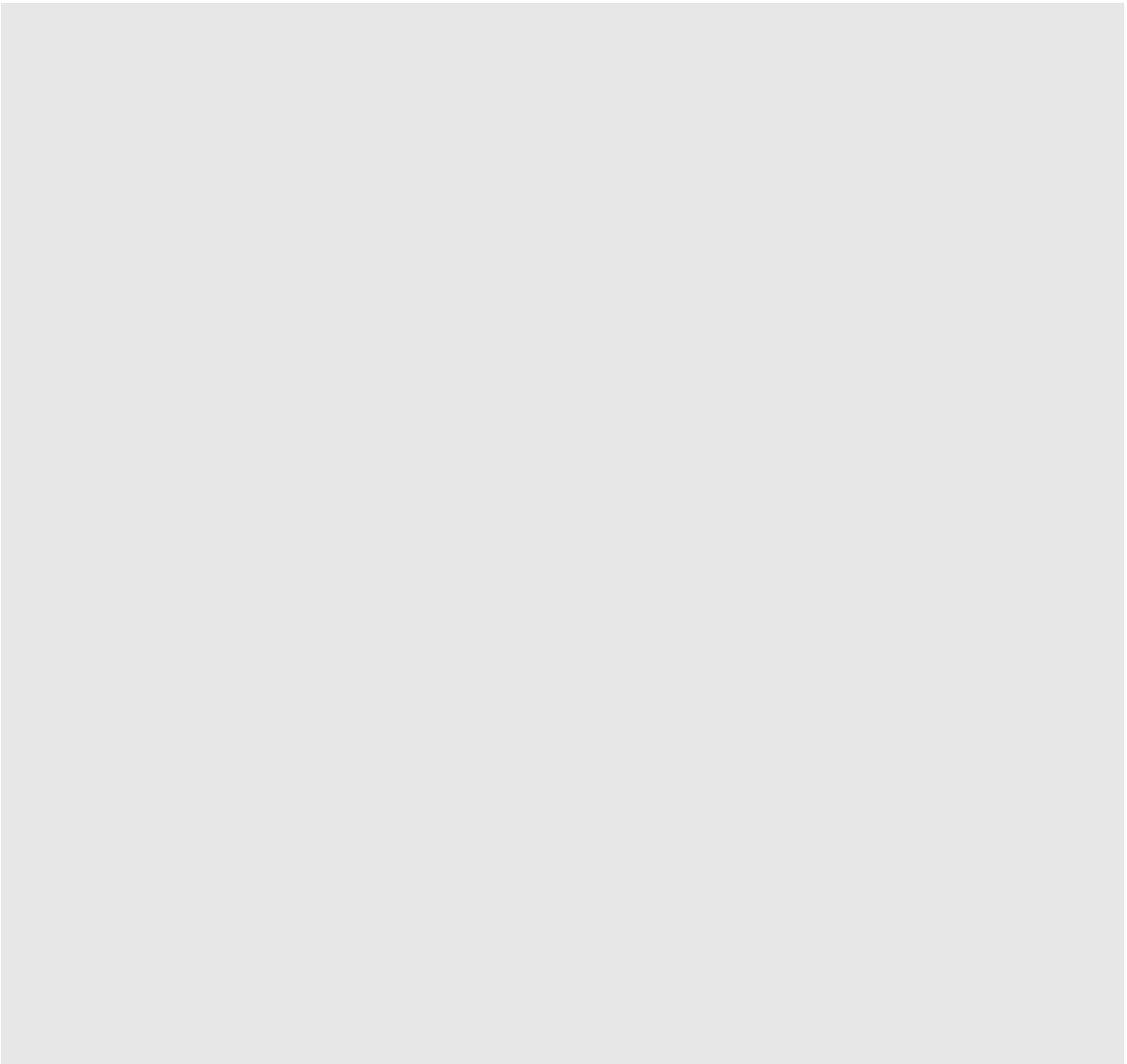


The Quality Imperative: The Theory



Chapter Outline

Improving Quality and Performance

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Theory of CQI

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The management model in Figure 5.7 shows how health services organizations (HSOs) and health systems (HSs) convert inputs into outputs. The inputs of structure, tasks and technology, and people are integrated to achieve individual and organizational outputs (productivity). The types and nature of inputs and the conversion process determine the quality of output. This chapter and the next discuss quality and its two dimensions.

Chapter 7 provides the conceptual framework for quality improvement (QI), which is the first dimension of quality. This framework is drawn from theorists and pioneers in QI. Prominent among them are Florence Nightingale, Ernest A. Codman, Walter A. Shewhart, W. Edwards Deming, and Avedis Donabedian. These individuals made vital contributions to the theory of quality and to applying the theory to performance improvement and measuring the results. Deming was the most significant of the contemporary quality improvement theorists. Joseph M. Juran and Philip B. Crosby were contemporaries of Deming and developed important applications of QI in the workplace. Hoshin planning is described as a means of aligning the organization's quality efforts.

Process improvement is the second dimension of quality. Chapter 8 describes how to organize for quality and provides a primer of methodologies, techniques, and tools to make continuous quality improvement (CQI) a reality. Their application in the organization, especially its operating units, is discussed. HSOs and HSs that use CQI to

become more productive and cost-effective have a significant competitive advantage.

Improving Quality and Performance

Attention was first paid to the quality of clinical practice in HSOs in the late 19th century. At that point, technology and efficacious surgery were centralizing clinical services in the acute care hospital. The methodology used to measure quality was peer review, defined as physician review of the care provided by physicians and other categories of caregivers. In 1912, the American College of Surgeons (ACS) began to develop the concept of peer review. By 1918, it published *The Minimum Standard*, part of which addressed peer review of medical treatment in hospitals: “The [medical] staff [shall] review and analyze at regular intervals their clinical experience in the various departments of the hospital.”¹ The first survey using *The Minimum Standard* showed how inadequate 150 hospitals were; the results were burned in the furnace of the Waldorf Astoria Hotel in New York City. The role of Dr. Ernest A. Codman in developing *The Minimum Standard* and establishing the American College of Surgeons’ Hospital Standardization Program is discussed later in the chapter. Chapter 1 noted that The Joint Commission continued the work of the ACS upon its establishment as the Joint Commission on Accreditation of Hospitals in 1951.

The process of peer review was called medical audit, terminology that continued into the 1960s. Enactment of Medicare codified utilization review (UR), which focused on appropriate use of services. UR did not directly affect the quality of care in hospitals, except that reviewing appropriateness of admission, use of ancillary services, and length of stay may have helped reduce nosocomial (institution-caused) and iatrogenic (physician-caused) problems. The focus of UR in Medicare was discussed in Chapter 1. A major shortcoming of medical audit and UR was that they made no attempt to solve the problems identified.

Efforts to measure quality continued to evolve. In the early 1970s, The Joint Commission required quality assessment activities, a variation on medical audit. In the middle 1970s, the words were changed to *medical care evaluation*, but it remained essentially medical audit. By 1980, the concept of quality assurance (QA) had become a Joint Commission standard. QA meant that The Joint Commission standards had evolved from finding and describing problems (medical audit) to be more proactive and dynamic by stressing problem solving to improve clinical quality. As noted earlier, performance improvement is now the umbrella concept for all quality-related Joint Commission standards.

Historically, quality has been defined as the degree of adherence to standards or criteria. As applied in health services, ensuring quality means using prospectively determined criteria to measure performance, with the measurement being done retrospectively. Newer definitions of quality are discussed here in the context of CQI. These include conformance to requirements and fitness for use, or fitness for need. They are customer driven because they focus on customer expectations and do not exclusively reflect criteria or standards developed using professional expertise. It is suggested that quality should be defined as meeting latent needs—identifying “needs” customers may not even know they have, but will be pleased to have identified for them and met by the provider. CQI defines *customer* broadly to include all who receive goods or services.

Measuring quality using the concepts of QA required that the HSO/HS establish standards (criteria), typically through peer judgments. Developing criteria was but the first step. Two other elements were necessary: a means of surveillance to identify deviations requiring action, and stopping the deviation or minimizing its recurrence—the corrective action. These steps are simple in theory and may be in practice as well, depending on what is being measured. Much of the conceptual framework used to measure quality was developed by Avedis Donabedian, a physician, whose nomenclature of *structure*, *process*, and *outcome* became standard in health services. Structure and process were the major foci of The Joint Commission’s QA standards in the 1980s.

Donabedian noted the difficulties of defining the quality of medical care and measuring the quality of the interpersonal relationship between physician and patient—a relationship essential to the process of care, as

reflected in the outcome of care. Technical aspects of care are more definable and measurable than are interpersonal relationships.² Regardless, measuring quality under traditional QA began with criteria developed internally or externally imposed or both.

Structure, Process, and Outcome in Quality Theory

Donabedian defined *structure* as the tools and resources that providers of care have at their disposal and the physical and organizational settings in which they work.³ *Process* is the set of activities that occurs within HSOs and between practitioners and patients. Here, judgments of quality may be made either by direct observation or by reviewing recorded information. Donabedian considered this means of measuring quality to be largely normative, in that the norms come either from the science of medicine or from the ethics and values of society.⁴ *Outcome* is a change in a patient's current and future health status that can be attributed to antecedent healthcare.⁵ Donabedian defined *outcome* broadly to include improvement of social and psychological function, in addition to physical and physiological aspects. Also included are patient attitudes, health-related knowledge acquired by the patient, and health-related behavioral change.⁶

Donabedian concluded that "good structure, that is, a sufficiency of resources and proper system design, is probably the most important means of protecting and promoting the quality of care."⁷ He added that assessing structure is a good deal less important than assessing process and outcome. Comparing process and outcome, Donabedian concluded that neither is clearly preferable. Either may be superior, depending on the situation and what is being measured. He emphasized that it is critical, however, to know the link between the content of the process and the resulting outcome. Only by knowing this link (preferably at the level of a causal relationship) can what is done or not done in the process be modified to improve the outcome. Not knowing how a desirable outcome was achieved means replication is but a matter of chance. Table 7.1 shows the advantages and disadvantages of focusing on process and outcome to

measure quality. Outcome indicators in Donabedian's taxonomy focus on the overall outcomes of medical care, such as health status and disability. Donabedian's emphases on system (structure of care) and process (of care) are emblematic of how QI is presently conceptualized and applied.

Development and application of QA peaked in the late 1980s with adoption of a 10-step QA process. From then to the present, The Joint Commission began its evolution to use of outcome indicators (measures). In 1987, its Agenda for Change initiated a major shift to adopting CQI. These activities were subsumed into what became known as the ORYX[®] initiative.⁸ It was generally conceded that the QA implemented in the 1980s did little to improve the quality of care. "On the whole, to the extent that quality measurement tools have been developed at all, they tend to unveil the fact of flaw, not its cause."⁹

The first clinical indicators developed were hospitalwide care and obstetrical and anesthesia care.¹⁰ In early 1989, 12 key principles of organizational and management effectiveness were announced by The Joint Commission, and pilot testing began. The purpose was to characterize an acute care hospital's commitment to continuously improving its quality of care. A central tenet was that identifying and monitoring outcome indicators were necessary for a hospital to focus its QI activities. By 1991, indicators had been developed for anesthesia, obstetrics, cardiovascular medicine, oncology, and trauma care.¹¹ These indicators focused on the high-risk, high-volume, and problem-prone aspects of care. Hospitals could choose from among hundreds of performance measurement systems and thousands of performance measures. A major goal of ORYX[®] is to develop standardized, evidence-based measures.¹² As of 2013, there had been 14 core performance measure sets identified for hospitals, including acute myocardial infarction, heart failure, pneumonia, perinatal care, and surgical infection prevention.¹³ A major initiative of the Centers for Medicare and Medicaid Services (CMS) is reducing the number of hospital readmissions after discharge from an inpatient stay. Hospitals with excess readmissions risk reduced Medicare payments.¹⁴ The number and range of evidence-based

performance measures by which hospital outcomes can be compared will increase and are strongly supported by CMS.

Table 7.1. Advantages and disadvantages of process and outcome measures of quality

Process		Outcome	
Advantages	Disadvantages	Advantages	Disadvantages
Practitioners have no great difficulty specifying technical criteria for standards of care.	Great weakness in the scientific basis for much of accepted practice and use of prevalent norms as the basis for judging quality may encourage dogmatism and perpetuate error.	When the scientific basis for accepted practice is in doubt, emphasis on outcome tends to discourage dogmatism and helps maintain a more open and flexible approach to management.	Even expert practitioners are unable to specify the outcomes of optimal care, as to their magnitude, timing, and duration.
Even not fully validated standards and criteria can serve as interim measures of acceptable practice.	Because practitioners prefer to err on the side of doing more than is necessary, there is a tendency toward overly elaborate and costly care; this is reflected in the norms.	An open and flexible approach may help in the development of less costly but no less effective strategies of care.	When indicators of health status are obtained, it is difficult to know how much of the observed effect can be attributed to medical care.
Information about technical aspects of care is documented in the medical record and usually is accessible as well as timely—it can be used for prevention and intervention.	Although technical aspects are overemphasized, the management of the interpersonal process tends to be ignored, partly because the usual sources of data give little information about the physician–patient relationship.	Outcomes reflect all of the contributions of all of the practitioners to the care of the patient and thus provide an inclusive, integrative measure of the quality of care.	Choosing outcomes that have marginal relevance to the objectives of prior care is an ever-present pitfall; even when relevant outcomes are selected, information about many outcomes often is not available in time to make it useful for certain types of monitoring.
Use of this information permits specific attribution of responsibility so that credit or blame can be more easily ascertained and specific corrective action can be taken.		Also reflected in the outcome is the patient's contribution to the care that may have been influenced by the relationship between patient and practitioners; a more direct assessment of the patient–physician relationship can be obtained by including aspects of patient satisfaction among measures of care.	Waiting for a pattern of adverse outcomes can be questioned on ethical grounds.
			Examining outcomes without examining means of attaining them may result in a lack of attention to the presence of redundant or overly costly care.

