

MEDICARE

ISSUE BRIEF

**The Burden of Out-of-Pocket Health Spending
Among Older Versus Younger Adults:
Analysis from the Consumer Expenditure Survey,
1998-2003**

September 2007

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INTRODUCTION

Rising health care costs affect adults of all ages in the United States, both the working-age population and seniors. It is plausible to think that either younger or older adults may have been affected more than the other group by recent increases in health care inflation. Among the working-age population, those with insurance have experienced substantial increases in both cost-sharing requirements and insurance premiums in recent years. Between 2000 and 2005, for example, average in-network deductibles in preferred provider organizations (PPOs) almost doubled while average monthly premiums for family coverage rose by two thirds.¹ These increases dwarf the approximate 10% rise in median family income during this time frame.² Moreover, the trend of declining private health insurance coverage has created a growing uninsured population at risk for the full cost of their health care expenses.³ Other evidence, however, suggests that seniors may have borne a greater burden due to rising health care costs. Medicare Part B premiums rose by 72% between 2000 and 2005, while premiums for Medigap Plan F, the most popular Medicare supplement plan, rose by 35% over this period.⁴ Although a drug benefit was added to Medicare in 2006, there has also been an erosion of private insurance coverage that supplements Medicare. Out-of-pocket costs for seniors with employer-sponsored retiree coverage have increased substantially due to rising retiree contributions to premiums and higher cost-sharing requirements.⁵

Research has shown that older people spend more out of pocket on health care expenses than younger adults, but there have been only a few comparisons over the past 15 years of the magnitude of this difference or analyses of how the spending burden for younger and older adults may have changed over time.^{6,7,8,9,10,11} Understanding the extent to which younger and older adults are affected by rising out-of-pocket costs as a share of income may be important in the coming years as policymakers grapple with the challenge of maintaining or improving coverage for the rising numbers of younger adults without health insurance in the U.S., the rising number of people of all ages who are under-insured, and the challenge of making health care affordable for seniors on Medicare. In this paper, we analyze the extent to which health care spending as a share of income has differed among younger adults versus people ages 65 and older, both at a point in time (2003) and over the six-year period from 1998-2003.

DATA AND METHODS

We use data from the Consumer Expenditure Survey (CES) to compare the ratio of out-of-pocket health care spending to income among people under age 65 to the ratio for people age 65 and older, over the six-year period from 1998 to 2003. The CES provides nationally representative information on income and consumer expenditures for all age groups. Data are collected for the Consumer Unit (CU), which refers to related individuals living together, individuals living alone or with others but keeping separate finances, or unrelated persons living together and pooling income and expenditures. In our results, we refer to CUs as households, which can consist of one or more people.

The CES collects data from respondents over five consecutive quarters; after a baseline interview, respondents are asked about their expenditures for the three months prior to the interview. To achieve an adequate sample size for each year, we combined data for respondents from four quarters. Our analysis includes only those CUs that provided information for all four quarters of the data collection period, and was further limited to the 97% of CUs that did not have missing income data, and that had a stable family size category and age category over the four quarters.¹² The resulting sample size was 25,512 CUs.

We examined the following subsets of respondents:

- Individuals who were under age 65.
- Individuals who were age 65 or older.
- Households of two or more persons, with all members under age 65.
- Households of two or more persons, with all members age 65 or older.

Our measure of interest is the ratio of out-of-pocket health care spending to income, averaged over all the CUs within each subset of respondents. Total out-of-pocket spending for health care includes insurance premiums (private and Medicare Part B for seniors), medical services and supplies, and prescription drugs.¹³ This was summed over the four quarters to calculate annual expenditures. We also separated out drug expenditures because these are likely to be substantially affected for people age 65 and older by the Medicare drug benefit that went into effect in 2006.¹⁴ For income, we used annual pre-tax dollar income, averaged over the four quarters reported for each CU. Rather than focusing on the mean ratio of spending to income, which would accentuate outliers (especially since the ratio can exceed a value of 1.0 for some people in some years), we present both the median and the 90th percentiles of the spending-to-income ratios.

FINDINGS

Per Capita Income and Out-of-Pocket Health Care Spending in 2003

Table 1 shows summary statistics for per-capita out-of-pocket health expenditures and income in 2003, for one-person and multi-person households. In all cases, those age 65 and older spend far more on health care than younger adults, but their incomes are substantially lower. For example, among households with two or more people, median per capita expenditures in 2003 were nearly five times higher for seniors (\$2,308) than for others (\$514).

