

# DOES STAYING HEALTHY REDUCE YOUR LIFETIME HEALTH CARE COSTS?

BY WEI SUN, ANTHONY WEBB, AND NATALIA ZHIVAN\*

---

## Introduction

Medical and long-term care costs represent a substantial uninsured risk for most retired households. A recent *brief* from the Center for Retirement Research at Boston College reported new findings on average lifetime health care costs at selected ages and on the distribution of those costs. This second *brief* explores the relationship between health care costs and health status. That is, it considers whether current good health is a predictor of low health care costs over one's remaining lifetime. If so, healthy households could set aside less for health care expenditures than the unhealthy, and households that stay healthy could release for general consumption money that they had previously set aside for health care costs.<sup>1</sup>

Our main finding is that although the *current* health care costs of healthy retirees are lower than those of the unhealthy, the healthy actually face higher total health care costs over their remaining lifetime. To illustrate, the expected present value of lifetime health care costs for a couple turning 65 in 2009 in which one or both spouses suffer from a chronic disease is \$220,000, including insurance premiums<sup>2</sup> and the cost of nursing home care, and 5 percent can expect to spend more than \$465,000. The comparable numbers for couples free of chronic

disease are substantially higher, at \$260,000 and \$570,000, respectively. This *brief* explains this somewhat counterintuitive finding.

## The Data and Methodology

The major health care expenses retired households face include premiums for Medicare Part B (which covers physician and outpatient services) and Part D (which covers drug-related expenses); Medigap and retiree health insurance<sup>3</sup> premiums; co-payments related to Medicare-covered services for those whose expenditures are not fully covered by Medigap or retiree health insurance; and health care services that are not covered by Medicare or other insurance, including home health care and nursing home costs.<sup>4</sup> About 24 percent of individuals turning 65 in 2010 will need at least one year of nursing home care,<sup>5</sup> and paid long-term care is very expensive.<sup>6</sup>

The distribution of health care costs incurred by households in a single year and the relationship between those costs and current health status provides little information about lifetime risk and how that lifetime risk might vary with health status. For example,

---

\* Wei Sun is a graduate research assistant at the Center for Retirement Research at Boston College (CRR). Anthony Webb is associate director of research at the CRR, and Natalia Zhivan is a consultant for the CRR. The CRR gratefully acknowledges Prudential Financial for its generous support of this research. This *brief* is related to broader analysis from Webb and Zhivan (2010a).

although households free of any chronic disease have lower current health care costs, they may also live longer than average and go on to incur greater health care costs over their lifetime.

One way of calculating the relationship between lifetime risk and current health status would be to use a panel data set to track annual out-of-pocket health care expenditure from age 65 until death, and then compare the present values of the lifetime expenditures of the healthy with those of the sick. However, the data set best suited for this purpose, the *Health and Retirement Study* (HRS) (a nationally representative sample of older Americans), has a maximum of only 16 years of data so that only a small and unrepresentative proportion of individuals age 65 at baseline has died. Therefore, we adopted an alternative approach, namely to use data from the HRS to create a large number of simulated lifetime health and health-care-cost histories for each HRS household observed at age 65.

In each simulation, the members of the household experience the onset of various chronic diseases (diabetes, cancer, lung disease, heart disease, and stroke), enter nursing homes, and eventually die. The probabilities of these events are calibrated to match those observed in the HRS data, and vary with gender and socioeconomic status. Health care costs, which are also calibrated to the HRS data, vary with age, health, and socioeconomic status, and with whether the individual is covered by Medigap or retiree health insurance and whether the individual is in a nursing home.<sup>7</sup> Costs include a random component, reflecting persistent individual-level variations in health expenditure, even after controlling for disease and socioeconomic status.<sup>8</sup> The simulated health-care-cost data are then used to calculate lifetime health care costs, given the household's socioeconomic status, initial health, insurance coverage, and, importantly, current health status.

## Health Status and Health Care Costs

As shown in Table 1, in any one year, households age 65 and over that report ever having been diagnosed with a chronic disease have substantially higher average out-of-pocket health care costs than do people free of chronic disease.<sup>9</sup> In addition, such chronic diseases are strong predictors of requiring long-term care. So it might be reasonable to assume that people free from chronic disease would also incur lower lifetime health care costs.

TABLE 1. HOUSEHOLD ANNUAL AVERAGE HEALTH CARE COSTS BY HEALTH STATUS, EXCLUDING NURSING HOME CARE, 2009 DOLLARS

Age of husband	Health status	
	Good health	Not in good health
65-69	\$6,509	\$7,989
70-74	6,000	7,416
75-79	6,701	8,027
80-84	7,271	8,295
85+	7,223	8,453

Notes: Costs are adjusted by the average increase in health care costs between 2005 and 2009, and including Medicare and private insurance premiums and home health care costs. We use HRS sample weights and exclude households in which the husband or wife had not attained age 65 by the 2004 interview.

