

Risk Differential Between Medicare Beneficiaries Enrolled and Not Enrolled in an HMO

By Paul Eggers

Medicare provides incentive reimbursements to health maintenance organizations (HMOs) which enroll Medicare beneficiaries on a risk option and provide care at a lower cost than expected. The incentive reimbursements are tied to an actuarial calculation of Medicare Adjusted Average Per Capita Cost (AAPCC). The AAPCC adjusts for a number of variables which affect Medicare reimbursements and for which data are available: place of residence, age, sex, welfare status, and institutional status of beneficiaries. These factors account for much of the expected difference in health care reimbursements. They do not, however, account for differences in health status. Because of this, AAPCC calculations of expected costs may be too high if a selected group of beneficiaries is healthier than average, or too low if the selected group has a poorer health status than average.

This case study examines the utilization behavior and reimbursement experience of a group of Medicare beneficiaries prior to their joining an HMO (during an open enrollment period) under a risk-sharing option. Their use was compared with a comparable Medicare population (the comparison group) to determine if their usage rates were greater, equal, or less than average. Results show that beneficiaries who joined during open enrollment had a rate of hospital inpatient use over 50 percent below the comparison group and a reimbursement rate for inpatient services 47 percent below the comparison group. These beneficiaries' use of Part B services also appears to be lower than the comparison group.

These results must be interpreted with care. The information came from a single case study. Specific aspects of the open enrollment process, described in the paper, further limit the general liability of the findings. Also, while some studies of the same subject support the results, many others do not.

Under present Medicare provisions, HMOs which enroll Medicare beneficiaries under a risk-sharing option are entitled to incentive reimbursements, if the cost of providing care to these Medicare beneficiaries is below comparable costs elsewhere in the HMO's service area. HMOs can receive up to 10 percent of average per capita Medicare costs, depending on how efficiently they can serve their enrollees.

Reimbursement under a risk contract is based on a comparison of the HMO's reasonable incurred cost and the Adjusted Average Per Capita

Cost (AAPCC). The AAPCC is the average cost of providing covered items and services in the HMO's enrollment area to Medicare beneficiaries not enrolled in the HMO, actuarially adjusted to reflect the makeup of the HMO's Medicare enrollment. Under a risk contract, if the HMO's incurred cost is less than the AAPCC, the HMO may earn a savings of up to 10 percent of the AAPCC; if the HMO's incurred cost exceeds the AAPCC, the HMO absorbs the loss, which may be carried forward and offset against future savings.

The appropriateness of the AAPCC as an efficiency standard for HMOs depends on how well the AAPCC accounts for any systematic differences between enrolled and non-enrolled beneficiaries which affect Medicare expenditures.

People are not randomly assigned to HMOs. Instead, selection occurs both in terms of the individuals who seek out HMOs and in terms of the marketing and enrollment practices of HMOs. There is the potential that, due to selectivity, HMO Medicare (or other) beneficiaries will be at a lower risk of incurring medical costs than individuals not enrolled. On the other hand, an HMO may enroll Medicare beneficiaries at a higher risk of incurring medical costs than other beneficiaries.

From a theoretical standpoint, individuals who are averse to the risk of incurring large, unanticipated, medical bills would be attracted to prepayment and HMOs. Similarly, individuals who anticipate using large amounts of medical services may choose to join an HMO and avoid, through prepayment, recurring medical charges, as well as the burdens of obtaining care from a number of separate providers and physicians. Perhaps the most likely group of HMO candidates is comprised of persons who, because of chronic illnesses, require large amounts of ambulatory services. These services, such as physician office visits, tend to be less well insured and require larger copayments under traditional health insurance. On the other hand, persons requiring large amounts of care may have established relationships with physicians and providers that they would be unwilling to sever in order to join a closed panel HMO.¹

HMOs may also seek to enroll particular groups for a variety of reasons (location, size, risk, etc.). Marketing strategies are designed with these goals in mind. HMOs also use benefit and premium structures to promote their services to various employers or employee groups.

¹ A closed panel HMO employs or retains the services of a specific group of physicians from whom beneficiaries must obtain their care. This is in contrast to an open-panel HMO which often contracts with most or all of the primary care physicians in its service area.

