Health care and prescription drug spending by seniors

Spending for health care and for prescription drugs among seniors has increased over the 1980–97 period; the seniors who had insurance coverage in addition to Medicare, on average, spent more on health care and prescription drugs than those who had Medicare coverage only

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Out-of-pocket spending on prescription drugs increased 411 percent between 1970 and 1997, based on nominal aggregate figures from the Health Care Financing Administration.[1] With the exception of health insurance premium payments, prescription drug expenses represent the single largest component of out-of-pocket spending on health care (17 percent of the total health care dollar, on average). Prescription drug expenses account for as much as those spent on physician care, vision care services, and medical supplies combined.[2] Many seniors, especially those with low income and those with multiple health problems, often must make a difficult choice between health care and other consumption needs.[3] According to the American Enterprise Institute, more than 10 percent of seniors spend up to $5,000 annually on prescription drugs and nearly one-fourth of Medicare beneficiaries are living on less than $600 per month.[4]

Although Medicare provides basic medical coverage for virtually all of the Nation's seniors who are aged 65 and older and for those under age 65 with certain severe disabilities, it does not provide coverage for prescription drugs. Con-sequently, seniors often turn to other insurance sources to defray costs of prescription drugs and other medical expenses. About 1 in 10 seniors have assets and income low enough to qualify for Medicaid.[5] To cover expenses that Medicare does not cover, nearly 3 in 4 seniors purchase additional insurance through their former employer or through private purchase.[6] Still, about one-third of Medicare beneficiaries do not have coverage for prescription drugs and, among those who do, coverage is often inadequate relative to expenses.[7] Further, prescription drug coverage is becoming increasingly expensive to obtain, as both public and private insurers have shifted costs to the ultimate consumer in the form of higher premiums, deductibles, and co-payments and as some insurance providers have cut-back or eliminated coverage for prescription drugs.[8]

Given the importance of prescription drugs to the health care of seniors, the addition of prescription drug benefits to Medicare has become an important public health policy issue. This article examines this issue in-depth by using the Consumer Expenditure Surveys from 1980 to 1997 to answer the following research questions:

1. What is the trend in out-of-pocket spending for health care in general and for prescription drugs in particular for the consumers aged 65 and older, both in terms of real dollars and budget shares?

2. What is the trend in purchasing health insurance to supplement Medicare for consumers aged 65 and older?

3. For individuals who are aged 65 and older, what is the relationship between having health insurance that supplements Medicare and out-of-pocket spending on prescription drugs? Does this relationship vary over time and by the type of health insurance? What are the determinants of out-of-pocket spending on health care and prescription drugs?

4. What is the relationship between having additional insurance coverage and total out-of-pocket health care expenditures, and does this relationship vary over time and by the type of health insurance? What are the other determinants of total out-of-pocket health care expenditures?

The results of this study provide detailed information for the current debate on prescription drug coverage for Medicare recipients.

Relevant literature

The consensus of previous research on out-of-pocket spending on health care in general and prescription drugs in particular, is that seniors are heavy users of medical care. They make up about 13 percent of the population, but they account for more than 35 percent of all health care expenditures, 34 percent of all prescriptions dispensed, and 42 percent of prescription drug expenditures.[9] Marilyn Doss Ruffin found that the household budget share for medical care and for housing was considerably greater for elderly consumers, compared with medical care and housing for consumers of all ages.[10] Similarly, Rose M. Rubin and Kenneth Koelln note that consumers aged 65 and older devote a larger proportion of total health expenditures to health insurance, prescription drugs, and medical supplies, as compared with the proportion for consumers aged 64 and younger.[11]

Another study found that seniors aged 75 and older spend more on all components of health care, compared with seniors aged 65 to 74.[12] Still another study, investigating differences in consumer spending by working and nonworking elderly households, concluded that, regardless of income level, the nonworking elderly households spent more on health care than working elderly households did.[13] Furthermore, disaggregating categories of health spending by income level and work status for 62 to 74 year olds, this study found significant differences for overall health care expenditures and for health insurance premiums. It also found significant differences for prescription drug purchases among seniors with incomes between $15,000 and $29,999. Rubin and Koelln compared the health spending of high income seniors with the low income elderly.[14] They concluded that a higher share of total expenditures (13.6 percent) was devoted to out-of-pocket health expenditures for seniors with low incomes, compared with those having high incomes (7.7 percent).

According to a study by Families USA, a nonprofit advocate for consumer health care, the cost of the top 50 prescription drugs used by seniors increased at four times the rate of inflation during 1998.[15] When public and private insurers shift the costs of health care goods and services to the ultimate consumers, such cost increases for prescription drugs can represent a major financial burden for seniors.

Burdens of health care spending

Every year, about 90 percent of Medicare beneficiaries get at least one prescription filled. But, the financial burden associated with prescription drug expenditures is not evenly distributed among seniors. Financial resources, health conditions, and access to health insurance that offers prescription drug coverage vary. Seniors with higher than average prescription drug costs are likely to be in relatively poor health; have severe functional limitations; be aged 75 or older or younger and disabled; and lack prescription drug coverage, but have purchased supplemental insurance.[16] Seniors with modest incomes (135 percent to 200 percent of the poverty threshold) have the highest average out-of-pocket drug expenses, whereas seniors who have incomes less than 100 percent of poverty with no Medicaid benefits spend the largest percent of their income on prescription drugs.[17]

