

TRENDS

How Much ‘Skin In The Game’ Do Medicare Beneficiaries Have? The Increasing Financial Burden Of Health Care Spending, 1997–2003

Medicare beneficiaries’ financial exposure increased during the study period, placing their financial and health security at greater risk.

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ABSTRACT: Rising health costs and an aging population present critical policy challenges. This paper examines the financial burden of out-of-pocket health spending among Medicare beneficiaries between 1997 and 2003. Over this period, median out-of-pocket spending as a share of income increased from 11.9 percent to 15.5 percent. In 2003, the 25 percent of beneficiaries with the largest burden spent at least 29.9 percent of their income on health care, while 39.9 percent spent more than a fifth of their income on health care. Results suggest that sustained increases in out-of-pocket spending could make health care less affordable for all but the highest-income beneficiaries. [*Health Affairs* 26, no. 6 (2007): 1692–1701; 10.1377/hlthaff.26.6.1692]

HEALTH SPENDING IN the United States continues to rise at a faster rate than income and earnings, affecting workers and their families, as well as the forty-four million elderly and disabled people on Medicare.¹ Between 1980 and 2004, aggregate per capita Medicare spending grew at an average annual rate of 7.5 percent, while seniors’ median income grew 4.6 percent, and the average annual Social Security cost-of-living adjustment was about 3 percent.² How beneficiaries are affected by these changes is largely determined by their medical needs, the cost of the services and supplies they use, and the generosity of their insurance coverage

over time.

Previously published studies indicate that Medicare beneficiaries experienced greater increases in out-of-pocket health spending relative to income over time and that a larger share of seniors than younger adults had relatively high out-of-pocket spending.³ In addition, Medicare Part B premiums have doubled since 2000, while supplemental insurance coverage, such as employer-sponsored retiree coverage, has become more expensive and less generous.⁴ Although Medicare Part D coverage may reduce beneficiaries’ out-of-pocket drug spending, all but very low-income enrollees may face premiums, deductibles, copayments,

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and costs in the so-called doughnut hole. These trends converge as policymakers contemplate changes in Medicare and other entitlement programs that could impose additional costs on beneficiaries.

This paper uses recent data from the Medicare Current Beneficiary Survey (MCBS) to examine the burden of out-of-pocket health spending among Medicare beneficiaries, as measured by the ratio of annual out-of-pocket spending on health services and insurance premiums to annual income, at a point in time (2003) and over the years 1997–2003. We examine changes in income, out-of-pocket spending, and the components of both total and out-of-pocket spending from 1997 to 2003. In addition, we compare the spending burden faced by Medicare beneficiaries to that of nonelderly adults, using recently published results from a separate analysis.⁵ Our analysis provides some context for understanding Medicare's role in providing health and retirement security and assessing implications of policies that would shift additional costs to beneficiaries. It also provides a baseline for measuring future changes in beneficiaries' out-of-pocket health spending burden.

Study Data And Methods

■ **Data.** We analyzed data from the MCBS Cost and Use file for 1997–2003.⁶ The MCBS is a nationally representative survey of approximately 12,000 Medicare beneficiaries, including those living in long-term care facilities.⁷ It merges information reported by beneficiaries with Medicare administrative data, providing information on health service spending and use and on beneficiary demographics. Our analysis includes Medicare beneficiaries of all ages (including the under-age-sixty-five disabled) and those residing in long-term care settings. Other studies of financial burden typically focus on community-dwelling seniors, primarily at a single point in time.⁸

Out-of-pocket health spending is defined to include all personal spending for medical and long-term care services, including premiums for Medicare and supplemental insurance. The survey captures out-of-pocket spending for

individual respondents rather than all household members, which precludes analysis of spending at the household level or by married couples. Income includes all sources, such as pension, Social Security, and retirement benefits, reported on a pretax basis, for the individual and spouse, where applicable.⁹ Because out-of-pocket spending is reported at the individual level, while income is reported for the individual and spouse, we divided income for married respondents in half to analyze the ratio of spending to income at the individual level.¹⁰

■ **Computing out-of-pocket spending as a percentage of income.** To measure the financial burden of health spending, we computed for each individual a ratio of out-of-pocket spending to income, and we computed both the mean and median for the entire group.¹¹ The discussion focuses on median values as well as on seventy-fifth and ninetieth percentile values to present unbiased estimates of the spending burden among beneficiaries who have high out-of-pocket spending relative to income.

