A Family Practice Center Experience with an HMO

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The Family Practice Center of Akron contracted as a medical provider with an individual practice association type of health maintenance organization (HMO) for a period of one year. This paper reports the results and analysis of educational, managerial, and financial issues in the center's HMO program. In addition, recommendations will be made to family practice residencies and practicing family physicians who are considering joining a health maintenance organization.

The HMO Concept

The health maintenance organization (HMO) concept is not a new idea in the American health care delivery system. In fact, the HMO movement has its roots in the early 1900s. However, only in the 1970s did it become part of the US government's health strategy. The Department of Health, Education, and Welfare has contributed significantly to the recent growth of HMO type plans, beginning with the publication of its white paper, "Toward a Comprehensive Health Strategy for the 1970's."[1] The ideas presented in this document were followed by legislative and executive branch action, resulting in the passage of the HMO Act of 1973.

Under the 1973 legislation, an organization was required to provide its members with the following set of benefits without any limitations as to time and cost to become a federally qualified HMO:

1. Physician services, including consultation and referral
2. Outpatient services
3. Inpatient hospital services
4. Medically necessitated emergency services
5. Short-term outpatient evaluative and crisis intervention mental health care services
6. Diagnostic laboratory and diagnostic and therapeutic radiological services
7. Home health services and preventive health services, including voluntary family planning services, infertility services, preventive dental care for children, and eye refractions for children
8. Medical treatment and referral services for abuse of or addiction to alcohol and drugs[1]

In addition, certain supplemental services (eg, vision, dental, and mental health care; prescription drugs) were required if the HMO had the resources to provide them and if members wished to purchase such services. A number of legislative measures have been passed at both the federal and state levels since 1973, but the basic benefits outlined above remain in force for qualification as a health maintenance organization.

An HMO by definition is a health care plan in which payments (premiums) are made in advance to a fund used to pay for an individual's health services when the need arises. There are three basic variations as defined by Braverman: the staff model, the individual practice association (IPA), and the group practice.

A *staff HMO* provides services through physicians who receive salaries from the HMO. In some cases physicians may receive incentive payments in addition to salary. Services are provided in a clinic setting with the number of service outlets depending on the number of enrollees and their areas of disbursement.

The *IPA* is usually sponsored by the state or county medical association. Enrollees pay monthly premiums to the HMO, which contracts with physicians to provide services on a fee-for-service basis.

A *group practice* is an HMO which contracts with a medical group, partnership, or corporation composed of health professionals to provide health services. All physicians are usually located in one facility and are paid a salary or on the basis of the number of persons for whom they are responsible.[2]

Beyond this broad definition HMOs begin to vary almost as widely as the approximately 200 different HMOs currently operating in the United States.[3-7]

The advantages promulgated by the supporters of HMOs are summarized in the Department of Health, Education, and Welfare white paper:

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HMOs simultaneously attack many of the problems comprising the health care crisis. They emphasize prevention and early care; they provide incentives for holding down costs and for increasing the productivity of resources; they offer opportunities for improving the quality of care; they provide a means for improving the geographic distribution of care; and by mobilizing private capital and managerial talent, they reduce the need for federal funds and direct controls.[8]

In terms of these organizations truly maintaining health, the Department of Health, Education, and Welfare document goes on to say:

Because HMO revenues are fixed, their incentives are to keep patients well, for they benefit from patient well days, not sickness. Their entire cost structure is geared to preventing illnesses and, failing that, to promoting prompt recovery through the least costly services consistent with maintaining quality. In contrast with prevailing cost-plus insurance plans, the HMO's financial incentives encourage the least utilization of high cost forms of care, and also tend to limit unnecessary procedures.[1]

In addition, proponents of the concept claim that HMOs hold the potential for improving continuing education and innovation in teaching programs. They also encourage the use of new technologies and management tools and the effective delegation of tasks to support personnel. In addition, supporters contend that HMOs enhance professional review and quality control in the colleague group.

Group Health Plan of Northeastern Ohio

In the fall of 1978 representatives of the Group Health Plan (GHP) of Northeastern Ohio approached the Family Practice Center of Akron requesting that the residency contract with GHP as a medical provider for their subscribers. GHP is a Cleveland based HMO organized essentially along the lines of the individual practice association model. GHP was founded in 1974 and offers the basic set of benefits outlined above, plus many of the supplemental benefits described.

