

Do Health Shocks Reduce Consumption in Retirement?

Barbara A. Butrica, Richard W. Johnson, and Gordon B.T. Mermin
Urban Institute

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1. Introduction

The possibility of serious illness poses significant financial risks for older adults. Although virtually all Americans age 65 or older are covered by Medicare, cost-sharing requirements and the exclusion of certain services often lead to large out-of-pocket medical expenses, especially for those who lack private supplemental insurance health benefits. Older adults under age 65, who are not eligible for Medicare unless they are disabled, may face more serious financial risks because there is no guarantee that they will have health insurance. In fact, 12 percent of Americans ages 55 to 64 were uninsured in 2004 (Johnson 2007).

High out-of-pocket health care costs may have serious repercussions for older people and their families. If their incomes are not high enough to cover these expenses, older adults with health problems may have to deplete their savings, turn to family and friends for financial help, or forego necessary care. Or they may be forced to reduce their consumption of other goods and services to pay their medical bills.

Relatively little is known about how health problems affect economic well-being. Widespread anecdotal evidence suggests that some older Americans are forced to choose between buying medications and paying for rent or groceries. There are no careful empirical studies, however, that measure the pervasiveness of the problem. Several studies have documented the relatively large share of income that certain subsets of the older population devote to health care (Crystal et al. 2000; Goldman and Zissimopoulos 2003; Maxwell, Moon, and Segal 2001), but we do not yet know how much these costs reduce living standards.

This study examines the impact of health problems at older ages on out-of-pocket health care spending and other types of expenditures. The effects might be minimal if older people are generally well-insured or have substantial financial resources. Otherwise, the onset of serious health problems could force many people to divert large shares of their spending to health care and away from other goods and services. The analysis uses a unique data source that includes information on both consumption patterns and specific medical conditions, and estimates models of different types of household expenditures. We examine spending patterns separately for people in households that include an adult age 65 or older and those in households that include an

adult younger than 65. The impact of health problems on spending patterns may be especially strong for those in the younger age group, most of whom do not yet qualify for Medicare, because some of them are uninsured or underinsured.

2. Background

The onset of serious health problems generally increases the use of health services and medications, raising out-of-pocket medical expenses despite the preponderance of third-party payments. Hwang et al. (2001), for example, found that adults ages 45 to 64 with three or more chronic conditions averaged \$1,055 in annual out-of-pocket payments for health care services in 1996, compared with only \$356 for those with no chronic conditions. The same study reported similar spending patterns for adults ages 65 and older, nearly all of whom have Medicare coverage. Although out-of-pocket spending levels of about \$1,000 may not be catastrophic for many people, some older adults with chronic conditions face very high expenses. For example, about 1 in 10 Medicare beneficiaries age 65 or older with acute myocardial infarction spend more than \$3,500 (in 1999 constant dollars) annually on out-of-pocket health care spending in the first year of diagnosis (Joyce et al. 2005).

The out-of-pocket cost implications of chronic health conditions are especially serious for older Americans, because the incidence of health problems increases rapidly with age. For example, 59 percent of adults age 70 or older experienced a major new medical condition (cancer, stroke, heart problems, lung disease, psychiatric problems, or diabetes) over about a 10-year period or was married to someone who did (Johnson, Mermin, and Uccello 2006). The risks are nearly as high for people ages 51 to 61, 57 percent of whom experienced new health problems over a 10-year period. Most older Americans report at least one chronic condition, and nearly half of persons with chronic conditions have more than one (Hoffman et al. 1996). In 1996, the share of Americans with at least one chronic condition reached 58 percent at ages 45 to 64, 78 percent at ages 65 to 79, and 85 percent at ages 80 and older (Hwang et al. 2001). About 52 percent of adults ages 65 to 79 had two or more chronic conditions in 1996.

Medicare Coverage

Although nearly all Americans age 65 or older are covered by Medicare, they face significant cost-sharing requirements. Copayments by Medicare beneficiaries rise with services use, and can accumulate rapidly. After meeting the annual deductible, beneficiaries must pay 20 percent of the costs of Medicare Part B services out of pocket, which include doctor visits and many other outpatient services. The Part B deductible stands at \$135 in 2008 (Centers for Medicare and Medicaid Services [CMS] 2007a). Hospitalizations, which are covered by Medicare Part A, can be especially costly. Medicare beneficiaries face annual deductibles of \$1,024 for hospital stays in 2008. There are no additional charges for the first 60 days, but daily copayments amount to \$256 for days 61 to 90, and \$512 for days 91 to 150. Longer hospital stays are not covered at all.

Until 2006, the lack of prescription drug coverage was by far the most important hole in the Medicare benefits package. In the mid-1990s, for example, drug costs accounted for between one-third and one-half of out-of-pocket spending on health care services by older Medicare beneficiaries (Crystal et al. 2000; Hwang et al. 2001), and rising prescription drug use and prices increased real out-of-pocket drug spending by Medicare beneficiaries by 61 percent between 1997 and 2001 (Moeller, Miller, and Banthin 2004).

The 2006 addition of Part D to Medicare provided a voluntary outpatient prescription drug benefit delivered by private insurance plans, but many Medicare beneficiaries continue to make substantial out-of-pocket payments for their prescription drugs. Although the Part D drug plans provide a range of coverage options at different prices, they must provide the standard benefit defined in law, its actuarial equivalent, or an enhanced benefit. The standard benefit has a \$275 deductible in 2008 and 25 percent coinsurance until total drug costs reach \$2,510 (CMS 2007b). Coverage is suspended after total drug costs exceed this level, and beneficiaries must pay 100 percent of their drug costs until total out-of-pocket spending reaches \$4,050. The plan then pays 95 percent of any additional costs, with beneficiaries responsible for only the remaining 5 percent. Although some plans cover beneficiaries in the standard coverage gap, only 4

percent of Part D enrollees had coverage in the gap for brand-name drugs in 2006 (Cubanski and Neuman 2006).

