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WORKSHOP IN HEALTH ADMINISTRATION STUDIES

WINTER, 1989

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"Disenrollment in Chicago area HMOs"

WORKSHOP PAPER

for

Thursday, February 16, 1989

Rosenwald 405

3:30 to 5:00 p.m.

HMO DISENROLLMENT: THE ROLE OF CLIENT SATISFACTION*

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HMO Disenrollment: The Role of Client Satisfaction

As the Health Maintenance Organization (HMO) market has grown and matured in the last decade their has been no shortage of comprehensive evaluations.[1-2] Many of these studies concentrated on the factors which have influenced choice of an HMO versus some alternative plan.[3-5] This research has found that a variety of plan (coverage, convenience, accessibility, etc.) and enrollee (marital status, family size, expected use of medical services) characteristics influence enrollment. The focus on the enrollment decision was logical in the early years because HMO growth was rapid. The potential of positive or adverse selection made the knowledge of who joined an HMO a very important issue.[6-9] Further, as Medicare instituted risk contracts with HMOs, the selection issue has remained important.[9]

Recently, however, researchers have become more interested in disenrollment from HMOs. It may appear that disenrollment is conceptually equivalent to the enrollment decision viewed from a different position. However, from an HMOs perspective, involuntary disenrollees pose a different problem than voluntary disenrollees, thus, the model is different. Three primary factors appear to influence voluntary HMO disenrollment: adverse selection, cost and dissatisfaction. Adverse disenrollment selection by enrollees leaving an HMO can have as great a financial impact as adverse selection at enrollment.[13-15] This literature has examined who leaves the HMO. Generally, the disenrollees are younger, female, single, have a smaller family and were enrolled a shorter period than those who remained enrolled. Utilization of health care services by recent disenrollees appears lower than those who remain enrolled.[15-17] Those findings have been especially true for use of ambulatory services. These results support the risk vulnerability hypothesis[6] which makes them appealing intuitively. For whatever reason, low utilizers select out of the HMO leading to the equivalent of adverse selection. However, some evidence exists that there were no differences for inpatient services,[18] no differences between disenrollees and continuous enrollees in utilization at all,[19] and that disenrollees were relatively heavy users of ambulatory services.[11]

Cost has also been demonstrated as a factor in disenrollment.[15,20] Premium increases in particular appear to make continued HMO enrollment decisions less attractive. Related to cost effects are the changes in benefits offered by the HMO. Greater benefits with no premium changes can be viewed as a premium decrease.

Finally, dissatisfaction with HMO services may lead to disenrollment. Numerous studies have identified four general elements of dissatisfaction: access, physician-patient relationship, perceived quality of administrative services, and perceived quality of medical services.[10,12,14,19] We expect that those HMO members who are dissatisfied with all or some aspects of the HMO will be more likely to disenroll. However, for various reasons, not all dissatisfied clients will disenroll and some satisfied clients will disenroll.[21] While reported clinical quality of care in HMOs may be high rates of disenrollment may indicate that some non-clinical dimension of quality may be low.

This paper summarizes the results of a study of recent disenrollees from 13 HMOs operating in a single state. These voluntary disenrollees were compared with continuous enrollees from the same HMOs. The study's overall goal was to assess the importance of member dissatisfaction in the decision to disenroll from an HMO. In addition, the plan is to determine the relative importance of client characteristics, utilization and health status, satisfaction, health plan linkages, and plan characteristics on the decision to

disenroll. The conceptual model employed appears in Figure 1. This relatively
simple model ignores the interrelated nature of the explanatory factors. It
does, however, allow a direct test of the importance of various factors on the
disenrollment decision using observable disenrollment experiences of HMO
clients.

The study extends prior research in a variety of ways. It provides a
comprehensive assessment of the role satisfaction plays with the HMO
disenrollment decision experience while controlling for a variety of other
factors. It also represents one of few studies that employ samples of
disenrollees and continuous enrollees from a large number of HMOs operating
related markets. Finally, it represents a current assessment of the role
satisfaction with HMOs plays on disenrollment after some the influences of
major changes in the health care system have had a chance to develop (i.e.
growth and maturity of HMOs, prospective payment and other competitive
changes.)

