# Problem Solving in Health Care: The Center for Health Outcomes

Walton Shim MD, FACS, Steven H. Shaha PhD, DBA, and Bonnie Castonguay RN, MBA

Additional Authors:
- Melinda Ashton MD
- Niraj Dasai MD
- Lee Evslin MD
- Al Fuse MD
- Tad Jackson MD
- Dew-Anne Langcaon MBA
- Michael Mihara MD
- Kenneth Robbins MD
- Raul Rudoy MD
- David Saito MD

Authors:
- Immediate past Chief of Staff, Kapiolani Medical Center for Women and Children. Advisory Board Center for Health Outcomes, Pediatric Surgeon. (W.S.)
- Biostatistician, Center for Health Outcomes. (S.H.S.)
- Vice-President, Quality Hawaii Pacific Health. (B.C.)

Correspondence to:
Bonnie Castonguay RN, MBA
55 Merchant St., 27th Fl.
Honolulu, HI 96813
Ph: (808) 535-7649

## The Problem

There is no question that healthcare, and its caregivers continue to achieve ever-better outcomes for their patients. Yet those of us within health care organizations recognize that major improvements remain to be achieved in results, in organizational performance and in systems efficiencies. The *Institute of Medicine Report* entitled *To Err is Human*[1] served to remind us all that there is plenty of room for improvement especially in those complex processes that affect outcomes.

How does an organization transform itself from a "good enough place" for health care into one that is truly excellent, one that is focused on patient safety, optimal outcomes and fiscal accountability? How does an organization break out of its rut and achieve genuine, tangible and lasting improvements? How do we get physicians "on board"? How do practicing physicians who care become personally engaged in driving an organization to become the best it can be, yet still have time for a thriving practice and not compromise their income and patient loads? What methodology can be applied that will result in a pervasive, infectious culture of patient safety and excellence?

Just such a set of questions haunted the leadership at Hawaii Pacific Health (HPH) a few years ago. The purpose of this article is to trace the establishment of The Center for Health Outcomes (The Center) and describe both the approach and the successes achieved within an unprecedented short timeframe. It is our hope that describing the Center, its truly unique approach, and the fascinating impact it has had on our organization, will lead physicians and the organizations in which they practice to achieve similar breakthroughs.

## The Challenge

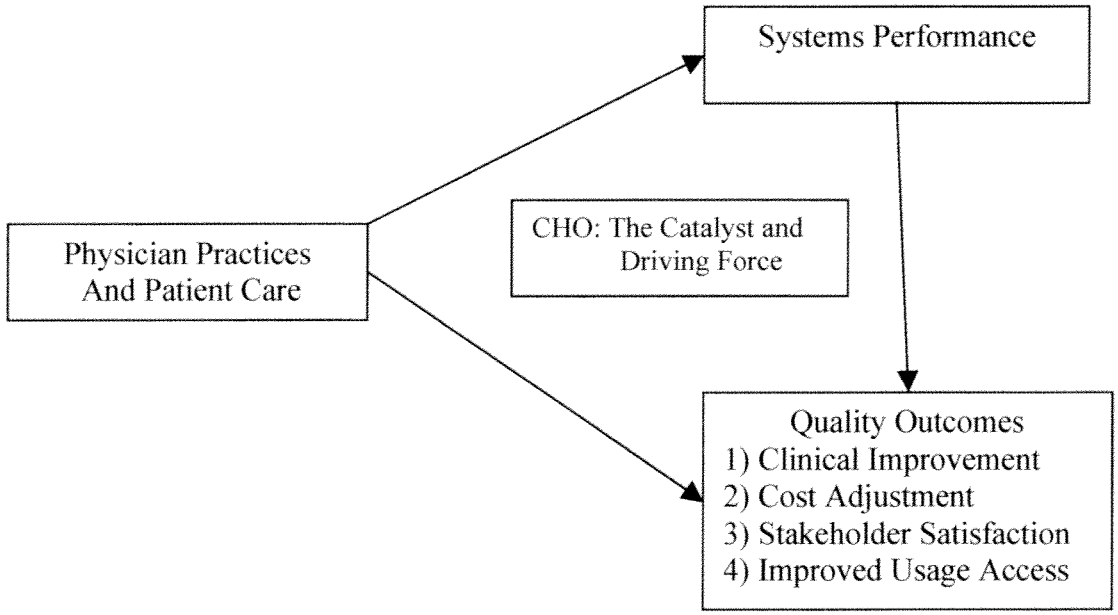
There are many models taken from industry which can be used with modifications for a healthcare system, but most methods fail to account for the difference in that health care in a community hospital is based on mostly voluntary, unremunerated cooperation of independent practitioners.

