

Health Affairs

At the Intersection of Health, Health Care and Policy

Cite this article as:

E A McGlynn

Six challenges in measuring the quality of health care

Health Affairs, 16, no.3 (1997):7-21

doi: 10.1377/hlthaff.16.3.7

The online version of this article, along with updated information and services, is available at:

<http://content.healthaffairs.org/content/16/3/7>

For Reprints, Links & Permissions:

http://healthaffairs.org/1340_reprints.php

E-mail Alerts :

<http://content.healthaffairs.org/subscriptions/etoc.dtl>

To Subscribe:

<http://content.healthaffairs.org/subscriptions/online.shtml>

Health Affairs is published monthly by Project HOPE at 7500 Old Georgetown Road, Suite 600, Bethesda, MD 20814-6133. Copyright © 1997 by Project HOPE - The People-to-People Health Foundation. As provided by United States copyright law (Title 17, U.S. Code), no part of *Health Affairs* may be reproduced, displayed, or transmitted in any form or by any means, electronic or mechanical, including photocopying or by information storage or retrieval systems, without prior written permission from the Publisher. All rights reserved.

Not for commercial use or unauthorized distribution

Downloaded from content.healthaffairs.org by Health Affairs on March 10, 2015
at ACQUISITIONS DEPT

www.m

Six Challenges In Measuring The Quality Of Health Care

To some degree, quality is in the eye of the beholder. This means balancing the competing views and needs of purchasers, patients, and health care professionals.

by Elizabeth A. McGlynn

PROLOGUE: As the configuration of the U.S. health care system continues to shift, it is increasingly important to assess the impact of the various changes, not just on national health spending, but on public health and quality of care as well. However, measuring quality is no simple task. As Elizabeth McGlynn, a RAND health policy analyst and an expert on quality issues, points out, patients, providers, and payers each define quality differently, which translates into different expectations of the health care system and thus differing evaluations of its quality. Having spent the past ten years focused on the development and application of quality measures for physical and mental health care, particularly in managed care settings, McGlynn provides an informed, objective overview of the current state of quality measurement and the challenges that must be addressed to move forward.

McGlynn's work has included evaluations of the quality of prenatal care in managed care organizations, comparisons of the appropriateness of angiography and coronary artery bypass graft surgery between the United States and Canada, and assessments of the quality of care provided to persons with schizophrenia or depression. With funding from The Commonwealth Fund, McGlynn recently provided technical assistance to the National Committee for Quality Assurance's (NCQA's) Committee on Performance Measurement during the development of HEDIS 3.0. McGlynn now serves as liaison between the research community and the committee. McGlynn holds a doctorate in public policy analysis from the RAND Graduate School in Santa Monica, California.

ABSTRACT: Quality monitoring is becoming an accepted method for purchasers, patients, and providers to evaluate the value of health care expenditures. Important advances in the science of quality measurement have occurred over the past decade, but many challenges remain to be addressed so that quality monitoring may realize its potential as a counterforce to the demands of cost containment. This paper describes six such challenges (balancing perspectives, defining accountability, establishing criteria, identifying reporting requirements, minimizing conflict between financial and quality goals, and developing information systems) and proposes some ways in which the public and private sectors might collaborate to respond effectively.

THE STRUCTURE OF the U.S. health care system is changing rapidly, primarily in response to concerns about the increased costs of health services. Many of these changes create disruptions in the way health care professionals are allowed to provide care and the way in which patients may seek care. Although these disruptions may inconvenience clinicians and patients in the short run, ultimately we want to know the longer-term effect of these new strategies on the health of the population.

Quality assessment offers one method for evaluating the impact of changes in the organization and financing of health services on health. If there were a precise relationship between price and quality, we would only need to know how to translate premium prices and other charges into quality units. However, because there is no such direct relationship, a separate set of quality measures is essential.¹ Expanding the information available on quality requires the development of valid measurement tools and routine access to the right data. The purpose of this paper is to discuss some of the challenges that must be met to achieve this goal.