Medicare premiums are substantial. Although most beneficiaries do not pay Medicare Part A premiums for inpatient services, most now pay monthly premiums of \$96.40 for Medicare Part B, which covers outpatient services. Beginning in 2007, Part B premiums are somewhat higher for high-income enrollees (single adults with incomes over \$82,000 and couples with incomes over \$164,000 in 2008). Part D premiums vary depending on the particular plan that enrollees choose, but monthly premiums for the standard plan averaged \$27 per month in 2007 (Medicare Trustees 2007). Low-income beneficiaries qualify for public assistance with premiums, deductibles, and copays for both Parts B and D, but there is concern that many eligible enrollees are not receiving help (Kaiser Family Foundation 2007; Levy and Weir. 2007; Moon, Brennan, and Segal 1998).

Additionally, Medicare does not cover all health care services received by older adults. Excluded services include dental care and dentures, routine vision care and eyeglasses, and hearing examinations and hearing aids, as well as most long-term care services.

Supplemental Coverage for Medicare Beneficiaries

Many older Americans obtain private supplemental insurance to fill some of the gaps in Medicare coverage, defraying the cost of Medicare deductibles and coinsurance and covering services excluded from the Medicare benefits package. In 2005, about 36 percent of noninstitutionalized Medicare enrollees age 65 and older obtained retiree health benefits from their former employers or their spouses' former employers, while another 35 percent purchased private supplemental coverage, known as Medigap, from insurance companies (Federal Interagency Forum on Aging Related Statistics 2008).

However, many employers are now cutting back on retiree health benefits, likely reducing employer coverage rates for future generations of Medicare beneficiaries. Between 1988 and 2006, the share of large private employers offering health benefits to retirees fell from 66 percent to 35 percent (Kaiser Family Foundation and Health Research and Educational Trust 2006). In 2003, only 25 percent of private-sector workers

were employed at establishments that offered retiree health benefits, down from 32 percent in 1997 (Buchmueller, Johnson, and Lo Sasso 2006). Employers that continue to offer benefits are forcing retirees to bear much of the costs. From 1998 to 2004, the median amount that retirees age 65 and older paid in premiums for employer-provided health insurance more than quadrupled, after adjusting for inflation (Johnson 2007). Nonetheless, employer health plans still provide important benefits to retirees fortunate enough to participate in them. In 2004 the median Medicare-enrolled retiree with employer health benefits paid less than half as much in premiums as the median Medigap enrollee (Johnson 2007).

Some older Americans who lack employer-sponsored retiree health benefits turn to the Medicare Advantage Program, which delivers traditional Medicare benefits to enrollees through private health plans.¹ Enrollment in these plans has been soaring in recent years, partly because they often provide services not included in the traditional Medicare program and thus can lower enrollees' out-of-pocket costs. In 2008, about one in five Medicare beneficiaries are enrolled in a Medicare Advantage plan (Gold 2008). Older adults with very limited incomes and assets may qualify for Medicaid, which pays virtually all health care costs for enrollees. Eligibility rules vary by state, but the average income cut-off across all states is about 88 percent of the federal poverty threshold.² Most state programs also include medically needy provisions that grant Medicaid benefits to older adults with high out-of-pocket health care spending. Medicaid covered about 12 percent of all Medicare beneficiaries in 2005 (Federal Interagency Forum on Aging Related Statistics 2008), but many eligible older Americans fail to enroll in Medicaid perhaps because of the stigma associated with the receipt of means-tested benefits or because they are not fully informed about the program (Moon, Brennan, and Segal 1998).

Coverage Options at Younger Ages

The impact of health problems on spending patterns may be greater for midlife adults than for those old enough to qualify for Medicare. More than 7 in 10 (71 percent)

¹ Some employers offer retiree health benefits through Medicare Advantage plans. About 16 percent of Medicare Advantage enrollees in 2007 were in employer plans (Gold 2008).

² Authors' calculations from Kaiser Family Foundation (2004b).

of adults ages 55 to 64 received employer-sponsored coverage in 2004, either as workers or retirees (Johnson 2007). Many of those without employer coverage, however, are uninsured or underinsured. About 12 percent of Americans ages 55 to 64 were uninsured in 2006, and another 8 percent purchased private nongroup coverage (Johnson 2007). Those without insurance can face catastrophic health care costs if they become ill, although many turn to charity care when they develop serious health problems (Johnson and Crystal 2000).

Relatively few nongroup policies provide comprehensive benefits. Because of the high cost of comprehensive coverage, many who purchase nongroup policies opt for plans that offer only limited coverage, with high deductibles, high cost-sharing requirements, and limited benefits. Policyholders with health problems sometimes opt for plans that exclude their pre-existing conditions to keep premiums down. Moreover, insurers are often reluctant to offer low-deductible comprehensive coverage because these policies generally attract people with health problems who use many services. This adverse selection problem drives up premiums and discourages all but the most heavy users of health services from purchasing coverage, causing the market for these policies to break down. Consequently, many near elderly persons with nongroup coverage may be underinsured, leaving them vulnerable to high out-of-pocket costs if they become seriously ill. Even when near elderly Americans are able to afford the high cost of private nongroup coverage, they may be denied coverage by insurers.

