Composition of the Subscribers in a Rural Prepaid Group Practice Plan

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THE RAPID GROWTH OF HEALTH maintenance organizations (HMOs) has been fostered by claims of savings to the consumer, principally due to decreased hospital utilization (*1–3*). Recent studies on the utilization experience of the Greater Marshfield Community Health Plan presented data indicating increased hospital utilization (*4, 5*). Some critics feel that HMOs enroll a selective group of patients whose general health and socioeconomic characteristics are not representative of the general population requiring medical care (*6*). Various demographic factors could lead to differences in outpatient or hospital use, or both, when compared to a cohort continuing with fee-for-service medical care.

The Greater Marshfield Community Health Plan (GMCHP), a community rated, prepaid health plan, enrolled 15,900 members of the Greater Marshfield area in the first year of operation. We sought to determine whether subscribers were representative of the community. The variables we studied included selective geographic, demographic, and socioeconomic characteristics as well as use of health services, morbidity, and satisfaction with medical insurance.

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Setting

The GMCHP is jointly sponsored by the Marshfield Clinic, St. Joseph's Hospital, and Blue Cross and Surgical Care Blue Shield of Milwaukee. The health plan was designed to serve a 30-township area in central Wisconsin. Analysis of 1970 census data indicated that of a total of 47,912 residents of that area, 1 in 3 lived in the City of Marshfield, one-half lived in rural farm areas outside of incorporated places, and the remainder resided in cities and villages other than Marshfield. All area physicians participated in the health plan: 120 from the Marshfield Clinic, 3 from a small clinic in Colby, and 3 other physicians in private practice.

The GMCHP accepted only persons under the age of 65. This policy was not by choice, but rather the result of lack of enabling legislation to permit Medicare beneficiaries an option to enroll. With the exception of this restriction, the plan was open to any resident who wished to join. There were no restrictive clauses, no pre-existing disease limitations, no co-payments or deductibles, and there was only one waiting period, a 270-day wait for maternity coverage. The monthly premium at the time of the study in 1973 was $59.60 for a family and $27.25 for a single-person contract.

Method

Dr. Harry Sharp of Survey Services, Madison, Wis., was asked to survey residents in the Greater Marshfield area. An interview schedule was developed, pretested, and revised. A strict probability sample of all households with residential telephone listings in the eligibility area

was drawn. The overall sampling rate was one in six listings. According to the 1970 census, 89.6 percent of the households in the eligibility area had a telephone. Use of the telephone technique may have introduced some sample bias, although reasonably close comparisons with the 1970 census indicated that the telephone contacts appeared to have provided a good sample. The extent to which the sample data applied to all households and to all residents of the area would have been increased if personal face-to-face interviewing could have been done. However, the cost of that procedure proved prohibitive.

Interviewers were oriented to the general purposes of the study and the specific objectives of each question. A day-long orientation of interviewers was conducted during which a number of illustrative interviews were conducted. Calls were made as many times as necessary to find a responsible adult resident and complete the interview. There was no substitution of telephone numbers, and attempts at completing interviews at no-response numbers were continued until the survey was terminated. The interviews were held in the last 3 weeks of January 1973.

The 2,027 numbers selected for the sample yielded 1,838 working numbers. These 1,838 numbers produced 1,718 completed interviews, for a response rate of 93.5 percent. Thirty-seven of the numbers were never answered, and 83 persons refused interviews.

The inteview schedule was coded, punched on data processing cards, and tabulated.

Results and Comment

The most dramatic difference between plan enrollees and the area population was the total absence of enrollees age 65 or older. It was estimated that there were 5,100 such residents in the plan's eligibility area. Because these people were not allowed to join the plan, all other comparisons in this paper are between plan members and the population under 65 in the area, or between plan members and the under-65 community members who pay for medical care on a fee-for-service basis. It was estimated from the telephone survey that there were 44,700 people in the area under the age of 65. Of these, 15,900 were plan participants and 28,800 were nonparticipants.

Table 1 lists the results of the survey of 1,718 households, a total of 5,260 persons under age 65. Of these, 1,872 were health plan members. The plan participants comprised 36 percent of the area's population under age 65. If the plan members were truly representative of the community, the expected percent for the selected characteristics measured would be 36. Differences of two or three percentage points may be the result of sampling error and do not reflect true differences in the populations.

