

Quality Monitoring and Management in Commercial Health Plans

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The spread of capitation within the managed care sector during the early 1990s intensified concerns about quality of care as a major potential problem for the US healthcare system.¹⁻³ Until that point, the vast majority of US physicians had been compensated using fee-for-service (FFS) payments, which, if anything, were believed to lead to overprovision of services.⁴ Under capitation, however, physicians and other providers of care had financial incentives to provide fewer services, leading to fears that physicians would skimp on care.⁵ These concerns contributed to the development and promulgation of the multiple quality measures and measurement activities that are common today.

Over the past 15 years, quality monitoring has become commonplace, and there has been increased interest in harnessing the organizational capabilities of health plans and hospitals to improve the quality of care.⁶⁻⁸ Most organizational efforts have included systematic collection and examination of clinical data, and use a variety of strategies such as physician and/or patient education, physician- and patient-specific feedback, public release of data, and financial incentives designed to improve adherence with accepted standards of care. Managed care plans occupy a unique place within the healthcare system, affording them the opportunity to access a variety of clinical and financial data that can be used in quality improvement activities.

Despite the importance of organizational efforts to monitor and improve quality of care, few data exist that describe the actual quality management practices of health plans.⁹⁻¹³ The data that do exist are a decade old. In the interim, there have been tremendous advances in information systems and other electronic capabilities that can enhance the capacity of health plans to engage in medical management activities. In this study we examined the current state of quality management activities of a nationally representative sample of commercial HMOs, particularly those activities related to the collection and use of clinical data. We hypothesized that health plans that primarily use capitation rather than FFS to compensate primary care physicians (PCPs) would have more highly developed quality management programs.

METHODS

Overview

We conducted a survey of a national sample of HMOs about their quality management activities (hereafter, we interchangeably use the terms “health plan” and HMO). We chose to focus on HMOs because among all types of health plans, they have the most advanced quality man-

Objective: To examine the current state of quality monitoring and management activities of US health plans.

Study Design: Cross-sectional survey.

Methods: We surveyed medical directors of 252 commercial HMOs (96% response rate) drawn from 41 nationally representative markets in the United States. We randomly sampled healthcare markets with at least 100,000 HMO enrollees. The markets in our sampling frame include an estimated 91% of US HMO enrollees and represent 78% of the metropolitan population.

Results: There was near-universal collection of data at the health plan level for each of the 7 outpatient measures we examined (ranging from 92.1% of health plans that collect data on hypertension control and cholesterol management (see p. 379) to 99.2% that collect data on patient satisfaction). There also was substantial data collection at the level of the individual provider or physician group (ranging from 50.4% for hypertension control to 81.4% for diabetes care); this was more common in health plans that primarily use capitation to reimburse primary care physicians. Health plans that collected data typically fed these data back to physician groups, but public reporting to enrollees was infrequent.

Conclusions: Almost all health plans measured their performance on multiple indicators of quality. The majority of health plans also collected data at the level of the individual physician or group and used these data in quality improvement activities, but not in public reporting. Thus, adoption of physician-level performance measurement and reporting by the Centers for Medicare & Medicaid Services will likely entail a major change for individual physicians.

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agement infrastructure. There are currently more than 70 million enrollees in HMOs nationally.¹⁴ We estimated the prevalence of specific quality management activities using a set of representative quality indicators related to chronic disease management and prevention selected from the Health Plan Employers Data and Information Set (HEDIS). We previously reported on a subset of these data that focus on pay for performance (P4P).¹⁵

Survey Sample and Data Collection

We surveyed representatives of HMOs in 40 randomly selected markets (metropolitan statistical areas [MSAs]) in the United States with at least 100,000 HMO enrollees. The markets in our sampling frame include an estimated 91% of US HMO enrollees and represent 78% of the metropolitan population. Population data were obtained from the 2000 Census,¹⁶ and market-level HMO penetration was determined from the 2004 InterStudy Competitive Edge database.¹⁷ To ensure that the sample would be distributed proportionally across the 4 census regions, we stratified our sampling by region according to its proportion of the total population. The probability of selection for markets within each region was in turn equal to its population share. We allowed only 1 primary MSA (PMSA) per consolidated MSA (CMSA) to be selected for the final sample. PMSAs are the individual, contiguous metropolitan areas that make up a CMSA.¹⁶ This choice was made to limit sampling of contiguous markets. Because New Orleans was in our original sample and Hurricane Katrina occurred before we had completed all the interviews for that MSA, we added a 41st metropolitan area from the same census region (San Antonio). The analysis includes the responses of medical directors at 3 health plans from New Orleans who had been interviewed prior to Hurricane Katrina.

