Health Policy Report

The American Health Care System

The Movement for Improved Quality in Health Care

Thomas Bodenheimer, M.D.

A VIBRANT movement to improve the quality of health care has sprung up in the United States. Report cards on health plans, hospitals, medical groups, and even individual physicians have appeared on the front pages of newspapers, on television, and on the Internet. Projects to solve problems of quality within health care institutions dot the health care landscape. A small but determined cadre of physician leaders has developed a science of health care quality and is working to transform that science into a national movement.

Two main strategic threads intertwine to create the present and future agenda of the movement to improve quality in health care. First, activists are persuading the purchasers of health care — large employers and the government — to demand high-quality care from managed-care plans and health care providers. Second, leaders are attempting to inspire health professionals to create a "culture of quality" within their health care institutions. A description of these interrelated strategies is the subject of this Health Policy Report. The report is based on interviews with experts on the quality of health care in academic medicine, business, and government and with the leaders of organizations that focus on quality in health care. Before describing the two strategies of the movement, I will briefly review the nation's main problems with the quality of health care, how it is measured, and the most important organizations concerned with the quality of health care.

PROBLEMS WITH QUALITY

Problems with the quality of health care can be categorized as overuse, underuse, and misuse.[1] A number of studies have demonstrated overuse of health care services; for example, from 8 to 86 percent of operations — depending on the type — have been found to be unnecessary and have caused substantial avoidable death and disability.[2] Underuse is prevalent in the care of patients with chronic disease. For instance, many patients with diabetes do not have regular glycohemoglobin measurements and retinal examinations, and from 1993 through 1995, only 14 percent of patients with cardiovascular disease had achieved the serum lipid levels recommended in national guidelines.[3,4] Underuse also occurs in acute care. The failure to use effective therapies for acute myocardial infarction may lead to as many as 18,000 preventable deaths each year.[1]

Misuse is a pervasive problem. An estimated 180,000 people die each year partly as a result of injuries caused by physicians.[5] Fatal adverse drug reactions in hospitalized patients caused an estimated 106,000 deaths in 1994.[6] Fatal medication errors among outpatients doubled between 1983 and 1993.[7] The quality of care within hospitals has been found to be inferior for blacks and the uninsured.[8,9] To deal with the problem of misuse, the movement for quality has begun to target issues of patient safety.

MEASURING QUALITY

The Institute of Medicine 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."[1] How does an individual physician, medical group, or health maintenance organization (HMO) know whether it is providing care of average, below average, or superior quality? The measurement of quality is an elusive but achievable goal.[10,11] Health care is not a single product, like a toaster or a lamp. It includes such diverse components as performing screening mammography in a healthy woman, optimally treating a patient with a myocardial infarction and cardiogenic shock, and counseling a depressed patient. Each intervention requires its own particular measurements of quality; some elucidate the processes of care, and some focus on outcomes. For patients with diabetes, the relevant measures might include the percentage of patients who undergo an annual retinal examination (a measure of process) and the percentage with normal glycohemoglobin levels (a measure of outcome). For patients with coronary heart disease, measures might include the percentage receiving aspirin and beta-blockers (process) and the percentage who have myocardial infarction or sudden death from cardiac causes (outcomes). Even when considering only one health care intervention — for example, coronary-artery bypass surgery — it is treacherous to compare the outcomes of one surgical team with those of another without adjusting for the age of the patients and the severity of their illness.

Different groups in the health care system have different issues of concern regarding the quality of health care and are interested in different measures of performance. Physicians view quality in health care as the application of evidence-based medical knowledge to the particular needs and wishes of individual patients. Patients may place more importance on how clinicians communicate with them, or how long they are kept waiting for appointments, than on the technical accuracy of the advice offered,

though a new wave of health-conscious consumers is developing technical sophistication. HMOs may value patient satisfaction and the use of preventive services above clinical outcomes because satisfied patients are less likely to leave the health plan and because the application of preventive services is a measure on which HMOs are currently judged.