How people respond to the onset of health problems and associated medical expenses likely depends on a number of factors, including age, financial status, insurance coverage, employment status, marital status, family networks, and the nature of the medical condition. Debilitating health problems that strike before retirement may force some people to drop out of the labor market prematurely, with serious repercussions on financial resources and spending. Health problems that strike at relatively young ages but are not disabling may induce others to delay retirement and remain at work until older ages, so that they can maintain their previous levels of consumption of non-health-related goods and services. In some families, the onset of serious health problems may lead the spouse to increase labor supply to maintain the couple's standards of living (Johnson and Favreault 2001). The ability to increase labor supply to offset the financial impact of

rising medical costs diminishes with age, and those who become ill very late in life have little choice but to rely on insurance, savings, or current income to meet consumption needs. People with substantial incomes or assets may be able to cover their medical bills without reducing other spending, and those with comprehensive insurance coverage may not experience sharp increases in health care costs when they become ill. However, people of modest means without comprehensive insurance may be forced to cutback non-medical spending when they develop serious health problems, or turn to family and friends (or the bankruptcy courts) for financial assistance.

Recent studies suggest that health care costs are quite burdensome for many older Americans, but the evidence is not conclusive. Research based on the Medicare Current Beneficiary Survey (MCBS) finds that older adults on average devote about one-fifth of their incomes to health care (Crystal et al. 2000; Federal Interagency Forum on Aging Related Statistics 2008; Gross et al. 1999; Maxwell, Moon, and Segal 2001). The share rises to about one-third for Medicare beneficiaries with limited incomes. However, the MCBS may overstate the financial burden of health care costs at older ages because survey respondents appear to understate their incomes (Goldman and Smith 2001). Estimates based on early 2000s data from the Medical Expenditure Panel Survey (MEPS) and the Health and Retirement Study (HRS) indicate that only about 12 percent of income went to health care spending for noninstitutionalized adults ages 65 and older (Federal Interagency Forum on Aging Related Statistics 2008; Johnson 2006). Nonetheless, 16 percent of adults ages 65 and older in the 2002 HRS devoted more than one-third of their household income to health care spending for themselves or their spouses (Johnson 2006). One limitation of these studies is that they do not account for the role that savings and extended family can play in cushioning the impact of high medical bills on economic well-being. Burdensome health care costs cannot persist indefinitely without affecting spending on other goods and services, but many families may be able to dip into their savings to maintain their living standards during relatively brief spells of expensive medical bills, or they may receive help from relatives.

3. Methods

This study examines how the presence of particular medical conditions affects out-of-pocket health care spending and other types of household expenditures at older ages. We observe each household's annual spending on a wide range of goods and services up to three times (in 2001, 2003, and 2005), and estimate random effects models of expenditure types as functions of medical conditions, income, wealth, insurance status, and demographic characteristics.

We examine several expenditure measures. In the health spending models, we consider two alternative dependent variables. In one specification, the dependent variable is the natural logarithm of total out-of-pocket health care costs (including spending on health insurance premiums, prescription drugs, health services, and medical supplies), and in the other it is the natural logarithm of out-of-pocket payments to providers. The second measure excludes health insurance premiums because they do not vary much with health status for most older people. Employers can not charge retirees with health problems higher contributions than retirees without health problems, and Medigap premiums are not permitted to vary by the health status of the policyholder (except for people who delay purchasing Medigap after they qualify for Medicare).³ To measure effects of health problems on nonhealth spending, we first model the natural logarithm of total expenditures excluding all health care costs, and then the natural logarithm of total expenditures excluding all health care and housing costs, because it is unlikely that many people can reduce their housing costs in the short term to offset rising health costs. We use the natural logarithm of expenditures instead of the level to reduce skewness in the dependent variables.

We estimate the models at the household level and stratify the sample by marital status and age. Economies of scale in household production generate different spending patterns for unmarried adults and married couples. We also estimate separate models for households that include an adult age 65 or older and for those that include an adult younger than 65, because virtually every household in the older group has some Medicare coverage and some younger households may be uninsured. In addition, a much larger

³ Older people in good health who do not expect to use many health services may choose to forego supplemental coverage, however, eliminating their premium payments.

share of the younger group than the older group works for pay. Both insurance coverage and employment status are likely to affect the impact of health problems on household expenditures.

The key predictors in our models are indicators of chronic conditions. One set of measures indicate whether the respondent and spouse (or just the respondent if unmarried) have ever been told by a doctor that they have any of the following medical conditions: diabetes, high blood pressure, arthritis, heart problems, serious lung problems, psychiatric problems, cancer, and stroke. The other set of measures are dummy variables indicating the number of these conditions for the respondent and spouse combined (or just the respondent if unmarried). We create dummy variables for one, two, and three or more conditions. We hypothesize that older adults with more medical conditions will spend more on health care than healthy older adults, and that they will spend less on other types of consumption. Because housing costs tend to be fixed in the short run, we expect that the impact of health problems may be greatest on non-housing spending. Alternatively, if most of the older population is well insured or has access to substantial savings or other financial resources, health problems may have little effect on consumption.

Other predictors in the models include the natural log of household income, the natural log of household wealth, and indicators for age, race, education, family size, urban/rural residence, and health insurance coverage. The models for married adults also include the spouse's education and age.