In addition, we estimated the share of Medicare beneficiaries who spent more than 20 percent of their income on health care, both overall and by poverty status, to facilitate a comparison of financial burden with the nonelderly adult population. Although some researchers have used a lower threshold of 10 percent (or 5 percent for lower-income people) to characterize the upper bound of “affordable” health care spending, we adopted the 20 percent threshold to examine the spending burden among people with exceptionally high out-of-pocket spending relative to income.¹²

Significance testing was performed by constructing 95 percent confidence intervals for the estimates in 1997 and 2003. Because of the complex survey design of the MCBS, we used the balanced repeated replication (BRR) method to derive standard errors used in computing the confidence intervals.¹³ All differences in the ratio of out-of-pocket spending to income discussed are statistically significant at the 0.05 level.

Study Results

■ **Income and out-of-pocket spending in 2003.** For both beneficiaries' income and out-of-pocket spending in 2003, the mean was greater than the median, influenced by those with relatively high levels of income or high out-of-pocket spending, or both (Exhibit 1).

Overall, in 2003, income was lower for women than for men, for black and Hispanic

beneficiaries than for whites, and for those in relatively poor health than for those in better health (Exhibit 1). Among seniors, income declined with age but was lower for younger beneficiaries with disabilities than for those age sixty-five and older. Beneficiaries with employer-sponsored and Medigap coverage had relatively high incomes, while those with no supplemental coverage (Medicare only) had

EXHIBIT 1 Number Of Medicare Beneficiaries, Income, And Out-of-Pocket Health Care Spending, Overall And By Subgroup, 2003

Subgroup	Beneficiaries		Income (\$)		Out-of-pocket health care spending (\$)	
	Number	Percent of total	Mean	Median	Mean	Median
Total	42,267,681	100	18,254	13,856	3,765	2,501
Age group (years)						
0-64 (disabled)	6,134,101	14.5	12,950	10,000	3,192	1,474
65-74	18,026,279	42.6	19,986	15,000	3,000	2,329
75-84	13,128,710	31.1	18,622	14,400	4,125	2,840
85+	4,978,591	11.8	17,719	13,040	6,286	3,285
Sex						
Male	18,615,388	44.0	19,443	14,500	3,459	2,322
Female	23,652,293	56.0	17,354	13,200	4,005	2,626
Living situation						
Lives alone	11,973,461	28.3	19,888	15,000	3,136	2,486
Lives with spouse	20,799,436	49.2	18,836	15,000	3,156	2,537
Other household type	7,140,422	16.9	14,973	11,220	2,720	1,866
Facility resident	2,202,103	5.2	14,873	10,536	16,239	8,971
Race/ethnicity						
White non-Hispanic	33,114,499	78.3	19,547	15,000	4,167	2,765
Black non-Hispanic	4,031,406	9.5	13,316	9,768	2,267	1,317
Hispanic	3,315,961	7.8	12,377	9,500	2,226	1,335
Other non-Hispanic	1,805,815	4.3	16,842	11,000	2,559	1,621
Insurance coverage						
Medicare HMO	5,538,725	13.1	17,190	13,920	3,192	2,061
Medicaid	5,483,732	13.0	8,164	7,224	1,754	346
Employer-sponsored	13,825,566	32.7	23,539	18,750	3,406	2,577
Self-purchased/Medigap	11,220,952	26.5	20,113	15,000	4,238	3,535
Other public coverage	902,601	2.1	11,357	10,056	3,180	1,792
No supplemental coverage	5,296,105	12.5	13,418	10,464	6,478	1,905
Percent of poverty						
<100%	7,941,793	18.9	5,627	6,060	2,976	1,160
100%-199%	14,171,625	33.6	11,167	10,800	3,652	2,485
200%-399%	13,410,415	31.8	20,206	19,458	4,064	2,785
400%+	6,597,721	15.7	44,894	38,000	4,349	3,058
Health status						
Excellent/very good	16,503,626	39.0	21,550	16,500	3,086	2,419
Good	13,158,830	31.1	18,014	13,767	3,707	2,556
Fair	8,397,874	19.9	14,544	11,500	4,427	2,527
Poor	3,967,236	9.4	13,334	10,200	5,233	2,589

SOURCE: Authors' analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file.

relatively low incomes, as did those on Medicaid, corresponding to program eligibility requirements.

