

Factors Affecting the Choice Between Prepaid Group Practice and Alternative Insurance Programs

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This paper examines the basis for the selection of prepaid group practice in a dual-choice situation, and the social, attitudinal, and health characteristics of populations choosing prepaid programs in contrast to other plans. When asked in an open-ended way why they made the decisions they did, those selecting prepaid group practice most frequently referred to the more comprehensive coverage provided and to the fact that at the time of choice they lacked a continuing or adequate relationship with a physician. Enrollees in the prepaid program were better educated and, contrary to previous research, more likely to be unmarried. There was little evidence that enrollees in the prepaid plan brought with them distinctive kinds of attitudes and orientations toward illness and medical care. Enrollees in the prepaid program were also comparable to those retaining an alternative health insurance option on a number of indicators of health status. However, prepaid practice enrollees tended to report more chronic conditions than persons who declined to enroll in the prepaid program. Although the overrepresentation of persons with chronic illnesses is not large, data drawn from a related study suggests that persons with several chronic conditions tend to be heavy users of medical services.

In order to minimize the number of dissatisfied patients in closed medical panels, it is customary to offer eligible participants a dual choice between prepaid group practice and alternative insurance programs. When prepaid group practice is offered as a possible option, an alternative fee-for-service insurance plan, which provides less comprehensive coverage but which does not in any way restrict the patient's choice of physician or location of service, is almost always offered.

The purpose of this paper is to examine the basis for the decisions made in dual-choice situations, and the social, attitudinal, and health characteristics of populations that have made varying choices. Through such an analysis, it is possible to better understand those aspects of health plans that are viewed as attractive by particular groups in the population. Previous studies of enrollment in prepaid plans relative to alternatives indicate the importance of such features as breadth of insurance coverage, em-

phasis on preventive medicine, and the availability of one's total pattern of medical care at a single location. Among the reasons people give for not selecting prepaid practice options are such factors as pre-existing ties with a private physician, concern about possible impersonality of care, and physical distance from the prepaid practice facility (Anderson and Sheatsley, 1959; Metzner and Bashshur, 1967; Wolfman, 1961).

It is particularly important to understand the extent and nature of selective biases in choices among alternative plans. From a practical standpoint, the relative costs and benefits of one alternative versus another depends on the health needs and characteristics of persons in various plans and how they regard and use medical services. To the extent that important differences in populations exist among plans, such information is significant in evaluating the relative performance and impact of alternative plans. Knowledge of such selectivity is also important in evaluating research findings comparing alternative health care programs. For pragmatic reasons, almost all of what we know about the performance of alternative plans comes from cross-sectional studies of enrollees in different plans who have selected their particular health care program. When we observe differences in the performance of plans, or the behavior of patients within them, it is difficult to know to what extent the results reflect real differences in performance in comparison to the special characteristics of patients choosing one or another health care program. Information on the selection process, although it does not compensate for the lack of randomized controlled trials, informs our interpretation of results from cross-sectional studies (Mechanic, 1972:102-111; 1974a). For example, in studies of mortality among patients in the Health Insurance Plan as compared with alternative populations, it is difficult to evaluate to what extent the results are a product of the special organizational characteristics of the HIP program in contrast to selective characteristics of consumers who have chosen this program relative to others (Shapiro et al., 1958; Shapiro et al., 1967).

One important type of selectivity, examined in this study, concerns individuals and families who anticipate or require, because of pre-existing conditions, higher than average needs for medical care. Commonly known as the risk-vulnerability hypothesis (Bashshur and Metzner, 1967; 1970; Metzner et al., 1972; Bice et al.), the notion is that people who estimate the risk of illness as

great, and who feel vulnerable to high costs for medical care, are predisposed to enroll in prepaid plans because of the protection against out-of-pocket costs provided. Although various studies have addressed the issue, most of them concentrate on socio-demographic characteristics as proxies for need, and do not directly examine data on health status or health consciousness. In talking with researchers who have investigated this issue, we have also come to suspect that the published literature may not be representative of research experience in this area. Investigators probably expect to find difference between prepaid and nonprepaid group practice in health status or health consciousness; when such differences are not found, such data are probably less likely to be written up or submitted for publication.

There is evidence in the literature that prepaid group enrollees are more likely to be older, married, and to have young children than people choosing alternative options (Bashshur and Metzner, 1967; Wolfman, 1961; Moustafa et al., 1971; Bice, 1973; Hetherington et al., 1975). On the other hand, Yedidia (1959) reports that the age composition of prepaid-group-practice enrollees is not distinctive, and on this basis questions the proposition that high-risk families are attracted to prepaid plans. More direct evidence concerning the relative vulnerability of enrollees in prepaid group practice comes from studies which included measures of health status and illness. Anderson and Sheatsley (1959) report no differences in the perceived health status of members of families enrolling in prepaid group practice and an alternative insurance plan. They also found that individuals selecting the prepaid option were no more likely than those in the comparison group to have experienced an expensive illness prior to enrollment. Hetherington et al. (1975) found higher proportions of families with chronic and acute illnesses in prepaid as compared with alternative plans, but it is difficult to be sure that such differences existed at the time of the choice. Bice et al. (1974), studying a lower-income area in Baltimore, found that families' previous use of health services was predictive of enrollment in a prepaid group practice for a group of people lacking an alternative option other than episodic outpatient care.

