finding the balance between quality and cost

What’s the answer to improving the value of health care? One group believes hospitals could take a lesson from Japanese quality expert Noriaki Kano.

Total quality activity can begin only if top management is conscious of the critical need for companywide commitment to quality and its own responsibility for introducing such activity.

—Noriaki Kano

At a time when consumer demand for value in health care—both in terms of quality and price—has never been higher, Noriaki Kano could share important insight with hospital CFOs and clinicians alike.

Kano is well-known for his model of customer satisfaction, which defines the most important attributes of customer service: meeting the customer’s basic needs, adding “extras” to basic service that will make a customer happier, and exciting and delighting the customer with a superior level of service that he or she did not expect.  

He suggests that steps to improve the value of any product or service can be divided into three categories:

> Eliminating quality problems that arise because the expectations of consumers are not met
> Reducing costs significantly while maintaining or improving quality
> Expanding the expectations of consumers by providing products and services that they perceive as unusually high in value

Kano’s ideas provide the basis for an integrated system of improving the value of health care—and understanding the relationship between the quality and cost of care.

Improving Value: Kano’s Three Key Aims

Hospitals can accomplish Kano’s first step toward achieving value, “Eliminating quality problems that arise because the expectations of consumers of health care are not met,” through such measures as decreasing adverse events, delays, and billing errors. Many organizations are becoming skilled at acknowledging and finding quality problems, measuring their frequency, and engaging physicians, nurses, and other clinicians in reducing these defects. It is less clear how to determine whether the reduction of these defects provides a financial gain for the organization in

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the short run. What has been referred to as "the business case for quality" often is a search for cost reduction as a side effect resulting from the reduction of quality defects.

Kano's second category, "Reducing costs significantly while maintaining or improving quality," provides a huge opportunity for healthcare. In other industries, cost reduction through redesign is considered part of everyone's job. In healthcare, the prevailing culture among clinicians often results in conflict when executives propose category two aims. Even when these aims are pursued, improvement teams usually produce potential savings (e.g., less wasted time) rather than actual cost savings (e.g., less overtime wages).

Kano's third approach to improving value, "Expanding the expectations of consumers by providing products and services that they perceive as unusually high in value," is, like the first category, associated with quality. However, work in this area often requires innovation. Traditionally, advancements in this area have been achieved by medical breakthroughs, such as drugs for AIDS or laser eye surgery. These aims might also be achieved by more convenient services, such as e-mail correspondence with physicians, technology innovations vital to safe and effective care such as shared Internet health records, or very convenient access to care.

These categories provide a way of understanding the relationship between quality and cost and also provide the basis for an integrated system for improving care. For improvements in quality that result from eliminating defects, opportunities for reduced costs are almost always present. Improvements in quality associated with the third category may actually increase cost—for example, in the form of more effective but more expensive drugs.

**Resolving the Perceived Conflict Between Quality and Cost**

The answer to controlling costs and increasing value lies in a balance among Kano's three key categories of customer satisfaction. Currently, an imbalance exists, leading to nonproductive tensions.

For example, clinicians often see themselves as the protectors of quality, "defending" patients and professional standards against the demands of the finance department. At the same time, the finance professionals see themselves as the protectors of the resources of the organization.

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**ABOUT THE INSTITUTE FOR HEALTHCARE IMPROVEMENT**

The Institute for Healthcare Improvement is a not-for-profit organization dedicated to improving health by advancing the quality and value of health care. In December 2005, the IHI hosted a small meeting of clinicians and healthcare executives, including CEOs and CFOs. Its aim was to reach common ground on how to improve value—a function of both quality and price—for healthcare consumers.

The executives in the room were invited because they were longtime leaders in the improvement of the quality of healthcare services. They had led the redesign of systems of care to improve quality in three major dimensions: the outcomes of care, the reliable application of evidence-based care, and the satisfaction of patients with the experience of care.

However, the executives had been less successful in redesigning systems to lower costs than in redesigning systems to improve quality. Most of them had responded to price reductions by the usual methods: cutting budgets, improving coding to recover lost revenues, and lobbying payers to mitigate some of the price pressures. But none of the executives thought this traditional approach was an adequate or sustainable way to address the problem.

