

CHAPTER 3

Quality in Healthcare: Concepts and Practice

Phil Buttell, Robert Hendler, and Jennifer Daley

In the healthcare industry, quality of care is more than a concept. It has become essential to patient well-being and financial survival. This chapter will discuss the complex concept and multiple definitions of quality of care and evaluate how it has become an increasingly important factor in the delivery of healthcare. We will start by providing a historical perspective to help readers understand the evolution of quality in the healthcare industry. This perspective will include landmark reports and events that have helped shape the role quality of care currently plays in the industry. We will then explore the key principles and definitions that are essential to healthcare quality. After reviewing the key principles, we will explore a case study that illustrates the impact that quality improvement is having on a particular company within the industry. Last, we will speculate on the role quality will play as the healthcare industry continues to evolve.

The authors of this chapter are involved daily in the complexity of designing systems and motivating people to achieve the desired goal of high-quality, highly safe, and efficient healthcare. We believe that this goal is important for both human and business reasons. Imagine a hospital system in which proper processes are delivered in a timely fashion for the many different types of patients and disease processes. Imagine a hospital with no hospital-acquired infections, no staff-related oversights leading to complications during difficult deliveries, no wrong-site surgeries, and no medication errors. A system that demonstrates this type of success has lowered the cost of providing care while maximizing the quality of care. We all want to be treated at such an institution. Employers would demand that their patients use this system because they no longer wish to bear the cost of poor outcomes, complications such as congestive heart failure following inadequate or delayed reperfusion of a coronary vessel in an acute heart attack, or

hospital-acquired infections. Clearly, hospitals and physicians that provide cost-effective quality care will have made the business case for quality of care and be rewarded with higher volumes of patients and better reimbursement.

QUALITY IN HEALTHCARE: WHAT IS IT?

To begin this discussion, we must have a shared definition of quality and understand the strengths, weaknesses, and misconceptions of commonly held concepts about quality in healthcare. When a group of healthcare professionals is asked what quality means, there may be as many definitions as people in the room. And differing definitions can and will lead to different priorities and different goals, depending on the perspective of the constituent: patients, their families, healthcare providers and professionals, regulators, insurers, and employers. W. Edward Deming, who led the quality revolution in Japan and the United States, said, "A product or service possesses quality if it helps somebody and enjoys a good and sustainable market."¹ Note that he does not define quality directly but references the value of a product or service in terms of its ability to both help the consumer as well as its marketability.

Donabedian, a leading figure in the theory and management of quality of healthcare, has previously suggested that "several formulations are both possible and legitimate, depending on where we are located in the system of care and on what the nature and extent of our responsibilities are."² Different perspectives on and definitions of quality will logically call for different approaches to its measurement and management.³ Another author recognizes the inherent problem in defining quality by stating, "It would be difficult to find a realistic definition of quality that did not have, implicit within the definition, a fundamental expression or implied focus of building and sustaining relationships."⁴ Understanding differing perspectives about quality does not prevent success in achieving quality of care as long as key principles and concepts of quality are identified, understood, and used.

The most durable and widely cited definition of healthcare quality was formulated by the Institute of Medicine (IOM) in 1990. According to the IOM, quality consists of the "degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."⁵ Other authors have recognized Deming's appreciation of the importance of the market. They refer to care that meets the expectations of patients and other customers of healthcare services.⁶ Therefore, for the purposes of this discussion, we have expanded the IOM definition. Quality consists of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes (quality principles), are consistent with current professional knowledge (professional practitioner skill), and meet the expectations of healthcare users (the marketplace).

THE EVOLUTION OF AWARENESS OF QUALITY IN HEALTHCARE AMONG THE PUBLIC

The public has become more aware of the role quality of care plays in healthcare. The definition has not changed, but the public and the industry's awareness

certainly has. High-profile patient safety failures have had a profound impact on the evolution of the public's awareness of quality of care. Patient safety plays an important role in quality performance, but it is important to note that quality and safety are not the same thing. Patient safety is a subset of the larger, much more complex and multidimensional concept of quality. Highly publicized patient care failures, however, were the catalysts that prompted a national evaluation of the patient safety issues troubling healthcare.

On December 3, 1994, a 39-year-old cancer patient died of complications of an overdose of cyclophosphamide, a chemotherapeutic agent she received at the Dana-Farber Cancer Institute (DFCI) in Boston for treatment of widely metastatic breast cancer. Another patient at DFCI also suffered an overdose of cyclophosphamide and experienced serious heart damage. According to James B. Conway, DFCI's chief operating officer, and Dr. Saul Weingart, director of the Center for Patient Safety at DFCI, "Both errors involved breakdowns in standard processes, and both raised issues of trainee supervision, nursing competence, and order execution."⁷ The media reported the event with 28 front-page headlines over the next three years, partially because the patient who died, Betsy Lehman, was a healthcare reporter for the *Boston Globe*.

Although medical professionals have always known about deadly errors in complex healthcare systems, the public at large reacted to the events at Dana-Farber with shock and disbelief. They want a safe environment for themselves and their families, and these incidents were clear examples that hospitals are often unsafe, even at highly respected institutions. Regardless of the magnitude of the errors or the ability of the media to relay the message to a local community or an entire nation, these incidents and medical errors put quality and patient safety on the front page of every newspaper in the United States. Numerous other high-profile and fatal medical errors continue to be reported on an almost weekly basis, contributing to a general loss of trust among patients and their families when they experience serious illnesses.

THE INSTITUTE OF MEDICINE RESPONDS: TO ERR IS HUMAN

In response to the incident at Dana-Farber and many other facilities, the IOM began a thorough examination of patient safety, which resulted in the report *To Err Is Human: Building a Safer Health System*.⁸ *To Err Is Human* brought patient safety into the mainstream of healthcare in academic centers, community hospitals, physician and nursing professional meetings, as well as on the front page of every newspaper in the United States. This report had a tremendous impact on the safety of healthcare delivered in the United States. As we will later see, the impact has not been as deep or as significant as one might have hoped, but the report changed the way people think about healthcare and their fundamental perceptions of the safety of healthcare delivery.

This report was the first in a series of reports produced by the Quality of Health Care in America Project. "The Quality of Health Care in America project

was initiated by the Institute of Medicine (IOM) in June 1998 with the charge of developing a strategy that will result in a *threshold improvement* in quality over the next ten years.⁹ The authors of *To Err Is Human* suggested that anywhere from 44,000 to 98,000 Americans die each year as a result of medical errors in hospitals. This number was derived from two parallel studies, one of which was conducted in Colorado and Utah hospitals and the other was a study based on data from New York State hospitals. The numbers were staggering and equivalent to a 747 airliner full of patients crashing every day. The New York study analysis suggested that serious adverse events occur in 3.7 percent of all hospitalizations.¹⁰ The New York study was replicated in Colorado and Utah and found that serious adverse events occurred in 2.9 percent of hospitalizations.¹¹ Although many healthcare professionals were aware of the potential for serious safety problems in U.S. hospitals, few lay people realized the full magnitude of the risk and the deadly outcomes of flawed hospital systems. Academics, lawyers, state and federal legislators, and healthcare professionals involved in the complex workings in healthcare organizations were faced with the realization that something was broken in a system in which the goal was to alleviate suffering and save lives.

The IOM report made the following (see table 3.1) recommendations based on their review of patient safety:

1. Improve leadership and knowledge.
2. Identify and learn from errors.
3. Set performance standards and expectations for safety.
4. Implement safety systems in healthcare organizations.

These recommended actions are critically important to the development of a safe healthcare environment. A continued focus on these objectives will help create a much more quality-driven industry and a much safer environment in which to receive care.

The recommendations made by the IOM serve as useful starting points to improve patient safety, and several changes have been made to address these recommendations. Not enough, however, has been accomplished to change the culture of patient safety in the industry overall. Leadership is vital to improving the focus as well as the performance in patient safety. Leaders help shape the agenda in our industry by a single-minded focus on patient safety that is shared among all participants and constituents in the healthcare system. An increased focus on patient safety in the industry will need to be supplemented with additional knowledge and understanding of the specific elements that promote patient safety. This single-minded goal drives the evolution of policy and creates a culture that values the role quality and patient safety play in the care of patients.

Identification of serious errors is also important when attempting to improve patient safety through root cause analysis. In addition, so-called near misses—patient safety system failures that do not result in injury to patients—also provide

Table 3.1
***To Err Is Human* Recommendations**

Improve Leadership and Knowledge

Recommendation 4.1: Congress should create a Center for Patient Safety within the Agency for Healthcare Research and Quality. The Center for Patient Safety should:

- Set the national goals for patient safety, track progress in meeting these goals, and issue an annual report to the president and Congress on patient safety.
- Develop knowledge and understanding of errors in healthcare by developing a research agenda, funding Centers of Excellence, evaluating methods for identifying and preventing errors, and funding dissemination and communication activities to improve patient safety.