Health and Retirement Study

Our data come from the Health and Retirement Study (HRS), a longitudinal survey of older Americans conducted by the Survey Research Center at the University of Michigan for the National Institute on Aging. Since 1992, HRS has been following several cohorts of older respondents and their spouses. In 2000, the survey interviewed a large, nationally representative sample of Americans age 53 or older and their spouses, and re-interviewed them in 2002, 2004, and 2006. The HRS introduced a new cohort of respondents ages 51 to 56 in 2004 (born between 1948 and 1953) and their spouses, and reinterviewed them in 2006. The survey collects detailed information on a wide range of topics, including income, assets, health status, health insurance, and demographics.

HRS administered a supplemental mail survey on household expenditures to a subset of respondents in 2001, 2003, and 2005. This survey, the Consumption and Activities Mail Survey (CAMS), asked respondents to report household expenditures over the past 12 months on 32 different groups of goods and services designed to capture all household spending. With regard to health care costs, respondents reported premium payments for health insurance (including Medicare premiums), out-of-pocket spending on prescription and nonprescription medications, out-of-pocket spending on health services (including hospital care, doctor visits, lab tests, and eye, dental, and nursing home care), and out-of-pocket spending on medical supplies. With regard to housing, respondents reported payments for mortgages, rent, homeowners' and renters' insurance, electricity, water, heating fuel, home repair and maintenance, housekeeping and yard supplies, and telephone, cable, and Internet access. Data was collected for 3,866 households in 2001, 3,254 households in 2003, and 3,880 households in 2005. In combination with the information collected from the core HRS questionnaires, CAMS provides an unusually rich source of data on health status and expenditure patterns.

We examine four separate household samples, stratified by age and marital status. They consist of 2,931 observations on married households with a spouse under age 65, 1,362 observations on single households under age 65, 2,420 observations on married households with a spouse age 65 or older, and 1,975 observations on single households age 65 or older. The married household sample includes households in which either spouse falls within the specified age range. Thus, some households in the older group will include spouses younger than 65 (and thus not eligible for Medicare), whereas some in the younger group will include spouses older than 65. In fact, the same household may appear in both age groups. Except for the expenditure measures, all variables come from the core survey of the HRS. The income measures, which refer to the year preceding the HRS survey year, and the health measures come from the HRS survey following the CAMS survey.⁴ All other variables come from the wave preceding the CAMS survey. Household wealth includes only financial assets. All financial measures, including

⁴ For 2001 expenditures, for example, expenditure data come from the 2001 CAMS, income and health data come from the 2002 HRS core survey, and all other data come from the 2000 HRS core survey.

household expenditures, are expressed in per-capita terms and in constant 2007 dollars, adjusted by the change in consumer price index for all items.

4. Results

Table 1 shows the demographic, health, and economic characteristics of our four samples. The average age of CAMS respondents in our under-age-65 samples is about 60 and the average age in the 65+ samples is about 72 for married respondents and 77 for unmarried respondents. Unmarried households are less educated, more likely to be black or Hispanic, and less likely to have employer-provided health insurance than married households. They also tend to have lower incomes and fewer financial assets. Households ages 65 and older are less educated, more likely to be non-Hispanic white, more likely to have health insurance, and are more likely to have medical conditions than households under age 65.

Nearly all of the households in our samples have at least one adult with some kind of health insurance. About 10 percent of unmarried households under age 65 lack health insurance, compared with less than 2 percent of married households in the same age group. Nearly all households ages 65 and older have insurance, because nearly all qualify for Medicare. Additionally, more than 30 percent of households under age 65 have Medicare or Medicaid, because many include a spouse age 65 or older who qualifies for Medicare. Although few households have no health insurance, many lack employer-provided health insurance, which is often more generous than nongroup or public insurance. About 44 percent of unmarried households under age 65 and about one-fifth of married households in the same age group lack employer-provided health insurance. Among those 65 and older, about half of married households and about 7 in 10 unmarried households lack employer-provided health insurance, available to either workers or retirees.

The presence of chronic health conditions is quite common among households in our samples. More than 6 in 10 married households under age 65 and three-quarters of those age 65 or older have three or more medical conditions. Unmarried respondents report fewer total chronic conditions in the household, but only because they include only one adult. (The analysis does not consider spending or chronic conditions for adults

sharing households with the respondents unless they are married or partnered.) About 4 in 10 unmarried households report three or more medical conditions, with slightly more for those age 65 or older and slightly less for younger households. High blood pressure and arthritis are the most common medical conditions, afflicting more than 70 percent of married households and more than half of unmarried households. Less than 6 percent of married and 16 percent of unmarried households under age 65 have no medical conditions. Only 2 percent of married and 7 percent of unmarried households ages 65 and older report no medical conditions.

Table 2 shows mean and median annual per capita household health expenditures by marital status and age. On average households under age 65 spend between about \$2,200 and \$2,500 on health expenses, about 9 to 10 percent of their total spending. Households ages 65 and over spend more out of pocket on health care than households under age 65 in both absolute and relative terms. On average married households ages 65 and older spend nearly \$3,000 on health (12 percent of total spending), and unmarried households in the same age range spend about \$3,500 (14 percent of total spending). Excluding insurance premiums, average health spending ranges from \$1,400 to \$2,200 per capita across our four samples. Total spending excluding health and housing expenses—the measure potentially most sensitive to health spending—ranges from about \$10,700 to \$13,400 per capita. The health spending distribution is skewed towards high spenders, with mean values exceeding median values by substantial margins in all spending categories.

