Acute Health Care Costs for the Aged Medicare Population: Overview and Policy Options

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MEDICARE IS A PUBLIC INSURANCE PROGRAM for the elderly and the disabled that pays part of their costs for acute care—that is, for health services other than preventive or long-term care. Enrollees share the costs of covered services through copayments (deductible and coinsurance amounts) as well as through premiums and balance-billing amounts (physicians' charges in excess of Medicare's allowed amounts). In addition, enrollees are liable for all prescription drug costs outside the hospital.

As a result of Medicare's cost-sharing requirements and coverage limitations, costs borne by enrollees who require many services during the year can be substantial. The potential for high out-of-pocket costs—that is, cost sharing other than premiums—induces more than 70 percent of aged Medicare enrollees to purchase supplementary private insurance to cover those costs. Another 8 percent of aged enrollees are eligible for Medicaid, which typically covers their premium and copayment costs under Medicare.

There is concern that the incentives created by cost sharing toward the prudent use of services will be eliminated for those who have supplementary coverage. There is also concern on behalf of those who lack supplementary coverage that out-of-pocket costs may sometimes be prohibitive, with the result that they may be unable to obtain needed health care services.

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The purpose of this article is to provide a comprehensive picture of acute health care costs borne by aged Medicare enrollees, and to examine some implications for federal policy. The article is organized as follows. The first section presents total acute health care costs and the portion paid out of pocket or through insurance premiums for three groups of aged Medicare enrollees: those who have only Medicare coverage; those with supplementary private insurance ("medigap") as well; and those who are simultaneously eligible for Medicaid benefits (whether or not they have medigap insurance). Next, the characteristics of these three groups of enrollees are examined. The third section discusses alternative approaches the federal government might take in dealing with disparities among the groups in their use of services and in the out-of-pocket costs they face, while the final section contains some concluding remarks.

Health Care Expenditures for the Elderly

To provide a comprehensive picture of acute-care costs for aged Medicare enrollees, information on premium costs, copayment and balance-billing amounts for covered services, and costs for prescription drugs are added to Medicare reimbursements. (Costs for routine eye and dental care and for long-term care are not included.) Both total costs and the share of costs paid by enrollees are presented, taking account of the effects of medigap and Medicaid coverage on enrollees' costs. Although some enrollees who use substantial services (such as those with long hospital stays) may receive some charity care other than Medicaid, there are insufficient data to take this factor into account. Throughout, the costs shown represent enrollees' liabilities. In some instances, patients may not pay all of their incurred liabilities, so that amounts actually paid may be less than the costs shown.

Data Sources and Methods

Three data sources were used for the analysis in this section: 1985 Medicare claims data (Medicare History file), the 1984 Health Interview Survey (HIS), and the 1980 National Medical Care Utilization and Expenditure Survey (NMCUES).

The primary Medicare program data base used was a 1 percent sample from the 1985 Medicare History file, aged to reflect use

patterns and projected spending for 1987 based on Medicare provisions in effect in February 1987. Program data provide more accurate information about use of and reimbursement for Medicare-covered services than self-reported survey data like NMCUES, because the latter are subject to substantial recall error. Because Medicare enrollees whose Medicare premiums are paid by Medicaid are identified in the data, the program data also permit assessment of how use and spending differ between enrollees with and without Medicaid benefits, although some enrollees who receive Medicaid benefits through "medically needy" programs may not be identified.

Program data do not, however, permit identification of enrollees with medigap coverage, nor do they provide information about prescription drug costs. This information was imputed from supplementary data sources and added to the Medicare History file. The 1984 HIS was used to impute medigap coverage, and the 1980 NMCUES was used to impute drug expenditures (appendix note A).

Health Care Costs

Health care expenditures for people aged 65 or more are substantial, and highly concentrated on the 22 percent of enrollees who enter the hospital each year. Table 1 records that average total costs for acute health care services in 1987 will be an estimated $3,351 per aged Medicare enrollee. For the 78 percent of aged enrollees who will have no hospital stays during the year, average costs will be about $817. For the remaining enrollees who will enter the hospital, average costs will be about $12,213. Those aged Medicare enrollees who enter the hospital will account for about 80 percent of total acute-care costs for the aged. (If costs for long-term care were included as well, total costs would be about 25 percent higher, on average. Long-term care costs are even more concentrated than acute-care costs, affecting only about 5 percent of enrollees each year [see Waldo and Lazenby 1984].)

Nearly 11 percent of acute-care costs will be paid out of pocket by enrollees, directly to providers. Aged Medicare enrollees will pay another 17.5 percent of their acute-care costs in insurance premiums, either for Medicare Part B coverage or for private supplementary insurance. Medicare will pay 72 percent of acute-care costs for aged enrollees, net of premium collections. Medicaid will pay less than 3 percent of costs for aged Medicare enrollees.

TABLE 1
Estimated Average Acute Health Care Costs and Means of Payment, for Aged Medicare Enrollees, by Insurance Coverage, 1987

	Enrollee group, by insurance coverage			
	All enrollees	Only Medicare	Medicare + medigap	Medicare + Medicaid
Total acute health care costs (in dollars per enrollee)*				
All enrollees	3,351	3,254	3,220	4,725
With no hospital stays	817	752	808	1,090
With hospital stays	12,213	12,082	12,185	12,600
Share (in dollars) of enrollees' costs paid by**				
Medicare	2,414	2,346	2,288	3,677
Medicaid	87	0	0	1,048
Premiums	585	215	757	0
Out-of-pocket	361	693	310	0
Share (in percents) of enrollees' costs paid by**				
Medicare	72.0	72.1	71.0	77.8
Medicaid	2.6	0.0	0.0	22.2
Premiums	17.5	6.6	23.5	0.0
Out-of-pocket	10.8	21.3	9.6	0.0

Source: Authors' estimates based on the 1985 Medicare History file aged to 1987 and the 1984 Health Interview Survey.
* Includes all costs for Medicare-covered services (including costs for all inpatient days and for balance-billing by physicians) and for prescription drugs, whether paid as insurance benefits or out of pocket by Medicare enrollees.
** The shares sum to more than 100 percent of total costs for medigap enrollees and for all enrollees because of administrative expenses (above benefit costs) included in medigap premiums.