Although a supplemental health insurance policy can help defray out-of-pocket costs for prescription drugs, not all seniors can afford this coverage. Further, among the supplemental health policies, there is wide variation in coverage, co-payments, deductibles, and stop-loss limits. A few seniors are fortunate enough to obtain supplemental health coverage that pays 100 percent of prescription drug costs, but that scenario is rare.[18] More than half of the seniors who spent $500 or more annually on out-of-pocket expenses for prescription drugs and more than 40 percent of seniors spending $1,000 or more had some type of prescription drug coverage. One-third of all Medicare beneficiaries have no prescription drug coverage; in rural areas, nearly half of all Medicare beneficiaries lack prescription drug benefits.[19] A survey of Medicare beneficiaries was conducted by the Health Care Financing Administration to investigate the proportion of health care spending devoted to prescription drugs across several States. The survey revealed wide variation in the proportion of prescription drug spending among Medicare beneficiaries living in different States—from

a low of 12 percent in Missouri to a high of 67 percent in Kentucky.[20] In addition, the survey found that almost one-fourth of all Medicare beneficiaries have private sector coverage through a former employer, but the number of firms offering such coverage had fallen by 25 percent between 1994 and 1998, and may continue to fall, as firms seek ways to rein in rising health-care costs.[21]

In light of these facts, it is of interest to examine trends in spending on health care and prescription drugs by seniors and to explore the possible impact that having health insurance, other than Medicare might have had on those trends.

Methods

Data and sample. Data for this study are from the Interview portion of the 1980 to 1997 Consumer Expenditure (CE) surveys.[22] The Consumer Expenditure survey collects data quarterly from approximately 5,000 consumer units in a rotating panel design. A consumer unit is defined as all members of a household related by blood, marriage, adoption or other legal arrangements; or as someone living alone or sharing quarters with others, but financially independent; or as two or more persons who pool income and make joint expenditures. The survey is designed to collect data regarding both regular and relatively large household expenses. Although the focus of the survey is on expenditures, limited data on demographic, social, and economic characteristics of members of the consumer unit are also obtained.

Unless a consumer unit decides not to continue with the survey, it will remain in the sample for five consecutive quarters. First quarter data are not included in the survey, but are used to compare responses obtained in subsequent quarters. Each quarter, 20 percent of the sample rotates out and a new 20 percent sample is added.

For this study, a sample of 3,423 households was used, with about 200 households for each year. The following five sample selection criteria were used:

1. For each year from 1980 to 1997, consumer units that contributed to four consecutive quarters of information in a given year were selected
2. Complete income reporters were selected[23]
3. The reference person or spouse of the consumer unit had to be age 65 or older at the time of the interview in order to be included in the study
4. Consumer units with positive income and positive total health care expenditures were included
5. Because estimates in expenditure studies are very sensitive to outliers, consumer units with real value of total health care expenditure greater than 3 standard deviations from the mean were excluded from the study.

Measurements and Analytical Methods. The main variables of interest were annual total out-of-pocket health care expenditures, health insurance coverage to supplement Medicare, and annual total out-of-pocket prescription drug expenditures. To answer the first research question, the average annual out-of-pocket health care expenditures (in 1997 dollars) and prescription drug expenditures (in 1997 dollars) were plotted. In addition, the budget shares[24] of both total health care and prescription drug expenditures for each year were plotted. To address the second research question, a set of logistic regressions was estimated. The dependent variable for the first logistic regression was whether the seniors had any insurance coverage other than Medicare. The dependent variables for the next four logistic regressions were whether seniors had a particular type of insurance plan to supplement Medicare, such as: a commercial health insurance, a Blue Cross / Blue Shield health insurance plan, a health maintenance organization (HMO) plan, or a commercial Medicare supplement. To answer the third research question, OLS regression analyses were run using out-of-pocket prescription drug expenditures as the dependent variable. Two models were estimated with dollar expenditures for prescription drugs (1997 constant dollar) and budget shares of prescription drug expenditures as dependent variables. The year and the incidence of insurance coverage were included as independent variables, along with other control variables. To gain insights into the fourth research question, which queries the relationship between insurance coverage and overall health care expenditures, two additional models were estimated with total out-of-pocket health care expenditures and budget shares of total out-of-pocket health care expenditures as dependent variables.

The control variables used in this study include annual after-tax income in 1997 constant dollars; age of the reference person; race or ethnicity (non-Hispanic White as the reference group, non-Hispanic Black, Hispanics, and other races); education (less than high school, high school as the reference group, and college or more); employment status (retired as the reference group, and still working); family size; family type (husband-wife family as the reference group, single male head, single female head, and other families); Medicaid eligibility; housing tenure (renter as the reference group, owner with mortgage, owner without mortgage); and region[25] (urban Northeast, urban Midwest, urban South as the reference group, urban West, and rural).

Results

Trend of out-of-pocket spending. The average total out-of-pocket health care expenditures (in 1997 constant dollars) generally increased over time for senior households, reaching the highest point in 1989, and then slightly decreasing for a

few years and increasing again in 1997. (See chart 1.) The budget share of health care also increased over the same time period, but at a lower rate. (See chart 2.) In 1980, the seniors' average total household health care expenditures was $1,434, compared with $2,590 in 1997—an 81-percent increase in real dollar amount, and a 35-percent increase in budget share. The real expenditure on prescription drugs also increased over time—$249 in 1980 and $492 in 1997. This was a 169-percent increase in real dollar amount and a 34-percent increase in budget share.

Additional insurance coverage. Table 1 shows descriptive statistics of seniors with supplemental health insurance coverage to Medicare. They are compared with seniors having no additional insurance coverage. The descriptive statistics show that, on average, the seniors without additional health insurance coverage were more likely to be Black non-Hispanic or Hispanic, not-working, single, having less than a high school education, and eligible for Medicaid. They also had lower incomes. The average annual total expenditure on health care was much lower for the group without additional insurance ($1,210), compared with the group having additional insurance ($2,805). Both out-of-

pocket expenditures on health insurance and on prescription drugs were higher for the group with additional insurance. The same pattern is true for budget share measures.