Out-of-pocket health spending, like income, varied by beneficiary characteristic. Among seniors, out-of-pocket spending rose with age and with income, most likely reflecting the ability of higher-income people to pay more. Out-of-pocket spending was higher for women than for men and for those in poor health than for healthier people. Spending was much higher for beneficiaries living in long-term care facilities, in part reflecting the high cost of care in institutional settings. Beneficiaries with Medicaid coverage spent less out of pocket than those in other insurance groups, while those with Medigap coverage spent more out of pocket than those with employer coverage, most likely reflecting the higher premiums and less generous coverage typically associated with Medigap policies.

■ **Out-of-pocket spending as a share of income, 2003.** The median Medicare beneficiary spent 15.5 percent of his or her income on health care in 2003 (Exhibit 2).¹⁴ However, the top 25 percent of beneficiaries with the largest burden spent at least 29.9 percent of their income on health care, while the top 10 percent spent at least 58.4 percent of their income on health care.

Median out-of-pocket spending as a share of income increased with age and was highest among beneficiaries age eighty-five and older (22.2 percent). The financial burden of health care was higher for women than for men and for white than for black and Hispanic beneficiaries. Despite higher poverty rates, the relatively low financial burden of out-of-pocket health spending among black and Hispanic beneficiaries was most likely attributable to higher rates of Medicaid coverage among beneficiaries of color.¹⁵

The financial burden of health care spending in 2003 was greater for beneficiaries with low incomes than for those at higher income levels. That year, the median beneficiary with income below 200 percent of poverty (\$17,960 single and \$24,240 couple) spent about 22 percent of income on health care, while those at

400 percent of poverty or more spent less than 8 percent of their income on health care. Beneficiaries in relatively poor health paid a larger share of income for health care than those in excellent or very good health, and those at the ninetieth percentile in poor health spent nearly all of their income on health care (Exhibit 2).

Beneficiaries living in long-term care facilities had relatively high spending as a share of income. At the median, they spent virtually all of their income on health care; at the ninetieth percentile, facility residents spent almost three times as much as their annual income to pay for their health and long-term care needs. This is a startling result but highly plausible considering the high cost of institutional long-term care; the requirement that residents in certain types of facilities spend their income and assets before qualifying for Medicaid's assistance; and the fact that some residents pay the full cost themselves, without support from Medicaid or private insurance. Almost one-quarter (23 percent) of the 2.2 million Medicare beneficiaries residing in long-term care facilities in 2003 were on Medicaid.¹⁶

Beneficiaries eligible for both Medicare and Medicaid spent a smaller share of income on health care at the median (4.6 percent) than those in all other insurance groups, despite the fact that dual eligibles tend to be sicker and use more services than other beneficiaries.¹⁷ This finding confirms Medicaid's important role in providing financial protection to low-income beneficiaries. Medicaid differs from other sources of supplemental coverage in that those who qualify do not pay Part B or other premiums. The median ratio of out-of-pocket spending to income was nearly 23 percent for beneficiaries with private self-purchased Medigap policies, 18.2 percent for those with no supplemental coverage, and 13–14 percent for those with coverage from employers or Medicare health maintenance organizations (HMOs). The higher ratio of spending to income at the median for those with Medigap than for those with no supplemental coverage may be attributable to premiums and differences in use.

EXHIBIT 2
Out-Of-Pocket Health Care Spending As Percentage Of Income Among Medicare Beneficiaries, Overall And By Subgroup, 1997 And 2003