ORGANIZATIONS CONCERNED WITH QUALITY

The National Committee for Quality Assurance (NCQA) was formed in 1979 by managed-care trade associations hoping to fend off federal monitoring of health plans. In 1990, in order to reduce competition from newer, presumably lower-quality HMOs, a group of HMOs in coalition with some large employers engineered a restructuring of the NCQA's board, transforming the organization into something more than a mere advocate for the interests of HMOs.[12]

The NCQA has two main voluntary activities: the accreditation of HMOs and the publication of measures of performance in the Health Plan Employer Data and Information Set (HEDIS). As of October 1998, 48 percent of the nation's approximately 650 HMOs had requested accreditation surveys from the NCQA; 96 percent of those surveyed have received three-year, one-year, or provisional accreditation. Thirty large corporations, including Xerox, General Motors, and IBM, will not contract with health plans that are not accredited by the NCQA, but most employers do not make accreditation a requirement. Employers concerned with the quality of health care tend to be companies that have been forced by international competition to improve the quality of their own products. Forty percent of the NCQA's budget comes from fees paid by HMOs for accreditation surveys; the rest comes from foundation grants, contracts, educational programs, and publications.

The current data set from the NCQA, HEDIS 3.0/1998, includes more than 50 measures of performance, including patient satisfaction, rates of childhood immunization, percentages of enrollees of certain ages receiving screening for cervical and breast cancer, and percentages of patients with diabetes who undergo retinal examinations.[13] Ironically, although employers tend to associate higher quality with lower costs (achieved by reducing overuse and misuse of services), the NCQA's HEDIS measures focus mainly on the underuse of health care, the correction of which raises costs. The NCQA agrees that the HEDIS measures include few items related to chronic illness; the group hopes to add such items for the year 2000 data set.

A health plan can refuse to disclose its HEDIS profile to the public. A total of 329 HMOs (51 percent of all HMOs) allowed the 1996 data to be publicized, but only 292 plans (45 percent) permitted public reporting of the data for 1997. According to the NCQA, the plans that refuse to allow publication of HEDIS data have significantly lower scores than the plans that permit publication.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO), founded in 1952 under the aegis of the American Hospital Association and the American Medical Association (AMA), has the authority to terminate hospitals' participation in the Medicare program if the quality of care is found to be deficient. Revenues for the commission come chiefly from fees paid by hospitals, home care agencies, and other facilities that it accredits. For years, the JCAHO attempted to launch outcomes-based accreditation standards that would allow the public to compare hospitals. Because of resistance from hospitals, this effort has been scaled down and converted to the ORYX program. ORYX allows a hospital to pick two measures of performance from a long list, including such items as mortality after coronary-artery surgery or the percentage of patients with diabetes who receive dietary counseling, as long as these measures are relevant to 20 percent of the hospital's patient population. Over time, hospitals must report more measures, but there is no requirement for the type of uniform reporting that would help the public compare one hospital with another.

The Health Care Financing Administration (HCFA) is responsible for ensuring that institutions providing services to Medicare and Medicaid beneficiaries meet certain standards of quality. In the past few years, HCFA has accelerated its quality-related activities and may soon be the nation's most influential organization working to monitor and improve the quality of health care. The Quality Improvement System for Managed Care (QISMC), established in 1996, sets quality standards for Medicare and Medicaid managed-care plans. In contrast to the NCQA, which reports HEDIS data only when health plans wish them to be released, HCFA has the authority to make public such data for all Medicare HMOs, but it has not yet done so. HCFA may eventually require hospitals that participate in Medicare to submit data on standardized measures of quality that consumers can use to compare hospitals, bypassing the more cautious approach of the JCAHO. HCFA is considering a similar approach for independent practice associations and group practices.

