

Evaluating Health Plan Quality 1: A Conceptual Model

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Objective: To develop a theoretical foundation for measuring health plan quality from a physician's perspective.

Study Design: Literature review and theory development.

Methods: We defined health plan quality as the degree to which health plan management practices increase the likelihood of high-quality care for individuals and populations and addressed the ways in which health plan quality is similar to, and different from, other commonly used quality measures. Based on an assessment of the literature, we proposed a conceptual model that organizes health plan care management practices into a coherent structure for measuring health plan quality.

Results: A conceptual model of health plan operation that organizes managerial practices into a structure for measuring health plan quality from a physician's perspective was developed.

Conclusion: Health plan quality is distinct from quality of care, and physicians can provide unique, timely, and reliable information about aspects of health plan quality.

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The development of new organizational arrangements in healthcare over the past decade has generated a variety of health plan performance measurement activities.^{1,2} Some of these activities focus on measuring patient outcomes such as health status,³ collecting data on consumer assessments of health plans,^{4,5} or constructing Health Employer Data and Information Set (HEDIS) measures of specific conditions such as hypertension.⁶ Other activities address processes of care (eg, the proportion of patients experiencing a heart attack who receive β -blockers, mammography rates, immunization rates) and structures of care (eg, the number, location, and certification of providers). More recently, researchers have developed an index of the "managedness" of health plans.⁷ Although a multitude of measures exist, few address health plan quality from the physician's perspective. Because physicians occupy a unique role in healthcare provision, acting as the interface between organizations

(eg, health plans, provider groups) and patients, physicians are likely to provide a unique perspective on health plan quality.

Physicians have been surveyed concerning how they feel about managed care and the effect of managed care and health plans on patients and their own practices, but they have seldom been asked to assess what specific health plans do to manage care processes for patients. This paper develops a theoretical foundation for surveying physicians about health plan quality. We define health plan quality as the degree to which organizational structures and processes increase the quality of care for individuals and populations. In high-quality health plans, care management practices will be in place to increase the likelihood that patients with diabetes are tested for glycosylated hemoglobin, blood pressure is controlled in hypertensive patients, and patients are satisfied with the care they receive. In this sense, we argue that high-quality health plans can *cause* high-quality care,⁸ which is defined by the Institute of Medicine as "the degree to which health services for individuals and populations increase the likelihood of positive health outcomes and are consistent with current professional knowledge."⁸ Keeping health plan quality and quality of care conceptually distinct is crucial for understanding how health plan quality

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relates to quality of care⁸ and, ultimately, for measuring health plan quality.

In this paper, we first define health plan quality. Second, we explore what health plans actually do and can do to manage health plan quality. Finally, we propose a conceptual model that organizes health plan care management practices into a coherent structure, which can form the basis for measuring health plan quality.

HEALTH PLAN QUALITY

Measuring health plan quality requires defining the object to be measured. We previously defined a health plan as an “organization using administrative processes or techniques to influence the quality, accessibility, utilization, costs and prices or outcomes of health services provided to a defined population by a defined set of providers.”² Health plans can take many organizational forms, including HMOs, preferred provider organizations, integrated delivery systems, and independent practice associations.¹ Health plan quality refers to the practices used by health plans to manage cost and quality of care.

Health plans manage cost and quality of care in a difficult environment, facing multiple—sometimes conflicting—objectives. We would argue that most plans want to provide appropriate, evidence-based care and avoid inappropriate care.⁹ They try to satisfy patients, who may weigh quality more heavily than cost because of the nature of health insurance, may not agree with evidence-based care recommendations, and may request specific treatments. The plans also try to satisfy purchasers, who may care greatly about costs and who may impose significant organizational process costs by demanding documentation of value and quality.

Health plans implement care management practices designed to help them achieve these sometimes-conflicting objectives. But the existence of specific practices does not necessarily imply high or low quality of care. The way in which they are implemented matters greatly. Utilization review, for example, can improve quality of care by guarding against inappropriate care. On the other hand, it can be a detriment to quality of care if overzealously applied. Given the natural variation that exists among patients, health plan practices must allow customized care that facilitates effective treatment of exceptions. Yet the health plan must still be able to obtain the economies associated with standardi-

zation. We argue that a high-quality health plan must have standard practices that manage costs and encourage high quality of care, but that these practices must be customizable to meet the needs of the exceptional patient.