The Group Health Plan program puts the family physician at the center of the patient's health care. When an individual and his or her family subscribe to the plan, they select a family physician from those who have contracted with GHP as medical providers for the plan. (In December 1978 GHP had contracted with 54 private family physicians in 19 separate practices located in five counties in northeastern Ohio.) The subscriber then enrolls in the family physician's practice of his/her choice. From this point on, all the health care and services that the individual or members of the subscriber's family seek must be on referral from or with the approval of the family physician in order for the costs of such care or services to be covered by GHP.

In northeastern Ohio the premiums for the GHP plan and for Blue Cross/Blue Shield are very comparable, varying less than 5 percent across all subscriber categories. GHP rates are the higher of the two in most categories. In contracting with this organization, the family physician agrees to provide or coordinate the delivery of the care and services stated in the plan's benefits.

The family physician continues to care for fee-for-service patients, but cannot contract with another prepaid plan without the written permission of GHP. As compensation, the family physician receives a capitation fee of $9.50 per month per subscriber enrolled in the practice. From this capitation fee the family physician is responsible for paying all specialist physician charges (both consults and referrals), all outpatient services (eg, laboratory, x-ray, physical therapy) ordered by the family physician and consultants, and personal office expenses (eg, physician and staff time, office laboratory or x-ray expenses, administrative costs).

Residency Contract with the HMO

After assessing the plan, the Family Practice Center of Akron decided to contract with GHP, with the approval of the residency's parent institution, Akron City Hospital. Because of the special circumstances surrounding this agreement (ie, a residency as a provider rather than the private practitioner) the standard contract as described above was modified. The Family Practice Center agreed to care for GHP patients for a period of one year. The center initially contracted for a maximum of 500 patients; however, this limit was raised to 550 in September of 1979. Because of the lack of data regarding the cost effectiveness of health care delivered in the residency setting, GHP agreed to reimburse the Family Practice Center on a fee-for-service rather than capitation basis. Therefore, when an HMO patient was seen in the center, a fee ticket was generated and the charge was forwarded to GHP. The Family Prac-

tice Center was then reimbursed monthly for the services rendered to GHP patients. Since the center was not acting as an individual practice association but simply as a medical provider, much of the administrative responsibility was assumed by the GHP, including drawing checks as payment for laboratory and x-ray services delivered outside the center and payment of consultants utilized by Family Practice Center physicians. These administrative functions are normally performed by the individual practice association itself.

The Family Practice Center developed a number of goals as it entered into the contract with GHP. The balance of this paper reflects the assessment of the center's success in achieving these goals over a one-year period in terms of educational and managerial outcomes.

The Family Practice Center had three major educational goals established when it contracted with GHP:

1. To educate residents about the concept, organizational types, administration, and financing of HMOs
2. To increase the cost consciousness of residents
3. To introduce residents to the psychosocial dynamics of caring for patients enrolled in a prepaid plan and to assess these dynamics

Also in contracting with GHP, the center had three managerial goals:

1. To increase the size of the patient panel enrolled in the practice. (This goal also has educational ramifications in terms of the volume and variety of patients cared for by each resident.)
2. To assess the cost and cost effectiveness of the Family Practice Center in delivering health care in a prepaid plan. Data was to be gathered in this area in particular to guide the center in future decisions on whether to contract with an HMO on a capitation basis. (This goal also contains an educational dynamic in terms of providing residents with data on the dollars and cents of prepaid plans, which could be helpful in their decision to contract or not contract with an HMO after completing their residency training.)
3. To assess and compare the utilization patterns of HMO patients with a matched group of fee-for-service patients.
4. To assess the comparative satisfaction of fee-for-service and HMO patients with the health care received at the Family Practice Center.

Methods of Evaluation

In evaluating the outcomes of the involvement of the Family Practice Center with Group Health Plan, the two areas of educational goals and managerial goals were assessed separately and in very different ways. Managerial outcomes were evaluated much more objectively and thoroughly. Educational outcomes were examined informally.

The first goal of educating residents about HMOs and prepaid plans in general was addressed sporadically and evaluated only anecdotally during the year. There were three formal presentations made on HMOs, and GHP in particular, at residents' meetings and staff meetings (which senior residents attend). However, there was a great deal of informal discussion between residents and faculty about HMOs and their impact on American medicine, particularly on the center and the residents' own practices. Senior residents of the 1978 and 1979 classes were particularly involved in such discussions as the topic related to their future practices.