We identified all health plans with an HMO product in the 41 selected markets using the InterStudy database, which was supplemented with information from state insurance commissioners. Information from InterStudy also was used to identify potential respondents in each plan (generally medical directors or directors of quality management). When sampled health plans were part of a regional or national plan, the survey was sent to the part of the organization that made the quality management policy decisions. Letters and information sheets were mailed to potential respondents and were followed with phone calls requesting participation. The survey was conducted between July 2005 and January 2006 and was administered by phone, except in one case where a large national plan elected to complete a subset of the questions in writing, which was supplemented with phone interviews.

Survey Design

The survey instrument elicited information related to the organizational characteristics of the health plan, its products and purchaser contracts, provider contracting, quality improvement activities, and “member-centric” health improvement efforts. Unless otherwise noted below, the frame of reference for the survey was 2005. Cognitive testing of a draft instrument was conducted with 5 health plans that were not in our sample prior to finalizing the questionnaire.

We first elicited information about the numbers of enrollees in the sampled market, the use of primary care gate-keeping, accreditation by the National Committee for Quality Assurance (NCQA), and ownership (for profit, not for profit). Next, we asked about the degree to which the plan relied on salary, capitation, and FFS payment for compensating PCP services. We were not able to distinguish between primary care payment arrangements with organizational entities such as large medical groups versus those with individual physicians, so individual physicians belonging to large medical groups might not be paid directly by capitation payments themselves in instances when the health plan used capitation payments for PCP services.

We then asked a series of questions about data collection programs at the level of the health plan as a whole, as well as at the level of physicians or groups of physicians within the plan. For these questions, we selected 7 tracer measures from HEDIS in the areas of patient satisfaction (1 measure), prevention (1 measure), mental health (1 measure), and other chronic disease management (4 measures) that we thought would be most important to an employed population. The measures were patient satisfaction, breast cancer screening, antidepressant medication management, hypertension control, use of appropriate medications for asthma, comprehensive diabetes care (including assessment and control of glycosylated hemoglobin, cholesterol assessment and control, retinal eye exams, and nephropathy screening), and cholesterol management after heart disease (defined as achieving a low-density lipoprotein cholesterol level <100 mg/dL). For ease of presentation, we focused our presentation of regression analyses on 4 of these measures, including 1 each in the areas of satisfaction, prevention, mental health, and other chronic disease management. The results for the other 3 quality indicators were qualitatively similar.

At the health plan level, we asked if the plan collected information on the measure, used the information obtained to target quality improvement efforts, or had demonstrated improvements in quality. At the physician/group level, we asked if the plan collected information, provided this information to the physicians/groups, used the information in a report

card for enrollees, or used the information in a P4P program. We also inquired into 2 patient-specific uses of data: whether the plan sent patient-specific feedback to the responsible physician and whether the plan sent specific reminders directly to patients (eg, for a flu shot).

Finally, we also elicited information on the collection and use of hospital performance data. For these questions, we inquired into the collection of data regarding the Leapfrog standards (eg, intensive-care-unit staffing, physician order entry, procedure volume),¹⁸ National Quality Forum Safe Practices, Joint Commission on the Accreditation of Healthcare Organizations core measures,⁶ nurse staffing ratios, complication rates,¹⁹ risk-adjusted mortality rates,²⁰ and patient satisfaction surveys.²¹ We then asked whether these data were used to define hospital tiers (eg, with varying copayment levels) or to provide increased payments.