Table 2 presents the logistic regression results on supplemental insurance coverage. The dependent variable for the first regression was whether a senior household carried any health insurance to supplement Medicare. The results show that over the years, the probability of purchasing additional insurance had not changed, when other factors were controlled. However, when different types of insurance were analyzed, a clear trend emerged. Over the years, senior consumers were more likely to purchase HMO plans and commercial Medicare supplements, and less likely to purchase other commercial health insurance or Blue Cross/ Blue Shield coverage.

Total after-tax income was positively related to the likelihood of purchasing additional insurance, other things being equal. Further investigation shows that higher income was positively related to the probability of being covered by a commercial Medicare supplement, but not related to being covered by the other three types of insurance (HMOs, Blue Cross/Blue Shield, and other commercial insurance). The older the reference person, the more likely his or her household

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Chart 1. **Out-of-pocket expenditures on total health care and on prescription drugs in 1997 dollars, 1980–97**
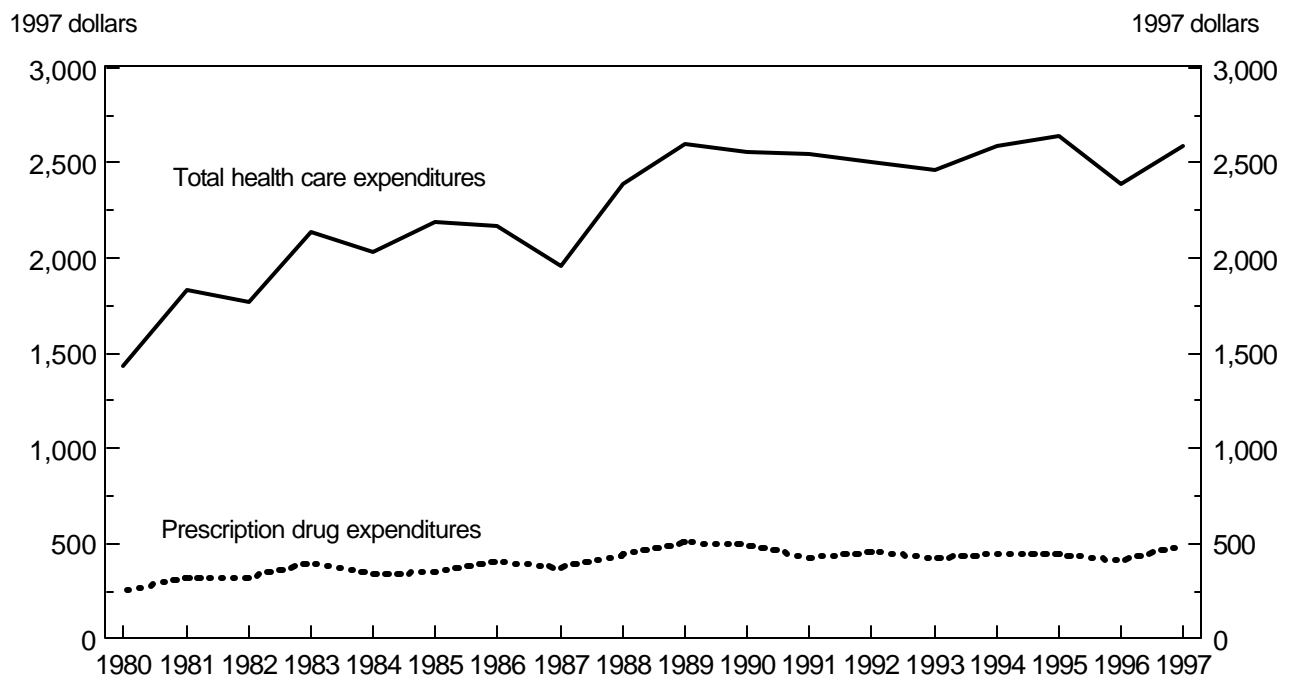
purchased some additional insurance coverage. In particular, age was positively associated with the probability of purchasing Blue Cross/Blue Shield and commercial Medicare supplement plans. It was, however, negatively related with the probability of purchasing other types of commercial health insurance, when other factors were held the same.

Ethnicity made a difference in senior consumers' probability of purchasing additional insurance, indicated by non-Hispanic Blacks and Hispanics being less likely to purchase additional insurance coverage. Compared with non-Hispanic White seniors, non-Hispanic Black seniors were less likely to purchase all types of insurance coverage plans with the exception of HMO plans, other things being equal. Hispanic seniors were less likely to purchase either other types of commercial health insurance plans or Blue Cross/ Blue Shield plans. Although there was no statistically significant difference between seniors of other races and non-Hispanic White seniors in terms of having any additional insurance coverage, seniors of other races were more likely to have HMO plans, and less likely to have Blue Cross/Blue Shield plans.

Holding other things equal, seniors with less than a high school education were less likely to have health insurance coverage other than Medicare. In particular, they were less likely to have HMO plans and commercial Medicare supplement plans. There was no statistically significant difference between seniors with a high school education and those with a college or post-college education in their purchasing pattern for health insurance. If the reference person was still working at the time of the interview, then his or her household was more likely to have insurance coverage other than Medicare.

Compared with married-couple households, households headed by single males were less likely to purchase additional insurance coverage. They were less likely to purchase a commercial Medicare supplement and other types of commercial health insurance. Both households headed by single females and nontraditional families were more likely to purchase Blue Cross/Blue Shield plans, compared with married senior households. Family size was related positively with the probability of purchasing HMO plans, other things being equal.

