A Trial of Disclosing Physicians’ Financial Incentives to Patients

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Background: Concern regarding financial conflict of interest for physicians has led to calls for disclosure of financial incentives to patients. However, limited data on the outcomes of disclosure exist to guide policy.

Methods: This randomized trial was conducted among 8000 adult patients at 2 multispecialty group practices based in the Boston, Mass, and Los Angeles, Calif, areas. Intervention patients were mailed a compensation disclosure letter written by the chief medical officer of their physician group, and all patients were surveyed approximately 3 months later.

Results: Disclosure patients were significantly more able to identify correctly the compensation model of their primary care physician, in Boston (adjusted odds ratio, 2.30; 95% confidence interval, 1.92-2.75) and in Los Angeles (adjusted odds ratio, 1.37; 95% confidence interval, 1.03-1.82). Disclosure patients also had more confidence in their ability to judge the possible influence of incentives on their health care: in Boston, 32.5% vs 17.8% (P < .001); and in Los Angeles, 31.8% vs 26.4% (P = .20). The disclosure intervention did not change trust in primary care physicians overall. However, of patients who remembered receiving the disclosure, 21.4% in Boston and 24.4% in Los Angeles responded that the disclosure had increased trust either greatly or somewhat, while in both cities less than 5% of patients responded that the information decreased trust. Patients’ loyalty to their physician group was higher among disclosure patients in Boston (73.4% vs 70.2%; P = .03) and Los Angeles (74.1% vs 66.9%; P = .08).

Conclusions: Among diverse patient populations, a single mailed disclosure letter from physician groups was associated with improved knowledge of physicians’ compensation models. Patients’ trust in their physicians was unharmed, and their loyalty to their physician group was strengthened. For physician groups with similar compensation programs, disclosure to patients should be considered an effective method to enhance the patient-physician relationship.

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During the 1990s, and through the early years of this decade, capitation and other physician payment methods that reward cost savings were the focus of considerable ethical and public policy concern. Commentaries by physicians, media reports, editorial cartoons, and even popular movies raised alarms that these new physician payment methods were creating hazardous conflicts of interest that would keep physicians from recommending expensive, but necessary, care.1-5 This increasing suspicion about financial incentives spawned individual and class action lawsuits, and was a prominent part of the managed care “backlash.”6,7

In the wake of this broad concern about the “perverse” incentives in managed care, many commentators8-12 have called for disclosure of physician incentives. By the late 1990s, 28 states had developed some form of requirement for health plans to disclose financial incentives contained in physician contracts.13 Widespread disclosure of financial incentives by physician groups, however, while frequently recommended on ethical and policy grounds, has never materialized. Opponents of physician disclosure of incentives have consistently made 2 claims: that disclosure would not help patients make informed choices about their health care and that disclosure, by raising the question of conflict of interest, would undermine trust between patients and physicians.13-15

To address this question, we performed a randomized trial in which letters disclosing details of the compensation system for primary care physicians were sent to patients at 2 large physician groups. This article reports the impact of disclosure on patients’ understanding of their physicians’ financial incentives, and on patients’ degree of trust in and loyalty toward their physician groups and personal primary care physicians.
Boston: Harvard Vanguard Medical Associates

Harvard Vanguard receives payments from the insurer of each patient who chooses to receive care at one of our practices. The money received is pooled centrally, and your primary care doctor gets a regular paycheck twice a month from Harvard Vanguard. Approximately 70% of your doctor's pay is a simple flat salary based on how many years he or she has been in practice. The remaining 30% of each doctor's take-home pay is variable and is determined by measuring two factors: 1) the number of patients for whom the doctor is listed as the primary care provider (panel size); and 2) the number and the complexity of patient visits seen by that doctor. These two factors, when taken together, are meant to reflect how hard the doctor is working to take care of his or her patients. Each doctor is compared to the other doctors in Harvard Vanguard to determine how much their individual variable compensation will be above or below the group's average.

The numbers of tests, treatments, and referrals ordered by an individual doctor have NO direct influence on how much money he or she will make. The costs of expensive tests and treatments are spread over the entire patient population of Harvard Vanguard, so no individual doctor needs to feel that “the bottom line” exerts undue pressure on the care of an individual patient.

Los Angeles: Healthcare Partners

We receive money from the many health insurers (health plans) that we accept to provide your medical care. That money is pooled centrally. From that pool, we pay your HealthCare Partners doctors a monthly salary. We also use money from that pool to cover all medical costs needed to take care of each of you. Costs of expensive tests and treatments are spread over the entire patient population of HealthCare Partners. That means no individual doctor feels undue pressure about “the bottom line” when making decisions about your care. Our doctors receive a salary based on their years of practice. They also receive incentives based on:

- The number of patients they care for;
- Their quality of care as judged by fellow physicians;
- Their overall adherence to treatment guidelines for certain diseases;
- Their overall performance as a team player; and
- Your satisfaction with their care.