Identify and Learn from Errors

Recommendation 5.1: A nationwide mandatory reporting system should be established that provides for the collection of standardized information by state governments about adverse events that result in death or serious harm. Reporting initially should be required of hospitals and eventually should be required of other institutional and ambulatory care delivery settings.

Recommendation 5.2: The development of voluntary reporting efforts should be encouraged.

Recommendation 6.1: Congress should pass legislation to extend peer review protections to data related to patient safety and quality improvement that are collected and analyzed by healthcare organizations for internal use or shared with others solely for purposes of improving safety and quality.

Set Performance Standards and Expectations for safety

Recommendation 7.1: Performance standards and expectations for healthcare organizations should focus greater attention on patient safety.

- Regulators and accreditors should require healthcare organizations to implement meaningful patient safety programs with defined executive responsibility.
- Public and private purchasers should provide incentives to healthcare organizations to demonstrate continuous improvement in patient safety.

Recommendation 7.2: Performance standards and expectations for health professionals should focus greater attention on patient safety.

Recommendation 7.3: The Food and Drug Administration (FDA) should increase attention to the safe use of drugs in both pre- and postmarketing processes through the following actions:

- Develop and enforce standards for the design of drug packaging and labeling that will maximize safety in use.
- Require pharmaceutical companies to test (using FDA-approved methods) proposed drug names to identify and remedy potential sound-alike and look-alike confusion with existing drug names.
- Work with physicians, pharmacists, consumers, and others to establish appropriate responses to problems identified through postmarketing surveillance, especially for concerns that are perceived to require immediate response to protect the safety of patients.

Table 3.1
To Err Is Human Recommendations (continued)

Implementing Safety Systems in Healthcare Organizations

Recommendation 8.1: Healthcare organizations and the professionals affiliated with them should make continually improved patient safety a declared and serious aim by establishing patient safety programs with defined executive responsibility. Patient safety programs should:

- Provide strong, clear, and visible attention to safety.
- Implement nonpunitive systems for reporting and analyzing errors within their organizations.
- Incorporate well-understood safety principles, such as standardizing and simplifying equipment, supplies, and processes.
- Establish interdisciplinary team training programs for providers that incorporate proved methods of team training, such as simulation.

Recommendation 8.2: Healthcare organizations should implement proved medication safety practices.

an opportunity to prevent errors. The industry has the ability to learn much from errors and near misses, and those learning opportunities need to be identified and capitalized on at the time of the safety system failure. Unfortunately, in our society, it is difficult to create a blame-free environment without incurring legal liability for negligence. Safety theory in other high-reliability industries such as commercial aviation and nuclear power strongly suggests that human error is typically related to system problems and human behavioral and cognitive patterns rather than mistakes by individual providers because of lack of knowledge or carelessness. To compound the naturally occurring problem of human error, healthcare providers have a professional and humanitarian responsibility for human life in which doing no harm is a basic ethical principle. Take, for example, an individual in an assembly line responsible for making stuffed animals. If this individual makes an error, there are few complications that will result, except perhaps lower productivity and an unhappy customer. In healthcare, mistakes can cause loss of life. Creating an environment that embraces error as an opportunity for improvement rather than an opportunity for blame and punishment is essential to promoting patient safety and safer healthcare for both patients and healthcare workers. The authors of the *To Err Is Human* report recognized the capacity for forgiveness and healing by choosing the title of the IOM report from a common phrase, "To err is human; to forgive, divine."¹²

According to the IOM, setting performance standards and expectations is another essential element to improving patient safety. This is an area that has been somewhat disorganized, as institutions were often responsible for setting their own patient safety agenda resulting in great variation among facilities. Resources were not always uniform, nor were they utilized in appropriate ways to set a safety agenda. There is value to creating standards and expectations that are universal. Creating standards and universal areas of focus help provide legitimacy

and a target area. The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) has taken a leadership position in setting the patient safety agenda by promulgating new patient safety goals every year around common patient safety problems in hospitals (e.g., wrong-site surgery, illegible and nonstandard abbreviations, and preventions of falls among hospitalized and nursing home patients).

The last area of focus the IOM recommended was the implementation of patient safety systems in healthcare organizations. Implementing reliable systems that prevent human error in emergency rooms and intensive care units will improve patient safety in the U.S. healthcare delivery system.

AFTER *TO ERR IS HUMAN*: WHAT HAVE WE LEARNED AND WHAT HAVE WE DONE?

It is clear that the healthcare industry is not where it needs to be when perceived from a patient safety perspective. Medical errors continue to happen every day, and people are still at risk whenever they enter the healthcare system for care. The public is more aware of issues that have been played out in the media, and the IOM report has improved the awareness of the problem, but still too little is being done to transform healthcare. The patient safety agenda has been promoted by accrediting bodies, professional and hospital associations, and the myriad of public and private institutions whose main goal is to improve patient safety and the quality of healthcare in the U.S. system.¹³ Five years after *To Err Is Human*, “the impact on attitudes and organizations has been profound. . . . In sum, the groundwork for improving safety has been laid these past 5 years but progress is frustratingly slow. Building a culture of safety is proving to be an immense task and the barriers are formidable.”¹⁴ Still, problems exist. “Little evidence exists from any source that systematic improvements in safety are widely available.”¹⁵ Improvements are happening every day, but the changes are limited to small improvements at local and individual levels. Some hospitals are achieving groundbreaking improvements in patient safety, but these are the exception rather than the rule. The changes need to be industry-wide for the value to really be seen by the public.

CROSSING THE QUALITY CHASM: A ROAD MAP FOR IMPROVING QUALITY OF CARE

A second major report by the IOM’s Committee on the Quality of Health Care in America—*Crossing the Quality Chasm*—followed *To Err Is Human*. This report focused on the quality of care currently present in the U.S. healthcare system. The first sentence of the report reads, “The American health care delivery system is in need of fundamental change.”¹⁶ The committee outlined an agenda to improve quality. Table 3.2 outlines this agenda.

This report expands the work outlined in *To Err Is Human* in regard to improving patient safety because it focuses on a redesign of the entire industry around

Table 3.2
Crossing the Quality Chasm Agenda

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- That all healthcare constituencies, including policy makers, purchasers, regulators, health professionals, healthcare trustees and management, and consumers, commit to a national statement of purpose for the healthcare system as a whole and to a shared agenda of six aims for improvement that can raise the quality of care to unprecedented levels.
 - That clinicians and patients and the healthcare organizations that support care delivery adopt a new set of principles to guide the redesign of care processes.
 - That the Department of Health and Human Services identify a set of priority conditions upon which to focus initial efforts, provide resources to stimulate innovation, and initiate the change process.
 - That healthcare organizations design and implement more effective organizational support processes to make change in the delivery of care possible.
 - That purchasers, regulators, health professions, educational institutions, and the Department of Health and Human Services create an environment that fosters and rewards improvement by (1) creating an infrastructure to support evidence-based practice, (2) facilitating the use of information technology, (3) aligning payment incentives, and (4) preparing the workforce to better serve patients in a world of expanding knowledge and rapid change.
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a culture of improving quality of care. The committee proposed six components that define quality in healthcare. High-quality healthcare should be:

- *Safe*: Avoiding injuries to patients from the care that is intended to help them.
- *Effective*: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
- *Patient centered*: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- *Timely*: Reducing waits and sometimes harmful delays for both those who receive and those who give care.
- *Efficient*: Avoiding waste, including waste of equipment, supplies, ideas, and energy.
- *Equitable*: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

Arguably, hospitals and other healthcare institutions have been addressing these areas of quality improvement for decades. Yet, in 2003, the RAND Corporation published a study of representative populations of patients in the United States and discovered that only 54 percent of the recommended treatments were provided.¹⁷ Why have we seen little progress? The use of measurement for the continuous improvement of high-quality process—quality management—that revolutionized manufacturing and service industries in the 1980s appears to have

had little or no effect on the healthcare sector.¹⁸ Once an innovation has been adopted by the first 15 to 20 percent of a field or industry, it becomes an almost unstoppable process.¹⁹