METHODS

Sample

Organizations

Because this study was supported by the Illinois Association of Health
Maintenance Organizations (IAHMO), the subscriber samples were drawn from the
14 member HMOs that had volunteered to participate. These HMOs had
approximately 60% of the HMO enrollment in Illinois as of June 30, 1986. Of
the nonparticipants, many were too new or had inadequate data systems to meet
the requirements of the study design.

HMOs were eligible to participate in the study based on the following
criteria:

o   Membership in the IAHMO
o   Operational dates on or before 6/0/85
o   Subscriber and member enrollment and disenrollment data available
        by month, or the period of 7/01/85 through 7/01/86

These HMOs varied in their organizational characteristics and their
enrollment composition. They include group/staff model HMOs as well as
IPA/network HMOs, for-profit and not-for-profit, free-standing versus chains,
and hospital-based. Most had either all or predominantly employed
subscribers, while two had only Medicaid subscribers. Finally, they ranged in
subscriber size from less than 100 subscribers to more than 45,000 subscribers
as of 7/1/86.

Subscribers

The data necessary to conduct the survey was collected between 8/26/86
and 12/12/86. The data collection process occurred in three phases. In the
first phase, each HMO submitted HMO specific information, such as HMO model
type, as well as total member and subscriber enrollments and disenrollments for
the time period of 7/1/85-6/30/86. This data was used to develop a subscriber
sampling methodology, which took into account the following variables: an HMO
specific retention rate, based on the proportion of subscribers who disenrolled
between 7/1/85 and 6/30/86; an estimated response rate (60% for currently
enrolled subscribers and 50% for disenrollees), and for those HMO's which had
Medicaid subscribers, an estimate of the Medicaid retention rate. Given the
time constraints for data collection and the available funding, a goal of 15

completed enrollee cases and 15 completed disenrollee cases was set for each participating HMO.

Based on this initial information, sampling instructions were developed and each HMO was asked to submit sytematic random list sample of current and disenrolled HMO subscribers with some subscriber specific information (age, sex, single or family premium and the most current locating information). A systematic random sample of 869 current and former subscribers was drawn from the 13 HMO's.

Two sampling frames were developed at each HMO, one of continuous subscribers and one of disenrolled subscribers. Continuous subscribers who were eligible to participate in the study were individuals who had been enrolled in the plan no less than 12 months as of 7/01/86. Disenrolled subscribers who were eligible to participate included individuals who had disenrolled on or before 7/01/86. and had been enrolled at least 12 months as of their date of disenrollment. The qualification that the subscriber must have been enrolled for at least 12 months increases the probability of some type of interaction between the subscriber and the HMO. It also reduces the inclusion of a disproportionate number of involuntary disenrolled subscribers in the sample.

The final phase of the data collection consisted of a telephone survey of the current and disenrolled subscriber samples. The survey began on 11/16/86 and was completed on 1/13/87. The questionnaire was developed to include questions believed to measure each of the elements in the model. To increase the validity of the instrument, questions were borrowed from major health studies whenever possible. In addition, a pilot study was conducted with about 50 current and disenrolled subscribers. The findings of pilot study were used to improve question clarity and format and develop precoded responses to open-ended questions. The survey instrument required about 15 minutes of respondent time to complete.

Response Rates

Of the 869 subscribers, 485 or approximately 56% were contacted and completed the questionnaire (Table 1). Three of the 485 questionnaires were partially completed and are included in the analysis. It is interesting to note that of the 384 (44%) who did not respond, only 57 (15%) refused to participate. The remaining non-response is due to inability to locate respondents because of telephone number changes, wrong telephone numbers, and moving.

Non-response rates range from 33% to 61% among the 14 HMOs. The highest non-response rates were associated with organizations which contract with the Illinois Department of Public Aid to offer HMO benefits to Medicaid beneficiaries. Historically, these individual are more mobile and difficult for an HMO to keep accurate records over time, particularly the disenrolled subscriber group. Within the currently enrolled sample, 64% completed the survey. The lowest response rates (33%) were from the two HMO's enrolling exclusively Medicaid populations. Excluding these two HMO's, and another with at least 50% Medicaid enrollees, decreases the range of response rates to between 49% and 90%, or 17-30 completed cases per HMO. For disenrollees, 49% of the sample completed the survey. The range across HMOs was between 37% and 65%. Excluding the Medicaid HMOs did not markedly improve the response rates. For disenrollees, the average number of completed cases per HMO was 15.