Adapted from Donabedian, Avedis. *Explorations in Quality Assessment and Monitoring. Vol. 1, The Definition of Quality and Approaches to its Assessment*, 119–122. Chicago: Health Administration Press, 1980.

Importance of QI

The importance of evaluating and improving quality was suggested in Chapter 1 and is expanded here. The Joint Commission and other accreditors such as the Community Health Accreditation Program, American Osteopathic Association, and Det Norske Veritas Health-care, Inc., require organized, effective QI activities. HSOs not accredited by a CMS-approved accreditor are not in “deemed” status and can be reimbursed for services to federal beneficiaries only by meeting the conditions of participation established by the Department of Health and Human Services (DHHS). Accreditors of medical education programs require the HSO to be accredited, but not necessarily by The Joint Commission. Insurers of all types expect HSOs/HSs to be accredited. Lending institutions and organizations that rate bond offerings consider accreditation in their decisions. Chapter 2 details the importance of credentialing clinical staff, an activity indispensable to QI. In addition, failing to effectively assess quality increases the likelihood of adverse malpractice judgments because the HSO may be seen as not meeting the legal standard of care.

QI is considered important by managerial, clinical, and support staff who want to do their best. They strive to do so because they have internalized the motivation to provide high-quality care and achieve excellence in their HSO/HS. This necessitates learning what is being done well, what is not, and closing the gap.

QI and QA Compared

HSOs/HSs that immerse themselves in the philosophy and techniques of CQI have achieved a paradigm shift away from traditional approaches to quality. As will be described QI uses powerful tools that result from a radically different philosophy about relationships between managers and staff. Table 7.2 suggests the differences between QI and QA; several should be highlighted.

QA is a negative process. It focuses on the “who” and seeks to identify those who seem to cause problems. Focusing on persons as the cause of problems is a natural human tendency and can be found even in HSOs that

are trying to apply CQI concepts. QI seeks the “why.” Workers are not the focus. QI implements the philosophy of W. Edwards Deming, whose theories are detailed later in the chapter, that 85%–94% of problems result from the process; few are caused by those who work in a process.

Commonly, QA measures only the quality of clinical practice, which was The Joint Commission’s focus until the 1990s. QI measures clinical outcomes, but it is more concerned with myriad processes and systems that support delivery of clinical services, as well as those that are administrative, such as admitting and patient accounts. The clinical and administrative aspects of many processes cannot be separated easily, and QI seeks to improve integrated or cross-functional processes as well as those that are intradepartmental. Improving quality in support and administrative processes positively affects clinical processes and, thus, delivery of care, because there is greater organizationwide quality consciousness and because, without exception, these areas affect clinical services. For example, inefficient intradepartmental or interdepartmental admitting processes directly and indirectly affect patient care. It is certain that they affect patient satisfaction.

Table 7.2. Characteristics of QI versus QA

QI	QA
“Why” focused (positive)	“Who” focused (negative)
Prospective	Retrospective
Internally directed	Externally directed
Follows patients	Follows organizational structure
Involves the many	Delegated to the few
Integrated analysis	Divided analysis
Bottom up	Top down
Proactive	Reactive
Employee focused	Management focused (directing)
Full staff involvement	Limited staff involvement
Process based	Event based
Process approach	Inspection approach
Quality is integral activity	Quality is separate activity
Focus on all processes to improve fitness for use	Focus on meeting clinical criteria
Focus on improving processes	Focus on solving problems
Makes no assumption about irreducibility of problems	Assumes problems/numbers of problems reach irreducible number

Another important difference is that QI focuses on *improving* processes, whereas QA focuses on solving the problems that *result* from a faulty process. QA addresses the unusual or unique—what Deming called special causes of variation—and investigates indicators that exceed thresholds. Similarly, the QA philosophy causes managers to spend much of their time “fighting fires.” Putting out fires is necessary, but doing so neither improves processes nor increases their efficiency or effectiveness. Putting out a fire only returns the process, more or less, to the state it was in before the fire. QI asserts that unique and unusual results or outcomes should be ignored unless they pose a significant risk or danger; instead, attention should focus on improving the process(es). HSO/HS managers cannot ignore unusual or unique events that affect patients, but the effort spent on them should be minimized; the real gain will come from improving processes to reduce variation, error rates, and other causes of poor process performance.

Finally, assumptions that were made about the irreducibility of problems were the most insidious aspect of the QA philosophy and were probably responsible for delaying improvement in the quality of care. Psychologically, it is essential that “good enough” is no longer acceptable; the QI philosophy rejects it. An element of “good enough” is suggested when HSOs/HSs compare outcome indicators or other performance measures with internal or external criteria. Criteria and indicators are important starting points and provide a macro-level understanding of outcomes produced by an HSO/HS, generally, or from a specific process. The fact is that organizations in which CQI has been implemented improve quality by reducing waste, rework, and redundancy, not by accepting a place within the herd. Until a systematic search for the root causes of medication errors has been performed using the tools of QI, for example, no one knows what the irreducible level of medication errors in an HSO is.

In the final analysis, improving clinical (and managerial) quality requires change. If Deming is correct that only 6%–15% of problems result from causes within worker control, management must enlist staff to improve quality. Managers must shed the traditional view that poor quality occurs because staff members choose to perform at a subpar level. What must be remembered, especially with the increased emphasis on outcome

indicators, is that the link between process and outcome has to be understood. Here, Donabedian's dictum is worth remembering: Unless it is known how a result was produced, desired outcomes cannot be purposefully replicated, nor can a process be changed to prevent undesired outcomes.

Background to the Present Focus on Quality Improvement

There has been a shift in the health services paradigm with respect to quality:¹⁵ "It represents a 'new order of things' in the provision of healthcare."¹⁶ This shift has occurred at two levels: the definition of quality output and the means of achieving it. First, as already noted, the traditional definition of quality of care and service—its output—has expanded beyond meeting specifications or standards to incorporate conformance to requirements and fitness for use, both of which include meeting or exceeding patient (customer) expectations. Second, there is recognition of a need to focus on improving the inputs and processes that generate the outputs of product and service.¹⁷ This expanded definition of quality output and the focus on improving inputs and processes are the twin pillars of CQI. Adopting the philosophy and methods of CQI will positively affect HSO/HS management and organizational arrangements; resource allocation, utilization, cost-effectiveness, and productivity improvement (PI); the quality of services provided (i.e., conformance to requirements and customer satisfaction); and the HSO's/HS's competitive position.

International competition and increased consumer demands and expectations for quality products and services profoundly affected American industry in the last decades of the 20th century. Industry was found wanting. The quality awakening in the 1980s and 1990s increased awareness of the importance of quality and the need to satisfy customers; stimulated initiatives to improve the quality of outputs to be globally competitive; and, as described by Deming, began the transformation of American business¹⁸ that is continuing.

Like industry, the health services system is undergoing profound change. The last 2 decades of the 20th century were tumultuous for

HSOs/HSs. The effects of environmental forces and the changes that occurred have continued into the 21st century. Changes include revenue and cost pressures from private and government payers; competition from alternate forms of delivery, such as managed care; and restructuring because of closures, mergers, consolidations, and other actions of HSs.¹⁹ The turbulent health services environment and increasing demands from, and accountability to, customers for lower-cost care with improved quality put HSOs/HSs at risk. The concept of customers has expanded beyond patients to include third-party payers of all types.²⁰ To survive and thrive, HSOs/HSs must respond effectively to the expectations of these customers and stakeholders.

Quality—Two Dimensions

Traditionally, quality in HSOs/HSs focused on the product or service content²¹ and meeting specifications or standards. Quality was evaluated retrospectively; the product or service was assessed using predetermined criteria. Examples are accuracy of diagnosis, physiological change and improvement in patients at discharge, mortality and morbidity rates, and the efficacy of medical procedures and drugs. Methods of quality evaluation include inspection, peer review, and QA, as well as tracking indicators such as infection rates, unplanned readmissions after discharge from inpatient treatment, and accuracy and timeliness of diagnostic tests.

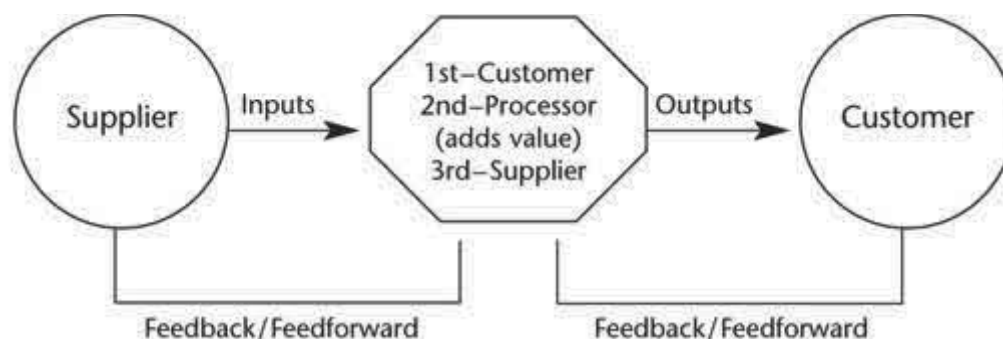


Figure 7.1. The customer–supplier relationship.

The contemporary view of health services quality includes conformance to requirements and fitness for use—both of which incorporate satisfying customer needs and meeting or exceeding expectations. The American Society for Quality (ASQ) defines quality as “1. the characteristics of a product or service that bear on its ability to satisfy stated or implied needs; 2. a product or service free of deficiencies.”²²

Quality judgments occur when the HSO or individuals within it generate outputs.²³ Judging quality includes asking questions such as Are there defects? Does the product work? Was the service appropriate? Is treatment reliable? Was the service on time? Was it delivered in a friendly manner? Was it the right service? Did it meet the customer’s needs? Was the customer delighted? Did product or service attributes exceed the customer’s expectations?²⁴ The answers to such questions about expectations by customers are influenced by their experiences, perceptions, and values.

The American Hospital Association’s Hospital Research and Educational Trust (HRET) Quality Management for Health Care Delivery (QMHCD) report termed this *delivery quality*. Delivery quality covers all aspects of the customer’s satisfaction with the HSO.²⁵ Conformance and expectation quality monitoring and improvement must be directed at every level and at every process.²⁶ Customers are not only patients; customers include physicians and other internal customers (downstream users of a unit’s output) and external customers such as payers and the community. For example, nursing is a customer of the pharmacy in terms of medications and a customer of dietary services in terms of patients’ dietary needs; physicians are customers of diagnostic testing; the intensive care unit is a customer of the emergency department (ED) when trauma patients are admitted; third-party payers are customers of patient billing; and, to some degree, all HSO departments and units are customers of administration. Depending on the transaction, the process, department, unit, or staff member commonly changes from customer to processor to supplier.²⁷ It is essential that all persons in a process understand their roles as customer, processor (person who adds value), and supplier. They

must know how what they do contributes to the aim of the organization and its efforts to optimize performance. Figure 7.1 is a simplified representation of a customer–processor–supplier relationship. In vertically integrated HSs, the skilled nursing facility is the customer of the acute care hospital. Figure 7.2 shows the internal and external customers of a hospital’s functional departments.

Taking a CQI Approach

Background

The philosophy that is now pervasive about quality in healthcare began to gain wide acceptance in the late 1980s. It draws on the work of industrial quality experts W. Edwards Deming,²⁸ Joseph M. Juran,²⁹ and Philip B. Crosby.³⁰ The CQI philosophy has four attributes. First, output quality includes meeting or exceeding customer needs and expectations. Second, monitoring and evaluating quality are retrospective; they are prospective in that poor quality can be prevented. Third, “quality is not the responsibility of just one department or individual,”³¹ it is organizationwide and involves everyone. Fourth, quality and CQI focus on both process (and inputs) and outcomes, not just outcomes.³²

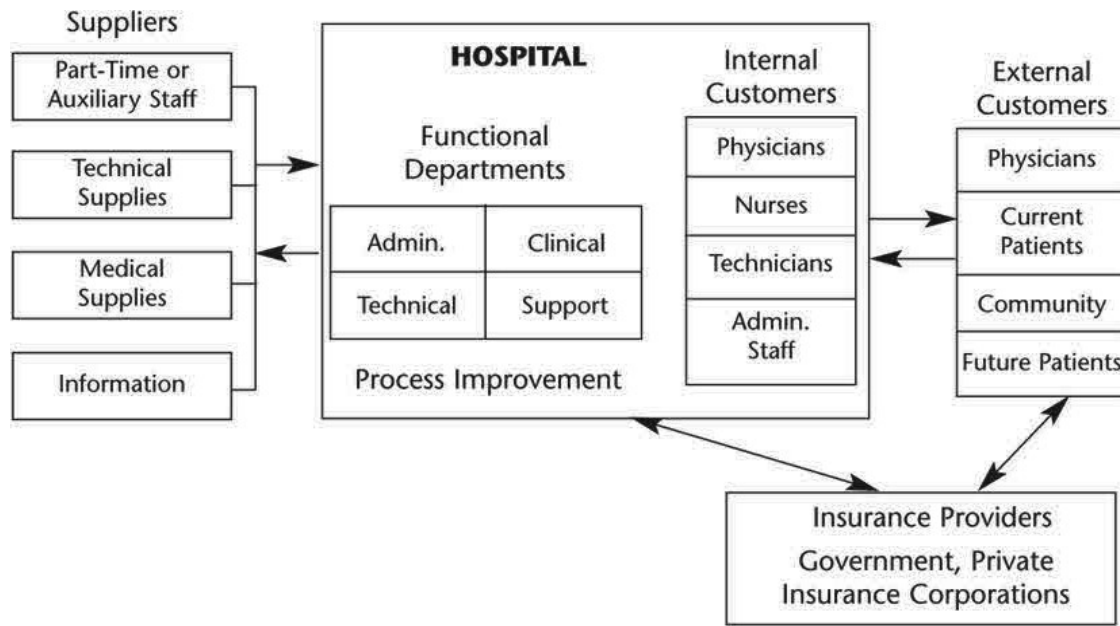


Figure 7.2. Internal and external customers of hospital functional departments. (From Carol Greebler, TQM Plus, San Diego, CA, 1989; reprinted by permission.)