The second educational goal of the Family Practice Center was to increase the cost consciousness of residents through involvement with an HMO. A monthly financial analysis of the GHP program for the entire practice was presented to residents; however, because of problems in the start up of the program and in communications between the Family Practice Center and GHP, it was very difficult to identify costs for each individual physician. Again, in this area there was a great deal of informal discussion of costs and cost effectiveness between faculty and residents, particularly third year residents. However, there was no formal evaluation of any change in resident cost consciousness.

Introducing residents to the dynamics of caring for prepaid patients was the third educational goal of the Family Practice Center. The quantitative aspects of evaluating this goal were accomplished by reviewing the standard productivity and financial records of the center and by an audit of the HMO patients' charts. The qualitative dimensions of this goal were assessed through informal discussions with residents and interviews with these physicians after six months of experience in caring for GHP patients.

The measurement of the Family Practice Center's success in meeting its managerial goals was

accomplished primarily through review and analysis of the center's "Monthly Report." This report routinely reflects productivity statistics such as patient visits and HMO patient enrollment on a monthly and cumulative basis.

Cost figures for both the Family Practice Center and specialists were kept as a routine part of the HMO program at the center. Administrative expenses for the HMO program were determined by time studies and a review of payroll records by the author.

The evaluation of the comparative satisfaction of HMO and fee-for-service patients and their utilization patterns was accomplished by the following method. Since the number of HMO patients was relatively small at the center at the time of the study, it was decided that the entire adult group who met the criteria outlined below would be included in an attempt to secure as much information as possible. The criteria used for selection were as follows: (1) The patient was a member of the HMO group; (2) the patient was at least 18 years old, since the health status indicator in the study is only administered to patients 18 years or older; and (3) the patient had been seen by the physician at least two times. (The last stipulation was made so that it would be assured that the physician had had at least this minimal contact before evaluating a particular patient.)

Once the size of the HMO group was determined, a sample of fee-for-service patients of a comparable size was selected randomly. The criteria used for inclusion of the fee-for-service patient population were as follows: (1) The patient had to have entered the center as a new patient no earlier than December 1978, when the HMO group entered. (This aspect was controlled to assure comparison of two "new patient" groups. Physicians would, therefore, have the same time frame within which to acquaint themselves with both groups.) (2) As with the HMO group, the patient should be at least 18 years old. (3) Finally, the patient had to have been seen in the Family Practice Center at least two times.

The results of this sampling technique netted a total of 77 HMO patients and 79 fee-for-service patients. A comparison between these two groups sampled in this manner provides a comparison between the average HMO patient and the average new fee-for-service patient at the center. This sampling technique was also used by Kovner in a study of comparative differences in health care utilization by two groups of workers.[9]

The method used to evaluate office and telephone utilization by the two groups was an audit of their charts. Patient visits to the center and telephone calls are recorded in the chart. The numbers of visits and calls were totaled for individual patients and then tabulated by group.

To evaluate patient satisfaction the 11-item questionnaire developed by Tessler and Mechanic was utilized.[10] In July 1979 the questionnaire was mailed to the 77 GHP patients and 79 fee-for-service patients who had been matched on several demographic variables (eg, age, sex, marital status) and who had had at least two encounters with physicians at the Family Practice Center between December 1, 1978, and June 1, 1979. One follow-up letter was sent to patients who had not responded to the questionnaire by the established deadline. A total of 37 GHP patients responded for a response rate of 48 percent. Responses were received from 34 fee-for-service patients, yielding a comparable response rate of 43 percent.

Results

Educational Goal Attainment

Due to the lack of formal, objective evaluation of the educational goals of the center's GHP program, no definite conclusions can be drawn in this area. The author's impression is that knowledgeability of HMOs increased on the part of the residents, but cost consciousness was affected very little.

The Family Practice Center was more successful in introducing residents to the dynamics of caring for prepaid patients. By the end of the one-year contract, 539 patients and 167 families were enrolled at the center through the HMO (Table 1). During the contract period there was a monthly average of 116 physician encounters with HMO patients, or seven percent of the total patient encounters recorded (Table 2).

