

CHAPTER 2

EFFECTS OF PRESCRIPTION DRUG COVERAGE ON SPENDING AND UTILIZATION

Insurance coverage that includes coverage of prescription drugs plays a critical role in assuring access to needed medications. People with coverage not only fill more prescriptions than people without coverage; they are likely to have access to a broader array of therapies, including more costly therapies. People without drug coverage face greater financial burdens and may sometimes be unable to follow the courses of treatment ordered by their physicians. There are even some indications that physicians themselves may recommend different therapies to people with and without coverage.

As will be seen, the effects of prescription drug coverage persist across different age groups, income levels, and health statuses. Coverage increases prescription drug utilization, changes the mix of different drugs received, and reduces financial burdens for all population groups. However, access to drug coverage is most important for the elderly, simply because they require more medications, including a higher prevalence of long-term maintenance drugs for chronic conditions.

This chapter will first present detailed comparisons of utilization and spending for Medicare beneficiaries and the total population with and without drug coverage. Second, it will examine some of the possible reasons for those differences and will consider the consequences of being without coverage. Finally, it will summarize trends in utilization and spending and some of the factors that influence these changes.

Key findings include:

- Medicare beneficiaries with coverage fill nearly one-third more prescriptions than those without coverage.
- Although total drug spending for beneficiaries with coverage is nearly two-thirds higher, those without coverage pay nearly twice as much out of pocket (\$463 versus \$253).
- On average, beneficiaries with coverage pay out of pocket for about one-third of their total spending on drugs. However, the share of spending paid out of pocket varies by source of coverage, from 58 percent for those with Medigap coverage to 20 percent for those with Medicaid.

- Differences in utilization and spending between Medicare beneficiaries with and without drug coverage generally hold up across different income levels, ages, health status, and other categories.
- Drug insurance makes an especially large difference in dollar terms for those in the poorest health. Among beneficiaries with five or more chronic conditions, those with coverage had much higher total spending (\$1,402 versus \$944) and much lower out-of-pocket spending (\$412 versus \$944) than beneficiaries without coverage.
- Among people who are not Medicare beneficiaries, similar differences in utilization and spending exist between prescription drug users with and without coverage. Those with coverage for drugs fill two-thirds more prescriptions but spend a third less out of pocket than those without coverage.
- About a third of Medicare beneficiaries accounted for three-fourths of beneficiaries' total drug spending in 1996. Only 13 percent had no spending at all. Spending on prescription drugs in the non-Medicare population is even less evenly distributed.
- Self-selection does not explain the difference in spending between Medicare beneficiaries with and without drug coverage. Even among beneficiaries with the same poor health status, more prescriptions are written for people with coverage, and people without coverage are less likely to fill prescriptions.
- Prescription drugs take up about one sixth of all health spending by the elderly. Out of pocket spending for prescription drugs is a larger proportion of health spending for the elderly than for younger people. Prescription drug spending also accounts for a larger share of spending by people with low incomes than it does for people with higher incomes.
- The burden of prescription drug costs creates access problems for some beneficiaries. High spenders with incomes below the poverty line spend more than one-fourth of their income on drugs. Among Medicare beneficiaries, 10 percent of those with only Medicare coverage report not being able to afford a needed drug, compared to 2 percent of those with a non-Medicaid supplement.
- Drug spending has grown more quickly than other health spending throughout the 1990's. Price increases, higher utilization, and the use of newer, more expensive drugs all play a part in increasing drug spending.

COMPARISONS OF UTILIZATION AND SPENDING

This section will present, for Medicare beneficiaries and for the non-Medicare population, comparisons of utilization by covered and noncovered people grouped by

various demographic and health characteristics. Unless otherwise noted, all results reported in this chapter are statistically significant at the 0.05 level, based on a two-tailed test. See the Introduction of this report for details.

The comparisons here are limited to simple descriptive tables, primarily focusing on the ratio between people with and without drug coverage. It is important to note that these descriptive comparisons, which look at one factor at a time, may not isolate the key determinants of drug spending. Multivariate analysis would be needed to establish which factors are most important in explaining differences between the covered and noncovered populations.

Most of the estimates provided in this chapter are drawn from Medicare Current Beneficiary Survey (MCBS) and Medical Expenditure Panel Survey (MEPS) data on prescription drugs. It should be noted that over-the-counter drugs are not included here. Drugs that are available both over-the-counter and in prescription strength are included if the drug was obtained in prescription strength.

MCBS and MEPS use different methods to gather data on utilization and spending. However, both find the same patterns in utilization and spending for people with and without coverage. Their estimates of the magnitude of the gaps between the covered and uncovered are sometimes different, though rarely contradictory. A detailed summary of the survey methods and of the differences in results is provided in appendix B.

Overall differences

Table 2-1, drawn from 1996 MCBS data, compares drug utilization and spending for Medicare beneficiaries with and without drug coverage. As in the previous chapter, beneficiaries are included in the covered category if they had drug coverage at any point during the year. The next section of this chapter will explore the differences in spending and utilization depending on the duration of their coverage.

**Table 2-1. Utilization and Spending for Prescription Drugs
By Medicare Beneficiaries with and without Drug Coverage, 1996**

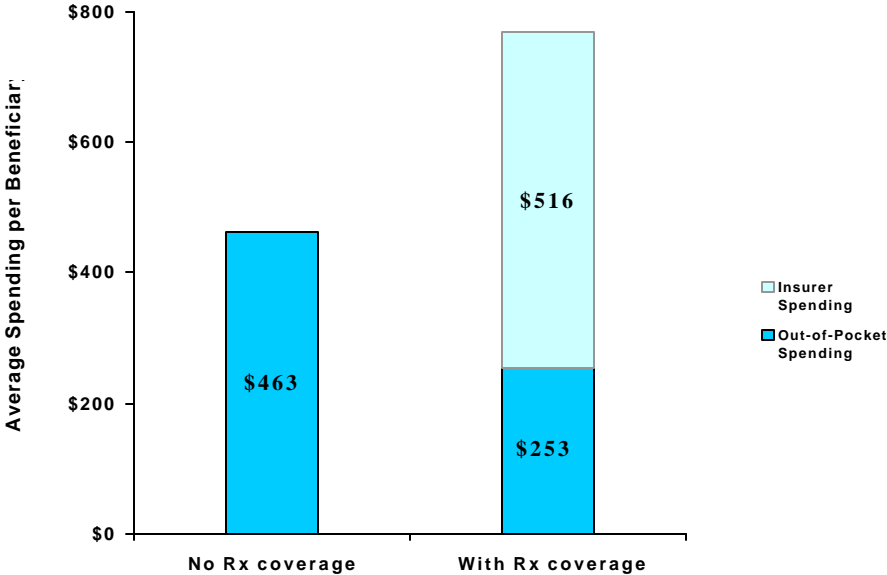
	All Medicare beneficiaries			Beneficiaries who filled at least one prescription		
	Covered	Not covered	Ratio, covered/ not covered	Covered	Not covered	Ratio, covered/ not covered
Percent who filled at least one prescription	89.4%	80.3%	1.11	100%	100%	1.00
Average # of prescriptions	21.14	16.01	1.32	23.64	19.93	1.19
Average annual spending	\$768.90	\$463.15	1.66	\$859.99	\$576.43	1.49
Retail price per prescription	\$36.37	\$28.93	1.26	\$36.37	\$28.93	1.26
Average out-of-pocket spending	\$252.65	\$463.15	0.55	\$282.58	\$576.43	0.49
% out-of-pocket	33%	100%	0.33	33%	100%	0.33
Average out-of-pocket per prescription	\$11.95	\$28.93	0.41	\$11.95	\$28.93	0.41

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

The table shows that:

- Beneficiaries who have prescription drug coverage fill nearly one-third more prescriptions than those who do not have coverage, and total drug spending for beneficiaries with coverage is nearly two-thirds higher.
- The cost of prescriptions filled by beneficiaries with coverage is higher on average than the cost of prescriptions filled by beneficiaries without coverage. This is not because the price of any specific medication is higher for people with coverage. Instead, the difference seems to come from the fact that people with drug coverage receive a different mix of drugs than noncovered people receive, or different size prescriptions. The next chapter will show that for a given prescription, prices are generally lower for people with third-party coverage than for people who purchase their own drugs.
- Beneficiaries with coverage pay out of pocket for 33 percent of their total spending on prescription drugs; those without coverage, of course, pay 100 percent. For each prescription they fill, beneficiaries without coverage pay on average more than twice as much out of pocket as those who have coverage. Overall, their annual out-of-pocket costs are nearly twice as high -- \$200 more -- even though they use fewer medications (see Figure 2-1).

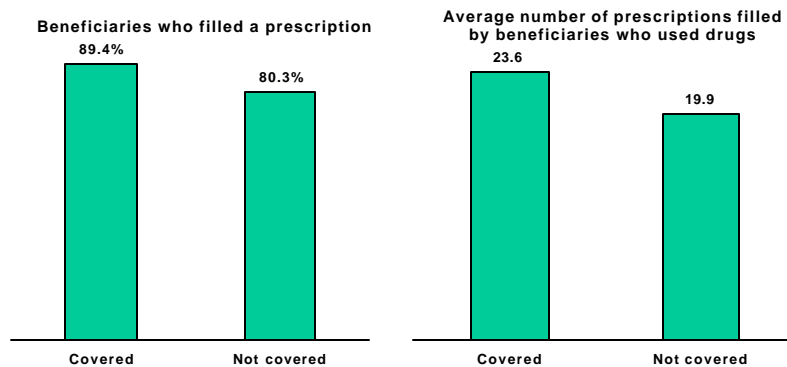
Figure 2-1. Out-of-pocket and Insurer Spending on Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

- Beneficiaries with coverage are more likely to fill at least one prescription. The differences between those with and without coverage persist even when looking only at beneficiaries who fill prescriptions (see Figure 2-2).

Figure 2-2. Medicare Beneficiaries Who Filled a Prescription and Number of Prescriptions Filled, by Coverage Status, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996

Table 2-2 presents similar information for the non-Medicare population.¹ The differences in utilization and total spending are much greater. This is because a very large number of non-Medicare individuals without coverage — nearly two-thirds — receive no prescription drugs at all. In contrast, only 13 percent of Medicare beneficiaries fill no prescription during the year.² If one considers only users of prescription drugs, the patterns are more similar to those shown in Table 2-1. Those who have coverage receive more, and more costly, prescriptions.³ Those without coverage pay over twice as much out-of-pocket for each prescription they fill (see Figure 2-3).

¹ This and subsequent MEPS-based tables on the non-Medicare population are limited to nonelderly people without Medicare. They omit the very small number of elderly people—an estimated 150,000—who are not covered by Medicare.

² Appendix B contains a further discussion of use rates and how users are treated in this report.

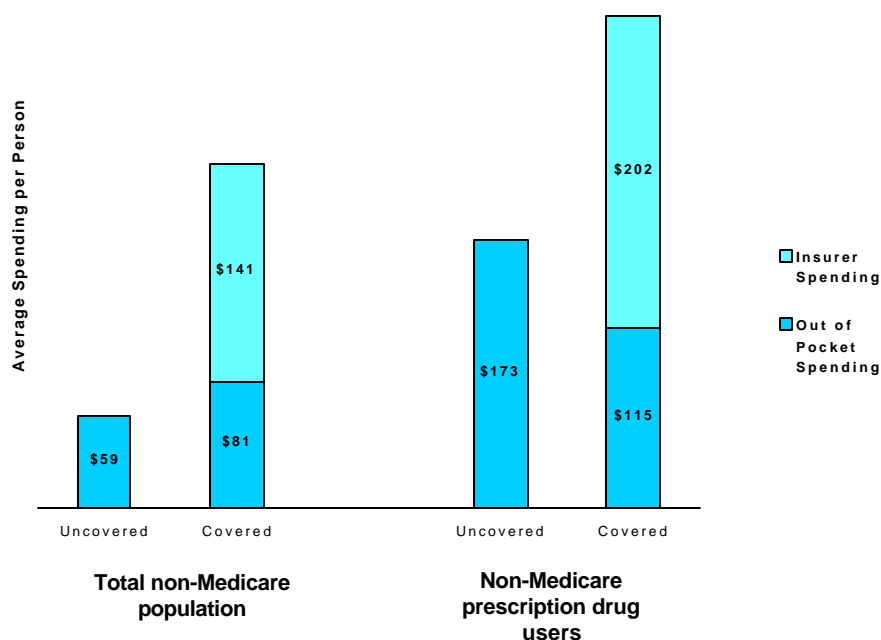
³ The difference in the price of prescriptions purchased by covered people compared to those purchased by noncovered people is only statistically significant at the five percent level on a one-tail test.

**Table 2-2. Utilization and Spending for Prescription Drugs
By Non-Medicare Individuals with and without Drug Coverage, 1996**

	Total non-Medicare population			People who filled at least one prescription		
	Covered	Not covered	Ratio, covered/ not covered	Covered	Not covered	Ratio, covered/ not covered
Percent who filled at least one prescription	70.0	33.9	2.06	100%	100%	1.00
Average # of prescriptions	6.80	2.02	3.36	9.73	5.92	1.64
Average annual spending	\$222.01	\$58.94	3.77	\$317.64	\$172.64	1.84
\$ per prescription	\$32.65	\$29.17	1.12	\$32.65	\$29.17	1.12
Average out-of-pocket spending	\$80.59	\$58.94	1.37	\$115.30	\$172.64	0.67
% out-of-pocket	36%	100%	0.36	36%	100%	0.36
Average out-of-pocket per prescription	\$11.85	\$29.17	0.41	\$11.85	\$29.17	0.41

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

Figure 2-3. Out-of-pocket and Insurer Spending on Prescription Drugs by Non-Medicare Beneficiaries with and without Drug Coverage, 1996



Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

It should be emphasized that, throughout this chapter, “out-of-pocket costs” include only the net costs to an individual, after any insurance payments, for any prescriptions received. Premiums paid for insurance coverage are not included. This analysis excludes premiums because it is difficult with survey data to separate drug premiums from overall insurance premiums. In fact, in many cases, calculating truly separate drug premiums would be impossible even with complete information. In many benefit packages, prescription drugs are considered a key piece, and the interactions with other benefits make it difficult to separate the incremental cost of a drug benefit from the package as a whole.⁴ Moreover, the insurance that these premiums buy has a value in and of itself, even if there is no drug utilization.

Duration of coverage

Table 2-3, drawn from an independent analysis of MCBS data by Bruce Stuart et al. for the Commonwealth Fund, shows differences in utilization and spending for Medicare beneficiaries who had drug coverage throughout 1996, during part of the year, or at no time during the year. It has been observed for other types of medical coverage that people with part-year coverage use more services during their covered period than people with full-year coverage use during a similar period; in effect, they are using their coverage to deal with previously unattended problems. However, this sort of catch-up effect does not appear to be applicable for prescription drugs. While someone can postpone elective surgery, for example, people who do not obtain needed medications during a period without coverage cannot make up for this when they obtain coverage.