Chart 2. **Budget shares for out-of-pocket total health care and for prescription drug expenditures, 1980–97**
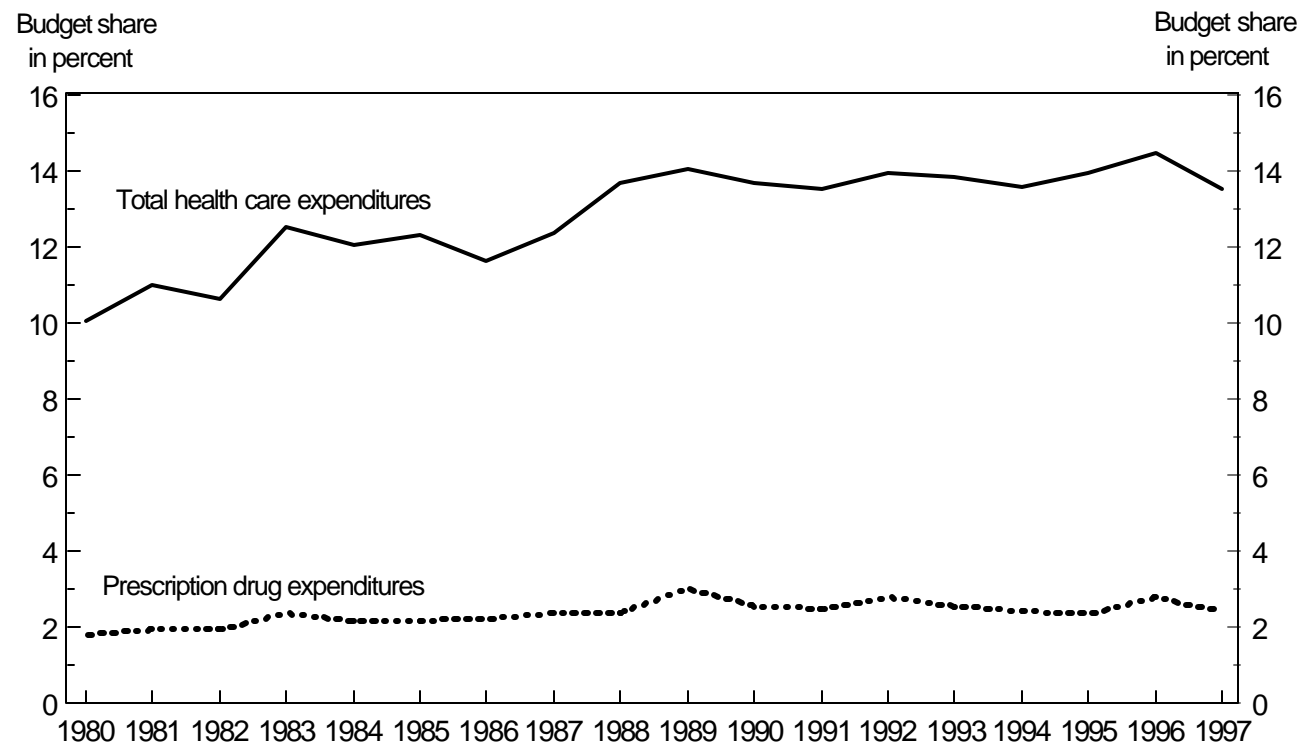
Table 1. Descriptive statistics of the senior sample, by insurance status, 1980–97

Item	Do not have other insurance		Have other insurance	
	Mean	Standard deviation	Mean	Standard deviation
Total health care expenditure,1997 dollars	1,210.21	1,213.76	2,804.89	1,858.52
Total health insurance expenditure, 1997 dollars	401.80	258.54	1,550.01	1,067.00
Prescription drugs expenditure,1997 dollars	281.80	499.63	472.65	623.93
Total health care budget share, in percent	8.58	7.24	14.95	9.13
Health care insurance budget share, in percent	3.49	2.79	8.63	5.94
Prescription drugs budget share, in percent	1.93	3.48	2.62	3.59
Total expenditure, 1997 dollars	16,236.89	12,237.09	22,023.41	14,896.22
Total income, 1997 dollars	19,050.29	18,334.80	24,759.07	20,954.54
Age	74.07	6.68	74.16	6.61
White	.74	.44	.90	.30
Black	.17	.38	.05	.23
Hispanic	.06	.24	.02	.15
Other race	.03	.16	.02	.16
Less than high school	.55	.50	.42	.49
High school graduate	.37	.48	.45	.50
College or more	.08	.27	.13	.34
Still working	.18	.38	.22	.42
Not working	.82	.38	.78	.42
Family size	1.72	1.09	1.86	1.00
Husband-wife family	.39	.49	.52	.50
Single male head	.15	.36	.08	.27
Single female head	.35	.48	.30	.46
Non-family	.11	.31	.11	.31
Not eligible for Medicaid	.68	.47	.84	.37
Eligible for Medicaid	.32	.47	.16	.37
Renter	.31	.46	.18	.39
Homeowner with mortgage	.14	.34	.16	.37
Homeowner without mortgage	.53	.50	.65	.48
Urban South...	.28	.45	.26	.44
Urban Northeast	.22	.42	.21	.41
Urban Midwest	.22	.41	.23	.42
Urban West	.19	.39	.19	.39
Rural	.11	.31	.13	.34

NOTE: Percentages may not sum to 100 percent due to rounding.

Seniors who were eligible for Medicaid were less likely to have any Blue Cross/Blue Shield insurance coverage, compared with those who were not eligible for Medicaid. Homeowners also were more likely to have commercial Medicare supplements and other types of commercial health insurance plans than renters, *ceteris paribus.*

Analysis of regional differences reveal that, senior households in the urban Northwest were more likely than senior households in the urban South to have Blue Cross/Blue Shield plans, but less likely to have commercial Medicare supplements or other commercial health insurance. Senior households in the urban West were less likely to have health insurance coverage to supplement Medicare, when compared with seniors living in the urban South. However, seniors living in the urban West were more likely to have HMOs, and less likely to have commercial health insurance or Blue Cross/Blue Shield plans. Senior households living in rural areas were no different from those living in the urban South.