Use of Services and Total Costs by Type of Insurance Coverage. Enrollees who are dually eligible for Medicare and Medicaid benefits are about 1.24 times as likely to use some health care services as those without supplementary coverage, while those with medigap insurance are about 1.06 times as likely to use some services. These differences in use occur in part because those who are responsible themselves for Medicare's cost sharing are discouraged from obtaining as many services as those who have medigap or Medicaid to cover copayments. The effects of

health status and other factors on use of services must also be considered, though.

For example, the much higher rate of use by Medicare-Medicaid enrollees is related not only to their exemption from cost sharing, but also to their typically poorer health (see next section). The result of these two factors working together is that total acute-care costs for Medicare-Medicaid enrollees are nearly 50 percent higher than costs for enrollees who lack any supplementary coverage—$4,725 per Medicare-Medicaid enrollee, compared to $3,254 for Medicare-only enrollees (see table 1).

Enrollees with medigap coverage, by contrast, are typically younger and in better health than other enrollee groups. As a result, although medigap enrollees are more likely to use some services than enrollees with similar characteristics who lack supplementary coverage, average acute-care costs are lower for the medigap group than for other enrollee groups. The effects of medigap coverage in inducing greater use of services can be isolated, however, by controlling for differences in enrollee characteristics. Regression estimates (using the 1984 HIS) indicate that the effect of medigap coverage for the typical Medicare-not-Medicaid enrollee is to increase use of both physicians' and hospital services by about 24 percent (appendix note B).

Out-of-Pocket and Premium Costs by Type of Insurance Coverage. Medicare enrollees who are not eligible for Medicaid benefits are responsible for a substantial portion of the costs of their covered services. Payment of a premium ($214.80 for 1987) entitles enrollees to Supplementary Medical Insurance (SMI) coverage for physicians' services, subject to specified exclusions. Enrollees are responsible for a $75 deductible before any SMI benefits are paid. After that, they are responsible for 20 percent of amounts allowed by Medicare for physicians' services, and for all balance-billing amounts. (Survey data indicate, however, that 40 percent of physicians do not seek to collect copayment amounts on assigned Medicare claims for patients without supplementary insurance. Some portion of billed amounts is probably uncollected on unassigned claims as well. By one estimate, about 12 percent of physicians' effective billed amounts—both assigned and unassigned—are written off as bad debt [see Cromwell and Burstein 1984].)

Under the Hospital Insurance (HI) portion of Medicare, enrollees who are hospitalized will be liable in 1987 for a deductible amount of $520 for each spell of illness, as well as for coinsurance of $130

a day for inpatient days 61 through 90 and $260 a day thereafter, until the enrollee's lifetime reserve of 60 hospital days is exhausted. Those patients discharged to skilled nursing facilities (SNFs) will pay coinsurance of $65 a day for days 21 through 100, but no coinsurance for days 1 through 20. Once the lifetime reserve of hospital days is exhausted, all subsequent hospital charges are paid by the enrollee, as are charges for any SNF days over 100. Less than 0.1 percent of enrollees actually use enough services in a year to be affected by these provisions, however.

Medicare enrollees who purchase medigap insurance pay a medigap premium in addition to the Medicare premium, but most of their Medicare copayments are then paid by the medigap policy. In all but four states (New York, Louisiana, Rhode Island, and South Dakota), medigap policies are required to meet minimum standards specified under the Baucus Amendment to the 1980 Social Security Act (P.L. 96-265). These standards require coverage of nearly all SMI coinsurance, all HI coinsurance, and 90 percent of most hospital expenses for a lifetime total of 365 days beyond those of the Medicare lifetime reserve. Coverage of the HI and SMI deductible amounts is not required under the Baucus legislation. Nevertheless, virtually all medigap policies cover the HI deductible, but most do not cover the SMI deductible. Medigap policies greatly reduce the risks of high copayment costs for Medicare's covered services. Only half of medigap policies cover some portion of balance-billing amounts on covered services, though, and most policies do not cover other costs such as prescription drugs (Cafferata 1984; Blue Cross and Blue Shield Association 1986).

Medicare enrollees who also receive Medicaid benefits are typically not liable for any of Medicare's premium or copayment charges, and balance billing is not permitted for these enrollees. Moreover, in most states Medicaid pays prescription drug costs for these enrollees. Medicaid eligibility is closely linked to receipt of Supplemental Security Income benefits—cash assistance which is available in all states to aged and disabled people in families with low incomes and assets. In areas with "medically needy" programs (37 states and the District of Columbia), some elderly with incomes above cash-assistance standards may be eligible for Medicaid benefits if they have incurred out-of-pocket health care expenses that are high relative to their incomes.

Average enrollee out-of-pocket and premium costs are highest for the group with medigap coverage, and virtually zero for Medicaid

beneficiaries. Enrollees with medigap policies will spend an average of $1,067 for out-of-pocket and premium costs in 1987, compared to an average of $908 for those with only Medicare coverage (see table 2). Enrollee costs for the medigap group will exceed payments by those without supplementary coverage because the medigap premiums they pay include administrative as well as health benefit costs. (Administrative costs range from 15 to 35 percent of the medigap premium—25 percent was assumed for the estimates shown here.) The existence of some employer-paid medigap coverage would reduce the costs paid by the medigap group somewhat, but this effect would probably be small.

While their average costs are slightly higher, the potential risk of large out-of-pocket costs is much lower for the medigap group than for the Medicare-only group, as shown by the more even distribution of spending by enrollees across use categories in table 2. For those with medigap coverage, enrollees' average costs will range from a low of $783 to a high of $1,599 depending on use of services. By contrast, costs for the Medicare-only group will range from $240 to $8,019 (or more, since these amounts are average costs by use category). Costs of $8,000 a year would be a hardship for most Medicare enrollees, whose average per capita income in 1987 will be about $12,000. While all Medicare-only enrollees (about 5.6 million people) face the risk of extremely high costs, only about 25,000 of them will fall into the highest cost group in 1987.

Characteristics of Aged Medicare Enrollees by Type of Insurance Coverage

Tabulations from the Survey of Income and Program Participation (SIPP) show that about 80 percent of aged Medicare enrollees had either medigap insurance or Medicaid coverage in April 1984. As a result, they were protected from most of the potential copayment costs under Medicare described in the previous section.