Consider the following illustration related to pharmaceutical management. Formularies should be implemented to maximize efficacy and minimize costs. Experts can screen drugs for efficacy, demand can be pooled to obtain lower costs, counter-detailing programs can be developed to educate physicians, and automated prescribing systems can be developed to improve efficiency and reduce errors. Although these actions benefit most patients, patients do not always react identically to drugs. A physician and his or her patient are in the best position to observe patient reactions to the drugs in the formulary and customize treatment to a patient's needs. Formularies by themselves neither ensure nor indicate quality: it is how they are implemented that determines quality. A high-quality health plan would have a formulary that makes sure drugs are available that are efficacious and cost effective and have processes in place that would allow physicians to treat each patient as an individual. Because of their role in prescribing drugs, physicians are at the center of health plan formulary implementation and have unique and important information on the quality of the formulary. Does the physician know that the plan has a formulary? Does the physician know what formulary policies are? Does the physician receive counter-detailing, educational outreach visits? Does the physician find that appropriate exceptions can be made? Is the physician able to customize the formulary to meet patient needs?

Surveys of health plans can provide information about the care management practices they have in place, but these surveys may not be the most reliable sources of information about the quality of the implementation of these practices. Because physicians mediate between health plans and patients, they have unique and important information on the way in which health plan care management practices are implemented. In the case of profiling, for example, physicians can say whether they actually receive useful and accurate reports. In the case of preventive care reminders, do physicians know whether these reminders are useful in treating their patients? **Figure 1** is a stylized diagram that makes this point more generally by depicting healthcare organizations in the context of information flows. The boxes are organizational entities, and the arrows represent information flows among those entities. Health plans

receive information from employers and purchasers on enrollment and provide them with product descriptions and resource use reports. The box with rounded edges represents the physician-patient encounter process, which triggers many health plan management practices and provides the raw material for activities such as profiling.

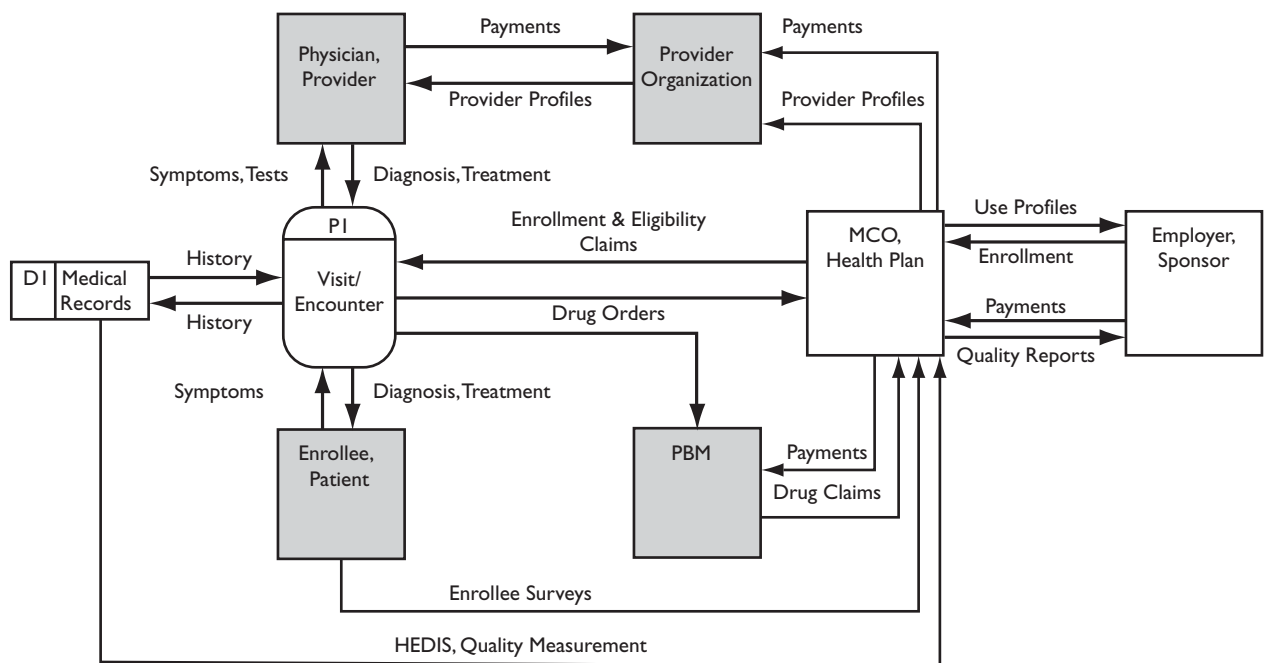
Health plans manage care delivery in 3 ways: (1) through selective contracting and credentialing processes, (2) by developing programs to support care that are made available to associated physicians, and (3) by implementing rules and structures that affect the provision and use of services. Health plans also manage information. The most important health plan function in this respect is arguably claims processing: physicians and patients submit claims that the health plan processes and uses to compensate physicians. The information from these claims becomes a resource that the health plan can use for profiling and feedback to physicians about

resource use and quality. Utilization review is a process that requires information flow from physician to health plan to physician. Education and counter-detailing are ways that health plans can provide physicians with new perspectives on treatment processes. Medical charts can be reviewed to develop HEDIS measures, as well as to improve legibility and completeness.