In 1972, Congress created professional standards review organizations, supplanted in 1982 by peer review organizations (PROs), one in each state, which are authorized to monitor quality in the Medicare program. A 1990 study found that PROs used ineffective punitive methods such as retrospective case review with denials of payment and warnings to physicians.[14] In 1992, HCFA transformed the PROs into organizations with staffs of medical professionals, trained in quality improvement, who analyze

patterns of care through the large Medicare data base and feed these data back to physicians and hospitals in order to improve care for patients with common illnesses such as myocardial infarction, congestive heart failure, stroke, and pneumonia.[15] PROs review individual cases in the event of complaints from patients and can deny payment for unnecessary services, but these constitute a small proportion of their work. Experts on quality inside and outside HCFA are concerned that Congress, intent on reducing fraud and abuse in the Medicare program, may require the PROs to return to their previous payment-denial practices and thereby compromise their quality-improvement activities.[16]

The Foundation for Accountability (FACCT) in Portland, Oregon, was created in 1995 on the initiative of Paul Ellwood. In contrast to the NCQA, an accrediting organization, FACCT is a think tank and educational vehicle whose purposes are to develop measures of performance that are relevant to consumers and to educate consumers about how to use this information. FACCT persuades the NCQA, JCAHO, HCFA, state governments, and employers to use its measures of performance.

For 10 years, the Institute for Healthcare Improvement (IHI) in Boston, founded by Donald Berwick, has organized an annual National Forum on Quality Improvement in Health Care; it has also developed a Breakthrough Series, bringing together leaders in health care organizations who are committed to solving problems of quality. The Breakthrough Series focuses on several collaborative efforts to improve care within institutions; the goals include reducing waiting times in emergency departments, preventing adverse events due to medications, and improving care for low back pain.

The National Patient Safety Foundation, located at offices of the AMA in Chicago, was established by the AMA in 1997 to change the attitudes of health professionals and the public regarding medical errors.[17] The foundation, with start-up funds from the AMA, sponsors research and educational efforts based on the assumption that errors are not personal failures deserving punishment but, rather, inadequacies of systems, which must be redesigned to help prevent errors. Leaders of the NCQA, JCAHO, FACCT, and IHI sit on the foundation's board of directors.

The National Roundtable on Health Care Quality, involving representatives from academic, business, consumer, provider, governmental, and publishing organizations, was convened by the Institute of Medicine in 1995 to heighten awareness of issues related to quality in health care. Funded by the federal government and private sources, the roundtable's 1998 report concluded that "serious and widespread quality problems exist throughout American medicine."[1] The Institute of Medicine is continuing the roundtable's work, looking at the dual strategies of changing health care institutions internally and fostering an external environment that encourages improvements in quality.

The Consumer Coalition for Quality Health Care in Washington, D.C. — formed in 1993 through the efforts of the American Association of Retired Persons and other consumer groups — represents labor, the elderly, and advocacy organizations and intends to bring the perspective of consumers to legislative and private initiatives to improve the quality of health care.

PRESSURING INSTITUTIONS FROM THE OUTSIDE

Accreditation, whether voluntary or compulsory, makes health care institutions satisfy a minimal standard of quality, thereby placing demands on these institutions to improve. The goal of the publication of performance measures, or report cards, is to put pressure on institutions in two ways. First, low scores on report cards may steer consumers or employers away from health plans, medical groups, or hospitals, and second, physicians within institutions that score poorly on report cards may be embarrassed into doing better.

Leaders in the movement for quality in health care, including those within the NCQA, view the commission's report cards as a first step toward improving quality, but they cite several limitations of the program:

Report cards may not channel most consumers to higher-quality health plans. Forty-seven percent of employees in large companies and 80 percent in small firms have no choice among health plans[18]; data on quality would therefore be of no use to them. Moreover, only 11 percent of 1500 employers recently surveyed relied on data on quality in selecting health plans; cost is the driving factor in most decisions by employers.[19]

Tens of millions of people receive health insurance through preferred-provider organizations, which are not included in the reporting on performance.

Patient satisfaction, an important component of HMO report cards for marketing purposes, is a questionable measure of the quality of care.[20] Patient satisfaction is an unreliable indicator because positive ratings from the great majority of enrollees — who are healthy and rarely use services — can dwarf the legitimate complaints of those who are sick.[21]

Gathering HEDIS data is costly to health plans and provider organizations, and the cost is ultimately shifted to purchasers and consumers. The movement for quality in health care brings profits to consultants as well as to the newest suppliers of health care products: computer and software companies.