The Institute of Medicine (IOM) has defined quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”² The definition suggests that (1) quality performance occurs on a continuum, theoretically ranging from unacceptable to excellent; (2) the focus is on services provided by the health care delivery system; (3) quality may be evaluated from the perspective of individuals or populations; (4) research evidence must be used to identify the services that improve health outcomes; and (5) in the absence of scientific evidence regarding effectiveness, professional consensus can be used to develop criteria.

The definition of quality illustrates the complexity of the concept and its evaluation. In designing a coordinated national strategy, we must ensure that the complex dynamics of health care delivery, the varying levels at which care might be evaluated, and the different perspectives of the key stakeholders in the system are adequately

represented. To realize these objectives, six challenges must be addressed: (1) Identify and balance the competing perspectives of the major participants in the health care delivery system; (2) develop an accountability framework; (3) establish the explicit criteria by which health system performance will be judged; (4) select a subset of indicators for routine reporting; (5) minimize the conflict between financial and nonfinancial incentives and quality-of-care objectives; and (6) facilitate the development of information systems necessary to support quality monitoring. The first two challenges address the framework within which quality assessment should be conducted. The third and fourth challenges define the quality measurement work plan. The fifth and sixth challenges identify factors that now inhibit progress in improving and assessing performance. A public/private partnership will be essential to solving these challenges.

Balance Competing Perspectives

To some extent, quality is in the eye of the beholder; that is, expectations and the value associated with different aspects of care are likely to vary among different stakeholders. A national monitoring system should include measures that assess dimensions of care that are important to purchasers, patients, and health care professionals. How do the differing perspectives of these three key groups influence the choice of quality measures?

■ **Purchasers.** From the purchaser's perspective, quality represents a way of evaluating how well premium dollars are being spent on those for whom the purchaser is financially responsible. Purchasers that are serious about evaluating the value of services for their population must make a fundamental shift from quantity measures (for example, the number of bypass surgeries paid for last year) to appropriateness measures (for example, the proportion of persons who underwent bypass surgery for whom the expected health benefits exceeded the expected health risks). Although cost-consciousness implies greater concern about unnecessary use of services, purchasers should be equally concerned with problems related to underuse of services (for example, how many people who could have benefited from bypass surgery did not receive it).

■ **Patients.** Patients tend to evaluate care in terms of its responsiveness to their individual needs. Medicine has made remarkable advances over the past century, which leads patients to expect that modern medicine is able and willing to solve most health problems; medications can cure any number of physical and psychological problems; surgery can undo the damage caused by genetic factors, lifestyle choices, or accidents; and immunizations can prevent the

development of diseases that until recently meant death or disability. The traditional fee-for-service system that rewarded physicians for doing everything possible for the individual has shaped the way most patients define quality.

Patients' expectations about the health care system may differ from those of purchasers and health care professionals, which may lead to different evaluations of quality. Perceived limits on access to care and choice of providers, which may be valued by purchasers for cost control, may be viewed negatively by patients. Shorter visit lengths, which reduce the cost of providing ambulatory care, may have a negative effect on patients' ability to participate in making choices about their care. On the other hand, many aspects of technical quality of care cannot be evaluated by patients; there will be health plans and doctors that provide a high level of technical quality but that are not rated highly by patients on humaneness, responsiveness, or satisfaction.

■ **Physicians.** Physicians are caught between efforts to control costs, their own judgment about the best course of treatment for a patient, and demands that patients' values be reflected in making treatment choices. These three influences do not always lead to the same conclusion. Cost control frequently is achieved as third parties make decisions about what services will be covered and what types of providers can offer those services. The involvement of third parties in decision making may diminish the importance of physician judgment and autonomy, which may lead physicians to conclude that the technical quality of care is suffering.