Instead, it seems likely that people who have coverage for only part of a year will act like noncovered people during their period without coverage and like other covered people during their period with coverage. In fact, beneficiaries even with 7 to 9 months of coverage spend only 12 percent (\$58) more than beneficiaries who are uncovered all year. Table 2-3 and Figure 2-4 show that the more substantial increase in utilization occurs when a beneficiary has drug coverage for at least 10 months.

⁴ In some cases, people with supplemental insurance may even be paying premiums for the addition of a drug benefit that cost more on average than the maximum value of the drug benefit.

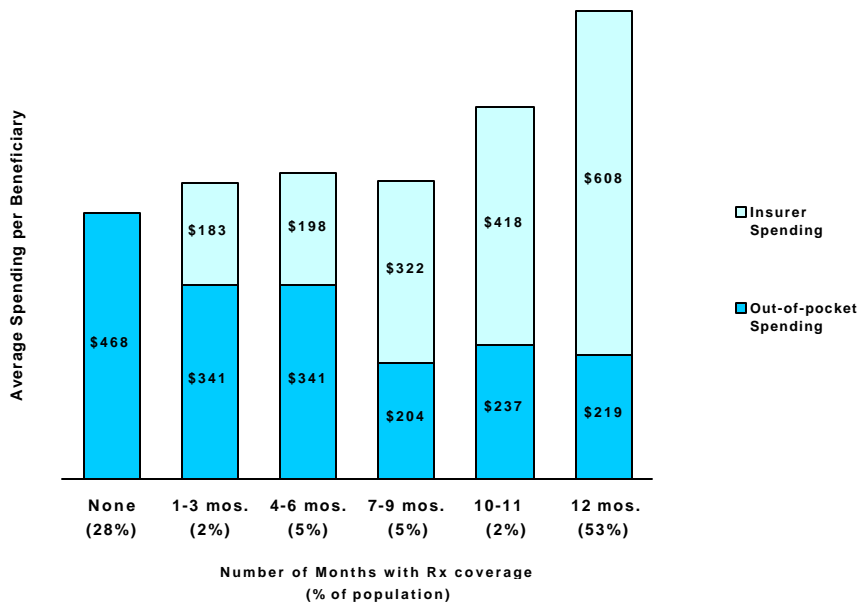
Table 2-3. Average Prescriptions, Total Spending, and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries, by Months of Coverage, 1996

	Months of drug coverage during 1996						
	Total	Never covered	1-3 months	4-6 months	7-9 months	10-11 months	Always covered
Annual prescription drug spending	\$688	\$468	\$524	\$539	\$526	\$655	\$828
Annual prescription spending out of pocket	\$316	\$468	\$341	\$341	\$204	\$237	\$219
Proportion of drug spending paid out of pocket	46%	100%	65%	63%	39%	36%	26%
Proportion of beneficiaries	95%*	28%	2%	5%	5%	2%	53%

*The total equals 95% because duration of insurance coverage could not be determined for 4.7% of beneficiaries (had claims paid but did not report coverage).

Source: Bruce Stuart tabulations of MCBS, 1996, for noninstitutionalized beneficiaries enrolled in Medicare for the entire year.

Figure 2-4. Out-of-pocket and Insurer Spending on Prescription Drugs by Medicare Beneficiaries, by Duration of Drug Coverage, 1996



Note: 4.7% of beneficiaries had drug coverage for an unknown number of months (had claims paid but did not report coverage).

Source: Bruce Stuart tabulations of MCBS, 1996, for noninstitutionalized beneficiaries enrolled in Medicare for the entire year.

Much of the MCBS data presented elsewhere in this report, and all the MEPS data, treat individuals as having drug coverage if they have coverage at any time during the year. Because people with part-year coverage have lower utilization and spending than those with full-year coverage, their inclusion lowers the averages for the covered group. As a result, the real differences between people who do and do not have coverage at a given point in time are understated throughout this report.

Source of Coverage

Table 2-4 and Figure 2-5 show that utilization and spending by Medicare beneficiaries varies according to their primary source of supplemental coverage.⁵ The gaps between beneficiaries with and without drug coverage also vary.

Table 2-4. Average Number of Prescriptions, Total Spending, and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Primary Source of Supplemental Coverage, 1996

Source of coverage	Covered				Not covered		Ratio, covered/not covered		
	Average number of prescriptions	Average total spending	Average out-of-pocket spending	Out-of-pocket as % of total spending	Average number of prescriptions	Average total spending (all out-of-pocket)	Average number of prescriptions	Average total spending	Average out-of-pocket spending
TOTAL	21.14	\$768.90	\$252.65	33%	16.01	\$463.15	1.32	1.66	0.55
Risk HMO	17.43	\$573.02	\$188.90	33%	*	\$151.33	*	3.79	1.25
Medicaid	28.50	\$882.13	\$177.57	20%	14.95	\$380.05	1.91	2.32	0.47
Employer Sponsored	19.07	\$805.89	\$238.72	30%	17.42	\$530.03	1.10	1.52	0.45
Individually Purchased	20.78	\$711.28	\$416.41	58%	17.61	\$524.70	1.18	1.36	0.79
Other	27.43	\$790.96	\$292.71	37%	17.87	\$543.66	1.53	1.45	0.54
Medicare Only					12.39	\$326.65			

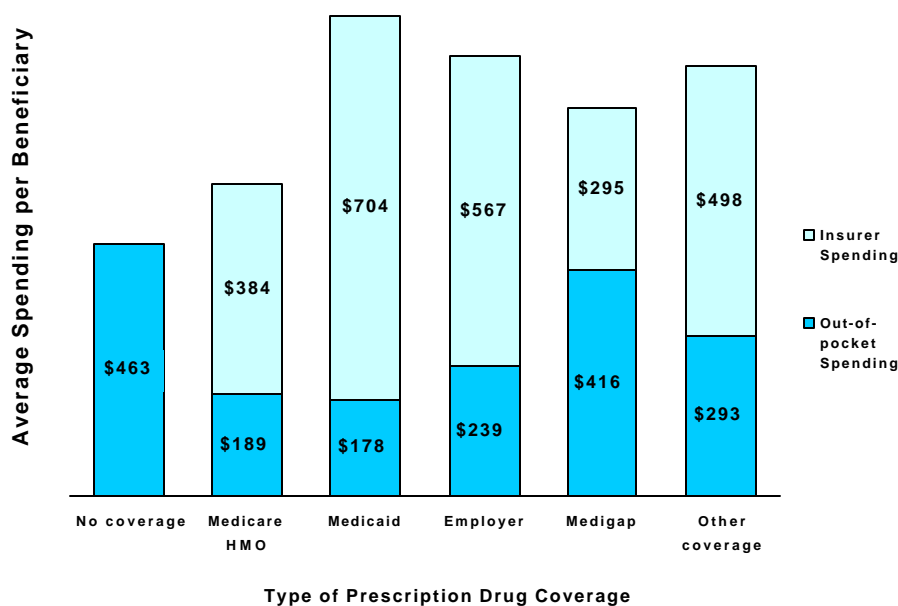
* Sample size is too small to produce a reliable estimate.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

⁵ Note that not every beneficiary with drug coverage obtained that coverage through the same source that provided his or her primary Medicare supplemental coverage.

Among beneficiaries with drug coverage, both total spending and the proportion that beneficiaries pay out-of-pocket vary by type of insurance. Beneficiaries who have individually purchased (mostly Medigap) insurance pay a higher proportion of their drug costs than any other covered group and have relatively low total spending compared to other coverage groups. Beneficiaries enrolled in Medicaid who have drug coverage have the highest utilization and spending and the lowest out-of-pocket costs of any covered group.⁶

Figure 2-5. Out-of-pocket and Insurer Spending on Prescription Drugs by Medicare Beneficiaries, by Type of Drug Coverage, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

With few exceptions, Medicare beneficiaries with drug coverage had more prescriptions, higher spending, and lower out-of-pocket costs than those without drug coverage as a whole and within each coverage group.⁷

⁶ However, Medicaid beneficiaries' spending, utilization, and out-of-pocket spending is not significantly different from the next closest group in each case: their spending is only different from spending by those with employer-sponsored coverage on a one-tail test, their utilization is not significantly different from beneficiaries with other public insurance, and their out-of-pocket spending is not significantly different from beneficiaries enrolled in an HMO.

⁷ Differences among beneficiaries enrolled in Medicare HMOs are not statistically significant, primarily because of the small number of beneficiaries in HMOs without drug coverage.

- The spending differences between Medicaid beneficiaries with and without drug coverage are dramatic. Beneficiaries who have Medicaid with drug coverage get nearly twice as many prescriptions and spend over twice as much on drugs as beneficiaries who receive Medicaid assistance only with cost sharing or premiums. Very low-income people who lack drug coverage may be least likely to be able to purchase needed medications on their own.
- Beneficiaries with employer-sponsored supplemental insurance show the smallest utilization difference between those with and without a drug benefit; the difference in the number of prescriptions per person is not statistically significant. The difference in total spending is much larger, because prescriptions received by those with a drug benefit were 39 percent more costly than those received by retirees without a drug benefit. Despite their higher total spending, those with drug coverage had out-of-pocket spending less than half of what uncovered beneficiaries in this group spent.
- The utilization difference for people with individually purchased coverage with and without a drug benefit is also quite small. In contrast to those with employer-sponsored insurance, however, those with drug coverage spend nearly as much out of pocket (almost 80 percent as much) as those without it. This is partly due to the deductible and cost-sharing requirements imposed by standard Medigap plans. On average, beneficiaries with a drug benefit and Medigap pay 58 percent of their costs out of pocket.

There are also notable differences among beneficiaries without drug coverage based on whether they had other supplemental coverage. With the exception of beneficiaries in HMOs, people with no drug coverage but some supplemental coverage had higher spending than people who had only Medicare coverage. One possible explanation is that people with no supplement are healthier than people who choose to obtain some form of supplemental coverage. Another possible factor is that beneficiaries without a supplement were less likely to see a physician, and hence less likely to receive a prescription. The issues of self-selection, moral hazard, and lack of access will be considered further below.

Income

Table 2-5 and Figure 2-6 show average prescription drug spending and average out-of-pocket spending for Medicare beneficiaries by income.⁸ Average spending for people

⁸ Income is given as a percentage of the federal poverty threshold, which differs by age and household size. For beneficiaries over 65, these calculations use a poverty threshold of \$7,525 for an individual, and \$9,491

with coverage is consistently higher than for people without coverage across income groups.⁹ It might be expected that spending differences would diminish steadily with higher income, because higher-income people without coverage are better able to pay for drugs on their own. The difference in average spending for covered and noncovered beneficiaries in poverty is indeed greater than for other income groups. However, among the higher income groups, there is no significant difference in the size of the spending gap between covered and noncovered beneficiaries. This suggests that insurance coverage for prescription drugs matters, irrespective of income.

Table 2-5. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Family Income as a Percent of Poverty, 1996

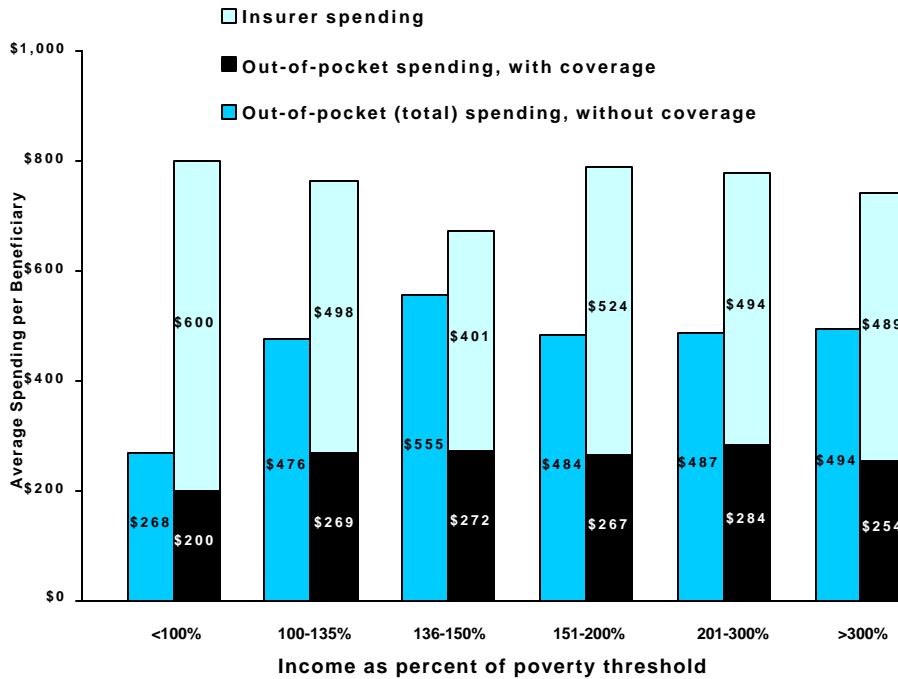
Income as a percent of poverty	Covered			Not Covered	Ratio, Covered/Not Covered	
	Average Total Spending	Average Out-of-pocket Spending	Out-of-pocket as % of Total Spending	Average Total Spending (all out-of-pocket)	Average Total Spending	Average Out-of-pocket Spending
Total	\$769	\$253	33%	\$463	1.66	0.55
<Poverty	\$800	\$200	25%	\$368	2.18	0.54
Poverty-135%	\$767	\$269	35%	\$476	1.61	0.57
136-150%	\$673	\$272	40%	\$555	1.21	0.49
151-175%	\$790	\$279	35%	\$453	1.74	0.62
176-200%	\$791	\$255	32%	\$512	1.54	0.50
201-300%	\$778	\$284	36%	\$487	1.60	0.58
301-400%	\$782	\$264	34%	\$453	1.72	0.58
>400%	\$717	\$248	35%	\$525	1.37	0.47

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

for those who lived with others. For beneficiaries under 65 they use \$8,163 for an individual, and \$10,564 for those who lived with others.

⁹ In the income range between 136 percent and 150 percent of poverty, the difference in spending between beneficiaries with and without coverage is not statistically significant.

Figure 2-6. Out-of-pocket and Insurer Spending on Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Income, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Among covered beneficiaries, those below the poverty threshold pay the smallest share of their own costs out of pocket. Poor beneficiaries are more likely to have drug coverage through Medicaid, which imposes only nominal copayments. Still, even with drug coverage, beneficiaries in poverty paid 25 percent of their own costs. This may be partly because people are counted as covered if they have coverage for any part of the year. The out-of-pocket costs might have been incurred by part-year eligibles during a period without coverage. Another possible factor is the fact that some state Medicaid programs limit the number of prescriptions beneficiaries may receive in a given period.

Table 2-6 shows spending by income for the non-Medicare population. Again, it is helpful to look at people who used any prescription drugs, rather than at the total population. Among users, patterns for the non-Medicare population are similar to those shown in Table 2-5 for the Medicare population as a whole. In all income ranges, there is a difference between spending by those with coverage and those without.¹⁰ Like Medicare beneficiaries, covered non-Medicare beneficiaries pay the smallest share of their own costs – just over a fourth – when they are in poverty. However, actual out-

¹⁰ However, the smallest difference, between users with and without coverage with incomes between 100 and 200 percent of poverty, is statistically significant only on a one-tail test.

of-pocket spending for drug users in this group is only \$76 on average, as opposed to \$200 for covered Medicare beneficiaries in poverty.