Analysis

We first summarized the plan- and enrollee-weighted characteristics of our sample. We next described the prevalence of plan-level and physician-level quality management activities both overall and stratified by capitated versus noncapitated methods for compensating PCPs. We lumped together plans that paid doctors by FFS and salary because we thought that the incentives in capitated plans to constrain utilization might result in heightened emphasis on quality management in these plans. We also examined analyses excluding the small number of plans that paid physicians by salary and the results were substantially the same; therefore, these results are not presented. Health plans were categorized as primarily capitated if they reported that 50% or more of PCPs were compensated via some form of capitated arrangement. To test the bivariate association between quality management activities and PCP payment methods, we modeled the odds of plan participation in each quality activity by using logistic regression. To adjust for clustering of health plans within markets, we adopted a generalized estimating equation approach to estimation.

We chose HMO characteristics to examine as covariates for the above multiple regressions based on previous studies and our judgment about the factors that would increase the likelihood of adopting quality management activities.^{9,22,23} These included region, model type (defined as independent practice association [IPA]/network vs group/staff), ownership, market share (a measure of size defined as above or below the median market share in the sample), and a requirement that enrollees have an assigned PCP (with or without a “gatekeeping” role) that would facilitate the attribution of patients to accountable physicians. However, requirements for use of a

gatekeeper were highly correlated with use of capitation payment, so our final models adjust only for region, model type, ownership, and health plan market share. For adjusted analyses, adjusted percentages are presented for each of the dependent variables we examined. Because of the large number of dependent variables, we do not present coefficients and odds ratios for the individual control variables. We considered *P* values less than 0.05 to be statistically significant. We did not adjust for multiple comparisons in our analyses, so our conclusions should be considered hypothesis generating.

RESULTS

Among 309 health plans we initially identified, 57 were found to be ineligible because they no longer offered a commercial HMO product in the relevant market (*n* = 36), had closed entirely (*n* = 11), or were duplicates (*n* = 10). Of the 252 eligible plans, 242 completed the survey (96% response rate). The overall item response rate was more than 90%.

Of the 242 health plans, 77 (32%) primarily compensated PCPs via some form of capitation, and the remainder used FFS (63%) or salary (5%) (Table 1). Capitated and salary plans were more commonly located in the West (53% and 42%, respectively, compared with 16% of FFS plans; overall *P* < .001) and less commonly located in the South (17% and 25%, respectively, compared with 42% of FFS plans; overall *P* = .015). The vast majority of plans were network or IPA model plans, and about two thirds were for profit. Most health plans required the use of a gatekeeper.

Collection and Use of Physician Performance Data

At the health plan level, there was near-universal collection of data for each of the 7 outpatient measures we examined, ranging from 92.1% of plans for hypertension control and cholesterol management to 99.2% of plans for data on patient satisfaction (Table 2). Health plans also frequently reported that they target these individual measures for improvement. The most commonly targeted measures were diabetes care (97.5% of plans) and breast cancer screening (93.0% of plans). A somewhat lower percentage of health plans targeted the other 2 measures of chronic disease management (hypertension control and cholesterol management, 68.6% and 83.1%, respectively). Substantial proportions of health plans also reported that they had documented improvement on these measures, ranging from a low of 45.5% of the plans for breast cancer screening to a high of 93.0% for diabetes care.

Although not as universal as at the health plan level, substantial data collection activities also were reported at the level of individual providers or physician group, ranging from

■ **Table 1.** Health Plan Characteristics

Characteristic	Percentage				P ^a
	All (N = 242)	Capitation (n = 77)	Fee for Service (n = 153)	Salary (n = 12)	
Region					.015
Northeast	20	18	22	8	
South	33	17	42	25	
Midwest	17	12	20	25	
West	29	53	16	42	
Model type					.003
Network/IPA	93	96	99	8	
Staff/group	7	4	1	92	
Gatekeeping					
PCP as gatekeeper	68	77	66	42	.021
PCP required but not as gatekeeper	13	9	13	33	.207
PCP not required	19	14	21	25	.366
For-profit	66	69	69	8	.018
Plan size (HMO enrollment)					.087
<50,000	47	44	50	25	
50,000-250,000	31	23	35	33	
>250,000	22	32	15	42	
HMO penetration in the market	30	38	26	33	.025

IPA indicates independent practice association; PCP, primary care physician.
^aP values were obtained by using a generalized estimating equation model to control for clustering at the market level.