A chart audit revealed that each individual resident had at least eight HMO families enrolled in his/her practice with an average of ten families per resident. Each resident also had a minimum of eight encounters with HMO patients during just the first six months of the contract period. In summary, a sufficient number of HMO patients were enrolled in the practice and an adequate number had been seen by each of the residents to

Table 1. Cost Analysis of HMO Patient Care January-November 1979 (dollars)

	Number of Patients Enrolled	Family Practice Center Costs*	Specialist Costs**	Total Costs	Hypothetical Capitation (@ $9.50/ enrollee)	Hypothetical Profit/(Loss)
January	292	2,111	1,529	3,640	2,774	(866)
February	322	1,694	1,341	3,035	3,059	24
March	343	2,165	1,486	3,651	3,259	(392)
April	373	2,173	851	3,024	3,544	520
May	380	1,577	1,041	2,618	3,610	992
June	443	2,556	1,701	4,257	4,208	(49)
July	463	2,011	1,964	3,975	4,399	423
August	483	2,053	5,483	7,536	4,589	(2,947)
September	487	2,640	1,708	4,348	4,627	279
October	494	2,918	2,571	5,489	4,693	(796)
November	539	3,765	2,342	6,107	5,121	(987)
Average	420	2,333	2,002	4,335	3,989	(346)

*Includes in-office laboratory and injections
**Includes outpatient laboratory, x-ray, physicial therapy, and similar services

Table 2. Analysis of Monthly Family Practice Center Patient Visits for January-November 1978 and 1979

	HMO Visits 1979	Total Visits 1979	Total Visits 1978	Increase/ (Decrease) in Total Visits, 1978-1979
January	100	1,683	1,136	547
February	81	1,445	1,391	54
March	127	1,643	1,596	47
April	95	1,643	1,408	235
May	113	1,734	1,520	214
June	102	1,614	1,513	101
July	124	1,698	1,481	217
August	111	1,665	1,395	270
September	119	1,425	1,301	124
October	124	1,630	1,767	(137)
November	177	1,654	1,523	131
Average	116	1,621	1,457	164

conclude that physicians had been introduced to, and gained some exposure to, dealing with HMO patients.

Again, drawing conclusions about the impact that this interaction had on residents is limited by the lack of objective data. During both informal discussion and interviews, the residents' self-report was that they were growing more comfortable and confident in their ability to deal with prepaid patients.

Managerial Goal Attainment

The first goal in the area of service was to increase the size of the active patient panel enrolled in the practice. This goal was met most successfully. As can be seen in Table 2, an average of 116 encounters per month with HMO patients were recorded during the period under study. Also during that 11-month period total patient visits increased by an average of 164, or 10 percent per

Table 3. Additional* Monthly Administrative Costs of HMO Program

Position	Compensation ($) (including fringes)	Hours Spent	Cost ($)
Receptionist	4.98/hr	1.5	7.34
Nurse	5.25/hr	5.5	30.36
Clerk-typist	4.60/hr	6.25	28.75
Business manager	11.97/hr	2.0	23.94
Total			90.39

Note: Figures in the above table are based on an average of 116 HMO patient encounters per months
*Costs above and beyond those involved in processing fee-for-service patients

month over the previous year. So, although no direct cause and effect relationship can be established between the HMO program and overall practice growth, the number of HMO patient encounters does make up the greater part of the average monthly increase in patient visits to the center. Other variables, such as patients leaving the center to follow graduating residents into private practice and non-HMO patients not enrolling in the practice, as a result of being put on a waiting list necessitated by HMO patients filling the physicians' schedules, were not controlled for in this analysis.

In contracting with the GHP, a second goal was to assess the cost and cost effectiveness of the Family Practice Center caring for HMO patients. There are two major expense categories involved in contracting with and caring for patients from an IPA type of HMO. The first is the expense of administering such a plan, and the second is the cost of actually delivering health care to patients.

Administrative Costs

The primary expense in administering the GHP program at the Family Practice Center was personnel costs. HMOs generate paperwork above and beyond that in caring for self-paying patients. Additional time is required for form preparation and processing, reports and analyses, filing, liaison with the central HMO office, and system troubleshooting and problem solving.

On a monthly basis these costs averaged $90.39. As can be seen in Table 3, extra time was required of the reception and nursing staff, a clerk typist and the business manager of the practice. These figures reflect costs of maintaining the HMO program once it was developed. Additional time was required of the program director, business manager, and clerk-typist in negotiating the contract and creating the systems necessary to put into operation the HMO program in the center. Because the Family Practice Center was not acting as an individual practice association, but only as a medical provider, it did not incur all the normal expenses associated with involvement in the HMO. Had the Family Practice Center contracted as an individual practice association on a capitation basis, additional time, particularly on the part of the clerk-typist, would have been required. Based on the experience of other family physicians under contract with the Group Health Plan as individual practice associations, an additional 35 to 40 hours per month of clerk-typist time would be used in the HMO program, at a cost of about $175. This is assuming a volume of about 500 patient subscribers.