Table 1
Per Capita Out-of-Pocket Spending and Income, 2003

	One-Person Households		Multi-Person Households	
	Age 65+	Age <65	Age 65+	Age <65
Health care total expenditures				
Mean	\$2,487	\$1,232	\$2,565	\$834
Median	\$1,939	\$664	\$2,308	\$514
90th percentile	\$4,894	\$3,196	\$4,597	\$2,015
Prescription drug expenditures				
Mean	\$578	\$189	\$635	\$120
Median	\$249	\$13	\$365	\$33
90th percentile	\$1,475	\$550	\$1,587	\$312
Health care non-drug expenditures				
Mean	\$1,909	\$1,044	\$1,930	\$713
Median	\$1,483	\$515	\$1,790	\$435
90th percentile	\$3,814	\$2,846	\$3,576	\$1,757
Income				
Mean	\$18,278	\$34,348	\$19,753	\$23,180
Median	\$13,904	\$28,600	\$14,280	\$18,312
Mean family size	1.0	1.0	2.0	3.3

The Ratio of Out-of-Pocket Health Care Spending to Income in 2003

Table 2 shows the median ratio of out-of-pocket health care spending to income for one-person households in 2003, comparing younger and older adults, stratified by demographic, regional, and insurance characteristics. Table 3 shows similar results for households of two or more people, but containing fewer stratifications because many of these characteristics are not unambiguously defined for multi-person households as they are for individuals. Confidence intervals are provided for each estimate, which allows comparisons across characteristics within an age group, as well as comparisons for particular characteristics across the two age groups.¹⁵

Table 2
Out-of-Pocket Health Care Spending as a Percent of Income,
By Demographic Group, For One-Person Households, 2003
Median Values and 95% Confidence Intervals

	One-Person Households		One-Person Households	
	Age 65+		Age <65	
	Median	95% CI	Median	95% CI
Total	12.46	(10.80, 14.12)	2.17	(1.83, 2.52)
Age				
65-74	10.04	(8.63, 11.46)		
75-84	14.13	(11.72, 16.54)		
85 +	16.07	(11.48, 20.65)		

	One-Person Households Age 65+		One-Person Households Age <65	
	Median	95% CI	Median	95% CI
Gender				
Male	9.61	(7.82, 11.41)	1.47	(1.17, 1.78)
Female	14.36	(13.03, 15.70)	3.05	(2.45, 3.66)
Race				
White	14.13	(12.46, 15.79)	2.32	(1.93, 2.70)
Non-white	9.03	(6.52, 11.55)	1.72	(1.37, 2.08)
Region				
Northeast	13.21	(10.98, 15.45)	1.97	(1.49, 2.45)
Midwest	16.07	(14.40, 17.74)	2.36	(1.42, 3.30)
South	11.54	(8.85, 14.23)	1.99	(1.45, 2.53)
West	10.90	(7.65, 14.16)	2.34	(1.56, 3.13)
Metro status				
Urban	12.20	(10.51, 13.89)	2.20	(1.83, 2.56)
Rural	14.96	(8.57, 21.36)	1.73	(-0.46, 3.92)
Education				
< HS graduate	11.47	(8.33, 14.60)	2.28	(0.11, 4.45)
High school graduate	14.40	(11.11, 17.68)	2.24	(1.43, 3.06)
Some college	13.89	(11.46, 16.32)	2.15	(1.59, 2.71)
College graduate +	11.81	(7.16, 16.46)	2.12	(1.65, 2.59)
Income as a percent of the Federal Poverty Level				
<100%	12.42	(7.35, 17.48)	1.80	(0.28, 3.32)
100-149%	16.13	(11.92, 20.33)	3.82	(1.46, 6.18)
150-199%	17.04	(13.98, 20.10)	2.64	(-0.02, 5.30)
200+%	7.98	(6.30, 9.67)	2.08	(1.81, 2.36)
Primary health insurance, age 65+ *				
Medicare HMO	10.56	(7.73, 13.40)		
Medicaid	9.44	(4.43, 14.46)		
Employer	10.96	(9.40, 12.53)		
Medigap	21.21	(17.80, 24.61)		
Other insurance	18.23	(13.32, 23.13)		
No supplemental insurance (Medicare only)	8.23	(6.37, 10.10)		
Primary health insurance, age <65 *				
Medicare			5.70	(0.30, 11.11)
Medicaid			0.00	(-1.28, 1.28)
Employer HMO			2.20	(1.75, 2.66)
Employer other			2.44	(2.01, 2.88)
Other insurance			3.81	(1.39, 6.23)
None			0.47	(-0.06, 0.99)
* Insurance categories were assigned in hierarchical order. That is, we initially looked to see if the individual was covered by the first type of insurance listed. If so, the individual was assigned to that category. If not, we looked to see if the individual was covered by the next listed source, and so forth down the list.				