	Median (%)			90th percentile (%)		
	1997	2003	Difference ^a	1997	2003	Difference ^a
Total	11.9	15.5	3.6**	47.5	58.4	10.9**
Age group (years)						
0-64 (disabled)	9.2	12.0	2.7**	46.8	69.1	22.3**
65-74	10.1	13.8	3.6**	34.3	44.0	9.6**
75-84	14.1	17.8	3.8**	49.6	58.9	9.3**
85+	21.0	22.2	1.2	129.3	120.9	-8.3
Sex						
Male	11.1	14.1	3.0**	39.6	51.8	12.2**
Female	12.7	16.8	4.1**	52.8	64.1	11.3**
Living situation						
Lives alone	10.9	13.7	2.8**	35.4	42.1	6.7**
Lives with spouse	11.7	15.8	4.1**	37.1	48.9	11.9**
Other household type	10.5	13.8	3.2**	37.8	55.6	17.8**
Facility resident	94.1	81.6	-12.6	334.3	286.9	-47.4
Race/ethnicity						
White non-Hispanic	12.4	16.6	4.2**	48.3	59.8	11.4**
Black non-Hispanic	9.6	10.7	1.1	45.3	56.2	-11.0
Hispanic	8.5	12.6	4.1**	38.9	51.7	12.8
Other non-Hispanic	6.1	10.5	4.4**	32.1	47.4	15.3
Insurance coverage						
Medicare HMO	8.0	14.0	5.9**	26.8	44.4	17.6**
Medicaid	6.5	4.6	-1.9**	99.4	56.5	-42.9**
Employer-sponsored	10.5	13.4	2.9**	31.6	41.2	9.5**
Self-purchased/Medigap	20.0	22.9	2.9**	50.7	58.6	7.9**
Other public coverage	13.1	17.8	4.7	63.8	97.6	33.8
No supplemental coverage	13.6	18.2	4.6**	62.1	131.3	69.2**
Percent of poverty						
<100%	18.2	22.0	3.7**	95.0	166.2	71.2**
100%-199%	15.1	22.1	7.0**	40.1	60.8	20.7**
200%-399%	8.7	14.4	5.7**	22.3	35.0	12.7**
400%+	4.5	7.8	3.3**	12.1	20.6	8.5**
Health status						
Excellent/very good	9.6	13.1	3.5**	31.1	40.8	9.7**
Good	12.7	16.5	3.8**	44.0	55.5	11.5**
Fair	15.3	19.2	3.9**	80.9	89.0	8.1
Poor	16.9	20.4	3.5	85.9	97.5	11.6

SOURCE: Authors' analysis of Medicare Current Beneficiary Survey Cost and Use files, 1997 and 2003.

NOTES: Significance indicates difference between 2003 value and 1997 value for each estimate. Results of statistical significance tests at the median and ninetieth percentile for differences between estimates within each subgroup for 1997 and 2003 are available upon request from the authors.

^a Percentage points.

** $p < 0.05$

To understand how the financial burden of health spending affects people on Medicare compared with nonelderly adults, we measured the share of beneficiaries paying more than 20 percent of their income on health, and we compared this estimate with a similar mea-

sure for the nonelderly adult population, based on published results from a separate analysis. This comparison shows that a far greater share of Medicare beneficiaries (39.9 percent) than nonelderly adults (7.3 percent) spent more than 20 percent of their income on health ex-

penses in 2003 (Exhibit 3). A higher rate of burden among Medicare beneficiaries compared with nonelderly adults exists at all poverty levels.

■ **Trends in income, out-of-pocket spending, and financial burden, 1997–2003.** Between 1997 and 2003, the growth in out-of-pocket spending for Medicare beneficiaries far outpaced income growth; over these years, median out-of-pocket spending increased by 50 percent, from \$1,667 to \$2,501, while median income for individuals rose by 15 percent, from \$12,000 to \$13,856.¹⁸ From this, it follows that the burden of health care spending on beneficiaries also increased. Median out-of-pocket spending as a share of income increased from 11.9 percent in 1997 to 15.5 percent in 2003 (Exhibit 4). At the median, premiums consumed a greater share of income than nonpremium spending across the entire seven-year period, with both components increasing over these years. Beneficiaries with the greatest financial burden at the seventy-fifth and ninetieth percentiles experienced a more rapid increase in the ratio of out-of-pocket spending to income than the median beneficiary between 1997 to 2003 (Exhibit 5).

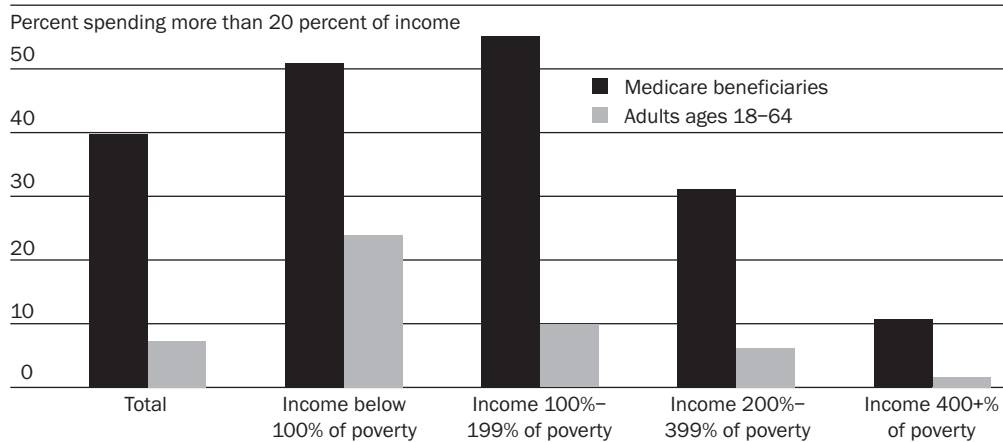
The near-poor, with incomes of 100–200 percent of poverty, experienced a larger increase in health spending as a share of income than those at other income levels. The ratio of out-of-pocket spending to income for this group increased from 15.1 percent in 1997 to 22.1 percent in 2003, compared to the smaller increase for beneficiaries with incomes greater than 400 percent of poverty (from 4.5 percent in 1997 to 7.8 percent in 2003).