If report cards truly channeled patients to higher-quality plans, those plans might attract a sicker, more expensive population of patients. The higher-quality plans would thus be punished rather than rewarded by the market, which does not adjust HMO premiums for severity of illness.

Although the impetus provided by report cards may boost quality within HMOs,[22] only items measured by HEDIS are affected. As pressure to reduce costs intensifies and the time patients spend with physicians decreases, overall quality could suffer even as HEDIS scores soar.[20]

What is the community of professionals concerned about the quality of health care doing about these shortcomings?

Some groups of employers, in particular the Pacific Business Group on Health (PBGH) and the Minnesota-based Buyers Health Care Action Group (BHCAG), are publishing report cards on medical groups and integrated care systems rather than focusing solely on health plans. A few purchasers are creating financial incentives aimed at improving the quality of care. PBGH pays health plans more money if they achieve negotiated preventive-services scores on HEDIS.[23] The huge Federal Employee Health Benefits Program is considering a similar move. General Motors reduces premiums for employees who choose high-quality plans.

A far more effective step is for employers to place clauses in contracts with health plans that require specific improvements in quality. This development comes from a leading-edge group called the Leapfrog Group. This is an informal think tank of several large employer organizations, including PBGH, BHCAG, and General Motors, whose goal is to make a direct assault on targeted issues related to patients' safety. The group, whose "epidemiology of opportunities for improving quality" is researched by PBGH medical director Dr. Arnold Milstein, has picked two issues as its initial focus on safety. The first is "evidence-based hospital referral" — that is, the channeling of patients to certain hospitals for conditions and procedures (including coronary angioplasty and bypass surgery, carotid endarterectomy, and repair of abdominal aortic aneurysm) for which clear evidence exists that a higher volume of procedures or teaching status is associated with better outcomes.[24-27] After learning that this program could save 500 to 1000 lives per year in California, PBGH (which is made up of employers that purchase care for a total of approximately 3 million employees and their dependents) is asking its California HMOs to use new performance standards for physician groups, hospital precertification, and enrollee education to advance evidence-based hospital referral for an initial subgroup of these interventions, beginning in urban areas. Although PBGH is beginning this effort with its HMOs, the intention of PBGH and the rest of the Leapfrog Group is to make these changes for all forms of health insurance.

The Leapfrog Group's second focus stems from research suggesting that medication errors at hospitals can be substantially reduced by installing computerized physician-order entry systems that display warnings in cases of drug interactions, known drug allergies, and incorrect dosages.[28] Employers could create contractual requirements, incentives, or consumer expectations for computerized physician-order entry systems.

The Leapfrog Group is intent on pushing the movement for quality forward in two ways: by bringing the safety of patients to the forefront of the consciousness of purchasers, and by going beyond the reporting of performance measures of health plans to make attention to quality improvement part of health plans' and providers' contractual obligations and market rewards.

CREATING A CULTURE OF QUALITY INSIDE INSTITUTIONS

External pressure from private purchasers and government regulators is necessary but not sufficient for improvement in quality.[29] Leaders in the field argue that a fundamental change is needed within institutions to bring both a science and a culture of quality to U.S. medicine that are currently lacking in most hospitals and physicians' organizations.

For years, experts on quality, most prominently Donald Berwick and Lucian Leape, have translated quality-enhancing techniques from other industries to health care.[5,30] Mark Chassin, cochair of the Institute of Medicine's National Roundtable on Health Care Quality, challenges the medical profession to strive toward "six sigma quality."[31] The six-sigma goal means tolerating fewer than 3.4 errors per 1 million events — a rate that lies outside six standard deviations of a normal distribution. Currently, the frequency of deaths during anesthesia has been reduced to 5.4 per million, close to the six-sigma goal. In contrast, 580,000 per million patients with depression (58 percent) are not given the correct diagnosis or treated adequately, and 790,000 eligible survivors of heart attacks per million (79 percent) do not receive beta-blockers; these rates are in the neighborhood of one sigma.[31]