You can feel confident that your doctor will discuss with you all treatments of proven value for your condition or illness, regardless of whether the treatment is a covered benefit. That said, health care is expensive, and we do encourage our doctors to help keep those costs under control. We cut waste, provide care more efficiently, and eliminate unnecessary testing and treatments. We coordinate specialty care through our own group of specialists, which helps us in this effort.…

Figure. Excerpts from disclosure statements describing compensation systems.

METHODS

PARTICIPATING MEDICAL GROUPS AND DISCLOSURE STATEMENTS

The study was performed among patients of 2 multispecialty physician group practices: Harvard Vanguard Medical Associates in the Boston area and HealthCare Partners Medical Group in the Los Angeles, Calif, area.

Harvard Vanguard Medical Associates and HealthCare Partners Medical Group contract directly with multiple insurers and receive insurance payments that contain a mixture of capitation and fee-for-service mechanisms. At the time of this study, Harvard Vanguard Medical Associates received approximately 75% of its revenue from capitation, while HealthCare Partners Medical Group received close to 90%; both proportions were higher than the average capitation revenue for all US physician groups, but were representative of the revenue structure for larger medical groups not organized as independent practice associations.16,17 Primary care physicians in both groups were paid according to a formula determined by each group’s compensation committee; as in most medical groups, compensation represented a blending of several different elements and was not a simple pass-through of the incentives inherent in the contracts at the group level.16

For this study, the chief medical officer of each medical group worked separately to draft a disclosure letter for patients with the explicit goal of giving enough information to allow the average person to understand the basic model of compensation and any other potential incentives that could affect total compensation. Key excerpts from each letter describing the specifics of the compensation programs are shown in the Figure. The complete disclosure letters are also available (http://www.dacp.org/spdocuments.html).

PATIENT SELECTION, DISCLOSURE INTERVENTION, AND OUTCOME MEASURES

Patients were eligible if they were 25 years or older and had been listed as a patient within the group practice for a year or more. Initial samples of 3000 patients at Harvard Vanguard Medical Associates in Boston and 3000 at HealthCare Partners Medical Group in Los Angeles were identified. Physicians in both medical groups were made aware of the study and sent a copy of the disclosure statement, but received no specific training or advice regarding conversations with patients about financial incentives.

Patients in the database from each medical group were randomly assigned to the control or intervention arm of the study. The disclosure letters were mailed once only to all intervention patients at both sites during the early weeks of December 2003. Approximately 8 to 12 weeks later, all patients at both sites, intervention and control, received a mailed survey. The survey included questions about health status and demographics, knowledge of the method of compensation for primary care physicians within the medical group, self-assessed degree of confidence in knowing enough about physicians’ method of compensation to be able to judge the possible influence on health care decisions, trust that primary care physicians would put patients’ health and well-being above costs, and loyalty toward primary care physicians and the physician groups. Most questions were constructed with 5-point Likert response scales. Questions were taken from research instruments used in prior research, several of which had been developed through focus groups and patient cognitive testing.19 The study design and all instruments were approved by the Harvard Pilgrim Health Care Human Studies Committee.

STATISTICAL ANALYSIS

The main analyses of the study were framed to measure the effectiveness of the disclosures by comparing all patients who were sent the disclosures (intervention) with those who were not sent the disclosures (control). Parallel analyses to evaluate the maximal impact of the disclosure statements were performed comparing control patients with patients who were sent a disclosure and indicated that they remembered receiving it.

Comparisons of the responders and nonresponders to the surveys are based on t tests and χ² tests. All other tests are Wald-type tests based on generalized estimating equations, which were used to control for clustering among patients sharing a primary care provider.20 Given the differences in disclosure letters and site population characteristics, analyses were stratified by site. Univariate P values from generalized estimating equations adjusted only for clustering by primary care provider. All other results described as “adjusted” in the text derive from multivariable generalized estimating equations, including variables for age, sex, race (Hispanic, black, Asian, or white), education (less than 4-year college degree vs 4-year degree or more), and self-reported health (very good or excellent, good, fair, or poor). All analyses were performed using SAS statistical software, version 8.2 (SAS Institute Inc, Cary, NC).