Given the presence of HMO supplied demographic information on the entire sample, the respondents were compared to non-respondents in an effort to measure non-response bias. Non-respondents did not differ from respondents in

terms of sex or coverage size. Non-respondents were statistically significantly younger than respondents (36.7 years versus 39.2 years), which could in part be attributed to the greater mobility generally found among younger people.

Exclusions

From the 485 completed cases, two types of subscribers were eliminated. In previous analysis it had been found that Medicaid subscribers differed significantly from non-Medicaid subscribers, particularly in regard to their satisfaction with medical quality. Consequently, this study excluded the 28 Medicaid disenrollees and 24 disenrollees and focuses on the commercial subscriber sample.

Second, we asked disenrollees to state their primary reason for disenrollment in anticipation of differences within this group. Based on those responses it was possible to subdivide them into two categories - voluntary and involuntary disenrollees. Voluntary disenrollment refers to a conscious decision by the member to leave a prepaid group (Hennelly and Boxerman (d). Involuntary or mandatory disenrollment, on the other hand, is usually a result of job changes, moving, or a company dropping an HMO. Differentiating these two disenrollment classifications was important since it appears that the involuntary disenrollees may represent another distinct group with regard to factors that motivate disenrollment behavior as noted in the literature.[17] In total, 48 involuntary disenrollees were eliminated from this analysis. Therefore, the final sample for this study compared 100 voluntary disenrolled subscribers and 295 continuous subscribers.

Study Variables

For purpose of this analysis, the key variables may grouped into five areas. The first group of variables considers demographic characteristics: age, sex, education, occupation, marital status, and length of time living in the community. The second set of variables relate to health status and health utilization: physician or nurse contact within the year, hospitalization within the year, regular physician within the HMO, perceived health status, and perceived health status of family members. The third group of variables measure the subscriber's satisfaction with multiple aspects of enrollment, including satisfaction with care received, organizational attributes such as waiting time, and administrative characteristics like the claims payment processing, as well as two measures of activity related to satisfaction, calling to register a complaint and recommending the HMO to a friend or family member. The next group of variables relate to strength of links to the HMO: years in this HMO, number of family members covered, the ability to maintain the pre-HMO personal physician after joining the HMO, and the availability of other health insurance coverage. Finally, organizational characteristics comprise the fifth and final set of characteristics: staff/group model versus IPS/network model, for profit status, total enrollees, premium change around the time of disenrollment, and change in level of benefits around the time of disenrollment.

Analysis

The data analysis proceeded in four stages. In stage I, two types of preliminary data preparations activities were performed: determination of sample weight and reliability of satisfaction scales. The weights for the voluntary disenrollees and continuous enrolles were derived from the HMOs reported eligible populations. These weights were required to generalize respondents to the HMO population of interest. The reliability of the clinical and administrative scales are important to determine because satisfaction may

have a multitude of dimensions and few widely used scales exist.

In stage II, bivariate analyses of the relationship of disenrollment and each explanatory variable were performed. This preliminary analyses allowed for a clear understanding of the differences between the two samples.

In stage III, the relative importance of personal characteristics, utilization and health status, satisfaction, health plan linkage and plan characteristics on the disenrollment decision was assessed. A variable called leave was created which takes the value one if the respondent was a voluntary disenrollee and zero if the respondent was a continuous enrollee. This variable was then the dependent variable for a series of weighted regression analyses. Because we are most interested in the relative explanatory power of sets of variables, this method is appropriate despite the nature of the dependent variable.[22]

Finally, in stage IV, stepwise weighted regression analyses (OLS and Logit) were performed to derive a full model of the HMO disenrollment decision. The stepwise option was employed because we wish to discover which variables best explain variance in the disenrollment decision.

RESULTS

As the data in Table 2 indicate, there are some statistically significant differences between voluntary disenrollees and continuous enrollees. With respect to **personal characteristics**, voluntary disenrollees were more likely married, younger and newer to their current residence. There were no differences by sex, education level or occupation. The age and years in residence findings are consistent with prior research. However, others have found disenrollees less likely to be married. These findings may be a result of separating the voluntary from the involuntary disenrollees. Those disenrolling for "involuntary" reasons may be younger and less likely married. By eliminating disenrollees from the sample we may have a better estimate of the effects of personal characteristics on volitional disenrollment.

The variables in the category **utilization and health status** generally were not different by enrollment category. The voluntary disenrollees ere less likely to have had a physician while in the HMO (80.4 percent versus 91.0 percent).