In terms of insurance coverage, the increase in median out-of-pocket spending as a share of income was greatest among those in Medicare HMOs: It increased from 8.0 percent in 1997 to 14.0 percent in 2003 at the median, and from 26.8 percent to 44.4 percent at the ninetieth percentile. By contrast, this ratio decreased for those with Medicaid coverage. These findings comport with studies of benefits and cost sharing in Medicare HMOs, which show that plans reduced benefits and increased premiums during this time period.¹⁹

The highest-spending 10 percent of beneficiaries experienced a disproportionately large increase in health spending as a share of income over time, as compared with the remaining 90 percent of beneficiaries. For those at the

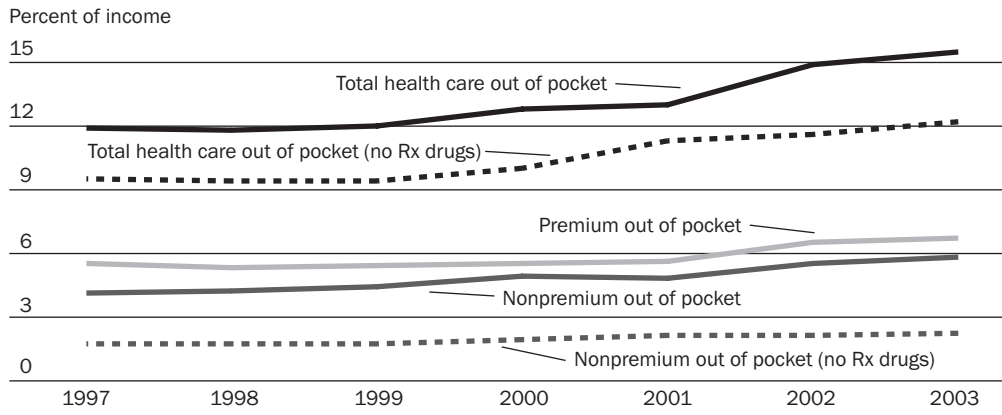
EXHIBIT 3

Prevalence Of High Out-Of-Pocket Health Care Spending Burden Among Medicare And Nonelderly Adult Populations, By Poverty Status, 2003



SOURCES: Estimates for the Medicare population are from authors' analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file. Estimates for the nonelderly adult population are based on disposable (after-tax) income from J. Banthoin and D. Bernard, "Changes in Financial Burdens for Health Care: National Estimates for the Population Younger than Sixty-five Years, 1996 to 2003," *Journal of the American Medical Association* 296, no. 22 (2006): 2712–2719.

EXHIBIT 4
Median Out-Of-Pocket Health Care Spending As A Percentage Of Income Among Medicare Beneficiaries, 1997–2003