Despite the enormous efforts to date, the strong resistance to change in healthcare suggests we have not reached the breakthrough point. Resistance can occur for many reasons. Among them are the technical challenges in distinguishing quality across physicians and other healthcare providers; the unwillingness of hospitals, patients, and physicians to use the information derived from quality management; and the fear among physicians that quality indicators may increase litigation risks if plaintiffs' attorneys use the information as evidence to bolster malpractice claims.²⁰ Probably the most compelling reason we have seen little progress is that medicine is still a so-called cottage industry with very little standardization across physicians, nurses, or hospitals in how to deliver high quality of care. In fact, autonomy among individual providers—the ability to practice individual discretion within professionally accepted boundaries in the care of an individual patient—is a treasured value. Reinertsen and Schellekens pointed out the paradox of physician autonomy, in that as patients suffer injury, physician autonomy is reduced through regulatory and health plan oversight of medical decision making.²¹

PRINCIPLES ESSENTIAL TO PROMOTING QUALITY OF CARE

Improving quality of care in the healthcare system is still a work in progress. Having a robust definition of the dimensions of quality care is insufficient to accomplish the goal of continuous improvement. As stated earlier, quality consists of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes (quality principles), are consistent with current professional knowledge (practitioner skill), and meet the expectations of healthcare consumers (the marketplace). Successful healthcare organizations—be they hospitals, physicians' offices, pharmacies, nursing homes, or ambulatory centers—will have understood, identified, and put into practice all of the following essential principles:

1. Leadership.
2. Measurement.
3. Reliability.
4. Practitioner skills.
5. The marketplace.

KEY PRINCIPLE 1: LEADERSHIP

In its simplest definition, leadership is the ability to influence behavior. The reason for changing behavior is to reach specific goals within an organization. The published literature on leadership is based on anecdotal and theoretical discussions. Less than 5 percent of these articles are empirically based, and most are based on demographic characteristics or personality traits of leaders.²² Despite

this, publications describing methods of personal development of leadership skills fill the shelves of bookstores. This discussion attempts to summarize briefly the basic and practical elements consistently associated with strong leaders.

a. Theories of Leadership

In 1977, a long-standing debate among the faculty of U.S. business schools began when a Harvard Business School professor published an article entitled “Managers and Leaders: Are They Different?”²³ In 1990, Kotter, a highly regarded thought leader in change theory, differentiated leadership from management and cautioned businesses to avoid confusing the two.²⁴ Management copes with the existing and growing complexity of our organizations, and leadership copes with change and transforming organizations to a vision with specific goals.²⁵ Kotter asserted that most U.S. corporations were overmanaged and underled and that both strong leadership and management were essential to success.²⁶ Leadership is not managing a spreadsheet but, rather, dealing in a disciplined manner with the complex world of human drives, desires, inspiration, and vision.

Berwick—a pediatrician and international thought leader in quality improvement in healthcare—questioned the common practice of defining healthcare improvement as changing regulatory, payment, and organizational structures under which care is given.²⁷ In many cases, this results in an emphasis on cost management and organizational downsizing with an associated loss of quality and safety. Berwick, now president of the Institute of Healthcare Improvement, stated that the failure to move the quality agenda forward was due to the failure of leadership and the inability of medical administrators and the professional workforce to innovate.²⁸ In 2005, Freed, in his detailed review of hospital turnovers, summarized the issue of leadership and management succinctly. He stated that hospitals that are underled may not do the right things and can find themselves at an eventual competitive disadvantage.²⁹ Hospitals that are undermanaged may not do things right and can find themselves eventually unable to execute.³⁰

b. The Individual Characteristics of Successful Leaders

Harsdorff and colleagues evaluated approximately 800 acknowledged leaders from different U.S. business sectors, including healthcare.³¹ The universal finding or traits that correlate with successful leaders are:

- Absolute personal integrity, including the ability to keep confidences.
- The ability to innovate.
- The ability to build partnerships in times of limited resources.
- Superior intelligence.
- The ability to hire and develop the best talent available.

Personal integrity must include an uncompromising approach to matters of safety, service, and quality of care. Careful listening to what physicians, consumers and patients, and the hospital staff desire and expect is required. *Innovation and superior intelligence* include the ability to project a specific vision and its practical goals to every individual in the organization as well as generate a very high percentage of strong buy-in by the employees. “The process of developing a winning strategy is . . . messy, experimental, and iterative and it is driven from the bottom up.”³² So-called transformational leaders, as opposed to those who manage by command and control, have the ability to transform cultures to create a context more conducive to the integration of evidence into clinical and management practice.³³ *The ability to build partnerships* through personal relations and highly effective meetings can lead to the empowerment of staff and a sense of ownership that drives the passion for high-quality care as well as high sensitivity to possible areas of risk. This unleashes the innovative potential of the staff in a way that is not common in healthcare. *The ability to hire and develop the best talent available* provides amplification of all of the previous activities and moves the organization toward a continuous cycle of improvement in multiple areas of caregiving, quality service, safety, and cost-effectiveness. All of these steps help lead to a highly effective organizational memory.

Other characteristics of transformational leaders include discipline and humility. “Disciplined attention is the currency of leadership” summarizes one of the characteristics contributing to a turnaround agent’s efficacy in getting the attention he or she needs.³⁴ “The most powerfully transformative executives possess a paradoxical mixture of personal humility and professional will. They are timid and ferocious. Shy and fearless. They are rare—and unstoppable.”³⁵ The turnaround agent is Level 5; he subordinates his role to that of the hospital for which he is clearing a safe path.

c. Leadership and Change

Coping with change is an essential focus of the effective leader. Every healthcare leader rapidly discovers that making a significant change (to transform or transition) is usually difficult to achieve and even harder to sustain. Often the toughest task for a leader in effecting change is mobilizing people throughout the organization to do adaptive work. “Adaptive work is required when our deeply held beliefs are challenged, when the values that made us successful become less relevant, and when legitimate, yet competing, perspectives emerge.”³⁶ “You don’t have to be managing people for long before you find out that people don’t like change.”³⁷

Hospital medical staff members’ failure to follow national guidelines to provide beta blockers or aspirin after a heart attack, failing to immunize patients with pneumococcal vaccine under Centers for Disease Control

and Prevention and Medicare guidelines, or continuing antibiotics longer than recommended by their own surgical societies with the associated risk of resistant organisms are examples of resistance to change. Some medical staff meetings can become war zones of resistance as checklists to remind physicians of evidence-based care are denounced as so-called cookbook medicine. Of interest, when education and negotiation have failed, regulation, such as incorporating quality goals into hospital policies or medical staff bylaws and increasing peer accountability, makes these issues vanish with no evidence of patient injury. If resistance is a consequence of the lack of clear goal setting and compelling objective information,³⁸ the essential role of the leader is to provide clear goals as well as the empirical information to help in clinical and administrative decision making.

Individuals in hospitals, as in many other organizations, find it hard to believe that “change is the only constant.”³⁹ But other industries have gone further than healthcare in recognizing that “individuals and organizations that are good react quickly to change. Individuals and organizations that are great create change.”⁴⁰ The rapid rate of change in healthcare makes the ability to accomplish appropriate change an essential skill for all healthcare administrators, medical staffs, and clinical staffs. An important role of leadership is to set organizational goals and through communication (dissemination) guide the organization to accomplish the needed change (adherence).⁴¹

Kotter’s eight-stage process is an effective tool for coping with change.⁴² In brief, his eight-stage process to create change can be summarized as:

1. Establish a sense of urgency.
2. Create the guiding coalition.
3. Develop a vision and strategy.
4. Communicate the change vision.
5. Empower broad-based action.
6. Generate short-term wins.
7. Consolidate gains and produce more change.
8. Anchor new approaches in the culture.

In many situations, however, an effort to improve a process may stall for unknown reasons. A practical and useful tool called the ADKAR model has been developed by Prosci, an independent research company. More than 300 organizations were surveyed, and Prosci found that there are five stages that a group must pass through to accomplish a sustainable change.⁴³ Different members of the group may be at different stages at different times, causing the process to stall. The ADKAR psychological model can be used to accelerate the change process.

- Awareness of the need to change.
- Desire to participate and support the change.
- Knowledge of how to change.
- Ability to implement the change.
- Reinforcement to keep the change in place.

In evaluating a hospital management team or any group of people essential to a change process, each element can be rated on a scale of 1 (no awareness) to 5 (complete awareness). The strength of this tool is that it turns opinion into observable fact and can be used by anyone involved in the change process for self-assessment or for organizations undertaking transformation. After the rating process (which can include averaging several observers' ratings), any element with a rating of 3 or less needs attention. The focus must be sequential, and awareness of each step is a prerequisite to the next. Complete implementation of change is highly unlikely until each element is accomplished. This simple tool allows the quantification of each stage, understanding what awareness or skills the group or individuals possess or lack. It also guides priority setting because teaching new skills to individuals who have neither the awareness nor the desire for change is a futile effort.

