



## Quality in hospitals: methodology for self-appraisal and change

FLOYD D. LOOP, MD; THOMAS KEYS, MD; ROBERT KAY, MD; RALPH A. STRAFFON, MD; RICHARD G. FARMER, MD

**C**ONSENSUS has not yet been reached about how to measure the quality of health care or how to compare one healthcare institution with another. Yet quality has become the common ground on which patients, providers, and purchasers communicate.<sup>1</sup> All these participants need a methodology that measures quality of care and, in the process, elevates this quality.

The hospital has become the focal point of quality assessment because it is a window into the delivery of major, and often expensive, care provided by large physician groups, regardless of the organizational scheme under which the individual physicians practice. Accordingly, the hospital is an appropriate and accessible forum for developing methodologies to improve the quality of health care.

Quality assurance consists of defining standards of care, reassessing these standards periodically, and continuously improving the medical systems that support these standards. That such activities exist in every hospital would seem self-evident, yet these seemingly simple tasks are not easily attained or even commonly accepted as goals.

The difficulty of assessing quality amidst the complexity of a hospital is often given as the excuse for the lack of standards. At the same time, methods of assessing quality are the subject of intense ongoing study. Evidence for this intensity includes the disclosure of

medical data by the government; the "Agenda for Change," authored by the Joint Commission of Accreditation of Healthcare Organizations (JCAHO); numerous provider initiatives, and the growing interest in effectiveness and outcomes research. Most of these approaches do not, however, focus on the immediate challenge of introducing a system for assessing quality in all our hospitals, in the context of everyday hospital life, with the intent to improve care at every level.

Several methodologies have been proposed to raise the level of healthcare, but most are concerned with generic monitoring data and the uninsured. The release of Medicare outcome data (MEDPAR reports) by the Health Care Financing Administration (HCFA) identifies irregular patterns of care and thereby stimulates hospitals to improve their data collection. HCFA, however, evaluates only providers and does so with limited outcome measures (mostly mortality), which in some cases are not a proper measure of quality.

HCFA's more recent medical effectiveness initiative goes beyond adjusted raw data. This initiative samples variations in practice patterns and outcomes and includes peer review organizations (PROs) and clinical data abstracted from medical records.<sup>2</sup> The JCAHO has assembled experts to aid in identifying clinical, organizational, and management indications of quality. As indicator data identify and publicize poor performance, hospitals will remedy problems, the JCAHO theorizes, and the overall quality of healthcare will improve. These initiatives are important, but they are mainly retrospective and stimulate reaction rather than proaction.

Provider reactions are also stimulated by external competition. Frequently, the response is directed more to "looking good" than actually to improving the quality of care.

From the Board of Governors (F.D.L.), Office of Quality Management (T.K.), Medical Operations (R.K.), Office of Professional Staff Affairs (R.A.S.), and Division of Medicine (R.G.F.), The Cleveland Clinic Foundation.

Address reprint requests to F.D.L., The Cleveland Clinic Foundation, One Clinic Center, 9500 Euclid Avenue, Cleveland Ohio 44195.

While data disclosure by third-party payors may stimulate change, substantive improvements in care must be driven by the providers themselves and must be understood and appreciated by the well-informed consumer.

Although sparked initially by regulatory agencies, quality assurance is being taken up by hospitals. Hospitals recognize the need to improve access, clinical outcome, and patient satisfaction, and to provide the best value to the patient. Reimbursement policies have also necessitated greater efficiency in healthcare. Physicians and hospitals are learning that successful businesses focus on service and results, and that medicine should be no different. Every hospital has its strong points, and if these can be amplified and any weak points diminished or eliminated, patients and payors might see a difference among competing hospitals.

How can a hospital change for the better? Administrators, even physician-administrators, are often far removed from patient contact. They are unable to assess quality because they lack the clinical experience that reflects the changing patterns of patient characteristics and how these patterns affect medical practice. Traditionally, hospital-affiliated physicians have been interested mainly in professional staff affairs and in issues related to their individual specialties. Yet the experience of these practicing physicians is more relevant to quality assessment and improvement than that of other personnel in the institution. As Jennett observed, "Much of the talent in medicine is on the shop floor."<sup>3</sup>

Efforts to measure quality in our hospitals must be viewed in the context of the somewhat unique and pluralistic healthcare system of the United States. The informed American consumer seeks greater value and expects satisfaction of these basic needs:

- access to and compatibility with physicians of their choosing;
- communication with the physician about risk, benefits, aftercare, and cost of treatment;
- assurance of the best possible outcome available anywhere and to anyone, given the diagnosis and comorbidity; and
- education about disease prevention and lifestyle modification.