Technical quality was traditionally defined as care that was consistent with community norms—a definition used in malpractice litigation. The move to begin setting national standards with objective criteria based on rules of scientific evidence is quite new and for many clinicians raises the specter of “cookbook medicine,” which implies rigid insensitivity to the needs and characteristics of individual patients. However, once government, insurers, and health plans began moving aggressively to develop practice guidelines, specialty societies began developing their own guidelines. These national efforts have fundamentally, and for the better, changed the way quality is defined.

Physicians have defined outcomes in terms of the biological status of the patient (for example, blood pressure, lung functioning, mortality) because these were the outcomes over which they had the greatest control. The outcomes research movement established a broader definition of the results of medical care, one that encompasses physical, emotional, and social functioning. A key objective of the outcomes research agenda has been to develop tools to measure

the broader dimensions of health so that evaluations of the effectiveness of different interventions can include this holistic definition. The rush to embrace outcomes as the sole metric for assessing quality often ignores whether there is any empirical evidence that the interventions medical care has to offer (that is, the process of care) affect the outcomes that are measured. Quality assessment must be restricted to process and outcome dimensions that are reasonably within the ability of the health care system to provide or influence.

■ **Balancing expectations.** The challenge for quality assessment is to find a way to balance these competing expectations and demands on the health care system. A starting point is to make explicit what purchasers, patients, and health care professionals value and regard as an essential mission of health care. Areas of agreement among these perspectives ought to define the central focus for quality measurement. Areas in which an objective is not shared by all groups but is not necessarily in conflict with other expectations should be incorporated into the quality measurement system next. Areas of direct conflict require solutions outside the quality-assessment arena.

Develop An Accountability Framework

Two mechanisms for accountability are accreditation standards and report cards. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee for Quality Assurance (NCQA) have standardized systems for accrediting hospitals and managed care organizations. Both the JCAHO and the NCQA hold the systems they evaluate responsible for the quality of health care professionals. Report cards, broadly defined, have been developed for hospitals, health plans, and physicians. The Health Care Financing Administration's (HCFA's) release of mortality data on hospitals was an early example of a report card on hospital performance.³ New York State's Cardiac Reporting System provides an example of a procedure-specific report (coronary artery bypass graft surgery risk-adjusted mortality rates) at both the hospital and surgeon levels.⁴ The NCQA's Health Plan Employer Data and Information Set (HEDIS) is the most prominent example of a report card on performance of managed care plans.⁵

Public release of information about the quality of care delivered by a health plan, hospital, medical group, or physician implies that the entity is responsible for the results reported. Reporting the same measures for similar (particularly competing) entities implies that it is reasonable to make direct comparisons among those groups. To make these assumptions valid we must (1) determine the entity that is responsible for each individual; (2) decide the conditions under

which accountability applies; and (3) consider the trade-off between individual and professional responsibility.

■ **Levels of accountability.** What level within the health care system should be held accountable for quality, and how can this be accomplished most effectively? The easy answer is that we want to hold all levels of the system accountable, including individual physicians, medical groups, hospitals, and health plans. The concept of accountability stems partly from the relationships established in fiscal transactions. The accountability framework also reflects expectations about the locus of professional responsibility. Thus, private and public purchasers of managed care view the health plan as the accountable entity. Health plans that contract with, or directly own or hire, hospitals, medical groups, and physicians hold those entities accountable but want to be accountable to others (such as purchasers or regulators) for only the portion of activity provided by the entity on their behalf. Medical groups compensate member physicians and are accountable to others for those physicians' performance. Patients view individual physicians as the accountable entity.

From the research and quality-monitoring perspective, health plans—especially managed care plans—offer the preferred level of accountability. In a capitated system, for example, the health plan has accepted responsibility for providing all of the care needed by the enrolled population in return for a set fee, thus establishing accountability. Purchasers expect the health plan to monitor the quality of individual physicians or medical groups, with the results of their efforts reflected in measures of quality at the health plan level.