■ **Table 2.** Data Collection and Use in Quality Improvement Activities for 7 Selected Measures

Measure	Plan-level Data, % (n = 242)			Physician/Group-level Data (n = 242)			
	Collect Data	Target Measures	Demonstrate Improvement	Collect Data	Provide Feedback	Use in Pay for Performance	Use in Report Cards
Patient satisfaction	99.2	92.6	74.0	56.2	47.1	27.3	17.8
Breast cancer screening	98.3	93.0	45.5	77.7	67.4	35.1	23.6
Antidepressant medication management	91.3	84.3	47.5	53.7	38.4	17.4	13.6
Hypertension control	92.1	68.6	58.3	50.4	37.6	14.5	12.8
Appropriate asthma medication use	95.0	87.6	81.4	79.8	68.6	33.1	21.5
Diabetes care	98.8	97.5	93.0	81.4	72.3	40.5	25.2
Cholesterol management	92.1	83.1	73.1	68.2	58.3	28.9	19.0

a low of 50.4% for hypertension control to 81.4% for diabetes care. Moreover, most health plans that collected individual-level or group-level data also fed these data back for use by the physicians or physician organizations in their quality improvement efforts. Fewer health plans used these measures in P4P

programs. The most frequently used measure in P4P programs was diabetes care (used by 40.5% of plans), whereas relatively few plans used the hypertension control or antidepressant medication management measures in this way (14.5% and 17.4%, respectively). Twenty-five percent or fewer of the

health plans reported data to enrollees in report cards (ranging from 13.6% for antidepressant medication management to 25.2% for diabetes care).

Collection and Use of Hospital Performance Data

Most health plans collected a variety of performance data about hospitals in their network, including 76.4% that examined data on standards promulgated by the Leapfrog group and 63.6% that examined data from the Hospital Quality Alliance (Table 3). Few health plans used these data to define hospital tiers with differential copayments or to provide extra payments to hospitals. For instance, approximately 20% of health plans used any hospital performance data to provide extra payments to hospitals and slightly fewer used these data to define hospital tiers.

Data Collection and Use in Capitated and Fee-for-Service Health Plans

At the health plan level (Table 4), there were relatively few differences in the collection and use of performance indicators between capitated and FFS health plans in both unadjusted and adjusted analyses. In general, capitated plans almost universally collected data on performance measures in each domain (100% for all measures except antidepressant medication management) and targeted these measures for improvement. Although FFS plans collected data almost as frequently, the measures were targeted for improvement less frequently. For instance, in adjusted analyses, although 98.8% of FFS plans collected satisfaction data, 90.2% targeted this measure for improvement, compared with 99.0% of capitated plans that targeted this measure for improvement ($P = .03$). In unadjusted analyses, capitated health plans reported more success in actually improving care. These differences were no longer significant after adjustment for other health plan characteristics.

At the physician/group level (Table 5), differences between capitated and FFS plans were more substantial in terms of data collection and use in P4P programs, but there was no significant difference with regard to feedback to physicians. After adjustment, 76.1% of capitated health plans collected patient satisfaction data compared with just 47.1% of FFS

Table 3. Collection and Use of Hospital-level Performance Data (n = 242)

Quality Management Activity	Percentage
Collect data	
Leapfrog	76.4
NQF safe practices	55.4
HQA measures	63.6
Nurse staffing ratios	17.8
Complication rates	57.4
Mortality rates (risk adjusted)	61.6
Patient satisfaction data	32.2
Define hospital tiers based on quality	
Any quality indicator	16.1
Leapfrog ICU staffing	8.3
Leapfrog computerized physician order entry	8.3
Leapfrog evidence-based referral for volume-sensitive procedures	6.2
Provide increased payments to hospitals based on quality	
Any quality indicator	19.8
Leapfrog ICU staffing	7.0
Leapfrog computerized physician order entry	5.8
Leapfrog evidence-based referral for volume-sensitive procedures	4.5

NQF indicates National Quality Forum; HQA, Hospital Quality Alliance; ICU, intensive care unit.

plans confirm ($P < .01$). With the exception of antidepressant medication management, the majority of capitated health plans (ranging from 54.9% to 74.2%) used these measures in P4P programs, compared with 14.6% to 25.2% of FFS plans ($P < .001$ for all comparisons). About one third of capitated plans used most of these measures in report cards to enrollees, whereas use in report cards was less frequent in FFS plans, but statistically significant only for antidepressant medication management.