Insurance coverage and prescription drug expenditures. For seniors without any additional insurance coverage other than Medicare, neither the real dollar expenditures on, nor budget shares for out-of-pocket prescription drugs increased in a statistically significant manner from 1980 to 1997. (See table 3.) The prescription drug expenditures increased at different paces for seniors with different types of health insurance plans. Seniors with commercial Medicare supplement insurance plans had the largest average increase per year on average, both in terms of dollar amount and in terms of budget share. The regression results show that, holding other things equal, seniors with commercial Medicare supplement insurance plans had about a $12-per year increase in 1997 constant dollars, compared with a $9-per year increase for those with Blue Cross/Blue Shield coverage and other types

Table 2. Logistic regression results on insurance coverage for seniors, 1980–97

Item	All insurance		Commercial insurance		Blue Cross/Blue Shield	
	Coefficient	Chi-squared	Coefficient	Chi-squared	Coefficient	Chi-squared
Intercept	−7.75	11.63***	5.32	4.51**	−8.30	12.64***
Year	.00	0.01	−.01	2.66*	−.06	43.25***
Log (real income)	.18	5.23**	.12	1.99	.07	.78
Log (age)	1.57	10.39***	−1.75	10.58***	1.66	11.17***
Black	−1.09	64.46***	−.56	9.78***	−.83	22.23***
Hispanic	−.91	19.27***	−.44	2.67*	−.90	9.40***
Other race	−.20	0.60**	−.11	.16	−.76	4.53**
Less than high school	−.20	5.03**	−.04	.20	−.13	1.95
College and above	.13	0.92	.06	.17	−.04	.07
Still work	.18	2.92*	.09	.75	.13	1.58
Family size	.06	1.26	.02	.21	.06	.95
Male single head	−.62	17.29***	−.36	4.19**	−.21	1.56
Female single head	−.01	0.01	−.19	2.14	.24	3.73*
Nonfamily	−.01	0.01	.02	.02	.34	6.64***
Medicare eligible	−.39	9.09***	−.11	.57	−24	3.07*
Owner with mortgage	.43	9.84***	.27	3.09*	.17	1.40
Owner without mortgage	.44	20.54***	.27	5.37**	.00	.00
Northeast	−.12	1.04*	−.41	10.66***	.68	37.80***
Midwest	−.02	0.02	−.10	.72	−.10	.86
West	−.21	3.08	−.32	5.96**	−.62	20.86***
Rural	.19	2.04	.21	2.36	−.18	1.65
Max-rescaled R-squared	.13	...	.05	...	.10	...

Item	Health Maintenance Organization		Commercial Medicare supplement			
	Coefficient	Chi-squared	Coefficient	Chi-squared		
Intercept	−3.41	0.67	−7.04	8.61***		
Year	.07	24.89***	.03	14.48***		
Log (real income)	.22	2.54	.15	3.44**		
Log (age)	−.64	.51	.95	3.47**		
Black	−.09	.10	−.69	15.02***		
Hispanic	−.10	.07	−.29	1.30		
Other race	.62	4.36**	−.16	.38		
Less than high school	−.34	4.37**	−.15	2.79*		
College and above	−.09	.21	.19	2.31		
Still work	.11	.43	.00	.00		
Family size	.24	12.75***	.02	.14		
Male single head	−.03	.01	−.38	4.86***		
Female single head	.14	.44	−.7	.29		
Nonfamily	.26	1.53	.04	.08		
Medicare eligible	−.24	.80	−.18	1.50		
Owner with mortgage	−.05	.04	.50	10.92***		
Owner without mortgage	−.13	.49	.48	17.04***		
Northeast	−.07	.08	−.85	42.68***		
Midwest	.20	.94	−.11	.95		
West	.97	24.81***	−.03	.06		
Rural	.14	.31	.20	2.53		
Max-rescaled R-squared	.11	...	.09	...		

   *   Significant at the 90-percent level.   *** Significant at the 99-percent level.

   **   Significant at the 95-percent level.

of commercial health insurance plans. The trend is similar for budget share of out-of-pocket prescription drug expenditure. Seniors with commercial Medicare supplement plans lead the way with a 0.05-percent per year increase in budget share, followed by those with either other types of commercial health insurance or Blue Cross/Blue Shield coverage with a 0.03-

percent increase, other things being equal. Interestingly, there was no statistically significant difference in both prescription drug expenditures and budget shares between senior households without health insurance other than Medicare, and those with HMO coverage, other things equal. This result implies that for seniors with HMO plans, neither the real

Table 3. Regression results on out-of-pocket prescription drugs expenditures among seniors, 1980–97

