ORIGINAL INVESTIGATION

Patient Attitudes Toward Physician Financial Incentives

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Background: Despite concern about the impact of financial incentives on physician behavior, little is known about patients' attitudes toward these incentives.

Objectives: To assess patient attitudes toward physician compensation models and to explore patient characteristics associated with these attitudes.

Methods: We mailed a survey to 2000 adult patients in a large New England health maintenance organization. We asked about their trust in their primary care physician; discomfort with compensation models of salary with withhold (salary), fee-for-service with withhold, and group capitation (capitation).

Results: One thousand one hundred twenty-five (56%) of the 2000 patients who responded expressed varying levels of discomfort with the proposed compensation models: 16% for salary, 25% for fee-for-service with withhold, and 53% for capitation ($P<.001$). Patients who knew their primary care physician was paid through capitation did not report less trust in their primary care physician but still frequently expressed discomfort (46%) with capitation. Among all respondents, those who were younger, white, had better health, had a higher income, were more educated, and who lacked a very trusting relationship with a primary care physician were more likely to report discomfort with both capitation and fee-for-service with withhold. In multivariable analyses, discomfort with capitation was more common among white patients (odds ratio, 2.6; 95% confidence interval, 1.6-4.2), patients with incomes exceeding $20 000 (odds ratio, 3.7; 95% confidence interval, 2.3-6.1), and college-educated patients (odds ratio, 2.0; 95% confidence interval, 1.4-2.7).

Conclusions: Most patients were uncomfortable with 1 or more of the 3 common methods used to pay physicians. Discomfort was highest with capitation and was more likely among wealthier, well-educated, white patients. With capitation increasing nationally, patients' concerns should be considered in the design of compensation agreements.

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In the past decade, there have been significant changes in how physicians are paid in the United States.[1-7] Different trends, including the increase in the number of physicians working as employees of health care organizations, and intensified efforts to use financial incentives to control costs and improve quality, have led to a tremendous variety of physician compensation models. Yet, there are still 3 basic methods of paying individual physicians: salary, fee-for-service, and capitation.[4] To each of these basic structures are usually added other components, chief among which are withholds and bonuses tied to the use of services, to the quality of care, and/or to measures of patient satisfaction.

Previous research has explored how physicians believe financial incentives affect patient care.[8] However, while previous research has studied the association between systems of care and health care outcomes,[9-12] to our knowledge, there are no data on associations between specific incentive types and health care outcomes. Despite this lack of data, physicians and the public have expressed strong concerns about the potential for "perverse" incentives to interfere with physicians' judgment. Rising suspicion about financial conflict of interest has spawned editorial anger, lawsuits, and calls for full disclosure of physicians' compensation arrangements.[13-15]

While some research has described a correlation between methods of physician payment and patients' satisfaction with, and level of trust in, their physicians,[16] to our knowledge, no previous studies have specifically assessed patients' expressed attitudes toward the 3 basic models of physi-

PATIENTS, MATERIALS, AND METHODS

STUDY SITE AND PATIENT SELECTION

The survey was performed among patients in Harvard Pilgrim Health Care (HPHC), a large mixed-model health maintenance organization (HMO) in New England. The Human Subjects Committee of the health plan approved the study design and all survey instruments.

Patients were eligible if they were 25 years or older, had been a continuous member of HPHC during the previous year, and had seen a clinician at least once during that time. From among all eligible patients, a survey sample of 2000 patients was created: 1000 patients randomly drawn from the division of the health plan that functioned as a staff model HMO, and 1000 patients randomly drawn from the division of the health plan composed of affiliated group practices. Both divisions served patients in the greater Boston area. At the time of this survey the staff model HMO physicians' compensation was based almost entirely on salary, with a 10% withhold on all salaries contingent on the financial performance of the entire division. In the group practices the proportion of patients with HPHC insurance varied. Each group practice had a capitation agreement with the health plan.

SURVEY DEVELOPMENT AND ADMINISTRATION

A written survey was created and pilot tested among 1000 patients in January 1997. Questions were retained for the final survey if they showed useful test characteristics (low skip rate or no ceiling or floor effect) in the pilot test. The survey was mailed out in February 1999; nonresponders received one follow-up reminder.

MAIN OUTCOME MEASURES

Sociodemographic information and insurance source (employer-based, Medicare, or Medicaid) were obtained from the computerized enrollment database of the health plan. Health status was assessed by the physical functioning subscale of the Medical Outcomes Study's Short Form-12 Item Questionnaire. Overall health and satisfaction with the health plan were assessed on a 5-point scale from excellent to poor.