The Joint Commission publishes accreditation manuals for the HSOs that it accredits. In addition to the *Comprehensive Accreditation Manual for Hospitals*, The Joint Commission publishes the *Specifications Manual for National Hospital Inpatient Quality Measures*. Version 4.2, effective in 2013, recognizes the need for outcome and process quality.³³ The philosophical context of The Joint Commission’s specifications manual is CQI, but it is titled hospital quality improvement (HQI).

- *Quality as a central priority:* The purpose of the initiative is to “stimulate and support a significant improvement in the quality of hospital care.”
- *Uniform measures set:* A comprehensive set of measures is created for national hospital reporting.
- *Comprehensive use:* All payers, purchasers, oversight and accrediting organizations, and providers will use the same measures for public reporting.³⁴

Improving quality may use several names: *quality management*,³⁵ *total quality management (TQM)*,³⁶ *total quality care*,³⁷ or *QI*.³⁸ *CQI* is preferred because it reflects the major break from previous efforts to achieve quality, states the concept positively, and minimizes any suggestion that quality is the job of only one group in an organization.

CQI is defined as an ongoing, organizationwide framework in which HSOs and their employees and clinical staff are committed to and involved in monitoring and evaluating all aspects of the organization's activities (inputs and processes) and outputs for the purpose of continuously improving them.³⁹ The essential elements of this definition are as follows:

- *CQI is organizationwide.* *CQI* can be successful only if the organization is transformed to seek quality in all that it does. *CQI* requires a total commitment to quality—a philosophical transformation—by the governing body and senior-level management; involves all HSO/HS employees, including the clinical staff;⁴⁰ and is rooted in a cultural setting that supports quality initiatives, teamwork, adaptability, and flexibility.⁴¹
- *CQI is process focused.* *CQI* seeks to understand processes, identify process characteristics that should be measured, and monitor processes as changes are made to determine the effects of those changes. The result is improved processes that enhance productivity through more efficient and effective use of resources. In sum, *CQI* improves conversion processes, thus generating higher quality products and service (outputs).
- *CQI is staff focused.* Process understanding and improvement require a team-based approach that involves and empowers employees to effect change.
- *CQI uses output measures.* Outcomes of care (indicators) provide macro-level data to determine how well groups of processes and the organization as a whole are performing. Indicators allow time-series as

well as inter-HSO/HS comparisons. These crude arrows may point to a need for specific foci to achieve process improvement.

- *CQI is customer driven.* The goal is to meet or exceed the expectations of customers, who are defined broadly and include internal and external customers.

The literature is replete with CQI applications in HSOs.⁴² Examples include hospitals⁴³ and integrated health systems.⁴⁴ There are success stories in disparate areas: clinical medicine,⁴⁵ laboratory,⁴⁶ radiology,⁴⁷ medical records,⁴⁸ EDs,⁴⁹ pharmacy,⁵⁰ and adverse drug events.⁵¹ The examples extend internationally to applying CQI in small general medical practices (Netherlands)⁵² and a multisite teaching hospital (Canada).⁵³ A survey of U.S. and Canadian hospitals found that approximately 90% of those responding had implemented CQI, and 65% had undertaken six or more CQI projects. The study found that larger teaching hospitals were more likely to be involved in CQI than smaller nonteaching hospitals.⁵⁴

CQI Model

CQI fundamentally shifts organizational thinking because it is customer driven and focuses on internal and external customers. CQI is systematic and organizationwide, with top management commitment to improving processes (and inputs) through employee empowerment. The result is improved quality and customer satisfaction, PI, and enhanced competitive position.

The HRET QMHCD described the CQI challenge: “Continuous Quality Improvement demands that healthcare providers answer three questions. Are we doing the right things? Are we doing things right? How can we be certain that we do things right the first time, every time?”⁵⁵ Figure 7.3 answers these questions in the context of a CQI model. The following discussion references the numbers in that CQI model [1], whose GOAL is “How can we be certain that we do things right the first time, every time?”

Are We Doing the Right Things?

The first pillar of CQI, output quality [3], determines if the HSO is doing the right things. Products and services that are in conformance and that meet or exceed customer expectations mean the organization is doing the right things. From the CQI perspective, the concept of customers is all encompassing. CQI defines customers as not only patients and external stakeholders, but also internal users of a department, a unit, or the outputs that an individual produces. In CQI a customer is the person or process that relies on another person or process for inputs. Output that is in conformance and meets the needs and expectations of customers is a quality product or service and means that the HSO is doing the right things.

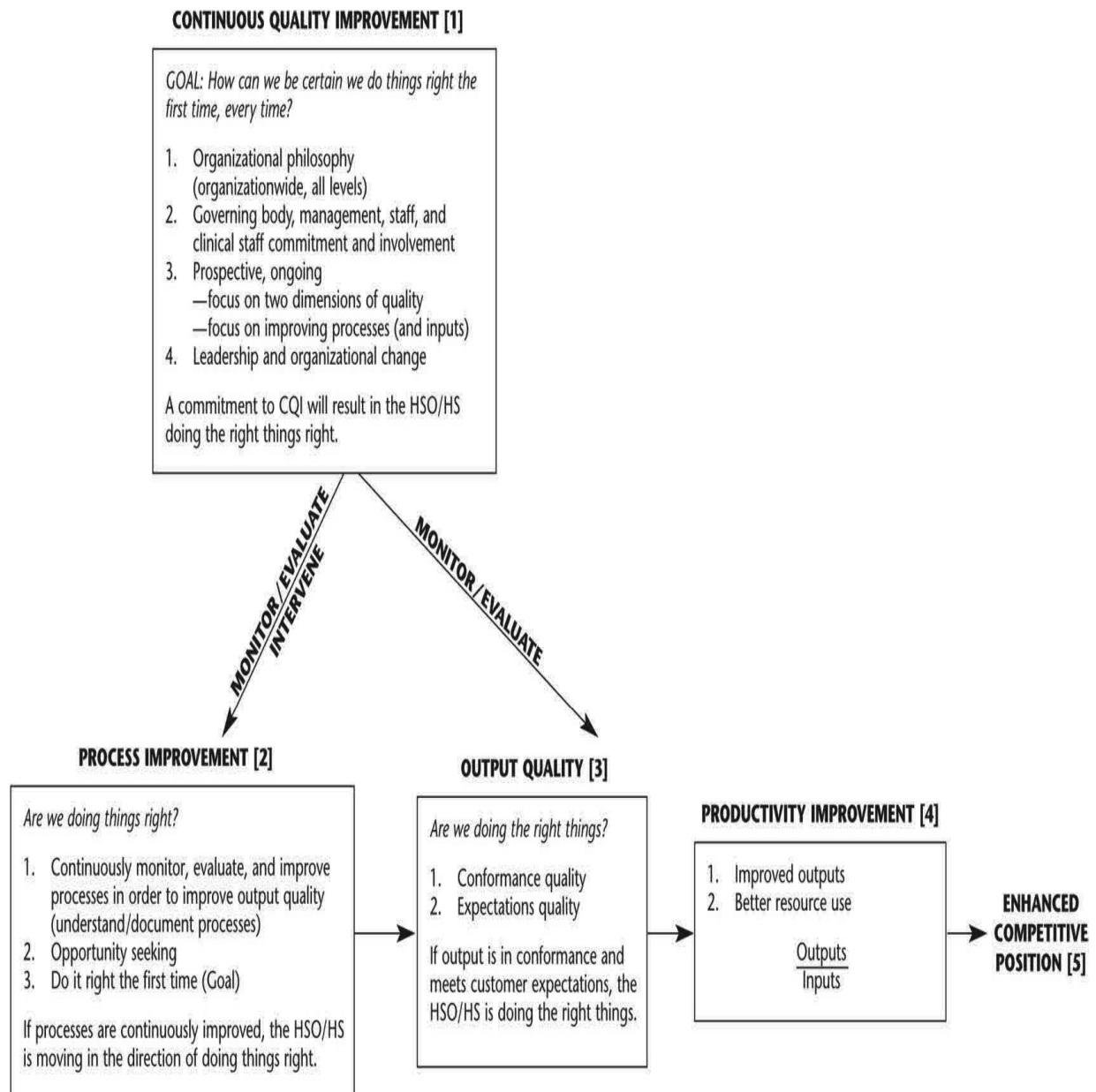


Figure 7.3. Continuous quality improvement model.

Are We Doing Things Right?

Process improvement [2] is the second pillar of CQI. Output quality can be improved only by improving the processes that produce it. All processes can be improved. Improving processes in health services delivery is daunting because they are technical, complex, often intense, and are necessarily personal, intimate, and focused on individuals. These

challenges have been and can be met, however, and their high degree of dependence on human action does not preclude patient care systems from being improved.⁵⁶ CQI means that even a process that functions well can be improved.⁵⁷ “If it isn’t perfect, make it better.”⁵⁸

Finally, “doing things right” requires that monitoring, evaluating, and intervening to improve processes are continuous. Requisite to continuous improvement is developing a systematic understanding and documentation of processes. All staff must be trained in process improvement and encouraged to seek opportunities to improve work results by improving the way they are produced. The outcome is not only improved output quality [3] but also improved productivity [4], in which there is more effective resource use, and enhanced competitive position [5]. Crosby urged organizations to establish a goal of “do it right the first time.”⁵⁹ This goal may be unattainable in an absolute sense, but HSOs that continuously improve processes are moving in the “right” direction.

How Can We Be Certain That We Do Things Right the First Time, Every Time?

CQI has the goal of doing things right the first time, every time. If there is quality output (the right things) and process improvement (doing things right) with CQI, the HSO/HS will move in the direction of doing things right the first time, every time (goal).⁶⁰ The essential attributes of CQI [1] are as follows (see Figure 7.3):

- CQI is an organizational philosophy that becomes pervasive in the culture—the ingrained beliefs and values of the HSO/HS. It is customer driven and requires the transformation of existing beliefs and values regarding quality.
- CQI requires the total commitment and involvement of everyone in the HSO/HS. Management must nurture the value system and commit the resources that support continuous improvement as integral to the work of everyone in the organization.⁶¹ Staff must participate in, and be committed to, continuously improving their work results and the way

those results are achieved. This requires collaboration and cross-functional coordination among work units and departments.⁶² All staff must be involved in problem solving, especially to seek and identify opportunities for improvement.

- CQI is prospective and ongoing. The focus on output quality must be prospective, not just retrospective; it must be continuous, not intermittent.⁶³ The aim is to prevent poor quality before it happens and to seek opportunities to improve processes in an organized fashion.
- CQI requires management to meet its leadership responsibility to train employees; encourage innovation, worker participation, and empowerment and build teams so that employees can contribute to process improvement problem solving; and facilitate organizational change that leads to improvement.

CQI, Productivity Improvement, and Competitive Position

The CQI paradigm is the reciprocal of the conventional cost-containment initiatives prevalent during the 1970s and into the 1980s. In the context of the management model in Figure 5.7, the emphasis then was to increase the ratios of outputs to inputs. The resulting initiatives were narrowly applied, episodic, and short-term. Typically, those initiatives had little worker involvement and commitment and focused on reducing input costs rather than enhancing output quality. By contrast, rather than simply reducing costs, CQI initiatives are broad-based, long-term, and ongoing; have extensive management and employee involvement and commitment; are customer driven; and focus on improving both process and output quality.