HEALTH PLAN ORGANIZATION, QUALITY CONCEPTUALIZATION, AND MEASUREMENT

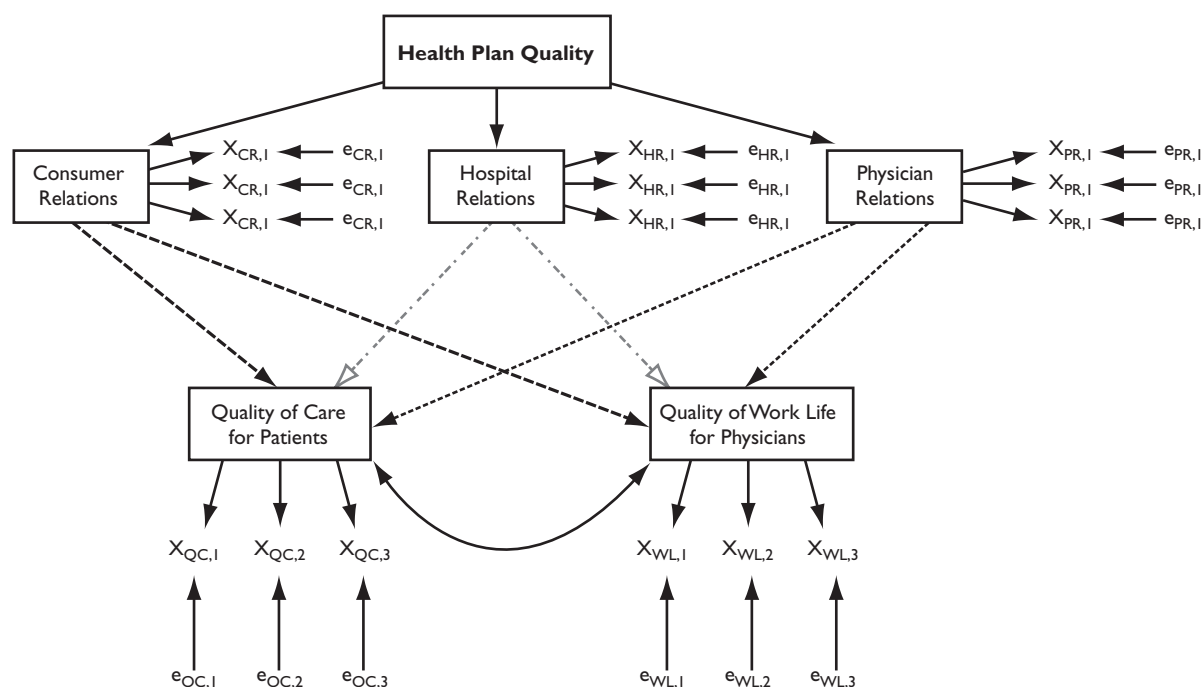
Figure 2 shows our conceptualization of the relationship among health plan quality; quality of the management of consumer, hospital, and physician relationships; quality of patient care; and quality of physician work life. The labels are latent variables that are not directly observed. The X_i variables are

Figure 1. Stylized Model of Healthcare Information Flows and Organization



Entity: An actor who provides or receives information and services. These entities are information sources or sinks. A patient, for example, provides information about symptoms. Process (PI): Transformation of data. In a physician encounter, medical knowledge is combined with a patient's symptoms and characteristics to obtain a diagnosis and treatment plan. Data store (DI): Information at rest, information that is stored. The medical record is a repository of patient encounter information. Data flow: Information moving. Provider profiles are information flowing from a health plan to a provider organization or physician.

HEDIS indicates Health Employer Data and Information Set; MCO, managed care organization; PBM, pharmacy benefits management.