Use of Patient-Level Data

Health plans also used their data to remind patients about needed care and to provide patient-specific reminders for physicians (Table 6). Both capitated and FFS health plans commonly reported sending patient reminders, with rates of about 90% for mammography and diabetes care reminders. Physician reminders, although also common, were used somewhat more frequently by capitated health plans than by FFS health plans.

■ **Table 4.** Collection and Use of Plan-level Data for Quality Improvement

Quality Management Activity	Unadjusted, %			Adjusted, % ^a		
	Capitation (n = 77)	FFS/Salary (n = 165)	P ^b	Capitation (n = 77)	FFS/Salary (n = 162)	P
Collect data						
Patient satisfaction	100.0	98.8	— ^c	100.0	98.8	—
Breast cancer screening	100.0	97.6	—	100.0	98.1	—
Antidepressant medication management	96.1	89.1	.20	96.1	89.5	—
Diabetes care	100.0	98.2	—	100.0	98.8	—
Target for improvement						
Patient satisfaction	98.7	89.7	.02	99.0	90.2	.03
Breast cancer screening	100.0	89.7	—	100.0	90.1	—
Antidepressant medication management	92.2	80.6	.07	92.4	80.6	.06
Diabetes care	100.0	96.4	—	100.0	96.9	—
Demonstrate improvement						
Patient satisfaction	75.3	73.3	.54	76.7	73.4	.26
Breast cancer screening	57.1	40.0	.04	59.6	39.5	.30
Antidepressant medication management	62.3	40.6	<.001	61.5	40.2	.09
Diabetes care	98.7	90.3	.10	98.7	90.7	—

FFS indicates fee for service; IPA, independent practice association; POS, point of service; GEE; generalized estimating equation.
^aAdjusted by region, model type (network/IPA vs group/staff), tax status, and size of HMO/POS (<50,000, 50,000-250,000, >250,000) with a GEE model.
^bP values were obtained by using a GEE model to control for the clustering effect of metropolitan statistical areas.
^cUnable to calculate adjusted P value because some cells had 100% performance.

DISCUSSION

To our knowledge, these data provide the first detailed picture of the quality monitoring and management practices of commercial health plans in the current era. There are 3 notable findings. First, health plans are almost universally collecting and reporting data on HEDIS measures, and very often these measures have been the target of health plan efforts in quality improvement. Second, a substantial proportion of plans are now measuring and feeding back HEDIS-type performance data to physicians or medical groups within their care delivery network, as well as using these data in P4P programs. However, unlike plan-level performance data, data on medical groups and individual physicians are infrequently made available to enrollees to allow comparisons of performance. Third, a smaller but substantial percentage of plans are collecting analogous data on hospital performance, although to date most health plans have not used hospital performance data to guide tiering or payment.

The almost-universal collection of data at the plan level should not come as a surprise. Often driven by employers or

other purchasers of care such as the federal government, health plans have adopted quality measures promulgated by the NCQA (ie, HEDIS measures) or the National Quality Forum.^{8,24} Furthermore, NCQA accreditation now requires monitoring of these types of measures, as do contracting requirements for Medicare and many state Medicaid programs.²⁵ More striking, however, is the prevalence of quality measurement and management activities for physicians and physician groups within the delivery network. Such data collection efforts hold the potential to improve the capacity of health plans to influence care, and our study shows that many plans use these data for quality improvement efforts including feedback and P4P. Despite the availability of information about individual physicians and medical groups, health plans only infrequently use these data for public reporting to enrollees. In addition, there is some variability by measure, which might be related to the ease of collecting data for various measures (eg, through administrative claims vs the medical record review that is required for some measures).