The measures in the category **satisfaction** were very rarely different for voluntary disenrollees compared with continuous enrollees. The voluntary disenrollees were less satisfied with information on how to use the HMO and less satisfied with courtesy of the administrative staff. No differences in satisfaction were observed for the remaining eleven items or for the clinical satisfaction, administrative or the overall satisfaction scales. Although the voluntary disenrollees were more likely to have called with a complaint and slightly less likely to recommend the HMO to a family member or to a friend, neither finding was statistically significant. These satisfaction measures do not appear to differentiate voluntary disenrollees from continuous enrollees.

Three of the four variables in **health plan linkage** were different for voluntary disenrollees. Those with other health insurance coverage were more likely to be voluntary disenrollees. Voluntary disenrollees had been in the HMO for fewer years and were <u>more</u> likely to have kept their physician when entering the HMO. No differences were observed by number of people covered by the policy.

The last category of variables is **plan characteristics**. Each of these

variables witnessed differences at the p = .05 level or better. Voluntary
disenrollees were more likely from large, for profit, IPA or network type HMOs.
Further, voluntary disenrollees were more likely to have come from plans which
had recently increased premiums and less likely to have recently decreased
premiums. Voluntary disenrollees were less likely to have experienced a recent
benefits increase or decrease. These last two variables are from self reports
of premium or benefits changes.

Table 3 presents results of weighted regressions of the dependent
variable leave (voluntary disenrollee = 1, continuous enrollee = 0) on each of
the variables in the five categories: personal characteristics, utilization and
health status, satisfaction, health plan linkage, and plan characteristics.
The intent of these analyses is to determine which category of variable
explains the greatest portion of variance in enrollees decision to leave.
Overall, the five plan characteristics explained the greatest proportion of
variance (13.6) followed by personal characteristics (10.8) and health plan
linkage (7.4). The four variables of satisfaction explained only 1.4 percent
of the variance in disenrollment. It is interesting that the direction of
influence in these multivariate analyses corresponds closely to that of the
bivariate analyses in Table 2.

For those five categories of variables important is the disenrollment
decision, it appears that people relatively new to the area, married and in
excellent health were more likely to disenroll. Likewise, those in an HMO a
shorter period, those with other coverage and those having maintained their
physician upon entering the HMO were more likely to leave. Finally, those in
larger HMOs or HMOs with premium increases were more likely to leave. As in
the bivariate analyses, satisfaction with various aspects of services has no
influence on voluntary disenrollment.

The data in Table 4 present a weighted stepwise regression of leave on
all variables in the full model and the corresponding forced entry regression
specification. In the stepwise model, seven variables enter and together they
explain over 24 percent of the variance in the variable leave. These findings
are largely consistent with those of the category-specific regression presented
in Table 3. Because of space limitations only those coefficients of
significant variables in the stepwise model are presented for the forced entry
model. The purpose of this comparison is to identify potential effects of left
out variables in the stepwise regression. As can be seen the coefficients in
the stepwise model are quite similar to those of the full model.

As had been observed in the bivariate analysis, those in large HMOs
married, in the HMO a shorter period, and had a recent premium increase had a
greater likelihood of disenrolling. Likewise, those living in the area a
shorter period, having other insurance coverage or having recently used a
hospital were more likely to disenroll. The hospital use influence was not
observed in the bivariate analyses.