About 20 percent of the elderly, however, had no protection other than Medicare against health care costs. Enrollees having no supplementary protection tended to be poorer, older, and less healthy than those who purchased medigap insurance, but not as poor or as old as those receiving Medicaid benefits. For example, 18 percent of those

TABLE 2
Estimated Premium and Out-of-pocket Costs for Aged Medicare Enrollees, 1987

Enrollee category	Number of enrollees		Enrollees' costs*					
	In thousands	Percentage of total	Insurance premiums	Copayments HI**	Copayments SMI	Balance billing	Prescription drugs	Total
ALL AGED MEDICARE ENROLLEES								
All use categories	28,000	100.0%	585	32	98	86	145	947
AGED ENROLLEES WITH ONLY MEDICARE COVERAGE								
All use categories	5,576	20.1	215	159	272	114	148	908
No hospitalization, no reimbursable services	1,725	6.2	215	0	25	0	0	240
No hospitalization, some reimbursable services	2,620	9.4	215	1	234	81	182	714
One hospitalization, no coinsurance days	832	3.0	215	524	541	274	251	1,806
Two or more hospitalizations, no coinsurance days	374	1.3	215	829	988	486	355	2,872
One or more hospitalizations, coinsurance days	25	0.1	215	5,325	1,653	511	314	8,019
AGED ENROLLEES WITH MEDICARE AND MEDIGAP COVERAGE***								
All use categories	19,922	71.7	757	0	61	89	161	1,067
No hospitalization, no reimbursable services	5,290	19.0	757	0	26	0	0	783

No hospitalization, some reimbursable services	10,409	37.4	757	0	75	60	185	1,077
One hospitalization, no coinsurance days	2,867	10.3	757	0	75	215	266	1,312
Two or more hospitalizations, no coinsurance days	1,274	4.6	757	0	75	383	382	1,597
One or more hospitalizations, coinsurance days	82	0.3	757	0	75	428	339	1,599
AGED ENROLLEES WITH MEDICARE AND MEDICAID COVERAGE								
All use categories	2,300	8.3	0	0	0	0	0	0
No hospitalization, no reimbursable services	325	1.2	0	0	0	0	0	0
No hospitalization, some reimbursable services	1,249	4.5	0	0	0	0	0	0
One hospitalization, no coinsurance days	452	1.6	0	0	0	0	0	0
Two or more hospitalizations, no coinsurance days	253	0.9	0	0	0	0	0	0
One or more hospitalizations, coinsurance days	21	0.1	0	0	0	0	0	0

Source: Authors' estimates based on the 1985 Medicare History file aged to 1987 and the 1984 Health Interview Survey.
* Costs shown represent liabilities, some of which may not be paid.
** Includes enrollee costs for inpatient days after hospital benefits are exhausted. That is, these costs are treated as 100 percent coinsurance payments.
*** Premium costs for these enrollees may be overstated to the extent that some medigap premiums are paid by former employers.

with only Medicare coverage were poor in 1984, compared to 6 percent of those with supplementary private insurance and 47 percent of those with Medicaid coverage. About 26 percent of the Medicare-only group were aged 80 or more, compared to 16 percent of those with private supplementary coverage and 31 percent of those eligible for Medicaid. About 15 percent of the Medicare-only group reported poor health, compared to 9 percent of those with private supplementary coverage and 34 percent of those with Medicaid coverage (see table 3).

Another comparison of enrollees is shown in table 4, with enrollees distributed by insurance coverage, instead of by characteristics as in table 3. Nearly 30 percent of aged enrollees with incomes under $9,000 had neither private insurance nor Medicaid eligibility in 1984, compared with 10 percent of those with incomes over $25,000. About 32 percent of the aged poor lacked supplementary coverage, compared with 19 percent of the nonpoor. Supplementary coverage for poor aged enrollees was nearly equally divided between Medicaid and medigap.

Although health care needs typically increase with age, so does the likelihood of being without supplementary coverage. About 17 percent of noninstitutionalized Medicare enrollees aged between 65 and 69 lacked supplementary coverage in 1984, compared with 27 percent aged 80 or more (table 4). The incidence of Medicaid coverage increased with age, but not by enough to offset the reduction in medigap coverage that occurred.

Enrollees reporting poor health were more likely to lack supplementary coverage than those reporting good health in 1984. About 28 percent of those reporting poor health were without supplementary coverage, compared with 17 percent of those whose health was excellent (table 4).

Implications and Policy Options

The findings in the previous sections show that potentially large out-of-pocket costs for acute care—and the attendant risks of inadequate access to health care services—exist primarily for the 20 percent of Medicare enrollees without supplementary coverage. This group of enrollees tends to be older, sicker, and less well off than the group that purchases medigap coverage. Some of this group may be unable to purchase medigap protection because of low income. Poor health

TABLE 3
Percentage Distribution of Insurance Groups by Demographic Characteristics, Aged Medicare Enrollees, 1984

Characteristic	All enrollees	Insurance group: Only Medicare	Medicare + private	Medicare + Medicaid
All enrollees	100	100	100	100
By family income				
Under $5,000	12	17	7	42
$5,000 - $8,999	22	33	18	31
$9,000 - $14,999	24	25	25	11
$15,000 - $24,999	23	16	27	8
$25,000 and over	19	10	23	8
By poverty status				
Poor	12	18	6	47
Not poor	88	82	94	53
By age				
65–69	33	29	36	22
70–74	28	27	28	28
75–79	19	19	19	20
80 or more	19	26	16	31
By self-reported health status				
Excellent	16	12	17	5
Very Good	21	19	22	11
Good	32	30	33	23
Fair	21	24	20	27
Poor	11	15	9	34

Source: Authors' tabulations from the Survey of Income and Program Participation, 1984; and, for health status, from the 1984 Health Interview Survey.

may also be a factor in limiting this group's access to medigap insurance. Although the Baucus legislation restricts the ability of medigap insurers to cancel coverage or to refuse to cover preexisting conditions, it does permit insurers to deny benefits for preexisting conditions for the first six months of coverage. Further, selective marketing techniques could limit the number of applicants who are in poor health.