Table 2-6. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Non-Medicare Individuals with and without Drug Coverage, by Family Income as a Percent of Poverty, 1996

Income as a percent of poverty	Covered			Not Covered	Ratio, Covered/Not Covered	
	Average total spending	Average out-of-pocket spending	Out-of-pocket as % of total spending	Average total spending (all out of pocket)	Average total spending	Average out-of-pocket spending
Total non-Medicare population	\$222.01	\$80.59	36%	\$58.94	3.77	1.37
<Poverty	\$191.14	\$49.64	26%	\$62.18	3.07	0.80
100-200%	\$195.96	\$76.98	39%	\$63.45	3.09	1.21
200-400%	\$210.66	\$79.10	38%	\$51.33	4.10	1.54
>400%	\$252.34	\$93.58	37%	\$61.36	4.11	1.53
People using prescription drugs	\$317.64	\$115.30	36%	\$172.64	1.84	0.67
<Poverty	\$291.65	\$75.74	26%	\$176.60	1.65	0.43
100-200%	\$285.74	\$112.26	39%	\$187.13	1.53	0.60
200-400%	\$305.98	\$114.89	38%	\$156.70	1.95	0.73
>400%	\$346.89	\$128.65	37%	\$172.10	2.02	0.75

Note: The totals include persons with negative family income.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

Health status and other health indicators

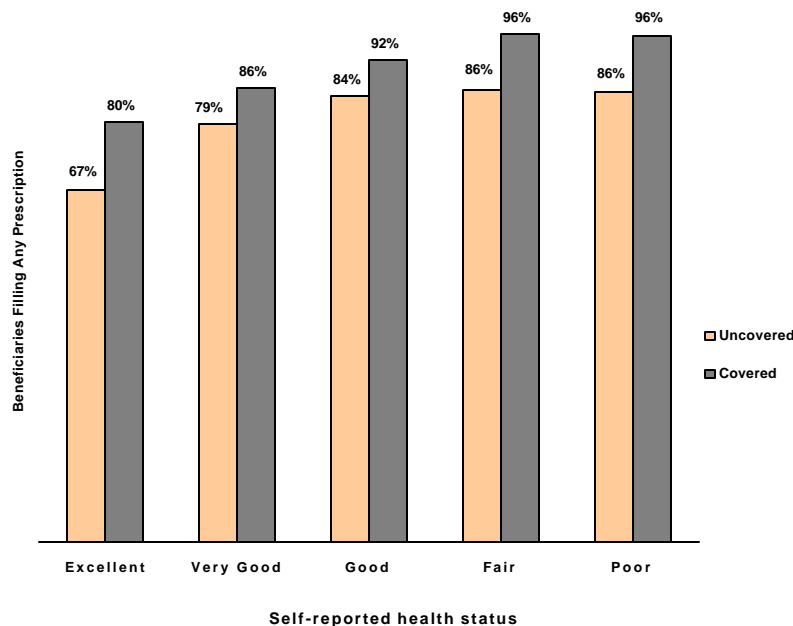
Not surprisingly, as health status worsens, beneficiaries use more drugs. However, Table 2-7 and Figure 2-7 show that while utilization rises, a gap remains between beneficiaries with and without coverage. Within each health status category, beneficiaries with coverage are more likely to fill at least one prescription, and fill more prescriptions when they do use drugs. Beneficiaries without coverage who are in fair or poor health are as likely to fill no prescriptions as covered beneficiaries in very good health.

Table 2-7. Medicare Beneficiaries Filling at Least One Prescription and Number of Prescriptions Filled, by Drug Coverage and Self-Reported Health Status, 1996

	% filling at least one prescription		Number of prescriptions filled by users		
	Covered	Not covered	Covered	Not covered	Ratio, covered/not covered
Excellent	80%	67%	13.76	11.42	1.20
Very Good	86%	79%	17.18	15.45	1.11
Good	92%	84%	22.40	20.36	1.10
Fair	96%	86%	33.22	26.44	1.26
Poor	96%	86%	39.67	31.43	1.26

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Figure 2-7. Percentage of Medicare Beneficiaries with and without Drug Coverage Filling at Least One Prescription, by Health Status, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

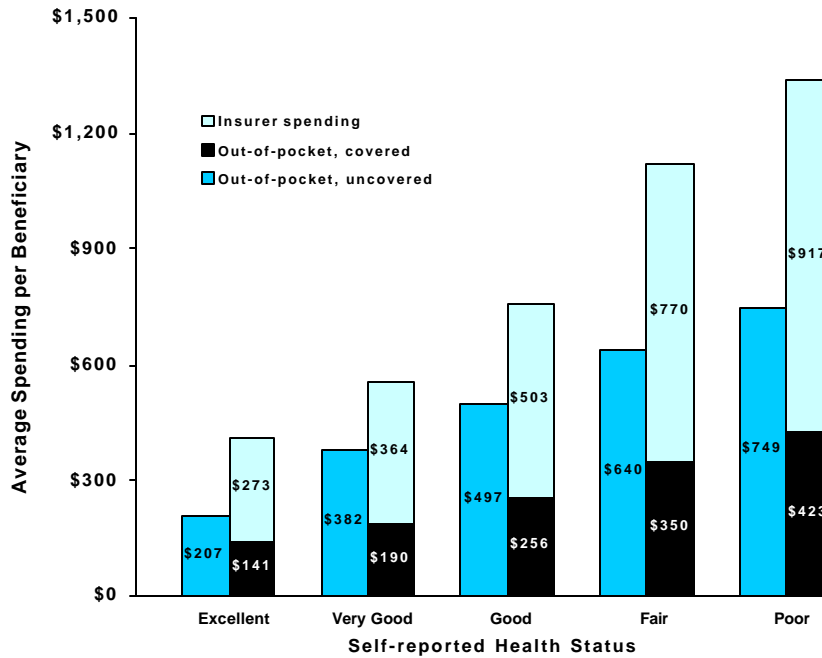
Table 2-8 and Figure 2-8 show that spending follows the utilization pattern: as Medicare beneficiaries report poorer health, their spending on prescription drugs increases. Again, within each health status category, beneficiaries with drug coverage have higher spending than the noncovered. Spending for beneficiaries in poor health who had drug coverage was \$590 more than for those who lacked coverage; for beneficiaries with fair health, the difference was \$480. Beneficiaries spent nearly twice as much out of pocket as those who had coverage unless they were in excellent health.

Table 2-8. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Self-Reported Health Status, 1996

Self-reported health status	Covered			Not Covered	Ratio, Covered/Not Covered	
	Average total spending	Average out-of-pocket spending	Out-of-pocket as % of total spending	Average total spending (all out-of-pocket)	Average total spending	Average out-of-pocket spending
Total	\$769	\$253	33%	\$463	1.66	0.55
Excellent	\$414	\$141	34%	\$207	2.01	0.68
Very Good	\$554	\$190	34%	\$382	1.45	0.50
Good	\$759	\$256	34%	\$497	1.53	0.51
Fair	\$1,120	\$350	31%	\$640	1.75	0.55
Poor	\$1,340	\$423	32%	\$749	1.79	0.56

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Figure 2-8. Out-of-pocket and Insurer Spending for Medicare Beneficiaries with and without Drug Coverage, by Health Status, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Table 2-9 shows that the same patterns are reinforced when beneficiaries are split according to the duration of their drug coverage. Beneficiaries who always had drug coverage had nearly twice the spending of beneficiaries who never had drug coverage at any time during the year, regardless of health status. Those in fair or poor health who were covered for only part of the year had total spending slightly closer to those who never had coverage.

Table 2-9. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries by Duration of Drug Coverage and Self-Reported Health Status, 1996

Self-reported health status	Always Covered			Sometimes Covered			Never Covered
	Average total spending	Average out-of-pocket spending	Out-of-pocket as % of total spending	Average total spending	Average out-of-pocket spending	Out-of-pocket as % of total spending	Average total spending (all out-of-pocket)
Total	\$828	\$219	26%	\$626	\$358	57%	\$468
Excellent/Good	\$655	\$184	28%	\$480	\$282	59%	\$386
Fair/Poor	\$1,327	\$318	24%	\$1,003	\$552	55%	\$732

Source: Bruce Stuart, Dennis Shea, and Becky Briesacher, "Prescription Drug Costs for Medicare Beneficiaries: Coverage and Health Status Matter," New York, Commonwealth Fund Issue Brief, January 2000.

That spending and utilization differences persist across different health statuses suggests that the overall difference in spending for covered and noncovered people cannot simply be attributed to different levels of need for prescription drugs between those with and without drug coverage. However, self-reported health status is not necessarily a good indicator of relative need for drugs or other health services. Table 2-10 uses three other indicators to compare spending by covered and noncovered Medicare beneficiaries: number of chronic conditions, number of functional limitations, and use of inpatient services during the year.

Table 2-10. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Other Indicators of Health Status, 1996

	Covered			Not covered	Ratio, covered/not covered	
	Average total spending	Average out-of-pocket Spending	Out-of-pocket as % of total spending		Average total spending (all out-of-pocket)	Average total spending
Total	\$769	\$253	33%	\$463	1.66	0.55
Chronic Conditions						
0	\$222	\$83	37%	\$148	1.50	0.56
1-2	\$600	\$191	32%	\$342	1.76	0.56
3-4	\$932	\$325	35%	\$617	1.51	0.53
5+	\$1,401	\$412	29%	\$944	1.48	0.44
Functional status						
No Limitations	\$662	\$218	33%	\$415	1.60	0.53
IADL Only ¹	\$1,160	\$394	34%	\$666	1.74	0.59
1 or 2 ADLs ²	\$1,051	\$348	33%	\$582	1.80	0.60
3+ ADLs ²	\$1,190	\$378	32%	\$674	1.77	0.56
Inpatient use						
No admission	\$699	\$230	33%	\$412	1.70	0.56
Admission	\$1,097	\$361	33%	\$694	1.58	0.52

¹ Beneficiaries who need assistance with one or more instrumental activities of daily living, such as meal preparation or managing money.

² Beneficiaries who need assistance with activities of daily living, such as bathing, dressing, toileting, or eating.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

On all three measures, the pattern is the same as for self-reported health status. Beneficiaries who report more chronic conditions, worse functional status, or a hospital stay during the year spend more on drugs whether or not they have coverage. In each category, beneficiaries with drug coverage spend much more than uncovered beneficiaries in the same category; at the same time, their out-of-pocket spending is much lower.

Because spending rises so dramatically with worsening health status, the dollar gaps between the covered and the noncovered rise with poorer health. For example, among beneficiaries with five or more chronic conditions, those with coverage had average total spending \$457 higher than that for beneficiaries without coverage, while the

difference for beneficiaries with no chronic conditions was only \$74. Out of pocket spending for uncovered beneficiaries with five or more chronic conditions was \$532 higher than for those with coverage. Drug insurance clearly makes an important difference for people with severe health problems.

Table 2-11 provides MEPS data for the total population (including people with and without Medicare) by self-reported health status. The figures include only people who used any prescription drugs. Again, spending rises with poorer health status for both the covered and the noncovered population,¹¹ and the dollar difference in spending is greatest for those in poor health.¹²

Table 2-11. Average Number of Prescriptions and Average Total Spending for Prescription Drugs by Prescription Drug Users with and without Drug Coverage, by Self-Reported Health Status, 1996

	Covered		Not covered		Ratio, covered/not covered	
	Average number of prescriptions	Average annual spending	Average number of prescriptions	Average annual spending	Average number of prescriptions	Average annual spending
TOTAL	12.59	\$427.75	8.77	\$269.04	1.43	1.59
Excellent	6.00	\$175.75	4.34	\$144.38	1.38	1.22
Very good	10.22	\$339.21	7.66	\$220.50	1.33	1.54
Good	14.59	\$528.28	8.09	\$221.31	1.80	2.39
Fair	25.11	\$875.10	16.80	\$584.61	1.49	1.50
Poor	37.86	\$1,309.97	25.80	\$793.25	1.47	1.65

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

Age

Table 2-12 and Figure 2-9 show data on spending for prescription drugs by age. There is a notable difference between elderly and non-elderly Medicare beneficiaries. Non-elderly Medicare beneficiaries qualify for the program on the basis of disability or end stage renal disease, and thus may be more likely to need prescription drugs. The spending gap between covered and noncovered beneficiaries is largest for nonelderly beneficiaries, particularly those under 45. Nonelderly beneficiaries with drug coverage

¹¹ For persons without coverage, the difference in spending between those with good health status and those with very good health status is not statistically significant, nor is the difference between persons with fair health and those with poor health.

¹² Among beneficiaries with the same health status, the spending difference between those with and without coverage is statistically significant for all beneficiaries except those in excellent health.

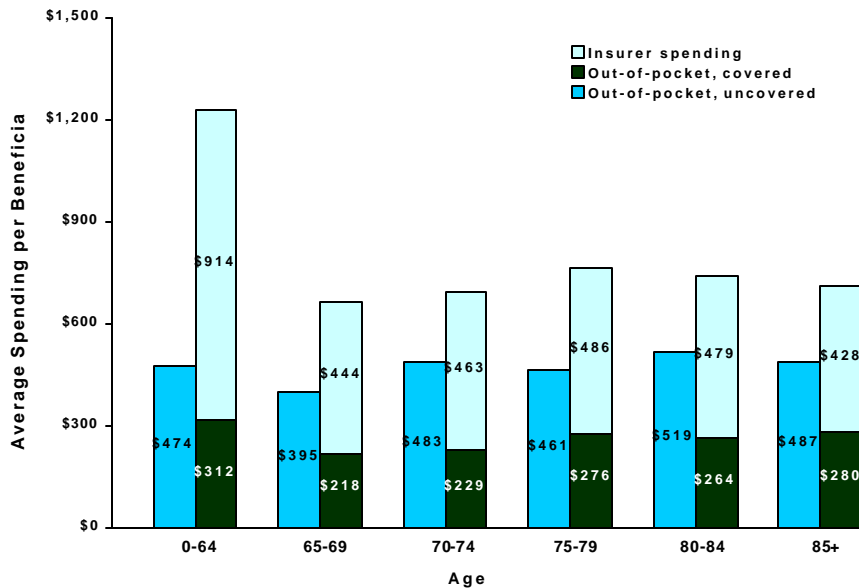
spend much more than elderly beneficiaries with drug coverage; beneficiaries under 45 without coverage spend much less than elderly noncovered beneficiaries.