Table 3
Out-of-Pocket Health Care Spending as a Percent of Income,
By Demographic Group, For Multi-Person Households, 2003
Median Values and 95% Confidence Intervals

	Multi-Person Households Age 65+		Multi-Person Households Age <65	
	Median	95% CI	Median	95% CI
Total	14.38	(13.08, 15.69)	2.70	(2.51, 2.89)
Region				
Northeast	13.55	(7.85, 19.26)	2.19	(1.80, 2.58)
Midwest	14.49	(11.03, 17.95)	3.00	(2.46, 3.54)
South	15.19	(11.89, 18.48)	3.13	(2.88, 3.38)
West	14.23	(13.25, 15.21)	2.25	(1.81, 2.69)
Metro status				
Urban	14.37	(12.85, 15.89)	2.66	(2.43, 2.89)
Rural	14.73	(10.75, 18.70)	3.09	(2.59, 3.60)
Income as a percent of the Federal Poverty Level				
<100%	27.43	(-13.00, 67.86)	1.87	(0.81, 2.92)
100-149%	23.58	(14.20, 32.96)	2.25	(1.51, 3.00)
150-199%	20.30	(16.51, 24.08)	4.09	(3.09, 5.09)
200+%	12.54	(10.56, 14.51)	2.72	(3.54, 2.90)

The clear pattern that emerges in both sets of results is that people over age 65 spend far more of their income out of pocket on health care costs than younger adults. Older individuals, on average, spend over 12% of income, compared to only 2% for younger individuals. The pattern for households with two or more people is nearly identical, except that spending in relation to income is slightly higher – 14% for seniors and 3% for younger adults.

As Table 2 shows, within each age group, whites have higher ratios of spending to income than non-whites, likely reflecting differences in disposable income. Females have higher ratios than males, and, not surprisingly, those with incomes above 200% of the poverty level have lower ratios than others (this applies to multi-person households as well). Education shows no consistent pattern for one-person households, nor does region or urban/rural status for either one-person or two-person households.

Among people age 65 and older, median out-of-pocket spending as a share of income rises with age. Those with Medigap to supplement Medicare spend more on health as a share of income than any other group of seniors, including those with no supplemental coverage at all, which may be driven by high premiums for private Medigap policies. Consistent with our other demographic results, the magnitude of the spending burden is greater for those age 65 and older than younger adults across all insurance coverage groups.

Trends in the Ratio of Out-of-Pocket Health Care Spending to Income, 1998-2003

Figures 1 through 4 show the ratio of out-of-pocket health spending to income for each year from 1998 to 2003, separately for younger and older adults. Figures 1 and 2 show medians and 90th percentiles, respectively, for one-person households, and Figures 3 and 4 the same

information for multi-person households. We show total out-of-pocket spending including and excluding prescription drug costs, to highlight the out-of-pocket spending burden among older adults that would be largely unaffected by the Medicare drug benefit, which took effect in 2006.

Figure 1
Median Values of Out-of-Pocket Health Care Spending as a Percent of Income
One-Person Households, 1998-2003