Figure 7.3 depicts the ways CQI improves quality and PI [4], and leads to enhanced competitive position [5]. Deming asserted that PI does not improve output quality. Rather, improved quality results in PI. The

Deming Chain Reaction in Figure 7.4 suggests this relationship: Better quality decreases costs, which improves productivity. In turn, this leads to decreased prices and increased market share; thus, the organization stays in business, provides jobs, and yields greater returns. Consequently, competitive position is enhanced. Deming argued that improved quality results in better resource use (lower costs) because improved processes mean less rework (readmissions), fewer mistakes (repeats of tests), and fewer delays (waiting for service). These results occur because the prospective and continuous assessment of, and changes made to, work processes and inputs yield both improved quality and improved productivity.⁶⁴

The Malcolm Baldrige National Quality Award (MBNQA), named for a U.S. secretary of commerce who died while in office, was created in 1987 and has been awarded since 1988. The application process is rigorous, the award prestigious. Its purpose is to promote quality excellence; recognize organizations that have made significant improvements in product, service, and competitive position; and foster information sharing among organizations. Criteria for the Baldrige award in healthcare are leadership, strategic planning, customer focus, workforce focus, operations focus, results, and measurement, analysis, and knowledge management.⁶⁵

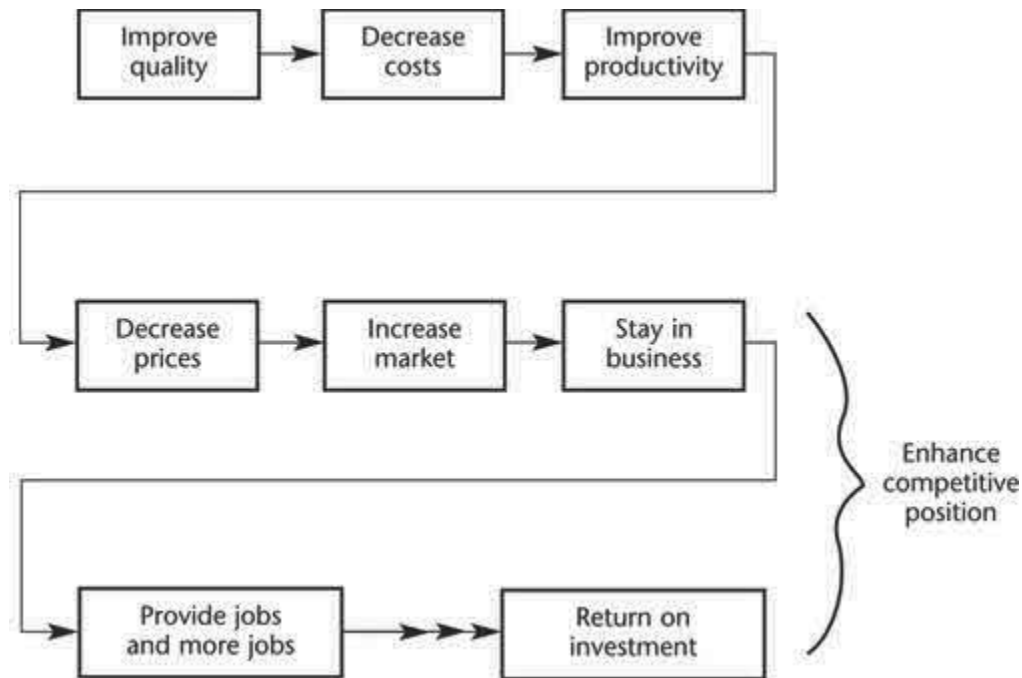


Figure 7.4. Deming chain reaction. (Adapted from Joiner, Brian L. *Fourth Generation Management: The New Business Consciousness*, 23. New York: McGraw-Hill, 1994; reprinted by permission of the McGraw-Hill Companies, Inc.)

Theory of CQI

The Pioneers

Sir Thomas Percival (1740–1804)

Modern history is replete with those who have striven to improve the quality of care. The eminent English physician Thomas Percival lived and worked in Manchester, where he was active in improving clinical practice and public health. Percival's experiences caused him to write two pamphlets—"Internal Regulation of Hospitals 1771" and "A Scheme of Professional Conduct Relative to Hospitals and Other Medical Charities 1772"—that sought to stimulate reform.⁶⁶ In 1803, Percival presented the idea of a hospital register to help physicians improve the quality of their

care.⁶⁷ The concept must have been startling (and perhaps alarming) to his medical colleagues; little apparent interest resulted. Chapter 4 notes that the AMA's "Principles of Medical Ethics" reflects Percival's influence.

Ignaz Semmelweis (1818–1865)

In 1847, the Austro-Hungarian physician Ignaz Semmelweis sought to reduce the incidence of puerperal (childbed) fever, an often fatal bacterial infection rampant among newly delivered women at the Vienna General Hospital. Semmelweis used mortality statistics to show that washing hands and instruments in carbolic acid (a solution of chlorinated lime) stopped the causative bacterium from spreading and virtually eliminated puerperal fever from his ward. Medical colleagues rejected his findings and so ridiculed him that he left Vienna.⁶⁸ Only after the French bacteriologist, Louis Pasteur (1822–1895), demonstrated the germ theory of disease causation in 1862 was Semmelweis vindicated.

Joseph Lister (1828–1912)

In 1877, the English surgeon Joseph Lister visited New York City and reported on the benefits of antisepsis in preventing the spread of microorganisms by disinfecting surgical instruments, gowns, and drapes with carbolic acid, as well as using it copiously throughout the operating theater. William S. Halsted, who later became an eminent surgeon at The Johns Hopkins Hospital, was beginning his career and sought to introduce antisepsis at Bellevue Hospital in New York City. Most surgeons opposed the concept, and there was such resistance to his use of antisepsis that he was forced to perform surgery in a tent outside the main hospital building. Halsted's results were so startling, however, that surgeons throughout New York City soon followed his example.⁶⁹

Reformers such as these were vindicated—some sooner, some later. Their struggles against medical orthodoxy, however, reflect the difficulties of changing a profession's trajectory, even after the evidence clearly supports a better way and a need for change. Their like-minded successors fared somewhat better.

Florence E. Nightingale (1820–1910)

Florence Nightingale first became famous when she demonstrated the value of good organization, cleanliness, and properly trained nurses in treating British soldiers during the Crimean War, 1854–1856. Tireless work there earned her the title of “The Lady with the Lamp,” which she carried as she tended the wounded and those ill from disease.

Nightingale was named for Florence, Italy, where she was born while her parents vacationed there. She developed an interest in nursing. Her parents actively discouraged this interest because at the time nursing had a very poor reputation. Finally, her parents relented. In 1851 she was sent to Kaiserswerth, Germany, where she trained as a nurse. This training enabled her to become superintendent of a hospital for gentlewomen in Harley Street, London, in 1853. The following year the Crimean War found Great Britain, France, and Turkey allied against Russia. One result was large numbers of British casualties. The desperate lack of proper facilities and care for the wounded caused the British war ministry to send Nightingale and a team of nurses to the military hospitals in Turkey. She and her nurses greatly improved conditions and substantially reduced the mortality rate.⁷⁰

Nightingale used data to significantly improve clinical outcomes, including development of a “model hospital statistical form” to collect and organize consistent data and statistics.⁷¹ Nightingale applied epidemiological principles to develop the “polar-area diagram,” later known as the pie chart. This visual display facilitated an understanding of the morbidity and mortality of soldiers who had been wounded or were ill from disease.⁷²

Following her return to England Nightingale established the Nightingale Training School for nurses at St Thomas’s Hospital in London in 1860. This was the first professional training school for nurses. After training, the nurses were sent to hospitals throughout Britain at which they introduced what they had learned, and established nurse training on the Nightingale model. Nightingale’s theories, published in “Notes on Nursing” (1860), were influential and her concerns for sanitation, military health, and hospital planning established practices used today.⁷³

Nightingale's contributions to health services and public health are legion. In addition to founding the first professional training school for nurses, she published over 200 books, reports, and pamphlets on nursing and healthcare, invented the pie chart, inspired the founding of the Red Cross, and was the first woman to be elected to the Royal Statistical Society. Her accomplishments are all the more noteworthy because she contracted brucellosis while serving in the Crimea. Brucellosis is a bacterial infection that causes constant fevers, sweating, and weakness, and it is painful and debilitating. In much of her later life Nightingale was bedridden, but she continued her work despite her malady.⁷⁴ Nightingale's efforts to organize and improve hospital-based care qualify her to be known as the first hospital administrator.⁷⁵

Ernest A. Codman (1869–1940)

Ernest Codman, a surgeon, was an advocate of hospital reform and is the acknowledged founder of what is known today as outcomes management in patient care. It was his lifelong pursuit to establish an “end results system” that tracked the outcomes of patient treatment to identify clinical misadventures that would provide a foundation to improve care for future patients.⁷⁶ Codman is credited with a number of firsts in medical care. As a prominent surgeon on staff at Massachusetts General Hospital in the early 1900s, he organized morbidity and mortality (M&M) conferences at which physicians discussed cases openly for the purposes of learning about the care received by patients and whether it contributed to good results. M&M conferences became ubiquitous and are required in hospitals that have an accredited graduate medical education program. Codman was one of several leading American surgeons who organized the American College of Surgeons (ACS) in 1913.⁷⁷ The “end result system of hospital standardization” became the stated objective of the ACS in its *Minimum Standard*. The Hospital Standardization Program became the Joint Commission on Accreditation of Hospitals in 1951. It is now known as The Joint Commission on Accreditation of Healthcare Organizations, or The Joint Commission. In 1920, Codman established the first bone tumor

(cancer) registry in the United States, which was the precedent for a national exchange of information on bone tumor cases.⁷⁸

The failure of Massachusetts General Hospital to adopt outcomes evaluation, or end results, led to Codman's resignation. In 1911, he established his own private hospital, the Codman Hospital, at which he instituted a program of monitoring surgical performance. He tracked patients after hospital treatment to understand the long-term benefits of care and to learn how it could be improved—the “end results” of care. The data, both negative and positive, were made public, and Codman challenged hospitals everywhere to do the same. Codman's review of his own clinical outcomes found that one error occurred for every three patients treated.⁷⁹

It is useful to recall that in the late 19th century, the modern hospital was just emerging from the darkness of scientific ignorance. Supported by technologies such as asepsis, laboratory and x-ray services, and inhalation anesthesia, hospitals became a temple of healing that was largely based on efficacious surgery. Codman's proposal must have been startling and intimidating to clinicians and administrators alike. Making outcomes evaluations public could be embarrassing and even politically and economically dangerous for hospitals and their physicians; it is easy to understand the reluctance to publicize the end result of the care patients received in them. Codman's reforming efforts brought him ridicule, poverty, and censure, but he never stopped his efforts to link care, errors, and end results and to measure, report, and improve.⁸⁰ Except for the work of the ACS in its Hospital Standardization Program, Codman's end results system died with him.

Notably, public reporting of hospital outcome data is only now becoming commonplace. It occurred because of intense pressure from public interest groups, third-party payers, and government. Although Percival's idea to establish a hospital register of end results predated Codman's work by almost a century, Codman must be credited with beginning the long, often interrupted, 100-year journey to the current emphasis on quality and performance improvement in health services delivery. Codman's application of elements of classic CQI methodology occurred well before the work of Walter A. Shewhart and his successors.

Walter A. Shewhart (1891–1967)

Walter A. Shewhart and Ernest A. Codman were contemporaries, although there is no evidence that they ever met—regrettably. Dr. Shewhart was the trail-blazing American statistician who developed the basic theory and application of statistical process control (SPC) and the precursor to the Plan, Do, Study, Act (PDSA) cycle that provide the methodological underpinnings for CQI. Shewhart's theories of SPC were applied in the 1920s at the Hawthorne Works of Western Electric, a facility near Chicago that manufactured telephones. W. Edwards Deming was one of Shewhart's students and colleagues during the 1920s and 1930s. Shewhart's book *Statistical Method from the Viewpoint of Quality Control*, published in 1939, was edited by Deming and contained the first version of the "Shewhart cycle." The Shewhart cycle evolved during the next 4 decades and is known as the PDSA cycle (as Shewhart and Deming developed it) and the Plan, Do, Check, Act (PDCA) cycle in Japan, primarily because of a misunderstanding in translation.⁸¹

The success of Shewhart's efforts is reflected in the slogan "alike as two telephones," which suggests that quality can be improved by reducing variation to the point that products are indistinguishable. His monumental work, *Economic Control of Quality of Manufactured Products*, published in 1931, is regarded as a complete and thorough exposition of the basic principles of quality control.⁸² Shewhart's SPC and PDSA were applied extensively and very successfully to military production during World War II. The PDSA cycle is also known as the Shewhart cycle.⁸³

Figure 7.6 shows the PDSA cycle, with a description for each step. When World War II ended in 1945, the American industrial base was undamaged; Germany's and Japan's lay in ruins. This fact, plus the pent-up demand for consumer goods after almost 4 years of total focus on war production, allowed American manufacturers to be less concerned about quality—there were buyers for everything they could produce, regardless of how well it was made. Thus, quantity became ascendant over quality. It was not until the 1980s that the focus returned to quality, prompted by declining markets for American products. Attention to service quality soon followed.