Item	Dollar amount (1997 dollars)		Budget share (in percent)	
	Coefficient	t-value	Coefficient	t-value
Intercept	−878.24	−1.53	−7.10	−2.06 **
Year	2.36	1.01	.01	.82
Having commercial insurance * year	8.86	4.01 ***	.03	2.61 ***
Having Blue Cross/Blue Shield * year	8.59	3.93 ***	.03	2.19 **
Having HMO * year	.11	.03	−.02	−.86
Having Medicare supplement * year	11.93	5.91 ***	.05	4.15 ***
Log (real income)	−18.43	−.93	−.59	−4.91 ***
Log (age)	380.51	3.10 ***	3.73	5.05 ***
Black	−60.15	−1.64 *	−.44	−1.99 **
Hispanic	−185.80	−3.29 ***	−1.16	−3.41 ***
Other race	−82.96	−1.27	−.61	−1.54
Less than high school	24.53	1.10	.53	3.99 ***
College and above	−41.25	−1.25	−.59	−2.97 ***
Still work	−34.89	−1.35	−.32	−2.06 **
Family size	−6.22	−.46	−.10	−1.23
Male single head	−307.37	−7.80 ***	−1.34	−5.64 ***
Female single head	−245.90	−8.03 ***	−.58	−3.17 ***
Nonfamily	−116.43	−3.48 ***	−.24	−1.18
Medicare eligible	−107.20	−3.20 ***	−.80	−3.95 ***
Owner with mortgage	−67.55	−1.91 *	−.40	−1.87 *
Owner without mortgage	−35.47	−1.39	−.11	−.74
Northeast	−161.27	−5.58 ***	−1.15	−6.59 ***
Midwest	−33.12	−1.19	−.22	−1.33
West	−105.40	−3.41 ***	−.73	−3.94 ***
Rural	−12.19	−.36	.05	.23
Adjusted R-squared	...	.08	...	.08

* Significant at the 90-percent level.

** Significant at the 95-percent level.

*** Significant at the 99-percent level.

expenditure on, nor the budget share for prescription drugs increased in a statistically significant manner from 1980 to 1997.

Total after-tax income was found to be negatively associated with the budget share of out-of-pocket ex-penditures on prescription drugs, while the association between real dollar amount and income was not statistically significant. Age was positively associated with both the dollar amount on, and budget share for out-of-pocket prescription drug expenditures. Both non-Hispanic Black seniors and Hispanic seniors were found to spend less on prescription drugs, compared with non-Hispanic White seniors, other things being equal. Seniors with less than a high school education spent more on prescription drugs in terms of budget share, compared with seniors with a high school education. Those with a college or post college education spent the least on prescription drugs in terms of budget share. Seniors who were still working at the time of the interview had lower budget shares for prescription drugs, compared with those who were not working.

Family type was associated with expenditures on out-of-pocket prescription drugs. Married-couple households spent more on prescription drugs, both in terms of dollar amount and budget share, compared with all other types of families. Seniors who were homeowners with a mortgage allocated less money to prescription drugs, compared with renters, probably because of their high budget share for housing. Compared with seniors living in the urban South, seniors living in the urban Northeast and in the urban West spent less money on prescription drugs, both in dollar amount and in budget share forms.

Insurance coverage and total health care expenditure. For seniors without additional health insurance coverage, the inflation-adjusted total dollar amount spent on health care decreased from 1980 to 1997, by about $19 per year, whereas the total budget share for health care also decreased by about 0.10 percent per year since 1980. (See table 4.) However, for seniors with health insurance coverage other than Medicare, both the dollar amount and the budget share for health care increased over the years, with those having a commercial Medicare supplement leading the way at about a $75 ($93.05 – $18.50) increase per year, followed by those with Blue Cross/Blue Shield and other types of commercial insurance at about a $68 increase per year. The increase in

Table 4.	Regression results on out-of-pocket total health care expenditures among seniors, 1980–97			
Item	**Dollar amount (1997 dollars)**		**Budget share (in percent)**	
	Coefficient	**t-value**	**Coefficient**	**t-value**
Intercept	−8831.94	−5.78***	−62.82	−7.88***
Year..	−18.50	−2.98***	−.10	−2.95***
Having commercial insurance * year ..	87.70	14.91***	.35	11.55***
Having Blue Cross/Blue Shield * year	85.83	14.78***	.39	12.80***
Having HMO * year	61.28	7.30***	.21	4.73***
Having Medicare supplement * year ..	93.05	17.33***	.38	13.41***
Log (real income)	151.75	2.88***	−2.25	−8.19***
Log (age)	2276.43	6.97***	22.88	13.43***
Black	−368.63	−3.77***	−2.19	−4.29***
Hispanic	−565.70	−3.76***	−2.87	−3.66***
Other race...	−385.67	−2.21**	−1.07	−1.18
Less than high school	−160.36	−2.71***	1.17	3.80***
College and above............................	48.13	.55	−2.32	−5.05***
Still work	67.83	.99	−.53	−1.49
Family size	10.95	.30	−.50	−2.62***
Male single head	−1100.75	−10.50***	−3.77	−6.90***
Female single head	−1106.90	−13.58***	−2.15	−5.04***
Non-family	−726.74	−8.17	−2.22	−4.79***
Medicare eligible	−15.58	−.17	−1.43	−3.08***
Owner with mortgage	25.00	.27	−.86	−1.76*
Owner without mortgage	76.91	1.13	1.04	2.94***
Northeast	−246.35	−3.20	−2.16	−5.39***
Midwest	−53.64	−.72	−.09	−0.22
West	−31.38	−.38	−1.06	−2.48**
Rural	−124.69	−1.40	.26	.57
Adjusted R-Squared	.32	...	.24	...

* Significant at the 90-percent level. *** Significant at the 99-percent level.

** Significant at the 95-percent level.

total expenditures on health care was the smallest for seniors with HMO coverage, at about $43 per year. Budget share followed a similar pattern, with seniors who had Blue Cross/Blue Shield or commercial Medicare supplement coverage leading the way at 0.29 percent or 0.28 percent increase per year, followed by seniors with other types of commercial insurance at 0.25 percent per year, and those with HMO coverage at 0.11 percent per year.