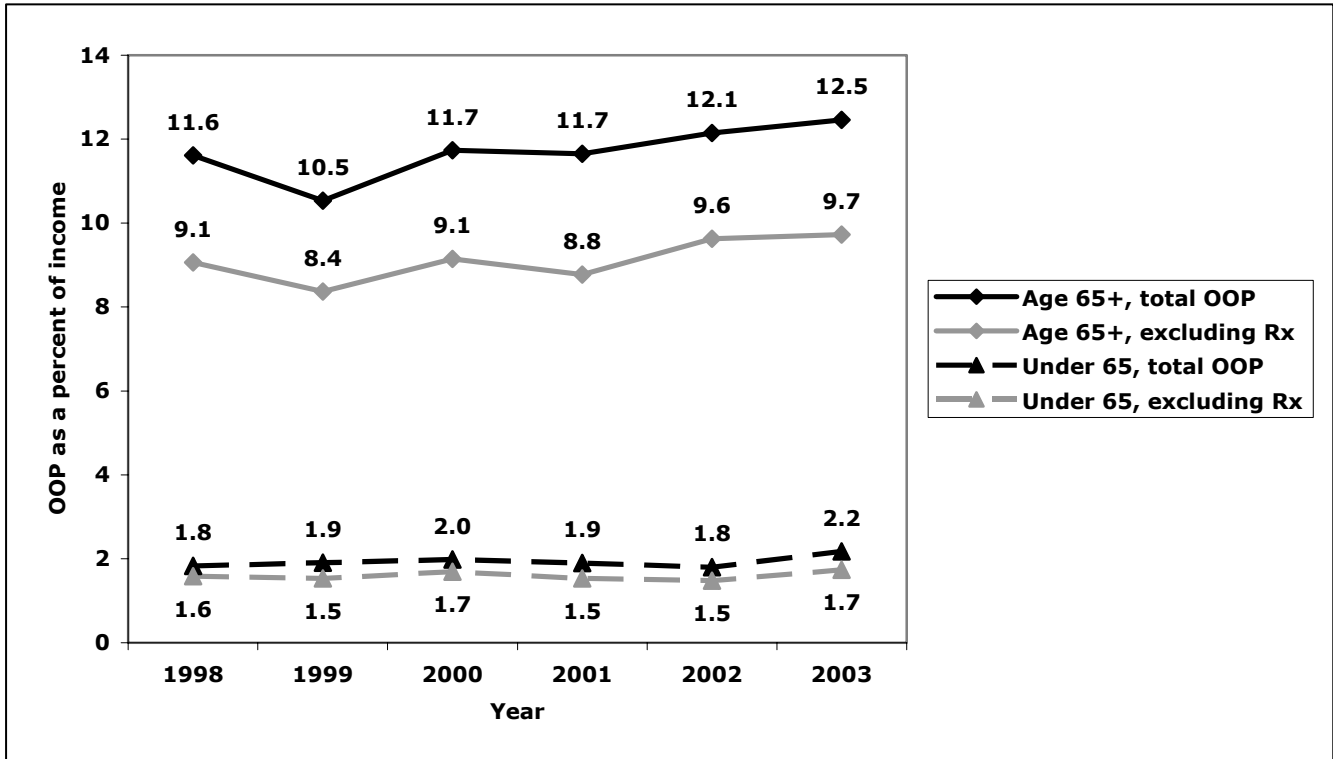


Figure 2
90th Percentile Values of Out-of-Pocket Health Care Spending
as a Percent of Income, One-Person Households, 1998-2003