How does a hospital and its staff (whether part-time or full-time) fulfill these expectations in an era of prospective payment and shrinking resources? It is not always possible to meet these expectations. Nevertheless, it should be the first goal of every hospital to respond to them and, as an institution, to provide the best possible care and service throughout the patient's

hospitalization, regardless of the payment scheme. Achieving that goal is not easy. Yet establishing a system for meeting this goal is the first, if not the most essential, step to responding to those expectations.

We outline below four principles that should underlie any quality assurance methodology at the hospital and provider level.

---

#### HOSPITAL OPERATIONS

---

Traditionally, "hospital operations" meant the facility, personnel, and equipment required to deliver healthcare. In reality, however, hospital operations—from admitting to finance—form the base of a pyramid, the vertex of which is patient outcome. Interposed between the base and the vertex are the various professional components, including the institution's medical staff and, in some cases, education and research. The efficiency of the systems used in operations affects the ability of the hospital staff to deliver cost-effective quality medical care. If these integral systems do not function optimally, they impair day-to-day performance and ultimately compromise the outcome of patient care.

While a hospital must comply with JCAHO guidelines, these guidelines are only minimum requirements for patient care. There are no official standards to measure the performance of a hospital's business office or patient accounts department, the ethics or image of its public affairs office, the efficiency of its admitting office, or whether its human resources activities are balanced and practical. These internal organizational and managerial issues are generally viewed as beyond monitoring, yet they are intrinsic and important parts of an institution's structure and quality of service.

Ongoing assessment of operations is essential to any attempt to quantify hospital quality. We propose that an oversight group, composed of physicians, trustees, and allied health personnel, review key operations that affect patient care. Reports on the strengths and weaknesses of operations should form part of the hospital quality assurance methodology. The kinds of variables to be considered in this evaluation might include bills, waiting lists, equipment, new technology, traditional treatments, patient satisfaction, and service.

Aside from the economic implications of cost-effective care, improving the efficiency of operations is a way to improve quality, because it forces an integrated look at the processes that affect a patient during a hospital encounter. Physicians must become part of the appraisal system. Physicians collectively and individually cannot

afford to be so narrow in their vision and loyalties that they are unconcerned or uninvolved with the infrastructure that supports their practice of medicine.

**Overcoming resistance**

Like physicians, hospital managers tend to be apprehensive about evaluation. Initial attempts to introduce performance appraisal may be perceived by operations managers as interference, a breach of confidentiality, or a formality undertaken by inexperienced persons unable to comprehend the complexities of the operation.<sup>4</sup> It is essential, therefore, that both managers and employees agree to the process of self-evaluation to improve performance. When a manager understands that the intent of the “outside evaluation” is to identify strengths and weaknesses in the operations systems, communication should improve between management and the medical staff.

What is the evidence that such a system of operations review will improve quality? Good managers and good employees affiliated with a “good” hospital should be sufficient to guarantee quality medical care. It has been shown, however, that when the employees and medical staff participate in decision-making, internal communication improves.<sup>5</sup> Moreover, hospitals that engage in continuous self-appraisal also function more effectively.<sup>6</sup> Operational effectiveness, in turn, should improve service to the patient. A well-organized hospital will be able to deliver more than a service; it will deliver a better product—quality healthcare.

**DATA DISCLOSURE**

Outcome data are necessary to set standards and to evaluate the effectiveness of patient care. Hospitals must improve the collection, analysis, and distribution of outcome data for their patients or they will be “cursing the darkness,” forced to rely on Medicare-based mortality and morbidity statistics to measure their effectiveness. These statistics do not yet provide sufficient information on the risk stratification needed to identify trends and to improve outcomes.

Most hospital Medical Records departments are huge repositories for charts and records, but they do not routinely provide information relevant for quality assessment. Heretofore, hospitals lacked incentive to monitor patient care on a daily basis, but now, with the emphasis on comparing hospitals, the incentive is strong.