Examples of airline success in safety and innovation are being discussed more frequently in healthcare. It is worthwhile to read about the early days of Southwest Airlines and note that all the elements of leadership noted previously are now considered routine in their company culture.⁴⁴ The durability of the Southwest Airlines culture appears to be because of these elements. But after the early days of struggle, one element seems to stand out in the employees' interactions with customers, both as a reason for initial success and sustainability. The paramount key to Southwest Airlines' success is the employees taking pride of ownership in the service they provide. Compare the Southwest approach to the healthcare industry with its shortage of workers, intense bidding for personnel such as nursing, declining revenues leading to cutbacks in benefits, and a premium on productivity to the point of mandated nursing-patient ratios. If a healthcare organization does not state outright that ownership of the process and outcome of the services we deliver is impossible, we certainly act as if it is. In fact, the concept of providing and promoting job security to a permanent core of employees as a form of ownership for healthcare workers is simply not part of the culture in many healthcare institutions. Many healthcare institutions act as if they are entitled to their patients' loyalty because of their mere presence in the marketplace and do not act as an entrepreneurial organization trying to earn and retain the loyalty of their patients and their families.

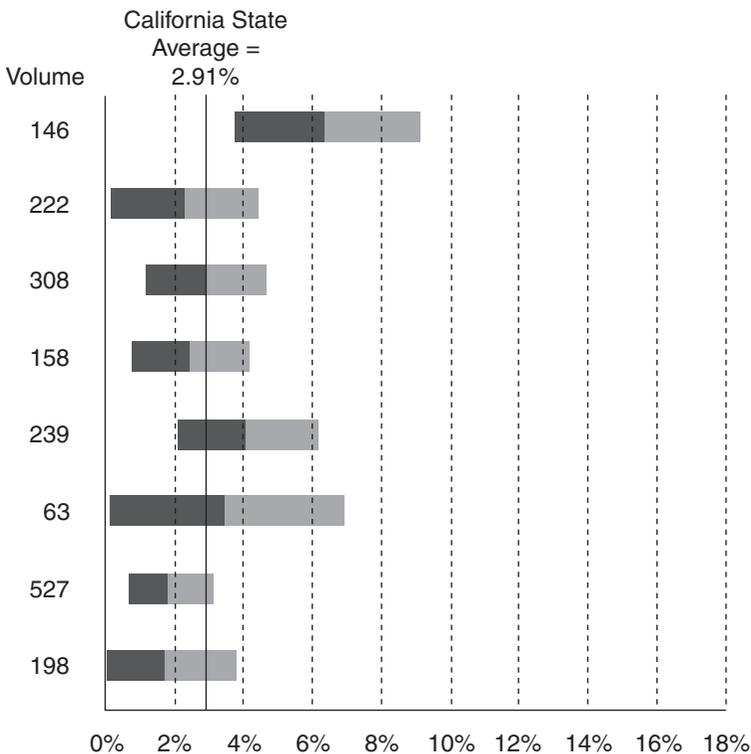
Genuine leadership in healthcare drives success through all the elements mentioned previously, but it is sustained by the promotion of a sense of personal ownership of the processes and outcomes for the patients cared for in our institutions. Personal ownership is an extraordinary potential force in healthcare organizations. It drives process improvement, risk awareness, communication, and innovation to achieve the levels of service and clinical performance that patients desire and that we all want for ourselves and our loved ones. Kotter clarifies: "What's crucial about a vision is not its originality but how well it serves the interests of important

constituencies—customers, stockholders, employees—and how easily it can be translated into a realistic competitive strategy.²⁴⁵ No one is better qualified than those same constituencies to participate actively in vision formulation. Participation in vision formation generates personal and organizational ownership.

KEY PRINCIPLE 2: MEASUREMENT

Quality of care can theoretically be measured by outcomes (a healthcare outcome is the change in the health status of the patient that is a direct result of care provided) or process (what providers do to and for patients). Outcome measurements have been a powerful tool in cardiovascular surgery and hospital-acquired infections (see figure 3.1).

Figure 3.1 An Example of Coronary Artery Bypass Graft Mortality Variation among California Hospitals¹

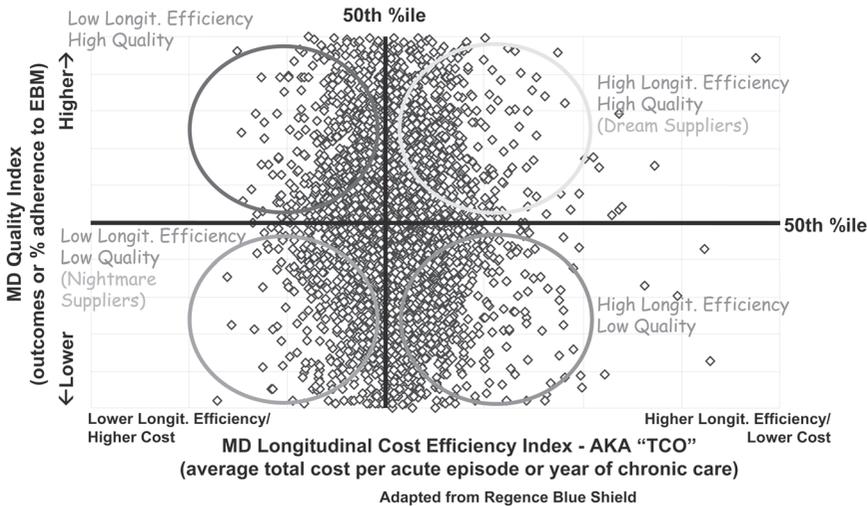


¹ Parker, J. P., Z. Li, B. Danielsen, J. Marcin, et al. 2006. *The California Report on Coronary Artery Bypass Graft Surgery 2003 Hospital Data*. Sacramento, CA: California Office of State-wide Health Planning and Development. Available at: <http://www.oshpd.state.ca.us/HQAD/Outcomes/Studies/cabg/2003Report/2003Report.pdf>. Accessed December 17, 2006.

The majority of our discussion, however, will be describing process measurements because they are the most common and are more easily measured than changes in patient health status. Measurement of process is often preferred because process is under relatively greater control of providers, needs a shorter time frame for results, can directly inform improvement, and may not require statistical adjustment for severity of illness.⁴⁶ Stated simply, certain evidence-based interactions with the patient are performed appropriately in a timely fashion or they are not. In a patient with pneumonia, either the antibiotic was given on time or it was not. In a patient with a heart attack, either an aspirin was given within a specific time period or it was not. These processes are examples of the nationally reported core measures reported by hospitals on a quarterly basis to JCAHO and the Centers for Medicare and Medicaid Services (CMS). The quality indicators have become a significant part of hospital and physician assessment. Clinical studies are appearing correlating quality of care with patient survival.⁴⁷ When paired with cost or efficiency of care, quality indicator graphs provide striking visual correlations (see figure 3.2).

Who is the doctor in the upper right quadrant offering risk-adjusted high-quality care at the greatest efficiency? These individuals are good for the healthcare system and provide evidence that high-quality care can be given without increases in marginal costs.

Figure 3.2 Physician Performance Disclosure Using Quality and Cost Metrics (adapted from Regence Blue Shield)¹



¹ Milstein, Arnold. 2004. "Clinical Climate Change: How Purchasers Will Hinge Provider Revenue on Superior Cost Efficiency and Quality." Available at: <http://council.brandeis.edu/pubs/Princeton%20XI/Arnold%20Milstein.pdf>. Accessed December 12, 2006. Reproduced by permission of the author.

The government and commercial payers have identified the value of measurement, whereas healthcare providers are less certain. Quality measures are reportable to the public in the form of core measures. These indicators have had a tremendous impact on how our industry cares for patients and are directly related to the IOM's "effective" characteristic of quality care. There has always been resistance when anyone in the industry (hospitals, patients, or payers) suggests that medicine should be practiced in a more predictable and reliable way. So-called cookbook medicine has developed a negative connotation to some healthcare providers. Opponents of practicing evidence-based medicine claim that practicing medicine cannot be defined in such simple terms as these evidence-based processes. But the use of processes demonstrated in randomized controlled trials that lead to better patient outcomes promote better health and outcomes.