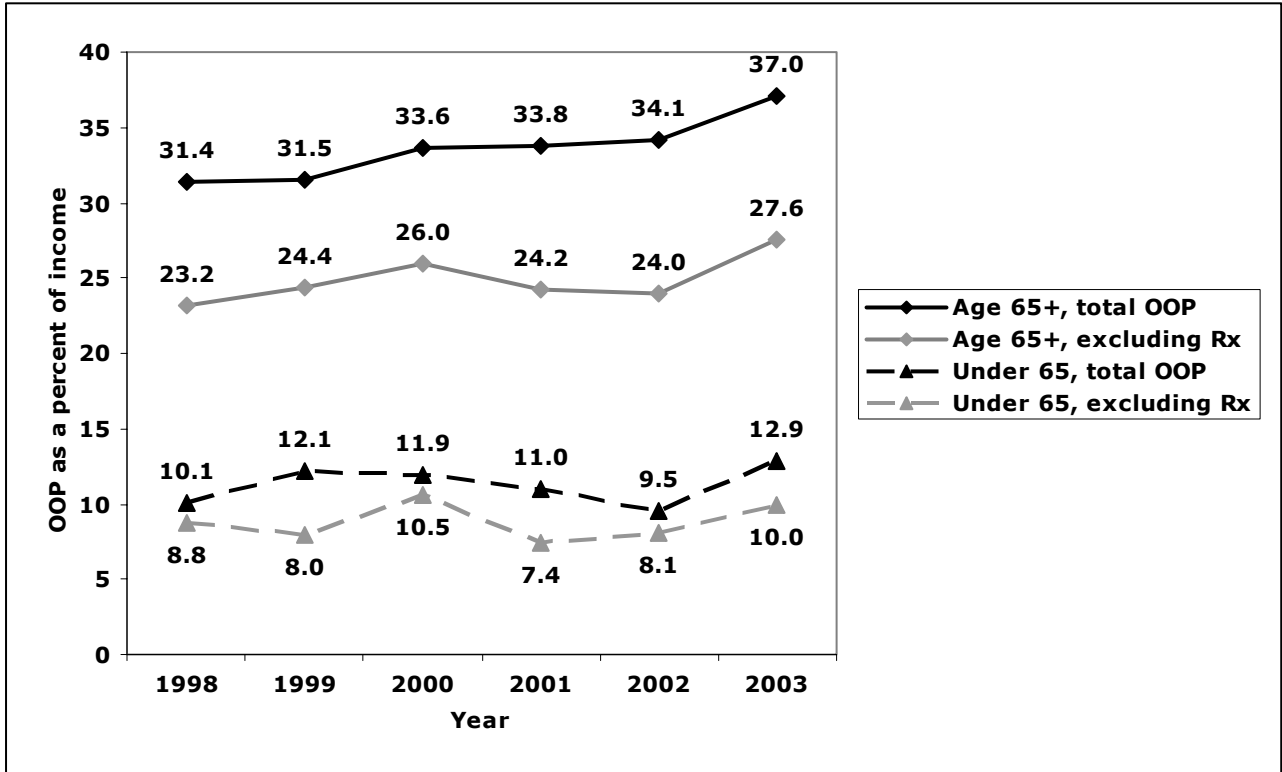


Figure 3
Median Values of Out-of-Pocket Health Care Spending as a Percent of Income
Multi-Person Households, 1998-2003