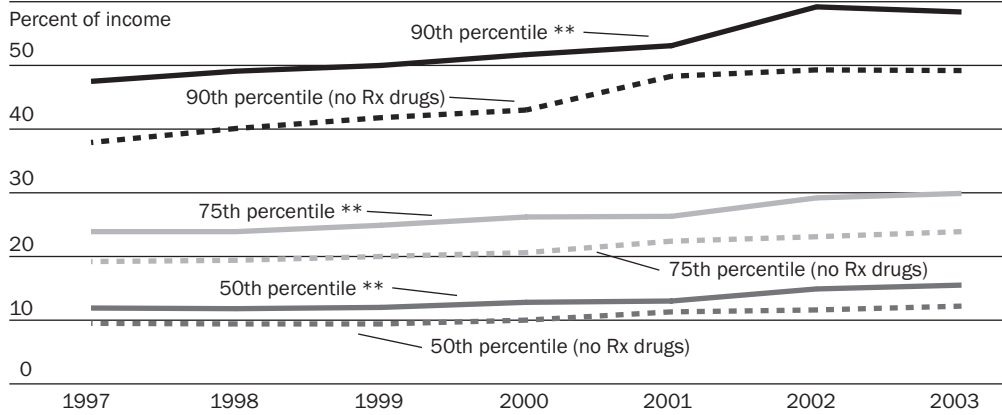
SOURCE: Authors' analysis of Medicare Current Beneficiary Survey Cost and Use files, 1997–2003.
NOTES: Difference from 1997 to 2003 value is statistically significant ($p < 0.05$). Annual amounts for components of total health care spending do not add to total amounts because values shown are median, not mean, values.

ninetieth percentile, who were already paying 47.5 percent of their income for health care in 1997, out-of-pocket spending as a share of income increased to 58.4 percent in 2003. Among those with the largest spending burden, the under-age-sixty-five disabled, those without any supplemental insurance, and beneficiaries living in poverty experienced the

largest increases in health spending as a share of income during this period.

■ **Components of total and out-of-pocket health spending.** Between 1997 and 2003, total per capita health care spending for Medicare beneficiaries increased 35 percent, affecting beneficiaries, third-party payers, and Medicare itself (Exhibit 6). Each payer should-

EXHIBIT 5
Out-Of-Pocket Health Care Spending As A Percentage Of Income Among Medicare Beneficiaries, By Spending Percentile, 1997–2003



SOURCE: Authors' analysis of Medicare Current Beneficiary Survey Cost and Use files, 1997–2003.
NOTES: Difference from 1997 to 2003 value is statistically significant, as marked. Annual amounts for components of total health care spending do not add to total amounts because values shown are median, not mean, values.
 ** $p < 0.05$

EXHIBIT 6
Components Of Per Capita Total And Out-Of-Pocket Spending By Medicare Beneficiaries, 1997 And 2003

Spending component	1997		2003		Difference, 1997-2003	Percent increase, 1997-2003	Share of growth, 1997-2003
	Spending amount	Share of total	Spending amount	Share of total			
Total (health services and premiums)	\$9,943	100.0%	\$13,426	100.0%	\$3,483	35.0	100.0%
Medicare spending	4,452	44.8	5,694	42.4	1,242	27.9	35.7
Third-party payer/other spending	2,843	28.6	3,967	29.6	1,125	39.6	32.3
Out-of-pocket spending (premium plus nonpremium spending)	2,648	26.6	3,765	28.0	1,116	42.1	32.0
Breakdown of out-of-pocket spending							
Premium spending	968	36.5	1,414	37.6	447	46.2	40.0
Nonpremium spending	1,681	63.5	2,350	62.4	669	39.8	60.0
Facility (LTC and SNF)	740	27.9	767	20.4	27	3.6	2.4
Prescription drugs	314	11.9	516	13.7	202	64.2	18.1
Medical providers and supplies	310	11.7	548	14.6	238	76.6	21.3
Dental	153	5.8	211	5.6	59	38.3	5.2
Outpatient hospital services	74	2.8	117	3.1	43	57.7	3.8
Inpatient hospital services	69	2.6	163	4.3	93	134.2	8.3
Home health	20	0.7	28	0.7	8	42.9	0.8

SOURCE: Authors' analysis of Medicare Current Beneficiary Survey Cost and Use files, 1997 and 2003.

NOTES: Number of beneficiaries in 1997 was 39.7 million; in 2003, it was 42.3 million. LTC is long-term care. SNF is skilled nursing facility.

dered approximately one-third of the dollar increase. During this period, Medicare spending per capita exceeded beneficiaries' per capita out-of-pocket spending levels; however, between 1997 and 2003, beneficiaries' out-of-pocket spending and third-party payments increased at much higher rates than Medicare spending per beneficiary. During these years, the share paid by each payer remained fairly constant.

Out-of-pocket spending per beneficiary increased by \$1,116 between 1997 and 2003. Premiums account for the largest component of this increase (\$447), followed by medical care providers and services (\$238), and then prescription drugs (\$202). Out-of-pocket spending on facility care was, by far, the largest component of nonpremium spending in both 1997 and 2003, yet the per capita dollar increase over this period was nominal (\$27). The share of spending for premiums and nonpremium expenses did not change over time, but there was a shift in the distribution of spending by type of service. Between 1997 and 2003, beneficiaries spent more out of pocket on prescription drugs and medical care providers, and less

on nursing home and other institutional care, perhaps attributable to greater use of home and community-based services.

