decades. The most dramatic gains have been registered by men and women past 65, especially those older than 75 or 80, leading to rapid extensions in the expected remaining life span of the oldest Americans. Though the cause of the gains is not clear, the authors point out that the decline in mortality accelerated after the introduction of medicare and medicaid in 1965.

Poterba and Summers compute the number of older people who remain alive solely because of recent reductions in mortality. These people are referred to as marginal survivors. In 1980 about 4 percent of men and 1½ percent of women aged 60 were marginal survivors when compared with men and women born twenty years earlier. That is, 4 percent of 60-year-old men in 1980 would not have been alive if they had faced the same life chances as men born twenty years before they were. The proportion of marginal survivors is much higher at more advanced ages. About 8 percent of men 80 years old and 22 percent of women of the same age were marginal survivors according to the definition described above. Thus a moderate fraction of men and a high fraction of women over 80 owe their existence to improvements in longevity that have occurred in the past two decades.

A natural question is whether the growing number of marginal survivors has any implications for the average health status of the elderly population. If the increases in longevity arise from fundamental improvements in health, such as better diet or control of cardiovascular disease, it is plausible that the health of the elderly has improved. But if medical science is most effective at keeping alive the very frail who would otherwise die, it seems likely that the surviving elderly are becoming less healthy on average.

Poterba and Summers examine this question by first setting out a mathematical model of frailty and survival under evolving medical conditions. They assume that frailty is an inborn trait that is distributed in an identical way within each age cohort. People who are more frail than average are more likely to die at any given age. But medical progress reduces the *average* death rate of each succeeding cohort. Under plausible assumptions about the underlying distribution of frailty, the authors show that

mortality rates may have been affected by the changing frailty of the population. Under their assumptions, the reductions in mortality have kept some frail people alive, and the resulting increase in average frailty has in turn limited gains in mortality at more advanced ages. If average frailty at each age had remained unchanged, the gains in mortality would have been even greater. But when one corrects for the effects of rising frailty, the gains in longevity at older ages are indeed remarkable.

Poterba and Summers interpret this finding as an argument against the view that longevity is currently pushing up against some natural limiting age, such as 95 or 100. They also point out that the differences in frailty at advanced ages are now greater than they once were. A greater proportion of extremely frail people now survive to age 70 or 80. This finding implies that the health of the very elderly should be declining. An alternative theory has been advanced by Victor Fuchs.<sup>1</sup> He argues that health is better viewed in relation to the time remaining until death rather than in relation to the time since birth (which is measured by age). Health outlays, for example, tend to be concentrated in the last year or two before death. As improvements in longevity postpone the age of death, people of any given age will be further away from death, and hence healthier on average.

The conflict between these two views resolves into a disagreement over the relative effects of medical progress on mortality, on the one hand, and on morbidity, on the other. Under the first view, gains in mortality will be associated with greater average morbidity in the surviving population, with especially strong deterioration in the health of people at the highest ages. According to Fuchs's view, improvements in longevity will be associated with declines in morbidity at any particular age.

Poterba and Summers examine various data on morbidity and health outlays to help resolve the conflict. The rate of institutionalization of old people has fallen in recent years, suggesting that their health is improving. On the other hand, the amount of medicare expenditures per person for those 85 and over relative to the expenditures per person for 65-year-olds has hardly changed at all, which suggests that the relative health of 85-year-olds is unchanged. The authors interpret this as evidence that medical progress has improved the health of survivors by about enough to offset the expected decline in health arising from the growing number of marginal survivors. They draw the same conclusions from trends in days of

1. Victor R. Fuchs, "'Though Much Is Taken': Reflections on Aging, Health, and Medical Care," *Milbank Memorial Fund Quarterly*, vol. 62 (Spring 1984), pp. 143-66.

restricted activity and days of bedridden disability, which also show little trend over time.

The authors next turn to microeconomic evidence. Using data from the RHS, they estimate the relation between reported health limitations, on the one hand, and both age and time to death, on the other. They find that both age *and* years until death have a statistically significant and nontrivial effect on reported health limits. This finding suggests that health deteriorates with advances in age even if an older person is not especially near death, but that nearness to death has an effect on health that is independent of an older person's age. The authors infer from the finding that advances in longevity will reduce the age-specific rates of activity limitation among the elderly.

Poterba and Summers mention several policy implications of their study. They argue that the historical evidence is inconsistent with either a very optimistic or very pessimistic view of future health trends among the surviving elderly. Though more frail elderly have survived, medical progress has ensured that the age-specific health status of the elderly has remained roughly unchanged. The growth in the size of the elderly population is nonetheless worrisome. Even if the average health of the elderly is not declining, the health care costs of a much larger elderly population will be burdensome in the next century, especially in view of the rapid gains in longevity. The pressure of growing costs will stimulate a reconsideration of who is elderly and in need of public help. But Poterba and Summers warn against any arbitrary redefinition of the onset of old age. Because medical progress has succeeded in keeping the more frail elderly alive, at any given age health varies more widely than it once did. The authors suggest instead that society should consider greater flexibility in defining who is aged, perhaps linking that definition to measurable health status.

### **Aging and the Ability to Work**

Work capacity declines as workers age. Although the great majority of men and women aged 50 are at work, only a comparatively small fraction remain employed when they reach age 70. Many retiring workers report that poor health was a contributing, or the decisive, cause of their retirement. If bad health is a cause of retirement, improvements in average health should contribute to a delay in normal retirement. It is not clear, however, that medical progress has tended to improve the average health

of workers. As Poterba and Summers point out, some forms of progress have helped to keep alive very infirm people who would otherwise have died. These marginal survivors may be incapable of working. Instead of raising the work capacity of the older population, medical progress may actually be reducing it.

Martin Neil Baily examines this set of issues in his paper. He concentrates especially on the implications that trends in work capacity have for the optimal design of public retirement and disability programs. The paper begins with a formal economic model of retirement in response to the social security pension program. Baily starts by considering the optimal design of a simple forced-savings retirement program. Using straightforward assumptions, he is able to show that the optimal age at retirement rises with the expected life span and the population's ability to work. The government can use this optimal age to set the "normal" retirement age, that is, the age at which workers are first eligible to draw full public retirement benefits.

The optimality of a single normal retirement age is less clear when there are wide differences among workers in their ability to work. Baily considers a simple extension of his basic model in which some workers are in good health while others are suddenly struck with a work disability as they age. If the government allows only a single normal retirement age for the drawing of retirement benefits, the healthy workers would retire at an age that from a social perspective is too young; the disabled, in contrast, would retire at an age that is too old. At the normal retirement age, healthy workers would be offered a financial incentive to leave work which is too generous in view of their continued willingness and ability to participate actively in the labor market. Baily points out that the problem could be circumvented if the government permitted more than one retirement age—for example, a higher retirement age for workers in good health and a lower one for workers suffering a work disability.

The problem with this solution is that the information required to implement it may be unattainable. True states of health are not directly observable. Workers with a taste for leisure have an incentive to describe themselves as disabled in order to qualify for generous retirement benefits at an early age. Workers who are truly disabled may be denied benefits if they are erroneously classified as nondisabled. Depending on its ability to distinguish between the truly disabled and the nondisabled, society can be more or less generous in its treatment of workers who suffer a decline in work capacity. If the test is imperfect and many nondisabled workers