The CMS has helped bring about a change in the acceptance of the process-defined approach to quality. The publicly available core measures are a set of processes that improve the care we provide patients. To date, these measures have improved clinical outcomes in some of the highest-volume illnesses, namely pneumonia, congestive heart failure, and acute myocardial infarction, and surgical-site infection. New measures in surgical care improvement, childhood asthma, and behavioral health are also in development. The measures are based on extensive clinical research, are evidence based, and have a focus on improving patient outcomes. The core measures have created the foundation for evidence-based metrics that meet the IOM definition of effective care in some prevalent medical conditions.

CMS makes these metrics transparent to the public on the Department of Health and Human Services Hospital Compare Web site, <http://www.hospitalcompare.hhs.gov>. They require participation by the hospital in order to receive yearly payment increases for the care of Medicare patients. The Web site allows any individual with access to the Internet to compare how hospitals perform these certain processes. According to the Web site, "Hospital Compare is a consumer-oriented website that provides information on how well hospitals provide recommended care to their patients." CMS has partnered with the Hospital Quality Alliance (HQA) in this project. The HQA is a public-private collaboration established to promote reporting on hospital quality of care. The HQA consists of organizations that represent consumers, hospitals, doctors, employers, accrediting organizations, and federal agencies. Similar public reporting initiatives are being promoted by states and multiple managed-care payers.

KEY PRINCIPLE 3: RELIABILITY

Underlying nearly every identified problem in the hospital setting is the problem of reliable process. In evaluating highly reliable organizations, five principles have been found to be universal. They are command and control, risk appreciation, a specific quality component of the industry, metrics driving management, and reward.⁴⁸

- *Command and control*: Performance goals shared and agreed upon throughout the organization.
- *Risk appreciation*: Whether there is knowledge that risk exists, and if there is knowledge that risk exists, the extent to which it is acknowledged and appropriately mitigated and/or minimized.
- *Quality*: Policies and procedures for promoting high-quality performance.
- *Metrics*: A system of ongoing checks to monitor hazardous conditions and used as the basis for accountability.
- *Reward*: The payoff an individual or organization receives for behaving one way or another; expected social compensation or disciplinary action to correct or reinforce a behavior, and the most powerful is recognition.

Of interest, the term *command and control* was used originally because preceding studies on reliability were on aircraft carriers.⁴⁹ This is not intended to suggest that each hospital leader should function in an inflexible military command and control demand mode. In fact, a highly reliable organization (HRO) must have mechanisms to support flexibility, organizational support for constrained improvisation on the part of lower level people, and cognition management methods.⁵⁰

The principles of an HRO have been applied and monitored for a decade in one healthcare organization and may be used as its own control to compare outcomes once the principles were stopped. A large pediatric intensive care unit (PICU) providing care for a large geographic area applied the Libuser principles of an HRO to support the bedside caregiver from 1989 to 1999. Admissions, daily census, ventilator use, and pediatric transports to the unit went up, and mortality and consequential events (events that lead to an increased level or amount of care, neurological injury, or death) went down. Additionally, nursing turnover was very low (approximately 5 percent). After the two champions of HROs left the PICU, the new intensivists did away with the high-reliability strategy. Admissions, daily census, transports, and children on ventilators went down, whereas mortality, consequential events, and employee turnover went up.⁵¹

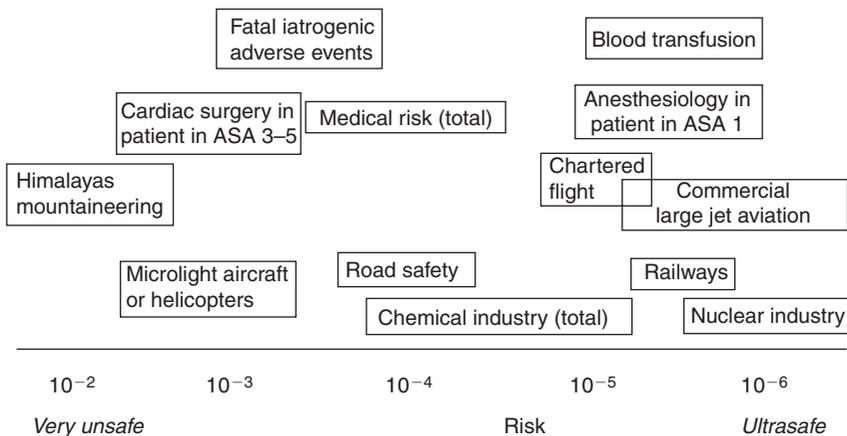
Although reliability has been successfully achieved by anesthesiologists⁵² and discussed by the Agency for Healthcare Research and Quality⁵³ in its effort to promote patient safety, healthcare in general has not applied all of the Libuser principles consistently. This may be one of the reasons for the lack of progress pointed out previously by Leape and Berwick.⁵⁴ The organizational efforts of identifying the rules and principles essential to reliable care and institutionalizing them in job descriptions, measuring adherence to these job elements, allowing constrained or supervised innovation at the bedside, and rewarding good results are not standard in the healthcare industry. Healthcare has been moving in a better direction through the work of the Institute for Healthcare Improvement (IHI) and the IOM, however. Further study into successful high reliability organizations and innovative appropriate application of their ideas into healthcare may accelerate the process of beneficial change.

In figure 3.3, different areas of healthcare are compared with other industries and activities. The relative risk of death in an airplane crash is 1 in 1 million, whereas the risk of death from climbing in the Himalayas is 1 in 100. Note that anesthesiology and the transfusion process are ultrasafe as opposed to the other healthcare areas. These ultrasafe areas have evolved through a focus on reliable and standardized processes similar to the airline industry.

One of the challenges in creating reliable processes is variability. When measured, healthcare processes and outcomes have always demonstrated wide variability. The principles of risk adjustment in large samples have provided a degree of comparability previously unavailable. The use of easily understandable visual presentations have allowed physicians to compare their performance against what they may or may not agree is a best practice.

Figure 3.4 demonstrates wide variability in the total charges and length of stay in a single diagnosis related group (DRG) among a group of physicians. Five variables are presented in this simple picture: physician (each circle), number of cases for each physician (represented by the size of the circles), adjusted length of stay, and adjusted charges (as a surrogate for cost). Length of stay and total charges are adjusted for patient risk. The graph demonstrates wide variability in both adjusted length of stay and total charges. Potential causes of the wide variability are different practice patterns among the physicians, inappropriate utilization of services, inefficient consultative services, or prolongation of hospitalization for social reasons.

Figure 3.3 Average Rate per Exposure of Catastrophes and Associated Deaths in Various Industries and Human Activities¹

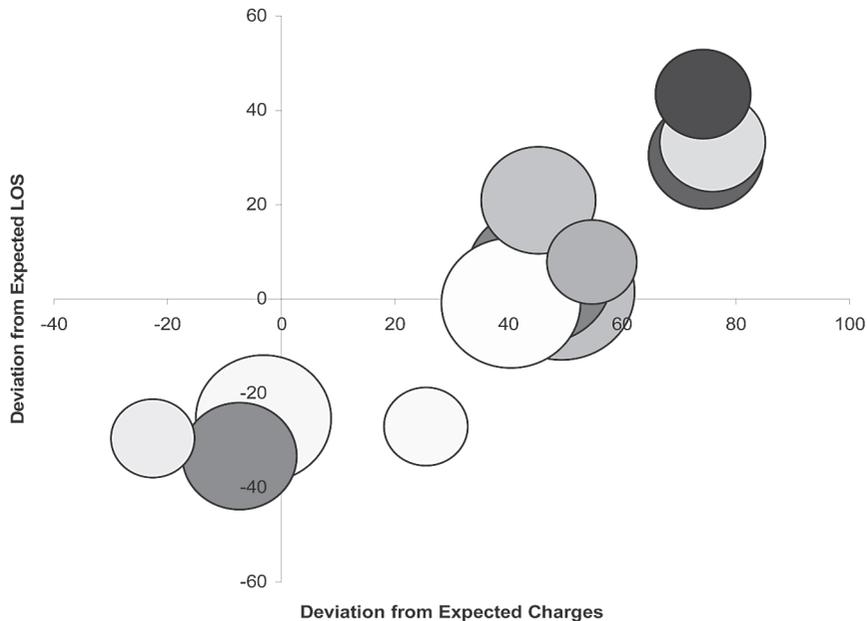


¹ Amalberti, R., Y. Auroy, D. Berwick, and P. Barach. 2005. "Five System Barriers to Achieving Ultrasafe Health Care." *Annals of Internal Medicine* 142 (9): 756-64. Used by permission.

