

## *Sounding Board*

### THE UNINTENDED CONSEQUENCES OF MEASURING QUALITY ON THE QUALITY OF MEDICAL CARE

IT was midafternoon, and I was 30 minutes behind schedule. My next appointment was with a new patient, Mr. H., a 50-year-old man whose chief symptom was headaches. I spent more than the scheduled time with Mr. H., but the visit went well. I made a diagnosis of tension headaches, which he accepted after some explanation. As I put my hand on the doorknob to leave the room, now 40 minutes behind schedule (this wouldn't help my scores on surveys of patient and staff satisfaction), Mr. H. said, "Oh, by the way, sometimes I get a bit more short of breath walking up hills than I used to." There are many ways to pass off such a symptom, but suppressing a sigh, I turned around, sat down, and listened to the patient a while longer — long enough to become suspicious that his symptoms, though mild, might be due to coronary disease. The following week, I spent a good deal of time on the telephone, trying to persuade the medical director of Mr. H.'s independent practice association to agree to a stress test, which turned out to be abnormal, and then to cardiac catheterization, which showed that Mr. H. had a critical stenosis of a dominant left anterior descending artery. The stenosis was successfully treated with angioplasty. Today, five years later, Mr. H. continues to be well.

If I had ignored this patient's vague symptom and if he had died, no one (except me, if I were honest with myself) would have known that I had given him very poor care. Fortunately, in this case, the quality of care was good. I believe that physicians provide this kind of high-quality care every day, that much if not most of the quality of medical care is not measured by current techniques,<sup>1-4</sup> that it is not likely to be measured in the foreseeable future, and that the use of techniques to measure the quality of care may actually reduce the probability that high-quality care of this kind will be given.

Measurements of quality are valuable. They can, for example, lead to higher rates of vaccination in childhood, greater use of beta-blockers for patients who have had myocardial infarctions, and lower rates of mortality from coronary bypass surgery.<sup>5</sup> There is abundant evidence that the quality of medical care in the United States is very uneven and not nearly as high as it could be.<sup>6-9</sup> Measurements of quality can improve the quality of care in the areas that are measured.<sup>10-14</sup> But valuable as such measurements

can be, the techniques used to measure quality may have unintended consequences.

During the past decade, attention has focused on the many difficult technical problems involved in measuring quality. Progress has been made in developing guidelines for appropriate care; in defining and validating measures of quality; in collecting and analyzing data on quality and making adjustments for risk; and in many other areas.<sup>11,15,16</sup> But the measurement of quality is not merely a technical problem. It has implications for the allocation of health care resources, for the organization of physicians' practices, for the professionalism of physicians, and for their concept of quality.

### THE ALLOCATION OF RESOURCES

Proponents of quality measurement argue, "It doesn't count unless you can count it."<sup>17</sup> Measurement is essential to the techniques of continuous quality improvement, which are currently being imported from other industries.<sup>13,18-22</sup> Health plans, hospitals, physicians' groups, and individual physicians are increasingly being given financial incentives to score well on measures of quality.<sup>23,24</sup> Although paying for high quality is an innovation with obvious potential benefits, it may also lead to the misallocation of both organizational resources and physicians' time. The medical director at one of California's largest managed-care organizations described the problem succinctly: "Everybody's doing what they are required to do in responding to the quality measurements that are being used. Every ounce of energy is being diverted to responding to these; not one ounce of energy is going to any other aspect of quality."<sup>25</sup>

Leaders of health plans, hospitals, and physicians' groups now have strong incentives to spend money to ensure that their organizations score well on the quality measures used by accrediting organizations and purchasers, instead of focusing on areas that they believe, on the basis of their specific knowledge of the local situation, would actually yield more benefits for their patients. Physicians' time is a limited resource. When physicians are preoccupied, for example, with recording yet again that they have counseled a patient to stop smoking, they may not take the time to investigate a subtle sign of a serious medical condition, speak to a home care nurse on the phone, or summarize a complex chart in order to make a helpful referral to a specialist. This problem may be relatively minor when the quality of a specific procedure performed by a specialized team of physicians is being measured — for example, coronary-artery bypass surgery — but it is likely to be important when the overall quality of care provided by a physician or organization is assessed.