It should be appreciated, of course, that prepaid group practice, and the populations given an opportunity to enroll in them, may vary in many important dimensions, and, thus, it should not be

surprising that the findings vary from one study to another. Any over-all assessment must be based on the research literature as a whole and cannot depend on any single study or study population.

Another selective bias to be examined concerns the possibility that people who enroll in prepaid plans bring with them distinctive kinds of attitudes and orientations toward illness and medical care. Anderson and Sheatsley (1959) were unable to find any consistent differences between health attitudes of individuals participating in prepaid and fee-for-service insurance plans. However, they did not probe systematically for the possibility that enrollees in prepaid group practice are more oriented toward health maintenance and preventive health utilization. A number of other studies have reported evidence of high rates of preventive health utilization in prepaid plans (see Donabedian, 1969; Roemer and Shonick, 1973; Hetherington et al., 1975), but it is not clear to what extent such differences reflect the organization of the plans or the attitudes of their enrollees.

In addition to examining each of the above issues, this study will also consider the possible effect of neuroticism (Eysenck and Eysenck, 1964) on choice behavior. We wish to examine indirectly the allegation that prepaid group practice tends to attract large numbers of "worried wells," people who are prone to present problems which physicians regard as trivial (Garfield, 1970); there is some evidence indicating that this contention may be very much exaggerated (Jackson and Greenlick, 1974). The "worried well" hypothesis, however, may be supported in part by the finding by Hetherington et al. (1975) that "hypersensitivity" to physical symptoms was higher among subscribers in a large group practice than in other insurance plans, but on more careful inspection of the data this is doubtful. Hetherington and his associates had physicians rate various symptoms in terms of the extent to which they required medical care. On the basis of these ratings, symptoms could be classified as high- and low-need symptoms. The measure of hypersensitivity took into account symptoms for which patients indicated they would seek medical care despite low-need ratings by the physicians. Inspection of the low-need symptoms indicates that they include such items as insomnia, "nerves," and general fatigue. The reader can make his own assessment as to whether seeking care for such symptoms can appropriately be regarded as the behavior of the "worried well" or as trivial.

Procedures in the Present Study

Data are reported from a telephone survey of individuals following a choice between prepaid group practice and an alternative Blue Cross–Blue Shield insurance plan. The study was designed so that interviewing took place soon after the choice situation, usually before those in the prepaid plan had any experience with the medical group. Thus we attempted to measure selectivity in terms of socio-demographic characteristics, attitudes, and illness experience prior to the time that these might be modified by the particular plan selected. The sample was drawn from public employees of a major metropolitan area including both blue- and white-collar workers.

For many years this city had offered the Blue Cross–Blue Shield plan to its employees. In June of 1973, the city gave to its employees the option of retaining the old plan or enrolling in the prepaid group practice. In order to obtain the prepaid group practice health insurance, city employees were required to pay part of the health insurance premium (\$11.77 per month for a family plan and \$4.03 per month for a single plan). The city, however, paid the entire Blue Cross–Blue Shield premium. Of approximately 7,000 city employees, 183 (2 percent) chose the prepaid plan, and this entire group was included in our study. A random sample of Blue Cross–Blue Shield subscribers was selected as a comparison group. Because of the requirement of an additional monthly payment, this sample is biased in favor of maximum social selection; under the risk-vulnerability hypothesis, we would expect that those willing to pay the additional cost would anticipate or have a particularly high need for medical services.

Whenever possible, women (usually wives of employees) were interviewed concerning their own health, the health of their spouse, and the health of children included within the insurance plan. If an interview could not be obtained by phone, we attempted to obtain the desired data through a household interview. Eighty-six percent of the Blue Cross sample ($N = 165$) and 93 percent of the prepaid practice sample ($N = 168$) were successfully interviewed.

Concurrent with the choice study was a second inquiry of patient satisfaction with prepaid practice and alternative insurance plans. Since we included almost all of the same questions used in

the choice study in the satisfaction study, we had a particularly good opportunity to replicate the analysis with a different sample. The satisfaction study included patients from one to two years of exposure to prepaid group practice, and thus, it is not prospective in the sense of the choice study. It provides, however, an excellent opportunity to examine consistencies and inconsistencies between the various populations used in these studies.