Attitudes about compensation structures were measured by asking patients how comfortable they would be if their health plan paid for their care in one of several ways: salary with a less than 10% withhold, FFS with a less than 10% withhold, and physician group capitation (**Table 1**). The descriptions of the payment structures were created with advice from the health plan medical director to accurately describe the broad outlines of the major methods of physician payment in use within the plan. Patients recorded their level of comfort with each compensation method on a 5-point scale from very comfortable to very uncomfortable. In reporting the results we collapse very uncomfortable and uncomfortable together to compare with all other responses.

Patients' level of trust in their own PCPs was measured by asking them whether they agreed with the statement, "Overall, I have a very trusting relationship with my primary care doctor." Patients rated their response on a 5-point scale from strongly agree to strongly disagree. We considered patients to have a very trusting relationship with their PCP if they agreed or strongly agreed with the survey statement.

STATISTICAL ANALYSIS

χ^2 Test and t test statistics were used for univariate comparisons between patient characteristics and the level of discomfort with each payment type. Fisher exact test was used in any cells that had fewer than 5 observations. Multiple logistic regression was used for multivariable analyses to model these associations. Variables were included in the multivariable model if they were associated with the outcome variable in univariate analyses ($P<.05$).

cian payment in use today. How comfortable would patients be if their own primary care physician (PCP) were paid by salary, by fee-for-service (FFS), or by group capitation? Do they know how their own PCP is paid, and does this affect their comfort with these incentive types? This study was designed to address these questions, with an aim to inform current efforts to design compensation structures that will be judged as trustworthy in the public's eye.

RESULTS

DEMOGRAPHICS AND SATISFACTION

Of 2000 enrollees surveyed, 1125 (56%) responded. Respondents were older than nonrespondents (mean age±SD, 56±16.5 vs 48±15.2; $P<.001$) and were more likely to be female (61% vs 55%, $P=.007$). The sociodemographic characteristics of the respondents are listed in **Table 2**. Among respondents, 503 (45%) were in the staff model HMO; the remaining 622 (55%) were in the affiliated group practices.

Satisfaction with care experience in the health plan was high, with 839 (76%) of the respondents rating the overall quality of care they received as excellent or very good, and only 42 (4%) of the patients rating their care as fair or poor. Availability of care was also rated favorably: of all of the respondents, 417 (74%) stated that their ability to get the health care they needed was excellent or very good, and only 70 (6%) stated it was fair or poor. Of all of the respondents, 716 (65%) rated their ability to see a specialist as excellent or very good, and only 96 (9%) rated it as fair or poor. Patients' level of trust in their individual PCPs was high as well: only 29 (3%) of the patients disagreed or strongly disagreed with the statement, "Overall, I have a very trusting relationship with my primary care doctor."

KNOWLEDGE OF COMPENSATION SYSTEM

When patients were asked to indicate how their PCP was paid through the health plan, 657 (61%) stated that they did not know; there was no difference between the staff model HMO patients and the patients in the affiliated

Table 1. Payment Descriptions

Salary with withhold: Most of the doctor's pay is based on a salary from the health plan that is guaranteed regardless of the amount of services provided. A small percentage (<10%) of the salary is held back by the health plan and returned to the doctor at the end of the year if specific goals related to quality of care, member satisfaction, and financial performance have been achieved.

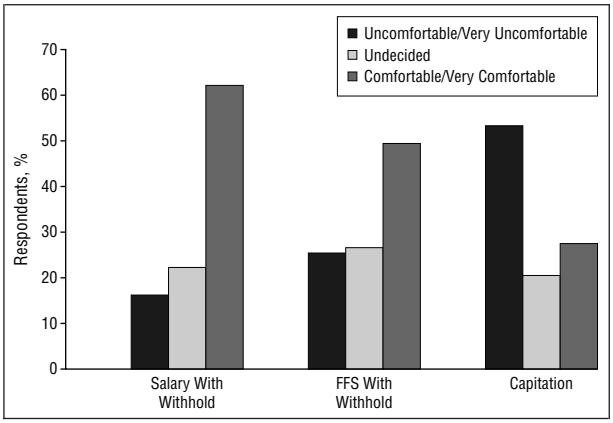
Fee-for-service with withhold: The doctor gets paid by the health plan separately for each service that they provide. A small percentage (<10%) of the doctor's fees is held back by the health plan and returned to the doctor at the end of the year if specific goals related to quality of care, member satisfaction, and financial performance have been achieved.

Capitation: A group of doctors (>10) receives a set dollar amount from the health plan at the beginning of the year for each health plan patient. The dollar amount is set at a level thought reasonable to pay the doctors for their services and to cover the costs of other care (such as tests or procedures). At the end of the year, if the cost of care for these patients has been less than the set dollar amount, the doctors, as a group, can keep most (>50%) of the surplus. If the cost of care for these patients has been more than the set dollar amount, the doctors as a group may lose money on these patients. The health plan will pay for the cost of very expensive treatments so that the doctors will not be at risk of losing a lot of money in the care of individual patients who might need expensive treatments.

