

A Follow-up Comparison of Patient Satisfaction Among Prepaid and Fee-for-service Patients

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This study reports the results of a follow-up patient satisfaction survey that sampled patients enrolled in a capitation program and compared their satisfaction levels with otherwise similar patients in a fee-for-service program two years after the programs began. On a scale of 1 (very dissatisfied) to 5 (very satisfied), the mean general satisfaction level for 158 prepaid patients was 3.17 ± 0.70 , and 3.42 ± 0.61 for 87 fee-for-service patients ($P < .05$). This finding contrasts with no differences seen in a previous study of the same populations at six months after the programs began (mean general satisfaction levels of 3.26 and 3.36 for the prepaid and fee-for-service patients, respectively). A statistically significant difference also existed in the subdimension "technical aspects of quality of care": 3.38 ± 0.65 for prepaid patients, and 3.61 ± 0.53 for fee-for-service service patients ($P < .05$). Levels of satisfaction within other individual constructs were similar for both groups and tended to remain the same over two years, although satisfaction with access to care decreased among prepaid patients, and satisfaction with continuity of care increased among fee-for-service patients. These data support the hypothesis that overall satisfaction levels and certain aspects of patient satisfaction may be compromised by a capitation program.

Growing levels of health care expenditures over the past two decades mandate the need for health service planners to keep costs down. In one form of cost containment, known as capitation, risk sharing motivates physicians to reduce unnecessary costs by encouraging physicians to reduce unnecessary services.^{1,2} Risk sharing is such a potent cost-containment stimulus that it may motivate physicians to reduce important or even necessary services; as a result, successful capitation programs may reduce costs at the expense of quality of care.^{3,4} Patient satisfaction, a useful process measure of quality of care,⁵ is itself a desirable outcome of medical care⁶⁻⁹ and can now be measured with reliable and well-validated instruments.¹⁰

Previous studies have already examined satisfaction levels among prepaid patients.^{11,12} The Rand Health Insurance Experiment demonstrated that those patients who had chosen the health maintenance organization (HMO) were as satisfied overall with medical care providers and

services as their fee-for-service counterparts. When patients were randomized to either the HMO or fee-for-service program, however, the typical patient assigned to the HMO was less satisfied overall relative to fee-for-service patients. These results are difficult to interpret because, although patients were randomized, the investigators studied patients in a setting where different physicians cared for the different patient groups. Variation in satisfaction could be attributed, therefore, to differences between the two provider groups and not necessarily to the cost-containment programs.

In contrast, the study described herein took advantage of a unique situation in which the same physicians were involved in the care of patients in different financial arrangements.

This article reports the results of a follow-up patient satisfaction study that samples a capitation program two years after it began and evaluates the same population that it had sampled six months after the programs began. The earlier survey determined similar levels of satisfaction for both the capitation study group and the fee-for-service control group in a large teaching hospital in all the dimensions of patient satisfaction except the way in which patients perceived their physicians' "humaneness" behavior (prepaid patients were less satisfied than the fee-

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for-service patients). Because these two patient groups appeared similar, except in their system of reimbursement,¹³ and because patient satisfaction is a measurement of one aspect of quality of care,⁹ a lower level of satisfaction for prepaid patients should support the hypothesis that a capitation program may affect adversely at least this one aspect of quality of care.

METHODS

This follow-up study is a cross-sectional analysis of the same natural experiment that began in January 1984, when two new health insurance plans were introduced for employees and their families at the University of California at Los Angeles (UCLA): a prepaid program and a fee-for-service program. At that time patients enrolled in either of the two plans they preferred, but also had a choice of other HMO and fee-for-service plans allowing the use of non-UCLA providers. By choosing the prepaid program, patients would receive complete medical coverage free of charge within the university, including all diagnostic tests, consultations, office visits, and prescribed therapy. The university pays 100 percent of the premium; therefore, no cost-sharing incentives exist for the patient. Services must be provided at the institution and only through the direction of the primary care physician, so access to care is controlled by the primary care provider or a utilization review committee. In exchange for the capitation, physicians assume the costs of their patients' care by absorbing the costs of diagnostic tests and referrals and by providing them with physician time. The burden of high cost lies with the provider, not with the patient, making cost-effective behavior essential for the provider.

In the fee-for-service program, patients also receive comprehensive benefits but must pay a monthly premium and a deductible. Similar to those in the capitation system, fee-for-service patients pay no coinsurance. The fee-for-service program, however, does not encourage risk-sharing behavior among providers as does the prepaid program.