Table 2-12. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Age, 1996

Age	Covered			Not covered	Ratio, covered/not covered	
	Average total spending	Average out-of-pocket Spending	Out-of-pocket as % of total spending	Average total spending (all out-of-pocket)	Average total spending	Average Out-of-pocket Spending
Total	\$769	\$253	33%	\$463	1.66	0.55
0-44	\$1,077	\$241	22%	\$268	4.01	0.90
45-64	\$1,300	\$347	27%	\$588	2.21	0.59
65-69	\$662	\$218	33%	\$395	1.68	0.55
70-74	\$692	\$229	33%	\$483	1.43	0.47
75-79	\$762	\$276	36%	\$461	1.65	0.60
80-84	\$743	\$264	36%	\$519	1.43	0.51
85+	\$708	\$280	40%	\$487	1.45	0.58

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Figure 2-9. Out-of-pocket and Insurer Spending for Medicare Beneficiaries with and without Drug Coverage, by Age, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Among elderly beneficiaries, spending by those with coverage rises with age, except that it drops slightly for those aged 80 and older.¹³ This may be because the sickest among the oldest beneficiaries are likely to be in institutions and are therefore omitted from the data. A similar, but slightly less clear, pattern is present for the elderly without coverage. The gap between those with and without coverage persists, but does not seem to follow any pattern as beneficiaries age.

Race

Table 2-13 shows spending by covered and noncovered beneficiaries by race. Among Medicare beneficiaries, average spending by people with coverage is slightly higher for whites than for blacks or people of other races, but the difference in spending for the covered and the noncovered is slightly greater for nonwhites. However, these differences are not statistically significant. Multivariate analysis would be needed to determine the extent to which any spending differences by race are associated with other factors, such as income, health status, or source of coverage.

Table 2-13. Average Total Spending and Out-of-pocket Spending for Prescription Drugs by Medicare Beneficiaries with and without Drug Coverage, by Race/Ethnicity, 1996

Race/ethnicity	Covered			Not covered	Ratio, covered/not covered	
	Average total spending	Average out-of-pocket Spending	Out-of-pocket as % of total spending	Average total spending (all out-of-pocket)	Average total spending	Average Out-of-pocket Spending
Total	\$769	\$253	33%	\$463	1.66	0.55
White	\$781	\$263	34%	\$478	1.63	0.55
Black	\$699	\$199	28%	\$369	1.90	0.54
Other	\$699	\$192	27%	\$330	2.12	0.58

Note: "Other" includes Asian, Hispanic, and North American Native.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

DISTRIBUTION OF SPENDING

Table 2-14 and Figure 2-10 show the distribution of spending by beneficiaries with and without drug coverage in 1996. Only 4 percent of Medicare beneficiaries accounted for almost a quarter of all beneficiaries' drug spending in 1996, and the top third of beneficiaries spent three-fourths of the total spent on drugs. The distribution of

¹³ The difference between spending by covered beneficiaries aged 65 to 69 and those aged 85 and over is not statistically significant.

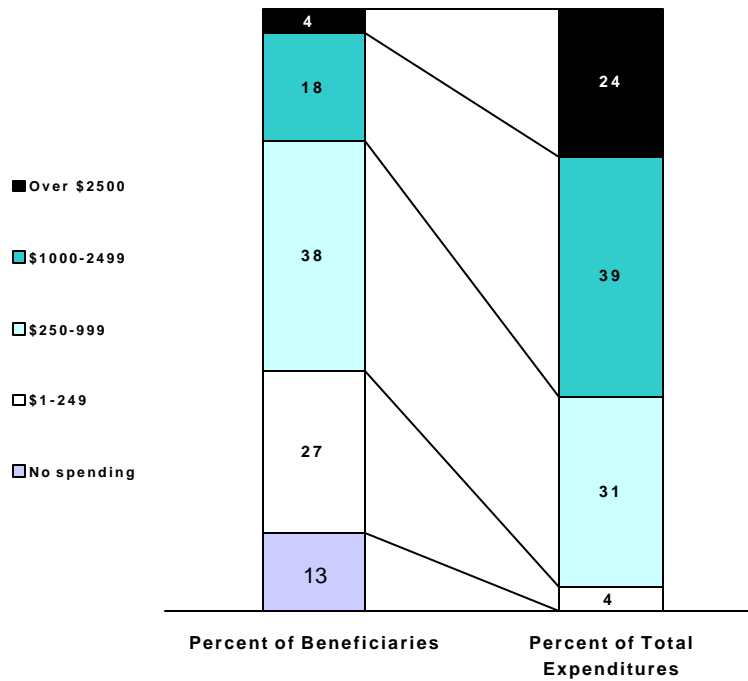
spending is different for covered beneficiaries compared to those without coverage. Compared to beneficiaries with coverage, those without coverage were almost twice as likely to spend nothing, and about half as likely to spend over \$1,000.

Table 2-14. Distribution of Medicare Beneficiaries with and without Drug Coverage by Amount of Prescription Drug Spending, 1996

Spending on Prescription Drugs	Percent of population			Percent of Spending		
	Total	Covered	Not covered	Total	Covered	Not covered
Total	100%	100%	100%	100%	100%	100%
No Spending on Drugs	13%	11%	20%	0%	0%	0%
\$1 – 249	27%	26%	29%	4%	4%	6%
\$250 – 499	17%	16%	19%	9%	8%	15%
\$500 – 749	12%	12%	11%	11%	10%	15%
\$750 – 999	9%	9%	8%	11%	10%	15%
\$1,000 - 1,249	6%	6%	4%	9%	9%	9%
\$1,250 - 1,499	4%	5%	3%	8%	8%	8%
\$1,500 - 1,749	3%	3%	2%	6%	7%	5%
\$1,750 - 1,999	2%	3%	2%	7%	7%	8%
\$2000 - 2,499	3%	3%	2%	9%	10%	7%
\$2,500+	4%	5%	1%	24%	28%	10%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Figure 2-10. Distribution of Medicare Beneficiaries and Prescription Drug Expenditures by Amount of Spending, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Tables 2-15 through 2-17 provide a fuller picture of the characteristics of the subset of Medicare beneficiaries with the highest spending. They compare the 20 percent of the population with the highest spending (those with annual expenditures over \$1,066) with the total population. The top 20 percent group is referred to as the “highest drug spenders” in these tables. Overall, 24 percent of covered beneficiaries fell into this group, and 12 percent of noncovered beneficiaries. Of the high spenders, 82 percent had drug coverage, compared to 69 percent of all beneficiaries.

The data show that, in general, the differences explored in this report between Medicare beneficiaries with and without drug coverage do not appear to be driven by high spenders. In other words, the gaps in spending and utilization between Medicare beneficiaries with and without drug coverage do not appear to result because of unique characteristics of those with higher spending. Differences in source of supplemental coverage for high spenders with and without drug coverage mirror the differences seen between all beneficiaries with and without drug coverage, as shown in Table 2-15. Overall, the highest spenders are more likely to have employer based insurance or Medicaid, and less likely to have individually purchased insurance or be in a risk HMO.

Table 2-15. Medicare Beneficiaries with and without Drug Coverage, as Share of Total Population and Share of the Highest Drug Spenders, by Primary Source of Supplemental Coverage, 1996

Primary Medicare supplement	Covered		Not covered		Total	
	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders
TOTAL	100%	100%	100%	100%	100%	100%
Risk	15%	10%	2%	*	11%	8%
Medicaid	17%	19%	4%	5%	13%	17%
Employer Sponsored	47%	50%	13%	18%	36%	44%
Individually Purchased	16%	16%	54%	61%	28%	24%
Other	5%	5%	2%	*	4%	5%
FFS Medicare	0%	0%	25%	14%	8%	3%

*Less than 1 percent; sample is too small to produce a stable estimate.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

For the demographic characteristics shown in Table 2-16, the highest spenders do not differ very much from the general Medicare population. Across the total population with and without drug coverage, high spenders' income distribution is similar; so is their age distribution, except that high spenders are slightly more likely to be nonelderly. Their distribution by race, sex, and metropolitan residence is also comparable. Within both the covered and the non-covered categories, the highest spenders are also similar to the general population of Medicare beneficiaries, except that people without coverage who are below poverty are less likely to be high spenders. This suggests that beneficiaries in all income and socioeconomic groups are at risk of having high drug spending, but that both health status and drug coverage can influence that spending.

In contrast, as might be expected, the highest spenders tend to have poorer health than other Medicare beneficiaries, as measured by each of the indicators used. Table 2-17 shows that these beneficiaries are more likely to report poorer health status, multiple chronic conditions, and more functional limitations, and they are more likely to have had an inpatient admission. This is true for beneficiaries with and without coverage.

Table 2-16. Medicare Beneficiaries with and without Drug Coverage, as Share of Total Population and Share of the Highest Drug Spenders, by Selected Demographic Characteristics, 1996

	Covered		Not covered		Total	
	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders
Total	100%	100%	100%	100%	100%	100%
Poverty/Income						
<Poverty	21%	22%	23%	18%	22%	22%
Poverty-135%	11%	11%	15%	17%	12%	12%
136-150%	4%	3%	6%	7%	5%	4%
151-175%	7%	7%	8%	7%	7%	7%
176-200%	7%	8%	9%	9%	8%	8%
201-300%	20%	21%	19%	20%	20%	21%
301-400%	12%	12%	9%	9%	11%	12%
>400%	17%	16%	12%	13%	16%	16%
Age						
0-44	4%	5%	4%	2%	4%	5%
45-64	8%	13%	7%	11%	8%	13%
65-69	27%	23%	23%	18%	25%	22%
70-74	24%	21%	23%	23%	23%	21%
75-79	18%	18%	19%	17%	18%	18%
80-84	12%	12%	14%	16%	12%	13%
85+	8%	8%	11%	12%	9%	8%
Sex						
Male	45%	40%	42%	39%	44%	40%
Female	55%	60%	58%	61%	56%	60%
Race						
White	85%	88%	88%	92%	86%	88%
Black	9%	8%	9%	6%	9%	8%
Other	6%	4%	4%	2%	5%	4%
Metro status						
Metro	78%	77%	64%	62%	73%	74%
Nonmetro	22%	23%	36%	38%	26%	25%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Table 2-17. Medicare Beneficiaries Reporting Selected Measures of Health Status, as Share of Total Population and Share of the Highest Drug Spenders, by Drug Coverage, 1996

	Covered		Not covered		Total	
	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders	Percent of all beneficiaries	Percent of highest drug spenders
Health Status						
Excellent	16%	7%	17%	3%	17%	6%
Very Good	26%	17%	27%	17%	27%	17%
Good	30%	30%	30%	32%	30%	30%
Fair	18%	28%	17%	31%	17%	28%
Poor	10%	18%	9%	17%	9%	18%
Functional Status						
No Limitations	76%	65%	77%	63%	77%	64%
IADL Only	4%	8%	4%	8%	4%	8%
1 or 2 ADLs	12%	16%	12%	17%	12%	17%
3+ ADLs	7%	11%	7%	12%	7%	11%
Chronic Conditions						
0	9%	2%	11%	2%	10%	2%
1-2	44%	30%	46%	26%	45%	30%
3-4	36%	45%	34%	50%	35%	46%
5+	11%	22%	8%	21%	10%	22%
Inpatient Stay						
No	82%	74%	82%	67%	82%	73%
Yes	18%	26%	18%	33%	18%	27%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

The distribution of drug spending is even more concentrated for the non-Medicare population. Table 2-18 shows the distribution for the non-Medicare population in three coverage groups: coverage other than Medicaid, Medicaid, and no coverage. The highest spenders account for much of the spending in each category. Among individuals with Medicaid or with other drug coverage, the top 5 percent account for over half of total spending. The top 5 percent of individuals without drug coverage account for almost three-quarters of total spending for people without drug coverage. People with Medicaid are somewhat more likely than people with other coverage to have had no drug spending during the year, while people without coverage are much more likely to have had no drug spending.

Table 2-18. Distribution of Non-Medicare Individuals with and without Drug Coverage by Amount of Prescription Drug Spending, 1996

Amount of prescription drug spending	Percent of population			Percent of total spending		
	Covered	Medicaid	Not covered	Covered	Medicaid	Not covered
Total	100%	100%	100%	100%	100%	100%
\$0	29%	36%	66%	0%	0%	0%
\$1-250	51%	50%	29%	16%	16%	27%
\$250-500	9%	4%	2%	14%	8%	13%
\$500-1,000	6%	4%	2%	19%	17%	18%
\$1,000 -2,000	3%	3%	1%	20%	24%	19%
\$2,000+	2%	2%	<1%	32%	34%	24%

Note: The total includes persons with negative family income. Percents may not add to 100 because of rounding.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

EXPLAINING UTILIZATION AND SPENDING DIFFERENCES

There are a number of reasons why people with prescription drug coverage might have higher utilization and spending than people without coverage:

- People who anticipate large drug expenditures might be more likely to seek drug coverage than people who do not expect to spend much on drugs. This phenomenon is known as adverse selection or self-selection.
- More prescriptions, or prescriptions for more costly drugs, might be written for people with coverage. This could be because physicians consider a patient's coverage when deciding on appropriate treatment. People with coverage may also be more likely to request drug therapies, especially more costly therapies. Higher demand by the consumer in these situations is also known as moral hazard.
- People without coverage may be less likely to fill the prescriptions they receive, or they may make a prescription last longer by not taking the recommended dosage. Those who have no health insurance at all (a large share of the nonelderly without drug coverage) may never visit a physician to obtain a prescription in the first place. These problems will be referred to here as lack of access.

All of these factors probably play a part in the observed utilization and expenditure differences. They are notoriously difficult to disentangle, both for drugs and for medical care in general. Distinguishing between self-selection, moral hazard, and lack

of access requires information about the relative quantity of drugs actually needed by people with and without coverage. This would require a much higher level of clinical detail than is available in the data used for this report. Some factors will be presented here to highlight fruitful areas for further analysis, not necessarily to resolve the issues. The emphasis will be on the Medicare population.

Adverse Selection

People without Medicare may decide whether or not to obtain health insurance, and anticipated need is certainly a factor in this choice. However, most non-Medicare individuals do not make a separate decision about whether to obtain coverage specifically for prescription drugs. The vast majority who have insurance are covered through employer plans or Medicaid programs and automatically receive whatever level of drug coverage their insurance provides. The primary exceptions are people whose employers offer cafeteria plans where drugs are an option, and people who have a choice of benefit packages when they seek out individual policies.

The story is similar for those Medicare beneficiaries who have employer-based coverage or Medicaid: they often do not control whether or not drugs are a part of their benefit package. However, a larger proportion of Medicare beneficiaries do not have access to these two sources of coverage. These beneficiaries must decide whether to obtain coverage to supplement their Medicare benefits, and whether that supplemental coverage should include drugs. It would be reasonable to expect that this decision would be influenced by the amount of health and drug spending that the beneficiary expects to incur. However, as Chapter 1 discussed, Medigap rules may make coverage more difficult to obtain for those in poor health. It is also likely that many Medicare beneficiaries who choose to buy supplemental coverage that includes drug coverage do so because they want to insure against the possibility of having high costs, not because they already know that their costs will be high.

Research to date has not focused specifically on the question of adverse selection into prescription coverage by Medicare beneficiaries. There is, however, a substantial body of research on selection into Medicare supplemental policies independent of drug coverage. Recent studies of Medicare HMO enrollment find strong evidence of favorable rather than adverse selection – that is, that enrollees in Medicare HMOs are actually healthier than average.¹⁴ Indications of adverse selection in the Medigap market have been found by some researchers but not others.¹⁵ Most researchers assume

¹⁴ Hellinger (1995), PPRC (1996), Riley (1996), Hamilton (1999), and Call et al (1999); see bibliography in Appendix A for detailed citations.