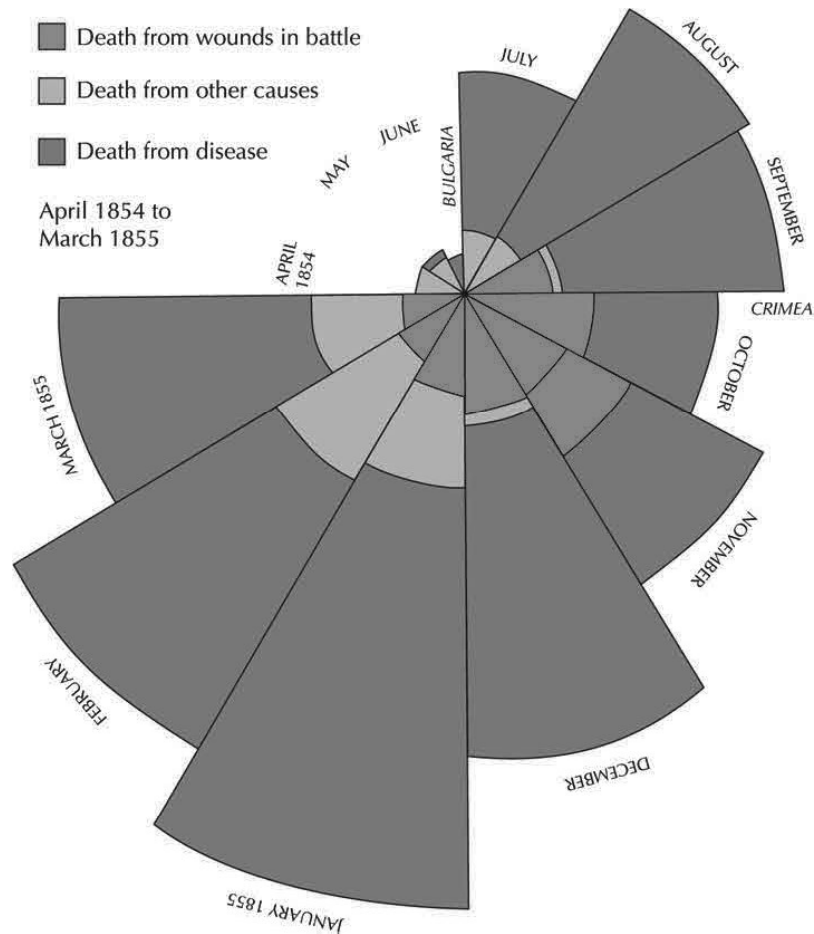


Figure 7.5. Florence Nightingale's original polar-area diagram. (From J. J. Connor and E. F. Robertson, "Florence Nightingale Biography," 2003. Retrieved February 12, 2013, from <http://www-history.mcs.stand.ac.uk/Biographies/Nightingale.html>)

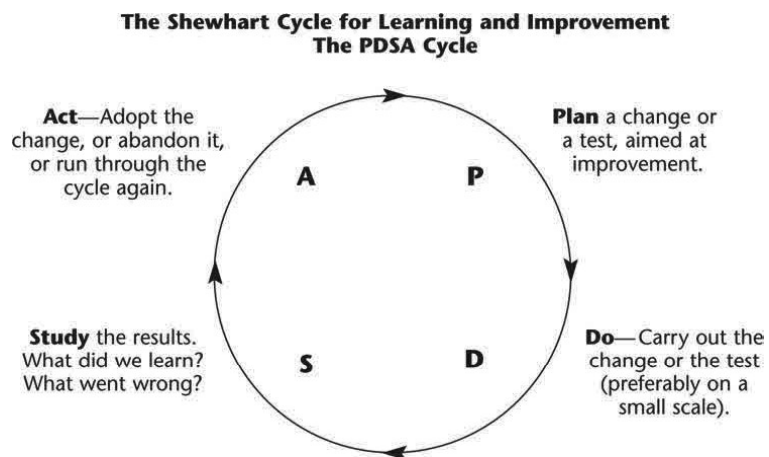


Figure 7.6. The Shewhart Cycle for Learning and Improvement. The PDSA Cycle. (From Deming, W. Edwards. *The New Economics for Industry, Government, Education*, 2nd ed., p. 132. Shewhart Cycle © 2000 W. Edwards Deming Institute, by permission of MIT Press.)

The Builders

Deming, Juran, and Crosby

Three contemporary theorists, educators, and practitioners of quality—W. Edwards Deming, Joseph M. Juran, and Philip B. Crosby—advocated CQI and greatly influenced its philosophy and practice. Their work provides thinking and methodologies to establish a quality culture.

To varying degrees and in a variety of forms, their principles have been adopted by HSOs/HSs.⁸⁴ The three were not of one mind on some specifics of how to achieve quality, however. The emphasis here is on Deming, who developed a philosophy applicable to life *and* to management that applies to improving quality in product and service. His theory of “profound knowledge” is a conceptualization of what is necessary for quality to be improved. Juran developed numerous models and statistical methods that support the managerial and applications perspectives. Crosby was more an organizational behaviorist and motivator and less a philosopher or technician. Their routes differ, but they have the same destination of improved quality.⁸⁵

W. Edwards Deming (1900–1993)

W. Edwards Deming earned his doctorate in mathematical physics and was Shewhart’s protégé at the Hawthorne Works. Deming made extensive use of Shewhart’s theories of SPC and PDSA in his approach to improving quality.⁸⁶ Deming went to Japan in 1947 to assist in taking a census. Because of his work in QI, he was invited to Japan in 1950 to lecture to Japanese manufacturers about how to improve their consumer products, which had inferior quality and were poorly regarded before and after World War II. Deming’s lectures were widely attended by the leaders of Japanese industry and were highly influential as Japan rebuilt its industrial

base that transformed it into the major economic power that it became. Dr. Deming's work is considered so important that Japan's highest award for quality is the Deming Prize. Because Deming introduced Shewhart's PDSA cycle to Japan, it is known as the Deming cycle there. It was only in the 1980s that Deming's work began to be appreciated in the United States.⁸⁷ Deming's most significant book, *Out of the Crisis*, was published in 1986. He was 86 years of age.

Deming defined *quality* broadly: "A product or service possesses quality if it helps somebody and enjoys a good and sustainable market."⁸⁸ Key to understanding how to improve quality is his view that poor quality results from badly designed or malfunctioning processes—not worker actions. Workers work in processes over which they have little or no control and are, therefore, able to do only what the process allows them to do. The process, not the worker, produces good or poor quality. Thus, better quality can be achieved only by improving the process. Management controls processes; thus, it must lead in QI. This view is reflected in Deming's emphasis on monitoring and evaluating processes through SPC and searching for ways to improve them. The Deming Chain Reaction in Figure 7.4 shows how improving quality will decrease costs, increase productivity, and enhance competitive position. This sequence is incorporated in the CQI model in Figure 7.3.

The Deming method has two distinct components. The first is critical: Managers must establish and maintain an environment in which quality is integral to all work. This means a transformation—a major philosophical shift and commitment that HSOs/HSs will improve quality. This philosophy is reflected in Deming's 14 points (see below). The second, concurrent component is that efforts to improve quality must be supported by SPC—management must have data that show what processes are doing and how well they are doing it. Analyses of these data enable managers to identify and correct problems. More importantly, the data support improvement of processes.

Deming's theory of profound knowledge includes four elements: appreciation for a system, knowledge about variation, theory of knowledge, and psychology.⁸⁹ *Appreciation for a system* means that management must understand the need for interdependent components to

work together to try to accomplish the aim of a system. The greater the interdependence among components, the greater is the need for cooperation and communication. Some components of the system may have to suboptimize if doing so allows optimization of the system. *Knowledge about variation* means that management must understand that there is variation in every activity and in every process. Management must collect data to know if a process is in statistical control; a process “in control” has a definable capability and can be improved. Deming’s *theory of knowledge* teaches that a statement, if it contains knowledge, predicts future outcome. Rational prediction requires theory and builds knowledge through systematic revision and extension of theory based on comparison of prediction with observation. In this regard, management is prediction. The fourth element, *psychology*, helps us understand people, interactions of people and circumstances, and those between manager and staff in any system of management. Managers must be aware that people are different and learn differently and that there are intrinsic and extrinsic sources of motivation. In total, Deming’s system of profound knowledge challenges managers to understand themselves and their jobs and staff members in ways that will enhance the effectiveness of staff members.

Deming’s 14 points for improvement of management are complementary to CQI and its application; they are essential to creating an environment in which quality can be achieved. The 14 points for quality⁹⁰ have been discussed extensively⁹¹ and have been applied to HSOs by Batalden and Vorlicky, as cited in Deming⁹² and Darr.⁹³

1. *Create constancy of purpose toward improvement of product and service with the aim to become competitive, to stay in business, and to provide jobs.*⁹⁴ This means identifying customers, giving them good-quality service, and ensuring organization survival through innovation and constant improvement.
2. *Adopt the new philosophy.* Commonly accepted levels of nonquality are unacceptable.
3. *Cease dependence on inspection to achieve quality.* Health services should require statistical evidence of quality of incoming materials,

such as pharmaceuticals, serums, and equipment. Inspection is not the answer. Inspection is too late and unreliable. Inspection does not produce quality... . Require corrective action, where needed, for all tasks that are performed in the hospital or other facility, ranging all the way from bills that are produced to processes of registration. Institute a rigid program of feedback from patients in regard to their satisfaction with services.⁹⁵

4. *End the practice of awarding business on the basis of price tag.* The intent is to develop long-term relations with suppliers so that they can improve the quality of the products (and services) they provide as an input to the HSO/HS.
5. *Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.* Improvement is not a one-time effort. Management is obligated to continually look for ways to reduce waste and improve quality.
6. *Institute training on the job.* Too often, workers learn their job from other workers who were never trained properly. They cannot do their job well because no one tells them how.
7. *Institute leadership.* A supervisor's job is not to tell people what to do or to punish them, but to lead. Supervisors need time to help people on the job. Supervisors need to find ways to translate the constancy of purpose to the individual employee. Supervisors must be trained in simple statistical methods for aid to employees, with the aim to detect and eliminate special causes of mistakes and rework.⁹⁶
8. *Drive out fear so that everyone may work effectively for the company.* Many workers are afraid to take a position or ask questions, even when they do not understand the job or what is right or wrong. We must break down the class distinctions between types of workers within the organization—physicians, nonphysicians, clinical providers versus nonclinical providers, physician to physician... . Cease to blame employees for problems of the system. Management should be held responsible for faults of the system. People need to feel secure to make suggestions.⁹⁷

9. *Break down barriers between departments.* Often, areas compete with one another or have conflicting goals. They do not work as a team to solve or foresee problems. Worse, one department's goals may cause trouble for another department.
10. *Eliminate slogans, exhortations, and targets for the workforce asking for zero defects and new levels of productivity.* "Instead, display accomplishments of the management in respect to assistance to employees to improve their performance."⁹⁸
11. *Eliminate work standards (quotas) on the factory floor.* Quotas that represent measured day work or output alone without regard to quality should be eliminated. "It is better to take aim at rework, error, and defects [all measures of quality], and to focus on [helping] people to do a better job."⁹⁹
12. *Remove barriers that rob the hourly worker of the right to pride of workmanship.* People are eager to do a good job and distressed when they cannot. Too often, misguided supervisors, faulty equipment, and defective materials stand in the way. These barriers must be removed.
13. *Institute a vigorous program of education and self-improvement.* "Institute a massive training program in statistical techniques. Bring statistical techniques down to the level of the individual employee's job, and help him to gather information in a systematic way about the nature of his job."¹⁰⁰ Also, the training "program should keep up with changes in model, style, materials, methods, and if advantageous, new machinery."¹⁰¹
14. *Put everyone in the company to work to accomplish the transformation.* As observed by Darr, "taking action to accomplish the transformation ... will take a special top management team with a plan of action to carry out the quality mission. Workers can't do it on their own, nor can managers."¹⁰²

An interpretation of Deming is useful:

Quality must become a central focus of the corporation. The emphasis must shift from inspection to prevention. Preventing defects before they occur and improving the process so that defects do not occur are goals for which a company should strive.

Training and retraining of employees [are] critical to the success of the organization. Deming believes that it is management's job to coach employees. Education and training are investments in people. They help to avoid employee burnout, [reenergize] employees, and give a clear message to employees that management considers employees to be a valuable resource. Finally, Deming also believes that management must pay attention to variability within processes. He advocates systematic understanding of variation and reduction of variation as a strategy to improve processes.

Deming believes that the road to enhanced productivity is through continuous quality improvement called the Deming Chain Reaction. Improving quality through improving processes leads to a reduction of waste, rework, delays, and scrap. This reduction causes productivity as well as quality to improve.¹⁰³

Even in the last years of his life, Deming worked with an intensity improbable for someone his age. He continued his worldwide consulting practice and writing until he died at age 93. At his death, he was working on his last book, *The New Economics for Industry, Government, Education*, Second Edition, which was published posthumously. Deming was impatient to see his philosophy and methods implemented in his homeland, where until very late in life, he was, as the aphorism states, “a prophet without honor in his own country.”

Joseph M. Juran (1905–2008)

Joseph M. Juran, consultant and founder and chairman emeritus of the Juran Institute, was an advocate of total quality management (TQM). During his career, he was an engineer, industrial executive, government administrator, university professor, corporate director, and management consultant.¹⁰⁴ Juran worked at the Hawthorne Works of Western Electric in the mid-1920s,¹⁰⁵ making him a contemporary of Deming's. Juran, too, worked with the Japanese after the war, but did so several years later and did not achieve the prominence in Japan that Deming had.

Juran defined quality as fitness for use, which includes being free from deficiencies and meeting customer needs.¹⁰⁶ Juran's Quality Trilogy is a generic way to think about quality. It is applicable to all functions, levels, and product lines.¹⁰⁷ The components of the quality trilogy are quality planning, quality control, and quality improvement.

Quality Planning: At the initial stage, products and services that will meet customers' needs are developed as follows:

1. Determine who the customers are.
2. Determine the needs of customers.
3. Develop product features that respond to customers' needs.
4. Develop the processes that are able to produce those product features.
5. Transfer the resulting plans to the operating forces.