Aged Medicare enrollees who do not have supplementary coverage use fewer health care services than similar enrollees who have sup-

TABLE 4
Percentage Distribution of Demographic Groups by Insurance Coverage, Aged Medicare Enrollees, 1984

Characteristic	All enrollees	Insurance group: Only Medicare	Medicare + private	Medicare + Medicaid
All enrollees	100	20	72	8
By family income				
Under $5,000	100	29	44	28
$5,000 - $8,999	100	30	59	12
$9,000 - $14,999	100	21	76	4
$15,000 $24,999	100	14	83	3
$25,000 and over	100	10	87	3
By poverty status				
Poor	100	32	35	33
Not poor	100	19	77	5
By age				
65–69	100	17	78	5
70–74	100	19	73	8
75–79	100	20	72	8
80 or more	100	27	61	13
By self-reported health status				
Excellent	100	17	82	1
Very Good	100	19	78	3
Good	100	20	77	3
Fair	100	24	70	6
Poor	100	28	57	15

Source: Authors' tabulations from the Survey of Income and Program Participation, 1984; and, for health status, from the 1984 Health Interview Survey.

plementary coverage. Economists generally agree that some cost sharing is useful because it imposes some economic discipline on enrollees and on their physicians, encouraging more prudent use of services. There is much less agreement, however, on how strong that discipline should be—that is, at what point the constraints imposed by cost sharing curtail use of services to an undesirable extent. For this reason, it is impossible to conclude with certainty either that necessary health care services are foregone by the Medicare-only group because of cost

sharing, or that those with supplementary coverage use too many services.

Implications

To summarize and focus the discussion, we set forth two problems identified by the results presented in earlier sections:

- Medicare coverage, by itself, does not protect enrollees from potentially catastrophic out-of-pocket costs for acute care. Although 37 states and the District of Columbia provide Medicaid benefits even to families not eligible for cash assistance when their medical costs are high relative to their incomes, this fall-back protection may be considered too limited by many Medicare enrollees in the states where it exists, and it does not exist at all in 13 states. As a result, most enrollees purchase medigap insurance for additional protection. About 20 percent of enrollees, however, have no supplementary protection, either through medigap or Medicaid.
- The prevalence of medigap insurance, which typically provides nearly first-dollar coverage, eliminates the constraints on unnecessary use intended to result from Medicare's cost-sharing provisions. As a result, use of Medicare-covered services is higher than it would otherwise be, and most of the costs of the additional services used are paid by Medicare rather than by medigap insurers.

A related problem concerns the overall structure of copayments under Medicare, which many people believe is inappropriately designed. It is argued that cost sharing is too low to curtail overuse of some services over which patients may exercise considerable discretion about seeking—such as home health services—while cost sharing is unnecessarily high for services where use is largely beyond the patient's control. Under the prospective payment system, for example, there is no need to rely on coinsurance payments to keep hospital stays short, since providers have powerful incentives to discharge patients as quickly as possible.

Policy Options

The federal government could take a number of approaches in response to the problems identified above, depending on the relative importance

of concerns about the financial risks and possible lack of access to care for enrollees who lack supplementary coverage, and about high costs for Medicare due to overuse of services. Three approaches are discussed in this section:

- First, if the primary concern is the risks arising from high out-of-pocket expenses that might be incurred by those without supplementary coverage, the copayments required by Medicare could be eliminated, reduced, or capped in a variety of ways.
- Second, if the primary concern is Medicare costs resulting from greater use of services by those with medigap coverage, the government could tax medigap policies in order to collect sufficient revenues to compensate Medicare for the additional federal costs that result from medigap coverage.
- Third, concerns about high out-of-pocket costs and overuse of services might both be addressed by a combination of approaches. Medicare's copayment requirements could be restructured, including a cap on enrollee copayment costs. Private insurance policies that covered any of the remaining copayment requirements could be taxed to recoup the costs such coverage would impose on Medicare.

The remainder of this section discusses the advantages and disadvantages of each of these approaches, and provides estimates of their effects on federal and state costs. The estimates apply to the entire Medicare population (both aged and disabled). They ignore differences in timing between the payment of newly implemented benefits and the beginning of revenue collections from newly imposed taxes. Hence, they cannot be used to assess the likely impact on the federal budget in the first year of implementation.

Reduce Medicare's Copayment Requirements. Medicare could eliminate all copayment requirements except for the $75 SMI deductible, for example. (An initial deductible on physicians' services is useful because it may reduce the need to process small claims. Currently, about one-third of enrollees have expenditures too low to exceed the deductible.) This approach would increase use for those enrollees who currently lack any form of supplementary coverage, but would be unlikely to affect use by other enrollees (80 percent of aged enrollees; 75 percent of all enrollees) who do not now pay Medicare's coinsurance and hospital deductible amounts.

Under this approach, the SMI annual premium would increase from $214.80 ($17.90 a month) to $265.20 ($22.10 a month), because under current law the SMI premium would automatically increase to cover 25 percent of additional SMI benefits paid per aged enrollee. No enrollee's copayment costs would exceed $75, although balance-billing amounts and prescription drug costs would continue to generate significant out-of-pocket liabilities for some enrollees. For those who currently purchase medigap policies to cover Medicare copayments, this approach would greatly undermine the rationale for doing so. Those who dropped their medigap coverage would thereby save about $540, or $490 on total premium costs after accounting for the SMI premium increase. (Enrollees might still purchase supplementary insurance coverage for services not covered by Medicare, such as prescription drugs.)

Although this approach would reduce federal-state Medicaid costs (because of lower copayment costs for Medicare-eligible recipients) by about $2.4 billion (55 percent of which would represent federal savings), the costs to Medicare would be large. Federal reimbursement costs (net of the automatic increase in the SMI premium) would increase by about $13.3 billion in calendar year 1987, with about 16 percent of the additional costs resulting from additional use of services (see table 5).

Under current financing mechanisms, the $6.4 billion increase in reimbursement costs for HI benefits would necessitate a 10 percent increase in the combined employer-employee HI payroll tax—from 2.9 percent to an estimated 3.2 percent. The $6.9 billion increase in net reimbursement costs for SMI benefits would be financed from general revenues. Hence, most of the costs under this approach would be paid by the general taxpayer, rather than by Medicare enrollees.

Alternatives to current financing mechanisms might place more of the costs of these expanded benefits on Medicare enrollees. Such alternatives might include imposing an income-related Medicare premium through the income tax system, or taxing the insurance value of Medicare benefits (Congressional Budget Office 1987, 85–88). Under either of these alternatives, higher-income Medicare enrollees would pay most of the costs of the additional benefits, partially offset by their lower costs for medigap premiums (which will total about $10 billion in 1987). Both approaches would, however, require an unusual application of the tax system—one that Medicare enrollees might not readily accept.