In terms of structure, the clinic physical environment and staff are identical for both insurance groups, including the providers, who are either house staff (physicians-in-training) or full-time physician faculty. Providers distinguish prepaid and fee-for-service patients by their charge documents, which must be completed by the provider at each visit. Cost-containment motivation is encouraged through (1) provider education about risk-sharing consequences, (2) utilization review, and (3) financial reward (more capitation is available to faculty providers in the form of bonuses when less is used to pay for patient care). About 25 family practice providers participate, and 10 to 40 percent of their individual practices consist of prepaid patients. The two patient groups include relatively healthy,

TABLE 1. EXAMPLE OF AN ITEM FOR EACH CONSTRUCT

Construct	Example
General satisfaction	"I'm very satisfied with the medical care I receive."
Access	"If I have a medical question, I can reach someone for help without any problems."
Availability	"There are enough family doctors around here."
Continuity	"I see the same doctor just about every time I go for medical care."
Finances	"I am happy with the coverage provided by medical insurance plans."
Physician conduct (humaneness)	"Doctors always treat their patients with respect."
Physician conduct (technical quality)	"Doctors aren't as thorough as they should be."

working, university employees and their families. Previous work has shown no significant differences in demographic variables defining these two particular groups, such as age, sex, marital status, employment status, and so on.¹³

Patient satisfaction was evaluated using a 26-item questionnaire (modified by abridging an instrument developed in previous work in the Rand Health Insurance Experiment⁷) two years after the prepayment and fee-for-service programs began. Each item consisted of a statement related to satisfaction with providers and specific features of medical care. The spectrum of answers included choices about how strongly patients agreed (strongly agree 5, agree 4) or disagreed (strongly disagree 1, disagree 2) with the statements. A response of uncertainty or indifference was indicated by a 3. Positive and negative items were alternated, but scoring was such that a higher score always indicated greater satisfaction.

The questionnaire tested six specific constructs with varying numbers of items: general satisfaction (4 items), access (4 items), availability (1 item), continuity (3 items), finances (1 item), and physician conduct, which equally weights the following two subdimensions, physician conduct-humaneness (7 items) and physician conduct-technical quality (6 items). Physician conduct-humaneness refers to the level of satisfaction a patient experiences with a physician's personal qualities, such as the ability to demonstrate caring, concern, and interest. Physician conduct-technical quality refers to the level of satisfaction a patient experiences with the physician's ability to act as a good technician as described by such qualities as completeness, appropriateness, or timeliness. An example of an item for each construct is listed in Table 1.

Surveys were distributed randomly to English-speaking patients in the Family Health Center of the University of California at Los Angeles Medical Center about six months after the institution of the prepayment and fee-for-service programs for the initial evaluation, and again after 24 months in the present follow-up evaluation. Patients were recruited randomly for the survey immediately after a visit with the physician. The same patients were not necessarily included in both the six-month and two-year evaluations. Over 85 percent of all patients sampled in both surveys completed the questionnaires satisfactorily, and of the 245 patients in the present survey, 158 (64.5 percent) belonged to the prepaid group, and 87 (35.5 percent) belonged to the fee-for-service group. In the Family Health Center, prepaid patients outnumbered the fee-for-service patients by two to one, which explains the proportional differences in sample sizes obtained after random sampling.

This study classified overall mean scores into five descriptive categories based on their satisfaction scores: very satisfied (≥ 3.50), satisfied (≥ 3.25 and < 3.50), neutral feelings (> 2.75 and < 3.25), dissatisfied (≤ 2.75 but > 2.50), and very dissatisfied (≤ 2.50). Satisfaction scores were calculated for each of six dimensions of patient satisfaction by determining the mean score of individual items relating to a single construct.

Power analysis was used to determine the necessary sample sizes. At an alpha level of 0.05 and a beta level of 0.20, sample sizes in this study were adequate in magnitude to determine a difference of 0.20 (delta = 5 percent). Average item scores were determined for the six individual dimensions of patient satisfaction. Thus, mean scores could range from 1 to 5, and small differences between the means of two groups (eg, 3.20 vs 3.40 = delta = 0.20, divided by the maximum possible range of 4.00, which equals 5 percent) may be very important. Differences of the population means were analyzed using Student's *t* test for unpaired data. When comparing the two population means from the first study with the two population means of the follow-up study (total of four means), analysis of variance (ANOVA) was used to decide whether any of the means were statistically different from the others. ANOVA adjusts for the problem encountered when multiple comparisons are otherwise tested with multiple *t* tests.