"The aim of the meeting was to broaden the scope of what IHI had learned about redesigning systems to improve quality of care, to include redesigning systems to reduce costs of care," wrote Thomas Nolan and Maureen Bisognano of IHI. "If successful, IHI could begin to establish a system for ongoing improvement of value. IHI wanted to accomplish three things: establish the need for clinical and nonclinical executives to have common aims with regard to improving quality and reducing costs; develop the methods for redesigning systems to make them less costly; and define the roles of executives in such a system."
"defending" the bottom line against the extravagant ways of clinicians. This leaves the nonclinical executives to use traditional methods of cost cutting, which may appear heavy-handed and ill-considered to clinicians.

Many clinicians now seem willing to admit to and reduce defects in care, but as yet have difficulty admitting to and reducing waste in care. One manifestation of the naïveté of clinicians about budgets and finance is the confusion over potential savings ("light green" dollars) and real savings ("dark green" dollars). Examples of potential savings include less time spent by nurses looking for lost lab tests, more coordination among clinicians, and earlier discharge times. Finance staff are often frustrated by the claims of savings that never materialize—light green dollars that never turn dark green.

Clinicians experience hassles and errors. Finance staff experience high costs. Both are different manifestations of the same source of problems: poorly designed systems. Common financial ratios, when used as measures in improvement projects, are helpful in bringing finance professionals and clinicians together.

Assessing the Impact of Improvements on Costs

The Institute for Healthcare Improvement has found the following formula to be a useful framework for assessing the impact of improvement-related components on overall salary costs in hospitals:

\[
\text{Total wages/admission} = (\text{average wage/hour}) \times (\text{worked hours/patient day}) \times (\text{patient days/admission})
\]

Since health care is a labor-intensive industry, total wages per admission is, of course, an important financial figure. One could decide to include different wage earners in this figure, depending on the aspect of the system under study. Each of the three components in the equation can be interpreted purely from a financial perspective. However, executives can bring clinicians and finance staff together by bringing an improvement perspective to these components. The exhibit on page 70 relates each component of this framework to improvement projects that have the potential to impact the component.

Viewed from an improvement perspective—i.e., one that integrates considerations of cost and quality—the first component, average wage per hour, includes, for example, the following sources of waste:

- Increased cost associated with contract labor, such as nurses from a temporary agency because of vacancies for full-time staff
- Premium pay associated with overtime or last-minute scheduling of nurses due to inadequate planning
- Overtime pay associated with failure to complete the day’s surgery schedule on time
- The cost associated with recruiting and training new nurses to fill vacated positions

The second component, worked hours per patient day, includes sources of waste such as:

- Inappropriate staff time in the intensive care unit because a patient is unable to be discharged to a lower-acuity unit due to problems with the discharge of patients from these units (IHI refers to these issues as problems with patient flow.)
- Hours in excess of budgeted hours because of the uneven workload between days of the week due to scheduling of surgery cases without regard to the impact on downstream resources

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b. This formula was developed by Kevin Nolan and Thomas Nolan for use in the Institute for Healthcare Improvement's IMPACT Learning and Innovation Community on Improving Flow Through Acute Care Settings.
Providers can make the connection between savings and improvement aims using relationships such as those illustrated below.

> Hours in excess of budget because of failure to predict demand a day or two ahead and match staffing appropriately

The third component, patient days per admission, commonly referred to as "length of stay," includes sources of waste such as:

> Excess patient days because of delays in discharge because of poor coordination of the processes associated with discharge

> Excess patient days because of a lack of setting and executing daily goals for the patient and the care team to accelerate the recovery of patients

> Excess patient days associated with an adverse event or complication

The framework presented relates to salary costs in a hospital. Other similar frameworks for medication costs or supply costs are easily devised. Consider the following equation for medication costs:

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\text{Total medication costs/admission} = (\text{average cost/dose}) \times (\text{number of doses/admission})
\]

Just as with salary costs, the medication costs could be considered in total or segmented by type of disease or medical division. The first component of the equation, average cost per dose, includes excess cost of brand medications when generics are available, excess cost associated with failure to make a timely switch from expensive administration routes to less expensive ones (for example, switching from intravenous to oral administration of antibiotics for patients with pneumonia), and excess cost associated with overuse of expensive medications when less expensive ones are available (for example, the use of strong antiemetic medications for mild nausea and vomiting).

The second component in the medication costs equation, number of doses per admission, includes sources of waste such as excess cost associated with failure to stop medications appropriately (for example, continuing prophylactic use of antibiotics for longer than 24 hours after surgery) and the cost associated with treating adverse events (for example, the use of medications to reverse oversedation).

Effective cost reduction frameworks in outpatient settings emphasize the prevention of hospitalizations and overuse of specialists.