Figure 2. Diagram of Conceptual and Measurement Model

X indicates observed variables; e, random errors; labels (CR [consumer relations], HR [hospital relations], PR [physician relations], QC [quality of care for patients], WL [quality of work life for physicians]), latent variables; \rightarrow , causal arrow.

observations based on the combined effects of the latent variable and of random variation (e_i). Consumer, hospital, and physician relations refer to the practices that health plans use to manage these relationships. Examples for consumers include healthcare education, incentive programs, grievance management, and customer relations. Examples for physicians include disease management services, guidelines, utilization and quality reports, and authorization procedures. The model can be extended to include more than these 3 relations. We argue that high-quality health plans manage these relationships more effectively. The arrows from consumer, hospital, and physician relations to quality of care for patients and quality of work life for physicians represent the argument that the better these relationships are managed, the better will be quality of care for patients and quality of work life for physicians. In this conceptualization, health plan quality affects quality of care for patients and quality of work life for physicians indirectly through the ways that health plans manage relationships. If the model in Figure 2 correctly represents the real world, then the correlation between consumer, hospital, and

physician relations will be significant and positive—a high-quality health plan will manage consumer, hospital, and physician relations effectively. (An alternative argument is that a single concept for health plan quality does not exist and that health plans manage each domain independently. This conceptualization can be contrasted with the conceptualization in Figure 2 because it results in different empirical predictions. One argument for health plan quality being a unitary concept is that improving health plan operations requires coordination across domains. For example, giving consumers information about preventive measures their physicians can provide does not work well unless physicians are ready to provide the services.)

In this paper, we focus on only 1 component of this model—conceptualizing and measuring health plan quality as reflected in health plan—physician relationships from the physician's perspective. To test the adequacy of the overall model, future researchers can compare these measures with measures of other relationships (eg, consumer and hospital relations) and with quality of patient care and quality of physician work life.

The model diagrams the relationship between health plans and physicians with a single causal arrow, which simplifies a complex set of possible organizational arrangements. This complexity poses significant difficulties for measuring health plan quality from the physician's perspective. Two issues that are regularly encountered are accountability and defining the core components of health plan quality.

Accountability and Health Care Organization

There is tremendous variation in the way that health plans organize healthcare delivery.^{1,2} At one extreme are health plans such as staff-model HMOs, which take responsibility for all aspects of organizing care. Closely related to staff HMOs are some group HMOs such as Kaiser and Group Health Care Cooperative of Puget Sound, where physicians and health plans are closely intertwined. At the other extreme are "virtual" health plans, where the health plan functions primarily as an intermediary between purchasers and providers and does little to manage care. Healthcare management activities can be outsourced to provider groups^{10,11} or to third-party organizations that specialize in a function such as claims processing. Some integrated delivery systems and provider practice management companies provide extreme examples, particularly when they accept all risk and healthcare management functions, leaving only marketing and purchaser relations to the health plan.

This variety of arrangements makes accountability extremely difficult to assess.¹² Answering the question "Who does what?" (The health plan? The provider group? The clinic?) is extremely difficult even for "those in the know," much less for a physician who is a member of a provider group and who is not directly involved in negotiating health plan contracts. Not only are the questions difficult to answer, but holding an actor accountable is difficult. It is common to hear a health plan claim that it is a provider organization's contractual responsibility to perform a function, or to hear a provider organization claim that a health plan failed to deliver necessary infrastructure to perform a function.

We argue that focusing on what is being done, rather than attempting to determine who does what, is the appropriate strategy for conceptualizing health plan quality and understanding accountability. Ultimately, purchasers should hold health plans accountable for care management practices regardless of the complexity of the health plan's contractual relationships. The Health Care Financing Adminis-

tration (now the Centers for Medicare and Medicaid Services [CMS]) *Quality Improvement System for Managed Care (QISMIC) Year 2000 Standards and Guidelines* states that "an organization may, by written contract, delegate any activity required under or governed by these standards to another entity."¹³ However, an organization entering into a Medicare or Medicaid contract remains entirely accountable to CMS or the state for performance of any such delegated function. It is the sole responsibility of the organization to ensure that the function is performed in accordance with applicable standards.¹³ The argument, from a purchaser's viewpoint, is that healthcare insurance and services are being purchased from the health plan, and that the health plan is responsible for ensuring the use of management structures that promote quality. If the health plan delegates an activity through contractual means, the health plan is responsible for making sure that the activity is carried out. (If the organization selling the product cannot manage the services it sells, either through implementation or evaluation, then one might question the rationale of buying a service or product from that organization.)