Because the rising cost of prescription drugs has been a pressing concern for Medicare beneficiaries, we evaluated how prescription drug spending, compared with all other components of out-of-pocket spending, contributed to the increase in burden over the 1997-2003 time period. Factoring out drug spending from the analysis of spending relative to income between 1997 and 2003, we found a statistically significant increase in out-of-pocket burden at the median and the seventy-fifth and ninetieth percentiles (Exhibits 4 and 5). Excluding drug spending from total out-of-pocket spending for nonpremium expenses, the ratio of out-of-pocket spending to income at the median increased from 9.5 percent in 1997 to 12.2 percent in 2003. Although drug spending accounted for 18.1 percent of the increase in per capita out-of-pocket spending over these years, it was a relatively small share of total out-of-pocket spending (13.7 percent in 2003); thus, its removal from the equation has a relatively modest effect on the overall

trend. Insurance premiums were the biggest single contributor to beneficiaries' spending growth over the time period.

Discussion

Health care spending has consumed an increasing share of Medicare beneficiaries' income in recent years, despite the protections provided by Medicare and supplemental plans. Overall, beneficiaries' incomes increased only modestly during a period of greater increase in premiums and nonpremium health spending. Our analysis shows that some beneficiaries are spending a far larger share of their income on premiums and health care services than others: specifically, the oldest old, those in relatively poor health, those with low incomes, and those living in long-term care facilities. Our findings also indicate that the financial burden imposed by health spending remains far greater for Medicare beneficiaries than for nonelderly adults.

Our analysis of trends from 1997 through 2003 suggests that the overall burden of paying for health care could continue to rise for beneficiaries. As yet unknown, but important to assess, is how the Medicare Part D benefit will affect the upward trend in beneficiaries' out-of-pocket spending burden, and how the effect might vary by characteristics. All signs point to sustained increases in other out-of-pocket health spending, because of increases in Medicare premiums and cost-sharing requirements and higher costs associated with supplemental employer-sponsored coverage.

Our analysis raises important questions about how much of their incomes beneficiaries can reasonably be expected to spend on their health care and whether current out-of-pocket spending levels are affordable. We recognize that spending levels are not entirely outside of beneficiaries' control. However, our analysis indicates that four in ten beneficiaries spent more than 20 percent of their income on health care in 2003, which is a relatively high threshold for measuring financial burden. This finding raises doubts about whether Medicare beneficiaries could afford to contribute more out of pocket toward their total health and

long-term care expenses.

As policymakers consider ways to finance care for an aging population, while slowing spending growth in Medicare and other entitlement programs, they will undoubtedly face difficult trade-offs. Our findings suggest that giving elderly and disabled Medicare beneficiaries more "skin in the game" could make health care less affordable and accessible for all but the highest-income beneficiaries.

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NOTES

1. G. Claxton et al., *Employer Health Benefits: 2006 Annual Survey*, September 2006, <http://www.kff.org/insurance/7527/upload/7527.pdf> (accessed 12 October 2006).
2. Authors' calculations based on data from National Center for Health Statistics, *Health, United States, 2005*, Table 139, "Medicare Enrollees and Expenditures and Percent Distribution, According to Type of Service: United States and Other Areas, Selected Years 1970–2004," <http://www.cdc.gov/nchs/data/hus/05.pdf#summary> (accessed 21 August 2006); U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements, "Historical Income Tables—People," <http://www.census.gov/hhes/www/income/histinc/p10ar.html> (accessed 21 August 2006); and Social Security Cost-of-Living Adjustments, <http://www.ssa.gov/OACT/COLA/colaseries.html> (accessed 13 August 2006).
3. See, for example, K. Davis et al., "Medicare versus Private Insurance: Rhetoric and Reality," *Health Affairs* 21 (2002): w311–w324 (published online 9 October 2002; 10.1377/hlthaff.w2.311); and M. Merlis, D. Gould, and B. Mahato, "Rising Out-of-Pocket Spending for Medical Care; A Growing Strain on Family Budgets," February 2006, http://www.commonwealthfund.org/usr_doc/Merlis_risingoopspending_887.pdf (accessed 10 July 2007).
4. Kaiser Family Foundation and Hewitt Associates, *Retiree Health Benefits Examined: Findings from the Kaiser/Hewitt 2006 Survey on Retiree Health Benefits*, December 2006, <http://www.kff.org/medicare/>