Quality Control: This activity has three steps:

1. Evaluate actual quality performance.
2. Compare actual performance with quality goals.
3. Act on the differences.

Quality Improvement: This is a means of raising quality performance to unprecedented levels ("breakthrough"). The methodology includes four steps:

1. Establish the infrastructure that is needed to secure annual QI.
2. Identify the specific needs for improvement—the improvement projects.
3. For each project, establish a project team with clear responsibility for bringing the project to a successful conclusion.
4. Provide the resources, motivation, and training that are needed by teams to diagnose the causes, stimulate the establishment of a

remedy, and establish controls to hold the gains.¹⁰⁸

Juran asserted that there is a cost to nonquality, including reworking defective products, scrap, liability from lawsuits, and lost sales from dissatisfied previous customers or customers who purchase competitors' products or services because their quality is better.¹⁰⁹ Figure 7.7 depicts the trilogy, which Juran described as follows:

The Juran Trilogy diagram is a graph with time on the horizontal axis and cost of poor quality (quality deficiencies) on the vertical axis. The initial activity is quality planning. The planners determine who the customers are and identify customers' needs. The planners then develop product and process designs that are able to respond to those needs. Finally, the planners turn the plans over to the operating forces.

The job of the operating forces is to run the processes and produce the products. As operations proceed it soon emerges that the process is unable to produce 100 percent good work. [Figure 7.6] shows that 20 percent of the work must be redone as a result of quality deficiencies. This waste then becomes chronic because the operating process was designed that way.

Under conventional responsibility patterns, operating forces are unable to get rid of that planned chronic waste. What they do instead is carry out quality control—to prevent things from getting worse. Control includes putting out the fires, such as that sporadic spike.

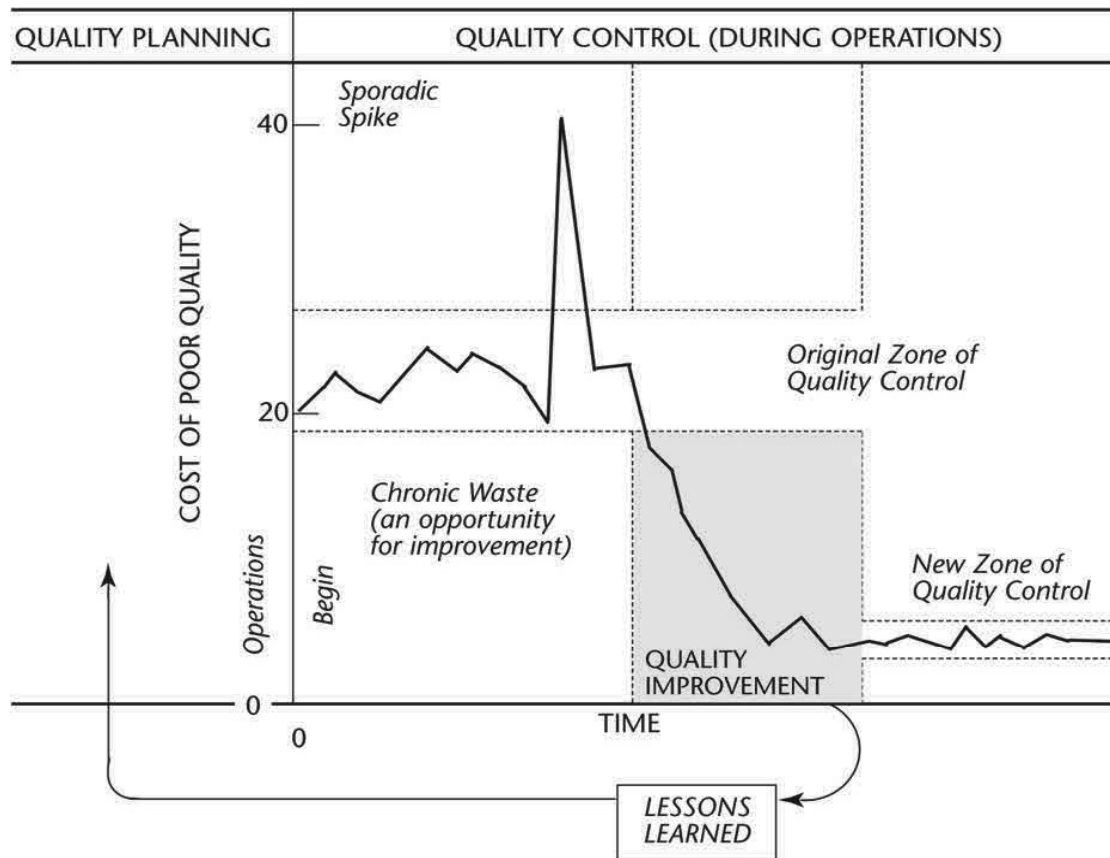


Figure 7.7. Juran quality trilogy. (From Juran, Joseph M. “The Quality Trilogy.” *Quality Progress* 19 [August 1986]: 20; reprinted by permission.)

The chart also shows that in due course the chronic waste is driven down to a level far below the level that was planned originally. That gain is achieved by the third process of the trilogy: quality improvement. In effect, it is realized that chronic waste is also an opportunity for improvement, and steps are taken to seize that opportunity.¹¹⁰

The third part of the Juran Trilogy uses CQI to improve an existing process (redesigned, if necessary) so that the chronic waste associated with the “original zone of quality control” can be reduced and quality increased. The result is the “new zone of quality control” shown in Figure 7.7.

Juran viewed CQI as seeking and finding opportunities for improvement that result in achieving the new zone. In earlier writings, Juran called this the “breakthrough” zone, consisting of a new and better level of performance and quality. A breakthrough necessitates accepting

the premise that current performance is not good enough and can be improved, as well as making an attitudinal change about quality that becomes part of the organization's culture.¹¹¹

Juran described the triple role of the worker shown in Figure 7.1. Workers in a process have three basic functions: being customers by receiving work products that come to them, being processors who add value to the input supplied, and in turn, being suppliers to the customers in the next step in the process. Juran also formulated the criteria that must be present for workers to be in a state of self-control, which allows management to hold the worker, rather than the process, responsible for quality: Workers must have 1) knowledge of what they are supposed to do, 2) knowledge of what they are doing, and 3) the means to regulate what they are doing if they fail to meet goals.¹¹² Juran guided managers to apply quality control principles in the workplace. Juran's seminal work is the *Quality Control Handbook*, first published in 1951 and now in its sixth edition.

Philip B. Crosby (1926–2001)

Philip B. Crosby was a former vice president of quality at International Telephone and Telegraph and a consultant to many industrial organizations. Crosby emphasized understanding nonquality: "Quality is free. It's not a gift, but it is free. What costs money are the nonquality things—all the actions that involve not doing jobs right the first time."¹¹³ Crosby defined quality as "conformance to requirements" and said that an organization's goal should be to "satisfy the customer first, last, and always."¹¹⁴

Crosby strongly advocates a system of quality improvement that focuses on prevention rather than appraisal. Prevention involves careful understanding of the process and identification of problem areas, followed by improvement of the process.

Crosby strongly advocates the ultimate goal of quality as "Zero Defects" and that a company should constantly strive to achieve this goal. He believes that the best measure of quality is "cost of quality" and that this cost can be divided into two components: the price of nonconformance, and the price of conformance. The price of nonconformance includes the cost of internal failures (i.e., the cost of

reinspection, retesting, scrap, rework, repairs, and lost production) and external failures (i.e., legal services, liability, damage claims, replacement, and lost customers). Crosby estimates that an organization's *cost of nonconformance can be as high as 25 to 30 percent of operating costs* [emphasis added]. The price of conformance, on the other hand, includes the cost of education, training, and prevention as well as the costs of inspection and testing. An organization must minimize the sum of both costs. The focus on process improvement, error-cause removal, employee training, management leadership, and worker awareness of quality problems are all important tenets.¹¹⁵

Crosby emphasized that organizations must identify the hidden costs of poor quality. In health services, malpractice is one such cost. Seven-eighths of an iceberg is below the waterline, and Figure 7.8 uses this simile to suggest the visible and hidden costs of poor quality for an HSO/HS. Crosby's goals were "do it right the first time" and the derivative concept of "zero defects."¹¹⁶ These ultimate quality goals may be unattainable, but they give important direction to the organization, nevertheless.¹¹⁷ To move toward improved quality, the HSO/HS must go through a maturation process with respect to a philosophy about quality and then use Crosby's 14 steps of CQI (see below).

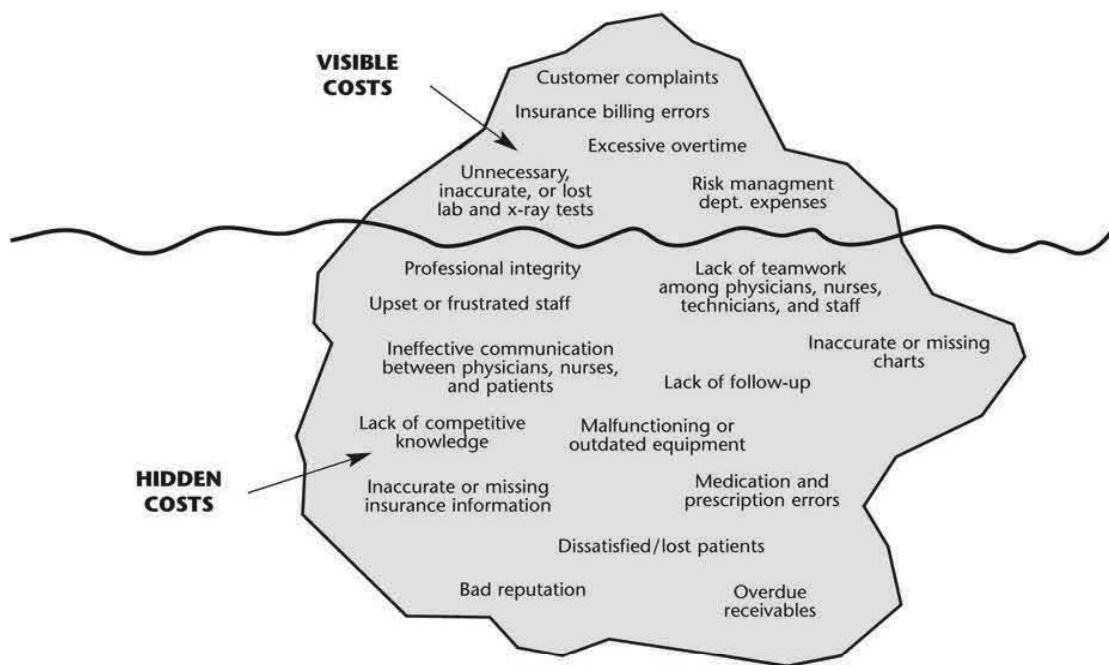


Figure 7.8. The iceberg of visible and hidden costs of poor quality. (From Carol Greebler, TQM Plus, San Diego, CA, 1989; reprinted by permission.)

Crosby's organizational maturity model includes the stages of uncertainty, awakening, enlightenment, wisdom, and certainty.¹¹⁸ Enlightenment occurs when management's understanding and attitude about CQI are heightened and it is supportive of and accepts CQI; problems are faced openly and resolved in an orderly manner; and there is implementation of Crosby's 14 steps to quality. Crosby stated that in the last stage, certainty, CQI is ingrained in the organization's culture.

Crosby's 14 steps of CQI are not necessarily sequential; many are concurrent:

1. Management commitment to and involvement in quality
2. Use of QI teams composed of people with process knowledge and a commitment to action
3. Quality measurement so that areas for improvement can be identified and action can be taken
4. Measuring the cost of quality, meaning the cost of nonquality
5. Quality awareness by all organization members
6. Corrective actions—seek opportunities for improvement
7. Zero defects planning—striving to “do it right the first time”
8. Employee education, with formal orientation at all levels of management (and employees), about the 14 steps
9. Zero Defect Day, which is management's demonstration of its commitment to quality
10. Goal setting—the ultimate is zero defects, but “intermediate goals move in that direction”
11. Error-cause removal, in which people describe problems that prevent error-free work
12. Recognition of those who meet their goals

13. Quality councils composed of quality professionals assisting others in
QI

14. Doing it all (steps 1–13) over again¹¹⁹

Crosby stated that his 14-step program is “a systematic way of guaranteeing that organized activities happen the way they are planned.”¹²⁰ It results in doing the right things the right way and doing them right the first time.

Table 7.3 shows the differences and similarities among Deming, Juran, and Crosby, including their definitions of quality, objectives for CQI, general approaches to quality, methods for CQI, and views of management responsibilities. For Crosby, the journey toward zero defects is attaining and surpassing the enlightenment stages of his organizational maturity model and moving to the certainty stage. Of Crosby’s several books, *Quality Is Free*, published in 1979, is among his most important.