TABLE 5
Steady-state Effects on Federal and State Costs for Alternative Options, 1987

Option	Estimated effect (in billions of dollars) on* Federal costs	State costs
Eliminate Medicare copayments except for $75 SMI deductible		
Medicare costs	13.3	—
Medicaid costs	−1.3	−1.1
Total	12.0	−1.1
Tax medigap policies for externality costs imposed on Medicare		
Total	−8.1	—
Restructure copayments and cap them at $1,000.** Also, tax medigap policies		
Medicare costs	3.8	—
Medigap tax	−6.3	—
Medicaid costs	−0.3	−0.3
Total	−2.8	−0.3

Source: Authors' estimates for the entire Medicare population, both aged and disabled. Estimates reflect the flow of outlays and revenues that would result after the policies had been fully phased in; as such, they do not accurately show budget effects in the first year of implementation.
* Positive values represent cost increases. Negative values represent cost decreases or (for the medigap tax) offsetting revenues.
** For a cap that would limit copayments under Part A for HI-only enrollees; under Part B for SMI-only enrollees; and under both Parts A and B for those enrolled in both HI and SMI.

Impose a Tax on Medigap Insurers. In economists' terms, medigap insurers impose "externality costs" on Medicare, because Medicare enrollees who have medigap policies to cover their Medicare copayments use more Medicare-covered services than they otherwise would, increasing Medicare's reimbursement costs. One remedy for this would be to require medigap insurers to compensate Medicare by imposing a tax on medigap policies equal to the externality costs they generate.

Based on the characteristics of Medicare and medigap coverage currently, the externality costs imposed on Medicare in 1987 because of medigap coverage will be an estimated $8.1 billion. (This assumes

that medigap coverage increases use of all Medicare-covered services by 24 percent, based on regression results from 1984 data, discussed earlier and in appendix note B.)

Additional Medicare reimbursement costs (net of premium collections) generated by medigap policies currently held are about $440 per medigap-insured enrollee, and average medigap benefits paid per enrollee are nearly as large. Hence, a tax of 100 percent on medigap benefits paid would be necessary to recover the additional federal costs generated because of medigap coverage in 1987. The tax need not apply to benefits paid for services that are not covered by Medicare, because such benefits would impose no external costs on Medicare. It would, however, apply to all benefits paid for copayments or balance billing on Medicare-covered services, since reducing any of these costs for enrollees would increase their use of the services.

Because insurers would likely pass the tax on to policy holders, a 100 percent medigap tax would probably double premium costs, thereby reducing the number of policies purchased. Whether or not medigap policies continued to be purchased by those who currently hold them, the net financial effects for the federal government would be the same. For those who dropped their medigap coverage, Medicare costs would fall because of reduced use of services. For those who continued their medigap coverage, federal revenues would increase because of receipts from the tax on medigap benefits. The resulting savings (or revenues) might be used to build up the Medicare trust funds (thereby reducing the federal deficit) or in a variety of other ways. Some of the savings might be used to pay out-of-pocket costs for needy Medicare enrollees who are not eligible for Medicaid. Or, the funds could be used to finance expansion of Medicaid benefits. For example, medically needy programs might be required in states that do not now have them. If all of the estimated $8.1 billion in savings were used for this purpose, projected federal spending for medically needy programs would be more than doubled in 1987. Many Medicare enrollees, however, might prefer not to have to rely on Medicaid or any other means-tested welfare program as their only protection against high out-of-pocket costs.

Restructure Copayments and Impose a Medigap Tax. An alternative copayment structure that would respond to the concerns about Medicare discussed earlier would increase copayments for services that are often discretionary, reduce copayments for services where use is largely

beyond the patient's control, and cap each enrollee's annual copayment liability. Further, a tax on medigap policies could be imposed so that those who sought to escape Medicare's new copayment requirements would pay the full costs of the extra services they would use. For example, one alternative might be the following:

- Increase the SMI deductible to $200 annually (from $75), but maintain the current 20 percent coinsurance requirement on covered charges above the deductible.
- Change the hospital deductible to $200 per admission (from $520 per spell of illness), and eliminate all other copayments for hospital stays.
- Impose 20 percent coinsurance on the costs of all covered services from skilled nursing facilities. (Currently, there is no coinsurance for days 1 to 20, and per-day coinsurance equal to one-eighth the hospital deductible for days 21 to 100.)
- Impose 20 percent coinsurance on the costs of all covered services from home health agencies. (Currently, there are no required copayments for home health visits.)
- Cap each enrollee's annual liability for copayments under Medicare at $1,000.
- Impose a tax on benefits under medigap policies that paid any part of Medicare's restructured copayments, with proceeds of the tax earmarked for the Medicare trust funds.

This set of provisions would incorporate incentives for more prudent use of services by enrollees, while reducing enrollees' copayment costs overall. The increase in the SMI deductible from $75 to $200 would help to reduce use of services for minor complaints, and might also reduce administrative costs by eliminating the need to process any claims for some enrollees. The lower HI deductible amount would probably still be sufficient to discourage unnecessary hospital admissions, and imposing the deductible for each admission (rather than for each spell of illness, as currently) could be useful to counter providers' incentives to encourage more admissions. The lower HI deductible would greatly reduce out-of-pocket costs for hospitalized enrollees who lack supplementary coverage, but would transfer those costs to the HI trust fund. Implementing 20 percent coinsurance on the costs of all nursing home and home health agency services would give patients

financial incentives to use these services prudently. The cap on copayments would protect all enrollees against catastrophic costs. Because the value of the cap would be fixed, though, rather than varying with enrollees' incomes, copayment costs could still be a burden for low-income enrollees.

Under this approach, enrollees' copayment costs would average $345 (compared to $460 under current law), although only enrollees without supplementary coverage would pay all of these costs out of pocket. No enrollee would be liable for more than $1,000 in copayments during the year, but enrollees would still be liable for balance-billing and prescription drug costs.

With the suggested copayment changes, Medicare's costs would be higher by $3.8 billion (assuming no part of the benefit expansion was financed by Medicare premiums). Offsetting revenues (or reductions in Medicare outlays) from a 100 percent medigap tax would total about $6.3 billion. (This estimate assumes that medigap insurers would adjust their benefits in response to the new Medicare copayment structure so that out-of-pocket costs for medigap-insured enrollees would be unchanged.) Hence, an additional $2.5 billion would be available to Medicare either to build up the trust funds, to reduce payroll tax and general revenue contributions, or for other purposes. Additional savings (about $570 million) would accrue to federal-state Medicaid programs because of reduced copayment costs for Medicare (see table 5).

Conclusion

Medicare's copayment requirements are substantial, with no ceiling on each enrollee's annual liability. As a result, the 20 percent of enrollees who lack supplementary coverage are at risk for very large out-of-pocket costs for acute-care services, although less than 1 percent of all enrollees actually require very costly services in any year. (The risk of incurring large costs for long-term care is greater, but long-term care services are not considered in this study.)