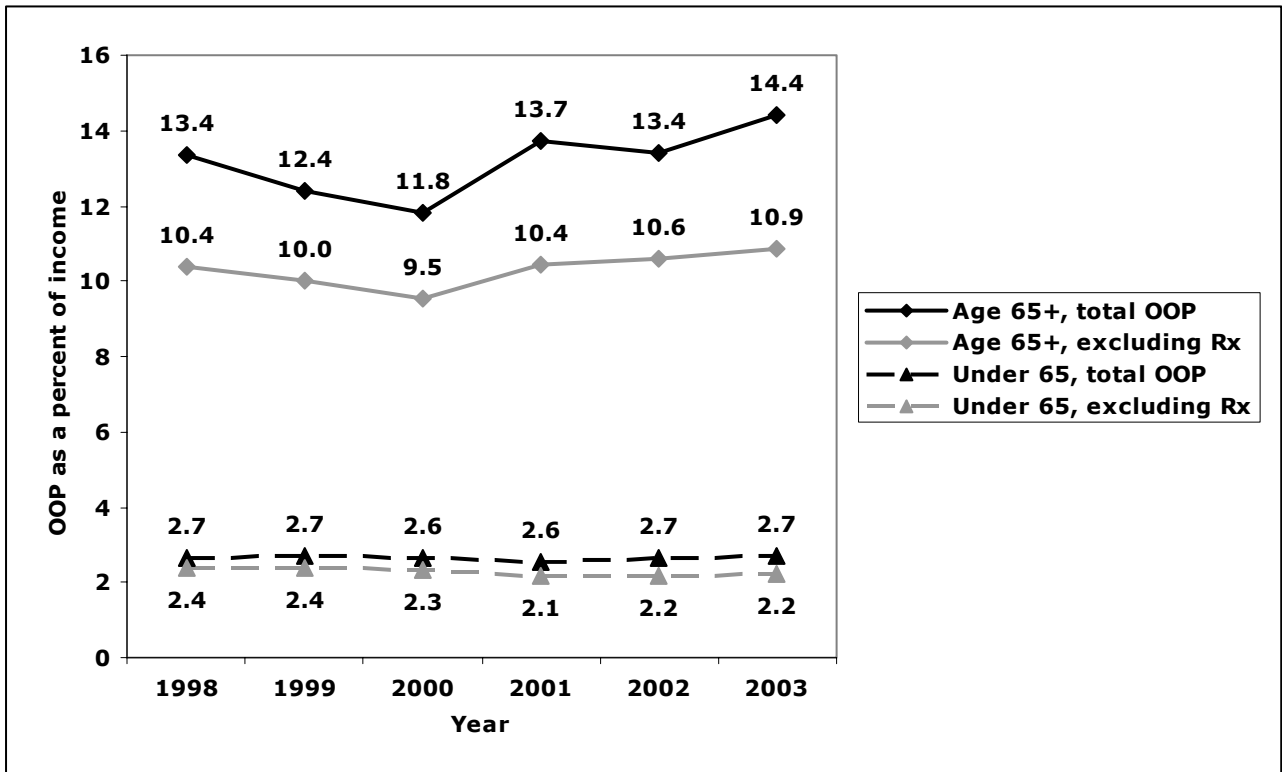
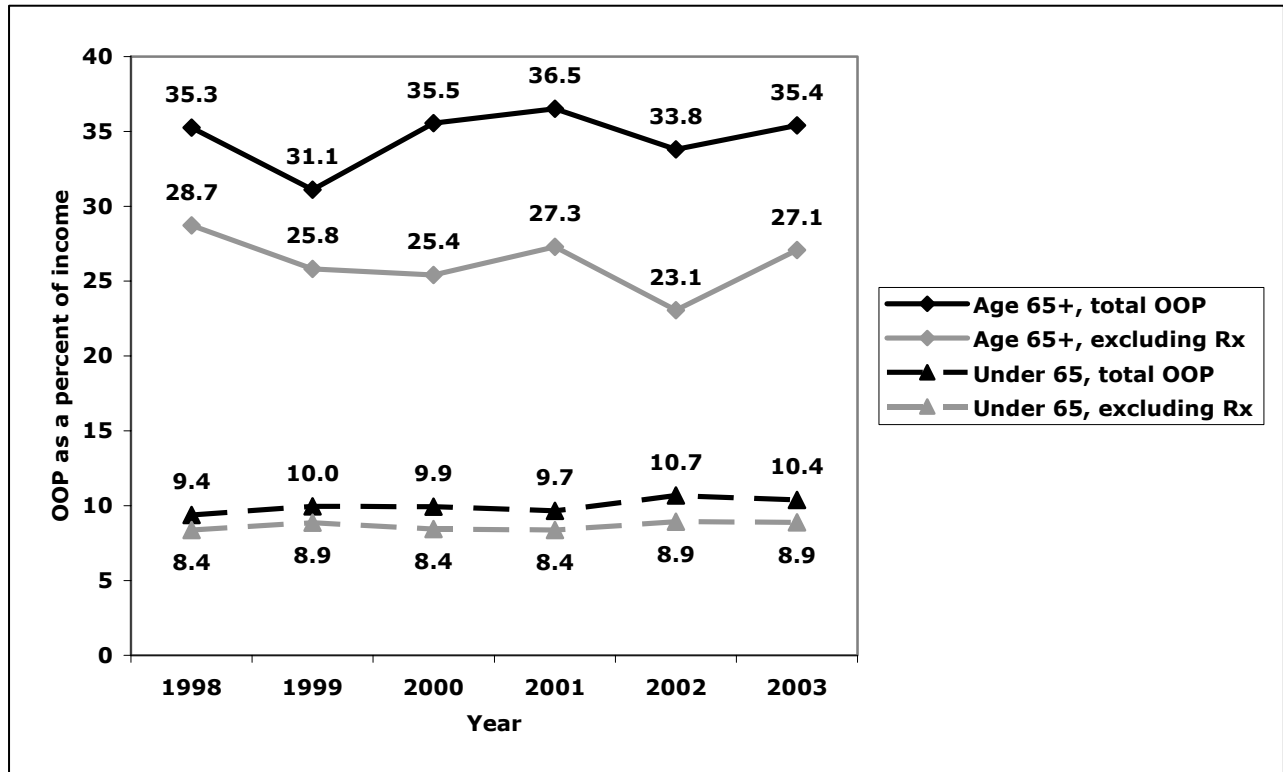


Figure 4
90th Percentile Values of Health Care Spending as a Percent of Income
Multi-Person Households, 1998-2003



All figures show similar patterns over time: in each year from 1998 to 2003, the ratios are far higher for those over age 65 than those under age 65. Looking at the median values in Figures 1 and 3, the ratio of spending to income is about ten percentage points higher for those age 65 and older than for younger adults in both one-person and multi-person households. The gap between young and old is even higher at the 90th percentile (Figures 2 and 4), around 25 percentage points in each year from 1998 to 2003.