Hospitals have approached these issues primarily through utilization management that appears to have been most successful following the institution of DRGs. Because physicians have often been reluctant to judge their colleagues' practice patterns, the effectiveness of utilization management and review in hospitals is far from consistent. Because of the complexity of utilization management and review, the primary approach of healthcare payers has been to deal with cost control rather than the complex underlying causes of cost expansion. Policies to reduce inappropriate variation in processes—be they HMOs with their own medical management programs, capitation, discounted contracting, or federally mandated reductions in physician payments—may have slowed the rise in medical costs and reduced inappropriate variation in utilization, but they have been far from successful.⁵⁵

Value-based purchasing—achieving the highest possible quality at the lowest possible cost—is being adopted by Medicare and many managed care payers as the next wave in healthcare purchasing. The concept is intuitively powerful to patients and insurers; this will be the standard against which all hospitals and physicians will be measured for the foreseeable future. Purchasers and consumers will seek the providers with the highest possible quality at the lowest possible cost and reward them with both volume and incremental bonuses of money or

Figure 3.4 Variability in DRG 89 at a Single U.S. Hospital (information derived from public data)¹



¹Variability similar to this can be seen in almost any DRG measured at any facility.

access to service (e.g., clinical information technology). Those providers who have low-quality scores and high costs will be assumed to have less value to purchasers and consumers, and those providers, be they physicians or hospitals, will see their market share shrink. Transparency to the public on both cost and quality through public reporting on Web sites and in the media will presumably encourage consumers to make educated choices about seeking value in their choices about where to seek care. The advent of high-deductible insurance products and health spending accounts may encourage consumers to act more rationally—in the economic sense—in choosing providers.

KEY PRINCIPLE 4: PRACTITIONER SKILLS

The process of achieving consistently high quality of care in a reliable way consists of “doing the right thing right.” To do the right thing requires that physicians, nurses, and all healthcare providers make the right decisions about appropriateness of services and care for each patient (high-quality decision making), and to do it right requires skill, judgment, and timeliness of execution (high-quality performance).⁵⁶

The IOM characterized the threats to quality into three broad areas that affect practitioners: overuse (receiving treatment of no value), underuse (failing to receive needed treatment), and misuse (errors and defects in treatment).⁵⁷ The physicians and practitioners that are making treatment decisions must be doing so in a way that appropriately utilizes resources without overuse, underuse, or misuse. This is difficult to control because of variability in physician treatment practices. Evidence-based medicine has made its way into mainstream health decision making to reduce this variability. The concept relies on evidence to help practitioners decide on the appropriateness of services and care and how to execute the patient’s care appropriately.

Both overuse and underuse represent limitations in the practitioners’ decision making ability. Both areas focus on the competence of the practitioners and their ability to utilize resources appropriately. Questions to ask when evaluating whether overuse or underuse has occurred are:

1. Do they utilize resources appropriately?
2. Are they ordering too many tests?
3. Are they ordering too few tests?
4. Is therapy appropriate and consistent with individual patients’ risk-benefit calculus?

Once a treatment decision is made, the duty of quality falls on the performance of the individuals providing the care to the patient (high-quality performance) and the systems in which they work. In the treatment phase of the care cycle, the providers must have processes and practices in place to ensure the treatment protocols are completed and there is no misuse. When errors and defects occur, quality is suboptimized (not an on-off switch but, rather, a spectrum) and patient safety is at risk.

KEY PRINCIPLE 5: THE MARKETPLACE

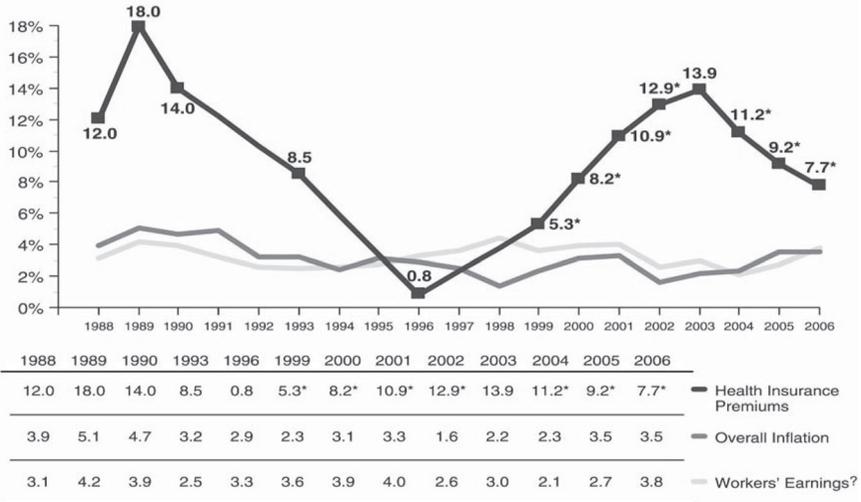
The marketplace has had a profound effect on moving hospital quality forward, and it is essential to understanding the role of quality of care in the current environment of healthcare. Despite the studies cited earlier,⁵⁸ quality metrics have been improving primarily by public transparency and the promise of improved payment and patient volumes. The value proposition of quality and efficiency and tying reimbursement to reporting or excelling in performance on specified quality metrics (pay for performance) has been accepted by nearly all third-party payers and has become a significant force in healthcare. This model has gained considerable attention by employers and payers for the following reasons. First, healthcare premium costs have continued to rise at rates as high as 14 percent per year. Although there have been some decreases in recent years in premium costs, workers are still only earning an additional 2.1 percent to 3.8 percent per year (see figure 3.5). The additional costs must be absorbed by one of two parties: the individual or the insurer. Additionally, the number of uninsured has continued to rise to a high of 45 million Americans, and that number is expected to increase to 51 million by 2010.⁵⁹

The basic economics in healthcare are similar to most industries and involve the management of three main principles: cost, volume, and revenue. We must understand the role quality plays in the market because it is fundamental to the environment in which we operate. Quality is an important component in several areas: from the basic business model of healthcare and the financial impact on the industry (practitioners, facilities, and customers) to the public opinion driving decisions for treatment plans and treatment locations. For the industry to adopt changes, institutions must “realize a financial return on investment in a reasonable time frame, using a reasonable rate of discounting. This may be realized as ‘bankable dollars’ (profit), a reduction in losses for a given program or population, or avoided costs. In addition, a business case may exist if the investing entity believes that a positive indirect effect on organizational function and sustainability will accrue within a reasonable time frame.”⁶⁰

The industry faces many challenges when it comes to costs. One problem is the significant variation of cost in U.S. healthcare.⁶¹ Some hospitals perform better quality care at a much lower cost than others. The industry also faces high fixed costs and a highly paid professional workforce, so it takes significant economies of scale to realize all the value. In addition, the cost of treating clinical complications is very high and contributes significantly to the rising cost of healthcare. One study indicated that between 10 percent and 20 percent of patients receiving greater than 48 hours of mechanical ventilation will develop ventilator-associated pneumonia (VAP). Treatment of VAP costs between \$10,019 and \$13,647 in additional hospital costs during the prolonged hospital stay.⁶²

One key element to the economic model that quality should help improve at facilities is volume. Practitioners and treatment facilities are consistently judged by visitors based, in large part, on the quality of care they are providing. Although some practitioners are able to thrive because of their technical proficiency, patients

Figure 3.5 Yearly Percentage Increase of Wages Compared to Healthcare Premiums¹



¹ Henry J. Kaiser Family Foundation and the Health Research Educational Trust. 2006. "Employer Health Benefits: 2006 Annual Survey." This information was reprinted with permission from the Henry J. Kaiser Family Foundation. The Kaiser Family Foundation, based in Menlo Park, California, is a nonprofit, private operating foundation focusing on the major healthcare issues facing the nation and is not associated with Kaiser Permanente or Kaiser Industries.

* Estimate is statistically different from estimate for the previous year show at $p < .05$. No statistical tests are conducted for years prior to 1999.

² Data on percentage increase in workers' earnings are seasonally adjusted data from the Current Employment Statistics Survey (April to April.)

Note: Data on premium increases reflect the cost of health insurance premiums for a family of four.

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999–2006; KPMG Survey of Employer-Sponsored Health Benefits, 1993, 1996; Health Insurance Association of America (HIAA), 1988, 1989, 1990; Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation (April to April), 1988–2006; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey (April to April), 1988–2006.

return and also refer their friends based on the quality experiences they have had. If a patient has a bad experience and receives the wrong drug at a facility (a misuse) or finds out a physician did not order a test another physician thought was indicated (underuse), the patient may be less likely to seek care at that facility or from that physician in the future. Additionally, patients will tell their friends about the bad experience they had. Although opportunities for service recovery exist, many patients and managed care plans are not returning to physicians and hospitals that provide poor quality of care.