There may be a number of good reasons why commercial health plans are not engaged in public physician/medical

■ **Table 5.** Collection and Use of Physician/Group-level Data for Quality Improvement

Quality Management Activity	Unadjusted, %			Adjusted, % ^a		
	Capitation (n = 77)	FFS/Salary (n = 165)	P ^b	Capitation (n = 77)	FFS/Salary (n = 162)	P
Collect any measure of clinical quality	96.1	84.8	.02	96.1	85.2	.05
Collect data on provider performance						
Patient satisfaction	76.6	46.7	.001	76.1	47.1	.004
Breast cancer screening	88.3	72.7	.002	88.1	71.7	.02
Antidepressant medication management	66.2	47.9	.005	66.2	47.8	.04
Diabetes care	94.8	75.2	.006	94.8	75.3	.01
Provides feedback						
Patient satisfaction	58.4	41.8	.02	59.1	41.6	.13
Breast cancer screening	64.9	68.5	.45	64.4	64.5	.53
Antidepressant medication management	44.2	35.8	.33	44.1	35.3	.87
Diabetes care	75.3	70.9	.36	75.1	72.0	.90
Used in pay for performance						
Patient satisfaction	54.5	14.5	<.001	54.9	14.6	<.001
Breast cancer screening	70.1	18.8	<.001	70.2	19.2	<.001
Antidepressant medication management	36.4	8.5	<.001	37.4	8.6	<.001
Diabetes care	74.0	24.8	<.001	74.2	25.2	<.001
Used in report card						
Patient satisfaction	32.5	10.9	.05	32.9	11.1	.55
Breast cancer screening	33.8	18.8	.36	33.0	17.9	.31
Antidepressant medication management	16.9	12.1	.47	17.0	11.1	<.001
Diabetes care	33.8	21.2	.70	32.1	20.3	.13

FFS indicates fee for service; IPA, independent practice association; POS, point of service; GEE, generalized estimating equation.
^aAdjusted by region, model type (network/IPA vs group/staff), tax status, and size of HMO/POS (<50,000, 50,000-250,000, >250,000) with a GEE model to control for the clustering effect of metropolitan statistical areas.
^bP values were obtained by using a GEE model to control for the clustering effect of metropolitan statistical areas.

group profiling, including concerns about sample sizes and more general worries over backlash from physicians. However, these data foreshadow an important change that is ahead for practicing physicians. Congress has mandated that the Centers for Medicare & Medicaid Services develop plans to institute P4P in Medicare, and it seems highly likely that the Centers for Medicare & Medicaid Services will begin its physician-level efforts with public reporting on individual doctors and medical groups, a strategy it has pursued for hospitals, health plans, and nursing homes.^{8,26-28} Public release of performance data at the level of individual physicians or groups of physicians is likely to be very controversial, raising questions about attribution of patients to a single physician or group, accuracy of estimates due to small sample size, and adjustment for clinical

and sociodemographic characteristics that affect measured performance.^{29,30}

As we expected, quality measurement and management are more prevalent among health plans that primarily use capitation to compensate PCPs than among those that primarily use FFS. There are several potential explanations. First, these patterns may reflect concerns that payment systems based on capitation may lead to underuse of medical services or greater ease in attributing the care of a patient to an individual doctor or medical group. Second, because encounter data in health plans that use capitation might be underreported, some health plans may have instituted specific provisions that allow for additional payments for preventive services such as immunizations and screening exams to both encourage provision of these services and improve the accuracy of reporting. Finally, health plans

■ **Table 6.** Use of Reminders Sent to Patients and Physicians

Quality Management Activity	Unadjusted, %			Adjusted, % ^a		
	Capitation (n = 77)	FFS/Salary (n = 165)	P ^b	Capitation (n = 77)	FFS/Salary (n = 162)	P
Send patient reminders for:						
Any needed care	90.9	89.7	.60	91.2	89.1	.97
Breast cancer screening	90.9	86.7	.20	91.2	86.8	.62
Antidepressant medication management	55.8	33.3	<.001	55.9	34.3	.03
Diabetes care	89.6	79.4	.07	89.9	79.5	.26
Physicians notified of patients who may not have received recommended care for:						
Any needed care	97.4	88.5	.02	97.4	88.9	— ^c
Breast cancer screening	83.1	72.1	.04	82.7	72.5	.12
Antidepressant medication management	61.0	47.9	.02	61.0	47.5	.15
Diabetes care	96.1	83.6	.01	96.2	84.1	.03