One variable that contributes to offset these administrative costs is the collection ratio, which for an HMO program is, in effect, 100 percent. The Family Practice Center of Akron has averaged a collection ratio of 92 percent over the past three years. Average monthly charges for in-office services to the GHP were $2,333 for the past year. Applying a collection ratio to this figure yields approximately $187 that would not have been collected. This figure would more than offset the cost of administering the HMO program under the fee-for-service contract for the past year. Another factor that offsets the additional administrative expense of an HMO is the lack of billing expenses (eg, materials, postage, and labor) which are incurred in

a fee-for-service system. However, these factors still fall short of offsetting the administrative expense of contracting as an individual practice association.

Patient Care Costs

The great bulk of the costs of HMO programs at the Family Practice Center of Akron fall in the area of actual patient care. Table 1 reflects the costs of caring for GHP patients on a fee-for-service basis from January 1, 1979, to November 30, 1979. It also shows the rate at which the Family Practice Center would have been compensated had it contracted on a capitation basis for that same period. The last column is the hypothetical profit or loss that the center would have experienced had it contracted on a capitation basis, rather than being reimbursed on a fee-for-service basis.

During the 11-month period considered in this analysis, an average of 420 HMO subscribers per month (column 1) were enrolled as patients at the Family Practice Center. The total cost per month for caring for GHP patients averaged $4,335 for the 11-month period. This figure is the sum of column 2, which includes all the charges to HMO patients made in the Family Practice Center, and column 3, which includes charges from specialists to whom GHP patients were referred. All charges for outpatient services not performed in the Family Practice Center such as laboratory and x-ray studies and physical therapy are included in column 3. Column 5 shows the monthly payments that the Family Practice Center would have received had the center been on a capitation rather than fee-for-service basis of reimbursement. The average monthly capitation payment (based on the 1979 rate of $9.50 per subscriber) for January to November 1979 would have been $3,989. The differences between column 4 and column 5, as reflected in the last column, are the hypothetical profits or losses experienced, had the center been on a capitation basis. Overall, the Family Practice Center would have experienced an average monthly deficit of $346.00 had it been reimbursed for HMO patient care via capitation.

One of the most notable phenomena in studying the data in Table 1 is the wide monthly variability in the costs of caring for HMO patients. This is somewhat evident in the monthly Family Practice Center charges (column 2); however, the deviations in specialists' charges (column 3) are even more pronounced. The charges ranged from a low of $851 in April to a high of $5,483 in August. There appear to be two major causes of these large fluctuations. One is the proportionately higher charges of the specialists as compared to the family physician. When a patient is a victim of a major trauma or develops a complex medical problem requiring extensive specialist care, the cost of such care can mount rapidly. The total cost for treatment of a single major problem of a patient can equal, and sometimes exceed, the cost of the family physician's caring for all other HMO patients for a month. A second cause of the variability of specialist charges is the accounting method used by GHPs. The organization uses a cost accounting technique so that charges are reflected by the month they are received and not necessarily in the month in which the service was rendered.

Given these two variables, it became increasingly apparent that the Family Practice Center had to look at the financial aspects of its affiliation with the GHP over a long term. In retrospect, the one-year contract with the HMO was a minimum term to compile and analyze data on which to base an informed decision to contract on a capitation basis.

Had the Family Practice Center chosen to be reimbursed by a capitated fee for its services to HMO patients at the outset, the center would have experienced an average monthly loss of $346. This figure yields a total hypothetical loss for the 11-month period of just over $3,800. As stated earlier, the figures for the first contract month, December 1978, could not be retrieved.

In addition to the losses resulting from patient care expenses, the additional administrative expense reported above of $90 per month adds another $1,080 to the loss. This yields a total loss of approximately $5,000 for the term of the contract. Had the center been acting as an individual practice association, this loss would have increased by $175 per month, or approximately $2,000 for the 11-month period under study.

There is one very large caveat which must be considered in reviewing and analyzing these figures. As stated earlier, the variability in the organization and financing of HMOs is very broad ranging. It must be remembered in analyzing these results and others throughout this report that such results were obtained from the study of one model of

a health maintenance organization, and the results might be very different in other models.

Demographic Profiles of HMO and Fee-for-Service Groups

The greatest difference between the fee-for-service patients and the HMO patients was found in the age category. As can be seen in Table 4, the fee-for-service patients' mean age was 35.5 years and the HMO mean age was 42.4 years. A significant difference between these two means was found using a t test.

Both groups had an equally high representation of females in the study, with 71 percent females for the fee-for-service patient group and 74 percent females for the HMO patient group. Whites and blacks were equally represented in both groups, at 87 percent and 13 percent, respectively.