All empirical studies of selectivity in HMO enrollment have focused on persons under age 65 enrolled in HMOs. The results provide instances of both favorable and adverse selection. Several HMOs, holding open enrollment periods required as a condition of Federal qualification, have reported adverse selection, enrolling individuals who use medical services at a higher rate and therefore cost the HMO more, with high rates of medical use and high costs. On the other hand, a closed panel HMO in the Rochester, New York area experienced favorable selection when it offered its services to employed groups. Another Rochester HMO (an open panel model), which offered its services at the same time, experienced severe adverse selection. Several articles have been written which review the research of self-selection in HMO enrollment (Luba and Lave; Luft; Bice, 1975; Berki, et. al., 1977). These articles suggest that there are many variables, such as consumer characteristics, variations in benefit and premium packages, and many other contextual variables which will affect enrollment choice. Therefore, it is important to note that the results of any case study reflect a set of influences particular to that study. In other settings, different selectivity is likely.

Objectives

This paper will examine enrollment selectivity under the single HMO Medicare risk contract signed to date. The contractor is Group Health Cooperative of Puget Sound (GHC) in the State of Washington. The objective is to determine whether GHC, in its open enrollment efforts, enrolled Medicare beneficiaries whose risk of incurring medical expenses was different from other beneficiaries in GHC's service area and, if so, the magnitude of this difference.

Before turning to the analysis, several aspects of GHC's Medicare marketing and enrollment practices should be mentioned.

During the first 15 months of its contract, GHC oriented its Medicare marketing to suburban areas and restricted its enrollment to suburban clinics. It neither marketed nor enrolled beneficiaries in its central—and largest—facility in Seattle.

During 1978, GHC conducted an internal marketing activity for new Medicare members. It mailed advertisements to its current members soliciting enrollment applications from their parents, spouses, other relatives or friends who were Medicare beneficiaries.²

² Although it does not affect the Medicare population studied in this paper, it should be noted that, beginning in fall 1979, GHC agreed to market and enroll throughout its service area. It arranged to have HCFA announce its program to all Medicare beneficiaries who reside in its service area.

All beneficiaries who responded to GHC marketing efforts were asked to complete a health evaluation questionnaire. This evaluation was then used to determine whether the respondent would be offered coverage limited to Medicare benefits (low option) or a broader, more expensive package of services (high option), which includes such non-Medicare benefits as out-patient drugs, unlimited hospitalization, and routine physical examinations. Poor health risks were offered only the low option, although the majority of the better risks chose the high option. Of the Medicare beneficiaries who joined GHC during the open enrollment period, 79 percent completed the health evaluation and selected the high option. The other 21 percent includes persons who elected to take the low option without the health evaluation and those who were identified as poor health risks by the health evaluation.

The nature of GHC marketing and enrollment practices may or may not have influenced the type of Medicare beneficiaries enrolled there. Although it is not possible to assess the influence of these practices, they underscore the difficulty in generalizing either the results of this case study or the analysis which follows.

The basic research question can be stated as follows: Did the Medicare population which enrolled at GHC during its open enrollment period have different utilization and reimbursement experiences in the years immediately preceding enrollment than a comparable Medicare population not enrolled in GHC?

The comparable Medicare population is defined as Medicare beneficiaries living in the same geographic area as those beneficiaries who enrolled at GHC.

Methods

Data

The data used in this study come from a variety of sources within the Medicare data system. Information on the identity of GHC open-enrollment beneficiaries was provided by the GHC program. Information on inpatient use and reimbursement for the open-enrollment beneficiaries was obtained from the Medicare Part A bills file. Information about Part B use came from the Health Insurance Enrollment File, a query file used to ascertain benefits for individuals during calendar years or benefit periods.

For the comparison group, age and sex distributions were determined from Medicare enrollment records. Inpatient use was calculated from the Medicare 20 Percent Research Discharge File. Part B use was estimated from the Medicare 5 percent sample of Part B bills.

Comparison Groups

GHC Open-Enrollment Beneficiaries

The open enrollment provision in the GHC HMO was begun in October of 1976 and has continued to the present. Through July 1, 1979, 984 Medicare beneficiaries were enrolled in GHC under open enrollment.