The sample for the satisfaction study was drawn from two large industrial firms which offer a dual choice including the same prepaid group practice involved in the choice study. However, in these situations the employer assumes the full cost of insurance irrespective of the plan selected. In contrast to the choice study, the alternative plans in the satisfaction study are more generous in benefits and include more outpatient services (for further details, see Tessler and Mechanic, 1974). Employees from these two firms included semi-skilled and skilled hourly workers, and salaried personnel. Representative samples of individuals choosing each option were obtained from each firm, and data were collected through a household interview. Ninety-one percent of eligible respondents were successfully interviewed.

The Health Insurance Plans

The prepaid group practice plan is a relatively new program (two and a half years old at the time of the study). Care is provided by a multispecialty hospital-based practice staffed by full-time physicians. Enrollees in the prepaid practice obtain a fairly comprehensive benefit package on a prepayment basis including outpatient visits, specialty services, consultation services outside the group at the request of a group physician, diagnostic and laboratory procedures, physical examinations, and eye examinations by an ophthalmologist (but not lenses or frames). Among the services excluded from coverage are drugs, dental care, most cosmetic care, and sterilization services. Inpatient services are comparable to Blue Cross, and private health insurance policies generally except that hospital services, excluding emergencies, must be provided by a single hospital associated with the program.

The alternative insurance plan involved in the choice study provided emergency medical care, accident care within 72 hours, outpatient surgical procedures, X-ray and radiation therapy, \$200

diagnostic services per year, and major medical insurance. The major medical program involved a \$50 deductible and 20 percent coinsurance thereafter with a \$20,000 maximum per person.

Results

Data descriptive of the socio-demographic characteristics of prepaid group practice and Blue Cross respondents are presented in Table 1. A significantly larger proportion of respondents who enrolled in Blue Cross—Blue Shield in contrast to the prepaid group practice were married and selected family plans. In addition, prepaid group respondents were significantly better educated than those retaining Blue Cross—Blue Shield health insurance. There were no significant differences in the two groups in terms of the respondent's age, sex, employment status, religion, or in the terms of family income. Nor were the two groups of respondents significantly different in terms of the number and ages of their children. Comparable patterns were replicated in the satisfaction study. Although the educational difference was in the same direction as in the choice study, it was not statistically significant.¹

Explicit Reasons for Choice

In order to assess respondents' reasons for the choices made, we asked respondents in an open-ended way why they made the decisions they did. We followed this question by suggesting various reasons for making the choice and asking respondents to indicate how important each reason was for their family. Finally, we asked respondents to select the single reason among those suggested that was of greatest importance to their families.

In the open-ended question,² Blue Cross—Blue Shield respondents indicated most frequently that they were satisfied with Blue Cross coverage (32 percent), that they had inadequate information about the choice (22 percent), that they were satisfied with their

¹Also in the satisfaction study, Blue Cross respondents were more likely to be women and less likely to be employed than respondents in the prepaid practice plan.

²Since many respondents gave several reasons for their choice, we aggregated the data so as to indicate what proportion of the sample mentioned each reason spontaneously.

TABLE 1

Socio-demographic Characteristics of Prepaid-
Group-Practice and Blue Cross Enrollees

Socio-demographic Factors	Blue Cross (<i>N</i> = 165) %	Prepaid Group Practice (<i>N</i> = 168) %	<i>p</i> ^a
Respondent—Married	77	57	< .001
Family health plan	80	62	< .001
Number of children			
0	46	55	
1-2	32	23	NS
3 or more	22	22	
Number of children under 12			
0	71	76	
1 or more	29	24	NS
Age of respondent			
30 or less	24	29	
31-45	34	30	
46-55	27	30	NS
56 or more	15	11	
Sex of respondent—Female	73	73	NS
Respondent employed	72	80	NS
Education of respondent			
Some high school or less	19	14 ^b	
Completed high school	52	41	< .01
Some college or more	28	46	
Religion of respondent			
Protestant	37	25	
Catholic	51	56	NS
Other	12	19	
Respondent—Black	11	6	NS
Family income			
Under \$8,000	7	13	
\$8,000-\$11,000	39	34	
\$11,000-\$14,000	27	29	NS
Over \$14,000	27	24	

^aStatistical significance is computed using the χ^2 distribution and the criterion used is the .05 level.

^bPercentages may not add to 100 percent because of rounding errors.

present doctor (21 percent), that they did not wish to assume the additional cost to enroll in the prepaid plan (15 percent), and that the prepaid-practice clinic was inconveniently located for them (14 percent). Other reasons given were inertia (15 percent), preference for a wider choice of doctors or hospitals (9 percent), and concern

about a clinic atmosphere at the prepaid practice (5 percent). Those selecting prepaid group practice most frequently referred to the more comprehensive coverage this program provided (30 percent) and to the fact that at the time of choice they lacked a continuing or adequate relationship with a physician (23 percent). Other reasons given included the fact that the plan covered office visits (15 percent), that it was a good deal for the money (14 percent), that physical exams were paid for (13 percent), that they knew about particular doctors at the prepaid practice clinic (13 percent), that a family member had a condition requiring a great deal of medical attention or the possibility of this occurring (9 percent), that the prepaid plan offered complete care at one location (7 percent), and that it provided preventive medicine (8 percent).