Examining changes over time, there are some apparent upward trends, but none of the differences in ratios between 1998 and 2003 are statistically significant at conventional levels. This is likely due to small sample sizes in the CES data. In general, the ratio of out-of-pocket spending to income held steady for those under age 65. The only counter-example is in Figure 2, where among one-person households, the ratio at the 90th percentile rises from about 10% to 13% between 2002 and 2003 (not statistically significant). Among seniors, ratios were fairly steady for those in households with two or more people, while there was an increase over time among one-person households in the 90th percentile, from about 31% in 1998 to 37% in 2003 (not statistically significant).

The figures show clearly that prescription drug spending was a relatively small portion of out-of-pocket health spending for younger and older adults alike. Thus, reductions in out-of-pocket spending that may occur among people over age 65 as a result of the Medicare drug benefit, although helpful, will do little to narrow the gap between the share of income spent out of pocket on health care costs for seniors versus younger people.

DISCUSSION

This paper examines the financial burden of health care, comparing out-of-pocket spending as a share of income among seniors and younger adults. Our findings document a persistent gap in financial burden between young and old which could have important implications for ongoing policy discussions in several areas, including the generosity of coverage for working age adults, rising health care costs, entitlements and more fundamental questions about the appropriateness of shifting more costs onto consumers.

Seniors are paying a larger share of income than working-age adults - a difference of roughly ten percentage points - even when prescription drug spending is excluded from the calculation of total out-of-pocket spending. This finding leads us to conclude that the Medicare drug benefit may do little to narrow the gap in financial burden between younger and older adults. The relatively high spending burden faced by seniors is likely related to their greater medical needs, but nevertheless particularly troubling since many live on relatively fixed incomes and have limited ability to generate additional financial resources to absorb rising medical bills.

Among seniors, it is evident that some groups bear a greater burden than others, notably, women and the oldest-old. Looking forward, monitoring their costs and experiences will be especially important. We also observed relatively high out-of-pocket spending as a share of income among seniors who purchase supplemental Medigap policies. Over time, the spending burden among seniors with Medigap will likely be affected by changes in the Medicare marketplace, including the availability of a drug benefit through Medicare and the expanded role of Medicare Advantage plans. It is conceivable that seniors with Medigap could experience a reduction in out-of-pocket spending if they switched to a Medigap policy without a prescription drug benefit, or if they switched to a government-subsidized Medicare Advantage plan that offered lower premiums and cost-sharing amounts.

All signs point to sustained increases in out-of-pocket health care spending for people of all ages. Our time trend results, although statistically insignificant, show a slight upward movement in the out-of-pocket spending burden for some groups. If, in the future, out-of-pocket spending on health care continues to rise at a substantially faster rate than income, then the burden of health care spending will only increase over time, raising serious concerns about the affordability of medical care, particularly for seniors. Future research is needed to assess the extent to which recent changes in coverage, including the trend toward consumer-driven health care, will appreciably affect the spending burden for both working-age and older adults, and the difference between the two groups.