Table 3 reports median annual per capita health spending by the presence of medical conditions. Not surprisingly, health care spending increases with the number of medical conditions. For example, married households ages 65 and older without medical conditions spend about \$1,050, while those with one or two medical conditions spend about \$1,850 and those with three or more conditions spend about \$2,200. The pattern is less consistent when comparing spending by the presence of particular conditions. Health spending is higher for households with heart problems, cancer, psychiatric problems, and high blood pressure than for households without these conditions, but sometimes lower for households with diabetes, stroke, lung problems, and arthritis. These comparisons are complicated by correlations between medical conditions and

demographics and income. For example, among unmarried households under age 65, mean per capita income is about \$12,000 lower for households with diabetes than those without and almost \$40,000 lower for households with three or more medical conditions than for households without medical conditions (not shown).

Tables 4 and 5 examine the impact of the number of medical conditions on health and non-health spending, controlling for demographics, health insurance status, income, and wealth. The tables show coefficients from random effects models of the natural logarithm of per capita health expenditures, health expenditures excluding premiums, total expenditures excluding health, and total expenditures excluding health and housing. Per capita spending of all types increases with education and wealth and decreases with household size. Somewhat counter intuitively, households without health insurance spend less on health care than households with employer provided health insurance. For example, among married households under age 65, the lack of health insurance reduces health spending by about one-half. Better access to health care may increase utilization of health services and therefore boost health spending. Exploratory analysis with interaction terms suggests employer health insurance may increase health spending overall, but may reduce health spending for households with chronic conditions. Public health insurance coverage also significantly reduces health spending for households under age 65.

Our models show that medical conditions substantially increase health spending. The presence of one medical condition increases total health expenditures by 50 to 59 percent and increases health expenditures excluding premiums by 77 to 108 percent. The presence of three or more conditions increases health expenditures by 70 to 115 percent and health expenditures excluding premiums by 129 to 163 percent. However, these models provide no evidence that increased spending crowds out non-health consumption. The presence of medical conditions never have a negative and significant impact on expenditures excluding health or expenditures excluding health and housing.

Table 6 explores which particular medical conditions increase health spending. The table shows coefficients from models of log per capita health expenditures including specific medical conditions as regressors. High blood pressure is the only condition that increases health spending in all four samples. Among households under age 65, high

blood pressure increases health expenditures excluding premiums by about 40 percent. Prescription drug costs may make high blood pressure a costly chronic condition. Other particular conditions increase health spending for subsets of our samples. Heart problems increase health spending excluding premiums for married households ages 65 and older by 17 percent and for unmarried households ages 65 and older by 35 percent. Diabetes increases health spending excluding premiums by 73 percent for unmarried households under age 65 and by 25 percent for married households ages 65 and older. Among married households psychiatric problems increase health spending excluding premiums by 21 percent for households under age 65 and 30 percent for households ages 65 and older.

5. Conclusions

Although the presence of chronic health conditions appears to lead older households to increase their out-of-pocket health care spending, our preliminary findings provide no evidence that it crowds out other types of household spending. After other factors are controlled for, unmarried adults in their 50s and early 60s with one chronic condition spend 59 percent more out of pocket on health care than those with no chronic conditions. Those with three or more chronic conditions spend 115 percent more than those with no conditions. Similar patterns hold for those ages 65 and older and for married households. Yet, the presence of chronic conditions does not reduce household spending on goods and services unrelated to health care, even when the models exclude housing spending, which is often difficult to control in the short term. What makes these results particularly striking is that one might have expected older people with multiple chronic conditions to devote less money to nonhealth expenditures because they are too frail to engage in activities associated with many types of spending, even if they could afford to spend more.

These results do not necessarily imply that chronic conditions and the out-of-pocket health spending they generate do not create financial burdens for older Americans. Many older people may deplete their savings or go into debt to finance their health care while maintaining other types of spending. Or they may rely on family members to pay their medical bills. Or they may forego necessary medical care. Moreover, measurement

error in the spending data may obscure the true impact of chronic conditions on household spending (although the annual out-of-pocket health care expenditure estimates in the HRS/CAMS are generally consistent with those from the Consumer Expenditure Survey and the Medical Expenditure Panel Survey, according to our preliminary comparisons). Nonetheless, if our preliminary estimates hold up, they suggest that out-of-pocket health spending associated with chronic medical conditions does not significantly reduce economic well-being for older Americans, and suggest that the current system of private and public insurance protects most older people.

Our next steps will be to further refine our analysis to confirm our preliminary findings. For example, we will interact chronic conditions with insurance status and income to see whether low-income, underinsured adults cut back their spending when they become ill. And we will devote more attention to the impact of medical conditions on the full distribution of health care and other types of household spending.

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Table 1. Sample Characteristics