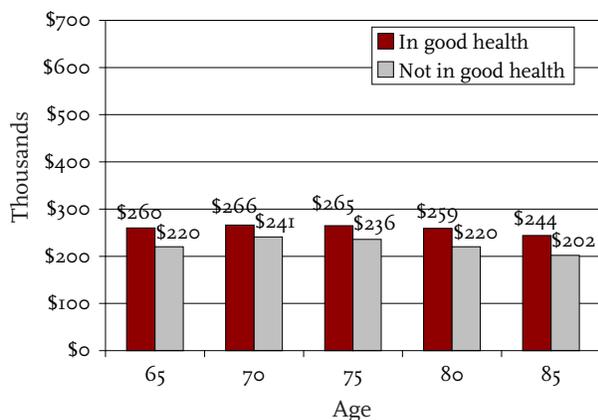
Source: Authors' calculations based on University of Michigan, *Health and Retirement Study* (HRS), 2006.

However, an analysis of the simulated lifetime health-care-cost histories shows that the opposite is the case – the currently healthy have *higher* lifetime costs. Figure 1 on the next page shows the relationship between health status and the average expected present value (EPV) of remaining lifetime health care costs, including long-term care, at selected ages.<sup>10</sup> The first age-65 bar shows the average EPV of lifetime health care costs from age 65 onward, discounted back to age 65, for a couple turning 65 in 2009 who are both free of chronic disease at that time. The second age-65 bar shows the average EPV of lifetime health care costs for a couple in which one or both spouses are not in good health, which we define as suffering from one or more chronic diseases. The corresponding bars for age 70 show average EPVs, expressed in 2009 dollars, but discounted back to age 70, for couples that are healthy or not in good health when they attain that age in 2014. The bars for subsequent ages have a similar interpretation.<sup>11</sup>

At any given age, average costs for people who remain in good health are higher than for those suffering from one or more chronic diseases. For example, at age 65, the average EPV of households not in good health is \$220,000. But the average EPV for those in good health is even higher, at \$260,000.

Figure 2 shows corresponding results for the 95th percentile of remaining lifetime health care costs. At age 65, the 95th percentile of remaining lifetime health care costs for couples not in good health is

FIGURE 1. MEAN REMAINING LIFETIME HEALTH CARE COSTS BY AGE AND HEALTH STATUS, 2009 DOLLARS

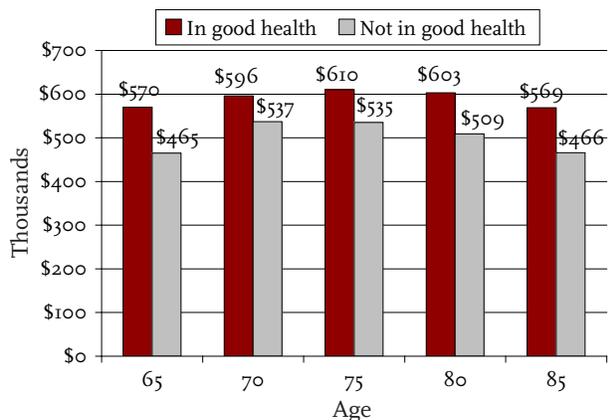


Notes: The above costs are for households turning 65 in 2009. Increases in medical costs are projected to place subsequent birth cohorts at greater risk.  
 Source: Calculations based on the model described in Webb and Zhivan (2010b).

\$465,000. The 95th percentile for those in good health is substantially higher at \$570,000.

So why do the currently healthy incur higher lifetime health care costs than the sick? First, people in good health can expect to live significantly longer. At age 80, people in healthy households have a

FIGURE 2. 95TH PERCENTILE OF REMAINING LIFETIME HEALTH CARE COSTS BY AGE AND HEALTH STATUS, 2009 DOLLARS



Notes: The above costs are for households turning 65 in 2009. Increases in medical costs are projected to place subsequent birth cohorts at greater risk.  
 Source: Calculations based on the model described in Webb and Zhivan (2010b).

remaining life expectancy that is 29 percent longer than people in unhealthy households, and, therefore, are at risk of incurring health care costs over more years. Second, many of those currently free of any chronic disease will succumb to one or more such diseases. For example, our simulated individuals who are free of any chronic diseases at age 80 can expect to spend one-third of their remaining life suffering from one or more such diseases. Third, people in healthy households face an even higher lifetime risk of requiring nursing home care than those who are not healthy, reflecting their greater risk of surviving to advanced old age, when the risk of requiring such care is highest.

## Conclusion

Households planning for retirement need to decide how much to set aside for health care costs and whether to purchase Medigap and/or long-term care insurance. Those currently in good health would be unwise to infer that they will continue to enjoy lower than average health care costs. The reality is that even the currently healthy can expect to eventually suffer from one or more chronic diseases, which often results in high out-of-pocket and long-term care costs.