Physicians, nurses, pharmacists, and other care givers cannot individually perform at a six-sigma level of reliability; meeting this goal requires building systems designed to prevent adverse consequences of unavoidable human errors.[5] For example, the use of information-and-reminder systems increases the proportion of patients with diabetes who regularly undergo glycohemoglobin tests and retinal and foot examinations.[32] The implication is that clinical care should be redesigned according to a team approach, so that goals for acute, long-term, and preventive care can all be met.

Some institutions are beginning to strive for six-sigma quality in specific areas. LDS Hospital in Salt Lake City designed computer programs to assist physicians in prescribing antibiotics and thus reduced mortality among patients treated with antibiotics by

27 percent.[33] A northern New England multihospital project used quality-improvement techniques to reduce mortality among patients undergoing cardiovascular surgery by 24 percent in three years.[34] The Community Medical Alliance in Boston has redesigned systems of care for patients with severe chronic disease by providing a wide range of services at home and greatly reducing the need for hospitals, specialists, and ambulances.[29] The IHI's National Forum and Breakthrough Series allow institutions across the country to learn from one another's quality-improvement projects. Given the tens of thousands of hospitals and medical practices in the nation, many of which do not have leaders capable of carrying through major quality-improvement projects, this strategy has had limited effects thus far.[1]

Leaders in the movement for quality in health care emphasize that health plans and providers will work toward six-sigma quality on a large scale only if they are rewarded in the market for doing so; currently, financial rewards favor low cost over high quality. Even with a fundamental change in the market, however, this level of quality is difficult to achieve. Physicians' offices, still the main site of clinical practice, are harder to redesign than larger multispecialty groups, which are more able to invest in information-and-reminder systems and to create team-based clinical care.

CONCLUSIONS

Why is the movement to improve the quality of health care active in the United States at a time when cost containment dominates the health care agenda? To some degree, improved quality can reduce costs, particularly costs due to overuse and misuse of services.[31] But substantial investment is needed to reduce misuse, and more funds are needed to address underuse. One cannot explain the existence of the movement simply as a cost-containment activity. A small number of people, mostly physicians, have brought the movement into being, to some extent against considerable odds. Overall, the movement for quality in health care expresses a human desire to do the right thing.

The movement has major barriers to overcome. Corporate purchasers and governments have reduced rates of reimbursement to providers, leading to reduced staffing in hospitals and less time with physicians for patients. Investor-owned health plans and provider organizations have exacerbated these trends by shifting dollars away from direct health services and toward profits and administration. Nonetheless, the goal of improving the quality of care has gained a prominent place on the nation's health care agenda.