	Under Age 65		Age 65 or Older	
	Married Households	Unmarried Households	Married Households	Unmarried Households
	Mean			
Age	60.7	59.8	71.6	76.5
Family Size	2.5	1.6	2.2	1.4
	Share with Characteristic (%)			
Education				
Less Than High School	12.0	18.9	18.1	25.2
High School	35.3	39.3	37.8	37.8
Some College or More	52.8	41.8	44.1	37.0
Race				
White, Other	90.5	77.4	93.4	88.8
Black	4.4	15.1	3.5	7.3
Hispanic	5.1	7.5	3.2	4.0
Rural/Urban				
Rural	32.5	28.6	31.3	30.7
Urban	42.2	43.7	43.2	43.5
Suburban	25.3	27.6	25.4	25.8
Household Health Insurance				
Employer	79.4	56.8	52.1	28.9
Nongroup	20.0	14.7	35.7	37.2
Champus/VA	6.9	3.9	7.2	3.0
Medicaid/Medicare	39.6	30.6	97.4	97.9
None	1.7	9.9	0.1	0.6
Household Medical Conditions				
Heart Problems	32.9	18.7	48.2	32.8
Cancer	20.0	15.4	33.6	18.4
Diabetes	25.4	16.0	28.5	15.2
Stroke	7.0	4.8	12.1	8.5
Lung	14.3	18.4	18.9	12.2
Psych Problems	23.5	24.9	17.8	14.4
Arthritis	74.1	64.0	85.8	73.5
High Blood Pressure	71.4	52.2	76.3	61.3
Number of Conditions				
None	5.5	15.5	2.0	6.6
One	12.8	22.9	7.5	21.9
Two	20.2	23.9	15.4	28.8
Three or more	61.5	37.7	75.1	42.7
	Median (2007 Dollars)			
Per Capita Income	\$33,110	\$26,503	\$21,900	\$18,858
Per Capita Financial Assets	\$13,718	\$3,612	\$26,503	\$20,742
N	2,966	1,363	2,439	1,977

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys. Age, education, and race refer to the CAMS respondent. The health insurance and medical condition measures indicate whether the CAMS respondent or spouse has insurance or condition.

Table 2. Per Capita Household Expenditures (2007 Dollars)

	Married Households				Unmarried Households			
	All Health	Health Excl. Premiums	Total Excl. Health	Total Excl. Health & Housing	All Health	Health Excl. Premiums	Total Excl. Health	Total Excl. Health & Housing
Under Age 65								
Mean	2,475	1,386	23,012	13,435	2,244	1,388	22,753	11,790
Median	1,551	702	17,433	9,749	1,101	543	17,206	8,475
Age 65 or Older								
Mean	2,918	1,657	21,413	13,092	3,462	2,170	20,573	10,723
Median	2,107	878	14,867	8,537	2,005	849	14,314	6,671

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys.

Table 3. Median Per Capita Household Health Expenditures by Presence of Medical Conditions (2007 Dollars)

	Under Age 65				Age 65 or Older			
	Married		Unmarried		Married		Unmarried	
	All Health Excl.	Premiums						
All	\$1,551	\$702	\$1,101	\$543	\$2,107	\$878	\$2,005	\$849
Heart Problems								
No	\$1,465	\$632	\$1,030	\$501	\$1,953	\$752	\$1,830	\$743
Yes	\$1,690	\$817	\$1,555	\$637	\$2,303	\$1,041	\$2,547	\$1,115
Cancer								
No	\$1,487	\$676	\$1,030	\$503	\$1,990	\$849	\$1,943	\$798
Yes	\$1,701	\$761	\$1,769	\$690	\$2,303	\$920	\$2,165	\$955
Diabetes								
No	\$1,577	\$676	\$1,124	\$533	\$2,142	\$843	\$1,988	\$819
Yes	\$1,516	\$768	\$840	\$637	\$1,999	\$980	\$2,038	\$977
Stroke								
No	\$1,571	\$702	\$1,101	\$546	\$2,075	\$876	\$1,988	\$849
Yes	\$1,380	\$584	\$946	\$543	\$2,319	\$1,014	\$1,888	\$777
Lung								
No	\$1,550	\$679	\$1,124	\$506	\$2,107	\$849	\$2,028	\$856
Yes	\$1,528	\$796	\$1,019	\$605	\$2,130	\$984	\$1,821	\$740
Psych Problems								
No	\$1,518	\$644	\$1,107	\$538	\$2,054	\$849	\$2,038	\$833
Yes	\$1,656	\$819	\$1,019	\$570	\$2,377	\$1,014	\$1,727	\$913
Arthritis								
No	\$1,324	\$601	\$936	\$393	\$1,821	\$744	\$2,079	\$755
Yes	\$1,592	\$732	\$1,189	\$637	\$2,146	\$898	\$1,981	\$884
High Blood Pressure								
No	\$1,296	\$562	\$1,006	\$419	\$1,964	\$744	\$1,807	\$648
Yes	\$1,604	\$749	\$1,159	\$620	\$2,129	\$913	\$2,187	\$955
No. of Medical Conditions								
None	\$1,014	\$293	\$726	\$297	\$1,058	\$451	\$1,250	\$309
One	\$1,405	\$601	\$1,037	\$421	\$1,827	\$695	\$1,873	\$655
Two	\$1,434	\$637	\$1,070	\$637	\$1,848	\$706	\$2,184	\$917
Three +	\$1,614	\$768	\$1,288	\$690	\$2,208	\$966	\$2,130	\$982

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys.

Table 4. Coefficients from Random Effects Models of Per Capita Log Expenditures among Households under Age 65