Table 2. Characteristics of 1125 Patients

Characteristic	Percentage
Female	61
Age	56
>50 y*	59
Insurance type	
Employer-based	64
Medicare	35
Medicaid	1
Division type	
Staff model HMO†	45
Group practices	55
Annual income at least $20 000	80
White	90
College degree	47
Health rating	
Excellent/very good/good	90

**The mean age of patients was 56 years.*
†HMO indicates health maintenance organization.



The repondents' level of comfort with compensation structures. FFS indicates fee-for-service.

group practices (59% vs 63%, $P=.17$). Among patients in the staff model HMO, 160 (33%) correctly answered that their PCPs were paid by salary. Among patients in the group practices, only 39 (7%) correctly stated that their PCPs were paid through group capitation.

Among all patients, only 2% reported ever having had a discussion with their PCP about how the PCP was paid, but 62% of patients wanted to have more information on this topic. Of those patients who wanted more information, 67% wanted it to come from their health plan, 15% wanted it to come from their PCP, 6% wanted the information to come from both the health plan and their PCP, and 12% were not sure which source they preferred.

In both the staff model HMO and in the group practices, patients' trust in their PCP was high and did not seem to suffer as a result of knowing how their PCP was paid. In fact, patients in the staff model HMO who knew correctly that their PCP was paid by salary and a withhold were somewhat more likely to report a very trusting relationship with their PCP than patients who said they did not know how their PCP was paid (90% vs 83%, $P=.06$). In the group practices, the number of patients who knew their PCP was paid through group capitation was small, but these patients had identical levels of trust in their PCP as did patients who did not know how their PCP was paid (both groups 90%, $P=.90$).

ATTITUDES ABOUT COMPENSATION SYSTEMS

There were marked differences in patients' attitudes toward the 3 compensation structures. Among all respondents, 173 (16%) felt they would be uncomfortable if their PCP were paid by salary with a less than 10% withhold; 259 (25%) felt they would be uncomfortable if their PCP were paid by FFS with a less than 10% withhold; and 563 (53%) indicated that they would be uncomfortable if their PCP were paid based on group capitation (**Figure**). Among those patients who expressed discomfort with FFS and/or capitation (n=597), 222 (37%) were uncomfortable with both compensation structures. Of all respondents, 101 (10%) were uncomfortable with all 3 financial incentive descriptions.

Although the numbers are small, knowledge that one's own PCP was paid through capitation did not seem to reduce discomfort with this form of compensation. Of the 39 patients in the group practices who knew their PCPs were paid by capitation, 18 (46%) expressed discomfort with capitation. Of the 338 patients in the group practices who stated they did not know how their own PCP was paid, 168 (50%) expressed discomfort with capitation ($P=.68$).

There were several patient characteristics that were correlated with discomfort with both FFS and capitation (**Table 3**). Younger patients were more likely to express discomfort, as were healthier patients. Wealthier patients and those with more education were also more likely to express discomfort, as were patients with employer-based insurance and those in the staff model HMO. Patients without a very trusting relationship with their

Table 3. Univariate Correlates of Discomfort With Fee-for-Service and Capitation for 1071 Respondents*

Characteristic	Respondents Uncomfortable or Very Uncomfortable With Fee-for-Service, %	*P*	Respondents Uncomfortable or Very Uncomfortable With Capitation, %	*P*
Age, y				
≤50	29	.002	62	.001
>50	21		47	
Sex				
Female	25	.52	55	.38
Male	24		52	
Race				
White	25	.27	55	.001
Nonwhite	20		36	
Annual income, $				
≥20 000	27	.001	61	.001
<20 000	8		18	
Educational level				
College degree	32	.001	69	.001
No college degree	17		39	
Health rating				
Excellent/very good/good	26	.021	55	.001
Fair/poor	16		36	
No. of visits per year				
<3	27	.25	59	.04
≥3	24		53	
Insurance type				
Employer-based	30	.001	64	.001
Medicare	14		33	
Practice type				
Staff model HMO	32	.001	61	.001
Group practices	18		47	
Very trusting relationship with PCP				
No	34	.01	63	.02
Yes	23		52	

**HMO indicates health maintenance organization; PCP, primary care physician. P values are based on χ^2 analyses.*

PCP were also more likely to express discomfort with either type of compensation.

In multivariable analyses, patients' income, education level, and type of insurance remained significantly associated with their attitudes about both FFS and capitation (**Table 4**). An annual household income of more than $20 000 was the characteristic most highly correlated with discomfort with both FFS and capitation (odds ratio [OR], 2.3; 95% confidence interval [CI], 1.2-4.3 and OR, 3.7; 95% CI, 2.3-6.1, respectively). Patients with a college education were also more likely to be uncomfortable with both FFS and capitation (OR, 1.7; 95% CI, 1.2-2.5 and OR, 2.0; 95% CI, 1.4-2.7, respectively). Patients in the staff-model HMO were more likely to be uncomfortable with FFS than patients in the group practices (OR, 1.7; 95% CI, 1.2-2.5).