REFERENCES

1. Chassin MR, Galvin RW. The urgent need to improve health care quality. JAMA 1998;280:1000-5.
2. Leape LL. Unnecessary surgery. Annu Rev Public Health 1992;13:363-83.
3. Weiner JP, Parente ST, Garnick DW, Fowles J, Lawthers AG, Palmer RH. Variation in office-based quality. JAMA 1995;273:1503-8.
4. McBride P, Schrott HG, Plane MB, Underbakke G, Brown RL. Primary care practice adherence to National Cholesterol Education Program guidelines for patients with coronary heart disease. Arch Intern Med 1998;158:1238-44.
5. Leape LL. Error in medicine. JAMA 1994;272:1851-7.
6. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients. JAMA 1998;279:1200-5.
7. Phillips DP, Christenfeld N, Glynn LM. Increase in US medication-error deaths between 1983 and 1993. Lancet 1998;351:643-4.
8. Kahn KL, Pearson ML, Harrison ER, et al. Health care for black and poor hospitalized Medicare patients. JAMA 1994;271:1169-74.
9. Burstin HR, Lipsitz SR, Brennan TA. Socioeconomic status and risk for substandard medical care. JAMA 1992;268:2383-7.
10. Brook RH, McGlynn EA, Cleary PD. Measuring quality of care. N Engl J Med 1996;335:966-70.
11. Eddy DM. Performance measurement: problems and solutions. Health Aff (Millwood) 1998;17(4):7-25.
12. Millenson ML. Demanding medical excellence. Chicago: University of Chicago Press, 1997.
13. Epstein AM. Rolling down the runway: the challenges ahead for quality report cards. JAMA 1998;279:1691-6.
14. Rubin HR, Rogers WH, Kahn KL, Rubenstein LV, Brook RH. Watching the doctor-watchers: how well do peer review organization methods detect hospital care quality problems? JAMA 1992;267:2349-54.
15. Jencks SF, Wilensky GR. The health care quality improvement initiative: a new approach to quality assurance in Medicare. JAMA 1992;268:900-3.
16. Prager LO. PROs aim to help curb payment errors. American Medical News. December 7, 1998:1, 38.
17. Leape LL, Woods DD, Hatlie MJ, Kizer KW, Schroeder SA, Lundberg GD. Promoting patient safety by preventing medical error. JAMA 1998;280:1444-7.
18. Gabel JR, Ginsburg PB, Hunt KA. Small employers and their health benefits, 1988-1996: an awkward adolescence. Health Aff (Millwood) 1997;16(5):103-10.
19. Prager LO. Top accreditor ties accountability to higher HMO quality. American Medical News. October 19, 1998:10, 13.
20. Brook RH, Kamberg CJ, McGlynn EA. Health system reform and quality. JAMA 1996;276:476-80.
21. Angell M, Kassirer JP. Quality and the medical marketplace — following elephants. N Engl J Med 1996;335:883-5.
22. Longo DR, Land G, Schramm W, Fraas J, Hoskins B, Howell V. Consumer reports in health care: do they make a difference in patient care? JAMA 1997;278:1579-84.
23. Schauffler HH, Rodriguez T. Exercising purchasing power for preventive care. Health Aff (Millwood) 1996;15(1):73-85.
24. Jollis JG, Peterson ED, DeLong ER, et al. The relation between the volume of coronary angioplasty procedures at hospitals treating Medicare beneficiaries and short-term mortality. N Engl J Med 1994;331:1625-9.
25. Grumbach K, Anderson GM, Luft HS, Roos LL, Brook R. Regionalization of cardiac surgery in the United States and Canada: geographic access, choice, and outcomes. JAMA 1995;274:1282-8.
26. Karp HR, Flanders WD, Shipp CC, Taylor B, Martin D. Carotid endarterectomy among Medicare beneficiaries: a statewide evaluation of appropriateness and outcome. Stroke 1998;29:46-52.
27. Hannan EL, Kilburn H Jr, O'Donnell JF, et al. A longitudinal analysis of the relationship between in-hospital mortality in New York State and the volume of abdominal aortic aneurysm surgeries performed. Health Serv Res 1992;27:517-42.
28. Bates DW, Leape LL, Cullen DJ, et al. Effect of computerized physician order entry and a team intervention on prevention of serious medication errors. JAMA 1998;280:1311-6.
29. Berwick DM. Crossing the boundary: changing mental models in the service of improvement. Int J Qual Health Care 1998;10:435-41.
30. Berwick DM. Continuous improvement as an ideal in health care. N Engl J Med 1989;320:53-6.
31. Chassin MR. Is health care ready for six sigma quality? Milbank Q 1998;76:565-91.
32. McCulloch DK, Price MJ, Hindmarsh M, Wagner EH. A population-based approach to diabetes management in a primary care setting. Effective Clin Pract 1998;1(1):12-22.
33. Pestotnik SL, Classen DC, Evans RS, Burke JP. Implementing antibiotic practice guidelines through computer-assisted decision support: clinical and financial outcomes. Ann Intern Med 1996;124:884-90.
34. O'Connor GT, Plume SK, Olmstead EM, et al. A regional intervention to improve the hospital mortality associated with coronary bypass graft surgery. JAMA 1996;275:841-6.