Table 2 shows the reactions of respondents choosing each option to eight possible reasons for their choice. Except for the item dealing with size of family, responses to all of the other items differed among respondents choosing each of the two options. Those retaining the Blue Cross-Blue Shield policy were more likely to rate as important the location of the prepaid-practice clinic and the fact that the family physician would be restricted to the prepaid group practice. It was clear that these were seen as disadvantages to the Blue Cross group and as advantages to those selecting the prepaid plan. For example, among the Blue Cross sample, 87 percent indicated that the location of the prepaid practice was a disadvantage, 81 percent indicated that its association with a particular hospital was disadvantage, and 90 percent indicated that the restriction of their family physician to the prepaid-practice group was a disadvantage. In contrast, among the enrollees in the prepaid plan, 76 percent said the location of the clinic was an advantage, 97 percent said its association with a local hospital was an advantage, and 93 percent indicated that it was an advantage that their family physicians would be part of the prepaid group practice. A majority of respondents choosing both options agreed that having one's medical care in one place was an advantage, although 100 percent of prepaid practice respondents gave the response in contrast to 69 percent of the Blue Cross respondents.

Table 2 also shows the proportion in the various subgroups who indicate each reason as the single most important one for them, and there is a significant difference in the pattern of response for the two subgroups. Blue Cross respondents cite as most impor-

TABLE 2

Proportion of Respondents in the Choice Study Rating Fixed Alternative Items as Very Important in Choice

	BLUE CROSS- BLUE SHIELD (N = 165)		PREPAID GROUP PRACTICE (N = 168)		p ^a
	% Rating Item Very Important	% Saying it Is Most Important Reason	% Rating Item Very Important	% Saying It Is Most Important Reason	
Location of Northpoint Clinic	37	25	28	8	NS ^b
Northpoint's association with St. Mary's Hospital	16	2	22	3	<.05
In Compcare, all the family's medical care would be pro- vided in one place	24	7	58	24	<.001
In Compcare, your family physician would be a member of the Northpoint group	48	34	27	12	<.001
Availability of medical care at night and on weekends at Northpoint	22	9	56	18	<.001
Knowing in advance what your medical care costs would be for the year	18	2	45	19	<.001
Importance of the size of your family in choosing health plan	19	7	24	3	NS
Chance that a member of your family might need a lot of medical care	29	14	40	14	<.05

^aStatistical significance computed by the X^2 statistic and the criterion used is the .05 level. In Table 2 the probability figures shown refer to the ratings of importance of each item and not to the ratings of the single most important item.

^bProbability is <.06.

tant in their choice the restriction of their family physician to the prepaid group practice and the location of the clinic. In contrast, prepaid-group-practice respondents indicate as most important the fact that all of the family's care would be provided in one place, knowing medical care costs in advance, and the availability of medical care on nights and weekends. Although more prepaid-practice respondents rate as very important the chance that a

member of their family might need a lot of medical care, an identical proportion in the two groups—14 percent—rate it as most important.

Selectivity Resulting from Health Status

In order to determine whether there were any differences in health status between families enrolling in prepaid group practice and families retaining their Blue Cross-Blue Shield policies, respondents were questioned about their own medical histories and current health problems, and about those of other family members as well. As one indicator of selectivity resulting from health status, respondents were presented with a list of 34 chronic health problems and, for each problem, asked to indicate whether anyone in their family had ever had that problem. The mean number of chronic problems reported is presented in Table 3 for Blue Cross and prepaid-practice respondents, their spouses, and children. Inspection of the results shows that prepaid-group-practice respondents reported significantly more chronic conditions than Blue Cross-Blue Shield respondents. As Table 4 shows, 14 percent of prepaid-practice respondents reported five or more chronic illnesses in contrast to 7 percent in the Blue Cross group.³

Although the chronicity differences observed for respondents are not very large in percentage terms, any addition of enrollees with a high level of chronic illness can result in considerable use of service. Analysis of the relationship between chronicity and utilization was undertaken with data from the satisfaction study. The results are presented in Table 5. Examination of the results reveals significant relationships between respondents' reports of their own chronicity and various indicators of medical-care utilization. Respondents with five or more chronic illnesses were over-represented among those making four or more office visits in the past year, those spending six or more days in the hospital, those with the highest total cost of hospitalization, and those undergoing surgery.

³As Table 4 shows, when the distribution of chronic illnesses among the two groups of respondents is tested for significance using *chi* square rather than the *F* distribution, as was the case in the result presented in Table 3, the difference between Prepaid Practice and Blue Cross respondents does not achieve statistical significance.