It is clear from table 1, parts A–C, that proximity to Marshfield was related to the likelihood of membership in the plan. Variations in relationship to head of household, sex, and age were not related to the likelihood of membership in the GMCHP (table 1, D–F).

The educational level of the family head was slightly related to membership in the GMCHP through the college graduate level; however, a strong relationship existed when the family head had done postgraduate work. Fifty-nine percent of all such persons in the survey were in the plan (table 1, G).

Family income was strongly related to the likelihood of membership in the GMCHP. Persons with 1972 family incomes below $4,000 were very much underrepresented in the plan, while income levels between $4,000 and $14,999 showed medium level membership; beyond an annual family income of $15,000 the likelihood of GMCHP participation was comparatively high (table 1, H). Although not cited in the tables, the results of the survey indicated that 94 percent of the family heads in the GMCHP were employed; 6 percent were not employed. Twenty-eight percent of all unemployed households heads were in the GMCHP, indicating that the unemployed were underrepresented in the plan (table 1, I). Part J, table 1, indicates that occupation was strongly related to the likelihood of GMCHP membership when the family head was a professional. Interestingly, while this relationship was strengthened because of the comparatively large number of Marshfield Clinic physicians in the population, it was not due simply to this fact. The other occupational classes did not vary markedly in GMCHP membership, although there might have been a slight positive relationship for families of businessmen.

Membership in the GMCHP appeared to be directly related to the likelihood of using medical services (table 1, K). One out of four persons in the GMCHP claimed to have seen a physician within the previous 2 months (the comparable proportion for those not in the plan was one out of five).

The data in table 1, L, indicated that a strong relationship existed between membership in the GMCHP and source of care. Members were much more likely to use the Marshfield Clinic, and less likely to use the Colby Clinic or one of the three private practice physicians in the plan.

Membership in the GMCHP was related to the likelihood of being an inpatient at St. Joseph's Hospital. Forty-six percent of all persons eligible for the plan and recent inpatients at St. Joseph's Hospital were plan members (table 1, M). As mentioned earlier, the expected percent was 36.

The occurrence of illness or injury causing disruption of daily routine was not related to membership in the plan. Severity, as measured by bed days, was also found not to be related (table 1, N). There appeared to be some evidence (table 1, O) indicating that GMCHP participants were more likely to visit a physician about an illness or injury than those not enrolled in the plan.

Table 1. Comparison of subscribers to the Greater Marshfield Community Health Plan (GMCHP) and area residents, 64 years or younger, telephone survey of 1,718 households comprised of 5,260 persons, 1973

Selected characteristics	Persons in survey households	
	Percent in GMCHP	Total number
A. County of residence:		
Wood	38	3,122
Marathon	34	1,506
Clark	25	632
B. Place of residence:		
Marshfield City	43	1,745
Other city or village	26	1,038
Rural area	32	2,477
C. Distance from residence to downtown Marshfield:		
Less than 1 mile	43	665
1–1.9 miles	50	724
2–4.9 miles	44	571
5–9.9 miles	29	680
10–14.9 miles	38	945
15 miles or more	25	1,675
D. Relationship to head of household:		
Head	36	1,323
Wife	36	1,222
Son	35	1,345
Daughter	36	1,271
Other	(1)	99
E. Sex:		
Male	35	2,582
Female	36	2,678
F. Age (in years):		
9 or younger	36	1,112
10–19	36	1,334
20–29	35	735
30–39	36	548
40–49	34	646
50–59	37	605
60–64	34	280
G. Education of household head:		
8th grade or less	32	1,438
9th–11th grade	35	740
High school graduate	36	2,106
Some college experience	35	489
College graduate	39	221
Postgraduate work	59	266
H. Total 1972 family income:		
$3,999 or less	19	213
$4,000–$6,999	33	690
$7,000–$9,999	35	1,296
$10,000–$14,999	34	1,499
$15,000 or more	44	1,072
Not ascertained	(1)	490
I. Employment status of household head:		
Employed	36	4,882
Not employed	28	378
J. Occupation of employed household heads:		
Professional	51	388
Business proprietor, manager, official	39	649
Sales or clerical worker	34	579
Skilled worker	36	800
Semiskilled or unskilled worker	31	1,318
Farmer	37	1,140
Not ascertained	11	8
K. Contact with physician within last 2 months:		
Physician was seen	41	1,190
Physician was not seen	34	4,070
L. Usual or last used physician or clinic:		
Marshfield Clinic	43	3,591
Colby Clinic	25	1,055
Physician in GMCHP	17	220
Other or none used	..	394
M. Hospitalization within last 6 months:		
Not hospitalized	35	4,960
St. Joseph's, Marshfield	46	268
Other hospitals	(1)	32
N. Confined to bed with illness or injury within last 30 days:		
Illness or injury occurred: all	34	733
Not confined to bed	33	360
Confined to bed at least 1 day	36	373
No illness or injury	36	4,527
O. Contact with physician in last 30 days due to illness or injury:		
Illness or injury occurred: all	34	733
Physician contacted personally	41	231
Physician phoned only	35	139
Physician not contacted	30	363
P. Medical insurance coverage through employment:		
Coverage provided through job	34	1,167
Coverage not provided through job	36	4,093