¹⁵ Ettner (1997), Wolfe and Goddeeris (1991), and Atherly (1999) found evidence of selection. Cartwright, Hu, and Huang (1992), Hurd and McGarry (1997), and Lillard et al. (1999) did not. See bibliography in Appendix A for detailed citations.

that there is no selection into retiree plans given the nature of plan sponsorship, but one recent work finds evidence of adverse selection in this market.¹⁶ These thoroughly mixed findings do little to clarify the issue of possible adverse selection into prescription drug coverage.

As Chapter 1 showed (see Tables 1-8 through 1-11), Medicare beneficiaries are slightly more likely to have coverage if they report poorer health status or more chronic conditions, but many of the differences are not statistically significant. Further analysis is needed to explore whether there is evidence of adverse selection when controlling for other factors.

Given the small differences in health status between beneficiaries with and without coverage, the spending differences between the covered and noncovered cannot be explained by assuming that sick people obtain coverage and healthy people forgo it. Furthermore, data presented earlier in this chapter in Tables 2-7 through 2-11 indicate poor health does not appear to explain the significant differences in utilization and spending among the covered and uncovered.¹⁷ This suggests that other factors, such as higher demand by those with coverage and lack of access by those without coverage, are also at work.

Moral Hazard and Barriers to Access

The RAND Health Insurance Experiment of the late 1970's and early 1980's found that even in the absence of adverse selection, insurance can lead to higher rates of use.¹⁸ In the experiment, higher cost-sharing deterred people from obtaining both necessary and unnecessary care.¹⁹ Several studies focusing on drug use by Medicare beneficiaries reach the same basic conclusion — drug coverage increases the probability of drug use.

¹⁶ Atherly, A. (1999). "The Effect of Medicare Supplemental Insurance on Medicare Expenditures." Department of Health Policy and Management. School of Public Health. Emory University. Atlanta, GA. Unpublished Paper.

¹⁷None of the measures used are direct indicators of the need for prescription drugs. However, that drug spending rises with deteriorating health for both covered and noncovered people suggests that the measures are at least strongly correlated with prescription drug need.

¹⁸The experimental design allowed researchers to eliminate the effects of self-selection by randomly assigning participants to plans that required various levels of copayment, ranging from full first-dollar coverage to 95 percent coinsurance (to simulate non-coverage).

¹⁹ Brook, Robert, et al., "Does Free Care Improve Adults' Health? Results from a Randomized Controlled Trial," *NEJM*, 309 (23), Dec. 8, 1983, 1426-1434; Lohr, Kathleen, et al., "Use of Medical Care in the RAND Health Insurance Experiment: Diagnosis and Service-Specific Analyses in a Randomized Controlled Trial," *Medical Care* 24(9) (Supplement), Sept. 1986, S74-S77; Manning, Willard G., et al. "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment," *American Economic Review*, 77(3), June 1987, 251-277.

The empirical estimates of insurance effects produced by the studies vary within a relatively narrow range. The addition of drug coverage is estimated to increase the probability of any prescription being filled by between 4 and 16 percent, depending on population subgroup and generosity of drug coverage.²⁰ In a study of Pennsylvania elderly, prescription coverage increased drug use by approximately 3 percent for every 10 percent reduction in out-of-pocket cost to beneficiaries, all else being equal.²¹

It is difficult to separate whether these effects are due to higher demand by people with coverage, or lack of access for people without coverage. If two people have similar characteristics, and the one with coverage receives more drugs than the one without coverage, is this because the one with coverage is receiving the appropriate drugs and the one without coverage is not? Or is it because the person with coverage is encouraged to receive excessive or unnecessary treatments and the one without coverage is thriftily purchasing only the care he or she needs? Both answers could be correct. Many people without coverage report difficulty in obtaining needed medications; data on the extent of this problem will be presented in the next section of this chapter. At the same time, however, studies have shown that some elderly people receive inappropriate drugs or inappropriately large dosages, with potential adverse effects.²²

CONSEQUENCES OF LACK OF DRUG COVERAGE

There are several ways to explore the burden that drug spending places on Medicare beneficiaries without coverage as compared to those who do have coverage: drug spending as a proportion of income, drug spending as a proportion of other spending, self-reported problems in affording drugs, and self-reported differences in the mix of drugs used. These measures show that beneficiaries without drug coverage are likely to have more trouble meeting their prescription drug costs, and are more likely to forgo filling a prescription as a result.

Out-Of-pocket Drug Spending and Income

²⁰ Stuart and Grana (1998), Stuart and Zacker (1999), Ya-chen (1999), and Lillard, Rogowski, and Kingston (1999); see bibliography in Appendix A for detailed citations.

²¹ Coulson NE. and Stuart, BC. (1995) "Insurance Choice and the Demand for Prescription Drugs." *Southern Economic Journal*. 61(4): 1146-1157.

²² General Accounting Office. *Prescription Drugs and the Elderly: Many Still Receive Potentially Harmful Drugs Despite Recent Improvements*, March 1996.

This report has shown that, while people without drug coverage have lower total drug spending than those with coverage, they incur higher out-of-pocket costs. Tables 2-20 through 2-23 show this out-of-pocket spending as a share of income for covered and noncovered Medicare beneficiaries, in the total population and in the 20% with the highest spending. Among all beneficiaries, those without coverage spend over twice as much of their income for drugs as those with coverage (2.2 percent versus 1 percent of income). Among the highest spenders, the ratio is over three to one (8.1 percent versus 2.6 percent of income). Within the group of high spenders, some classes of beneficiaries without coverage are spending a significant proportion of income (frequently over 10 percent, and sometimes over 20 percent) on out-of-pocket payments for drugs.

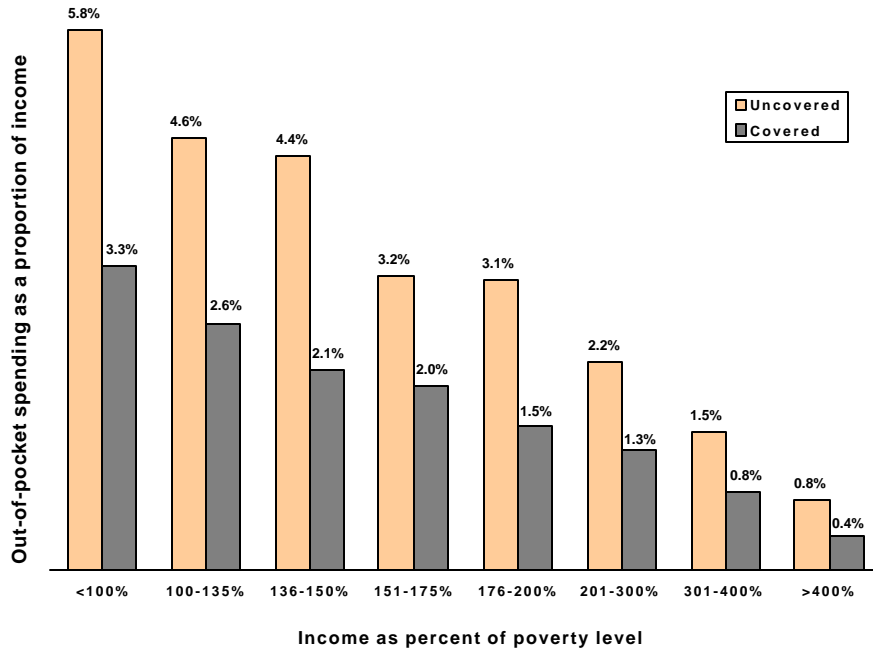
Table 2-19 and Figure 2-11 show that at all income levels, beneficiaries with no drug coverage spend a larger proportion of their income on out-of-pocket prescription drug costs. Beneficiaries in the high spending group whose incomes are below the poverty threshold spend more than a quarter of their income on prescription drugs.

Table 2-19. Out-of-pocket Spending for Prescription Drugs as a Percent of Income, for all Medicare Beneficiaries and for the Highest Drug Spenders, by Income, 1996

Income	All beneficiaries		Highest drug spenders	
	Covered	Not covered	Covered	Not covered
TOTAL	1.0%	2.2%	2.6%	8.1%
<Poverty	3.3%	5.8%	7.8%	27.8%
Poverty-135%	2.6%	4.6%	6.2%	16.5%
136-150%	2.1%	4.4%	6.3%	15.9%
151-175%	2.0%	3.1%	4.7%	12.4%
176-200%	1.5%	3.1%	3.7%	11.8%
201-300%	1.3%	2.2%	3.2%	7.7%
301-400%	0.8%	1.5%	2.1%	5.8%
>400%	0.4%	0.7%	1.0%	2.8%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Figure 2-11. Out-of-pocket Spending on Prescription Drugs as a Proportion of Income for Medicare Beneficiaries With and Without Drug Coverage, by Income Level, 1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Table 2-20 shows the relative income share by type of coverage. Shares of income devoted to out-of-pocket spending are quite close for beneficiaries with individually purchased coverage that does and does not include a drug benefit. This result is consistent with earlier results showing that Medigap coverage tends to offer the least protection against drug costs. High spenders with no supplemental insurance spend almost 12 percent of their income on prescription drugs; those who are enrolled in Medicaid but have no drug coverage spend 23 percent of their income on drugs.

Table 2-20. Out-of-pocket Spending for Prescription Drugs as a Percent of Income, for all Medicare Beneficiaries and for the Highest Drug Spenders, by Source of Supplemental Coverage, 1996

Source of supplemental coverage	All beneficiaries		Highest drug spenders	
	With drug coverage	Without drug coverage	With drug coverage	Without drug coverage
Total	1.0%	2.2%	2.6%	8.1%
Risk HMO	0.8%	*	2.1%	*
Medicaid	2.2%	4.3%	5.5%	23.0%
Employer Sponsored	0.7%	1.7%	1.8%	6.2%
Individually Purchased	1.7%	2.2%	4.7%	7.8%
Other	1.7%	3.2%	3.8%	*
FFS Medicare; no supplement		2.4%		11.6%

*Sample size too small for a reliable estimate.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Table 2-21 shows out-of-pocket spending on prescription drugs as a proportion of income for different demographic groups. For Medicare beneficiaries as a whole, the relative income share for the covered and noncovered is fairly constant across these subgroups. Those without coverage almost always spend a higher percentage of their income on drugs. Among the highest spenders who have no drug coverage, certain demographic groups have extraordinarily high costs as a proportion of their income. The youngest and oldest beneficiaries in this group both spend more than 10 percent of their income on drugs. Non-white beneficiaries without coverage in the high spending group spend over 15 percent of their income on prescription drugs.

Table 2-21. Out-of-pocket Spending for Prescription Drugs as a Percent of Income, for all Medicare Beneficiaries and for the Highest Drug Spenders, by Selected Demographic Characteristics, 1996

	All beneficiaries		Highest drug spenders	
	Covered	Not covered	Covered	Not covered
TOTAL	1.0%	2.2%	2.6%	8.1%
Age				
0-44	2.0%	2.0%	4.2%	13.6%
45-64	2.0%	3.2%	3.7%	8.4%
65-69	0.7%	1.7%	2.2%	9.8%
70-74	0.8%	2.0%	2.1%	6.6%
75-79	1.1%	2.2%	2.5%	7.3%
80-84	1.3%	2.6%	2.7%	8.2%
85+	1.3%	2.8%	3.5%	10.3%
Sex				
Male	0.8%	1.8%	2.1%	6.8%
Female	1.3%	2.5%	3.0%	9.3%
Race				
White	1.0%	2.1%	2.5%	7.7%
Black	1.4%	3.1%	4.1%	15.9%
Other	1.3%	2.3%	3.8%	15.4%
Metro status				
Metro	0.9%	2.0%	2.3%	7.7%
NonMetro	1.4%	2.5%	3.8%	8.8%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Table 2-22 shows spending on drugs as a percent of income by various measures of health status. Uncovered high spenders who have the worst health or functional status or the most chronic conditions spend over a tenth of their income on prescription drugs.

Table 2-22. Out-of-pocket Spending for Prescription Drugs as a Percent of Income, for all Medicare Beneficiaries and for the Highest Drug Spenders, by Selected Indicators of Health Status, 1996

	All beneficiaries		Top 20% by spending	
	Covered	Not covered	Covered	Not covered
Health status				
Excellent	0.4%	0.9%	1.0%	7.4%
Very Good	0.7%	1.5%	1.9%	5.3%
Good	1.1%	2.6%	2.5%	7.4%
Fair	1.9%	3.7%	3.2%	9.8%
Poor	2.6%	3.9%	4.3%	12.5%
Functional status				
No Limitations	0.8%	1.9%	2.1%	7.7%
IADL Only	2.2%	3.7%	3.8%	*
1 or 2 ADLs	1.9%	3.2%	3.7%	8.4%
3+ ADLs	2.3%	3.6%	4.3%	12.2%
Chronic conditions				
0	0.3%	0.7%	3.0%	8.1%
1-2	0.7%	1.6%	2.0%	6.9%
3-4	1.4%	2.8%	2.8%	7.8%
5+	2.0%	4.7%	3.1%	11.0%
Inpatient stay				
No	0.9%	1.9%	3.0%	8.1%
Yes	1.7%	3.4%	2.3%	6.8%

*Cell size is too small to produce a reliable estimate

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1996.

Even some people with coverage are devoting a considerable share of their income to prescription drugs. MCBS estimates that 8 percent of beneficiaries with drug coverage have total spending of \$2,000 per year or more. Table 2-23 shows the out-of-pocket costs that would be incurred by someone with \$2,000 in spending under different types of drug coverage. Beneficiaries with Medigap plans would pay over half this cost out of pocket.

Table 2-23. Illustration of Out-of-pocket Costs under Different Coverage Sources for a Beneficiary with Total Spending of \$2,000

Source of drug coverage	Deductible	Copay	Over cap	Total out-of-pocket	Percent paid out-of-pocket
HMO (\$7.50 copay, \$1,500 cap) ¹	--	\$412	\$88	\$500	25%
Medigap H/I/J (\$250 deductible, \$1,250 or \$3,000 cap, 50% coinsurance) ²	\$250	\$875	--	\$1,125	56%
Employer (\$7.50 copay) ¹	--	\$412	--	\$412	21%
Medicaid (\$2 copay) ¹	--	\$110	--	\$110	6%
Medicare FFS only	--	--	--	\$2,000	100%

¹ For non-Medigap plans, typical cost-sharing rules are assumed; there are plans with higher and lower cost sharing. The \$2,000 spending was divided by the average cost of prescriptions for Medicare beneficiaries with drug coverage (\$36.37) to generate the number of prescriptions (55) used for the examples in this table. The cap on HMO payments applies to spending by the plan.

² For Medigap plans, out-of-pocket spending in this table is calculated directly from the dollar amount of spending (\$2,000). After the beneficiary has met the \$250 deductible, Plans H and I will cover 50% of \$2500 in total spending, for a total plan payment of \$1250. Plan J will pay a total of \$3000.