Strategic Quality Planning: Hoshin Planning¹²¹

The Japanese word *hoshin* means “shining metal compass” or “pointing direction.” Used in planning, hoshin is a strategic approach to quality that is also known as focused planning, policy deployment, or strategic quality planning. Hoshin planning is customer oriented, is externally focused, and seeks to achieve breakthroughs in performance, quality, and competitive position. It is a way of linking quality planning, such as that in CQI and reengineering (discussed in Chapter 8), to the overall strategic planning process discussed in Chapter 9. Hoshin planning identifies and focuses improvement activities on a few key areas that are strategic priorities to meet customer needs and enhance competitive position.¹²²

Hoshin planning has six attributes:

1. *A focus for the organization* in the form of a few breakthrough goals that are vital to the organization's success
2. *A commitment to customers*, including targets and means at every level of the organization that are based on meeting the needs and expectations that customers rank as most important
3. *Deployment of the organization's focus* so that employees understand their specific contributions to it (referred to as the "golden thread" that links employees to what is important to customers and to one another)
4. *Collective wisdom to develop the plan* through a top-down, bottom-up communication process called catchball
5. *Tools and techniques* that make the hoshin planning process and the plan helpful, clear, and easy to use
6. *Ongoing evaluation of progress* to facilitate learning and continuous improvement, that emphasizes both results and the processes that are used to achieve results¹²³

Hoshin planning is vertical, as opposed to the horizontal planning of CQI, is based on the strategic vision of the organization in conjunction with its values and mission, and is a systematic way of prioritizing and integrating key success factor process improvement initiatives.¹²⁴ It allocates resources and aligns or restructures the organization so that "all units attempt to achieve or contribute to the same few key organizational goals or objectives."¹²⁵

Table 7.3. Differences and similarities in the approaches to quality of Deming, Juran, and Crosby

Dimension	Deming	Juran	Crosby
Definition of quality	A product or service that helps someone and has a good and sustainable market	Fitness for use—free of deficiencies and meeting customer needs	Conformance to requirements, including “satisfy the customer”
Poor quality	Overwhelmingly caused by process, not workers; common cause variation	Caused by poor planning/design (chronic) and sporadic spike (see Figure 7.7)	Nonconformance; there are (hidden) costs of nonquality (see Figure 7.8)—quality is free
Quality objective	Error-free (reduce common cause variation); hit target every time	Reduce chronic poor quality and sporadic spike; move to “new zone” of quality control	Zero defects (objective); “do it right the first time”
Customer orientation	Yes, transformation—improve quality (so customers buy products) to improve competitive position (see Figure 7.4)	Yes, meet customer needs	Yes, satisfy the customer
General approach to quality	Prospective prevention in all processes, not retrospective inspection; understand and reduce variation through statistical process control; transform organization (change culture)	General management approach; find opportunities for improvement; “break-through”; change culture regarding quality	Managerial approach: QI teams, project basis for improvements, move to “certainty” stage, prevention and error-cause removal
Method for quality improvement	14 points for QI	Trilogy (quality planning, quality control, QI)	14 steps to QI
Management responsibility	Commitment to quality control (central focus); cause transformation; establish and perpetuate environment in which quality is integral to work of all employees; don’t blame employees; drive out fear; break down barriers; and train, coach, and teach statistical methods to employees	Commitment to quality, especially design; instill quality culture; support operating forces and QI project teams	Commitment, leadership, and involvement in QI; worker training; promote quality awareness by all employees and management

As delivery of health services evolves from focusing on illness to supporting wellness and from independent organizations to aggregations of HSOs in systems, managers must address critical questions:

- How do we plan a successful integrated system?
- What are the right things for people to focus on to ensure long-term success of the system?
- How do we align many different people, departments, and organizations to work together toward the success of the whole system?
- How can we increase employee understanding of the system’s priorities and plans?
- How can we balance the need for organizational direction with opportunities for employee initiative and creativity?
- How can we promote breakthrough thinking and results?¹²⁶

Strategic quality planning, or hoshin planning, answers these questions.

Hoshin planning is summarized in Figure 7.9. Components include 1) choosing the focus (defining the future organization), 2) aligning the organization to review and improve performance, 3) finalizing and implementing the plan and monitoring performance against it, and 4) reviewing the plan and making improvements in it to enhance competitive position.

Customers and Focus

Choosing the focus includes the tasks inherent in strategic planning discussed in Chapter 9: integrating mission and objectives into the plan; analyzing external environment opportunities and threats, including customers, markets, and competitive position; and assessing the HSO's/HS's internal environment to identify strengths and weaknesses. Hoshin planning focuses on strategic vision—identifying and articulating what the HSO/HS seeks to do, for example, become the highest value provider in the service area, integrate delivery to enhance community health, expand delivery capacity and capability, and provide information on demand for customers.¹²⁷

Align the Organization

The alignment component of Figure 7.9 identifies the performance targets for key success factors that meet customers' needs. Gap analysis using survey data from customers and management will reveal discrepancies between expectations and actual performance in service delivery.¹²⁸ An organizationwide iterative process known as catchball develops, negotiates, and communicates targets for key process performance.¹²⁹

In the catchball process, one level of management throws the ball—the tasks to be accomplished—to the next level of management or another planning team. [There is] input to the development of means to achieve the targets. Dialogue about targets and means proceeds within and across departments, down to the next level of the people closest to the relevant customers and work processes, until the plan is

developed in sufficient detail. Then, the process is reversed. As the plan is finalized, it is rolled back up the organization and checked for gaps, overlaps, and feasibility.¹³⁰

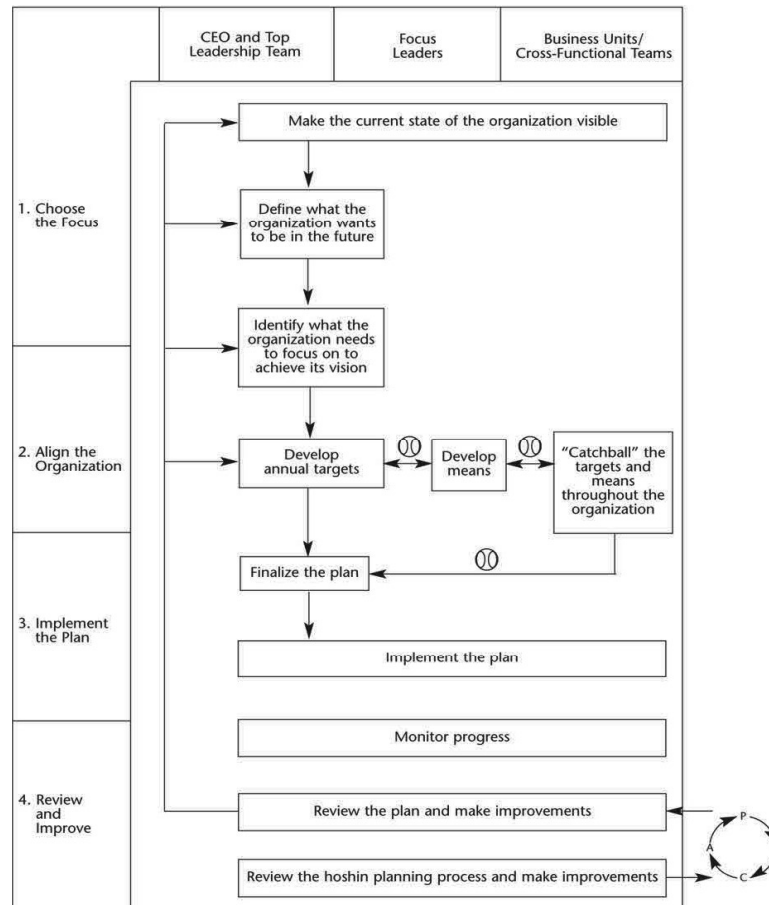


Figure 7.9. Hoshin planning system overview. (From Melum, Mara Minerva, and Casey Collett. *Breakthrough Leadership: Achieving Organizational Alignment Through Hoshin Planning*, 127. Chicago: American Hospital Publishing, 1995; reprinted by permission.)

The staff's collective wisdom is applied as the iterative process develops specific targets at all organizational levels and the plans to achieve them. The process includes top-down, horizontal, and bottom-up cascades throughout the HSO/HS. Important outcomes are an understanding of how targets and plans relate to other organizational processes and how they are interconnected. Including employees in planning and implementation enhances acceptance of the strategic plan and their commitment and motivation to succeed. Furthermore, catchball and the resulting understanding of interrelationships facilitate teamwork. The "golden

thread” is the concept that interconnected performance targets from all levels tie the organization together.

Implement the Plan and Review and Improve

Steps 3 and 4 in Figure 7.9 show that implementation of the plan and reviewing and improving involve the same steps as those in the PDSA (PDCA) cycle. Implementation is based on targets for the processes critical to success and the resulting plan(s). Data track performance for each target. Reviewing and improving the plan are concurrent and interactive with implementation. It is essentially a problem-solving and control activity. If desired results are not attained in key processes, assessment will determine how deviations can be corrected. Assessment may also indicate no deviation, but that further improvement is possible. As in the PDSA cycle, lessons learned can be communicated. This can be done with reviews by QITs, the next level of management, and senior management. These activities will facilitate achieving the vision developed in the focus stage.

Two Models to Improve Processes

CQI uses data to understand the performance of processes. Monitoring data allows managers to identify the parts of a process that will benefit most from improvement efforts. There are many variations on Shewhart’s PDSA cycle, but it remains the methodological core of quality/productivity improvement (Q/PI). One widely used variation has been FOCUS-PDCA, which was developed in the 1980s by for-profit Columbia/HCA (formerly the Hospital Corporation of America):

- (F)ind a process to improve.
- (O)rganize a team that knows the process.
- (C)larify current knowledge of the process.
- (U)nderstand sources of process variation.

(S)elect the process improvement.

(P)lan the improvement.

(D)o the improvement.

(C)heck the effect of the change.

(A)ct to hold the gain.

Data collection is essential to allow managers to monitor and evaluate, to determine if an opportunity for improvement is present, to clarify current knowledge about a process to be improved, to uncover causes of variation, to determine effects of improvement, and to continue monitoring.

In 2005, HRET published Quality Management for Health Care Delivery (QMHCD), an evolution of the 1989 Quality Measurement and Management Project research initiative that directly linked CQI to HSOs. QMHCD is a CQI model similar to the FOCUS-PDCA model.¹³¹ The QMHCD emphasizes the need for high quality through a structured approach ultimately affecting competition, quality, and cost and system synergy.¹³²

HRET's QMHCD model includes the following¹³³:

1. Find a process that needs improvement.
2. *Assemble a team that knows the process.* In general, those who understand it best are the employees involved in it. "Through its members, the team must also have an understanding of continuous quality improvement principles, statistical quality control, the use of data management systems, and access to management so that organizational roadblocks to improvement can be overcome."
3. *Identify customers and process outputs, and measure customer expectations regarding outputs.* Different processes have different outputs, and "the team's first task is therefore to list the outputs of the process, identify its customers, and measure expectations of outputs."

Customers may be patients, external stakeholders, or an internal downstream process.

4. *Document the process.* A process consists of a series of steps that convert inputs into outputs. They are usually hierarchical; that is, the main process may be broken down into subprocesses, each with subinputs and suboutputs. The hierarchical chain may be followed to that level of detail necessary to understand the process.
5. *Generate output and process specifications.* “A specification is an explicit, measurable statement regarding an important attribute of an output (a customer expectation) or the (sub) process that produces it.”
6. *Eliminate inappropriate variation (implement).*
7. *Document continuous improvement (innovate).* The team can select those ideas that seem most promising and then apply them on a test basis within their process. The proposed change can then be discarded, implemented, or modified and tried again, based on the results of the test.

As noted earlier, the QMHCD report credits Deming with providing the framework and inspiration for improvement of quality in health services.¹³⁴

Organizing for Improvement

Role of Governance and Senior Managers

The governing body (GB) sets the overall direction of the HSO/HS. In this leadership position, the GB, through senior management, determines the organization's level of commitment to quality and QI. The GB's decisions regarding strategic direction, selection of the chief executive officer (CEO) and approval of other senior leadership, and expectations regarding QI are key. The GB must support its commitment to quality with resources

sufficient to ensure success. In addition, the GB sets a moral tone that ultimately affects the organization's culture and its focus on quality. Thus, in Dr. Deming's words, the transformation of the HSO/HS begins at the top, which is where the constancy of purpose and adoption of the new philosophy toward improvement of product and service that are hallmarks of CQI must be found.

Typically, GB members are unlikely to be conversant with Q/PI theory and applications in health services delivery. It rests with the CEO and other senior leadership to educate GB members and instill and nurture a dedication to CQI. Failure to educate them as to the long-term commitment needed to transform the organization will cause quality efforts to falter long before they are integral to the organization's culture and are the focus of all that is done. The need to nurture and reinforce the GB's commitment cannot be overstated. Common shortcomings are that governance is unwilling to commit the resources for training of staff and the staff members and consultants that ensure the success of the Q/PI effort; in addition, there is a tendency to be impatient. A culture that focuses on quality cannot be achieved easily; constancy of purpose and a long-term commitment to achieving this paradigm shift are essential.

Special attention must be directed to educating and involving members of the GB's quality committee because it will be most closely linked to operationalizing CQI. GB members whose experience is focused on performance in the next quarter must understand that transforming a culture to put quality at the forefront of all that is done may take a decade or more. Becoming a quality-focused HSO/HS is neither easy nor quickly accomplished.

Quality Improvement Council

Reporting to the GB's quality committee is the quality improvement council (QIC). The QIC is the implementation and monitoring arm for Q/PI. The QIC's core membership is typically 12 to 15 and includes senior managers (including nursing and professional staff organization leadership), various middle managers, and specialists and consultants in CQI. Ad hoc participants are those reporting on QI activities, including

service line managers, “owners” of cross-functional processes, department heads, and staff such as those monitoring infectious disease, those doing UR, and patient educators.

The QIC’s important roles include using customer satisfaction, quality, and performance data to set priorities for improvement efforts; sanctioning and monitoring cross-functional quality improvement teams (QITs); reviewing measures of clinical and administrative performance, and patient satisfaction data; and setting education and staff involvement goals.