This study is primarily concerned with how these beneficiaries used medical services prior to their enrollment in the HMO. Therefore, the analysis will concentrate on the years 1974, 1975, and 1976. The year 1976 is included as a pre-enrollment year, because very few of these beneficiaries had enrolled by that time, and those that had were enrolled for only two months of the year. Overall in 1976, 99.8 percent of this population's months of risk was prior to GHC enrollment.

Selection of Comparison Group

The open enrollment provision has been available to Medicare beneficiaries in a six-county area around Puget Sound, Washington.³ The comparison group consisted of those Medicare beneficiaries in these six counties who were *not* GHC open-enrollment beneficiaries. This included approximately 200,000 beneficiaries.

Analyses

The basis for the analysis is to determine whether there were differences in use and reimbursement between the comparison group and the open-enrollment beneficiaries before they enrolled in the HMO. This will consist of four separate but related analytical comparisons. They are described briefly as follows:

Age-Sex Comparison

This is a simple descriptive comparison of both groups. Differences in age and sex can greatly affect use of medical services and reimbursement. For example, Medicare beneficiaries use more services as age increases. Differences in age and sex distribution will be considered in the utilization analysis. This descriptive section will also discuss whether GHC open-enrollment beneficiaries are representative of the area's Medicare population with regard to age and sex.

³ The counties are King, Kitsap, Mason, Pierce, Snohomish, and Thurston. They will be referred to collectively hereafter as the Puget Sound area.

Inpatient Utilization Comparisons

An important measure of risk in this study is the use of inpatient services in short-stay hospitals. Total discharges and total days of care per 1,000 beneficiaries were calculated for open-enrollment beneficiaries and other Medicare beneficiaries for the time period prior to GHC enrollment. Hospitalization is the best proxy measure of health status, or risk available for this study. Because it reflects a state of illness serious enough to require institutional care, it is probably sensitive enough to indicate varying propensities for requiring health care and thereby incurring health care expenditures.

Inpatient Reimbursement Comparisons

Although a valuable measure of health status and use of health services, inpatient use is not precisely related to reimbursement. In fact, AAPCC calculations are based solely on reimbursement. The mix of services used makes no difference in the calculation. Therefore, a comparison of inpatient reimbursement rates of the two groups was also made. This was the primary comparison in the analysis, because inpatient reimbursements account for 69 percent of all Medicare reimbursements (HCFA, 1978).

Part B Reimbursements

Reimbursement for Part B covered services is another indicator of risk. The measure used in this study was the percent of beneficiaries who met the \$60 deductible level. This does not, of course, reflect the average or overall use of Part B services. It only indicates the extent to which an individual or group of individuals incurs a given dollar level of services. The limited measure was used to examine the possibility that the difference in inpatient reimbursements could be offset, at least in part, by a reverse difference in outpatient reimbursements.

Limitations of the Study

Four constraints of this study should be noted. First, it only examined the Medicare aged; disabled Medicare beneficiaries were not included in the analysis. Disabled beneficiaries account for only a small part of the total Medicare population and the GHC open-enrollment beneficiaries. The lack of available data makes comparisons to the disabled impractical. This should not greatly affect the results.

Second, only those Medicare beneficiaries residing in the six-county area were included in the study. Over 94 percent of GHC open-enrollment beneficiaries reside in the Puget Sound area. Thus, the study eliminated a small fraction of the population.

Third, the study did not include beneficiaries who entered the program after January 1, 1979, because 1979 Medicare utilization records are incomplete. The net effect of not including the disabled, residents of other counties, and new beneficiaries was to reduce the population under consideration from 984 to 887, a decrease of 10 percent.

Fourth, the basic comparison is between GHC Medicare open-enrollment beneficiaries and other Medicare beneficiaries in the Puget Sound area. However, the "other" category includes a small fraction of Medicare GHC beneficiaries who were GHC enrollees before becoming entitled to Medicare. Given the time constraints of the study, it was not possible to eliminate them from the control group. Their use of medical services is likely to be lower than average and would thus tend to lower the use rates of the control group. However, because this GHC group accounts for only about eight percent of all Medicare beneficiaries in the Puget Sound area, the effect should not be substantial.