Finally, Table 5 presents the stepwise weighted logit model for
disenrollment. Although these results are largely similar to those of the OLS
regression, recent hospital use does not enter. The sign of all factors are
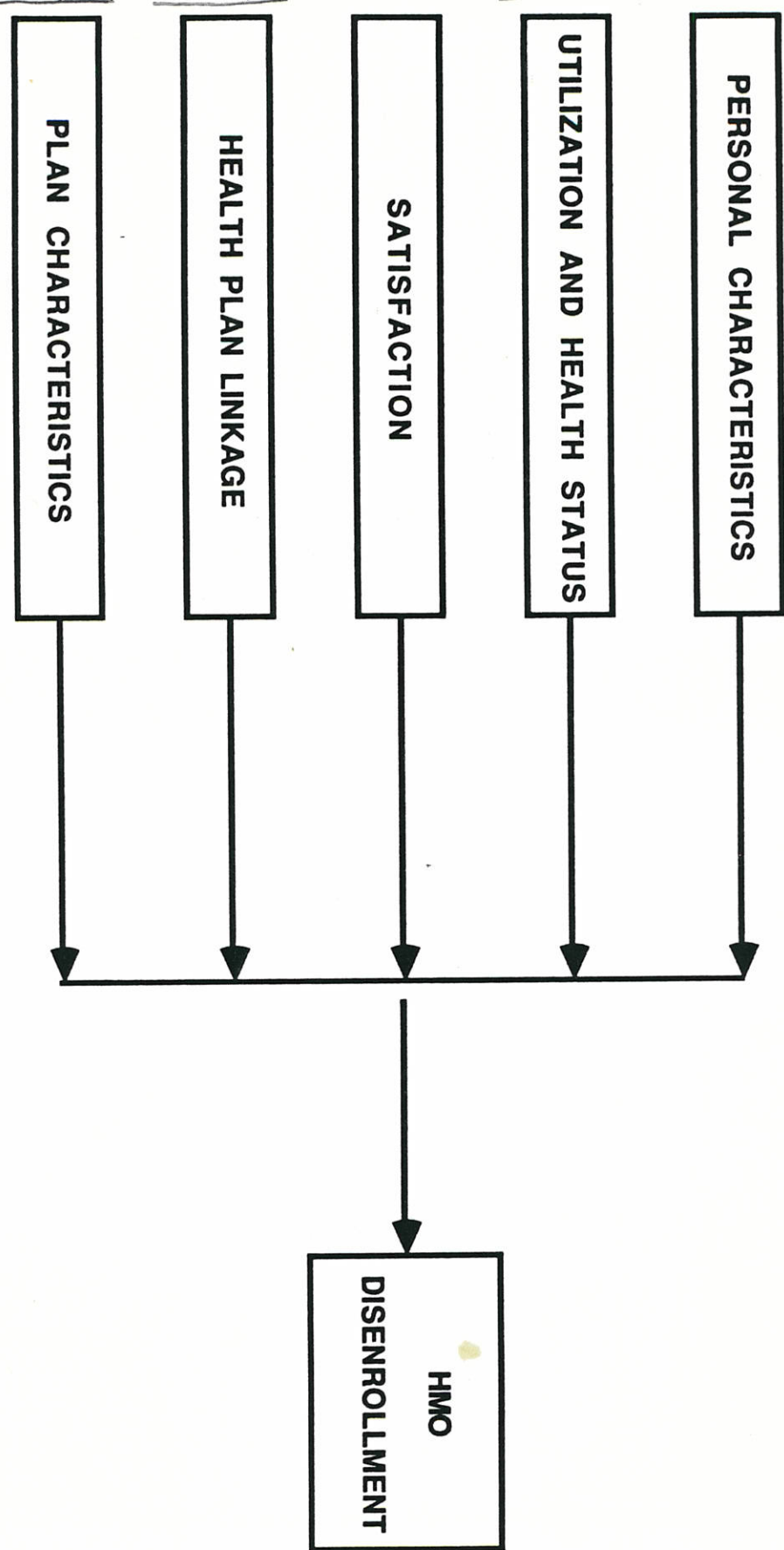consistent with those of the prior models.

REFERENCES

1.   Wolinsky F. The performance of health maintenance organizations: An
analytic   review. <u>Milbank Memorial Fund Quarterly</u> 1980; 58: 537.

2.   Luft H.S. <u>Health Maintenance Organizations: Dimensions of Performance</u>.
New   York: John Wiley & Sons, 1981.

3.   Tessler R., Mechanic D. Consumer satisfaction with prepaid group
practice: A   Comparative study. <u>Journal of Health and Social
Behavior</u> 1975; 16: 95.

4.   Berki S.E., Ashcraft M. HMO enrollment: Who joins, what and why: A
review of   the literature. Milbank Memorial Fund Quarterly 1980; 58:
588.

5.   Grazier K., Richardson W., Martin D., Drehr P. Factors affecting choice
of   health care plans. <u>Health Services Research</u> 1986; 20: 659.

6.   Bice T. Risk vulnerability an enrollment in a prepaid group practice.
<u>Medical</u>   <u>Care</u> 1975; 13: 8.

7.   Acito F. Consumer decision making and health maintenance organizations:
A   review. <u>Medical Care</u> 1978; 16: 1.