Married persons comprised 57 percent of the patients in each group, but a difference in the unmarried segment varied according to whether the unmarried persons were divorced or single. For the fee-for-service patients only 11 percent were divorced as opposed to 19 percent of the HMO patients. Conversely, single patients were found to comprise 19 percent of the fee-for-service patients, whereas only 9 percent were single in the HMO group.

The educational status of the patients was relatively equal. The mean number of years of education for the fee-for-service patients was somewhat higher (12.6 years) when compared to the 12.1 years of education for the HMO patients. However, there was not shown to be a significant difference between the two groups on this variable when a t test was administered.

Utilization Patterns of HMO and Fee-for-Service Groups

Referring again to Table 4, it can be seen that 91 percent of the fee-for-service patients made no telephone calls to their physician as opposed to only 79 percent of the HMO patients. And 100 percent of the fee-for-service patients made two calls or fewer, while only 97 percent of the HMOs made two calls or fewer. However, the percentage of patients making more than one call represents only a small minority of patients in either group.

The mean number of visits to the center was actually lower for the HMO group. A greater percentage of fee-for-service patients (43 percent) visited their physician twice in comparison to the HMO group (35 percent). However, the HMO group had a higher percentage of patients making three and four visits at 46.8 percent compared to 36.7 percent for the fee-for-service group. This also is a very small overall difference between the two groups. If these two indicators of utilization of the center are taken together, they would tend to balance out to relatively no difference of utilization for the two groups.

Satisfaction with Health Care of HMO and Fee-for-Service Patients

Satisfaction with health care received by the patients was indicated by 11 items dealing with specific aspects of health care at the Family Practice Center. Table 5 indicates the great majority of all respondents were very satisfied with their health care. This is true over the broad range of variables included in the survey as well as in each of the specific items on the questionnaire. While fee-for-service patients were very satisfied in general with the care received, HMO subscribers indicated even higher levels of satisfaction on all but one of the items. Interestingly, these results are almost the exact converse of Tessler and Mechanic's findings.[10] In their study, although satisfaction was high, HMO patient satisfaction was generally lower than the non-HMO group. However, comparison with the Tessler and Mechanic study is severely limited by the fact that their research was done with patients from two distinct settings. One setting was for HMO patients, and the other setting served fee-for-service patients exclusively.

The data reported above indicate that, from the patient perspective, the Family Practice Center can maintain, in the short run, a high degree of patient satisfaction in delivering health care to a limited number of HMO patients. However, two major limitations were obvious in the study: (1) the poor response rate, and (2) the short duration of the affiliation with the HMO when the survey was done. These limitations can be overcome with similar studies in the future drawing on larger samples and seeking the opinions of HMO patients who have been enrolled in the center for a greater length of time.

Table 4. Demographic Profiles and Utilization Patterns

	Fee-For-Service Patients (n=79)			HMO Patients (n=77)		
	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
Age						
18-25 years	26	32.9	32.9	8	10.5	10.5
26-35 years	23	29.1	62.0	21	27.6	38.1
36-45 years	8	10.1	72.1	11	14.5	52.6
46-55 years	12	15.2	87.3	21	27.6	80.2
56-65 years	10	12.7	100.0	15	19.8	100.0
Total	79	100.0		76	100.0	
Mean	35.5			42.4		
Median	32.3			44.5		
Range	42.0 (19-61)			47.0 (18-65)		
Sex						
Female	56	71.0		57	74.0	
Male	23	29.0		20	26.0	
Total	79	100.0		77	100.0	
Race						
Black	10	13.0		9	13.0	
White	67	87.0		61	87.0	
Total	77	100.0		70	100.0	
Marital Status						
Married	45	57.0		43	57.0	
Divorced	11	14.0		19	25.0	
Single	19	24.0		9	12.0	
Spouse deceased	3	4.0		4	5.0	
Separated	1	1.0		1	1.0	
Total	79	100.0		76	100.0	
Education						
Less than high school	15	19.0		15	20.8	
High school	34	43.0		37	51.4	
Some college	21	26.0		11	15.3	
BA	7	9.0		8	11.1	
More than BA	0	0.0		1	1.4	
MA	2	3.0		0	0.0	
Total	79	100.0		72	100.0	
Mean (years)	12.6			12.1		
Median (years)	12.2			12.1		
Range	10 (8-18)			11 (6-17)		
Number of Calls						
0	72	91.0		61	79.0	
1	6	8.0		12	16.0	
2	1	1.0		2	3.0	
3	0	0.0		0	0.0	
4	0	0.0		2	3.0	
Total	79	100.0		77	100.0	
Number of Visits						
1-2	34	43.0	43.0	27	35.0	35.0
3-4	29	36.7	79.7	36	46.8	81.8
5-6	10	12.7	92.4	9	11.7	93.5
7-8	3	3.8	96.2	3	3.9	97.4
9-10	1	1.3	97.5	2	2.6	100.0
11-12	0	0.0	97.5	0	0.0	100.0
13	2	2.5	100.0	0	0.0	100.0
Total	79	100.0		77	100.0	
Mean	3.5			3.3		
Median	2.8			2.9		