Historically, healthcare organizations have racked up an enviable array of improvements within operations, relying heavily on non-physicians to design and implement better processes and systems. But as organizations continue to learn, these operationally driven improvements such as Continuous Quality Improvement (CQI), Total Quality Improvement (TQI), Six Sigma, Airline Industry's blameless culture, W. Edwards Deming's Total Quality Management (TQM), can only scratch the surface of changing the fundamental outcomes of healthcare if they do not engage practicing physicians. Hence the nearly universal frustration among clinicians with the limited successes of former approaches to continuous improvements.[2,3,4] To succeed in changing health care, we must first succeed in engaging physicians. How can that physician engagement be successfully and productively achieved?

Physicians fundamentally are motivated by the drive to do "the right thing" for their patients. They are also sensitive to the needs of the organizations within which they practice and within which their patients receive care. Courses of action and treatment methods they pursue – the way they practice – are largely determined by their training, experience, and by information gleaned at medical meetings or from other industry sources. They seldom have the benefit of meta-analyses of the problems that currently engage them and their patients, often being so close to what they do that they cannot evaluate and consider treatment alternatives beyond their training or habits. In the absence of compelling data, physicians are stuck doing what has worked for them in the past.

Engaging physicians is fundamental, but not sufficient alone. Dr. John Wennberg suggests that the underlying ethos of physicians to do the right thing for patients will lead them to modify their behaviors or practice patterns if shown compelling outcomes data.[5,6] So providing data and relying on data becomes a second fundamental need for success. Additionally, most physicians question the validity or credibility of data that put their "proven" practices at risk unless they were personally engaged in the study process that produced that data. Of course, personal involvement not only establishes the credibility of the data, but also makes implementation of change more readily achievable.

**THE PARADIGM**




## The Hypothesis

An important element in the Center's success is that physician practices and systems performance will not readily translate into improved quality and patient outcomes unless there is a continuous tension and expertise applied by a Catalyst for improvement. The Catalyst combines proven skills as a specialist in outcomes-focused improvement with methodological expertise in research methods and statistical analysis. He acts as a facilitator for many meetings with interpersonal and team leadership expertise. Thus through this Catalyst-facilitated methodology, physicians are guided to decide how to approach problems and apply proven statistical methods to study problems, reach conclusions, implement change and achieve transformations.

## Methodology

In May 2001 the Center's Board was established as a leadership group, consisting of eleven key people. The Board of eleven was comprised of eight physicians representing in equal numbers the two facilities at that time, and three non-physicians representing senior leadership, quality management leadership and the Catalyst. Among their first acts for the Center was to name itself. The Center's intent and mission are implicit in its name, that being to focus on improving outcomes associated with health and health care processes. The effectiveness of the endeavor was from the outset based on:

1. Physician Leadership and participation of practicing physicians
2. Buy-in and lasting support from the very highest administrative levels
3. Data Availability
4. A strong, dedicated Center Director
5. A skilled, credible, expert Catalyst

The Catalyst provided the expertise, credibility and rigor needed for meeting management, data, capture, subsequent analysis and rapid evaluation for decision-making. Steve H. Shaha, PhD, DBA, filled this role and brought his skills as a credible established expert with advanced training in statistics, business, and continuous improvement to the organization.

The ultimate success of the Center required that an infrastructure of quality management resources be in place. To this end Bonnie Castonguay, Hawaii Pacific Health's quality management leader was included as

a board member and named Executive Director of the Center for Health Outcomes.

Balanced Metrics: When we consider improvements in health care we intuitively understand that it should be something more than the "bottom line." It is an important concept that more than just profit or money is involved, that the totality of improvement is best measured or expressed as balanced metrics – the summation of 1) clinical improvement, 2) stakeholder satisfaction, 3) improved access and 4) cost adjustment. Although reduction in the last is frequently seen as the goal of industry, it is sometimes necessary to spend, or invest in change that will ultimately result in improved stakeholder satisfaction, access, and clinical outcome – all resulting in increased volume and efficiency.