8.   Hudes J, Yound C., Sohrab L., Chung T. Are HMO enrollees being attracted
by a   liberal maternity benefit? <u>Medical Care</u> 1980; 18: 635.

9.   Wilensky G, Rossiter L. Patient self-selection in HMOs <u>Health Affairs</u>
1986; 5:   66.

10.   Sorensen A., Wersinger M. Factors influencing disenrollment from an HMO.
          <u>Medical Care</u> 1981; 19: 766.

11.   Kidneigh J. <u>Study of reasons for membership in a group health plan</u>. St.
Paul   MN: Group Health Plan, Inc.

12.   Hennelly V., Boxerman S. Out of plan use and disenrollment: Outgrowth
of   dissatisfaction with a prepaid group practice plan. <u>Medical Care</u>
1983; 21:   348.

13.   Griffith M., Baloff N., Spitzngel E. Utilization patterns of health
maintenance   organization disenrollees. <u>Medical Care</u> 1984; 22: 827.

14.   Hennelly V., Boxerman S. Disenrollment from a Prepaid group plan.
<u>Medical Care</u>   1983; 21: 1154.

15.   Wersinger M., Sorensen A. Demographic characteristics and prior
utilization   experience of HMO disenrollees compared with total
membership. <u>Medical Care</u>   1980; 20: 1188.

16.   Lewis K. Comparison of use by enrolled and recently disenrolled
populations in a   health maintenance organization. <u>Health Services
Research</u> 1984; 19: 1.

17.   Wintringham K. Impact of step-rating and price sensitivity on
disenrollment and   risk selection. <u>The Group Health</u> Journal 1982;
3: 15.

18.   Gold W. Predicting HMO disenrollment behavior: A study of demographic
and   behavioral characteristics of HMO members. University of
Minnesota, 1987.

19.   Mechanic D., Weiss N., Clary P. The growth of HMOs: Issues of
enrollment and   disenrollment. <u>Medical Care</u> 1983; 21: 338.

20.   Wintringham K, Bice T. Effects of turnover on use of services by
Medicaid   beneficiaries in health maintenance organizations. <u>The Group
Health Journal</u>   1985; 6: 12.

21.   Ware J., and Davies A. Behavioral Consequences of Consumer
dissatisfaction with   medical care. <u>Evaluation and Program Planning</u>
1983; 6: 29.

FIGURE I

CONCEPTUAL MODEL OF HMO DISENROLLMENT

PLAN CHARACTERISTICS

HEALTH PLAN LINKAGE

SATISFACTION

UTILIZATION AND HEALTH STATUS

PERSONAL CHARACTERISTICS

HMO DISENROLLMENT

What is behavioral explanation for these influences?

TABLE 1.   RESPONSE RATES FROM 14 PARTICIPATING HMOS

| | HMO Subscribers | | |
	Currently Enrolled	Disenrolled	Total
Total	131,847	62,371	194,218
Sampled	476	393	869
Completed	287	198	485
Response Rate	60%	52%	56%

T A B L E   2
Descriptive Statistics of Study Variables

Variable Name	Continuous Enrollees	Voluntary Disenrollees	Total Sample
Personal Characteristics			
Sex (% Male)	46.2	48.9	47.0
Education - HS or less	29.2	33.0	30.4
- Some College	29.1	26.6	28.3
- College Graduate +	41.7	40.4	41.3
Occupation (% Professional or Manager)	55.0	47.2	52.5
Marital Status (% Married)	63.7	80.7*	69.2
Age (Years)	41.5	38.6*	40.6
Residence time (Years)	29.7	22.1*	27.3
Utilization and Health Status			
Use of M.D. or Nurse (% Yes)	91.5	89.4	90.8
Use of Hospital (% Yes)	17.9	23.4	19.6
Had M.D. in HMO (% Yes)	91.0	80.4*	87.6
Health Status (% Excellent)	39.7	49.4	42.9
Family Health Status (% Poor)	2.1	5.6	3.2