RESULTS

Among the 5000 patients identified in Boston, 250 had incorrect addresses or were deceased. The response rate to the survey was 48.4% (1138/2352) among disclosure
Table 1. Demographic Characteristics of Responders to the Patient Survey

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Control Group (n = 1277)</th>
<th>Intervention Group (n = 1138)</th>
<th>Control Group (n = 549)</th>
<th>Intervention Group (n = 533)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean ± SD, y</td>
<td>54.7 ± 14.0</td>
<td>54.1 ± 15.0</td>
<td>55.2 ± 18.0</td>
<td>57.9 ± 16.0</td>
</tr>
<tr>
<td>Female sex</td>
<td>57.9</td>
<td>58.1</td>
<td>59.5</td>
<td>59.6</td>
</tr>
<tr>
<td>Self-described health status of “excellent” or “very good”</td>
<td>60.8</td>
<td>63.2</td>
<td>50.7</td>
<td>45.6</td>
</tr>
<tr>
<td>Highest level of education completed†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>2.8</td>
<td>2.3</td>
<td>3.7</td>
<td>8.2</td>
</tr>
<tr>
<td>High school</td>
<td>14.8</td>
<td>11.4</td>
<td>25.1</td>
<td>21.7</td>
</tr>
<tr>
<td>2-y College</td>
<td>14.3</td>
<td>13.9</td>
<td>25.8</td>
<td>34.6</td>
</tr>
<tr>
<td>4-y College</td>
<td>24.9</td>
<td>31.0</td>
<td>26.0</td>
<td>23.4</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>43.3</td>
<td>41.4</td>
<td>18.3</td>
<td>13.8</td>
</tr>
<tr>
<td>Race†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>76.7</td>
<td>78.4</td>
<td>52.2</td>
<td>54.2</td>
</tr>
<tr>
<td>Black</td>
<td>11.7</td>
<td>10.7</td>
<td>7.3</td>
<td>9.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.5</td>
<td>2.7</td>
<td>22.9</td>
<td>18.1</td>
</tr>
<tr>
<td>Asian</td>
<td>4.5</td>
<td>5.4</td>
<td>12.2</td>
<td>13.1</td>
</tr>
<tr>
<td>Other</td>
<td>3.5</td>
<td>2.7</td>
<td>5.4</td>
<td>4.8</td>
</tr>
</tbody>
</table>

*Data are given as percentage of each group unless otherwise indicated. In Boston, the responders were 53.3% (1277/2398) of the control group and 48.4% (1138/2352) of the intervention group. In Los Angeles, the responders were 56.8% (549/1421) of the control group and 38.6% (533/1449) of the intervention group.
†Percentages may not total 100 because of rounding.

patients and 53.3% (1277/2398) among control patients. In Los Angeles, 130 patients had surveys returned as undeliverable. Response rates were lower in Los Angeles (P<.01): 36.8% (533/1449) among disclosure patients and 38.6% (549/1421) among control patients.

Compared with nonresponders, responders to the survey in both medical groups were older (mean ± SD age, 54.6 ± 15.0 vs 48.8 ± 15.0 years; P<.001) and more likely to be female (57.7% vs 53.3%; P<.001). As shown in Table 1, patients responding to the survey represented a diverse mix of racial backgrounds and educational levels, with distinct differences between the Los Angeles and Boston populations. Los Angeles patients included more Hispanics and Asians, whereas Boston patients were more highly educated, with 70.2% having a 4-year college degree or more; in Los Angeles, only 40.6% of patients had 4-year college educations or more and 29.4% had not progressed beyond a high school education. The differences in race and educational background between the Boston and Los Angeles patients were statistically significant (P<.01 for all).

When asked if they remembered receiving the disclosure statement, 34.4% of disclosure patients in Los Angeles answered affirmatively, 18.9% were not sure, and 46.8% answered no. In Boston, 54.1% of disclosure patients responded that they remembered receiving it, 14.0% were not sure, and 31.9% indicated that they did not remember the disclosure at all (P<.01).

The effects of the disclosure statements on patients’ knowledge of incentives are shown in Table 2. Among control patients in Boston, 18.9% mistakenly believed their physician was paid by fee-for-service and 10.8% gave capitation as the most likely compensation model, whereas 43.2% responded incorrectly that their physicians were paid “a salary with a bonus if the entire medical group has done well financially at the end of the year.” In Los Angeles, the most common incorrect answer among control patients was also the salary plus bonus model, but, compared with Boston, more patients gave fee-for-service as the answer, and nearly 1 in 5 mistakenly believed their primary care physician was being paid by capitation.