Table 4. Adjusted Odds Ratios for Patient Characteristics Associated With Discomfort With Fee-for-Service (FFS) and Capitation*

Characteristic	FFS, OR (95% CI)	Capitation, OR (95% CI)
White race	1.4 (0.8-2.4)	2.6 (1.6-4.2)
Annual income >$20 000	2.3 (1.2-4.3)	3.7 (2.3-6.1)
College education	1.7 (1.2-2.5)	2.0 (1.4-2.7)
Commercial insurance (compared with Medicare)	1.8 (1.0-3.1)	1.9 (1.1-3.1)
Staff model HMO patient	1.7 (1.2-2.5)	1.3 (0.9-1.8)

**Values were adjusted for age, sex, health status, and the presence of a very trusting relationship with a primary care physician. OR indicates odds ratio; CI, confidence interval; and HMO, health maintenance organization.*

COMMENT

Testing patients' knowledge about how their health plan pays for their care is complicated by the complexity of contractual arrangements among health plans, physician groups, and PCPs.[17] We specifically asked patients about how their health plan paid for their care, but in many cases this may not reflect how the individual PCP is paid through an intermediary physician group.[18,19] Our study found that most patients knew little about how their health plan paid PCPs for care, a finding consistent with previous research.[20] Most patients in this study did want to know more about how their PCP was paid, but very few had ever had a discussion about this with their own PCP.

When asked, hypothetically, how they would feel if their PCP was paid through each of 3 common payment methods, most patients expressed discomfort with 1 or more. More than half of all patients said they would be uncomfortable if their PCP were paid through group capitation, while a quarter of the patients were uncomfortable with a payment based on FFS with a less than 10% withhold on use. Salary with withhold was the most acceptable compensation structure, but 16% of patients indicated that they would be uncomfortable or very uncomfortable with even this relatively mild form of financial incentive.

The high rate of discomfort with capitation has added significance given the increasing rates of capitated care nationally.[6] Almost half (46%) of the patients in this study who knew that their own PCP was paid through capitation still indicated that they were very uncomfortable or uncomfortable with that method of compensation. Interestingly, while expressing discomfort with the idea of capitation, these patients did not demonstrate reduced trust in their own PCPs. Our results suggest that it is possible that discomfort with the concept of capitation may not penetrate through to erode the trust that has been established in an existing patient-physician relationship.

Given the common perception that capitation and FFS offer opposing financial incentives to PCPs,[21-23] the discomfort with both FFS and capitation that many patients expressed seems paradoxical. On further analysis, however, the common element that bothered patients may have been conflict of interest.[24] Under both FFS and capitation patients may have perceived a link between the quantity of patient care and the income their PCPs receive. Patients may not be accustomed to thinking about any association between their PCP's clinical decisions and income considerations,[25] and the discom-

fort the patients reported may thus be a nonspecific response to this association.

Patients who were well educated and wealthy expressed more discomfort with both FFS and capitation. Their higher levels of discomfort may arise from a greater exposure to negative media attention to HMOs, particularly with concerns that financial incentives might influence physicians' clinical decisions.[26] Also, this group of patients may be more willing to question the value of their health plan, whereas a more vulnerable population (poor or less educated) may have fewer health care options and thus be more accepting of their current health plan and provider group.

Because of regional differences in the prevalence of managed care, it is difficult to generalize these patients' attitudes to a broader population. However, New England has some of the highest rates of managed care in the nation, and of capitation in particular, and like the rest of the country, these rates are steadily climbing here.[6] The attitudes of patients in this area may serve to predict nationwide attitudes in the future.

The high levels of expressed discomfort in our study are relevant in the context of recent efforts to mandate financial disclosure by health plans and/or PCPs. Currently,[22] states require HMOs to explain physician financial incentive systems to enrollees,[27] and since January 1997 the Health Care Financing Administration has required managed care organizations to inform Medicare beneficiaries about their financial incentive structures.[28] Current policy statements by the American Medical Association urge disclosure of incentives by physicians,[29] but there is some concern that disclosure without careful forethought will be potentially disruptive to the patient-physician relationship.[15,25]

Some researchers are attempting to develop and test communication strategies for physicians to aid them in the discussion of financial incentives. Their hope is to prevent disruption of the patient-physician relationship.[30] Although very few of the patients we surveyed were aware of how their own PCP was paid, there was no evidence that this knowledge was associated with a less trusting relationship with their PCP. While efforts to develop communication strategies proceed, further research is necessary to help understand the specific nature of patients' concerns about financial incentives, and to explore how these concerns may affect their trust in their own PCPs.

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