All healthcare providers, physicians included, will soon be impacted by the financial impact of improving quality of care. Many have already felt the impact of pay for performance. Managed care plans and Medicare are offering financial and volume referral incentives to physicians and hospitals that demonstrate superior adherence to evidence-based practices and better outcomes. In some pay-for-performance plans, the higher performing entities receive greater than average payments, whereas the poorer performers will receive less than the average payment. The federal government is committed to developing more quality metrics in more diagnostic and therapeutic categories and is poised to implement pay-for-performance bonuses to hospitals and physicians in 2008 or 2009.⁶³

Tenet Healthcare and the Commitment to Quality: A Case Study

Formed in 1996 in the merger of two for-profit healthcare systems, American Medical International and National Medical Enterprises, Tenet Healthcare enjoyed rapid growth with the subsequent acquisition of more than forty hospitals until 2002. Hospital volumes were growing rapidly, and the profitability of its hospitals and the holding entity was at an all-time high. In fall 2002, however, Tenet faced serious and, to some observers, fatal charges against it and some of its hospitals. Based on analysis by independent observers, Tenet was reported to have escalated its charges so that, in a substantial minority of its hospitals, the hospitals were receiving an unacceptably high proportion of Medicare outlier payments. In the same week, the Federal Bureau of Investigation raided a Tenet hospital in Redding, California—Redding Medical Center—based on allegations of overuse and inappropriate utilization of invasive cardiac procedures such as cardiac catheterization and coronary artery bypass graft surgery. Subsequently, in 2006, Tenet settled with the federal government for \$750 million to settle all charges lodged against it by the federal government related to these and other issues. In late 2005, Tenet also settled multimillion dollar liability claims by patients who had been treated for cardiac disease at Redding Medical Center.

In early 2003, the new senior leadership of Tenet recognized that perceptions of the quality of care in its hospitals constituted a serious threat to its long- and short-term viability. Supported by the board of directors, Tenet and its leadership committed to making substantial improvements in the quality of care provided in its hospitals and associated healthcare institutions. This new initiative—known as the Commitment to Quality (C2Q)—had as its sustaining mission the improvement of every aspect of care. Recognizing the rising demands for both improvement and transparency in quality and safety of care from regulators, payers, patients, and employers, Tenet and its leadership committed to supporting and sustaining improvement in six dimensions of quality of care: evidence-based medicine, patient safety, physician excellence, nursing excellence, patient flow and capacity management, and clinical resource management. Subsequently, in 2005, additional dimensions of improvement were added to the Commitment to Quality. Service

excellence, which had been a focus of improvement in Tenet Healthcare since 2000 in its Target 100 program, merged with the Commitment to Quality.

Senior management requested an evaluation of the quality of care for each hospital in the identified dimensions as well as a plan to improve the quality of care—consistent with evidence-based goals for quality and safety—that Tenet hospital leaders would be held accountable for achieving. Senior leaders recognized that the change management process around the Commitment to Quality programs would be both significant and difficult but insisted on sustainable and measurable progress in return for providing the resources to improve the quality of care.

Establishing ongoing communication and dialogue about the strategic implementation plan for the Commitment to Quality among senior and midlevel leaders in the corporate and hospital leadership structure was a critical first step in the implementation of C2Q. Daylong meetings were held in national and regional venues to vet the initiative and solicit input and feedback from corporate and hospital leaders.

Initial reactions to the initiative were enthusiastic but tempered by concerns about draining resources from bedside care to improve quality. Financial officers were skeptical that the proposed investment in improving quality and safety did not have sufficient financial return to the hospitals. Historically, Tenet had a decentralized model of corporate oversight in clinical care and quality improvement. Some leaders expressed concern about a broad initiative developed by corporate management being undermined by staff and leadership in the hospitals. They requested the right to prioritize the quality initiatives based on both the hospitals' baseline performance and readiness for change.

One apparent barrier to launching the Commitment to Quality was the lack of standardized metrics in many of the dimensions of the program across the hospitals. Although many of the higher-level metrics that were reported through common reporting systems (e.g., length of stay) to regional and corporate leaders, in some dimensions—especially in detailed operational metrics such as emergency room dwell time or operating room start and stop times—little or no standardization across the hospitals existed. One of the first tasks was to establish a common set of metrics for each goal and objective and provide standard rationales, definitions, data collection protocols, as well as data reporting guidelines. Each hospital spent one month collecting and validating each metric in the complete list prior to beginning implementation.

The hospital leadership teams also raised significant issue about the resources available at each hospital to implement the changes necessary to achieve rapid but sustainable change in quality and safety. They expressed concern that diverting hospital resources toward improvement compromised the ability to deliver care by midlevel managers and frontline staff. They also acknowledged that detailed expertise in change management, improvement methods and techniques, and deep knowledge of hospital systems was not uniformly available or of the same quality across all Tenet facilities. They did agree that the transfer of such knowledge to

the senior leadership, midlevel managers, and frontline staff would be required to create a sustainable improvement in performance as well as a change in the culture of improvement in the hospitals. To address these concerns, an implementation vehicle known as the C2Q Transformation Team was created. Each of the four geographic regions in the Tenet Healthcare system has an improvement team known as a Transformation Team. Each team is staffed by a regional team leader, typically an experienced hospital senior manager (e.g., hospital chief operating officer, chief nursing officer). The team is also staffed by subject matter experts—typically nurse leaders—in case management, emergency room management, and operating room management.

After the in-depth monthlong self-assessment, the C2Q Transformation Teams spend eight weeks full-time on-site at each hospital working side-by-side with their hospital counterparts to achieve improvement on a set of mutually agreed upon goals established during the first week on-site. The regional Transformation Team is then available to the hospitals through multiple communication vehicles and returns to conduct sustainability visits every 8 to 12 weeks. A second round of four-week on-site visits was begun in 2005 with the goals of integrating Tenet’s service quality initiatives with C2Q and focusing on length of stay reduction and pharmacy safety as well as continuing to improve performance in the initial six C2Q dimensions. Examples of specific projects and goals in each dimension of quality are described in table 3.3.

Table 3.3
Quality: Goals and Targets

<i>Commitment to Quality Dimension</i>	<i>Example of Goal</i>	<i>Associated Metric</i>	<i>Example of Target</i>
Evidence-based medicine	Improve core measure performance in acute myocardial infarction (AMI)	Number of times the patient received appropriate treatment/Number of opportunities to provide evidence-based treatment appropriate for the patient	Greater than or equal to 95% adherence to evidence-based standards
Patient safety	Reduce hospital-acquired infections (e.g., central venous catheter-associated bloodstream infections (CVCBSI)	Number of patients with central venous catheter-associated bloodstream infections /1,000 patient days with device in place	Reduce CVCBSIs to top decile performance in national comparative databases

Table 3.3
Quality: Goals and Targets (*continued*)

Physician excellence	Implement and monitor timely physician privileging and credentialing	Percentage of all new and reappointment credentialing and privileging completed within time specified by hospital and medical staff bylaws	100% timely and accurate credentialing and privileging
Nursing excellence	Improve nursing satisfaction and increase nursing retention rates	Employee satisfaction scores for nurses Percentage turnover for new hires (within year one) Percentage turnover for all nurses	Improve nursing satisfaction scores by 20% Reduce new-hire and veteran turnover rates to 10%
Capacity management and patient flow	Improve capacity management in the emergency room (ER)	Left without being seen (LWBS) Patient dwell time in ER for patients who are discharged from the ER Patient dwell time in the ER for patients who are admitted to the hospital	LWBS \leq 2% ER dwell time (discharged) \leq 2 hours ER dwell time (admitted) \leq 4 hours
Utilization management and review	Insure that all patients undergoing percutaneous angioplasty and/or coronary artery bypass graft and/or cardiac valve replacement receive the procedure consistent with American College of Cardiology/American Heart Association (ACC/AHA) appropriateness guidelines	Percentage of patients undergoing the procedures that are Class I or Class IIA (ACC/AHA guidelines)	95%
Clinical resource management	Reduce variable cost per case of high-volume, high-cost procedures while maintaining clinical effectiveness for patient process and outcome (e.g., total hip replacement)	Percentage of all first-time total hip replacements using clinician-approved cost-effective prostheses	90%

Among the positive forces at work in the Commitment to Quality in Tenet Healthcare is leadership. Involvement by the most senior leaders at Tenet in communicating and reinforcing key strategies and demanding accountability for results has been vital to the success of the C2Q initiative in promoting change. The board of directors has adopted an incentive compensation system based on a so-called balanced scorecard of results that emphasizes clinical quality, safety, and service excellence equally with financial results. Transparency among the hospital leaders about their quality performance has also promoted healthy competition to achieve higher and higher levels of performance. Both transparency and accountability have accelerated change and improvement in the hospitals. Commencing with the collection of core measure data for heart attack in mid-2003 with adherence rates of about 50 percent for the initial measure set, adherence to the CMS expanded core measures in heart attack was 95 percent among the 20,000 patients treated in 2006 in Tenet hospitals.