When surveyed 8 to 12 weeks after having received the disclosure, disclosure patients were significantly more able than control patients to identify correctly the form of the compensation received by their primary care physician. This effect was significant at both sites, but was more pronounced in Boston, where the proportion of patients able to identify correctly the method of compensation was 27.1% among control patients, 45.1% among all disclosure patients (P<.001), and 56.9% among disclosure patients who remembered receiving the disclosure (P<.001).

In univariate analyses stratified to assess the impact of disclosure among various patient subgroups, disclosure patients at both sites had higher rates of correctly identifying their physicians’ compensation model compared with control patients in all major racial subgroups (black, Asian, Hispanic, and white) and among patients in all educational strata. Multivariate analyses adjusting for sociodemographic variables confirmed the significant correlation of the disclosure intervention with a correct identification of the compensation model, in Boston (adjusted odds ratio, 2.30; 95% confidence interval, 1.92-2.75) and in Los Angeles (adjusted odds ratio, 1.37; 95% confidence interval, 1.03-1.82).

In addition to gaining improved knowledge of the compensation model, patients at both sites who received the disclosure had more confidence that they knew enough about how their primary care physician was paid to be able to judge the possible influence on their health care. The percentage of patients agreeing or strongly agreeing with this assessment in Boston was 17.8% among con-
Table 2. Impact of Disclosure on Knowledge of Incentives in Boston, Mass, and Los Angeles, Calif

<table>
<thead>
<tr>
<th>Type of Incentive</th>
<th>Boston Group†</th>
<th>Los Angeles Group†</th>
<th>Patients Mailed a Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control Patients</td>
<td>All Patients Mailed a Disclosure</td>
<td>Who Remembered Receiving the Disclosure</td>
</tr>
<tr>
<td>A salary plus a smaller portion based on the number and complexity of patients seen ‡</td>
<td>27.1</td>
<td>45.1 (P&lt;.001)§</td>
<td>56.9 (P&lt;.001)§</td>
</tr>
<tr>
<td>A salary with a bonus if the entire medical group has done well financially at the end of the year</td>
<td>43.2</td>
<td>33.7</td>
<td>28.0</td>
</tr>
<tr>
<td>Fee-for-service: based on the number and complexity of patients seen</td>
<td>18.9</td>
<td>14.9</td>
<td>13.2</td>
</tr>
<tr>
<td>Capitation: a set amount per patient per month from which the physician gets to keep what is left over after medical care expenses</td>
<td>10.8</td>
<td>6.3</td>
<td>1.9</td>
</tr>
</tbody>
</table>

*Data are given as percentage of patients in each group.
†There were 2398 control patients, 2352 patients who were mailed a disclosure, and 1270 patients who were mailed a disclosure and who remembered receiving the disclosure.
‡This was the correct answer.
§P values compare these patients with control patients.

Table 3. Impact of Disclosure on Trust and Loyalty in Primary Care Physicians in Boston, Mass, and Los Angeles, Calif

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control Patients</th>
<th>All Patients Mailed a Disclosure</th>
<th>Patients Mailed a Disclosure Who Remembered Receiving the Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust in primary care physician to put health and well-being above costs*</td>
<td>84.9</td>
<td>83.9 (P = .71)†</td>
<td>86.5 (P = .32)†</td>
</tr>
<tr>
<td>Feel loyal to medical group and unlikely to switch groups in the next couple of years‡</td>
<td>70.2</td>
<td>73.4 (P = .03)†</td>
<td>74.7 (P&lt;.01)†</td>
</tr>
<tr>
<td>Los Angeles Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust in primary care physician to put health and well-being above costs*</td>
<td>74.8</td>
<td>78.6 (P&lt;.01)†</td>
<td>82.2 (P = .10)†</td>
</tr>
<tr>
<td>Feel loyal to medical group and unlikely to switch groups in the next couple of years‡</td>
<td>66.9</td>
<td>74.1 (P = .08)†</td>
<td>76.0 (P = .11)†</td>
</tr>
</tbody>
</table>

*Data are given as percentage of patients who completely or mostly agree. There were 2398 control patients, 2352 patients who were mailed a disclosure, and 1270 patients who were mailed a disclosure and who remembered receiving the disclosure.
†P values compare these patients with control patients.
‡Data are given as percentage of patients who strongly agree or agree. There were 1421 control patients, 1449 patients who were mailed a disclosure, and 493 patients who were mailed a disclosure and who remembered receiving the disclosure.

Control patients, 32.5% among all disclosure patients (P<.001), and 42.8% among patients who remembered receiving the disclosure (P<.001). The corresponding results among patients in Los Angeles was 26.4% among control patients, 31.8% among all disclosure patients (P = .20), and 46.4% among patients who remembered receiving the disclosure (P<.001).