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- ² U.S. Census. 2006. *Statistical Abstract of the United States*. Table 679. http://www.census.gov/compendia/statab/income_expenditures_wealth/ Accessed Sept. 25, 2006. At time of writing, the most recent income available were from 2003. Average median family income rose by only 3.8% from 2000 to 2003, so it is unlikely that, two years later, it had risen by more than 10% over the 2000-2005 period.
- ³ See for example, L. Clemans-Cope, B. Garrett, and C. Hoffman, "Changes in Employees' Health Insurance Coverage, 2001-2005." Kaiser Commission on Medicaid and the Uninsured, October 2006; and J. Holahan and A. Cook, "Why Did the Number of Uninsured Continue to Increase in 2005?" Kaiser Commission on Medicaid and the Uninsured, October 2006.
- ⁴ The 2005 data were obtained from: http://www.findarticles.com/p/articles/mi_m0EIN/is_2005_August_29/ai_n14934193 . The 2000 data were obtained from: http://www.weissratings.com/News/Ins_Medigap/20010326medigap.htm . Both were accessed on Sept. 25, 2006.
- ⁵ See Kaiser Family Foundation and Hewitt. "Retiree Health Benefits Examined." Washington, DC, Kaiser Family Foundation, December 2006; and McCormack, L.A., J.R. Gabel, H. Whitmore, W.L. Anderson, and J. Pickreign. 2002. "Trends in Retiree Health Benefits." *Health Affairs* 21(6), November/December: 169-176.
- ⁶ Merlis et al. pooled Medical Expenditure Panel Survey (MEPS) data from 1996-97 and 2001-02 to examine trends in family out-of-pocket spending. The authors examine spending as a share of income among families with any member age 65 or older and younger (nonelderly) families, but do not specifically examine out-of-pocket spending among families that consist solely of adults age 65 and older. The analysis indicates that between 1996-97 and 2001-02, average family out-of-pocket spending rose nearly twice as fast as family income, and that families with any member age 65 or older were much more likely than other families to have high out-of-pocket spending relative to income. See Merlis, M., D. Gould, and B. Mahato. "Rising Out-of-Pocket Spending for Medical Care: A Growing Strain on Family Budgets." The Commonwealth Fund, February 2006.
- ⁷ Rubin and Koelln pooled 1986-1988 CES data to examine out-of-pocket spending differences (including premiums) between elderly and non-elderly households. They did not calculate the ratio of spending to income, but did compare different age and income groups. See Rubin, R.M., and K. Koelln. 1993. "Out-of-Pocket Health Expenditure Differentials Between Elderly and Non-Elderly Households." *The Gerontologist* 33(5): 595-602.
- ⁸ Using the 1995 CES, Hong and Kim divided people into one of seven "life cycle" stages, but their results are not directly comparable to ours because there is no group that consists solely of those age 65 and older. See Hong, G-S., and S.Y. Kim. 2000. "Out-of-Pocket Health Care Expenditure Patterns and Financial Burden Across the Life Cycle Stages." *Journal of Consumer Affairs* 34(2), Winter: 291-313.

⁹ Hwang et al. used 1996 MEPS data to analyze out-of-pocket spending (excluding premiums) for chronic health conditions, and to see how age interacted with number of chronic conditions. However, the authors did not look at the ratio of spending to income. In general, older persons spent more out of pocket, and those with more chronic conditions tended to spend more at all ages. See Hwang, W., W. Weller, H. Ireys, and G. Anderson. "Out-of-Pocket Medical Spending for Care of Chronic Conditions." *Health Affairs* 20(6), November/December 2001: 267-278.

¹⁰ Banthin and Bernard used MEPS data to examine the burden of out-of-pocket health expenditures. Although the authors focus only on the under-65 population, they do examine the ratio of out-of-pocket health care spending to income and how this burden has changed over time (from 1996 to 2003). See Banthin, J.S., and D.M. Bernard. 2007. "Changes in Financial Burdens for Health Care: National Estimates for the Population Younger than 65 Years, 1996-2003." *Journal of the American Medical Association* 296(22), December 13, 2006: 2712-2719.

¹¹ Xu used 1998 MEPS data to analyze differences in prescription drug spending between older and younger adults. He found that the elderly spent about three times as much of their incomes on out-of-pocket drug spending as the non-elderly. See Xu, K.T. 2003. "Financial Disparities in Prescription Drug Use Between Elderly and Nonelderly Americans." *Health Affairs* 22(5), September/October 2003: 210-221.

¹² In the 1998-2003 CES data files, there were 56,472 CUs who could have provided the full four quarters of data ending in the period 1998 to 2003, of which 30,953 provided the full four quarters. The remaining CUs were excluded from our analysis. To examine whether the CUs with incomplete data were different from those with the full four quarters of data, we compared CUs with four quarters of data to those with fewer, examining selected characteristics reported at the last available quarter. CUs that had all four quarters were more likely to contain Medicare beneficiaries, to have family members who were older and more likely to be white, and have higher income and health care expenditures. There was no temporal pattern of completing all four quarters (that is, from 1998 to 2003), and also no pattern by family size.

¹³ As with other surveys based on individual self-reports, the CES is subject to reporting and sampling errors that can affect expenditure estimates, especially with regard to premium data. Research suggests that the CES tends to understate premium estimates, which could have the effect of understating the burden of health care spending as a share of income. For an analysis of expenditure estimates in the CES, see Garner, T., et al. "The CE and the PDE: A Comparison." *Monthly Labor Review*, September 2006: 20-46.

¹⁴ Lacking data for this analysis beyond 2003 that captures more recent prescription drug spending among seniors, we were unable to take into account the effects of the Medicare drug benefit that went into effect in 2006.

¹⁵ Sample sizes of all subgroups exceed 30 except for one case: seniors in two-person households with income below 100% of the poverty level (N=11).



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