TABLE 3

Health Status of Families Selecting Blue Cross
and Prepaid Practice Options

Health Status Indicator	Blue Cross \bar{X}	Prepaid Practice \bar{X}	p^a
1. Chronic problems			
a. respondents ($N = 333$)	1.67	2.12	< .05
b. spouses ($N = 221$)	1.24	1.33	NS
c. children ($N = 164$) ^b	.71	.84	NS
2. Perceived health			
a. respondents ($N = 333$)	1.61	1.61	NS
b. spouses ($N = 221$)	1.64	1.56	NS
c. children ($N = 164$)	1.35	1.36	NS
3. Bed-disability days			
a. respondents ($N = 333$)	.42	.44	NS
b. spouses ($N = 221$)	.36	.13	NS
c. children ($N = 164$)	.34	.43	NS
4. Major illnesses			
a. respondents ($N = 333$)	1.08	1.09	NS
b. spouses ($N = 221$)	1.07	1.02	NS
c. children ($N = 164$)	.01	.05	NS
5. Hospital days			
a. respondents ($N = 333$)	1.26	1.26	NS
b. spouses ($N = 221$)	1.17	1.00	NS
c. children ($N = 164$)	.25	.72	NS
6. Perception of family's medical problems ($N = 333$)	1.52	1.51	NS
7. Perception of family's utilization patterns ($N = 333$)	1.51	1.54	NS

^aStatistical significance is based upon unstandardized regression coefficients, employing the F distribution. The criterion used is the .05 level.

^bThe total number of chronic illnesses among all children in the family, coded 0, 1, 2 or more, is represented here. All other figures for children included in this table are based on the average score for children in each family.

While there were no over-all differences among spouses and children of prepaid and Blue Cross respondents in number of chronic problems reported (refer to Table 3), there was a tendency for differences to emerge in a direction consistent with the risk-vulnerability hypothesis for low-income families for whom we would expect degree of chronicity to have its greatest impact on perceived vulnerability to medical-care expenditures. Tables 6 and 7 show the distribution of reports of chronic illnesses among spouses and children of Blue Cross and prepaid-practice enrollees

TABLE 4
Number of Chronic Illnesses Reported by Respondents
in Blue Cross and Prepaid Practice Plans

Reported Chronic Illness	Blue Cross (<i>N</i> = 165) %	Prepaid Practice (<i>N</i> = 168) %
No chronic illness	28	23
One	26	21
Two	23	25
Three	11	13
Four	5	5
Five	4	6
Six or more	3	8

$\chi^2 = 6.53$

df = 6

p > .05

TABLE 5
Relations Between Chronicity and Use of Services Among
Respondents in the Satisfaction Study (*N* = 989)

	NUMBER OF CHRONIC ILLNESSES					<i>p</i> ^a
	0	1	2	3-4	5 or more	
	(<i>N</i> = 272) %	(<i>N</i> = 276) %	(<i>N</i> = 180) %	(<i>N</i> = 182) %	(<i>N</i> = 79) %	
Office visits						
0	39	32	21	24	10	
1-3	48	48	52	41	33	< .001
4 or more	13	20	28 ^b	35	57	
Days in hospital						
0	89	90	90	84	75	
1-5	8	5	5	9	8	< .01
6 or more	3	6	5	7	17	
Cost of hospitalization						
0	89	90	90	84	75	
Less than \$1019	10	6	8	11	14	< .01
\$1019 or more	1	4	2	5	10	
Surgery						
Yes	4	4	3	9	16	
No	96	96	97	91	84	< .001

^aStatistical significance is based on the chi square distribution.

^bPercentages may not add up to 100 percent because of rounding errors.

TABLE 6

Number of Chronic Conditions Reported for Spouses by Insurance Plan
Among Families with Incomes of Less than \$11,000

	Blue Cross (<i>N</i> = 44) %	Prepaid Practice (<i>N</i> = 25) %
Number of chronic illnesses		
0	41	32
1	36	28
2 or more	23	40

$\chi^2 = 2.31$

df = 2

p > .05

whose family income was less than \$11,000. Forty percent of the prepaid-practice spouses were reported to have two or more chronic illnesses as compared to 23 percent of the Blue Cross spouses. Thirty-two percent of the prepaid respondents, in contrast

TABLE 7

Number of Chronic Conditions Reported for Children by Insurance Plan
Among Families with Incomes of Less than \$11,000

	Blue Cross (<i>N</i> = 28) %	Prepaid Practice (<i>N</i> = 25) %
Number of chronic illnesses		
0	64	44
1	14	24
2 or more	21	32

$\chi^2 = 1.13$

df = 2

p > .05

to 21 percent of the Blue Cross respondents, reported two or more chronic illnesses among their children.⁴