Additionally, there are certain adjustments to the utilization and reimbursement data which will be discussed in the context of the various tables.

Results

Age-Sex Comparison

In the Puget Sound area in Washington there are approximately 214,000 Medicare beneficiaries. Of this total, 18,000 are members of the Group Health Cooperative (GHC).⁴ Thus, GHC serves about 8 percent of the aged Medicare population in this area. Most of these beneficiaries "aged in," that is, they were GHC members before reaching age 65. Only a small number, less than 1,000, of GHC's Medicare beneficiaries entered the HMO as part of the open enrollment program. These beneficiaries account for approximately 5 percent of all GHC's aged Medicare enrollment.

The age distribution (see Table 1) of the Puget Sound area closely approximates that of the nation as a whole. About a third of aged Medicare beneficiaries are age 65 to 69, a quarter are 70 to 74, and the remaining 40 percent are 75 and over. The Medicare beneficiaries in GHC are younger as a group than the area's Medicare population.

⁴ Table 1 shows only 11,400 GHC Medicare beneficiaries. This is 1976 data, the latest year for which age-sex breakdowns were available for GHC.

Table 1
Age-Sex Distribution of Medicare Aged Beneficiaries in the Puget Sound Area

Age-Sex	Puget Sound Aged Medicare Beneficiaries ¹		GHC Aged Medicare Beneficiaries ²		GHC Open-Enrollment Beneficiaries	
	N	%	N	%	N	%
Total	214,237	100%	11,399	100%	869	100%
65-69	71,750	33%	4,971	44%	344	40%
70-74	54,776	26%	3,162	28%	252	29%
75-79	38,999	18%	1,874	16%	152	17%
80-84	26,824	13%	953	8%	77	9%
85-over	21,880	10%	439	4%	44	5%
Male	86,981	41%	4,925	43%	355	41%
65-69	33,025	15%	2,240	20%	161	19%
70-74	23,535	11%	1,393	12%	101	12%
75-79	14,918	7%	755	7%	56	6%
80-84	8,893	4%	354	3%	28	3%
85-over	6,610	3%	183	2%	9	1%
Female	127,256	59%	6,474	57%	514	59%
65-69	38,733	18%	2,731	24%	183	21%
70-74	31,241	15%	1,769	16%	151	17%
75-79	24,081	11%	1,119	10%	96	11%
80-84	17,931	8%	599	5%	49	6%
85-over	15,270	7%	256	2%	35	4%

¹ 1978 enrollment

² 1976 enrollment

Forty-four percent are 65 to 69, while only 28 percent are 75 years older and over. There is no readily apparent reason for the youth of the GHC population. A possible explanation is that, prior to Medicare (pre-1966), GHC enrollees who retired could no longer afford to maintain their coverage and dropped out. Since Medicare, more have stayed in the cooperative. However, the older age groups would still be under-represented due to the pre-Medicare time period.

Open-enrollment beneficiaries have an age distribution much like that of the other GHC beneficiaries. About 40 percent are 65 to 69, another 29 percent are 70 to 74, and the remaining 31 percent are 75 and over.

The sex distribution in the Puget Sound area is identical to the national rate among Medicare beneficiaries, in that 59 percent are female (Table 1). Females are slightly under-represented in the GHC Medicare population (57 percent). Among GHC open-enrollment beneficiaries, the rate of female enrollment is the same as in the Puget Sound area.

Inpatient Use

The analysis of inpatient use began by considering unadjusted data on discharge rate, days of care (DISC/1,000 and DOC/1,000), and the average length of stay (ALOS). According to

these measures, the GHC open-enrollment beneficiaries used far fewer services than the comparison Medicare population. The overall Medicare discharge rate for the Puget Sound area ranged from 272 in 1975 to 296 in 1977. The discharge rate for the State of Washington in 1975, 1976, and 1977 was 325, 328, and 327, respectively. Thus, the discharge rate for the Puget Sound area is about 9 percent to 16 percent below the State average. The rate of the GHC open-enrollment beneficiaries is considerably below the Puget Sound area rate.