For patients, the individual physician or medical group seems to be a more appropriate level of accountability. It may, however, be difficult to define the extent or limits of responsibility that an individual physician has for the health of the patients in his or her panel. Should primary care physicians be held responsible for services provided by subspecialists? Should a cardiologist who is managing a patient's congestive heart failure be responsible for ensuring that the patient receives an annual mammogram?

There also are logistic challenges and increased expenses associated with evaluating care at the level of individual physicians. For many chronic conditions, individual physicians may not have enough patients with a particular condition to evaluate quality reliably. In addition, the cost of reporting at the physician level is higher than at the plan level. For example, about fifty patients are needed to reliably assess satisfaction with a physician. Two hundred patients are needed to assess satisfaction with a plan. While a survey of patients' satisfaction with a plan measures different things than

does a survey of satisfaction with physicians, the plan satisfaction survey may appropriately measure accountability and would be considerably less costly. If a plan has 500 physicians, the cost of surveying fifty patients per physician at \$20 per patient surveyed would be \$500,000. In contrast, a plan survey of 200 patients at \$20 per patient would cost only \$4,000. This is not meant to imply that quality should never be measured at the physician level, but rather that we must be selective.

The entity being evaluated must have had an adequate opportunity to affect the aspect of quality that is being measured. It takes years for the preventable complications of many chronic diseases to develop. For example, diabetic retinopathy may take ten or twenty years to develop; coronary artery disease may develop after many years of poor lifestyle habits or failure to control blood pressure. Given workforce dynamics, changes in geographic locations, mergers of health plans, and changes in coverage, the health plan or physician caring for the patient when the complication or adverse outcome is detected may not be the same one that managed the patient's care over the prior ten or twenty years. We must use science (that is, information about the disease course or risk-adjustment methods) to establish reasonable standards of accountability.

An accountability framework should determine the dividing line between individual and health system responsibility. Almost all of medicine requires shared responsibility between physician and patient. Physicians can increase the likelihood that their patients will adhere to clinical recommendations, but there are no perfect interventions, and some patients will always choose not to follow recommendations. Patients may even make these choices with full information—"I'd rather die of a heart attack than live without french fries." In choosing which aspects of quality to measure, which risk factors to adjust for, and which performance benchmarks to set, we will be making decisions about how to distribute responsibility; this should be done explicitly rather than implicitly.

Establish Explicit Clinical Criteria

Explicit criteria (for example, women over age fifty should receive an annual mammogram) standardize the assessment of quality by using rules that are known to those being assessed and that can be updated over time as new treatments are introduced or more is learned about the effectiveness of existing treatments in different populations. Criteria that are based on results from scientific studies are considered to be more valid than criteria that are based on opinion. However, professional consensus will always be needed to define criteria when gaps exist in the scientific literature.

■ **Technical quality.** Explicit criteria have been most commonly used to evaluate technical quality as opposed to interpersonal quality or outcomes. Appropriateness criteria, for example, define the patients for whom the expected health benefits of an intervention are much greater than the expected risks. For example, patients with left main coronary artery disease (the most severe type) live longer following coronary artery bypass graft surgery than similar patients who are given medical therapy only.⁶ By comparison, patients with single vessel disease show no benefit from surgery as compared with medical therapy and in one study actually had worse outcomes over an eleven-year follow-up period.⁷ This information can be used to design criteria that are more clinically meaningful than comparisons of bypass surgery rates. These methods also can identify potential underuse of services, which is essential for balancing the incentives in cost containment.