NOTE: This table does not attempt to account for premiums paid or the different purchasing power that \$2000 might have under different discount arrangements negotiated by HMOs, employers, and Medicaid.

Table 2-24 shows data from MEPS on out-of-pocket spending as a proportion of income for non-Medicare beneficiaries. Overall, this group spends a lower share of their income on drugs than Medicare beneficiaries spend. Among all non-Medicare drug users, those with coverage spend about half as much of their income on prescription drugs as people without coverage. The difference between covered and noncovered users persists across all income levels.²³

Table 2-24. Out-of-pocket Spending as a Percent of Income for Non-Medicare Individuals with and without Drug Coverage, by Income Quintile, 1996

Income quintile	Total Population		Users	
	Covered	Noncovered	Covered	Noncovered
TOTAL	0.98%	0.93%	1.41%	2.72%
20%	*	*	*	*
40%	0.41%	0.28%	0.59%	0.84%
60%	0.23%	0.15%	0.33%	0.46%
80%	0.14%	0.08%	0.19%	0.29%
100%	0.08%	0.06%	0.11%	0.14%

* Estimates are not stable.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996.

²³ The difference between covered and noncovered users in the next to highest quintile is significant only on a one tail test.

Out-of-pocket Drug Spending and Other Health Spending

Spending for drugs is a substantial component of total out-of-pocket health spending for all ages and income levels. The following tables and charts were prepared using the Consumer Expenditure Survey (CEX) data prepared by the Bureau of Labor Statistics. This analysis differs in several respects from others reported in this chapter. Expenditures are for the consumer unit (basically a family or unrelated individuals who share living expenses) rather than the individual. Consumer units are grouped here according to age of the reference person.²⁴ A unit with an elderly reference person may contain non-elderly individuals, and vice versa.

Table 2-25 shows the average breakdown of spending by consumer units in 1997-98. Spending for non-health necessities -- defined here as food, shelter, utilities, transportation, and clothing -- makes up a majority of total spending for all ages and income groups.²⁵ Out-of-pocket health spending, including insurance premiums as well as out-of-pocket payments for drugs and other medical services and supplies, is an important component of discretionary spending (spending other than for non-health necessities) for all ages and incomes. Payments for over-the-counter drugs are included in the total for out-of-pocket health spending. As in the rest of this chapter, they are not included in spending on prescription drugs.

²⁴ A consumer unit comprises either: (1) all members of a household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone, or a person sharing a household who is financially independent; or (3) two or more persons living together who pool their income to make joint expenditure decisions. The reference person is the person named when the respondent is asked to "Start with the name of the person or one of the persons who owns or rents the home." It is with respect to this person that the relationship of the other consumer unit members is determined.

²⁵ Total reported spending for units with reported income below \$15,000 actually exceeds \$15,000. Data in the tables are for complete income reporters. These are units that provide values for at least one of the major sources of their income. However, even complete income reporters do not necessarily provide full accounting of their income. In addition, some units may spend more than their income by borrowing or by using up assets; the latter may be more likely for the elderly.

Table 2-25. Components of Average Consumer Unit Spending, by Income and Age of Reference Person, 1997-1998¹

Average expenditures per consumer unit	Consumer units whose reference person is:					
	Under age 65			Age 65 or over		
	All incomes	Income <\$15,000 ²	Income >\$40,000 ^{2*}	All incomes	Income <\$15,000 ²	Income >\$40,000 ^{2*}
Total expenditures	\$37,306	\$16,746	\$53,740	\$25,598	\$15,999	\$51,377
Spending for non-health necessities	\$23,602	\$12,184	\$32,247	\$15,032	\$9,986	\$27,573
Discretionary spending (including health) ³	\$13,704	\$4,562	\$21,493	\$10,566	\$6,013	\$23,804
Health spending ⁴	\$1,499	\$703	\$2,045	\$2,993	\$2,178	\$4,210
Prescription drug spending	\$154	\$117	\$173	\$516	\$438	\$502
Drugs as % of all spending	0.4%	0.7%	0.3%	2.0%	2.7%	1.0%
Drugs as % of discretionary	1.1%	2.6%	0.8%	3.8%	5.3%	1.8%
Drugs as % of health	10.2%	16.6%	8.5%	17.2%	20.1%	11.9%

* The statistics in this income group are less reliable than for other series, due to a lower sample size.

¹ Estimates of single-year prescription drug expenditures are unpublished data that do not meet the reliability standards of published estimates. Therefore, data are presented as averages of two years to generate sufficient sample size needed to make the prescription drug estimates meet the Bureau of Labor Statistics' reliability standards.

² All income ranges are before taxes.

³ Health spending is included with discretionary spending because spending for health is frequently forgone by low income households.

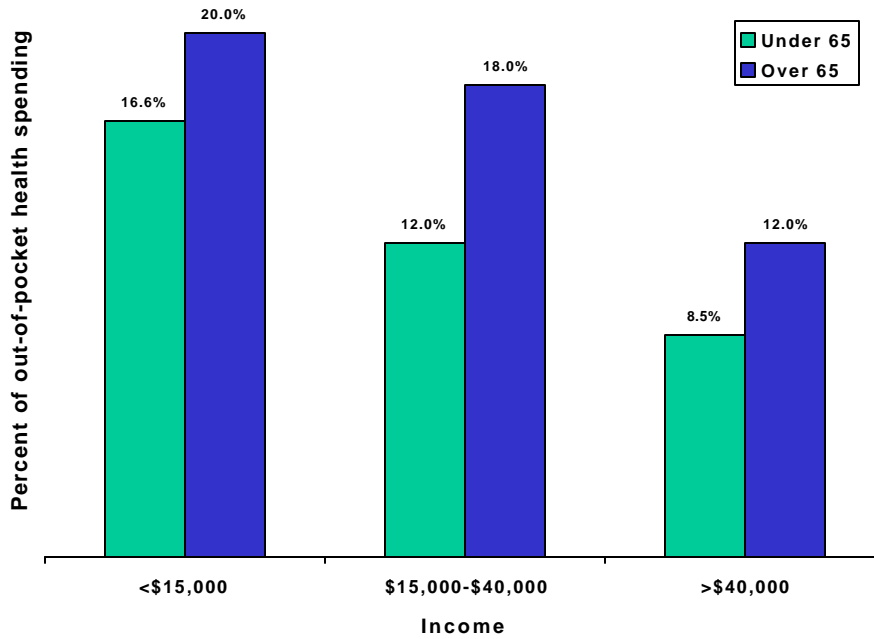
⁴ Out-of-pocket health care spending includes out of pocket insurance payments, prescription and nonprescription drug expenses, and payments for all other medical services and supplies.

Source: Consumer Expenditure Survey data from the Bureau of Labor Statistics as analyzed by the Office of the Actuary, HCFA.

As Figure 2-12 shows, out-of-pocket spending for prescription drugs is a larger proportion of health spending for units with an elderly reference person than for units with a younger reference person.²⁶ Prescription drug spending also accounts for a larger share for people with low incomes than for people with higher incomes. For the lower income units with an elderly reference person, spending for drugs accounted for 20 percent of health spending, and 5 percent of all discretionary spending.

²⁶ Note that these figures cannot be compared to the MCBS and MEPS out-of-pocket numbers for individuals because the year is different, and many units have more than one individual.

Figure 2-12. Out-of-pocket Prescription Drug Spending as a Proportion of Health Spending, by Age and Income, 1997-1998



Note: Expenditures are for the consumer unit and shown by the age of the reference person (see text).
 Source: Office of the Actuary, Health Care Financing Administration: Bureau of Labor Statistics Consumer Expenditure Survey, 1997-1998

Because the CEX information on drug coverage is not definitive, this analysis is not able to compare spending by those with coverage to those without coverage. However, this chapter showed earlier for Medicare beneficiaries that as a percentage of income, drug spending for those without coverage was double the spending of those with coverage (see Table 2-19). This implies that for uncovered beneficiaries, an even larger proportion of spending goes to prescription drugs than is shown here.

Table 2-26 shows changes in the components of spending for units with an elderly reference person between 1992-93 and 1997-98. Out-of-pocket spending for drugs rose much more rapidly than out-of-pocket health spending. This was particularly true for low income families. In dollar terms, out-of-pocket drug spending for higher-income units increased more than for lower-income units. As a share of health spending, however, the increase was much greater for the lowest-income units: increased spending for drugs accounted for 92 percent of the total increase in health spending during the period. As a result, drugs as a share of health spending rose from 16.3

percent to 17.2 percent for all consumer units with an elderly reference person, and from 17.6 percent to 20.1 percent for the subset of these units with the lowest incomes.

Table 2-26. Change in Components of Average Consumer Unit Spending for Units with a Reference Person Age 65 or Older, 1992-1993 to 1997-1998¹

Average expenditures per consumer unit	All income groups			Income <\$15,000 before taxes		
	1992-93	1997-98	% change	1992-93	1997-98	% change
Total expenditures	\$21,214	\$25,598	20.7%	\$14,054	\$15,999	13.8%
Spending for non-health necessities	\$12,520	\$15,032	20.1%	\$8,760	\$9,986	14.0%
Discretionary spending (including health) ²	\$8,694	\$10,566	21.5%	\$5,294	\$6,013	13.6%
Health spending ³	\$2,644	\$2,993	13.2%	\$2,106	\$2,178	3.4%
Prescription drug spending	\$432	\$516	19.4%	\$372	\$438	17.9%
Drugs as % of all spending	2.0%	2.0%		2.6%	2.7%	
Drugs as % of discretionary	5.0%	4.9%		7.0%	7.3%	
Drugs as % of health	16.3%	17.2%		17.6%	20.1%	

¹ Estimates of single-year prescription drug expenditures are unpublished data that do not meet the reliability standards of published estimates. Therefore, data are presented as averages of two years to generate sufficient sample size needed to make the prescription drug estimates meet the Bureau of Labor Statistics' reliability standards.

² Health spending is included with discretionary spending because spending for health is frequently forgone by low income households.

³ Out-of-pocket health care spending includes out of pocket insurance payments, prescription and nonprescription drug expenses, and payments for all other medical services and supplies.

Source: Consumer Expenditure Survey data from the Bureau of Labor Statistics as analyzed by the Office of the Actuary, HCFA.

Access to Needed Drugs

Because out-of-pocket spending for prescription drugs can take up a significant share of spending, some people may not be able to buy all of the medications they need. Data from the 1997 National Health Interview Survey confirm that, both among Medicare beneficiaries and in the total population, people without coverage are going without medications because they cannot afford them.²⁷

²⁷ The MCBS Access to Care component for 1996 asked whether the respondent had failed to fill one or more prescriptions during the year, and why. By contrast, the NHIS question asks whether a respondent failed to

Table 2-27 shows, for the total (Medicare and non-Medicare) population, NHIS estimates of people who reported that they needed prescription drugs but did not get them because they could not afford to. These data do not necessarily reflect cases in which people postponed filling a prescription, purchased less than the quantity prescribed, or took the medication less often than prescribed. About 3 percent of all people with health insurance, and 16 percent of people without health insurance, failed to get needed prescription medicine because they could not afford it. Note that health insurance in this table includes insurance that does not cover prescription drugs; thus all elderly people with Medicare fall into the insured column. If data were available on drug coverage, the differences would likely be even larger.

Table 2-27. Percent of Population Not Receiving Prescription Medicine Because of Cost, by Insurance Coverage and Selected Characteristics, 1997

	Percent reporting that they needed prescription medicine in the last 12 months but did not get it because they (or a parent) could not afford it		
	All persons	With health insurance	Without health insurance
Total	4.9%	3.0%	16.4%
Income (as % of Poverty)			
<Poverty	11.5%	7.6%	21.0%
100-150%	11.2%	8.0%	19.2%
150-200%	7.0%	4.8%	14.9%
200-300%	5.2%	3.4%	17.0%
300-400%	2.7%	1.9%	12.2%
>400%	1.4%	0.9%	13.7%
Health Status			
Excellent	2.1%	1.1%	8.9%
Very Good	3.7%	2.1%	13.7%
Good	6.9%	4.2%	19.6%
Fair	13.3%	9.2%	35.7%
Poor	21.9%	16.1%	60.5%

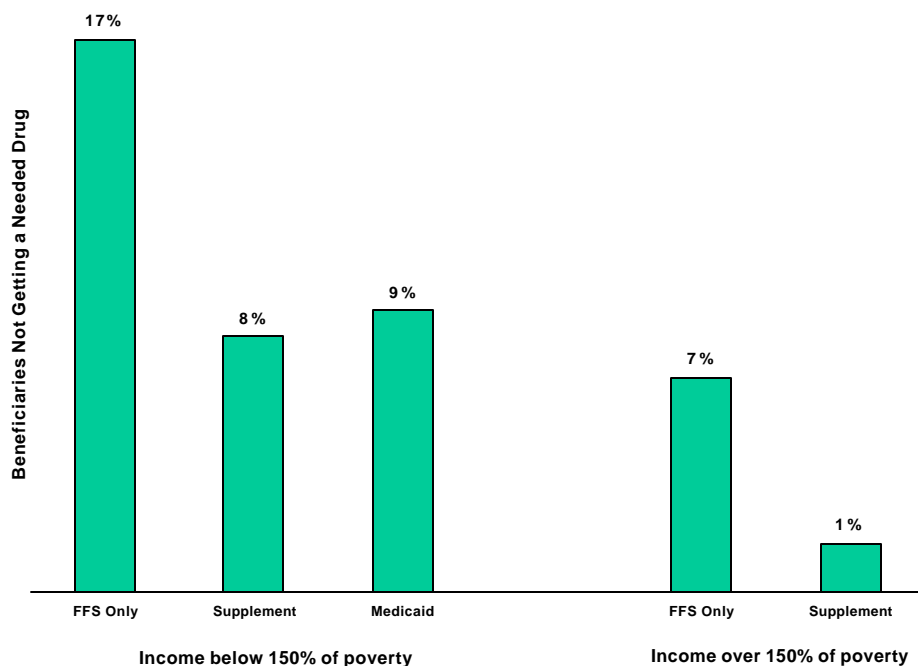
Source: Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control, National Health Interview Survey (NHIS), 1997.

People without insurance are consistently more likely than people with insurance to report that they couldn't afford needed medicines. Among the uninsured, the problem is greatest for people with low incomes and for people in poor health. Over 60 percent of uninsured people in poor health reported not getting medicines they needed.

receive a needed drug. This study does not include an analysis of the MCBS question because it does not directly capture people who might never have had a drug prescribed because they did not go to the doctor.

Table 2-28 and Figure 2-13 show the responses by more detailed insurance categories and income. Again, for both Medicare beneficiaries and the non-Medicare population, people without insurance and those with the lowest incomes were most likely to go without a prescription drug.²⁸ About a sixth of low-income beneficiaries without supplemental coverage, and just over a fifth of low-income uninsured non-Medicare beneficiaries, reported not receiving a needed drug because of cost.