The unadjusted ALOS for open-enrollment beneficiaries was also less than for the Puget Sound area population. The net effect of the low discharge rate and low ALOS is to make the difference in days-of-care rates even greater.

These differences could be due to at least two factors. First, there could be differences in age and sex composition. Second, the comparison group includes about 5 percent of beneficiaries who died during the year. The open-enrollment beneficiaries, because they later enrolled in GHC, had to have survived the year. On average, Medicare beneficiaries use many more services in the last year of life. (Gornick, 1976). Therefore, the inclusion of those who died during the year tends to exaggerate the differences between the two groups.

Table 2 presents the Inpatient utilization rates for both groups, adjusted for age and sex composition and for the high use of persons who died during the year. The age and sex adjustment was by the direct method (Spiegelman, 1968), standardized to the age/sex distribution of the State of Washington.

In general, the adjustment for age and sex tended to increase the discharge and days of care rates for open-enrollment beneficiaries (except for 1976, where the adjustment resulted in decrease). This suggests that the age/sex groups which used less services tended to be over-represented among open-enrollment beneficiaries. However, the impact of the adjustment was not large enough to greatly affect the comparison.

The adjustment for those who died during the year did lower the comparison group's use considerably. Medicare data on inpatient reimbursement show that the 6 percent of beneficiaries who die during a year account for about 23 percent of reimbursements.⁶ Removing these beneficiaries from the estimates lowers the use rates by about 18 percent. As a result, the estimates of days of care per 1,000 beneficiaries who lived through the year in the comparison group are 1,761 and 1,929 for 1975 and 1976, respectively. The rates for the open-enrollment beneficiaries are 52 percent lower and 62 percent lower than these rates for the same two years. The differences in use are clearly statistically significant. The figures for the open enrollees are from a 100 percent sample of their bill files. Therefore, there is no sampling error. The comparison group estimates are based on a 20 percent sample of inpatient records. Given the size of this sample (approximately 10,000 discharges) the standard error is about 130 discharges (HCFA, 1978). Thus, a 95 percent confidence interval about the estimate of days of care for the comparison group would be approx-

imately \pm 45 days of care per 1000. This is far less than the observed differences.

The results of this analysis of inpatient use clearly indicate that the open-enrollment beneficiaries were low users of hospital care prior to their enrollment in GHC. Neither demographic nor geographic characteristics can account for this low use rate.

It would seem then, that the overall health of this group of beneficiaries must have been very good to account for their low hospital use rates.

Inpatient Reimbursement

As discussed above, utilization serves primarily as a proxy measure for health status. Reimbursements are of more immediate concern to the Medicare program. This section discusses the differences in inpatient reimbursement rates between the open-enrollment beneficiaries and other Medicare beneficiaries in the Puget Sound area.

Table 3 summarizes the results of the inpatient reimbursement comparison. Inpatient reimbursements per person for open-enrollment beneficiaries in 1974, 1975, and 1976 were \$97.25, \$101.35, and \$128.35, respectively. For the other Medicare beneficiaries, per capita reimbursements for 1974, 1975, and 1976 were \$272.85, \$356.20, and \$402.19, respectively. However, three adjustments to the comparison group data were made to obtain a more accurate comparison.

First, an adjustment for the AAPCC was made. It was assumed that none of the open-enrollment beneficiaries was institutionalized. Only 12 of them were beneficiaries for whom Medicare purchased Part B services. Because of the low incidence of institutionalized and welfare persons in this group, their expected reimbursement is quite low. This AAPCC factor was used to adjust the comparison group's reimbursement rate downward by 23 percent.

⁶ Medicare Part A Reimbursements. Unpublished Data.

Table 2
Adjusted Discharge and Days of Care Rates for Aged GHC Open-Enrollment Beneficiaries and Other Aged Medicare Beneficiaries in the Puget Sound Area.³

Year	GHC Aged Open-Enrollment Beneficiaries ¹				All Other Medicare Aged Beneficiaries ²			
	N Person	Discharges/ 1,000	Days of Care/ 1,000	ALOS	N Person	Discharges/ 1,000	Days of Care/ 1,000	ALOS
1974	569	150	1,152	7.7	190,583	incomplete data		
1975	646	140	849	6.1	194,942	223	1,761	7.9
1976	736	115	731	6.4	199,408	242	1,929	8.0

¹ Data from the Inpatient Bill Files.