Leadership and commitment must be accompanied by resources to achieve results. Tenet commits more than \$60 million a year in corporate and regional resources to supporting quality and quality-related initiatives on an annual revenue base of \$9.5 billion. More than one-third of these resources are committed to developing informatics infrastructures that enable consistent and accurate data collection, information transfer, and rapid sharing of both results and improvement strategies over a corporate-wide intranet. Significant investments are made in supporting the regional quality improvement infrastructure, including regional chief medical officers and regional directors of clinical quality improvement, who work collaboratively with the regional Transformation Teams to sustain and improve quality, safety, and cost-effectiveness. Collaboration between the hospitals and the regional teams has promoted a 33 percent to 50 percent reduction in hospital-acquired infections such as catheter-associated bloodstream infections with almost half the hospitals recording no catheter-associated bloodstream infections for more than a year.

Initially, the Commitment to Quality was envisioned as a corporate initiative that would be implemented in similar ways in each hospital. Acceptance at the hospital level was markedly enhanced by standardized metrics and goals but with customization of the improvement initiatives at the local level. In order to prevent each hospital from reinventing the wheel, so to speak, when addressing similar issues, success stories and failures are shared among the hospitals, creating a virtual network of improvement teams that share strategies, tactics, and knowledge. For example, in order to achieve 95 percent adherence to the acute myocardial infarction (AMI) core measures, several hospitals redesigned their relationships with their local emergency medical services to permit transmission of electrocardiogram tracings from the field to the emergency department, allowing identification of ST-segment elevation heart attacks in the field. Hospitals alerted to a ST-segment elevation AMI are able to mobilize cardiac catheterization teams that are ready when the patient arrives at the hospital and have reduced the average so-called door-to-balloon time to an average of 45 minutes. The emergency department and cardiology staff in those hospitals conduct national

Web-enabled presentations to all the other hospitals and are available to mentor other Tenet hospitals that are working to reduce door-to-balloon times.

These strategies are shared among regional improvement teams and utilize the Tenet intranet to catalog the experiences and lessons learned across the system. Many common improvement ideas and strategies evolved, but unique and innovative solutions to common problems continue to be reported after several years of implementation. One hospital, which had implemented the Institute of Healthcare Improvement bundles to reduce catheter-associated bloodstream infections, was frustrated by its inability to reduce the rate of infection. In frustration, the chief medical officer insisted that every physician placing central venous access be re-trained and recertified. A core team of four physicians was certified and observed by infection-control practitioners to monitor technique and the sterility of the placement process. Within eight weeks, the rate of bloodstream infections associated with placement of central catheters had dropped 90 percent and achieved performance equal to the lowest decile performers in the National Nosocomial Infections Surveillance (NNIS) database.

Providing an initial assessment for each hospital granted excellent opportunities for the hospital medical staff and clinical and administrative leadership to address issues they mutually determined to be important to the success of the hospital and the care of the patients. Although many hospitals faced similar challenges in improvement in evidence-based medicine and patient safety, different challenges were observed in capacity management and patient flow. Standardized goals and metrics help identify opportunities for improvement, but the solutions—although having some common features—are primarily the result of frontline employees and midlevel managers conducting multidisciplinary improvement efforts. One hospital experienced unacceptably high rates of diversion of ambulances from its emergency room—in some months approaching 200 hours. Careful mapping of the flow and timing of patient movement from entering the emergency room through admission to a patient care floor or intensive care unit identified several barriers to patient flow, including poor communication between the emergency room staff and the receiving units and long delays in the turnover of rooms by environmental services. Mapping and measuring the times associated with each part of the patient flow process resulted in new communication protocols between the emergency room and the receiving care units and service standards about response time. Hospital managers also reorganized the staffing and team structure of environmental services to meet peak demand in patient room cleaning and turnover. As a result, the hospital has less than ten hours of diversion a year and has consistently met the established goals of fewer than 2 percent of all patients entering the emergency department leaving without being seen and average dwell times of less than two hours for patients seen and discharged and less than four hours for patients seen and admitted.

Continuous communication at every level of the organization and through multiple mechanisms is also vital to the success of C2Q. Repetition of the key messages in multiple forums and through e-mails, conference calls, regional and national

meetings, corporate and local hospital written and in-person presentations, and in face-to-face meetings is vital. Presentations and question-and-answer periods with the hospital governing boards and medical staff, as well as employee forums with frontline employees and midlevel managers, proved invaluable.

THE BUSINESS CASE FOR QUALITY

Healthcare has had a difficult time demonstrating the business case for quality because of the complexity of care and difficulty in capturing the real fixed and variable costs of caring for patients. Other industries have long accepted the theory first described by Deming that improvement in quality leads directly to a decrease in cost. Better quality results in less rework, fewer mistakes and delays, and a better use of time. Productivity improves as a result. By improving quality, the industry captures the market with better quality and lower price, is able to innovate in the business and clinical practice of medicine, and so can provide more jobs.⁶⁴

The difficulty in demonstrating the business case in healthcare may be the result of healthcare not having yet reached the level of quality that triggers the results as defined by Deming. Healthcare lags significantly behind many industries in rates of errors and the ability to capture the measures that permit maximal management of the complex healthcare process. The ability to provide timely and detailed measurement in healthcare is time and personnel intensive because of insufficient real-time information technology. In fact, as overburdened as healthcare workers feel while manually gathering quality-related data, we are obtaining and using only a small fraction of the information necessary for maximizing the management of high-quality care.

What is the cost of quality? Does it raise the price of goods and services? Are huge savings possible by implementing continual improvement efforts? These questions are not easy ones, but quality is becoming increasingly measurable as are its costs. In healthcare, the failure to prevent serious complications, such as a hospital-acquired infection, may cost the patient his or her life, prolonged disability, and thousands of dollars in treatment. Avoidable surgical complication may prolong hospitalization, result in disability or death, and cause great expense and repeated procedures.

Healthcare organizations, however, have been reluctant to implement improvements because better quality has not been accompanied by better payment or improved profitability. The most recent business case for quality has been driven by employers and third-party payers seeking value-based purchasing. Serious doubts about the long-term sustainability of rising healthcare costs, the accelerating numbers of uninsured, and the double-digit increases in healthcare premiums are driving employers and health plans, as well as federal and state governments, to demand cost-effective, safe, and patient-centered care. Both physicians and hospitals are being assessed with a combination of quality and efficiency (cost) measures

and these measurements are being used to include or exclude both hospitals and physicians from healthcare plans.

The current business case for quality is straightforward. Access to the patient (both by volume and payment level) is being determined by demonstrating high quality and cost efficiency. A clear understanding of the history and development of the concept of quality patient care and the ability to understand, identify, and utilize the key principles will help create successful healthcare organizations.

CONCLUSION

There has been a change in healthcare since the mid-1990s that will shape the future of the industry. As Leape stated, “Ten years ago, no one was talking about patient safety. Five years ago, before the IOM report, a small number in a few pioneering places had developed a strong commitment, but its impact was limited and most of health care was unaffected. Now, the majority of health care institutions are involved to some extent and public awareness has soared.”⁶⁵ Many exciting changes have occurred in the industry because of the increased focus on safety and quality. Some of these changes may be short-lived, but some will truly revolutionize the way healthcare is provided. Quality and safety are important factors shaping the future of the industry for hospitals and medical care providers. Quality metrics will shape physician practices as well as the processes in place at the hospitals in which they practice. Quality will define both success and failure for physicians, hospitals, and the executives who lead in the healthcare industry.

Key Concepts

- Quality consists of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes (quality principles), are consistent with current professional knowledge (professional practitioner skill), and meet the expectations of healthcare users (the marketplace).
- Successful healthcare organizations—be they hospitals, physicians’ offices, pharmacies, nursing homes, or ambulatory centers—will have understood, identified, and put into practice all of the following essential principles: leadership, measurement, reliability, practitioner skills, and the marketplace.
- Access to the patient (both by volume and payment level) is being determined by demonstrating high quality and cost efficiency. A clear understanding of the history and development of the concept of quality patient care and the ability to understand, identify, and utilize the key principles will help create successful healthcare organizations.
- Quality metrics and practices will help define both success and failure for physicians, hospitals, and the executives who lead in the healthcare industry.

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