Quality Improvement Teams

There are several types of QITs. The most common and simple are those in functional areas or departments, each of which should have several QITs undertaking internal improvement efforts at any one time. The processes these teams improve are those almost entirely internal to the department or functional area and over which the responsible manager has more or less exclusive authority. Typically, the process improvements these teams recommend can be approved and implemented by the department head or functional area manager without review by more senior management. Only when other areas are affected or additional resources are required must higher authority be consulted. Such efforts are the grassroots of Q/PI.

QITs for processes that cross functional area lines or are interdepartmental must be sanctioned by the QIC. This is done because 1) it is likely that resource consumption will be greater; 2) it is almost certain that more than one department or process will be investigated for improvement, and the cooperation of all managers is needed; and 3) the changes that will be recommended by the cross-functional team will have to be judged and possibly implemented. Thus, there is need for the QIC *imprimatur*.

Complex HSOs such as hospitals have scores of cross-functional processes; improving them will provide the greatest gain of higher quality and lower costs. The QIC sanctioning process must identify a process owner, who is usually the manager whose work most depends on the performance of the process being studied. Although the process owner will

lead the team in its quest to improve quality, the QIC must be sure that team members are educated to participate effectively. Often, cross-functional QITs include a facilitator who is a member of the HSO's/HS's quality resources department. Facilitators meet with the team, but are not team members. They assist with group process, application of QI tools, and efficient use of meeting time.

The Next Iteration of CQI—A Community Focus

What is the future of CQI? The next iteration of CQI will be a quantum leap to involve multiple independent HSOs or HSs within a community. Acceptance of CQI by all health services providers in a community, including those in public health, will be difficult to achieve, and their arrangements will be complex.¹³⁵ Essential features will be 1) data sharing among participating provider organizations, which may be threatening to them and a possible barrier to cooperation; 2) accommodating different organizational cultures and answering questions of control; and 3) the shift in quality activities from independent providers to a collection within the community that represents “a transformation from hierarchies to markets.”¹³⁶ CQI initiatives beyond the HSO or HS will likely use a public health model that relies on health status indicators, community satisfaction, and overall community benefit.¹³⁷ The Precede-Proceed model in Figure 1.2 reflects these elements.

CQI in the context of a communitywide model will require application of CQI principles, perhaps reengineering, and, certainly, strategic quality planning. However, it will be necessary to manage the changed leadership patterns among participating HSOs/HSs, lessen threats to them, and gain the cooperation of providers that have traditionally competed. Achieving this will be problematic. The following steps will facilitate the transformation from traditional organization-based to community-oriented quality initiatives¹³⁸:

1. *Be cautious in implementing a conventional QI infrastructure that may have worked in intraorganizational initiatives.* All organizations may not have the same experience with quality initiatives; they may have different agendas and different priorities.
2. *Achieve the commitment of top management to community-based needs assessment.* Community-based indicators of need and quality must be developed, with HSO/HS leaders focusing on the needs of the community, not their individual organizations.
3. *Develop long-run objectives, but also set short-term measurable objectives.* Because of variability in commitment among different organizations, short-run objectives, perhaps involving modest initiatives, are necessary to demonstrate that communitywide quality initiatives can work.
4. *Select topics to utilize network participants who are ready for a common QI approach to specific objectives, capitalizing on small wins.* Build consensus by selecting issues and areas for cooperation that the majority of key participants is ready to implement.
5. *Emphasize data feedback and improved insight.* Use feedback to lessen the concerns of HSOs/HSs, as well as autonomous professionals who may be conceding some sovereignty.
6. *Avoid “religious” wars.* One organization should not proselytize its concept of quality as the one and only.
7. *Build the network of organizations carefully.* Elicit the cooperation of community stakeholders who are critical to success.
8. *Recognize initial efforts as a coalition arrangement.* Indicate to potential participants how the community quality initiatives will benefit them and help to achieve their organization’s objectives. Also, permit them to participate or not participate in initiatives; in a confederation, it is necessary to allow some freedom.

Efforts to improve the community’s health will only be successful through interorganizational cooperation, a goal that all health services executives should strive to achieve.

Discussion Questions

1. What important changes occurred in health services delivery in the 1980s and 1990s that stimulated HSOs/HSs to adopt the philosophy of CQI?
2. Define CQI. Why is it an organizational philosophy? What are its attributes? How can CQI lead to an enhanced HSO/HS competitive position?
3. Throughout history, reformers have sought to improve the quality of medical care. What common threads connect them? Why did some fail?
4. Think about the nursing service in a hospital. Who or what are its customers? If the nursing service is the customer, who or what provides inputs (is the supplier)?
5. Identify the similarities and differences in the approaches to quality taken by Deming, Juran, and Crosby.
6. Discuss the elements of the PDSA cycle. Apply it in a health services setting using a hypothetical example.
7. Discuss the application(s) of the Deming Chain Reaction in health services delivery.
8. Figure 7.8 identifies visible and hidden costs of poor quality. Add several types to each category.
9. Discuss the role and activities of quality improvement teams (QITs). Identify the attributes of their members.
10. Identify the ways HSOs interact with their communities. Discuss the importance of CQI in those interactions.

Case Study 1

Fed Up in Dallas¹³⁹

Dear Ann Landers: I've done at least \$20,000 worth of business with a local printer. I've always paid my bills in installments, some as large as \$1,000 a month. My printer told me my payments were too small and she had to have all her money in one lump from then on. I paid her off and took my printing elsewhere.

I've patronized the same dry cleaner for 5 years. They know me on sight and have never asked for identification when they cash my checks. Suddenly, they are losing and damaging my clothes and acting as if it's not their fault.

This morning I drove into the service station where I've been a customer for 3 years. I asked the man to please check the pressure in a low tire. I was told that I'd have to buy gas in order to get full service. When I said, "OK," the attendant continued to gripe and then the owner got into the act. I told them to forget it, that I'd go elsewhere. The attendant replied, "You want me to take the air back out of your tire?" Needless to say, they won't see me again.

I've even had a run-in with a doctor I've been seeing for 6 years. I walked out of his office after being kept waiting for an hour and a half.

Ann, what's wrong with these people? Why don't they value those of us who keep them in business? In these times of economic hardship, you'd think they would do everything possible to please their customers. Am I wrong to expect a little service and courtesy in exchange for my business?
—Fed Up in Dallas

Questions

1. Obviously, Fed Up in Dallas is not a satisfied customer. In general, why do you think some organizations and their staffs are indifferent to customers who buy their products and services?

2. Describe an instance in which you or an acquaintance encountered a negative customer orientation by an HSO. What was your (or your acquaintance's) reaction?
3. Fed Up in Dallas describes negative experiences with four different businesses. Could she be the problem? What should organizations do when confronted with difficult customers?

Case Study 2

Clinics

In the mid-1990s, Newland Hospital sought ways to increase the number of referrals to its inpatient services. The governing body approved a number of new initiatives, one of which was to purchase several primary care practices that were owned by family practice physicians who were in solo or two- or three-physician partnerships and who had clinical privileges on Newland's professional staff organization. Over a 2-year period, Newland purchased three practices with a total of eight physicians. In the purchase contract, Newland agreed to buy the practices, employ the physicians, and employ the clinical and clerical support staff who worked in the practices. These staff would report for administrative matters to Newland's vice president for ancillary services and would report to the physicians for clinical matters. The contract specified that the physicians would work 40 hours a week. The physicians would, however, control their hours of work and the patient schedule. The quality of care at the practices would be reviewed by Newland's chief medical officer.

It was assumed that the practices would benefit from the improved management that the hospital would provide. In addition, it was expected that there would be several efficiencies and economies of scale, especially in terms of staffing, logistics support, and the information technology provided by Newland. The practices were financially healthy when purchased, and allowing for the problems incident to the change in

ownership, it was projected that the clinics would at least break even in the year following purchase and return to profitability no later than the 3rd year after purchase.

Now, the 5th year after purchase, all of the practices are losing money, with total annual losses in excess of \$500,000. You are the vice president for ancillary services. The chief executive officer has asked you to prepare an analysis regarding the poor financial performance and to make recommendations regarding the actions to be taken.

Questions

1. Describe the system that Newland Hospital created by purchasing the primary care practices. How do the concepts of optimization and suboptimization of a system apply?
2. What reasons might explain why the practices are losing money?
3. Identify the economic value of the clinics to Newland Hospital. Identify the noneconomic value.
4. Outline a plan that applies CQI principles and concepts to improve the healthcare delivery system composed of the primary care practices and Newland.

Case Study 3

Where *and* How to Start?

Tri-River Hospital (TRH) is a 300-bed community hospital located in a metropolitan area of the upper Midwest. TRH has a good reputation in its service area. On several occasions, TRH has been recognized for meeting measures of clinical quality that The Joint Commission has established. Despite meeting these measures of clinical quality, TRH has patient

satisfaction scores that have been consistently at or near the 50th percentile. Month-to-month and year-to-year there is only common cause variation in the patient satisfaction scores. The QIC and the quality resources staff have attempted a number of hospitalwide initiatives to improve patient satisfaction scores. These included written scripts for nursing staff to encourage a more engaging relationship with patients and family members, mounting white boards in each patient room that identify nursing and other staff members who will be treating patients each shift, and increasing the attention by environmental services to bathrooms and the general level of cleanliness in patient rooms. None of these initiatives seems to have made a difference.

Patient satisfaction scores are obtained from a telephone survey of a random sample of adults discharged each month. The survey is conducted by a national survey research firm. Questions are standardized as required by the CMS and may not be duplicated by a hospital's local survey process. Responses can be sorted by several variables, including discharging unit, insurance, attending physician, patient's self-identified race, and the like. The hospital has a recognition program for individual units using Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores. Some patients surveyed have been out of TRH only a few days, others were discharged a month or more earlier.

The pressure to improve patient satisfaction scores will only increase. Generally, competitors have better scores, and the CMS is likely to incorporate patient satisfaction into criteria to determine reimbursement.

Questions

1. Critique TRH's efforts to this point.
2. Formulate a QI initiative to raise patient satisfaction scores.
3. Develop a step-by-step plan to implement the initiative.
4. What measures should be considered in addition to those directly affecting patients?

Case Study 4

Extent of Obligation

You are a physician who is the managing director of a 100-member, multispecialty group practice. There are 290 employees, exclusive of the physicians and other licensed independent practitioners (LIPs). The small human resources department is responsible for non-LIP staff. Your job requires significant involvement in recruiting physicians, credentialing them, and monitoring performance during their first year of associate membership in the group.

About 12 months ago you successfully recruited a surgeon, Dr. F.W. Nieren, who had had a fellowship that included significant experience using the DaVinci robotic surgical system. The DaVinci robot is a programmable device that can perform intricate surgical procedures with results that are usually better and more consistent than those achieved by surgeons who are unaided by the robot. The group had sought to add a surgeon qualified with the DaVinci system for several years, partially because of competitive pressures, but also because of the prestige and marketing potential having the robot would give. The \$3 million device was installed and available soon after Dr. Nieren joined the staff.

Now, after almost 12 months to observe, monitor, and interact with Dr. Nieren you are very disappointed with the mixed quality of outcomes for her patients, the negative reactions of trusted non-LIP members of the staff to working with Dr. Nieren, and her unpleasant affect and often disruptive behavior. The number of incidents, especially the quality of clinical outcomes, has given you great concern. About a month ago, you asked several senior members of the surgical staff to conduct a full-scale review of Dr. Nieren's clinical work, including the behavioral problems that had been documented. The probationary period of 12 months will end in 2 weeks. The report of the review committee supported your judgment about Dr. Nieren. After consulting with members of the practice's executive management committee to which you report, you conclude that Dr. Nieren should not become a member of the group and should be asked to leave.

Your conversation with Dr. Nieren did not go well. She reacted angrily to the points you made, and alleged that she had been treated unfairly by LIP and non-LIP staff members and the review committee. She stated that she would leave without protest only if she received a laudatory letter of recommendation. Dr. Nieren hinted that she was prepared to retain legal counsel and make life for the group “a living hell.” Your response to Dr. Nieren’s demand for a laudatory letter was that the best you could do would be to write a letter that offered only the dates of her employment, but that provided no information as to her clinical or collegial performance.

Questions

1. Identify the ethical, legal, and quality issues present in the case.
2. What should you do regarding the letter that Dr. Nieren is demanding?
3. Identify and discuss your obligations to Dr. Nieren’s future patients and the sites at which she might seek clinical privileges.
4. Draft a letter that could be sent in response to inquiries from sites of potential employment or clinical affiliation for Dr. Nieren.

Case Study 5

Surgical Safety—Retained Foreign Objects

Your hospital established a safety program for keeping track of surgical sponges several years ago when The Joint Commission and the Centers for Medicare and Medicaid Services identified retained sponges as a “never event.” A never event is something that should never occur—sponges should never be left inside a patient after a procedure. Unfortunately, there

was a recent incident in which a patient had to be taken back to the OR. The cause of her pain was a retained sponge. The surgical count in the medical record showed that there was no discrepancy in the sponge count.

Questions

1. After reading the documentation of the process in place, what resources can you use to compare your program to national best practices?
2. Your patient safety department decided that it should organize a group to perform the root cause analysis that is required by The Joint Commission. Identify by title those who should be included.
3. The root cause analysis found that there is a process to keep track of surgical sponges, but there are other places to put used sponges that blood has colored red. This can conceal the fact that a sponge was misplaced. How could this fact be included in the best practice?
4. Comment on the possibility that an OR staff member miscounted or deliberately reported a correct count.

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