■ **Providers' skill.** Explicit criteria also can be used to assess the skill of health care professionals. One might make inferences about skill based on physician characteristics (such as board certification, quality of residency training, or years of fellowship training). Alternatively, one might examine whether the outcomes were those that would be expected if the service were provided competently. In the case of bypass surgery, this could mean looking at surgical outcomes such as reoperation, infection, and mortality. Finally, one can directly examine care processes, such as whether patients treated medically for depression are receiving therapeutic doses of antidepressants.⁸

■ **Criteria development.** Most of the clinically detailed quality-assessment criteria have been developed for research studies, and few of these have been translated into routine monitoring systems. Criteria are more likely to have been developed for preventive services and common chronic conditions and are less likely to exist for acute problems, rare conditions, or complex aspects of managing common conditions. Private and public efforts to develop quality-of-care criteria should focus on those areas for which inadequate or few criteria exist. The federal government, through the Agency for Health Care Policy and Research (AHCPR), could take the lead in identifying the areas in greatest need of criteria development and then fund or broker work in those areas.

Criteria often are developed carefully during an initial effort without making any provision for ongoing review and revision. Scientific knowledge will continue to advance, and to be credible, criteria have to reflect those changes. In designing strategies for updating, we must decide when new information is compelling enough to change quality-assessment criteria. The evidence-based practice

centers being funded by the AHCPR could be charged with making such recommendations.

■ **Criteria and guidelines.** Quality-assessment criteria and clinical practice guidelines, while related, are not identical. One important difference between the two concepts is the level of specificity. Quality-assessment criteria must be defined in enough detail to permit objective evaluations of the extent to which current practice meets the criteria and to ensure that results can be compared fairly among organizations. Operational definitions must be developed for vague terms (such as mild, moderate, or severe); specific time frames must be established for assessing performance periods (for example, annual monitoring, follow-up within thirty days); eligibility for inclusion in an assessment must be determined; and so on. The NCQA and others with expertise in developing technical specifications to implement quality criteria should take the lead.

Selecting Indicators For External Reporting

Indicators for external reporting may be selected from the explicit clinical criteria that are developed. Potential report-card indicators must be valid for making comparisons among health plans. In evaluating measures of quality proposed for inclusion in HEDIS 3.0, the Committee on Performance Measurement (CPM) considered the measures' relevance, scientific soundness, and feasibility.⁹

■ **Relevance.** Relevance can be evaluated in several ways. First, is the measure important? Importance simply means that the information conveyed by the measure is, or should be, compelling to one or more of the intended audiences. The results should lay a foundation for dialogue among the parties. Second, is the area measured a priority for resource allocation? A maxim in quality assessment is that "what gets measured gets done." Preference should be given to those areas where better performance will enhance the health of the population. Third, will results from a measure facilitate actions? The actions include purchasers' selecting which plans to offer and negotiating prices, consumers' selecting which health plan to enroll in, and health plans' identifying areas for quality improvement.

■ **Scientific soundness.** Scientific soundness has three key dimensions: reliability (repeated measurement produces the same result), validity (measure really reflects the quality of care delivered), and adjustability (factors other than quality are accounted for in the final score). In addition to the design of a measure, the source of data may greatly affect scientific soundness. For example, within the same health plan, immunization rates for children based on claims data, medical record abstracts, or surveys of parents will be very different, even though the "true" rate is the same. Given the variable

“Many quality measures send a signal to the health care system to increase services (for example, cancer screenings).”

capacity of data systems in different health plans and the cost implications of certain data collection methods, attention to the effect of the data source on results is necessary.

■ **Feasibility.** For many measures, there are not enough people in a given health plan who are eligible for the performance indicator to allow for statistically or clinically meaningful comparisons to be made. For example, in an average-size health plan (90,000 enrollees) with an age distribution comparable to that of the U.S. population, about twenty-seven new cases of breast cancer are likely to be diagnosed annually. This number is insufficient to allow for statistically meaningful comparisons among plans of the stage at which breast cancer was diagnosed.

Once individual indicators have passed the criteria discussed above, a group of indicators must be selected that constitutes the report-card set. Feasibility requires making a trade-off between comprehensiveness and parsimony.

Comprehensiveness means that the indicator set covers the range of services, types of conditions, population groups, settings of care, and competing perspectives. Comprehensiveness will be difficult to achieve when fielding a small number of measures, but it can be used as a way of choosing among competing new measures for a set. For example, rather than adding a second preventive care measure in children, one might prefer a measure related to an acute condition if none currently exists.