Data for these comparisons may be collected in several ways: One is to sponsor independent clinical registries for given disease categories that are based in

**TABLE 1**  
MEDICARE SHORT-STAY HOSPITAL DISCHARGES, BY LEADING DRGS\* 1985

DRG#	Description	Total charges (in millions)	Discharges
127	Heart failure and shock	\$ 2,243	498,305
89	Simple pneumonia and pleurisy	\$ 1,798	347,275
14	Cerebrovascular disorders, except transient ischemic attacks	\$ 1,772	312,285
209	Major joint and limb reattachment procedures	\$ 1,754	164,800
148	Major small and large bowel procedures	\$ 1,567	116,970
210	Hip and femur procedures, except major joint procedures	\$ 1,065	121,100
140	Angina pectoris	\$ 1,006	348,940
182	Esophagitis, gastroenteritis	\$ 870	313,140
	Total, above eight DRGs	\$12,075	2,222,815
	Total, all Medicare	\$53,462	10,027,010

\*From Latta <sup>7</sup>

departments; another is to develop a central clinical information system within Medical Records that can supply data needed to evaluate clinical outcome.

Independent departmental computerized registries for given disease categories are valuable but they tend to be overprogrammed, involve considerable start-up and maintenance costs, and are designed to capture trends and long-term results for selected diseases. Such registries are also subject to nonuniform programming and perceptions of potential bias because they represent self-administered internal record-keeping. Hence, we propose that a central clinical information database be maintained by the Medical Records department.

Missing in most healthcare environments are timely reports on the outcome and performance across all specialties and patient populations served. Independent and uniform collection, distribution, and analysis of data by the hospital information system is a means of continuously and objectively evaluating results. Accurate and sequential patient outcome data are the best measure of performance and the only credible guide to changes that might be necessary to improve quality of care individually, collectively, and institutionally.

The most frequent diagnoses are the most practical targets for focused data collection and disclosure. Because a large proportion of resources is expended on only a few disease categories, improved methods of managing these categories, based on continuous evaluation, should improve the quality of care.

Eight DRGs comprise 22% of all charges nationally (Table 1).<sup>7</sup> Thus, hospital quality data should be prioritized according to the frequency of disease treated

and procedures performed in that locale. Quality indicators, reflective of the most frequent encounters, are the best way to begin data disclosure in each department. The staff physicians should determine the data relevant to their area of practice.

In setting priorities for data disclosure projects, procedures for which preadmission/preprocedural review is mandated also suggest targets for initial review, as well as targets where improved data disclosure might affect quality of care. The Health Care Financing Administration now requires such review for bunionectomy, cardiac catheterization, carotid endarterectomy, carpal tunnel surgery, cataract surgery, coronary artery bypass grafting, hysterectomy, inguinal hernia repair, laminectomy with disk excision, and percutaneous transluminal coronary angioplasty.<sup>8</sup>

### Custom-programmed clinical indicators

We have begun a pilot project of "custom programming" for specific medical and surgical departments. Clinical departments requested data pertaining to demographics, clinical variables, and outcome measures, which were centrally abstracted in Medical Records. Each of six specialties in the pilot could request information on up to four of their most frequent medical diagnoses. For example, Pulmonary Medicine chose emphysema, asthma, and pneumonia, and Orthopaedics requested information about total hip and total knee replacement. Each department requested specific objective outcome data on 15 to 25 variables for each DRG, such as patient demographics, comorbidity, treatment rendered, complications, length of stay, charges, and readmission. At the outset, the departments selected these measures through consensus of their professional staff. The measures were more specific to the disease and treatment than are the generic screens or indicators offered by a PRO.

While obtaining information about all diagnoses is not practical, custom programming enables each department to evaluate performance in treating the diagnoses most frequently encountered, based on the clinical indicators specific to that disease. This exercise uses data that each department believes may affect outcome and reflects standards set prospectively by an informed peer group. By itself, a clinical indicator is not a standard or practice guideline.<sup>9</sup> The data are objective and therefore form a realistic foundation on which the department can base individual and group goals and standards. These data may further stimulate clinical research as the results are discussed.

We estimate that, in a mid-size to large hospital,

pertinent clinical information needs to be obtained for between 25 and 30 different specialties and between 100 and 150 disease categories. Reports should provide information about the results of treatment by individual physician, as well as the entire department, and should be updated monthly or quarterly.