FFS indicates fee for service; IPA, independent practice association; GEE, generalized estimating equation.
^aAdjusted by region, model type (network/IPA vs group/staff), tax status, and health plan size (<50,000, 50,000-250,000, >250,000) with a GEE model to control for clustering at the market level.
^bP values were obtained by using a GEE model to control for clustering at the market level.
^cUnable to calculate adjusted P value because some cells had 100% performance.

that commonly use capitation may more frequently contract with provider organizations such as some IPAs and large medical groups that have inherently different capabilities and are better equipped to measure and manage quality of care.³¹

Health plans frequently collect data on hospital performance but do not frequently use these data to determine payment rates or for tiering. The negotiations between hospitals and health plans are strongly influenced by the size and market power of hospitals. As with reporting and use of physician-level performance data, we expect that health plans will increasingly use these types of data.

Few data are available to which our results can be compared. In a 1994 survey, Gold et al reported that 68% of health plans used plan profiling to “provide physician feedback and identify areas for system-wide quality improvement.”³³ No data were provided about the sorts of routine data collection and monitoring that health plans pursued. Similarly, in 1997, we surveyed a comprehensive sample of health plans serving the Medicaid population (50% of these were commercial health plans).¹³ At that time, data collection at the health plan level for a variety of measures similar to those in this study ranged from ~50% to 90%, so there clearly has been a major change. We did not assess data collection at the level of the individual physician or group at that time because we thought it was likely to be very uncommon. Finally, Newhouse et al also found

that more than 90% of health plans collected data on HEDIS measures in 1998; they did not report on physician-level or group-level quality management or other aspects of quality management.¹⁰

Our study is subject to several limitations. As with almost all surveys, it lacked formal validation; instead, we relied on self-reports from representatives of plans rather than more objective audits of what was actually done. However, our survey targeted the most knowledgeable respondent in the organization who should have accurate information on the activities that we inquired about. In addition, similar policies reported by different plans might be implemented differently, and some could be systematically better. Respondents also might have been more likely to respond positively to questions that concerned desirable aspects of managed care. Although we focused our results on plans that primarily use capitation or FFS to compensate physicians, the form of physician payment was highly correlated with several other variables, including region and the use of gatekeeping. Thus, we cannot definitively say that the use of capitation, as opposed to region or some other variable, is responsible for the differences we observed between health plan types because many of these factors are associated. Moreover, groups that accept capitation might not pay individual doctors that way. Finally, we focused on metropolitan areas with a minimum of 100,000

total HMO enrollees because we assumed that intensive quality management would not likely take place in markets without sufficient numbers of HMO patients and health plans. As such, our results may not generalize to markets with lower levels of HMO activity, although these less penetrated and smaller markets include only 9% of all health plan enrollees.

In summary, we found that almost all health plans are measuring their performance on multiple indicators of quality. The majority of health plans also are collecting data at the level of the individual physician or group and using these data in quality improvement activities but not in public reporting to enrollees. We believe that these findings document the substantial changes health plans have made in data collection and quality management. Moreover, they foreshadow the controversy ahead as we likely move to broad-scale public reporting on individual doctors and medical groups.

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Take-away Points

This survey of a nationally representative sample of HMOs indicated that almost all health plans measure their performance on multiple indicators of quality.

- The majority of health plans collect data at the level of the individual physician or group and use these data in quality improvement activities, but not in public reporting.
- Collection and use of performance data are more prevalent among health plans that predominantly use capitation.
- These findings document the substantial changes health plans have made in data collection and quality management, and foreshadow the controversy ahead as we likely move to broad-scale public reporting on individual physicians.

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