² Data from the 20 percent Medicare Research File.

³ Both GHC aged open-enrollment beneficiary rates and other Medicare aged beneficiary rates were adjusted (by the direct method) to the age-sex distribution of the State of Washington.

**Table 3
Inpatient Reimbursements per Person for Open-Enrollment Beneficiaries and Other Medicare Beneficiaries in the Puget Sound Area**

Year	Aged Open-Enrollment Beneficiaries ¹		Other Medicare Beneficiaries ²				
	N Person	Reimbursements/ Person	N Person	Reimbursements/ Person	Adjusted Reimbursements/ Person ³	Per Capita Difference	Percent Difference
1974	569	\$ 97.25	190,583	\$272.85	\$163.15	\$ 65.90	40%
1975	646	\$101.35	194,942	\$356.20	\$213.43	\$112.08	53%
1976	736	\$128.35	199,408	\$402.19	\$240.99	\$112.64	47%

¹ Data from Medicare Inpatient Bill Records.

² Data from *Reimbursement by State and County* 1974, 1975, and 1976 HEW publication No. (SSA) 77-11717 and HCFA publication No. 018 (6-78).

³ Adjusted reimbursements per person are adjusted for the AAPCC, persons dying during the year, and non-inpatient part A reimbursements.

Second, the comparison group contained persons who died during the year. Removing the effect of these persons reduces per capita reimbursement by 18 percent.

Third, the comparison group's reimbursement reflected *all* Part A reimbursements. The reimbursement rate for open-enrollment beneficiaries is only for inpatient services. On average, inpatient services account for 95 percent of all Part A services. Removing the effect of reimbursements for skilled nursing facility services and Part A home health agency services reduces the per capita reimbursements by 5 percent.

The total effect of these three adjustments was to reduce per capita reimbursement for the comparison group by 40 percent. Consequently, the adjusted or per capita inpatient reimbursements for other Medicare beneficiaries in the Puget Sound area for 1974, 1975, and 1976 were \$163.15, \$213.43, and \$240.99, respectively. This still represents a considerably higher inpatient reimbursement rate than that of the open-enrollment beneficiaries. For the three years 1974, 1975, and 1976, open-enrollment beneficiaries received inpatient reimbursements 40 percent, 53 percent and 47 percent lower, respectively, than would have been expected given AAPCC adjustments. Thus, it seems that this group was not characteristic, in terms of reimbursement, of typical Medicare beneficiaries.

Part B Reimbursement

As stated in the methodology section, a difference in inpatient use could be offset by a reverse difference in use of ambulatory care. Table 4 shows the percent of open-enrollment beneficiaries who met the \$60 deductible in 1975, the only year in which comparable data are available. It was not possible to calculate the comparable figure for other Medicare aged beneficiaries in the Puget Sound area. Instead, the percent meeting the deductible is shown for the State of Washington. For the year 1975, 53 percent of open-enrollment beneficiaries met the \$60 deductible. In the same year, 59 percent of Medicare aged beneficiaries in Washington met the deductible. Thus, in terms of Part B services, use rate for open-enrollment beneficiaries was somewhat lower than would be expected for beneficiaries living in Washington.

**Table 4
Percent of GHC Aged Open-Enrollment Beneficiaries and Washington Aged Medicare Beneficiaries Meeting the Part B Deductible Level**

Year	GHC Aged Medicare Open Enrollment Beneficiaries ¹ Percent	Washington Aged Medicare Beneficiaries ² Percent
1975	52.9%	58.6%

¹ GHC data calculated from Health Insurance Enrollment Records.

² Washington figures taken from *Medicare: Summary* 1975, Unpublished.