The potential for incurring large out-of-pocket costs induces about 70 percent of aged Medicare enrollees (or 65 percent of all Medicare enrollees) to purchase medigap insurance, which pays most of Medicare's required copayments. The prevalence of medigap coverage, however,

substantially reduces enrollees' financial incentives to use health care services prudently. Medigap insurance policies impose "external costs" on Medicare, because medigap-covered Medicare enrollees use more Medicare-covered services than they otherwise would, with most of the resulting costs paid by Medicare.

Appropriate policy responses depend on the relative importance of concerns about out-of-pocket costs for some enrollees, and about high costs for Medicare due to overuse of services by others. If the major policy concern is the risk of large out-of-pocket costs faced by some enrollees, a suitable though costly option would be to reduce or cap Medicare's copayment requirements. If the major concern is overuse of services by medigap-insured enrollees, the external costs imposed on Medicare might be recovered by taxing medigap policies. Concerns about both out-of-pocket costs and overuse of services might be addressed by a combination of these approaches.

Appendix Note A

This note describes the 1985 Medicare History file used to obtain the results presented in the article. It also explains the methods used to impute medigap coverage and drug expenditures to the file, as well as the basis for the cost and revenue estimates shown in table 5.

Medicare claims data for a 1 percent random sample of Medicare enrollees were used to construct a comprehensive data base on all Medicare-covered services used during calendar year 1985 by these enrollees. There are more than 300,000 enrollee records in the data base. These 1985 data were aged to 1987 using current-law projections (as of February 1987) from the Congressional Budget Office (CBO). Adjustments to use rates for various categories of Medicare-covered services, as well as adjustments to charges and reimbursements per enrollee, were made to match CBO's per enrollee projections.

Medigap coverage was imputed to the Medicare History file by age, sex, race, disability, health care use, and Medicaid coverage, based on the distribution of medigap enrollment reported in the 1984 Health Interview Survey. Drug expenditures were imputed to the file in proportion to charges for physicians' services provided in ambulatory settings, using total outpatient drug costs for Medicare enrollees as projected by CBO. CBO's projections were themselves based on tab-

ulations of drug spending from the 1980 National Medical Care Utilization and Expenditure Survey.

This microeconomic data base was used to simulate the effects of altering Medicare's copayment structure, both on Medicare's costs and on enrollees' liabilities for copayment costs. The per enrollee reimbursement costs derived from the sample simulation, when multiplied by actual Medicare enrollment in 1987, yield estimated costs to the federal government for any given proposal. Where appropriate, the federal costs shown are net of SMI premium receipts, which would increase to offset about one-fourth of the costs of new SMI benefits.

When Medicare benefits are increased, both federal and state Medicaid costs fall for those Medicare enrollees who are dually eligible for Medicaid, because the costs that must be covered by Medicaid are reduced. Medicare-Medicaid enrollees are identified in the Medicare History sample, so that estimated effects on Medicaid costs are readily obtained.

The Medicare History sample also permits estimation of the revenues that would be collected from a tax on medigap benefits, given the imputation for medigap coverage described above. Medigap benefits were estimated by assuming a prototype medigap policy—one that would pay all Medicare copayment costs except the $75 SMI deductible, and about 30 percent of balance-billing amounts. Estimated revenues from the medigap tax are equal to medigap benefits, since the appropriate tax rate is estimated to be 100 percent.

The estimates in table 5 show the entire effect of the medigap tax as tax revenues, although some portion of the effect would actually occur as reduced Medicare outlays, because some current medigap policy holders would probably drop their medigap coverage subsequent to imposition of the medigap tax. This response by policy holders would not alter the net budget effect of the medigap tax, though, so long as the medigap tax were set appropriately to recover the externality costs to Medicare—which are measured as the increase in reimbursements (net of SMI premium receipts) that is generated by medigap benefits. A drop in medigap coverage would simply mean that more of the medigap tax effect would occur through reduced Medicare outlays (because former medigap policy holders would now face Medicare's cost-sharing requirements), and less would occur through medigap tax revenues.

Appendix Note B

The effect of medigap insurance coverage on aged Medicare enrollees' use of services was estimated with a multivariate model of health services utilization described in this note. The cross-section research design compares the utilization behavior of Medicare enrollees having private insurance supplements to that of aged enrollees having no supplementary coverage, statistically controlling for other determinants of utilization. This work follows the general approach used by Link, Long, and Settle (1980), but employs an improved estimation technique and uses more recent data to reflect any changes resulting from more widespread medigap coverage and the advent of Medicare's prospective payment system for hospitals.

Methods

A two-part model of utilization behavior was used (Manning et al. 1981). This model first examines the determinants of whether a Medicare enrollee uses any amount of a health service in a year, and then examines the determinants of the level of use among those who use services. Separate probability and level-of-use equations were estimated for inpatient hospital and physician services.

The estimating equations made these dependent variables a function of several independent variables. The key independent variable reflects whether or not a Medicare enrollee was covered by private supplementary health insurance. The remaining independent variables control for factors other than private supplementary insurance that could also cause variation in utilization rates among insurance groups, thereby isolating the separate effect of insurance. These other variables include the enrollee's health status, age, sex, race, education, family income, family structure, and geographic location. (See table B-1 for a complete list of variables and their sample proportions.)

Data for this part of the study came from the 1984 Health Interview Survey (HIS), which provides information on individuals' utilization of health services, insurance coverage, health status, and on their demographic and economic characteristics. After exclusions for missing data, the HIS provides a usable sample of 7,799 full-year Medicare enrollees.