Patients who remembered receiving the disclosure were asked to judge how the information they received had affected their trust in their primary care physician. More than 70% of patients in Boston (76.9%) and Los Angeles (72.0%) responded that it had not changed their level of trust, while 21.4% of patients in Boston and 24.4% of patients in Los Angeles responded that the disclosure had increased trust either greatly or somewhat. In both cities, less than 5% of patients who remembered receiving the disclosure responded that the information decreased trust somewhat, and not a single patient responded that it had decreased trust greatly.

In neither patient population did a disclosure intervention produce statistically significant changes in levels of trust in primary care physicians (Table 3). In Los Angeles, for example, 74.8% of control patients completely or mostly agreed with the statement that they trusted their primary care physician to put their health and well-being above costs; this level of trust was expressed by 78.6% of all disclosure patients and by 82.2% of patients who remembered receiving the disclosure.

When patients were asked whether they felt loyal to the larger medical group and would be unlikely to switch to medical groups in the next couple of years unless they moved away, 66.9% of control patients in Los Angeles
agreed or strongly agreed, compared with 74.1% of all disclosure patients and 76.0% of patients who remembered the disclosure. In Boston, because of the larger sample size, improvements in loyalty to the physician group reached statistical significance: loyalty was expressed by 70.2% of control patients, 73.4% of all disclosure patients, and 74.7% of patients who remembered receiving the disclosure.

As a measure of overall reaction to the disclosure statements, patients who remembered receiving a disclosure were asked “How useful was the information about how your primary care doctor is paid?” In Los Angeles, 20.6% replied very useful; 50.6%, somewhat useful; 22.4%, neutral; and 6.5%, not useful (percentages do not total 100 because of rounding). Similarly, in Boston, 69.5% of patients responded very or somewhat useful and only 7.6% replied not useful. In Los Angeles and Boston, 70% or more of patients who remembered receiving the disclosure responded that they believed that medical groups should routinely send out this kind of information telling patients how their physicians are paid. Less than 10% disagreed with this statement.

While it has been recognized that all forms of compensation, even based on pure salary, can present physicians with conflicts between their personal interests and the interests of their patients, a sharp sense of alarm was raised in the 1990s by new forms of capitated payments, withhold, and bonuses. These forms of compensation became linked in the public’s mind with the view that managed care organizations sought to increase profits by providing incentives to physicians to withhold care. Surveys published at the time showed that more than 50% of patients who mistakenly believed their physicians were being paid through capitation or were using incentives linked to use or cost patterns. The most recent available published data indicate that use of capitation as the predominant method of base compensation has declined, but approximately 75% of physician organizations still pay their physicians in some kind of blended format, with incentives tied to productivity, quality of care, or use. To our knowledge, reliable data that would help researchers or the public judge the scope, size, and intensity of these incentives are not available.

Disclosure is one possible remedy for concerns about financial conflicts of interest. However, many have wondered whether disclosure would actually do more harm than good. In one report, Hall and colleagues found that disclosures by health plans of various forms of incentives increased knowledge of these incentives among patients while having negligible, if any, effects on patients’ trust in health plans or physicians. To our knowledge, no prior studies, however, have examined the impact of disclosure directly by physicians or physician groups to their own patients.

In diverse patient populations in Boston and Los Angeles, our study demonstrated that 1-time inexpensive mailings of 2 different disclosure statements each produced significantly improved knowledge of how physicians in the groups were compensated. Although compensation methods are intrinsically complicated, improved knowledge was seen among patients with all levels of education. Patients who received a disclosure felt more competent to judge the impact of their physician’s compensation on their health care, and nearly a quarter of patients who remembered receiving a disclosure reported that it had increased their trust in their primary care physician. However, careful comparison by one of us (S.D.P.) of the disclosure letters with the details of the compensation program at both groups revealed no inclusion of potentially worrisome information; in particular, neither of the groups involved in this study linked the variable component of primary care physician compensation to the fiscal performance of the overall organization.

The disclosure letters in this study, while having a positive effect on understanding overall, left many patients unable to identify the basic method through which their physicians were compensated. Even among patients who remembered receiving a disclosure, more than 50% did not feel like they knew enough to be able to judge the possible influence of their physician’s compensation on their health care. Disclosure’s limitations must be acknowledged: it will most likely always be imperfect and inadequate to endow all patients with an understanding of compensation and the risks for conflict of interest. But, our study also showed that there were still many patients in Boston and Los Angeles who mistakenly believed that their physicians were being paid through capitation or a bonus tied to year-end financial performance. It is possible that the public’s perception of physicians’ compensation, framed so vividly in the 1990s by car-
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REFERENCES