The Maine Medical Assessment Project<sup>10</sup> showed that, as information about quality becomes known, physicians change their management of specific medical problems. Feedback of performance measures directly to the physician is the effective element for change. Using data from regional variations in hospital utilization rates, the Maine Medical Assessment Project established specialty study groups in orthopedics, gynecology, and urology. For example, in orthopedics, laminectomy rates and outcome were disseminated among orthopedic surgeons throughout the state. The study group found that most surgeons were practicing "competent and conscientious medicine." This data disclosure resulted in a sentinel effect. Statewide, laminectomies for Workers Compensation patients began to fall at the time the orthopedic study group reviewed the procedure with orthopedic surgeons and neurosurgeons.

Information about individual patient outcomes is important to improving patient care. Moreover, outcome data will also provide objective information for payors and patients, which should help them make informed choices when purchasing healthcare. The first "amendment" to a patient's bill of rights should be access to care and, as importantly, access to accurate information about that care in the designated setting. The hospital is responsible for making these data available to patients who seek medical care and who wish to know the implications of their treatment. A custom-programming approach, if widely implemented, would be a revolutionary step in "quantifying quality." Data disclosed at the request of each department could be the most objective form of quality assessment.

---

### ANNUAL PROFESSIONAL REVIEW

---

A systematic appraisal of each hospital staff physician is especially pertinent in a university or clinic system, to evaluate performance and to rate academic achievement. For many physicians who are not full-time employees of an institution, the initial credentialing process is the extent of a professional review. Ongoing reviews provide performance assessments, wherein credentialing for privileges is only the beginning, not the end, of the evaluation process. Such a review should assess the individual's performance based on objective

measures, including outcome data and their role in the institution, and should be a vehicle to elicit staff physicians' thoughts on the department and operations of the hospital, as well as their ideas on how to improve quality. Apart from a strict peer review of clinical performance, the annual professional review may address individual performance in administration, education and research (when appropriate), leadership, collegiality, and medical activities locally and nationally. It is the time when all goals and expectations for the next year are entertained.

The Cleveland Clinic Foundation has a well-developed system of professional review. Discussion occurs among the staff physicians, the department or division chairmen, and the medical administration. A self-review by each staff person provides the initial assessment for the annual review process. In this way, individuals gain more perspective on their accomplishments and recognize their own need for improvement. Performance also must be discussed with individual staff members after the evaluation process is completed. This follow-up conversation provides communication that is expected to influence performance. This kind of review system should not be limited to full-time salaried physicians in a group or on a hospital staff but should apply to all practitioners in a given hospital.

### **"To change, to better"**

An annual professional review reinforces and even rewards physicians who do well in the system, but heretofore such reviews have not attempted to improve the system itself. Recently, Berwick<sup>11</sup> introduced to medical readership the word "kaizen," which designates a process-oriented approach used in Japanese industry to achieve higher standards; "kai" means "to change" and "zen," "to better." In Japan, industrial managers spend 50% of their time on improvement.<sup>12</sup> Engineers at Japanese plants are often reminded: "There will be no progress if you keep on doing things the same way. Standards exist only to be superseded by better standards."

We need not transplant the Japanese culture to learn a valuable lesson from this management technique and to apply it to our own hospitals and hospital staff. An ongoing dialogue on improving individual performance, as well as improving the internal environment of each institution during an annual professional review, would be a step in that direction. This review should be a periodic and constructive roundup in a process that instills accountability, provides perspective on achievement, and establishes the basis for continued improvement of the individual and the institution.

---

### QUALITY ASSURANCE

---

Myths and bad approaches to quality assurance have soured many practitioners on the subject. Quality assurance has been perceived as needless bureaucratic documentation. One popular misconception is that someone "does quality" for the institution. The fact is that quality control by regulation is not likely to produce any significant change in quality. To attempt to assure quality by regulation is to invite great activity, energy expenditure, and creativity in trying to "get around the rule book."

Peer review organizations tend to focus on irregular treatment patterns or unnecessary hospitalization, but these observations are guided by minimum standards and are insufficient to assess quality in specialized care.

Outcome measures that guide true quality assurance differ among specialties and diseases. Quality cannot be "assured" by a top-down management that exhorts the staff to alter certain generic practice patterns. Quality awareness begins with individual physicians who want to improve their ability to care for patients. The best forum for communicating awareness is at regular departmental and other staff meetings that focus on concrete goals for quality improvement.