Focusing on what is being done, rather than who is doing something, may appear to impose conceptual difficulties on measurement. This is not the case, however. In developing surveys, questions such as "How often has plan X's preauthorization procedures delayed the admission of a patient into a hospital?" measure who is doing what; the question presumes a health plan organization in which the health plan operates the preauthorization, similar to a staff HMO. If a health plan has delegated preauthorization to a provider group, then a physician respondent could (should?) truthfully reply that the health plan had never delayed the admission of a patient. This problem can be addressed, conceptually, in a physician survey by using a passive question such as "For your patients in plan X, how often have preauthorization procedures delayed the admission of a patient into a hospital?" This latter style focuses on what is being done for a patient in a plan, rather than who is responsible for doing something.

Core Components of Health Plan Quality

Health plan care management can be broadly categorized by its focus on demand and supply management. Demand management focuses on influencing consumer behavior through benefit designs (covered procedures, copayments, deductibles) education, and reminders. Benefit designs can be documented through analysis of

health plan product descriptions⁷ or through consumer surveys. Consumer surveys about plan provision of information on benefits and preventive care programs arguably are the best source of information about health plan interactions with consumers. Supply side management, in contrast, uses physician incentives and managerial practices intended to influence service delivery.

Physician Incentives. Physician incentives have attracted significant interest among researchers, yet they are not a focus of our conceptual framework for a number of reasons. First, research does not paint a clear picture of the effect incentives have on care delivery.¹⁴⁻¹⁶ One reason may be that researchers seldom have complete information on the specifics of how providers are rewarded. Knowing that provider payment is subject to withhold or bonuses, for example, does not provide information on what the provider must do to obtain the withhold or bonus, or the amount of withhold or bonus.¹¹ More explicit detail on what needs to be done to receive an incentive is necessary to predict its effect.

A second reason for not focusing on incentives in physician surveys is that the best source of information on incentives is probably the formal contract language between health plans and physician organizations.⁷ In cases where plans contract directly with physicians, compensation arrangements can be coded from contracts. Research using such contractual information shows that appropriately structured incentives combined with performance targets can reduce costs and increase quality of care.¹⁷ In cases where plans contract with provider groups that are responsible for paying physicians, the best information source is the provider group manager(s) who administers financial arrangements. Research with this type of survey data shows that incentives or medical group structures can reduce costs.¹⁸ In either case, the important advantages of using contractual data, or data from medical group financial managers, is that they measure the actual structure of the incentives from either operative documents or highly knowledgeable respondents. The perceptions of individual physicians concerning incentive and organizational structures may be biased or inaccurate, particularly when they reflect quality-of-work-life issues such as satisfaction with pay.

Third, it is not clear that physicians can accurately respond to questions about incentive structures. In cases of nested incentive structures (where plans contract with provider groups that arrange physician compensation and where provider groups

are capitated), the compensation arrangement for physicians may differ from that of the provider group. (This also is a problem when physicians are asked about health plan actions; the implications are discussed in the Conclusion.) It is not uncommon to observe capitated provider groups in which physicians are paid fee-for-service or salary. Although the researcher could focus on the incentives encountered by the individual physician, this may be an inappropriate unit of analysis, particularly if the physicians in a capitated provider group have jointly implemented practices to manage utilization.¹¹ If this is the case, then the appropriate focus for analytic purposes is the health plan's arrangements with the provider group, because these arrangements cause the provider group to implement structures to manage utilization.

Management Practices. A variety of approaches have been proposed to measure what health plans do (eg, network structuring, utilization review, authorization requirements, guidelines, clinical pathways, reminders, profiling).¹² Some authors have grouped these practices into (1) those that directly control physician behavior such as utilization review and preauthorization rules and (2) those that indirectly influence physician behavior such as guidelines and education.¹⁹ Direct controls (eg, denials) reduce physician autonomy and satisfaction, whereas indirect approaches can increase physician satisfaction.¹⁹ Although these conceptualizations are useful, they are built primarily from the perspective of what health plans do. In contrast, a Predisposing, Reinforcing, and Enabling Constructs in Ecosystem Diagnosis and Evaluation (PRECEDE) model of managing physician behavior²⁰ focuses primarily on physician behavior, not on what health plans do. Predisposing effects refer to the effect of physician attitudes and beliefs about the relationship among patient characteristics, symptoms, disease, and the usefulness of diagnostic or treatment procedures. Examples of predisposing effects are a physician's beliefs about the yields of diagnostic tests. Enabling effects "are skills, resources, or structural barriers that facilitate or prevent behavior."^{21(p2021)} Examples of enabling effects are reminder systems, computer-based clinical decision-support systems, and utilization review. Reinforcing effects affect behavior by providing information or outcomes to a provider through feedback.

Literature reviews of healthcare management practices show a variety of potentially effective practices that health plans, provider organizations, and

medical groups can use within the PRECEDE conceptualization.