Indicators of health status other than chronicity were all unrelated to choice of health plan (refer to Table 3). When asked to assess the health status of each member on a scale ranging from excellent to poor, prepaid and Blue Cross respondents did not differ in their ratings of their own health, their spouses' health, or the health status of each of their children. When they were questioned about the number of days spent in bed because of illness by family members within the last three months, prepaid-practice and Blue Cross respondents showed no significant differences in their responses. Similarly, no consistent differences emerged when respondents were questioned about the total number of days spent in a hospital in the preceding year, or about major illnesses in the past three months (indicated by reports of illnesses for which a physician was seen five or more times). There were also no significant differences in respondents' ratings of the seriousness of their family's medical problems as compared with other families, or the extent to which their families were prone to utilize medical services. Each of the foregoing analyses was repeated for those in the low-income groups, but no relationship worthy of note emerged.

Thus far the health-status results have been presented separately for individual health-status measures, employing respondents, spouses, and children as units of analysis. Another approach was undertaken in which individual measures of health status were aggregated into a summary index with the total family employed as the unit of analysis. For respondents who had a spouse and at least one child covered by the insurance plan, an index of over-all family risk was constructed employing five pieces of information concerning the health status of family members prior to the interview. These were number of chronic illnesses, perceived health status, bed-disability days, major illnesses, and days spent in a hospital. Each of these pieces of information was available for respondents, spouses, and children. The empirical

⁴Because of the small sample sizes on which these differences are based the results do not achieve statistical significance even though the percentage differences are relatively large.

TABLE 8

Scores on 15-Point Family Risk Index
Based on the Choice Survey

	Blue Cross (N = 85) %	Prepaid Practice (N = 65) %
Score on risk index		
0-3	4	3
4	28	31
5	29	23
6	22	23
7 or more	16	20

$\chi^2 = .46$

$df = 4$

$p > .05$

⁵The reader should note that in the satisfaction study sample the information concerning the health status of family members will reflect the structure of the varying health care plans as well as patient characteristics and behavior.

distributions on each were examined, and extremes on the end of each distribution were designated as high-risk categories. One point was then assigned to a family whenever the respondent's, spouse's or children's score fell into a high-risk category. The total possible range on the risk index was 0-15.

Table 8 shows that over-all family risk was not significantly related to choice of health care plan, though the difference in the highest-risk category is in the direction predicted by the risk-vulnerability hypothesis. Twenty percent of the families enrolling in prepaid practice, in contrast to 16 percent of the families retaining Blue Cross-Blue Shield health insurance, received scores of 7 or more on the risk index. These differences are small and could represent chance variation.

A comparable analysis was carried out on the satisfaction-study sample in order to determine whether the same trend would emerge.⁵ Unfortunately a measure of major illness was not included in the satisfaction study and therefore the risk index was

TABLE 9
Scores on 12-Point Family Risk Index
Based on the Satisfaction Survey

	Blue Cross (N = 309) %	Prepaid Practice (N = 301) %
Score on risk index		
0-1	1	1
2	27	24
3	28	29
4	22	23
5	13	13
6 or more	7	11

$\chi^2 = 2.48$

$df = 5$

$p > .05$

based on four rather than five types of information about respondents, spouses, and their children. Thus the index had a total possible range of 0-12. For the four pieces of information that were available, the same cutoff points for assigning risk points which were employed in the choice study were also used in the cross-validation. Table 9 shows that a similar trend emerged in the cross-validation sample, though once again it is weak and not statistically significant. Eleven percent of the families participating in the prepaid practice, in contrast to 7 percent of the families participating in Blue Cross, received the highest scores on the risk index.

Selectivity Resulting from Health Attitudes and Behavior

In evaluating whether there was any relationship between orientations toward preventive health practices and the choice of prepaid group practice, we questioned respondents about their propensities to use medical services under varying circumstances for both themselves and their children, their perceptions of the importance of regular checkups, when they last had a routine checkup, and whether they owned a medical reference book. We also asked a variety of more general questions concerning perceived control

over illness, faith in doctors, and skepticism about medical care. The results are presented in Table 10. Inspection of the results shows that no significant differences emerged. As with the health-status data, each of the analyses was repeated with the higher-income families excluded from the analysis. None of the resulting coefficients exceeded .10.