RESULTS

Prepaid and fee-for-service patients demonstrated a similar number of visits over six months to the physician, and both groups demonstrated the same trend over the two-year period. The average number of visits for prepaid patients after two years of enrollment in the program was

TABLE 2. MEAN SCORES FOR SATISFACTION CONSTRUCTS 24 MONTHS AFTER INTRODUCTION OF A PREPAID INSURANCE PROGRAM

Constructs	1986		Delta
	Prepaid	Fee for service	
	Mean (SD*)	Mean (SD)	
General satisfaction	3.17 (0.70)	3.42 (0.61)	-0.25**
Access	3.26 (0.74)	3.33 (0.75)	-0.07
Availability	3.32 (0.86)	3.20 (0.90)	+0.14
Continuity	3.79 (0.72)	3.90 (0.73)	-0.11
Finances	3.86 (1.01)	3.71 (1.06)	+0.15
Physician conduct	3.53 (0.57)	3.71 (0.50)	-0.18
Humaneness	3.76 (0.60)	3.87 (0.57)	-0.11
Technical quality	3.38 (0.65)	3.61 (0.53)	-0.23**

* Standard deviation
** *P* < .05

6.5, compared with 6.3 for fee-for-service patients. Six months after the programs began, the average number of visits was 2.2 and 1.8 for the two groups, respectively.

The general satisfaction score two years after the program began was 3.17 for prepaid patients and 3.42 for fee-for-service patients. This delta of 6.25 percent is statistically significant at the 0.05 level (Table 2). A similar difference was also present at the six-month evaluation (3.26 for prepaid patients, 3.36 for the fee for service), but was not then statistically significant. Among the prepaid patients, 40 percent scored in either the dissatisfied or very dissatisfied categories in contrast to 16 percent in the fee-for-service group (Table 3).

Analysis of the other individual dimensions of patient satisfaction revealed mean levels of satisfaction ranging from 3.20 to 3.90 (Table 2). The prepaid patients scored highest in satisfaction with finances (3.86) and lowest in satisfaction with access and availability (3.26 and 3.32 respectively). In contrast, fee-for-service patients scored highest in satisfaction with continuity (3.90), but also scored lowest in access (3.33) and availability (3.20). The majority of patients scored in the very satisfied range regardless of insurance type (Table 3).

In Table 4 is a comparison of prepaid patients with the fee-for-service patients with regard to trends in each satisfaction category over the 18-month study interval. Among prepaid patients, satisfaction with access decreased significantly. Among fee-for-service patients, satisfaction with continuity increased significantly.

DISCUSSION

One previously published study has reported consumer satisfaction with providers whose case mix included pre-

TABLE 3. DISTRIBUTION (PERCENT) OF PATIENTS BY SATISFACTION LEVEL AT 24 MONTHS

Satisfaction Constructs	Percent in Each Group				
	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
General satisfaction					
Prepaid	15	25	9	9	42
Fee for service	3	13	19	14	51
Access					
Prepaid	13	19	9	13	46
Fee for service	10	16	9	13	52
Availability					
Prepaid	13		47		40
Fee for service	17		51		32
Continuity					
Prepaid	5	9	7	8	71
Fee for service	5	3	3	13	76
Finances					
Prepaid	11		15		74
Fee for service	18		12		70
Physician conduct					
Prepaid	4	4	18	13	60
Fee for service	4	0	8	16	72
Physician conduct (humaneness)					
Prepaid	3	2	13	6	78
Fee for service	2	2	7	2	87
Physician conduct (technical quality)					
Prepaid	10	5	28	10	47
Fee for service	2	1	23	12	62

paid and fee-for-service patients.¹³ Repeating the survey helps eliminate the bias of a "new program" on levels of satisfaction. The repeated survey was also administered to obtain larger sample sizes and to verify the reproducibility of the initial results. At the time of this follow-up study, patients were also better experienced with the programs (as measured by an increase in number of reported visits to the physician), thereby making them better evaluators. Thus, overall validity is improved.

The greatest discrepancy between prepaid and fee-for-service patients appeared in the general satisfaction score, a measure of overall patient satisfaction, where there were 2.5 times more dissatisfied prepaid patients as fee-for-service patients. The 1984 survey also revealed a difference in the same direction, but the magnitude was less (and statistically not significant), suggesting that patients have become less satisfied overall in time.

It is not surprising that satisfaction scores for the prepaid group were lowest for the constructs access and availability, since health care costs are generally believed to be lowered in HMO settings by reducing these elements of the health care delivery system.¹⁴ Fee-for-service patients do not usually encounter the same barriers to health care as prepaid patients, so their levels of satisfaction with access and availability should be higher than the levels for

prepaid patients. But in this experiment, fee-for-service patients encountered the same barriers to health care as prepaid patients; therefore, it is also not surprising that the fee-for-service patients demonstrated relatively lower levels of satisfaction in the areas of access and availability.

Both groups were extremely satisfied with the continuity of their care, and satisfaction among fee-for-service patients increased over the two-year period. High levels of patient satisfaction with continuity of care is consistent with an important goal of family practice. As expected, levels of satisfaction with continuity are higher at 24 months, as patients have had more opportunity to experience continuity.