	Married				Unmarried			
	All Health Expenditures	Health Exp. Excluding Premiums	Total Expenditures Excl. Health	Total Expend. Excl. Health & Housing	All Health Expenditures	Health Exp. Excluding Premiums	Total Expenditures Excl. Health	Total Expend. Excl. Health & Housing
Age								
Respondent Age	0.02 ***	0.02 ***	-0.002	0.00	0.05 ***	0.04 ***	0.01	-0.01
Spouse Age	0.01	0.02 **	0.003	0.00				
Respondent Education								
< HS	-0.48 ***	-0.63 ***	-0.16 ***	-0.22 ***	-0.82 ***	-0.84 ***	-0.24 ***	-0.48 ***
College	0.30 ***	0.30 ***	0.22 ***	0.18 ***	0.17	0.10	0.15 *	0.13
Spouse Education								
< HS	-0.16	-0.02	-0.22 ***	-0.26 ***				
College	-0.02	0.20 *	0.14 ***	0.13 ***				
Race								
Black	-0.20	0.00	-0.17 ***	-0.25 ***	-0.27	-0.22	-0.11	-0.25 **
Hispanic	-0.37 **	-0.18	-0.13 *	-0.19 **	-0.48	-0.49	0.03	-0.24
Family Size	-0.29 ***	-0.24 ***	-0.24 ***	-0.25 ***	-0.26 ***	-0.26 ***	-0.39 ***	-0.38 ***
Married	-0.30	-0.85	-0.28	0.00	0.45	0.78 ***	-0.04	0.08
Rural/Urban								
Rural	0.20 **	0.13	-0.12 ***	-0.07	0.02	0.05	-0.24 ***	-0.19 *
Urban	-0.05	-0.14	0.11 ***	0.07	-0.36 **	-0.19	0.01	-0.04
Health Insurance								
Nongroup	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
Public	-0.24 ***	-0.31 ***	-0.14 ***	-0.13 ***	-0.93 ***	-0.89 ***	-0.21 ***	-0.19 ***
None	-1.07 ***	-0.65 ***	-0.27 ***	-0.21 **	-0.91 ***	-0.70 ***	-0.17 **	-0.25 ***
Log Income	0.03	0.04	0.10 ***	0.11 ***	0.07	0.06	0.08 ***	0.10 ***
Log Assets	0.04 ***	0.03 ***	0.01 ***	0.02 ***	0.07 ***	0.05 ***	0.01 **	0.01 **
No. of Medical Conditions								
One	0.53 ***	0.86 ***	0.06	0.09	0.59 ***	0.78 ***	0.03	0.01
Two	0.64 ***	1.04 ***	0.12 *	0.16 *	0.75 ***	1.33 ***	-0.05	-0.07
Three or more	0.75 ***	1.29 ***	0.09	0.12	1.15 ***	1.51 ***	-0.06	-0.14
Intercept	4.84 ***	3.70 ***	9.26 ***	8.38 ***	2.72 ***	2.05 *	9.00 ***	9.27 ***
Wald Chi2	413	61	957	876	98	174	480	366
R2 Within	0.03	0.002	0.05	0.03	0.01	0.02	0.17	0.09
R2 Between	0.26	0.05	0.46	0.46	0.16	0.25	0.37	0.35
R2 Overall	0.19	0.02	0.34	0.32	0.08	0.18	0.37	0.33
No. of Observations	2,931	2,931	2,931	2,931	1362.00	1,362	1,362	1,362
No. of Households	1,032	1,032	1,032	1,032	504.00	504	504	504

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys. The unit of observation is the person-year.

* p < .10; ** p < .05; *** p < .01

Table 5. Coefficients from Random Effects Models of Per Capita Log Expenditures among Households Age 65 or Older

	Married				Unmarried			
	All Health Expenditures	Health Exp. Excluding Premiums	Total Expenditures Excl. Health	Total Expend. Excl. Health & Housing	All Health Expenditures	Health Exp. Excluding Premiums	Total Expenditures Excl. Health	Total Expend. Excl. Health & Housing
Age								
Respondent Age	0.01	0.01 **	-0.007 ***	-0.01 ***	0.00	0.01	-0.02 ***	-0.04 ***
Spouse Age	0.00	0.01	-0.005 *	-0.01 *				
Respondent Education								
< HS	-0.05	-0.09	-0.077 *	-0.12 **	-0.37 ***	-0.33 *	-0.07	-0.17
College	0.24 ***	0.25 ***	0.230 ***	0.26 ***	0.18	0.35 **	0.19 ***	0.28 **
Spouse Education								
< HS	-0.10	-0.21 *	-0.241 ***	-0.27 ***				
College	0.09	0.12	0.079 **	0.06				
Race								
Black	-0.59 ***	-0.39 **	0.027	-0.17 *	-0.28	-0.23	0.09	-0.20
Hispanic	-0.94 ***	-0.52 **	-0.086	-0.34 ***	-1.34 ***	-1.55 ***	-0.17	-0.38
Family Size								
Family Size	-0.31 ***	-0.28 ***	-0.251 ***	-0.26 ***	-0.37 ***	-0.37 ***	-0.37 ***	-0.32 ***
Married								
Married	0.08	-0.36	0.234	0.47 *	-0.61 *	-0.51	0.10	-0.18
Rural/Urban								
Rural	0.12	0.06	-0.127 ***	-0.10 **	0.00	-0.21	-0.15 **	-0.05
Urban	0.01	0.04	0.023	0.00	-0.18	-0.21	-0.10 *	-0.27 **
Health Insurance								
Nongroup	0.00	0.00	0.001	0.00 **	0.01 ***	0.02 ***	0.00	0.00
Public	-0.28	-0.66 ***	-0.180 **	-0.07	0.49	0.35	0.14	0.10
Log Income								
Log Income	0.05	0.05	0.204 ***	0.20 ***	0.16 ***	0.21 ***	0.26 ***	0.26 ***
Log Assets								
Log Assets	0.04 ***	0.03 ***	0.018 ***	0.03 ***	0.06 ***	0.04 ***	0.03 ***	0.06 ***
No. of Medical Conditions								
One	0.57 **	0.77 ***	0.188	0.23	0.50 ***	1.08 ***	-0.02	-0.10
Two	0.54 **	0.91 ***	0.131	0.19	0.75 ***	1.60 ***	-0.09	-0.12
Three or more	0.71 ***	1.25 ***	0.147	0.25 *	0.72 ***	1.63 ***	-0.15	-0.33
Intercept								
Intercept	5.58 ***	4.43 ***	8.545 ***	8.08 ***	4.67 ***	1.71	8.67 ***	9.26 ***
Wald Chi2								
Wald Chi2	290	216	926	748	239	236	563	207
R2 Within								
R2 Within	0.01	0.02	0.05	0.02	0.01	0.02	0.03	0.01
R2 Between								
R2 Between	0.24	0.18	0.50	0.47	0.23	0.22	0.41	0.20
R2 Overall								
R2 Overall	0.17	0.12	0.36	0.33	0.17	0.16	0.29	0.13
No. of Observations								
No. of Observations	2,420	2,420	2,420	2,420	1,975	1,975	1,975	1,975
No. of Households								
No. of Households	866	866	866	866	761	761	761	761