Table 5. Report on Satisfaction with Medical Care Among HMO and Fee-for-Service Patients at the Akron Family Practice Clinic (%)

Measures of Satisfaction	Percentage "Very Satisfied" HMO (n=37)	Fee For Service (n=34)
1. Amount of privacy in doctor's office	100	94
2. Amount of time doctor spends with you/your children	89	91
3. The doctor's concern about you/your children's health	92	87
4. The doctor's warmth and personal interest in you/your children	88	85
5. Amount of information given you about you/your children's health	89	79
6. The doctor's training and technical competence	92	88
7. The doctor's friendliness	92	88
8. Friendliness of nurses, receptionists, etc	78	71
9. Quality of medical care you/your children have received	95	85
10. Adequacy of office facilities and equipment	95	85
11. The doctor's willingness to listen when you talk about you/your children's health	92	85

Discussion

Although there were formal presentations, informal discussions, and financial reports on the HMO program there was no objective assessment of the change in resident knowledge of HMOs or their cost consciousness. In addition, there were no built-in incentives for residents to become more cost conscious or more cost effective in their care of Group Health Plan patients. As a result no definite conclusions can be drawn as to the impact that the program had on residents. Chart audits revealed that all the residents had had some exposure to caring for GHP patients; however, again no definite conclusions can be drawn as to the impact on residents of this interaction.

It can be reported, anecdotally, that over the course of the year residents developed an attraction for caring for HMO patients. This was due, for the most part, to the fact that HMO patients came to the center as entire families. Residents unanimously reported to the author that in addition to the opportunity to care for whole families, they enjoyed the role of a health care broker with GHP patients. That is, once these patients had selected a family physician, they could not see another health care provider without the approval of that family physician. This requirement precluded the possibility of fragmented family care and "doctor shopping."

There was little change in the cost consciousness of residents as a result of the HMO program. There was a great deal of information readily available and accessible within the Family Practice Center and from the HMO that would have served as an excellent basis for health care cost education, but it was never compiled, analyzed, and presented to residents. The second major reason for the lack of any significant change in cost consciousness was the fact that the residents were insulated from the real impact of capitation payment by both the fee-for-service method of payment and by the fact that even under capitation they would not have been at risk financially.

Including an HMO component in the total residency program is analogous to the "model unit" concept in family medicine education. In educating future practitioners, there is no substitute for

seeing and working with the same variables as students that they will encounter as family physicians. This is true whether the varible is well-baby care, performing a pelvic and pap smear, or working with an HMO and its subscribers. Working with one prepaid group plan as residents has given graduates valuable knowledge and experience that has aided them in developing and managing their postresidency practices.

Anecdotally, four of the five 1979 graduates of the Family Practice Center of Akron established their practices in the Akron area. All four have been approached by an HMO seeking to contract for their services. Each of these graduates has conveyed to the authors the value and benefit of their experience with an HMO during their training in making the decision as to whether or not to contract as a provider in their own private practices.

The accomplishment of the goals in the managerial area, although better evaluated in the formal sense, was less clear-cut in terms of success than were educational achievements. The center was most successful in increasing the size of the active patient panel. Patient visits increased ten percent for the year, and at the end of the contract period HMO patient visits had constituted seven percent of the total monthly average for the year. The percentage climbed steadily as the year progressed, and HMO patients accounted for about 11 percent of all visits in the last month of the contract year. As this percentage grew during the year, the center established an upper limit of 15 percent on HMO patient visits. Although this quota was never reached, it was felt that the establishment of such a limit was vital to protect the residency in the event that the HMO contract was suddenly terminated for whatever reason or reasons.