[1] Base too small to compute percentage.

Although not shown in the tables, 38 percent of the plan participants who were ill or injured reported visiting a physician; the comparable figure for nonplan persons was 29 percent.

Finally, part P, table 1, presents data indicating that medical insurance coverage was obtained through personal employment to about the same extent by both GMCHP members and nonmembers.

Table 2 presents data on satisfaction with medical coverage for those households with only one type of coverage. Households which had duplicate coverage, Medicare, Medicaid, or no coverage are not included

Table 2. Satisfaction with medical insurance coverage, by households with one type of coverage only, in percentages

Satisfaction	Type of medical coverage		
	GMCHP (N = 426)	Blue Cross (N = 129)	Other commercial plans (N = 539)
Very satisfied	55	21	22
Satisfied	39	63	64
Dissatisfied	2	11	10
Very dissatisfied	.....	1	1
No opinion	4	4	3
Total	100	100	100

Table 3. Criticism of medical insurance coverage by households with some criticism and one type of coverage only, in percentages

Criticism	Type of medical coverage		
	GMCHP (N = 22)	Blue Cross (N = 21)	Other commercial plans (N = 63)
Poor coverage of medical service or costs	23	52	83
Excessive cost of premiums	68	38	6
Other criticisms	9	10	11
Total	100	100	100

in the table. GMCHP members appeared to be more content with their coverage. There was little difference between Blue Cross and other commercial plans, and none of the plans had a large number of dissatisfied users. When the criticisms were analyzed as in table 3, it was apparent that GMCHP members were most likely to complain about the high cost of premiums, while Blue Cross received criticism about coverage and, to a lesser extent, premium cost. Few households with other commercial plans complained about premium cost, but 83 percent of all complaints concerned poor coverage.

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SYNOPSIS

NYCZ, GREGORY R. (Marshfield Medical Foundation) WENZEL, FREDERICK J., LOHRENZ, FRANCIS N., AND MITCHELL, JOHN H.: *Composition of the subscribers in a rural prepaid group practice plan. Public Health Reports, Vol. 91, November-December 1976, pp. 504–507.*

To determine the degree to which enrollees of the Greater Marshfield Community Health Plan were representative of the community the plan was designed to serve, a telephone survey of 1,838 households in the 30-township area was undertaken. The response rate was 93 percent, and data were obtained from 1,718 households containing 5,260 persons. Of these, 484 households had at least one health plan member. Since the plan accepts only persons under age 65, analysis of the data was limited to those persons aged 64 and younger.

Results indicate that enrollees showed good representation of demographic variables such as age, sex, and relationship to the household head when they were compared to the under 65 population of the area. When the enrollees' socioeconomic characteristics (education, income, and occupation) were studied, it was found that, although enrollees showed good representation for most categories, they tended to underrepresent the under 65 area population in the lowest income and education classes, as well as in the semiskilled or unskilled occupations. The opposite was true for the upper income and educational classes. Data on location of residence indicated that a strong relationship existed between enrollment and proximity to Marshfield, where the major health care center is located.

The use of health services was found to be positively related to membership, with enrollees overrepresented among those with recent hospital or physician contacts. The ability to obtain coverage through employment or by other means was found not to be related to membership. Satisfaction as expressed by participants was much higher in the prepaid program than among those with other forms of coverage.