We did find, however, one exception to the general proposition that there is no selectivity resulting from preventive health attitudes and practices. Unlike the choice study, the satisfaction study included items designed to determine whether children covered by alternative insurance plans had received specific immunizations. Evidence for selectivity in immunization patterns is clearest for children, five years old and over, who had been participating in the prepaid program for one year only. These respondents were asked when, if ever, each of their children had been immunized against measles, polio, rubella, and mumps. The

TABLE 10
Reports on Use and Attitudes Toward
Preventive and Other Services

Measures of Use and Attitudes Toward Preventive and Other Services	Blue Cross (<i>N</i> = 165) \bar{X}	Prepaid Practice (<i>N</i> = 168) \bar{X}	<i>p</i> ^a
1. Propensity to use medical services for oneself	12.77	13.09	NS
2. Propensity to use medical services for young children ^b	13.46	12.86	NS
3. Importance of physical checkups	3.08	3.11	NS
4. Months since last checkup	48.98	38.89	NS
5. Importance of physical checkups for young children	2.64	2.58	NS
6. Perceived control over illness	8.93	9.01	NS
7. Faith in doctors	3.11	3.01	NS
8. Skepticism about medical care	8.50	8.75	NS
9. Possession of a medical reference book	1.59	1.54	NS

^aStatistical significance is based upon unstandardized regression coefficients, employing the *F* distribution. The criterion used is the .05 level.

^bItems 2 and 5 were only asked of respondents with children under 12: *N* = 93.

TABLE 11

Reports of Number of Immunizations Received One Year or More Prior to Interview by Children Five Years of Age and Over

	Blue Cross (N = 373) %	Prepaid Practice (N = 445) %
Number of immunizations received		
None	6	4
1	22	18
2	20	19
3	29	26
all 4	23	32

$\chi^2 = 11.47$

$df = 4$

$p < .025$

results, presented in Table 11, show that 32 percent of the children in the prepaid program, in contrast to 23 percent of those covered by Blue Cross health insurance, were reported to have received all four of the immunizations more than a year prior to the interview. It appears that children currently covered by the prepaid plan were more likely to be fully immunized prior to enrolling in prepaid practice than children of families choosing to retain Blue Cross health insurance.

A final question addressed by the present study was whether people with psychoneurotic symptoms would enroll in disproportionate numbers into a prepaid group practice plan. The results indicate that prepaid-group-practice respondents were no more neurotic ($\bar{X} = 7.86$) than Blue Cross-Blue Shield respondents ($\bar{X} = 7.88$). There were no significant differences in neuroticism in the satisfaction study, comparing prepaid-practice and Blue Cross respondents.

Discussion

Two socio-demographic factors were found to differentiate enrollees in prepaid group practice from families who chose to re-

tain their fee-for-service insurance plan. Enrollees in the prepaid program were better educated and more likely to be unmarried. The education finding is consistent with other relevant research (Metzner et al., 1972), but the marital status result is more puzzling, since most other studies of choice report that married people are *more* likely than single people to enroll in prepaid plans. Single people were also found to be overrepresented among prepaid-group-practice participants in the satisfaction study where the employer was paying the entire health insurance premium.

The findings concerning perceptions of choice, based on the reasons people gave for their decisions, were generally consistent with previous research. Physical distance from the prepaid practice clinic and the existence of an ongoing relationship with a personal physician emerged as major deterrents to enrollment in the prepaid plan.

More than one quarter of prepaid-practice respondents reported that they had no regular doctor before joining the prepaid plan. Of those who had a regular doctor, about half indicated they were very satisfied with him when they joined the prepaid plan, and about 70 percent reported being either very or fairly satisfied. Although there was some dissatisfaction with existing medical care that led respondents to be attracted to prepaid practice, the majority were not dissatisfied, but rather were drawn to the prepaid program by positive attributes including centralization of all medical care in one place, insurance against risk, and availability of care on nights and weekends.

The risk-vulnerability hypothesis received little support in the present study. Socio-demographic indicators of risk-vulnerability (age, number of children, etc.) did not predict enrollment. Indeed, the relationship which emerged between marital status and enrollment is contrary to some of the implications of the risk-vulnerability hypothesis. Similarly, most of the data on health status does not support the risk-vulnerability formulation. There was little sign of selectivity due to perceived health status, bed disability, major illnesses, or hospitalization either when these variables were examined separately or when they were examined as part of an index of over-all family risk.

Some support for the risk-vulnerability formulation came from analyses of the distribution of chronic illnesses in the two groups.

Prepaid-practice respondents reported more chronic illnesses than Blue Cross respondents, and although the overrepresentation of respondents with chronic illnesses in the prepaid program was not large, our data suggests that persons with many chronic illnesses tend to be heavy users of medical services. From a practical point of view, therefore, any overrepresentation of persons with chronic illnesses is a significant matter. There was also a tendency for spouses and children of lower-income families enrolling in prepaid group practice to have more chronic illnesses than spouses and children of lower-income families who chose to retain the Blue Cross plan.

The evidence for selectivity resulting from preventive-health attitudes and behavior was somewhat mixed. In the choice study itself, there is no evidence of selectivity in choice resulting from health attitudes and propensities. The enrollment decision was found to be unrelated to several questions included in the interview schedule designed to tap health consciousness and readiness to use medical services. If a conclusion is to be drawn on the basis of this study alone, it would be that prepaid-group-practice and Blue Cross enrollees are basically the same in their propensities to use preventive services and in their attitudes toward care. On the other hand, retrospective data drawn from the satisfaction study concerning immunization of children participating in alternative insurance plans indicated that children of prepaid-practice respondents were more fully immunized at the point of enrollment than children of respondents who chose to retain Blue Cross-Blue Shield.