Resources available to prepare report cards are limited. The limits exist because of the real dollar constraints and because potential users can only make use of a few pieces of information. Comprehensiveness and parsimony might be achieved through a system of rotating measures. Some might be reported every year, whereas others might be reported every other year or even less often. For example, if a plan has reported a 90 percent immunization rate for the past three years, that measure might be rotated out and another measure reported in its place. The “old” result could be reported until such time as a new data collection effort is deemed necessary.

Financial Incentives And Quality Goals

Concerns about rising health care costs have led to the introduction of financial and nonfinancial mechanisms to control expenditures. Medicare’s prospective payment system (PPS) reimburses hospitals

a fixed amount depending on the reason for hospitalization; significant reductions in average lengths-of-stay have resulted.¹⁰ The RAND Health Insurance Experiment demonstrated that copayments and deductibles could decrease utilization without negatively affecting health status for most persons.¹¹ Most indemnity plans today include deductibles and copayments. Capitation is a fixed payment for providing services to a defined population; this places the health plan “at risk” for absorbing expenditures in excess of the budget and thus provides an incentive to limit care. How do these various financial incentives affect quality? How do the incentives provided by quality monitoring affect cost containment goals? How often are cost containment and quality in conflict?

Care for chronic disease illustrates how some of these incentives might conflict with one another. For many (but not all) chronic diseases, early detection may greatly improve the opportunities for limiting the impact of that disease on functioning and may even affect expected length of survival. Early detection of breast and cervical cancer, for example, improves the potential for good outcomes.

Once a patient has a chronic disease diagnosis, there may be a choice of treatment interventions, such as medications, lifestyle changes, or surgery. For many patients, the key to optimal outcomes is active participation in management and monitoring of the disease. For example, persons with hypertension may monitor their blood pressure regularly at home, and persons with diabetes may monitor their blood sugar levels daily. Lifestyle changes such as exercise and dietary habits can greatly improve the effectiveness of medication regimens for chronic illnesses. What are the relative rates of reimbursement for medications as compared with counseling about lifestyle changes? How much time is allowed for routine monitoring visits? Are there incentives for physicians to limit the number of routine laboratory tests used for monitoring chronic disease? Which personnel are assigned responsibility for managing chronic conditions? The challenge is to examine what is known about optimal combinations of interventions for different conditions and to evaluate whether the structure of benefits, personnel, and reimbursement facilitate or inhibit provision of the best mix of services. A public/private partnership could be charged with designing a “quality-friendly” set of standards for benefit packages.¹² Existing benefit packages could be scored against this standard.

One also can ask what messages are being sent to health plans and clinicians regarding their evaluation under specific quality indicators. Most of the report-card measures in use today are presented as proportions (number of persons receiving a certain service di-

“Many people are concerned about whether they will get the care they need in a system focused on cost control.”

vided by the number who were eligible to receive the service). Proportion-based measures imply that 100 percent performance is the goal. We need to evaluate the cost implications of these quality measures.

Preventive services offer one good illustration because patient and clinician behavior combine to produce the observed result. Some people are likely to come in voluntarily and on schedule for mammograms, Pap smears, influenza vaccines, or childhood immunizations. In most of these cases, the cost of providing the preventive service is reasonable, given the expected health benefits. Other people will come in if they are reminded (a postcard in the mail). In most cases, the additional cost of such reminder systems is reasonable because they are inexpensive relative to the expected health benefits. Then consider some of the additional activities that might be required to achieve 100 percent performance: mobile mammography vans, personal telephone calls to individuals, or free transportation to a clinic. At some point, the cost of trying to achieve 100 percent will exceed the benefits expected from the service. Further, it is likely that in trying to improve performance in one or more of the measured areas, resources for providing care in unmeasured areas may decline.