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys. The unit of observation is the person-year.

* p < .10; ** p < .05; *** p < .01

Table 6. Coefficients from Random Effects Models of Per Capita Log Health Expenditures

	Under Age 65				Age 65 or Older			
	Married		Unmarried		Married		Unmarried	
	All Health Expenditures	Health Exp. Excluding Premiums	All Health Expenditures	Health Exp. Excluding Premiums	All Health Expenditures	Health Exp. Excluding Premiums	All Health Expenditures	Health Exp. Excluding Premiums
Age								
Respondent Age	0.03 ***	0.02 ***	0.05 ***	0.05 ***	0.01	0.01 *	0.00	0.01
Spouse Age	0.01	0.02 **			0.00	0.01		
Respondent Education								
< HS	-0.48 ***	-0.65 ***	-0.81 ***	-0.87 ***	-0.07	-0.12	-0.41 ***	-0.36 **
College	0.30 ***	0.31 ***	0.21	0.13	0.26 ***	0.29 ***	0.16	0.34 **
Spouse Education								
< HS	-0.14	-0.05			-0.11	-0.22 *		
College	-0.02	0.19 *			0.09	0.13		
Race								
Black	-0.23	-0.02	-0.25	-0.24	-0.63 ***	-0.44 **	-0.28	-0.25
Hispanic	-0.43 ***	-0.19	-0.53	-0.53	-0.96 ***	-0.52 **	-1.30 ***	-1.53 ***
Family Size	-0.29 ***	-0.24 ***	-0.27 ***	-0.27 ***	-0.32 ***	-0.29 ***	-0.38 ***	-0.37 ***
Married	-0.37	-0.87	0.54	0.81 ***	0.12	-0.27	-0.71 *	-0.57
Rural/Urban								
Rural	0.23 ***	0.17	0.06	0.09	0.13	0.07	0.01	-0.20
Urban	-0.04	-0.12	-0.33 *	-0.16	0.01	0.03	-0.20 *	-0.23
Health Insurance								
Nongroup	0.00	0.00	0.00	0.00	0.00	0.00	0.01 ***	0.02 ***
Public	-0.25 ***	-0.33 ***	-0.95 ***	-0.92 ***	-0.29	-0.66 ***	0.45	0.27
None	-1.07 ***	-0.69 ***	-0.93 ***	-0.73 ***				
Log Income	0.04	0.05	0.07	0.07	0.05	0.06	0.16 ***	0.22 ***
Log Assets	0.05 ***	0.03 ***	0.07 ***	0.05 ***	0.04 ***	0.04 ***	0.05 ***	0.03 **
Medical Condition								
Heart Problems	0.04	0.13	0.17	0.04	0.09	0.17 **	0.21 *	0.35 ***
Cancer	0.03	0.05	0.31	0.28	0.06	0.01	0.17	0.23
Diabetes	0.10	0.12	0.57 ***	0.73 ***	0.10	0.25 ***	0.07	0.12
Stroke	0.04	0.21	-0.19	-0.27	0.14	0.26 **	0.05	-0.07
Lung Problems	-0.11	0.08	0.18	0.26	-0.08	0.00	0.14	0.25
Psych Problems	0.15 *	0.21 **	0.18	0.22	0.20 **	0.30 ***	-0.16	0.04
Arthritis	0.06	0.13	0.08	0.33 *	0.12	0.18	-0.03	0.16
High Blood Pressure	0.24 ***	0.38 ***	0.27 *	0.44 ***	0.09	0.18 *	0.19 *	0.56 ***
Intercept	5.08 ***	4.03 ***	2.78 ***	2.11 *	6.08 ***	5.03 ***	5.25 ***	2.44 **
Wald Chi2	404.96	268.71	202.17	172.15	285.11	220.23	233.92	221.91
R2 Within	0.03	0.00	0.01	0.02	0.01	0.01	0.02	0.02
R2 Between	0.26	0.06	0.30	0.26	0.24	0.19	0.23	0.21
R2 Overall	0.19	0.03	0.22	0.18	0.18	0.13	0.16	0.15
No. of Observations	2,884	2,884	1,345	1,345	2,352.00	2,352	1,938	1,938
No. of Households	1,029	1,029	501	501	861.00	861	757	757

Source: Authors' estimates from Health and Retirement Study and Consumption Activities Mail Survey (CAMS).

Notes: Estimates are based on a pooled sample of CAMS respondents (one per household) from the 2001, 2003, and 2005 surveys. The unit of observation is the person-year.

* p < .10; ** p < .05; *** p < .01