Figure 2-13. Medicare Beneficiaries Who Did Not Get a Needed Drug Because They Could Not Afford It, by Source of Insurance and Income, 1997



Note: Medicaid is not included at higher income level because sample size is too small to produce reliable estimates.

Source: Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control, National Health Interview Survey (NHIS), 1997.

²⁸ The exception is for people with Medicaid, for whom the difference between income groups is not statistically significant.

Table 2-28. Percent of Population Not Receiving Prescription Medicine Because of Cost, by Detailed Insurance Status, 1997

	Percent reporting that they needed prescription medicine in the last 12 months but did not get it because they (or a parent) could not afford it			
	Total	0-150% of poverty	150-300% of poverty	300% of poverty or more
Health Insurance				
Medicare beneficiaries				
Medicare FFS only	9.9%	16.9%	7.6%	*
Medicare + non-Medicaid supplement	2.2%	7.8%	2.4%	0.6%
Medicare + Medicaid	8.8%	8.6%	*	*
Non-Medicare population				
Medicaid	6.2%	6.6%	7.6%	*
Private	2.4%	7.1%	3.8%	1.2%
No Insurance	16.4%	20.3%	16.0%	13.0%

* Small cell size; estimates not reliable

Source: Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control, National Health Interview Survey (NHIS), 1997.

Medicare beneficiaries with no supplemental coverage were over four times as likely as those with a non-Medicaid supplement to report not receiving a drug they needed. Among the non-Medicare population, people without any insurance were almost eight times as likely as people with private insurance to report going without a needed drug.

Again, this difference between people with and without coverage would likely be even stronger if information were available on which supplements included drug coverage. As Chapter 1 showed, while many Medicare beneficiaries with supplemental coverage have drug coverage, most beneficiaries with an individually purchased policy do not have coverage for their drugs. This distinction may be less important for non-Medicare beneficiaries, who usually have drug coverage if they have health insurance.

Mix of Drugs

Another consequence of not having drug coverage may be the use of a different mix of drugs. In addition to not filling some prescriptions, some people without drug coverage may obtain different prescriptions compared to the prescriptions that people with drug coverage get. Preliminary analysis of MCBS data on Medicare beneficiary utilization of medications commonly associated with the treatment of hypertension

(categorized as diuretics, calcium channel blockers, beta blockers and anti-hypertensives)²⁹ suggests that:

- Beneficiaries with prescription drug coverage were more likely to be dispensed a generic drug for all of the drug categories; beneficiaries without coverage were more likely to be dispensed a brand name product. Presumably, beneficiaries with coverage are more likely to be encouraged (or required) to use generic products by the health plan or pharmacy benefit manager.³⁰
- The average number of units dispensed per prescription was higher for people with prescription drug coverage. Individuals with prescription drug coverage may be purchasing a supply of drugs to last a longer period of time (for example, a 30 day supply rather than a 14 day supply). Individuals without coverage also may be skipping doses to avoid higher out-of-pocket costs (for example, taking medication once per day instead of twice per day).

One issue the analysis raises for future work is the possibility of a connection between insurance status and “step therapy.” That is, beneficiaries with insurance could be more likely to have a drug or combination of drugs prescribed and dispensed that is more responsive to a particular patient (and perhaps more expensive). For example, a physician may prescribe an increased drug dose, substitute another drug, or add a second agent from a different class of drugs if a patient is not responding adequately to current drug therapy. More work is necessary to discern whether or not beneficiaries with drug coverage are more likely to be prescribed or fill those additional prescriptions, and take them at appropriate dosages.

TRENDS IN PRESCRIPTION DRUG SPENDING

Prescription drug spending and utilization have become increasingly important issues in part because of their rapid growth. Spending on prescription drugs has risen faster than spending on other types of health care throughout the 1990’s. This section explores growth in spending for the total population and for Medicare beneficiaries. It will also examine some of the components of this growth.

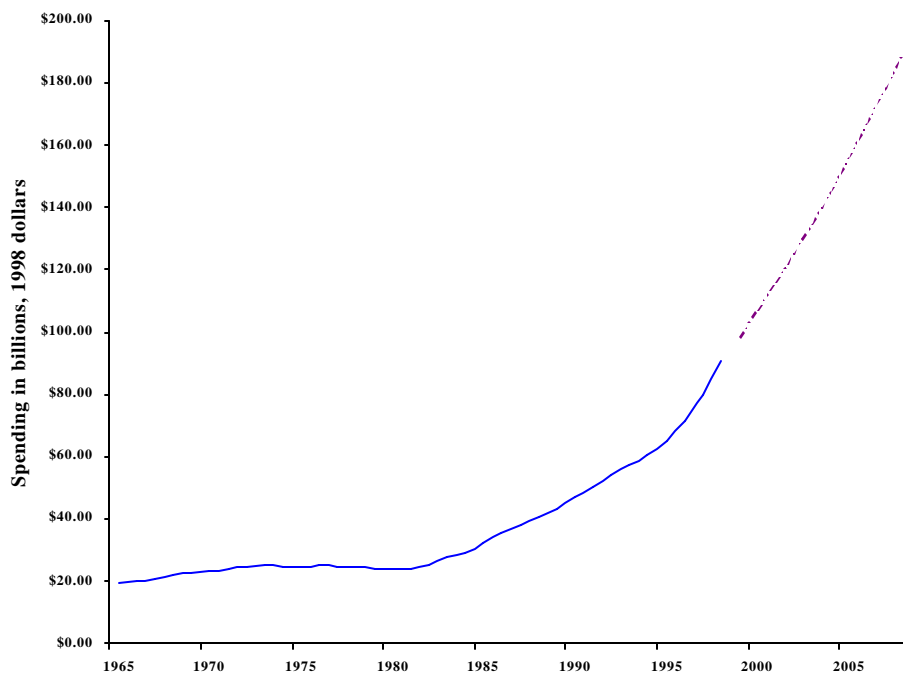
²⁹ Note that the analysis included beneficiary use of drugs associated with hypertension, but some of these medications may have been prescribed for purposes other than treatment of hypertension. For example, diuretics could be prescribed for a number of purposes.

³⁰ However, Chapter 3 will show that people with and without coverage purchase a similar mix of brand-name and generic drugs. More analysis is needed on this issue.

Growth in Drug Spending for the Total Population

The nation's spending for prescription drugs has grown dramatically in recent years. Table 2-29 shows estimated total national health expenditures and prescription drug expenditures for selected years from 1965 through 1998, along with HCFA's projections to 2008. All numbers are in nominal dollars and thus reflect general inflation during this period. Figure 2-14 shows the trend in drug spending in 1998 dollars: even when controlling for general inflation, there has been a dramatic increase in drug spending, especially since the mid-1980s.

Figure 2-14. Real Spending for Prescription Drugs for the Total Population, 1965-1998 and Projected 1999-2008, in 1998 Dollars



Source: National Health Statistics Group, Office of the Actuary, Health Care Financing Administration: National Health Accounts. Adjusted for inflation using the historical CPI-U through 1998 and OMB projections of CPI-U for 1999 through 2008.

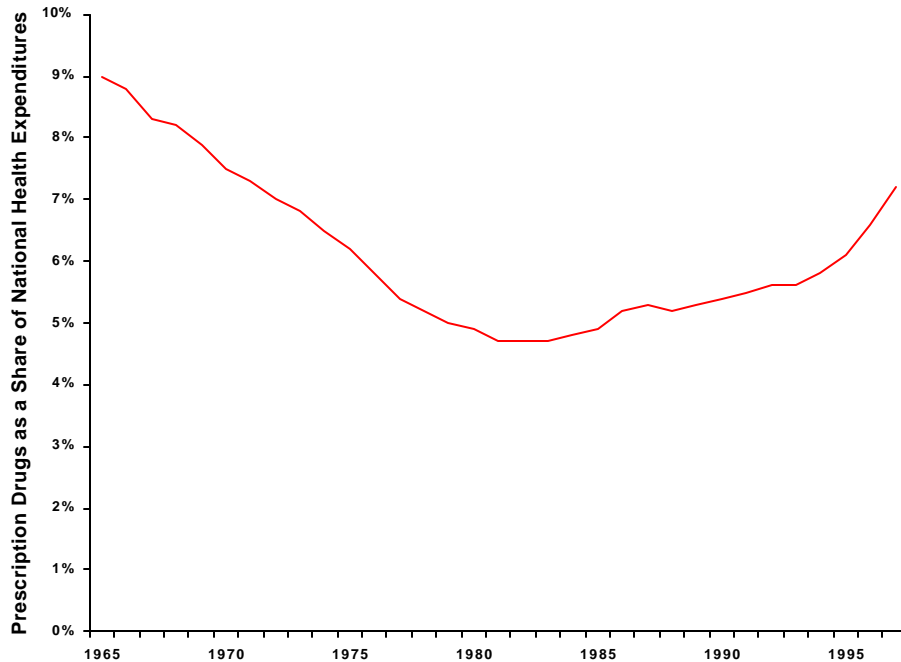
Table 2-29. Growth in National Health Expenditures and Prescription Drug Expenditures, 1970-1998 and Projected 1999-2008

Year	National health expenditures		Drug expenditures		Drugs as % of NHE
	Total (millions)	Annual change	Total (millions)	Annual change	
1965	\$41,100		\$3,715		9.0%
1970	\$73,243	12.2%	\$5,497	8.2%	7.5%
1980	\$247,273	12.9%	\$12,049	8.2%	4.9%
1990	\$699,361	11.0%	\$37,677	12.1%	5.4%
1991	\$766,783	9.6%	\$42,148	11.9%	5.5%
1992	\$836,537	9.1%	\$46,598	10.6%	5.6%
1993	\$898,496	7.4%	\$50,632	8.7%	5.6%
1994	\$947,717	5.5%	\$55,189	9.0%	5.8%
1995	\$993,725	4.9%	\$61,060	10.6%	6.1%
1996	\$1,042,522	4.9%	\$69,111	13.2%	6.6%
1997	\$1,092,385	4.8%	\$78,888	14.1%	7.2%
1998	\$1,149,100	5.1%	\$90,648	14.9%	7.9%
2003 (proj.)	\$1,590,359	6.7%	\$152,363	11.1%	9.6%
2008 (proj.)	\$2,176,620	6.5%	\$243,437	9.8%	11.2%

Source: National Health Statistics Group, Office of the Actuary, Health Care Financing Administration: National Health Accounts.

Through the 1970s and 1980s, drug spending grew somewhat more slowly than overall health spending—at an annual rate of 10 percent a year, compared to 12 percent for all health spending. In the 1990s, growth in drug spending began to outpace growth in spending for other kinds of health services. As a result, the share of health expenditures going to prescription drugs increased throughout the 1990’s, growing from 5.4 percent in 1990 to 7.8 percent in 1998 (see Figure 2-15). Part of this trend may be attributed to a slowing of the growth in health expenditures associated with the expansion of managed care. Some analysts contend that growth in drug spending also contributed to the moderation in spending growth for other services. They suggest that some new drug therapies replaced more costly treatments; for example, new asthma drugs may have reduced emergency room utilization. While these substitution effects have been identified in specific instances, it is not possible to assess the aggregate degree of substitution that may be occurring. This could be a fruitful area for future research.

Figure 2-15. Prescription Drug Expenditures as a Percent of National Health Expenditures, 1965-1997



Source: National Health Statistics Group, Office of the Actuary, Health Care Financing Administration: National Health Accounts.

HCFA projects that growth in drug spending will moderate slightly in the coming years. This is partly because the patent protection for many top-selling brand-name drugs will expire over the next decade. The likely appearance of generic equivalents for these drugs will depress spending growth slightly. Still, many new medications are expected to appear, and drug spending is projected to consume a steadily larger share of total spending by all the major payment sources.

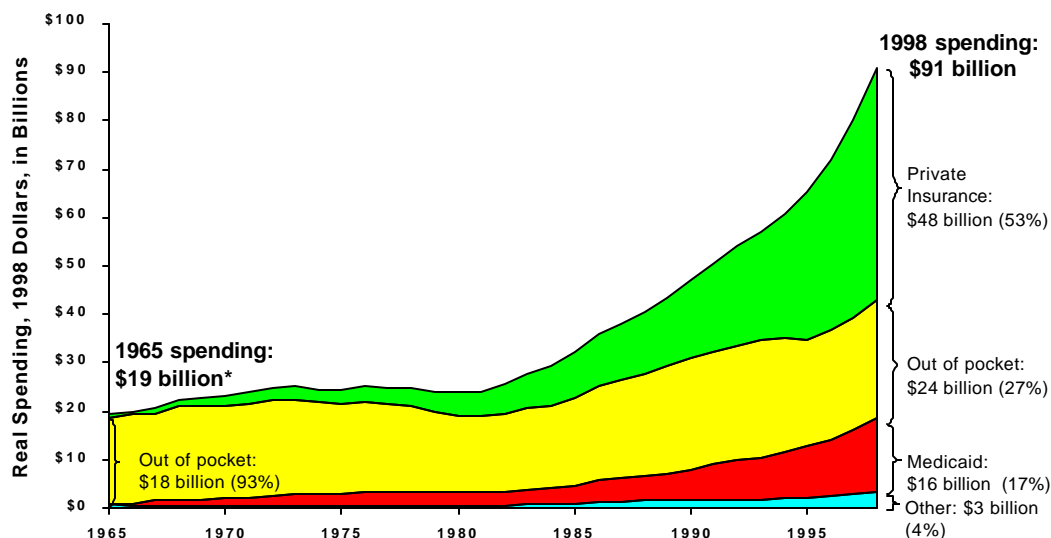
Between 1965 and 1998, spending on drugs by every major payment source – private insurers, Medicaid, consumers’ out-of-pocket payments, and other sources – increased faster than general inflation. However, expenditures by some sources have increased much faster than others. As Table 2-30 and Figure 2-16 show, the result has been a substantial shift in the share of drug expenditures that each source accounts for.

Table 2-30. Growth in Prescription Drug Expenditures by Source of Payment, 1970-1998 and Projected 1999-2008

Year	Annual Growth				Share of Drug Spending			
	Private Insurance	Medicaid	Out-of-pocket	All Other	Private Insurance	Medicaid	Out-of-pocket	All Other
1965					3.5%	0.0%	92.6%	3.9%
1970	30.1%	-	5.7%	-14.4%	8.8%	7.6%	82.4%	1.2%
1975	15.3%	15.9%	6.0%	13.8%	12.2%	10.8%	75.4%	1.6%
1980	19.8%	10.1%	5.5%	16.1%	20.1%	11.7%	66.0%	2.2%
1985	21.1%	12.1%	8.1%	17.8%	29.9%	11.8%	55.4%	2.9%
1990	15.4%	15.2%	9.2%	19.1%	34.4%	13.5%	48.3%	3.8%
1991	17.0%	21.7%	6.1%	4.0%	36.0%	14.7%	45.8%	3.6%
1992	18.1%	8.6%	5.7%	4.2%	38.5%	14.4%	43.8%	3.4%
1993	12.2%	15.6%	3.8%	2.2%	39.7%	15.3%	41.8%	3.2%
1994	16.6%	10.4%	1.1%	12.8%	42.5%	15.5%	38.8%	3.3%
1995	21.9%	12.9%	-3.3%	15.4%	46.8%	15.8%	33.9%	3.4%
1996	17.5%	14.7%	5.3%	16.1%	48.8%	16.1%	31.6%	3.5%
1997	18.7%	17.2%	4.9%	16.2%	50.8%	16.5%	29.1%	3.6%
1998	19.7%	19.2%	5.4%	18.0%	52.7%	17.1%	26.6%	3.6%
2003 (proj.)	11.1%	13.0%	8.8%	14.1%	53.0%	18.7%	24.1%	4.2%
2008 (proj.)	10.0%	11.6%	8.2%	8.9%	53.3%	20.3%	22.4%	4.1%

Source: National Health Statistics Group, Office of the Actuary, Health Care Financing Administration: National Health Accounts.