Many quality measures send a signal to the health care system to increase services (for example, cancer screenings). Increased screening will identify problems requiring treatment, both those that are the direct target of the intervention and others that are coincidentally identified. In the short run, treatment will increase the costs of care. Thus, actions taken to satisfy the demands of quality assessment may conflict with cost containment goals. Although these actions may ultimately “save” money by preventing more expensive treatments at some later date, the health plan that increases screening and treatment will not realize savings on those persons if they subsequently change health plans—a common occurrence in today’s volatile marketplace. Purchasers must be willing to set premiums that adequately support the provision of high-quality care. Health plans must take a long-term view of investments in health. If purchasers, plans, and providers ensured that appropriate primary, secondary, and tertiary care was provided, the entire system would benefit over time from a healthier pool of enrollees.

Facilitate Information System Development

Two of the biggest gaps in information systems today are the availability of detailed clinical information and routine assessments from the consumer perspective. All too often the selection of measures is determined by the availability of automated data rather than by the importance of the measure. We need to recognize this reality and develop an information system capacity that can respond to the important quality-monitoring questions.

Quality monitoring has developed most rapidly in areas for which enrollment and claims data adequately capture the concept of interest. These measures require eligibility criteria such as age, sex, length of enrollment, and an event for which a claim is generated. Quality monitoring for most preventive services can be done well with claims data. However, the major barrier to monitoring the quality of care for chronic diseases is the absence of routinely available, clinically detailed data (for example, blood pressure).

Many people are concerned about whether they will get the care they need in a system focused on cost control if they experience a serious illness such as cancer or heart disease. Assessing the quality of care for such conditions requires data that are more clinically detailed than those typically found in claims data systems. For example, to understand whether appropriate treatments are being provided to persons with cancer, we generally need to know the stage of the cancer at diagnosis; this information is not routinely available in claims data, and making linkages to cancer registries is limited by privacy restrictions. To determine whether bypass surgery is indicated, we need to know the location and extent of disease (how many and which arteries, how extensive is the blockage); this information also is not routinely available in claims data systems. To conclude that a diabetic is being appropriately managed, we would like to know the most recent glycosylated hemoglobin level; we can determine from claims data whether or not the test was done but not the result. This information is now obtained from abstracting medical records, which can be cumbersome, expensive, and in some systems, logistically difficult. This strategy has worked for special studies, but for routine monitoring it is less than ideal.

What do we need to do to move forward? The first step is to agree on the important questions that should be answered for quality monitoring (as outlined in the third challenge). From these questions, the variables that are necessary, and the best source of information for those variables, can be identified. For example, although most laboratories have test results in automated form, reports to physicians are often provided on paper. If automated results were

provided, they could be integrated into a plan's information system. Systems could be designed to routinely obtain the information required from doctors (for example, the results of histories and physical examinations, blood pressure levels) during the patient visit. This approach is consistent with the efforts to develop uniform data sets. The framework design could be done in the public sector, leaving the software implementation to private interests.

The second gap is information derived from the consumer perspective. Most plans today collect data on patient satisfaction with care, but few have set up systems to routinely capture information on patients' knowledge of self-management strategies for chronic diseases, the effects of health problems on their ability to function in everyday life, or their experiences with obtaining care—whether they were treated humanely and in a manner that was consistent with their preferences. Surveys, while less expensive in some instances than chart review, are more expensive than claims data systems and often are only usable for the specific purpose for which they were fielded. For privacy reasons, it is often not possible to link survey information with other data in the system; frequently, too few persons are included in subgroups of interest (such as the chronically ill, elderly, or poor). Moving forward in this area requires the same steps described above for enhancing the clinical content of information systems.

Finally, there must be a penalty for failure to report quality results. In today's marketplace the reverse is often true: Those not reporting are presumed to have care that is better than those who do report. A penalty for failure to report may provide the strongest incentive for information system development.