The use of formulas like these at IHI’s December 2005 meeting began to provide a common language for improvement of value.

**The Roles of Healthcare Executives**

Several years ago, IHI visited five successful and well-known Fortune 100 CEOs to understand how they managed the improvement of value. From our experiences with them, we see a new role emerging for executives in healthcare organizations. For example, in ensuring vitality and agility when dealing with internal challenges and external demands, executives will be most effective when the senior team speaks with one voice about the clinical, operational, and financial improvements needed. The
exhibit below right illustrates an executive system for consistently improving value that could serve as the basis for this consistent communication. Some version of the system in this exhibit was being used by the senior team in each of the five organizations we visited.

With respect to the cost reduction component of this system, successful senior teams have adopted changes at their own level to increase the odds of widely defined success. These strategies for success include the following.

**Establish cost reduction as a worthy aim.** We observed the persistent discomfort of the participants at our meeting when it came to setting aims to reduce costs. This discomfort seemed as prevalent among the financial executives as it did among the non-financial participants. Many senior leaders have tried to elicit physician input and support for their quality efforts by focusing exclusively on the clinical outcomes desired, without discussing or requesting the necessary financial literacy and analysis that accompany any kind of change.

One of the steps toward a system for improving value is recognizing that waste removal is an essential component of that system, not just a by-product of defect reduction. To alleviate discomfort with setting aims for cost reduction, senior leaders should:

> Set aims for cost reduction while also mandating that quality must be maintained or improved by the effort

> Help everyone in the organization see the aims for cost reduction as part of a larger system for improving value

> Make the ongoing efforts in each of Kano's three categories visible to the organization

**Build cost reduction into the business plan.** It's possible that healthcare organizations can reduce costs by 1 percent to 3 percent of operating expense by setting and achieving aims for cost reduction. This assertion is supported by results from benchmarking organizations outside of health care that consistently reduce costs through redesign.

At IHI's December 2005 meeting, all attending healthcare organizations agreed that such savings annually would be a significant contribution to their financial well-being. The goal translates to 6 percent to 9 percent of expenses that are controllable in the short run. The attendees agreed that this goal, if set annually, was aggressive, but feasible.

Strategy maps enable senior leadership teams to track where savings will accrue and reinvestments will be targeted.
Develop charters for cross-functional teams. It is vital that clinicians, operational leaders, and finance leaders work together to develop charters for new improvement teams that are consistent with the 1 percent to 3 percent overall cost reduction goal. They must agree ahead of time where the real financial savings will come from.

Start with budget-related sources of real cost savings such as:
- Costs of contract labor
- Overtime or other premium pay
- Supplies
- Medications

Work backward from the estimates of targeted savings to set improvement aims, such as the reduction of adverse events or delays. Then, make the connection between the savings and the improvement aims, using relationships such as those in the exhibit on page 70.

Track the savings. Organizations that have been successful at yearly cost savings have some mechanism to track this savings. The tracking method should be designed with strong leadership from the finance staff. Use the financial measure components in the exhibit on page 70, such as average wage per hour, to measure the savings and tie them to budget line items. Establish regular team report-ins with managers and executives. Use the review cycle to track potential savings and agree on an aggregation methodology, when appropriate. Implement communication tools to alert department managers and purchasing staff to shifts in projected labor and supplies.

Allocate the savings purposefully and transparently. The 1 percent to 3 percent savings goal does not mean necessarily that the expense budget will be reduced by that amount. The savings may be used to finance raises for staff or to buy new equipment. Some senior leadership teams are using strategy maps (see the exhibit on page 71) to create strong alignment across the senior team for critical annual goals and to track where savings will accrue and reinvestments will be targeted.

A traditional source of resistance to engaging in improvement work at the local department level is the recognition that, for all the hard work of change, the benefits (especially financial savings) will accrue elsewhere. When physicians and nurses can see their efforts linked to ongoing improvement through the strategy map, they can connect the team's work with departmental gains or hospitalwide changes.

The Value of Value-Driven Care
Improving the value of care, both in terms of quality and cost, is critical for hospitals to succeed in today's healthcare environment. Integrating Kano's three categories for creating value is essential to creating the vitality necessary for hospitals to thrive in the challenging years ahead.

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The authors acknowledge the contributions of James Mounford, Charles Neumann, Kevin Nolan, and members of the IHI research and development team to the development of the ideas in this article. We appreciate the help of Frank Davidoff, Jane Roessner, and Val Weber in the preparation of the manuscript.