The figures in Table 4 do not, of course, indicate the range, distribution, or average reimbursement for open-enrollment beneficiaries. It is possible that, for those persons receiving them, reimbursements were higher among open-enrollment beneficiaries than the general Medicare aged population. It is possible to estimate the per capita Part B reimbursement for open-enrollment beneficiaries necessary to compensate for the lower inpatient reimbursement received by this group. Table 3 shows that in 1975, open-enrollment beneficiaries had per capita inpatient reimbursements \$112.08 lower than the comparison group. Therefore, if their Part B per capita reimbursement was \$112.08 higher than the comparison group, the total per capita reimbursement would be the same.

Reimbursement data for 1975⁶ show that the per capita Part B reimbursement in the Puget Sound area was \$159.30. Adjusting this figure downward, to account for AAPCC underwriting factors and use of Part B services by those who died during the year, lowers the figure by 24 percent, to \$120.44. Therefore, Part B per capita reimbursement for the open-enrollment beneficiaries would have had to be \$232.52 (\$120.44 + \$112.08) to compensate for their lower inpatient reimbursement. Table 5 shows that 52.9 percent of open-enrollment beneficiaries actually received reimbursements in 1975. Thus, the necessary reimbursement per person served would have had to be \$439.54 (\$232.52 + .529) to compensate for the inpatient difference.

In Washington, the Part B reimbursement per person served in 1975 was \$273. The rate of reimbursement for users under open-enrollment would have to be 61 percent higher than for Washington users. Without actual Part B reimbursement data there is no way of knowing if this group actually received reimbursements this high. It should be noted that Medicare data indicate that a large proportion, 45 percent, of all Part B reimbursements are for physician care provided in an inpatient setting.⁷ Because the open-enrollment beneficiaries have been shown to be low users of inpatient services, their Part B reimbursements for inpatient physician care should be correspondingly low. Thus, their use of ambulatory services would have to be that much higher.

Listed below are the Medicare allowed charges for physician services in the State of Washington in 1975:

Type of Service	Average Allowed Charge
Medical Care	\$ 9.77
Surgery (Inpatient)	\$290.36
Diagnostic X-ray	\$ 16.60
Laboratory	\$ 7.13

⁶ Medicare Reimbursement by State and County 1974 and 1975 HEW Pub. No. (SSA-11717)

⁷ Five percent Part B Summary Record data system, Unpublished data.

After beneficiaries met a \$60 deductible, Medicare paid 80 percent of these allowed charges as reimbursement. These figures are shown merely to give some idea of what mix of services might be needed for Medicare reimbursement to reach about \$440.

Conclusion

The research question examined in this study was, "Did the open-enrollment Medicare population have different utilization and reimbursement experiences in the years immediately preceding enrollment in GHC than a comparable Medicare population not enrolled in GHC?" The results indicate that the open-enrollment beneficiaries used inpatient services 52 to 62 percent less than a comparable population. The rate of reimbursement for inpatient services was 40 to 50 percent below the comparable population. Finally, it is estimated that the open-enrollment beneficiaries would need to have received \$440 per user in Part B reimbursements in 1975 to compensate for their low inpatient reimbursements.

It is evident that the open-enrollment beneficiaries were low users of inpatient services prior to their enrollment. It is not evident that their use of Part B services was comparably higher. Such data as do exist suggest that these beneficiaries are a lower risk group (with respect to reimbursements) than would normally be expected. In summary, the GHC open-enrollment beneficiary's use of medical services indicates that, in all probability, a selection process exists.

Two possible explanations are plausible. First, it is possible that healthier, low-risk people were attracted to and "self-selected" into GHC, that higher risk patients were not attracted to GHC. Second, it is possible that GHC encouraged healthier persons to enroll (or discouraged less healthy persons from enrolling) in its plan. Neither explanation could be ruled out by this study.

The existence of a selection process has implications for the utility of the AAPCC in setting reimbursement rates for HMOs. As previously stated, the AAPCC controls for place of residence, age, sex, welfare status, and institutional differences in reimbursement rates. It seems apparent, however, that other factors, unaccounted for in the AAPCC, can affect reimbursement rates.

Finally, it should be restated that this was a case study of a single experience of HMO open enrollment of Medicare beneficiaries. Under a different set of benefit and premium options, or under a different set of marketing procedures, the mix of enrolled beneficiaries could change greatly. As more HMOs offer open enrollment to Medicare beneficiaries, replications of this study can be done to help determine the generality of the findings.

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