Estimation of the two-part model of utilization behavior involves

TABLE B-1
Sample Proportions and Estimated Coefficients for the Likelihood of Inpatient Hospital and Physician Use

Variable	Proportion with characteristic	Estimated coefficients*	
		Inpatient hospital admissions	Physicians' visits
		Dependent variables:	
One or more inpatient hospital admissions	.206	—	—
One or more physicians' visits	.831	—	—
		Independent variables:	
SUPPLEMENTARY INSURANCE			
None	.198	—	—
Medicaid	.053	.061 (2.85)	.141 (5.81)
Private coverage	.749	.043 (3.45)	.083 (8.00)
SELF-ASSESSED HEALTH STATUS			
Excellent	.153	—	—
Very Good	.209	.038 (2.20)	.061 (4.90)
Good	.319	.079 (4.92)	.088 (7.41)
Fair	.212	.152 (8.78)	.132 (9.21)
Poor	.107	.238 (11.61)	.171 (8.31)
AGE AND SEX CATEGORY			
66–69, female	.159	—	—
66–69, male	.136	−.022 (1.11)	−.062 (3.76)
70–74, female	.173	.029 (1.76)	.024 (1.68)
70–74, male	.126	.057 (3.07)	−.009 (0.57)
75–79, female	.131	.080 (4.60)	.056 (3.53)
75–79, male	.090	.088 (4.52)	−.008 (0.45)
80–84, female	.077	.068 (3.38)	.078 (4.02)
80–84, male	.039	.085 (3.37)	.036 (1.52)
85 and over, female	.047	.032 (1.34)	.015 (0.69)
85 and over, male	.022	.111 (3.60)	.059 (1.89)
RACE			
White	.916	—	—
Black	.070	−.027 (1.43)	.015 (0.87)
Other	.014	−.051 (1.22)	.117 (2.85)
ACTIVITY LIMITATIONS			
None	.604	—	—
Unable to perform major activity	.098	.165 (9.93)	.143 (7.38)
Limited in kind or amount of major activity	.143	.103 (7.56)	.089 (6.30)
Limited in other activity	.155	.037 (2.78)	.092 (7.06)

TABLE B-1. (*Continued*)

Variable	Proportion with characteristic	Estimated coefficients*	
		Inpatient hospital admissions	Physicians' visits
MAJOR ACTIVITY			
Not working	.904	—	—
Working	.096	−.023 (1.29)	−.009 (0.71)
DEGREE OF URBANIZATION			
Metropolitan, central city	.268	—	—
Metropolitan, noncentral city	.358	.015 (1.24)	.026 (2.46)
Nonmetropolitan, nonfarm	.356	.012 (0.98)	−.024 (2.23)
Nonmetropolitan, farm	.018	−.009 (0.24)	−.067 (2.35)
LIVING ARRANGEMENTS			
Alone	.336	—	—
Only with non-relative(s)	.012	.034 (0.83)	−.030 (0.77)
With spouse	.535	−.030 (2.46)	−.009 (0.85)
With other relative(s)	.117	−.008 (0.50)	−.048 (3.21)
VETERAN STATUS			
Nonveteran	.848	—	—
Veteran	.152	.031 (2.06)	.008 (0.62)
EDUCATION			
Less than 8 years	.354	—	—
9–12 years	.461	.007 (0.64)	.014 (1.41)
13 years or more	.185	.007 (0.45)	.061 (4.47)
FAMILY INCOME			
Less than $5,000	.123	—	—
$5,000-9,999	.278	.004 (0.25)	.020 (1.33)
$10,000-14,999	.205	.023 (1.22)	.030 (1.83)
$15,000-19,999	.141	.023 (1.13)	.035 (1.90)
$20,000-34,999	.177	.031 (1.50)	.049 (2.69)
$35,000 and over	.076	.071 (2.89)	.070 (3.09)
CENSUS REGION			
South	.327	—	—
Northeast	.232	−.012 (0.92)	−.007 (0.60)
West	.184	−.007 (0.51)	.000 (0.03)
North central	.257	.011 (0.90)	−.015 (1.40)
Constant	1.000	−.458 (17.01)	−.001 (0.06)
		Sample Size = 7,799	

Source: Authors' estimates based on the 1984 Health Interview Survey.
* The coefficients are reported as partial derivatives—that is, they reflect the change in the probability of use due to a one-unit change in the respective independent variable, other things being constant. These coefficients can be converted into "probit units" by multiplying each by the reciprocal of the predicted ordinate (3.72148 for inpatient hospital admissions and 4.35502 for physicians' services). Absolute-valued *t*-statistics are shown in parentheses.

a different statistical technique for each type of dependent variable. The equations for the dichotomous variables, indicating whether or not a person uses a particular type of health service, were estimated with the probit procedure using the entire sample (Maddala 1977). The equations for the continuous variables, indicating the level of use, were estimated with ordinary least squares (OLS) using only those individuals who were users of services (samples of 1,600 and 6,481 for inpatient hospital and physicians' services, respectively).

The continuous use variables have nonnormal, skewed distributions because of outlying observations. For example, although the mean number of hospital days for users was about 12.4, the maximum observed was 133 days (over 8 standard deviations above the mean). To correct for this skewness, which violates one of the assumptions behind standard OLS statistical tests, the continuous use variables were converted to logarithmic form. Continuing the example above, the difference between the maximum and the mean hospital days in logarithms was less than 3 standard deviations.

Specification of the independent variables was based on conventional practices in the health services research literature and, therefore, is not described at length here. One determinant that could not be controlled directly was the availability of health care resources in the respondent's area of residence. (If resource availability and medigap coverage were correlated, then the medigap coefficient might be biased.) Separate controls for census region and degree of urbanization were used as proxies for this determinant.

Findings

Medicare enrollees having medigap coverage use 24 percent more inpatient hospital and physicians' services than enrollees having no supplementary coverage, holding all other determinants of use at their mean values. The total effect of medigap on use was estimated as the result of two separate effects—the probability of use and the level of use among users—plus an interaction term. (Tables B-1 and B-2 present the regression coefficients; table B-3 summarizes the estimated effect of medigap on use.)

In the case of inpatient hospital services, medigap increases the probability of one or more admissions by about 27 percent (a difference significant at the 99 percent level of confidence), while having a small

TABLE B-1. (*Continued*)

Variable	Proportion with characteristic	Estimated coefficients*	
		Inpatient hospital admissions	Physicians' visits
MAJOR ACTIVITY			
Not working	.904	—	—
Working	.096	−.023 (1.29)	−.009 (0.71)
DEGREE OF URBANIZATION			
Metropolitan, central city	.268	—	—
Metropolitan, noncentral city	.358	.015 (1.24)	.026 (2.46)
Nonmetropolitan, nonfarm	.356	.012 (0.98)	−.024 (2.23)
Nonmetropolitan, farm	.018	−.009 (0.24)	−.067 (2.35)
LIVING ARRANGEMENTS			
Alone	.336	—	—
Only with non-relative(s)	.012	.034 (0.83)	−.030 (0.77)
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With other relative(s)	.117	−.008 (0.50)	−.048 (3.21)
VETERAN STATUS			
Nonveteran	.848	—	—
Veteran	.152	.031 (2.06)	.008 (0.62)
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$20,000-34,999	.177	.031 (1.50)	.049 (2.69)
$35,000 and over	.076	.071 (2.89)	.070 (3.09)
CENSUS REGION			
South	.327	—	—
Northeast	.232	−.012 (0.92)	−.007 (0.60)
West	.184	−.007 (0.51)	.000 (0.03)
North central	.257	.011 (0.90)	−.015 (1.40)
Constant	1.000	−.458 (17.01)	−.001 (0.06)
		Sample Size = 7,799	