REMINDERS. Prompting physicians about a patient's preventive care needs before a scheduled encounter can improve performance on all "preventive care procedures, including cancer screening, ... immunization, ... diabetes management, blood pressure management and follow-up, cardiac care, cholesterol management, smoking cessation, glaucoma screening, alcohol abuse counseling, prenatal care, and tuberculosis testing."^{22(pp304-305)} A similar practice is providing physicians with information about a patient's perceived health status, which affects processes of care such as diagnosing conditions.²³

CLINICAL DECISION-SUPPORT SYSTEMS. A clinical decision-support system (CDSS) is "software designed to directly aid in clinical decision-making in which the characteristics of individual patients are matched to a computerized knowledge base for the purpose of generating patient-specific recommendations that are then presented to clinicians for consideration."^{24(p1340)} Reviews of computerized CDSSs show systematic positive effects on care processes.²⁴⁻²⁸ Although CDSSs do not appear to systematically improve diagnosis, they can improve order management for pharmaceuticals, laboratory tests, and the provision of preventive and chronic care.

GUIDELINES. Guidelines are "systematically developed statements to assist practitioner decisions about appropriate healthcare for specific clinical circumstances."²⁹ Reviews of clinical guidelines show that they can improve practice. All but 4 of 59 studies evaluating clinical guideline use that were published before 1993 "detected significant improvements in the process of care following the introduction of guidelines" and "9 of 11 papers that assessed the outcome of care reported significant improvements."^{30(p1321)} Effective implementation of guidelines may be influenced by physician organization.³¹ Physicians in solo or small single-specialty practices, for example, may not be able to take advantage of consensus approaches to developing and obtaining commitment to guidelines and may be less influenced by local opinion leaders. Health plan organizations may be able to overcome some of these difficulties by structuring continuing medical education appropriately.

DIAGNOSTIC TEST ORDER MANAGEMENT. A review of physician use of diagnostic tests shows that many different interventions influence the process of ordering tests.²¹ Educational interventions modestly influence use of tests, but the effects are stronger when coupled with feedback. Feedback,

including information on utilization and compliance with guidelines, affected volume of resource use and appropriateness.

UTILIZATION REVIEW. Research on utilization review suggests that utilization review reduces resource use.^{32,33} Higher levels of preauthorization intensity reduce patient satisfaction,³⁴ but referral denial has no effect on average patient satisfaction. This is perhaps a consequence of utilization review being widespread, whereas denial rates are very low.³⁵ Patients who self-report difficulty in obtaining referrals to specialists have lower trust and confidence in their primary care physicians.³⁶

EDUCATIONAL OUTREACH VISITS. Educational outreach visits ("a personal visit by a trained person to a health provider in his or her own setting") are effective in managing healthcare delivery, particularly when they are combined with another intervention such as reminders or audit and feedback.³⁷ Drug detailing to encourage appropriate drug use, for example, is effective in changing physician behavior. Outreach visits "using patient-related content are more effective than using performance summaries for content,"³⁷ multiple outreach visits are more effective, and continuing outreach visits are important because the effect of a visit diminishes over time. Outreach visits may be particularly effective when targeting outliers in resource use. Consistent with the positive effect of educational outreach visits are physician reports that educational strategies increase health plan quality.^{38(p595)}

AUDIT, FEEDBACK, AND PROFILING. Reviews of audit, feedback, and profiling efforts show weak effects: "While audit and feedback can be a useful part of an intervention, the effects are generally small to moderate, with or without educational materials or educational meetings."³⁹ A systematic review of profiling shows a significant, but small, effect of peer-comparison feedback of information on clinical procedure use.⁴⁰ The limited magnitude of the effect, and the fact that peer-comparison feedback affects only a low proportion of patient-physician encounters, led Balas et al to conclude "peer-comparison feedback alone cannot be considered a substantive quality improvement or cost-control intervention."^{40(p588)} They speculate that combining feedback with other strategies (eg, education, reminders) that complement the shortcomings of profiling alone may improve the effectiveness of profiling. But a review of combination strategies did not find evidence to support this argument.³⁹ A possible reason for a weak profiling effect is that the profile may not provide useful information because of inclusion of partial-

year enrollees, overly sensitive algorithms (false-positive diagnoses), type II errors (measuring a test as not being done when it was actually done), and small sample sizes resulting in unreliable estimates.^{41,42} This implies that physicians can provide important information on both whether profiling is being done and whether the profiling that is being done is useful.