As the contract year progressed, the center developed an additional concern about the patient panel. As the HMO movement began to gain momentum in the area, the possible ramifications of a number of educational, service, business, or industrial concerns, or just one or two large organizations, contracting with an HMO became more sharply focused. As HMOs step up and become more successful in their marketing efforts, the center, were it not affiliated with an HMO, might find itself in the position of losing established patients to providers who had contracted with an HMO. So what began as an effort to increase the patient panel was now potentially a way of retaining the panel that had previously been developed. These dynamics are obviously not limited to this Family Practice Center or this area of the country.

The amount of money lost by the center under a capitation plan of reimbursement was probably influenced by one variable more than any other. Utilizing the fee-for-service method of payment creates an incentive for residents and staff to perform more services, whereas the capitation method has the opposite effect.

Although the Family Practice Center would have lost money on the HMO program had it contracted on a capitation basis rather than fee-for-service, several factors made this unpleasant fact more acceptable. First, the hypothetical $5,000 loss for the year was just within the Family Practice Center itself. However, as a result of the affiliation with the HMO, the center's parent institution, Akron City Hospital, penetrated a market from which it had been excluded previously. As a result it realized an average monthly income of about $8,500 in laboratory, x-ray, and per diem charges to HMO patients cared for by Family Practice Center physicians and the specialists to whom they referred HMO patients. Since Akron City Hospital is responsible for funding the Family Practice Center, a part of the internal loss of the center would have been made up in additional income in other divisions of the hospital.

Second, a large part of any family practice residency budget is devoted to the education of residents as opposed to costs of service or patient care. The hypothetical loss in the HMO program was seen by the center and the hospital as a fiscally acceptable additional educational expense. Other residencies and hospitals will have to decide if such a philosophy is applicable to their situations. If it is applicable, then a determination will have to be made of the value of such an educational experience in terms of dollars "lost," if such is the case with an HMO program.

Third, as was stated previously, there was little or no additional cost consciousness education of physicians when the HMO program began or during the contract period. With the data that are available, this would be one of the most obvious and powerful methods of improving cost effectiveness. Such education would, however, have to be timed and presented in a manner appropriate to the level of training of residents.

Assessment of the office and telephone utilization patterns of the two groups did not yield the results that were expected based on the literature. The premise that HMO patients are more demanding on physicians' time and services was not borne out by the objective indices of telephone calls and office visits. The two groups were very similar in the number of phone calls to physicians, and the HMO group actually had a lower mean number of office visits during the period under study.

Several studies have been completed on the satisfaction of HMO patients with their health care.[10-13] All in all, these studies have reported no consistent trends of patient satisfaction or dissatisfaction with prepaid care. One study by Tessler and Mechanic compared employees of two large industrial firms, some of whom chose a prepaid plan and some of whom participated in alternative health insurance plans.[10] The investigators reported overall satisfaction by both groups; however, non-HMO subscribers "indicated significantly higher levels of satisfaction on most items."

The major service goal of the Family Practice Center of Akron is to deliver good health care to its patients. Periodic assessment of patient satisfaction with personnel and services has been performed since the inception of the program. Due to a lack of familiarity and experience with caring for patients covered by a prepaid plan and their assumed lack of experience with a family practice residency, there was special interest in GHP patients' reactions to the center, its services, and personnel.

The results of the survey of patient satisfaction were both surprising and pleasing. The overall satisfaction of both fee for service and HMO patients was very high. And that HMO patients reported even higher levels of satisfaction than fee-for-service patients allayed a great deal of initial anxiety about prepaid patient reaction to health care in the residency setting. The positive response of patients to their care at the center was further strengthened by the fact that nearly one half of the HMO patients surveyed had been through the difficult transition from a graduating senior resident physician to care by a junior resident. The limitations of response rate and lack of comparability to other studies are major obstacles to drawing any far-reaching conclusions about patient satisfaction.

In summary, the Family Practice Center of Akron's experience with an HMO was a positive one from the educational and managerial perspectives. The goals that were developed in contracting with the HMO were not fully accomplished, but the investment of time, energy, and money that was made returned more than adequate dividends in the education of residents and in the management of the center. Perhaps even more important than the answers that were derived from the experience were the questions that the center learned to ask in assessing an HMO and entering into a contract with such an organization. These questions have greater significance to family practice residencies, to family physicians in private practice, and to family medicine as a whole than do the answers to these questions for a specific residency working with a particular HMO for a one-year period in one area of the country. Residencies or family physicians considering becoming involved in a prepaid group plan would be well advised to ask themselves and the HMO the kinds of questions that the Family Practice Center of Akron asked, but much earlier, more clearly and specifically, and with a firm grasp on both the goals and nature of the two organizations involved.

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