The possible misallocation of effort and resources as a result of quality measurement has been recognized as a problem in other industries<sup>26</sup> and by some

health-services researchers.<sup>15,27</sup> A branch of economics called principal-agent theory addresses this problem.<sup>28,29</sup> The principal (in this case, a health care purchaser or accrediting organization) offers the agent (a physician, hospital, or health plan) incentives to make the maximal effort to act in the principal's interest (provide high-quality medical care). But "if an employee is expected [by the principal who pays the employee] to devote time and effort to some activity for which performance cannot be measured at all, then incentive pay cannot be effectively used for any other activities [e.g., easy-to-measure ones] that the employee controls."<sup>30</sup>

Since most of what physicians do in caring for patients is not measured, rewarding a limited number of activities may lead to less effort — and lower quality — in areas of care that are equally or more important.

### THE ORGANIZATION OF PHYSICIANS' PRACTICES

The types of quality measures that are used may favor certain forms of physicians' practices over others. For example, large organizations that can afford to purchase expensive data systems and hire quality-improvement experts may have an advantage over small organizations in scoring well on population-based measures of the quality of care, such as mammography rates. Similarly, medical groups typically have greater control over their physician members than independent practice associations have over the independent physicians with whom they contract, and therefore medical groups may be able to score better on population-based measures. Case-based measures,<sup>15</sup> in contrast, depend on a review of individual charts and do not necessarily favor large or tightly structured organizations. The point here is not to argue for or against a particular form of physician organization, but to suggest that different types of quality measures may favor different types of organization, and that this consequence may not necessarily be intended.

### PROFESSIONALISM

Quality measurement provides both a means and a justification for shifting the control of medical care from individual physicians and the medical profession as a whole to large corporations, which use hierarchical chains of command and techniques of quality improvement developed in other industries.<sup>18,26,31</sup> Until recently, physicians in the United States successfully insisted that only they had the expertise to judge the quality of medical care. In the absence of quantitative measures, business and government purchasers of care lacked the expertise to challenge physicians' authority. But when these large purchasers began to define quality in terms of activities that can readily be counted or measured, evaluation by aca-

demics and intervention by executives who are not physicians were facilitated.

The emphasis on quality measurement may thus reduce the authority of individual physicians and of the medical profession as a whole. It may also reduce the degree to which physicians act professionally, which can be narrowly defined as putting the patient's interests above their own. Professionalism has been characterized by some observers as a self-serving myth and by others as a vital safeguard of patients' welfare.<sup>32-35</sup> It may be more accurate to state that physicians will act more or less professionally, depending on the conditions under which they care for patients. People are likely to act according to their principles when they have a strong belief in those principles and when the costs of adhering to them are not too high.<sup>36</sup> Physicians are trained to have strong professional principles, but it may be unrealistic to believe that most physicians, most of the time, will act according to those principles when the cost is high.

Quality measurement could reduce the degree to which physicians act professionally both by decreasing the strength of their belief in professional principles and by increasing the cost of acting on them. Physicians employed by large, bureaucratic organizations may feel less like professionals than their colleagues who practice in smaller, less bureaucratic settings.<sup>37</sup> Insofar as quality measurement encourages the growth of large organizations, it could reduce the degree to which physicians act professionally. Insofar as physicians view quality management as micromanagement — primarily as a requirement to comply with externally imposed standards, rather than as a way to improve care — their morale and their sense of professionalism may suffer.<sup>38,39</sup> Insofar as physicians are paid for scoring well on a relatively narrow range of quality measures, the cost of acting professionally by attending to the overall quality of a patient's care rises. Physicians who maintain their focus on the overall needs of each patient may pay for their professional behavior by receiving lower scores on quality measures and therefore smaller bonuses than their more narrowly focused colleagues.

### PHYSICIANS' CONCEPT OF QUALITY

Physicians have traditionally thought of quality in terms of the care of an individual patient. The new sciences of quality measurement and continuous quality improvement conceive of quality in terms of the services that a group of physicians provides for a group of patients, with the quality of care related to organizational procedures rather than to the isolated activities of individual physicians. Although these concepts of quality could complement each other, the danger is that purchasers, patients, and eventually even physicians may begin to identify high quality simply as high scores on quality measures. Qual-

ity measures are not just technical tools. As they are used more widely, and as they are linked to physicians' pay and organizational budgets, they begin to define what is important and what is real. Future generations of physicians might be taught that it doesn't count if you can't count it, and they may be paid on that basis. Thus, they might not even understand that most aspects of the quality of medical care are not measured and that medicine is not just a science but also an art.