CONTINUING MEDICAL EDUCATION. A review of continuing medical education (CME) showed that CME has positive effects on use of laboratory tests, prescribing practices, counseling on health behaviors such as smoking cessation, and preventive care practices.^{43,44} The same review noted that some interventions not only changed processes, but also improved patient outcomes. More intensive CME and CME using multiple interventions—including a combination of interventions targeting predisposing, enabling, and feedback—were likely to be more successful. Educational activities such as conferences were not effective unless they were combined with an enabling or reinforcing intervention. Similarly, printed educational materials did not yield clinically significant results.⁴⁵

Overall, then, the literature shows that physician behavior and clinical practice can be influenced through a variety of management practices. Although there are no “magic bullets,” interventions certainly are available for improving healthcare delivery.⁴⁶⁻⁴⁹ Predictably, interventions closest in time and space to the encounter between patient and physician (eg, reminders, test and drug order management systems) appear to have the biggest effects. More distant interventions such as audit and feedback or education appear to have more distant and attenuated effects. The studies also suggest that combinations of interventions (eg, education combined with feedback) may be more useful than a single intervention. But the literature suggests that some practices widely adopted by health plans, such as profiling, may not be viewed by physicians as very useful.

Physicians are the appropriate source of information about which management practices are being used, because these practices are designed to influence their behavior. Asking health plans or provider groups if the practices are in use yields information on what health plans or provider groups think they have implemented, but not on what physicians actually experience. If physicians do not experience practices such as profiling reports, detailing visits, or preventive care reminders, the plan or provider group arguably has not implemented these practices effectively. Observing the consequences, such as

high rates of use of β -blockers for patients with a myocardial infarction, does not imply that the practice is being used (arguing that it does is the fallacy of affirming the consequent). The only way to ascertain the use of the management practices is either through surveys of physicians or direct observation of physician practice.

A Conceptual and Measurement Model of Health Plan Quality

Figure 3 contains an organizational framework for evaluation of health plan quality that builds on the PRECEDE framework. The columns delineate 3 major types of resources that a health plan manages: physicians, drugs, and hospitals. (Laboratory use has been omitted because its management will be captured in part by questions about management of physician and hospital resources, and because it was believed to be not as important as physicians, hospitals, and drugs. Laboratory resource use can be added to the conceptual model we propose as another resource column.) Each is important to address the consistency of health plan care management practices across resource domains, but we have no a priori expectations about the consistency of practices across domains.

The rows are arrayed in 4 major blocks: (1) enabling, immediate, patient specific; reinforcing, timely, practice specific; predisposing, profession specific; (2) evaluations of quality of structure or process; (3) evaluations of quality of outcome; and (4) overall evaluation. The enabling, reinforcement, and predisposing categories focus on the presence and reported usefulness of the managerial practices that the research literature suggests can influence clinical processes. We assumed that the implementation of management practices in a manner useful to physicians would result in a positive evaluation of health plan quality by them, and a willingness by physicians to recommend the health plan to others. General hypotheses about the effect of management practices on physician evaluations of health plan quality and health plan recommendations are presented below. *Italicized statements indicate hypotheses about the relationships among survey concepts that reflect internal consistency.*

- Within a resource domain (physicians, drugs, hospitals), the evaluation of the quality of health plan practices such as referral networks and authorization processes will be a function of the use of management practices and their perceived usefulness.
- Within a resource domain (physicians, drugs, hospitals), the evaluation of quality outcomes,

Figure 3. Conceptual Model of Health Plan Quality

| Enabling, Reinforcing, and Predisposing: Timeliness and Specificity of Care Management | | Type of Resource Managed | | |
|---|---|--------------------------------|----------|-----------|
| | | Physicians | Drugs | Hospitals |
| Enabling, immediate, patient specific | Online order management | | | |
| | Clinical guidelines | | | |
| | Reminders | | | |
| | Disease management | | | |
| | Authorization | | | |
| Reinforcing, timely, practice specific | Profiling—resource use | | | |
| | Profiling—quality and prevention | | | |
| | Profiling—patient satisfaction | | | |
| | Incorporating physician views | | | |
| Predisposing, profession specific | Educational outreach, detailing | | | |
| | Continuing medical education | | | |
| Quality of structure or process evaluations | Authorization | | | |
| | Guidelines | | | |
| | Resource use profiles | | | |
| | Quality and outcome profiles | | | |
| | Quality of resource | | | |
| | Incorporating physician views | | | |
| Quality of outcome evaluations | Promote an environment of trust | | | |
| | Encourage continuity of care | | | |
| | Adjust care to individual patient needs | | | |
| | Provide timely care | | | |
| | Reduce likelihood of drug interactions | | | |
| | Prescribe appropriate dosages | | | |
| | Prescribe cost effectively | | | |
| Summary quality evaluation | | Primary care Specialty care | Pharmacy | Hospital |
| Overall | Recommend plan to family member or friend Recommend plan to people with serious illnesses Recommend participating in plan to other physicians | | | |

perceptions of the quality of patient care, environments of trust, continuity of care, and ability to customize care will be a function of the use of management practices and their perceived usefulness.