To assure uniform standards, however, there must be an overseer of the quality mission of the institution. A Quality Assurance or Quality Management Office should review institutional performance on objective outcome measures. The Office should coordinate departmental quality assurance plans, introduce quality as an integral part of strategic planning, and provide the vital data that influence financial, legal, and operational decisions. The Quality Office should ensure that each department develops a plan for monitoring quality indicators directed to patient care. All clinical outcome data should be under the purview of this office, to eliminate the perception of conflict of interest by individual departments reviewing their own results. An advisory board composed of physicians and non-physicians should make the decisions about quality management for the institution. Neither group alone will be effective.

An important charge for the advisory board is to assist the Quality Office in discovering issues that pertain to quality in the hospital; for example, indications for a procedure or new technology, patient satisfaction, or issues specifically pertaining to improved care. These questions are easily resolved without a thorough investigation. After study, the conclusions should be transmitted to the governing body of the hospital for consideration and perhaps corrective action.

## SUMMARY OF THE HOSPITAL QUALITY ASSURANCE METHODOLOGY

Quality touches the individual practitioner, the specialty, and the internal hospital practice environment. Essential components are: (1) the continuous review of operations; (2) the monitoring of quality indicators through integrated medical information systems; (3) annual professional review; and (4) physician management.

Movement toward quality improvement requires the attention of the individual practitioner. Inherent in the process are rigorous self-assessment and peer review, combined with clearly defined institutional and specialty standards for acceptable practice. Standards must be determined and agreed to by the physicians to assure that such standards are tailored to specific diseases and treatments, rather than being generic measures that are applied to all conditions. These standards must be vigorously enforced by the institution, which is accountable for quality assurance by our community of patients,

providers, and purchasers of healthcare.

The challenge of improving quality is to elevate continuously the level of practice. Tangible and demonstrable improvements must be the goal. Accountability and improved communication among practitioners (whether or not they practice together) and with patients are the essence of improved quality, but the processes for creating both need to be institutionalized. Any self-appraisal that applies to hospital operations applies foremost to individual patient-provider performance. Leadership at the department level must create a culture of quality in the staff and perpetuate the best ideals on which healthcare is founded. Carrying out quality assurance activities driven by rigorous self-appraisal in each division or department of the hospital, regardless of level or type of staff appointment, should be the first priority of any hospital-based organizational unit. Only in this way will quality awareness become a part of the structure of hospital professional life and provide greater value for the patient.

## REFERENCES

1. Roberts J. Quality Indicators as Viewed by the JCAHO. Presented at The Cleveland Clinic Foundation, May 24, 1988.
2. Roper WL, Winkenwerder W, Hackbarth GM, Krakauer H. Effectiveness in health care: an initiative to evaluate and improve medical practice. *N Engl J Med* 1988; 319:1197-1202.
3. Jennett B. High-Technology Medicine: Benefits and Burdens. Oxford: Oxford University Press; 1986.
4. Kaluzny AD, Barnsley JM. The John Mannix Quality of Care Symposium. Organizational indicators of quality. *Health Matrix* 1988; 6:3-7.
5. Shortell SM, LoGerfo JP. Hospital medical staff organization and quality of care: results for myocardial infarction and appendectomy. *Medical Care* 1981; 19:1041-1055.
6. Bedard JC, Johnson AC. The organizational effectiveness paradigm in health care management. *HCM Review* 1984; (Fall):67-75.
7. Latta VB, Helbing C. Medicare: short-stay hospital services, by leading diagnosis-related groups, 1983 and 1985. *Health Care Financing Review* 1988; 10:79-107.
8. Peer Review Systems, Inc. PRO Third Scope of Work, revised April 1, 1989; as required by HCFA in Peer Review Organizational Manual, Interim Manual 85-2. Department of Health and Human Resources, Health Care Financing Administration, March 1986, Section IM 2050.6, pp 53-58.
9. Statement of the Joint Commission on Accreditation of Healthcare Organizations concerning H.R. 1692, Medical Care Quality Research Act of 1989, before the Subcommittee on Health, Committee on Ways and Means, May 24, 1989.
10. American Medical Association, Department of Health Care Review, Division of Health Policy and Program Evaluation. Confronting Regional Variations: The Maine Approach. Chicago: American Medical Association; 1986.
11. Berwick DM. Continuous improvement as an ideal in health care. *N Engl J Med* 1989; 320:53-56.
12. Imai M. Kaizen: The Key to Japan's Competitive Success. New York: Random House Business Division; 1986.