For seniors, the higher the household after-tax income, the higher the total health care expenditure, holding insurance coverage and other household characteristics constant. However, total after-tax income had a negative relationship with the budget share for health care expenditure when other things were controlled. Age was positively correlated with a senior household's total out-of-pocket health care expenditure. Non-Hispanic Black and Hispanic seniors were found to spend less on health care, both in dollar amount and in budget share terms, compared with non-Hispanic White seniors. Seniors of other races were found to spend less on total health care expenditures, but not in terms of budget share. The results also show that total health expenditures were more of a burden to seniors with lower levels of education, but less of a burden to seniors with college or more education, compared with seniors who had a high school education.

Family size generally had a negative relationship with the budget share for health care, other things being equal. Compared with all other types of households, married-couple households spent more money on health care and allocated a higher budget share for such care, holding other things equal. Total out-of-pocket health care costs were less of a burden to seniors who were eligible for Medicaid, compared with those who were not; homeowners with a mortgage, compared with renters; and seniors who lived in the urban Northeast and urban West, compared with those living in the urban South. However, homeowners without a mortgage allocated a larger share of their total expenditure to health care than renters, other things being equal.

Discussion

As the baby-boom generation ages, health care costs become an important area of concern. Typically, seniors spend more on health care than do younger members of the population, as they tend to have more health problems with greater severity. Medicare, which covers virtually all seniors aged 65 and older, was designed to help seniors avoid catastrophic costs associated with hospital stays and use of medical services. The original designers of the plan, however, did not

foresee the impact that an aging population, increased longevity, and rising health care costs would have on the ability of Medicare to pay claims. The lack of prescription drug coverage as well as other coverage gaps has encouraged many seniors to purchase additional health insurance to supplement their Medicare coverage.

Points for debate. The dramatic rise in prescription drug costs in recent years has sparked a debate. Some argue that seniors would be better off if prescription drugs were covered under Medicare.[26] Others cite the size of Medicare's current financial liabilities and contend that such a plan would wastefully duplicate coverage that nearly 3 in 4 seniors already have through Medicaid and private insurance. This group of debaters prefers to allow seniors to choose their health coverage in the market and giving them tax-advantaged ways of saving to cover their own health expenses such as using a RothIRA as a medical savings account.[27] Still others would target the pharmaceutical companies themselves, requiring price controls or shorter periods of patent protection.[28]

There are problems with each solution offered. Covering prescription drugs under Medicare will certainly increase the financial demands placed on the Nation's largest public insurance program. Meeting these financial demands could mean a reallocation of public dollars to the program at the expense of meeting other needs. However, to leave it to the seniors to cover their own health expenses requires the means to do so be available, both in terms of market choices and seniors' own financial resources. Currently, many insurers are cutting back on coverage and passing additional costs on to the ultimate health consumer, reducing market choices. Seniors with relatively high income and asset holdings may be able to finance their health care needs through the purchase of insurance or out-of-pocket payments. Seniors with low income and few assets can draw on Medicaid. Seniors who have low to moderate income and asset holdings, however, may not be able to finance health care or prescription drug costs. While the idea of using a Roth IRA to help cover health costs has appeal, the law governing Roth IRAs would have to be changed. Currently, only earned income can be deposited into an Roth IRA and only 18 percent of those aged 65 and older have earned income from employment. Further, unless deposits are held for 5 years, they cannot earn interest tax-free. This rule would discourage the type of deposits and withdrawals needed to pay for health care goods and services.[29] Placing price controls on, or reducing patent protection for prescription drugs could discourage investment in research and development of new drugs. And, although the cost of prescription drugs is high, to the extent such drugs help seniors to avoid or minimize hospital stays, they might lead to a cost savings overall.

Outcomes and indications. Results of this study indicate that, in both real dollar amounts and budget shares, the out-of-pocket costs that seniors pay for health care in general and prescription drugs in particular have increased, except for seniors with either no additional health insurance other than Medicare or seniors with HMO insurance in addition to Medicare. Other than those with HMOs, the seniors who had insurance coverage in addition to Medicare, on average, spent more on health care and prescription drugs than those who had Medicare coverage only. This fact suggests possible adverse selection, with those who perceive a need for additional coverage purchasing and utilizing the provisions of such coverage.

The increasing use of HMO plans and commercial Medicare supplements and the decreasing use of other commercial health insurance or Blue Cross/Blue Shield might be due to a changing health care market during the years examined in this study. Rising health care costs in the 1980s encouraged growth of HMO plans. These plans incorporated the cost of care in the premium dollar paid, emphasized preventative care, and restricted access to more expensive specialists. Typically, out-of-pocket costs consisted of the premium payment and nominal co-pay for each physician visit. Other commercial health insurance and Blue Cross/Blue Shield policies in contrast, required the consumer to pay for health care out-of-pocket first and then would reimburse dollars spent according to a benefit schedule. Thus, the HMO plans could not only limit out-of-pocket costs per physician visit, but also could make such costs more predictable, which is important to seniors living on a relatively fixed income.

Overall, our results indicate that using a managed care approach to meet the prescription drug needs of seniors can help keep costs down. However, whether such an approach is the most cost-effective and whether it is capable of maximizing social welfare is open to debate.

Limitations. The CE survey provides data on household level out-of-pocket spending on health care over a broad span of time. In this respect, it is a good data set to use to examine trends in health care spending. However, the CE survey gives no insight into the health condition of survey respondents. Because health condition is certainly an important factor in health care spending, this limitation can reduce the explanatory power of the multivariate models in this study. Also, the CE survey gives no information on the specific provisions of health insurance policies held by a consumer unit. And, expenditure information is collected at the household level instead of the individual level. Whereas other sources of data, such as the Medical Expenditure Panel Survey (MEPS),[30] report greater detail about respondents' health conditions and specific health insurance coverage, the data are available for only limited points in time.