Prepaid patients receive most of their care for free, while the fee-for-service patients pay a small portion of the monthly premium. Six months into these two programs, the prepaid patients, as expected, expressed higher levels of satisfaction with finances, although both groups were satisfied. On the repeat survey, two years later, there were no differences. Perhaps fee-for-service patients believed they received better care and were therefore more willing to pay something extra for it.

Patient cost sharing reduces health care consumption, which may affect levels of satisfaction.¹⁵ Because prepaid and fee-for-service patients differ in their contributions to

TABLE 4. MEAN SCORES IN EACH SATISFACTION CATEGORY BY PAYMENT SYSTEM AT SIX MONTHS AND 24 MONTHS

Satisfaction Constructs	6 Months	24 Months
General satisfaction		
Prepaid	3.54	3.17
Fee for service	3.36	3.42
Access		
Prepaid	3.55	3.26*
Fee for service	3.46	3.33
Availability		
Prepaid	3.24	3.32
Fee for service	3.30	3.20
Continuity		
Prepaid	3.68	3.78
Fee for service	3.64	3.90*
Finances		
Prepaid	3.89	3.86
Fee for service	3.58	3.71
Physician conduct		
Prepaid	3.45	3.53
Fee for service	3.57	3.71
Physician conduct (humaneness)		
Prepaid	3.54	3.76
Fee for service	3.70	3.87
Physician conduct (technical quality)		
Prepaid	3.44	3.38
Fee for service	3.51	3.61

* P < .05

health care costs, it is possible that patients who pay more for health care expect more. Yet prepaid patients, who have free health care, scored lower, especially in global satisfaction and in virtually all the dimensions of satisfaction.

Physicians can manipulate their test-ordering and treatment behavior to control costs, especially with prepaid patients where risk sharing occurs. Unpublished data collected in the same health center as the one in this study indicate that prepaid hypertensive patients in this same program have fewer laboratory tests, chest x-ray studies, and consultations in comparison to their hypertensive fee-for-service counterparts. If physicians do minimize their care with prepaid patients, then prepaid patients might be expected to express lower levels of satisfaction with physician conduct as compared with fee-for-service patients. In fact, both the 1984 and 1986 surveys found this difference in satisfaction with physician conduct. Perhaps an even larger difference is not noted because patients may not be able to detect subtle differences in their physicians' test-ordering or treatment behavior or appreciate the importance of these differences.

Closer examination of the construct of physician conduct reveals more important differences. Similar to the

survey at six months, fee-for-service patients had higher levels of satisfaction with humaneness of their provider in the follow-up study, although this difference decreased over time. In 1984, fee-for-service patients also reported higher levels of satisfaction with the technical quality of their physicians' conduct compared with the prepaid patients. While fee-for-service satisfaction with technical quality increased in 1986, prepaid satisfaction with technical quality decreased. This difference of greater than 5 percent means that prepaid patients, compared with fee-for-service patients, perceive their provider as practicing lower technical quality of care. One recent study has demonstrated a positive correlation between a patient's perception of technical quality and a board of experts' perception of process measures of quality.¹⁶ If patient study groups are equal in all aspects except for prepaid patients' ability to stimulate cost-containing behavior, then these results suggest that cost-containment behavior, encouraged by a capitation program, may affect adversely the technical quality of care.

Perhaps the frequency or type of patient visits influenced the level of patient satisfaction or improved the likelihood of a more satisfied patient being selected for this survey. Although the mean number of visits was the same for both patient groups, a selection bias caused by the frequency of patient visits is still possible because the study design did not control for either the number or type of visit.

Patients were not assigned randomly to a health insurance plan. It is conceivable that differences in patient attributes that affect the choice of a health insurance plan also affect satisfaction levels with their health plan. The six-month study, however, did not demonstrate any major differences between the prepaid and fee-for-service patients in a wide variety of characteristics.

Small changes in satisfaction scores, especially among the fee-for-service group, may reflect patient disenrollment from one reimbursement program to another. Such an effect would be estimated to be small, as patients in either group can move freely from one program to another each year; nevertheless, this effect was not measured, and its contribution to these results remains unknown.

This study was conducted entirely within a teaching medical center; therefore, the providers may place a high priority on process of care issues for teaching purposes despite cost-containment pressures. This attitude could explain the generally high levels of satisfaction among both patient groups, but does not explain the observation that fee-for-service patients experience higher levels of general satisfaction and perceive higher technical quality of care than prepaid patients.

Because prepaid patients and fee-for-service patients are similar except in the method of reimbursement, and because cost-containment behavior among physicians

does in fact take place, these data support the notion that a cost-containment program may affect adversely at least this one aspect of quality of care. In their attempts to reduce the rising cost of health care, policy makers should consider the importance of this effect in deciding whether modifications in risk sharing are warranted.

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