Conclusions

Quality monitoring is critical for maintaining appropriate checks and balances as financial and organizational mechanisms for controlling rising health care costs continue to affect the delivery of services. Financial and organizational strategies can be blunt and clinically insensitive in their application, meaning that both needed and unneeded care generally are eliminated as cost controls are introduced. While no one (at least in theory) supports paying for services that do not produce health benefits, in the absence of routine monitoring it is impossible to determine whether this is occurring and to prevent it before it happens. Thus, quality monitoring is an important tool for making optimal resource allocation decisions.

We have come a long way over the past two decades in the tools and methods that are available for quality assessment. We have made huge strides in the past five years in our willingness to make

quality assessment part of the business of health care. What we need right now is to design a strategic plan for the future and determine the steps necessary to realize that vision. The six challenges discussed in this paper represent some of the key decisions that we will face as we move forward.

.....
The author acknowledges the support of The Commonwealth Fund and Kaiser Permanente in preparing this paper. The opinions expressed are those of the author and do not reflect the official positions of Commonwealth, Kaiser, or RAND.

NOTES

1. S.M. Soumerai et al., "Payment Restrictions for Prescription Drugs under Medicaid: Effects on Therapy, Cost, and Equity," *The New England Journal of Medicine* 317, no. 9 (1987): 550-556; A.L. Siu, A. Leibowitz, and R.H. Brook, "Use of the Hospital in a Randomized Trial of Prepaid Care," *Journal of the American Medical Association* 259, no. 9 (1988): 1343-1346; and A.L. Siu et al., "Inappropriate Use of Hospitals in a Randomized Trial of Health Insurance Plans," *The New England Journal of Medicine* 315, no. 20 (1986): 1259-1266.
2. K.N. Lohr, ed., *Medicare: A Strategy for Quality Assurance*, vol. 1 (Washington: National Academy Press, 1990).
3. S.T. Fleming, L.L. Hicks, and R.C. Bailey, "Interpreting the Health Care Financing Administration's Mortality Statistics," *Medical Care* 33, no. 2 (1995): 186-201.
4. E.L. Hannan et al., "Improving the Outcomes of Coronary Artery Bypass Surgery in New York State," *Journal of the American Medical Association* 271, no. 10 (1994): 761-766.
5. J.K. Iglehart, "The National Committee for Quality Assurance," *The New England Journal of Medicine* 335, no. 13 (1996): 995-999.
6. L.L. Leape et al., *Coronary Artery Bypass Graft: A Literature Review and Ratings of Appropriateness and Necessity*, Pub. no. JRA-02 (Santa Monica, Calif.: RAND, 1991).
7. *Ibid.*
8. R. Sturm and K.B. Wells, "How Can Care for Depression Become More Cost-Effective?" *Journal of the American Medical Association* 274, no. 1 (1995): 51-58.
9. The CPM was convened by the NCQA in the summer of 1995 to guide the development of HEDIS 3.0. The CPM included representatives of public and private purchasers, managed care plans, and consumer groups.
10. G.S. Chulis, "Assessing Medicare's Prospective Payment System for Hospitals," *Medical Care Review* (Summer 1991): 167-206; K.L. Kahn et al., "Comparing Outcomes of Care before and after Implementation of the DRG-Based Prospective Payment System," *Journal of the American Medical Association* 264, no. 15 (1990): 1984-1988; and V.B. Latta and R.E. Keene, "Use and Cost of Short-Stay Hospital Inpatient Services under Medicare, 1988," *Health Care Financing Review* 12, no. 1 (1990): 91-99.
11. J.P. Newhouse and the Insurance Experiment Group, *Free for All? Lessons Learned from the RAND Health Insurance Experiment* (Cambridge, Mass.: Harvard University Press, 1993).
12. H. Kattlove et al., "Benefits and Costs of Screening and Treatment for Early Breast Cancer: Development of a Basic Benefit Package," *Journal of the American Medical Association* 273, no. 2 (1995): 142-148.