There was no evidence of selectivity due to neuroticism in the present study. Thus the results provide no support for the proposition that prepaid practices tend to attract disproportionate numbers of "worried wells" (also see Mechanic, 1973; 1974b).

In concluding, it is important to emphasize that this is basically a case study. Any conclusions about degree of selectivity into prepaid plans must be made on the basis of cumulative experience in varying social settings. The people under study here were drawn from an employed population and the Blue Cross-Blue Shield alternative was quite liberal with respect to its outpatient coverage. It is possible that selective influences on choice will prove to be greater in other populations where the savings in costs

resulting from enrollment in prepaid group practice plans is more obvious and clear-cut for individuals and families at risk.

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References

- Anderson, W., and B. Sheatsley
 1959 Comprehensive Medical Insurance: A Study of Costs, Use, and Attitudes Under Two Plans. Health Insurance Foundation. Research Series No. 9.
- Bashshur, R. L., and C. A. Metzner
 1967 "Patterns of social differentiation between Community Health Association and Blue Cross-Blue Shield." *Inquiry* 4: 23-44.
- 1970 "Vulnerability to risk and awareness of dual choice of health insurance plan." *Health Services Research* (Summer): 106-113.
- Bice, T. W.
 1973 "Enrollment in a prepaid group practice." Unpublished manuscript. Department of Medical Care and Hospitals, The Johns Hopkins University.
- Bice, T. W., S. Radius, and L. Wollstadt
 1974 "Risk vulnerability and enrollment in a prepaid group practice and disenrollment from a prepaid group practice." Unpublished manuscript. Center for Metropolitan Planning and Research, The Johns Hopkins University.
- Donabedian, A.
 1969 "An evaluation of prepaid group practice." *Inquiry* 6: 3-27.

Eysenck, S. F. G., and H. J. Eysenck

- 1964 "An improved short questionnaire for the measurement of extroversion and neuroticism." *Life Sciences* 3: 1103-1109.

Garfield, S. R.

- 1970 "The delivery of medical care." *Scientific American* 222: 15-23.

Hetherington, R., C. E. Hopkins, and M. I. Roemer

- 1975 *Health Insurance Plans: Promise and Performance*. New York: Wiley-Interscience.

Jackson, J. O., and M. Greenlick

- 1974 "The worried-well revisited." *Medical Care* 12: 659-667.

Mechanic, D.

- 1972 *Public Expectations and Health Care*. New York: Wiley-Interscience.
- 1973 "Patient behavior and the organization of medical care." *Research and Analytic Report Series*, 1-73. Center for Medical Sociology and Health Services Research, Madison, Wisconsin.
- 1974a "The comparative study of health care delivery systems." *Research and Analytic Report Series*, 12-74. Center for Medical Sociology and Health Services Research, Madison, Wisconsin.
- 1974b "The organization of medical practice and practice orientations among physicians in prepaid and nonprepaid primary care settings." *Research and Analytic Report Series*, 13-74. Center for Medical Sociology and Health Services Research, Madison, Wisconsin.

Metzner, C. A., and R. L. Bashshur

- 1967 "Factors associated with choice of health care plans." *Journal of Health and Social Behavior* 8: 291-299.

Metzner, C. A., R. L. Bashshur, and G. Shannon

- 1972 "Differential public acceptance of group medical practice." *Medical Care* 10: 279-287.

Moustafa, A. T., C. E. Hopkins, and B. Klein

- 1971 "Determinants of choice and change of health insurance plan." *Medical Care* 9: 32-41.

Roemer, M. I., and W. Shonick

- 1973 "HMO performance: the recent evidence." *Milbank Memorial Fund Quarterly: Health and Society* (Summer): 271-317.

Shapiro, S., S. L. Weiner, and P. M. Densen

- 1958 "Comparison of prematurity and perinatal mortality in a general

population and in the population of a prepaid group practice medical care plan." *American Journal of Public Health* 48: 170-187.

Shapiro, S., J. J. Williams, A. S. Yerby, P. M. Densen, and H. Rosner
1967 "Patterns of medical use by the indigent aged under two systems of medical care." *American Journal of Public Health* 57: 784-790.

Tessler, R., and D. Mechanic
1974 "Consumer satisfaction with prepaid group practice: a comparative study." *Journal of Health and Social Behavior*, forthcoming.

Wolfman, B.
1961 "Medical expenses and choice of plan: a case study." *Monthly Labor Review* 84: 1186-1190.

Yedidia, A.
1959 "Dual choice programs." *American Journal of Public Health* 49: 1475-1480.