### MINIMIZING THE UNINTENDED CONSEQUENCES OF MEASURING QUALITY

Quality measurement and the processes of continuous quality improvement that it encourages have an enormous potential to improve the quality of care, and this potential has barely begun to be realized.<sup>40-42</sup> The likelihood that quality measurement will lead to unintended consequences, some of which may reduce the quality of care, is not a reason to abandon the effort. It is a reason, however, for purchasers, academics, and accrediting and funding organizations to consider possible unintended consequences, develop methods to look for them, and find ways to minimize their adverse effects.

Researchers should begin to collect data on the degree to which physicians' organizations (as well as hospitals and health maintenance organizations) use quality-improvement processes in areas in which measurements of quality are not required by purchasers and accreditors. Purchasers and accreditors should try to minimize the likelihood that resources will be allocated to the areas in which quality is being measured at the expense of other areas. For example, quality measures could be rotated every few years, or a broad menu of quality measures could be assembled, with only certain measures — not announced in advance — being used in a given year.<sup>15</sup>

Researchers should learn what individual physicians and leaders of physicians' organizations believe about the ways in which quality measurements affect the allocation of their time, attention, and institutional resources. They should also investigate whether particular types of physicians' organizations consistently score better on certain types of quality measures. For example, do larger organizations score better than smaller ones on population-based measures, and do medical groups score better than independent practice associations? Do smaller groups and independent practice associations score as well as or better than larger organizations on measures that are based on detailed reviews of charts?<sup>15</sup>

Research could also be focused on what might be called "the quality of agents" and on the effects of quality measurement on the quality of agents. Both individual physicians and physicians' organizations can be viewed as agents. As principal-agent theory sug-

gests, the quality of agents would not be important if the principal (in this case, the purchaser) could devise a perfect set of incentives that would induce the agent to give his or her best effort even when the principal could not observe or understand that effort. Since most of the care given by physicians and medical organizations is not observed and measured, the quality of physicians and organizations continues to be very important.<sup>29</sup> In fact, this is the argument that has long been made for relying mainly on physicians' professionalism<sup>43,44</sup> (and on non-profit hospitals<sup>45-47</sup>) to ensure that patients receive high-quality care.

The literature on quality measurement has demonstrated more than adequately that reliance on professionalism alone is not enough. Both quality measurement and procedures developed within physician organizations have the potential to improve quality in ways that individual physicians cannot. However, because the quality of physicians as agents will remain important, research should better define the ways in which quality measurement and other factors may affect professionalism. Despite the extensive literature on professionalism,<sup>32-35,37</sup> there are few if any data to support or refute the claim that physicians usually act professionally, perhaps because the concept is difficult to define in a way that makes it amenable to scientific study. If professionalism were defined as putting patients' interests above one's own, then it would be possible to study the degree to which physicians take specific actions that improve the quality of care but for which they are not rewarded. For example, how often does a physician make diagnoses in addition to those related to the patient's presenting symptoms (as in the clinical example described above)? How often does a physician offer preventive services during a visit for an acute problem, even when those services are not among those being tracked by a quality-measuring organization? Research could determine whether the degree to which physicians act professionally varies according to the types of quality measurement used or other factors, such as the way in which physicians are paid<sup>48,49</sup> and the size and type of organization in which they practice.

A similar argument can be made about physicians' organizations, hospitals, and managed-care plans. The quality of care depends not only on how well these organizations score on quality measurements but also on the quality they provide in areas that are not being measured. The degree to which different kinds of organizations develop processes to improve quality in areas that are not being measured should be examined.

Proponents of quality measurement have had to counter physicians' skepticism, purchasers' inertia and disorganization, and inadequate clinical-information systems.<sup>50</sup> Their efforts to improve the quality of care

are most likely to be successful if they include attempts to identify and minimize unintended consequences that may be detrimental to good medical care.

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Supported in part by a grant (FT-43031-98) from the National Endowment for the Humanities.

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