## Examples

The approach and success of the Center is best understood through reviewing a series of examples selected because they illustrate challenges taken on by physicians that range from proactive and introspective drives to improve, to reactive resolution of complex issues representing long-standing struggles unsolved by former methodologies:

### 1). Efficacy of Repeat Antenatal Ultrasound

Antenatal ultrasound to screen for birth defects is performed routinely. However, the examination frequently is not able to visualize every organ system clearly to rule in or out all possible deformities. This results in a dilemma for the interpreting physician of whether or not to repeat the procedure.

A study proposal was mounted to evaluate the efficacy of repeating the procedure to provide more information. After reviewing 1,474 2nd trimester examinations over an eight month duration analyses focused on repeat examinations (n=126); rationale for repetition and clinical accuracy corroborated by post partum chart reviews of both mother and baby. The perinatology service concluded and published results that showed no significant additional information was obtained by repeated tests, resulting in a significant saving of patient time, worry, and expense.

### 2). Newborn Readmissions

A review of Kapiolani Medical Center for Women and Children's newborn readmissions indicated a rate higher than the national benchmark. Detailed investigation of this phenomenon included racial as well as epidemiological parameters. We found that all readmissions were justified because of jaundice, but that there was a statistically higher incidence of jaundiced Filipino babies which constituted a disproportionately larger minority than in the general population. This has led to a further project of investigating bilirubin metabolism in Filipino babies and ethnic differences in post-natal care.

### 3). Sedation of Ventilated Adults

One of our adult pulmonologists noted that ventilator weaning was not accomplished in a clearly defined fashion with criteria for either reducing or increasing the sedative drug Propofol. This frequently resulted in over sedated patients using more sedation than necessary or too rapid withdrawal of Propofol causing increased agitation necessitating reinstitution of high doses of sedation.

Clearly defined guidelines utilizing the Motor Activity Assessment Scale (MAAS) relative to clinical status and agitation were established for either decreasing or increasing specified doses of Propofol. The project involved pulmonologists, other physicians and hospitalists, nurses, respiratory therapists and others.

After establishing these clinical weaning parameters decannulation of these ventilated patients occurred more expeditiously and a significant cost saving from Propofol use was effected, so that a saving of approximately $350.00 per ventilator day was effected thus saving an estimated $60,000.00 annualy.

### 4). Procedural Sedation and Ancillary Service Scheduling

A problem in the scheduling of ancillary studies such as Imaging and EEG/EKG is the need for a sedated or non-moving patient. This requires a complex coordination of schedules for patients, anesthesiologists, sedation recovery nurses and equipment.

Under physician leadership and with administrative clout, a Center-launched effort was able to decrease the delays between scheduling and testing from an average of between two to four weeks (outliers were 3-4 months) to 4 days as an average, with more than 80% within a day of the scheduling call by the parent. Delays remain primarily attributable to parental needs and preferences, for which expanded hours of imaging service have already been implemented. Interdepartmental challenges had to be adjudicated, space allocations approved, new monitoring equipment had to be purchased, contracts with key sedation-related clinicians to be created or modified, and patient preference and prioritization factors for schedule times determined. The pool of sedation specialists had to be expanded in order to ensure coverage, credentialing criteria had to be considered, reimbursement negotiated for non-anesthesiologists. The Center provided an optimal forum for achieving these complex and "politically sensitive" goals in a minimal time frame with maximum benefit to all, especially the patients and anesthesiologists who are most affected by these processes.

## Discussion

Health care organizations have historically struggled to achieve improvements in health outcomes and system enhancements due in great part to minimal or only marginal physician engagement. Physicians have often viewed administratively driven initiatives as repackaged attempts to control physician behavior rather than efforts to engage physicians in genuine rethinking and redesigning of the imperfect. Merely involving physicians as invited participants rather than engaging them as key players has led to minimal improvement. Traditional approaches have failed to transform the fundamental cultures of the organizations.

The Center represents a genuinely unique approach to engaging practicing physicians in leading change and thus transforming the organization. It acts as a transformational agent for HPH and for its practitioners. Three years of unprecedented success underscore the wisdom of the approach adopted and the credibility the Center has achieved among physicians and administrators alike.

The approach, while unique, is generalized and transferable. The Center serves to demonstrate that improvement is achievable through a well-resourced approach that is physician-led and data-rich. With strong Center-like infrastructure backed by administrative buy-in, and with the skills and capabilities of those involved, organizations can engage practicing physicians in making a positive difference for all: Patients, the organization, care givers at large, and the physicians themselves. Everyone benefits.

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