- Global evaluations of the quality of health plan practices (physicians, drugs, hospitals) will be a function of the evaluation of the quality of health plan practices and outcomes for each resource domain (physicians, drugs, hospitals).
- Recommendations of the plan to others will be a

function of the evaluations of the quality of health plan practices and outcomes across resource domains (physicians, drugs, hospitals). Recommendations of the plan to others are an overall evaluative quality measure commonly used in physician surveys of health plans.^{38,50}

Combining the general hypotheses with the literature reviews on the effectiveness of individual management practices can yield more specific hypotheses. For example, the arrangement of rows

in Figure 3 reflects the timeliness and patient specificity of the managerial tool. CDSSs that provide drug efficacy, cost, and dosage information are timely and patient specific because they inform the physician-patient interaction in real time. The timeliness and patient specificity of reminders vary as a function of their implementation. Some implementations (eg, CDSS-based reminders) are timely and patient specific, whereas others (eg, reminders about preventive care counseling) may be less timely and patient specific. Guidelines, clinical pathways, and disease management programs are timely because they are available during the physician-patient interaction. However, they often are not customized to particular patients. As suggested by other research,¹⁹ reminders, guidelines, and disease management supports will result in more positive physician evaluations of the quality of health plan practices and outcomes for resources (physicians, drugs, hospitals). Although authorization is patient specific, difficulties with it arise when it is not timely or when it adversely affects the timeliness of care delivery. Working around reimbursement and authorization rules may disrupt the timeliness of care delivery.⁵¹ As suggested by other research,^{19,38} authorization requirements and denials of care will result in lower physician evaluations of the quality of health plan practices and outcomes for resources (physicians, drugs, hospitals).

Reinforcement and feedback comprise the next PRECEDE category within managerial tools. Being able to do resource and quality profiling means that the health plan has developed administrative claims systems to the degree necessary to support the analysis of claims data and medical records. Because satisfaction profiling requires linking consumer surveys to physicians, it represents a different type of information management skill for the health plan. Although health plans or their contracting organizations may have implemented profiling, not all implementations are equal. Common complaints about profiling are that the data are inaccurate and/or are not useful.⁴¹ The effect of profiling on physician evaluations of the quality of health plan practices and outcomes will be a function of the degree to which physicians perceive reports as accurate and/or useful.

Predisposing is the final PRECEDE category under managerial tools. As suggested by other research,^{19,38} educational activities will result in more positive physician evaluations of the quality of health plan practices and outcomes.

SUMMARY

Measuring the quality of health plans requires measuring how health plan managerial practices are carried out. Focusing on what is done, rather than who is doing what, allows for complexity in health plan operational arrangements and for the diverse ways in which health plans apply managerial practices to modify physician behavior. Physicians can provide a unique and valuable perspective on health plan quality because they observe the effect of health plan practices. The conceptual model we propose provides the foundation for developing a physician survey of health plan quality.

Physicians can provide important and unique information on health plan quality. Although a patient may never know that a question about tobacco use was based in a reminder system, a physician will. Although patients may never know how physicians change their prescribing behavior because of counter-detailing, a physician will. Although a patient may never know that a physician is following a clinical pathway or guideline, a physician will. Even if a health plan thinks it has implemented a reminder system, physicians who do not receive reminders, or do not remember if they have received them, are not influenced by the reminder system. Physicians can report on their exposure to specific management practices (eg, reminders, profiling) when caring for patients in a plan and assess the usefulness of the practice from their perspective.

Both physician and consumer surveys have important strengths compared with many quality benchmarks such as HEDIS measures. Physician-based survey measures provide a cross-sectional view of what the plan is doing that is timely. The survey questions can ask about broad areas such as the overall use of guidelines, reducing some of the reliability problems associated with the specific measures used by HEDIS. Surveys do not require continuous enrollment, although screening requirements can be used. Physician surveys are costly, but they may not be as costly as some HEDIS measures. Well-designed physician surveys may provide a relatively economical, reliable method of monitoring health plans and medical groups.

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