TABLE 2 (Cont.)
Descriptive Statistics of Study Variables

Variable Name	Continuous Enrollees	Voluntary Disenrollees	Total Sample
Satisfaction			
Complaint (% Call)	24.3	30.4	26.3
Recommend to Family or Friend (% Yes)	85.3	80.1	83.6
Satisfaction With:			
Overall Quality	2.68	2.69	2.69
Choice of M.D.s	2.53	2.38	2.48
Choice of Hospitals	2.63	2.58	2.61
Location of M.D.s	2.74	2.73	2.74
Wait for Appointment	2.39	2.43	2.40
Wait at Office	2.40	2.45	2.41
M.D. Attitude	2.75	2.78	2.76
Use of Non Physicians	2.70	2.81	2.74
Membership Process	2.71	2.75	2.72
Information on How to Use HMO	2.76	2.65*	2.73
Claims Payment Process	2.75	2.86	2.78
Referral Process	2.46	2.44	2.45
Courtesy of Administrative Staff	2.82	2.55*	2.73
Clinical Satisfaction			
Scale (alpha = .63)	21.0	21.0	21.0
Administrative Satisfaction			
Scale (alpha = .45)	13.5	13.2	13.4
Overall Satisfaction			
Scale (alpha = .78)	34.5	34.2	34.4

*Statistically significant difference between continuous enrollees and voluntary disenrollees at P = .05.

TABLE 2 (Cont.)
Descriptive Statistics of Study Variables

Variable Name		Continuous Enrollees	Voluntary Disenrollees	Total Sample
Health Plan Linkage				
Other Coverage (Yes)		19.8	33.1*	24.1
Duration in HMO		3.2	2.3*	2.9
Prior Ties (% kept M.D.)		22.6	36.6*	27.1
Coverage Size:	Single	38.0	42.1	39.3
	Two	20.2	13.3	18.0
	Three or More	41.8	44.6	42.7
Plan Characteristics				
IPA/Network (% Yes)		61.5	81.0*	67.7
For Profit (% Yes)		68.7	87.3*	74.6
Total Enrollees		119,640	175,263*	137,412
Premium Change:	Increased	11.4	13.7*	12.1
	No Change	73.0	80.7	75.5
	Decreased	15.6	5.5	12.4
Benefits Change:	Increased	19.6	10.3*	16.6
	No Change	73.6	89.7	78.7
	Decreased	6.9	0.0	4.7

TABLE 3

Summary of Weighted Regression Analyses of Voluntary HMO Disenrollment

Variable Category	Significant Variables	Sign	R^2	Adjusted R^2
Personal Characteristics	Residence***	–	.108	.092
	Marital Status***	+		
Utilization and Health Status	Health Status*	+	.040	.026
Satisfaction	---		.014	.003
Health Plan Linkage	Duration***	–	.074	.063
	Other Coverage**	+		
	Prior Ties*	+		
Plan Characteristics	Total Enrollees***	+	.136	.124
	Premium*	+		

*   Significant at p = .05
**   Significant at p = .01
*** Significant at p = .001

T A B L E   4

Full Model and Stepwise Weighted Regression of
of Voluntary HMO Disenrollment
(Standard errors in parentheses)

Variable	Full Model	Stepwise Model
Total Enrollees (x100,000)	.161*** (.030)	.170*** (.025)
Marital Status (Married = 1)	.132* (.059)	.146** (.049)
Years in HMO	-.026* (.012)	-.027** (.009)
Premium Change	.177*** (.048)	.172*** (.044)
Residence (Years)	-.005** (.002)	-.005** (.001)
Other Coverage (Yes = 1)	.115* (.058)	.118* (.053)
Hospital Use (Yes = 1)	.086 (.060)	.117* (.055)
Intercept	-.133 (.281)	.138 (.077)
R^2	.281	.244
Adjusted R^2	.230	.228
F	5.54***	15.76***
Degrees of Freedom	326	342

* Significant at $P = .05$
** Significant at $P = .01$
*** Significant at $P = .001$

TABLE 5

Weighted Stepwise Logistic Regression

of Voluntary HMO Disenrollment

(Standard Errors in Parentheses)

Variable Name	Coefficient	Elasticity
Total Enrollees (x100,000)	.922*** (.155)	.870
Marital Status (Married = 1)	.856** (.329)	.409
Years in HMO	-.236** (.078)	.479
Premium Change	.975*** (.280)	.020
Residence (Years)	-.027 (.009)	.518
Other Coverage (Yes = 1)	.678* (.312)	.107
Intercept	-1.661 (.507)	--
R^2	.185	
Model Chi Square	92.65***	
D.F.	6	

*   Significant at P = .05
**   Significant at P = .01
***   Significant at P = .001