FUTURE RESEARCH CAN EXPLORE the possibility of combining the CE with other data sets to get more information. For example, the National Health Interview Survey (NHIS) or the MEPS can be used to estimate health conditions and then the estimated health status can be entered into the CE analysis. In addition, when more recent CE data become available, this study should be expanded in order to provide more up to date information. □

Notes

[1] National Health Expenditure Projections 1998–2008 (Health Care Financing Administration (HCFA). January 2000) on the Internet at: www.hcfa.gov/stats/NHE/-Proj/.

[2] M. J. Gibson, N. Brangan, D. Gross, and C. Caplan, How much are Medicare beneficiaries paying out-of-pocket for prescription drugs? (Washington, DC, AARP Public Policy Institute, September 1999) on the Internet at: http://research.aarp.org/health 9914_how_much_1.html.

[3] B. Jackson, " Paying for prescription drugs worries Medicare recipients," Mar. 16, 1999, on the Internet at: **www.cnn.com/ ALLPOLITICS/stories/1999/03/16/jackson.prescriptions/**; Gibson and others, How much are Medicare beneficiaries paying? 1999.

[4] "Should Medicare's basic benefits include prescription drugs?" (American Enterprise Institute, Jan. 4, 1999), on the Internet at: **www.aei.org/ra/rahelms.htm**.

[5] J. Rogowski, L. A. Lillard, and R. Kington, "The financial burden of prescription drug use among elderly person," *The Gerontologist*, 1978, vol. 37 no. 4, pp. 475–82.

[6] J. C. Goodman and M. Matthews, Jr., "Simple solutions for elderly prescription drugs," Brief Analysis no. 300 (Dallas, TX, National Center for Policy Analysis, July 2, 1999).

[7] Gibson and others, How much are Medicare beneficiaries paying? 1999.

[8] National Health Expenditure Projections 1998–2008, January 2000.

[9] *Cost overdoses: Growth in drug spending for the elderly, 1992– 2010* (Families USA, Washington, DC, July 2000); and R. M. Rubin, K. Koelln, and R. K. Speas, Jr., "Out-of-pocket health expenditures by elderly households: Change over the 1980s," *Journal of Gerontology: Social Sciences*, vol. 50B, no. 5, 1995, pp. S291–S300.

[11] R. M. Rubin and K. Koelln, "Out-of-Pocket health expenditure differentials between elderly & nonelderly households," *The Gerontologist*, 1993, vol. 333 no. 5, pp. 595–602.

[12] M. Abdel-Ghany, and D. L. Sharpe, "Consumption patterns of the young-old and the old-old," *Journal of Consumer Affairs*, 1997, vol. 31, pp. 90–112; Beth Harrison, "Spending patterns of older persons revealed in expenditures survey," *Monthly Labor Review,* October 1986, pp. 15–18; and F. N. Schwenk, "A comparison of households headed by persons 55 to 65 years of age: Retired and employed," *Family Economics Review*, 1990, vol. 3, pp. 19–25.

[13] Thomas Moehrle, "Expenditure patterns of the elderly: workers and nonworkers," *Monthly Labor Review*, May 1990, pp. 34–41.

[14] Rubin and Koelln, "Out-of-Pocket health expenditure," *The Gerontologist*, 1993.

[15] D. J. Hall, "Drug prices put squeeze on the elderly," *Wisconsin State Journal*, November 1999, vol. 4, pp. A1, A3.

[16] Gibson and others, "How much are Medicare beneficiaries paying out-of-pocket?" 1999.

[17] Gibson and others, "How much are Medicare beneficiaries paying out-of-pocket?" 1999.

[18] Jackson, "Paying for prescription drugs worries," 1999.

[19] *National Health Expenditure Projections*, HCFA, January 2000.

[20] *Cost overdoses*, Families USA, 2000.

[21] Testimony of Michael Hash, Deputy Administrator, Health Care Financing Administration on prescription drug coverage for Medicare beneficiaries before the House Commerce Committee, Subcommittee on Health and Environment (Sept. 28, 1999). On the Internet at: **http://cms.hhs.gov/media/press/testimony.asp?Counter=546**.

[22] Data for the Consumer Expenditure survey are collected by the Bureau of the Census for the Bureau of Labor Statistics. For more information about the Consumer Expenditure survey. See *BLS Handbook of Methods*, Bulletin 2490 (Bureau of Labor Statistics, April 1997) or on the Internet at: **http://www.bls.gov/opub/hom/ homch16_itc.htm**.

[23] The distinction between complete and incomplete income reporters in the Consumer Expenditure Survey is based in general on whether the respondent provides values for major sources of income, such as wages and salaries, self-employment income, and social security income. Even complete income reporters may not provide a full accounting of all income from all sources. In the current CE surveys, consumer units that report across-the-board zero income are categorized as incomplete reporters.

[24] Budget share for prescription drugs was defined as total expenditure for prescription drugs divided by total household expenditure. Budget share for total health care expenditure was defined as total health care expenditure divided by total household expenditure. We also tried defining budget shares as a percentage of after-tax income. However, extreme cases with low reported after-tax income and high health care expenditure skewed all mean budget share estimates substantially upward.

[25] The reason the variable "region" is included is to control for possible regional price differences of medical care.

[26] American Enterprise Institute, "Should Medicare's basic benefits include prescription drugs," 1999.

[27] Goodman and Matthews, "Simple solutions for elderly prescription drugs," 1999.

[28] Samuelson, R. J., "Beware of a regulatory overdose," *The Washington Post,*Sept. 5, 2000.

[29] Goodman and Matthews, "Simple solutions for elderly prescription drugs," 1999.

[30] The Medical Expenditure Panel Survey is conducted by the National Opinion Research Center for the Agency for Healthcare Research and Quality Center and the National Center for Health Statistics.