Figure 2-16. Spending for Prescription Drugs by Payment Source, Total Population, 1965-1998, in 1998 Dollars



*Nominal spending in 1965 was \$3.7 billion.

Source: National Health Statistics Group, Office of the Actuary, Health Care Financing Administration: National Health Accounts. Adjusted for inflation using the CPI-U.

Private insurance payments accounted for only 3.5 percent of all prescription drug expenditures in 1965; by 1998, private insurers paid just over half of all drug costs. One of the major factors in this shift has been the addition of outpatient prescription drugs to the standard benefit package that private insurers offer. In 1965, it was much less common than it is today for health plans to include drugs in their benefit package. More recently, the trend toward an increasing insurer share may also be related to the shift to managed care and the corresponding move from benefit packages with deductibles and coinsurance to no-deductible plans with fixed copayments.³¹

³¹ Copayments are not necessarily less burdensome than coinsurance. On a \$35 prescription, 20 percent coinsurance would be \$7, less than the copayments imposed by many plans. However, the elimination of deductibles probably reduced consumer liabilities considerably. In addition, coinsurance rises automatically with drug inflation, while insurers have to change copayments periodically to keep pace with inflation.

Medicaid has also covered an increasing share of prescription drug expenditures since its creation in 1965. In 1975, Medicaid paid for just over a tenth of all drug expenditures. The program now covers almost a fifth of all drug costs.

While the population's out-of-pocket spending on prescription drugs grew significantly between 1965 and 1998 in dollar terms, the share of total drug expenditures that were paid out-of-pocket dropped from 93 percent to only 27 percent. HCFA projects that out-of-pocket spending will begin to grow more rapidly than it has in recent years, as insurers and employers respond to higher drug costs by passing some of these costs on to health plan enrollees. However, HCFA projects that insurer spending on drugs will grow even more rapidly, continuing the slow shift from out-of-pocket expenditures to other sources of payment.

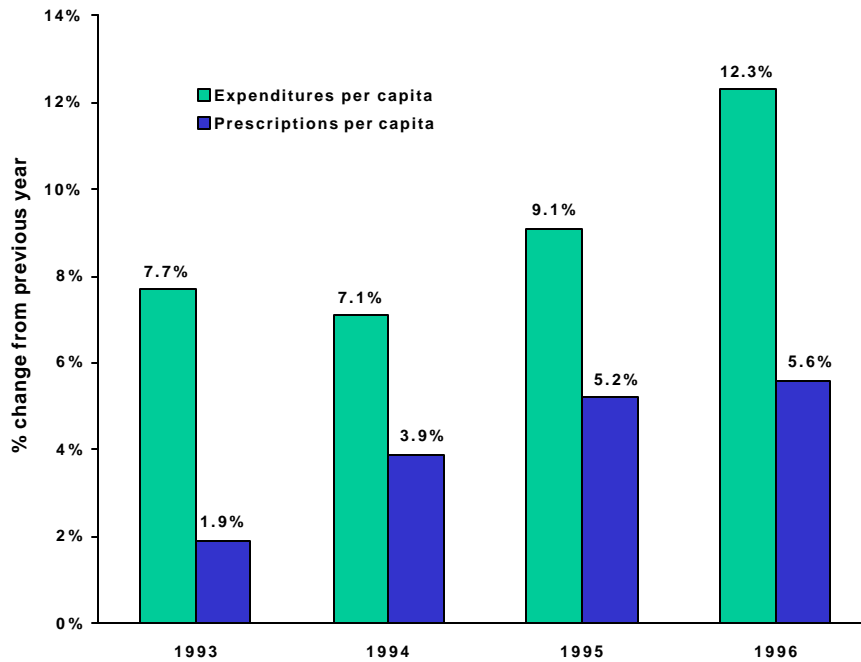
It is not possible to separate Medicare beneficiaries from the rest of the population in the National Health Expenditures data. However, some of the findings of this report suggest that the sources of spending have been different for Medicare beneficiaries compared to the rest of the population. As Chapter 1 showed, many beneficiaries continue to lack access to a source of coverage for their prescription drug costs. As a result, the trend toward increasing coverage of drug costs by insurers has likely been much less dramatic over time for Medicare beneficiaries than for the rest of the population. The next section will explore overall spending and utilization trends for Medicare beneficiaries more recently, using the Medicare Current Beneficiary Survey.

Spending Trends for Medicare Beneficiaries

Table 2-31 shows MCBS data on changes in drug utilization and spending for Medicare beneficiaries between 1992 (the first year of MCBS) and 1996, results that are generally consistent with the National Health Expenditures estimates for the total population. Total per beneficiary drug spending (including both third-party and out-of-pocket spending) rose at an annual rate of 9 percent in this period. Utilization grew 4.1 percent a year, slightly faster than the 3.9 percent annual growth in total retail prescriptions over the same period (NACDS). Spending per prescription grew 4.7 percent — well above general inflation, which averaged 2.8 percent from 1992 to 1996. Figure 2-17 shows that expenditures per Medicare beneficiary grew more rapidly than prescriptions per beneficiary throughout this period.

As it did for the total population, out-of-pocket spending on prescription drugs by Medicare beneficiaries grew less rapidly than total spending. This is due both to a growth in prescription drug coverage and particularly to shifts into managed care, including expanding Medicare risk HMO enrollment and increased use of managed care in retiree health benefit plans. Thus, this slower growth in out-of-pocket spending by Medicare beneficiaries may not reflect current or future trends.

Figure 2-17. Growth in Drug Spending and Number of Prescriptions per Medicare Beneficiary, 1993-1996



Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1992-1996.

Table 2-31. Growth in Utilization and Spending for Prescription Drugs by Medicare Beneficiaries, 1992-1996

	1992	1993	1994	1995	1996	Average Annual Change
Per Capita Total Expenditures	\$477	\$513	\$550	\$600	\$674	9.0%
Per Capita Out-of-pocket	\$277	\$284	\$287	\$303	\$318	3.5%
Per Capita Scripts	16.62	16.94	17.60	18.52	19.54	4.1%
Total Exp./Script	\$28.66	\$30.30	\$31.22	\$32.39	\$34.47	4.7%
Out-of-pocket/Script	\$16.67	\$16.77	\$16.28	\$16.34	\$16.29	-0.6%
Percent Out-of-pocket	58%	55%	52%	50%	47%	-5.1%

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1992-1996.

Table 2-32 shows changes in spending between 1995 and 1996, by primary source of supplemental coverage and whether or not the beneficiary had drug coverage. Total spending and out-of-pocket spending both grew more rapidly between 1995 and 1996 than in the preceding two years. Spending growth was highest for enrollees in risk

HMOs and for Medicaid beneficiaries, and enrollees in other public programs. Spending actually declined for beneficiaries with no supplemental coverage.

Table 2-32. Percent Change in Average Expenditures and Out-of-pocket Expenditures for Prescription Drugs for Medicare Beneficiaries with and without Drug Coverage, by Primary Medicare Supplement, 1995-1996¹

Primary Medicare Supplement	Growth in per capita total drug expenditures			Growth in per capita out-of-pocket drug expenditures		
	Total	Covered	Not covered	Total	Covered	Not covered
All Beneficiaries	12.3%	11.6%	7.0%	5.2%	8.5%	7.0%
No Supplemental Coverage (FFS Medicare only)	-7.2%	na	-7.2%	-7.2%	na	-7.2%
Supplemental Coverage:						
Medicare Risk HMO	17.9%	19.7%	*	-4.8%	-4.1%	*
Medicaid ²	17.0%	16.4%	38.5%	16.1%	11.4%	38.5%
Employer-sponsored ³	11.1%	10.2%	10.6%	4.5%	5.9%	10.6%
Individually-purchased only	10.3%	6.1%	11.2%	11.7%	16.3%	11.2%
All other ⁴	27.9%	25.4%	45.1%	24.7%	21.6%	45.1%

¹Each person has been assigned to one supplementary insurance category but they may or may not obtain their drug insurance coverage from that source.

²Includes beneficiaries receiving full Medicaid benefits, as well as QMBs and SLMBs.

³Includes those who only had employer-sponsored supplemental insurance and those who had both employer-sponsored and individually-purchased supplemental insurance.

⁴Includes other public programs such as VA, DOD, and State Pharmaceutical Assistance Programs for low-income elderly, as well as non-risk HMOs (cost and HCPP plans).

* Number is unreliable because of small sample size.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1995 and 1996.

Factors in Spending Growth

The very rapid growth in drug spending in recent years has been attributed to a variety of factors:

- Part of the growth in drug spending is attributable to price increases for existing drugs. Although price increases have been less than one percentage point above general inflation since 1994, these increases (including the effect of general inflation) still contribute significantly to the total increase in drug spending.³²

³² HCFA, based on the CPI and the GDP deflator.

- Second, the nature of the drugs people receive has changed. There has been a shift toward newer drugs. The number of new drugs introduced each year has grown rapidly, from 23 new drugs introduced in 1990 to 53 new drugs introduced in 1996; the Pharmaceutical Research and Manufacturers of America (PhRMA) estimates that 100 new drugs were introduced in 1997 and 1998.³³ Many of these drugs have been breakthrough treatments; others are merely incremental improvements over existing therapies, or “me too” drugs that offer little improvement over existing options. New drugs are often more costly than older ones. Profitable drugs have to cover their own development costs as well as costs for drugs that do not receive FDA approval and those that are not profitable after approval.
- Finally, utilization has grown dramatically. The number of prescriptions filled by retail and mail-order pharmacies grew by 32 percent between 1992 and 1998 (NACDS). There are a number of possible reasons. An aging population may have a higher incidence of chronic conditions for which drug therapy is appropriate, although these demographic changes are occurring only gradually. The use of prescription drugs is also likely growing because of changes in medical practice, including the rise in managed care, early intervention, and the substitution of medications for other therapies – including new medications that offer therapies not previously available. As noted earlier, demand may have increased because of the lower cost-sharing requirements of managed care plans. Another factor related to increased demand may be greater consumer awareness of therapies, both because of increased media coverage of medical news and the growth of direct-to-consumer advertising of prescription drugs.

A recent study by the Barents Group for the National Institute for Health Care Management (NIHCM) attempted to measure the relative importance of different factors in the growth of drug spending, as shown in Table 2-33. In general, the study split inflation into two categories: “price” effects and “utilization” effects. Each of these effects were further split between older drugs (drugs that entered the market before 1992) and new drugs (drugs that entered the market in 1992 or later).

The study found that about two thirds of spending growth from 1993 to 1998 was attributable to price. Of this portion, 22 percentage points were attributable to pure price increases for older drugs. Another 42 percentage points reflected the fact that newer drugs cost more than older drugs: the study estimated that the average 1998 price for drugs introduced in 1992 or later was \$71.49 per prescription, compared to \$30.47 for previously existing drugs. This difference reflects higher initial introduction prices as well as price increases after introduction. The study did not attempt to

³³ PhRMA, *Drug Utilization And Managed Care*, Sept. 1998.

measure how much of this difference reflects changes in quality as better, newer drugs replace older, less effective medications.

The study reported that increased utilization accounted for about one third of spending growth. If price levels and the mix of prices had not changed between 1993 and 1998, 36 percent of the total spending growth would still have occurred as a result of the increased number of prescriptions. Increased utilization of newer drugs contributed almost twice as much as utilization of older drugs to this increase.

Table 2-33. Percentage Contribution of Changes in Price and Utilization to 1993-98 Increase in Prescription Drug Spending

	Percent of rise in drug spending attributable to prices (at introduction and subsequent increases)	Percent of rise in drug spending attributable to utilization	Total
New drugs (1992 or later)	42%	23%	65%
Older drugs	22%	13%	35%
Total	64%	36%	100%

Source: National Institute for Health Care Management Research and Educational Foundation, *Factors Affecting the Growth of Prescription Drug Expenditures*, Washington, 1999.

Table 2-34 shows some of the components of spending growth for Medicare beneficiaries. Both utilization and cost per prescription grew from 1995 to 1996. This analysis did not attempt to measure changes in the mix of drugs. Average cost per prescription grew by 6.4 percent, more rapidly than during the preceding years. The cost change was larger than the change in utilization for HMO enrollees and those in employer plans. The reverse was true for Medicaid beneficiaries and purchasers of individual coverage; for these groups utilization grew faster than price. For beneficiaries with no Medicare supplement, both utilization and average price dropped. This may mean that these beneficiaries were less able to afford prescription drugs. However, it might also suggest that the highest spenders in 1995 were disproportionately represented among beneficiaries who newly gained drug coverage in 1996.

Table 2-34. Percent Change in Average Number of Prescriptions and Expenditure per Prescription for Medicare Beneficiaries with and without Drug Coverage, by Primary Medicare Supplement, 1995-1996¹

Type of Insurance Coverage	Growth in Average Number of Prescriptions Per Beneficiary			Growth in Average Expenditure per Prescription		
	Total	Covered	Not covered	Total	Covered	Not Covered
All Beneficiaries	5.5%	4.2%	4.4%	6.4%	7.1%	2.5%
No Supplemental Coverage (FFS Medicare only)	-2.8%		-2.8%	-4.6%		-4.6%
Supplemental Coverage:						
Medicare Risk HMO	7.9%	8.5%	*	9.3%	10.3%	*
Medicaid ²	8.5%	8.1%	20.6%	7.8%	7.7%	14.9%
Employer-sponsored ³	2.9%	2.5%	3.9%	8.0%	7.4%	6.5%
Individually-purchased only	7.2%	6.0%	6.8%	2.9%	0.2%	4.1%
All other ⁴	19.0%	17.4%	27.6%	7.4%	6.9%	13.7%

¹Each person has been assigned to one supplementary insurance category but they may or may not obtain their drug insurance coverage from that source.

² Includes beneficiaries receiving full Medicaid benefits, as well as QMBs and SLMBs.

³ Includes those who only had employer-sponsored supplemental insurance and those who had both employer-sponsored and individually-purchased supplemental insurance.

⁴ Includes other public programs such as VA, DOD, and State Pharmaceutical Assistance Programs for low-income elderly, as well as non-risk HMOs (cost and HCPP plans).

* Number is unreliable because of small sample size.

Source: Information and Methods Group, Office of Strategic Planning, Health Care Financing Administration: Medicare Current Beneficiary Survey Cost and Use File, 1995 and 1996.