- upload/7587.pdf (accessed 12 July 2007).
5. J. Banthin and D. Bernard, "Changes in Financial Burdens for Health Care: National Estimates for the Population Younger than Sixty-five Years, 1996 to 2003," *Journal of the American Medical Association* 296, no. 22 (2006): 2712–2719.
 6. Data beyond 2003 were not available when this analysis was conducted.
 7. The MCBS surveys residents in a variety of institutional settings including licensed nursing homes, retirement homes, mental health/mental retardation facilities, continuing care facilities, assisted living facilities, and rehabilitation facilities.
 8. See M. Moon, *Medicare: A Policy Primer* (Washington: Urban Institute Press, 2006); S. Crystal et al., "Out-of-Pocket Health Care Costs among Older Americans," *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 55, no. 1 (2000): S51–S62; D. Gross et al., "Out-of-Pocket Health Spending by Poor and Near-Poor Elderly Medicare Beneficiaries," *Health Services Research* 34, no. 1, Part 2 (1999): 241–254; and C. Caplan and N. Brangan, "Out-of-Pocket Spending on Health Care by Medicare Beneficiaries Age Sixty-five and Older in 2003," Data Digest, September 2004, http://assets.aarp.org/rgcenter/health/dd101_spending.pdf (accessed 12 October 2006).
 9. This suggests that our results could underestimate the actual spending burden for beneficiaries who pay and file income taxes.
 10. Other researchers have used a similar approach, including Moon, *Medicare: A Policy Primer*; Caplan and Brangan, "Out-of-Pocket Spending"; and Crystal et al., "Out-of-Pocket Health Care Costs." We discuss implications of this approach in a technical appendix, available online at <http://content.healthaffairs.org/cgi/content/full/26/6/1692/DC1>.
 11. The technical appendix contains a complete discussion of methods used to compute out-of-pocket spending burden and their relative merits; *ibid*.
 12. See, for example, Merlis et al., "Rising Out-of-Pocket Spending for Medical Care"; and C. Schoen et al., "Insured but Not Protected: How Many Adults Are Underinsured?" *Health Affairs* 24 (2005): w289–w302 (published online 14 June 2005; 10.1377/hlthaff.w5.289).
 13. The MCBS provides replicate weights that can be used with this method, where multiple subsamples are chosen from the full sample, and the variability among subsample estimates is used to estimate variance for the full sample. See J.M. Gossett et al., "How Complex Can Complex Survey Analysis Be with SAS?" in SAS Institute Inc., "Proceedings of the Twenty-seventh Annual SAS Users Group International Conference, 2002," <http://www2.sas.com/proceedings/sugi27/p266-27.pdf> (accessed 8 October 2006); and J.M. Brick, D. Morganstein, and R. Valliant, "Analysis of Complex Sample Data Using Replication," 29 July 2000, <http://www.westat.com/wesvar/techpapers/ACS-Replication.pdf> (accessed 8 October 2006).
 14. The mean ratio (37.4 percent) is larger than the median (15.5 percent) and ratio of sums (20.6 percent).
 15. M. Lillie-Blanton and C. Hoffman, "The Role of Health Insurance Coverage in Reducing Racial/Ethnic Disparities in Health Care," *Health Affairs* 24, no. 2 (2005): 398–408.
 16. Authors' analysis of data from 2003 MCBS Cost and Use file.
 17. Kaiser Family Foundation, "Dual Eligibles: Medicaid's Role for Low Income Beneficiaries," Fact Sheet, February 2006, <http://www.kff.org/micaid/4091.cfm> (accessed 30 July 2007).
 18. The corresponding increases in mean values for out-of-pocket spending and income from 1997 to 2003 are, respectively, 42 percent (from \$2,648 to \$3,765) and 3 percent (from \$17,756 to \$18,254).
 19. See, for example, M. Gold and L. Achman, "Average Out-of-Pocket Health Care Costs for Medicare+Choice Enrollees Increase Ten Percent in 2003," August 2003, http://www.commonwealthfund.org/usr_doc/gold_averagoop2003_667.pdf (accessed 10 July 2007).