Households that delay purchasing insurance until their health declines run the risk of facing higher premiums, or for long-term care insurance, being denied coverage altogether. Insurers need to charge premiums that reflect the risk of claim. Individuals who wait until their health declines represent a particularly bad risk because they incur higher medical costs than the healthy, at least in the short run, and also pay fewer years' premiums. Therefore, households that do not buy Medigap when they first join Medicare run the risk of facing substantially higher premiums, as do households of any age that postpone buying long-term care insurance.

## Endnotes

- 1 The healthy can expect to live longer than the unhealthy, and may therefore need to set aside more for general consumption in retirement.
- 2 Premiums include Medicare, Medigap, and retiree health insurance premiums, but not long-term care insurance premiums. Although our estimates are similar in magnitude to those of the Employee Benefit Research Institute (2009), they are not strictly comparable because their numbers incorporate investment, as well as longevity and medical cost risk, but do not include the cost of long-term care.
- 3 As used in this *brief*, retiree health insurance does not include long-term care insurance.
- 4 Medicare covers up to 100 days of “skilled nursing care” following hospitalization and provides limited home health care. In particular, it will not provide 24-hour-a-day home health care or home health care to individuals who do not also require skilled nursing care.
- 5 Spillman and Lubitz (2002); Congressional Budget Office (2004).
- 6 For information on nursing home costs, see Prudential (2008).
- 7 A potential concern with the HRS data, raised by Hurd and Rohwedder (2009), is misreporting of health care expenditure by HRS households. Webb and Zhivan (2010a) address this concern by recoding the small number of expenditures that are implausibly large in relation to the household’s income and assets. On the other hand, the HRS excludes individuals who were institutionalized at baseline. Both this and other analyses based upon HRS data will therefore likely understate nursing home care costs.
- 8 Some of these variations may reflect different preferences and budget constraints. But they are probably largely the result of variations in the severity of a disease and its amenability to treatment.
- 9 We include cancer, diabetes, heart disease, lung disease, and stroke.
- 10 The couple is assumed to have a high-school education, and it is further assumed that the couple never becomes eligible for Medicaid. The data upon which the simulations are based almost entirely predate the January 1, 2006, introduction of Medicare Part D. This benefit will reduce the health-care-cost risk faced by those retirees previously lacking comparable coverage.
- 11 The probability of being free of chronic disease decreases with age, and there will be relatively few intact couples free of any chronic disease at older ages. The present value of remaining lifetime costs initially increases, because with each year the household survives, there is a greater risk of being alive to incur high medical and long-term-care costs at older ages, and those costs are subject to less time-discounting.

## References

- Congressional Budget Office. 2004. "Financing Long-Term Care for the Elderly." Washington, DC: U.S. Government Printing Office.
- Employee Benefit Research Institute. 2009. "Savings Needed for Health Expenses in Retirement: An Estimation of Persons Aged 55 and 65 in 2009." *Notes* Vol. 30, No. 6. Washington, DC.
- Hurd, Michael D. and Susann Rohwedder. 2009. "The Level and Risk of Out-of-Pocket Health Care Spending." Working Paper WP218. Ann Arbor, MI: Michigan Retirement Research Center.
- Prudential. 2008. "Long-Term Care Cost Study." Available at: <http://web.prudential.com/media/managed/LTCCostStudy.pdf>.
- Spillman, Brenda C. and James Lubitz. 2002. "New Estimates of Lifetime Nursing Home Use: Have Patterns of Use Changed?" *Medical Care* 40(10): 965-975.
- University of Michigan. *Health and Retirement Study*, 2006. Ann Arbor, MI.
- Webb, Anthony and Natalia Zhivan. 2010a. "What is the Distribution of Lifetime Health Care Costs From Age 65?" *Issue in Brief* 10-4. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Webb, Anthony and Natalia Zhivan. 2010b. "How Much is Enough? The Distribution of Lifetime Health Care Costs." Working Paper 10-1. Chestnut Hill, MA: Center for Retirement Research at Boston College.

CENTER FOR  
RETIREMENT  
RESEARCH  
AT BOSTON COLLEGE

---

### About the Center

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and forge a strong link between the academic community and decision makers in the public and private sectors around an issue of critical importance to the nation's future.

To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

### Affiliated Institutions

The Brookings Institution  
Massachusetts Institute of Technology  
Syracuse University  
Urban Institute

### Contact Information

Center for Retirement Research  
Boston College  
Hovey House  
140 Commonwealth Avenue  
Chestnut Hill, MA 02467-3808  
Phone: (617) 552-1762  
Fax: (617) 552-0191  
E-mail: [crr@bc.edu](mailto:crr@bc.edu)  
Website: <http://www.bc.edu/crr>

---

© 2010, by Trustees of Boston College, Center for Retirement Research. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that the authors are identified and full credit, including copyright notice, is given to Trustees of Boston College, Center for Retirement Research.

The research reported herein was supported by Prudential Financial. The findings and conclusions expressed are solely those of the authors and do not represent the opinions or policy of Prudential Financial or the Center for Retirement Research at Boston College.