Source: Authors' estimates based on the 1984 Health Interview Survey.
* The coefficients are reported as partial derivatives—that is, they reflect the change in the probability of use due to a one-unit change in the respective independent variable, other things being constant. These coefficients can be converted into "probit units" by multiplying each by the reciprocal of the predicted ordinate (3.72148 for inpatient hospital admissions and 4.35502 for physicians' services). Absolute-valued *t*-statistics are shown in parentheses.

a different statistical technique for each type of dependent variable. The equations for the dichotomous variables, indicating whether or not a person uses a particular type of health service, were estimated with the probit procedure using the entire sample (Maddala 1977). The equations for the continuous variables, indicating the level of use, were estimated with ordinary least squares (OLS) using only those individuals who were users of services (samples of 1,600 and 6,481 for inpatient hospital and physicians' services, respectively).

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TABLE B-2
Estimated Coefficients for the Number of Inpatient Hospital Days and Physician Visits among Users

Variable	Dependent variable*			
	Inpatient hospital days		Physician visits	
SUPPLEMENTARY INSURANCE				
None	—		—	
Medicaid	−.008	(0.07)	.279	(5.16)
Private coverage	−.024	(0.37)	.109	(3.53)
SELF-ASSESSED HEALTH STATUS				
Excellent	—		—	
Very good	.087	(0.81)	.130	(3.32)
Good	.149	(1.53)	.311	(8.41)
Fair	.237	(2.38)	.541	(13.18)
Poor	.582	(5.33)	.883	(17.49)
AGE AND SEX CATEGORY				
66–69, female	—		—	
66–69, male	.054	(0.51)	−.095	(2.02)
70–74, female	.234	(2.63)	.061	(1.59)
70–74, male	.183	(1.87)	.060	(1.34)
75–79, female	.239	(2.67)	.114	(2.74)
75–79, male	.289	(2.88)	.100	(2.08)
80–84, female	.023	(0.23)	.145	(2.98)
80–84, male	.397	(3.10)	.017	(0.27)
85 and over, female	.023	(0.19)	−.075	(1.27)
85 and over, male	.604	(4.15)	.045	(0.58)
RACE				
White	—		—	
Black	.154	(1.55)	.174	(3.73)
Other	.006	(0.03)	.095	(1.06)
ACTIVITY LIMITATIONS				
None	—		—	
Unable to perform major activity	.507	(6.54)	.612	(14.31)
Limited in kind or amount of major activity	.345	(5.16)	.329	(9.58)
Limited in other activity	.102	(1.47)	.281	(8.79)
MAJOR ACTIVITY				
Not working	—		—	
Working	.080	(0.78)	−.117	(2.90)

TABLE B-2. (*Continued*)

Variable	Dependent variable*			
	Inpatient hospital days		Physicians' visits	
DEGREE OF URBANIZATION				
Metropolitan, central city	—		—	
Metropolitan, noncentral city	−.052	(0.84)	−.044	(1.53)
Nonmetropolitan, nonfarm	−.074	(1.20)	−.073	(2.48)
Nonmetropolitan, farm	−.209	(1.08)	−.075	(0.83)
LIVING ARRANGEMENTS				
Alone	—		—	
Only with nonrelative(s)	−.302	(1.60)	.114	(1.10)
With spouse	.023	(0.35)	−.082	(2.74)
With other relative(s)	.051	(0.60)	−.105	(2.50)
VETERAN STATUS				
Nonveteran	—		—	
Veteran	.068	(0.87)	.014	(0.36)
EDUCATION				
Less than 8 years	—		—	
9–12 years	.073	(1.34)	−.009	(0.36)
13 years or more	.012	(0.16)	.101	(2.85)
FAMILY INCOME				
less than $5,000	—		—	
$5,000–9,999	.040	(0.48)	.003	(0.08)
$10,000-14,999	.030	(0.31)	−.010	(0.21)
$15,000-19,999	−.040	(0.38)	.005	(0.09)
$20,000-34,999	−.058	(0.55)	.114	(2.24)
$35,000 and over	.012	(0.09)	.153	(2.52)
CENSUS REGION				
South	—		—	
Northeast	.213	(3.22)	.123	(3.96)
West	−.094	(1.33)	.118	(3.57)
North central	.128	(2.06)	.021	(0.69)
Constant	1.342	(8.97)	.689	(10.74)
Sample size	1,600		6,481	

Source: Authors' estimates based on the 1984 Health Interview Survey.
* Ordinary least squares estimates on the natural logarithm of the use measure. The coefficients can be interpreted as the proportionate change in the dependent variable due to a one-unit change in the respective independent variable. Absolute-valued *t*-statistics in parentheses.

TABLE B-3
Estimated Effects of Medigap Coverage on Medicare Enrollee Utilization, Adjusted for Other Determinants, 1984

Measure of use	Type of service	
	Inpatient hospital	Physician
Increased use by enrollees with medigap, in percentages* (*t*-statistics are in parentheses)		
Probability of annual use per enrollee**	26.8	12.1
	(3.45)	(8.00)
Level of annual use per user***	−2.4	10.9
	(0.37)	(3.53)
Interaction	−0.6	1.3
Total annual use per enrollee***	23.8	24.3

Source: Authors' calculations based on multivariate estimates derived from the 1984 Health Interview Survey.
* Increased use is calculated by the following formula, expressed in percentages (medigap use − Medicare-only use)/(Medicare-only use).
** Probability of one or more hospital admissions and probability of one or more physician visits, respectively.
*** Number of inpatient days and number of physician visits, respectively.

and statistically insignificant effect on the number of inpatient days among users. Finding medigap's effect limited to admissions and not extending to length of stay is consistent with the expected effect of supplementary insurance. This expectation arises because medigap pays Medicare's large first-day hospital deductible, but has no further gaps to fill until after the 60th day of care (exceeded by only 0.5 percent of enrollees). In contrast, medigap payment of Medicare's coinsurance increases the probability of any physician use by 12 percent and the amount of services used by 11 percent (both effects are statistically significant at the 99 percent level of confidence).

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