
Accelerating Best Care at Baylor Dallas

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A culture of quality improvement (QI) is needed to bridge the gap between possible STEEEP™ (safe, timely, effective, efficient, equitable, and patient-centered) care and actual usual care. Baylor Health Care System (BHCS) developed Accelerating Best Care at Baylor (ABC Baylor), an innovative educational program that teaches health care leaders the theory and techniques of rapid-cycle QI. Course participants learn general principles of continuous QI, as well as health care–specific QI techniques, and finish the course by designing and implementing their own QI project. ABC Baylor has been employed in a variety of settings and has spread its success to other organizations, especially small and rural hospitals. These hospitals, like BHCS, have demonstrated sustained improvements that are due in part to the use of ABC Baylor and its reliance on specific modules that focus on health care safety, service, equity, and chronic disease management. The role of ABC Baylor training and consulting is part of the overall culture and infrastructure that have allowed BHCS to achieve success in its improvement journey, including the receipt of several national awards and the achievement of high reliability in compliance with Centers for Medicare and Medicaid Services core measures of processes of care related to heart failure, acute myocardial infarction, community-acquired pneumonia, and surgical care. The culture of rapid-cycle QI facilitated by ABC Baylor serves to link BHCS's vision and goals to practical execution.

In 1999, the Institute of Medicine (IOM) released its landmark report, *To Err Is Human*, which estimated that there are close to 90,000 annual preventable deaths in the United States secondary to flaws in health care delivery processes (1). The IOM's second report in 2001, *Crossing the Quality Chasm*, defined high-quality health care as care that is safe, timely, effective, efficient, equitable, and patient-centered (STEEEP™) (2). In accord with these reports, the health care industry has recognized the need to improve the safety and reliability of health care. Moreover, the concept of “value-driven health care” recently emerged to reflect the need for transparency in pricing, transparency in quality, and demonstrable efforts to improve quality and safety (3). Both the public and the payers are holding the health care industry accountable.

Across many industries, the term “high reliability” refers to a low rate of product defects (4, 5). For example, Ireson has

defined reliability as “the capability of the product to perform the specified function in the designated environment for a minimum length of time or a minimum number of cycles or events” (5). While the definition of a product defect may be relatively straightforward in an industry such as electronics, it is less clear how to define defective care in the health care industry. One example of a defect in care may be a case in which a physician misses the opportunity to recommend a mammogram to an eligible patient. The Centers for Medicare and Medicaid Services (CMS) has defined defective health care as the failure of a hospital to comply with 24 recommended, evidence-based processes of care related to heart failure, acute myocardial infarction, community-acquired pneumonia, and surgical care. These best practices are collectively referred to as core measures (6). In addition, some professional organizations such as the Society of Thoracic Surgeons have defined recommended processes of care for each surgical intervention (7). Improving the reliability of health care across core measures means increasing the proportion of patients who receive all recommended best practices.

A culture of quality improvement (QI) is needed to improve the reliability of health care and thereby bridge the gap between possible STEEEP care and actual usual care (2, 8, 9). By training staff in QI techniques and adopting an organizational focus on health care improvement, organizations have improved all dimensions of STEEEP measures, including equality (10), efficiency (11), patient-centeredness (12), and safety and clinical effectiveness as defined by CMS core measures (13) and health care process measures for cardiovascular illness (14, 15) and pneumonia (16). But despite the success of QI programs and their use in health care since at least 1995 (17), hospitals vary in their ability to train staff, implement the programs, and sustain health care improvement as an organizational focus (18, 19). Many of these differences arise from factors such as organizational leadership, hospital culture, hospital size, and inertia (20, 21); moreover, small and rural hospitals may lack the resources

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to implement QI programs (22–25). These are differences that must be overcome for successful adoption of QI programs. Disseminating information and lessons learned from successful QI programs is one way to help hospitals overcome barriers to implementation (13, 26, 27).

This article describes a successful health care QI training program and its implementation and sustainability in a large, integrated health care system.

ABC BAYLOR: THE PROGRAM

Setting and origins: Baylor Health Care System

Baylor Health Care System (BHCS) is an integrated health care delivery system that comprises 20 owned, leased, or affiliated hospitals; 5 short-stay hospitals; more than 80 primary care, specialty care, and senior health centers; 12 rehabilitation clinics; 18 ambulatory surgery centers; more than 400 physicians employed by the HealthTexas Provider Network; 3000 other BHCS-affiliated physicians; and the Baylor Research Institute.

In September 2000, the BHCS Board of Trustees passed a resolution on QI:

Whereas, maintaining the status quo or achieving quality and safety levels only equal to or slightly better than national, regional, or local norms is not compatible with the BHCS Vision and Mission Statements; . . . and Whereas, regulatory and legislative changes and a growing number of more informed patients support better quality patient care and safety; . . . Therefore, be it resolved, that the Board of Trustees of Baylor Health Care System hereby challenges itself and everyone involved in providing health care throughout the system to give patient safety and continuous improvement in the quality of patient care the highest priority in the planning, budgeting and execution of all activities in order to achieve significant, demonstrable and measurable positive improvement in the quality of patient care and safety.

BHCS affirmed its commitment to this resolution by creating the Institute for Health Care Research and Improvement and recruiting the appropriate talent to lead its efforts. In 2001, the Best Care Committee was formed to oversee the planning, budgeting, execution, and reporting of activities to improve the quality and safety of care throughout BHCS. Health care improvement leadership continued to be developed through exposure to multiple resources, such as participation in the Institute for Healthcare Improvement Breakthrough Series projects (28), as well as the training of 30 physician, nursing, and administrative leaders in the Intermountain Healthcare Advanced Training Program in Health Care Delivery Improvement (29).

Inspired and supported by Intermountain Healthcare, BHCS developed and launched its own training program, “Accelerating Best Care at Baylor” (ABC Baylor) (30), in 2003. ABC Baylor, an innovative educational program focused on health care QI, teaches health care leaders the theory and techniques of rapid-cycle QI, outcomes management, and staff development. It facilitates the enhancement of skills needed

by physicians, nurses, administrators, and others to lead QI efforts (27, 30).

Although numerous QI programs are available through external consultants, BHCS decided to develop internal resources to train its workforce in techniques of continuous quality improvement (CQI) rather than outsource the training to external entities. This decision was based on the recognition that a more reliable health care delivery organization needs to incorporate CQI as one of its core competencies and needs to develop the necessary talent internally. This decision also allowed BHCS to standardize the language and tools used for CQI.

Differences between ABC Baylor and other QI training programs include the integration of the main messages of the IOM, including the need for STEEEP health care (2); reliance on QI examples that include clinical care; simplicity of the material and exclusion of advanced statistical concepts; and individual modules that focus on health care safety, service, equity, and chronic disease management.

ABC Baylor training objectives and curriculum

ABC Baylor’s first objective is to have a cultural impact on participants by creating a sense of urgency around the quality chasm described by the IOM (2) and around the need to adopt health care improvement methods. Next, ABC Baylor aims to provide experiential training in tools of health care improvement using a variety of sources such as classic CQI (4), total quality management (31), Lean (32), Six Sigma (33), and Toyota production systems (34). Results of a participant satisfaction survey, as well as informal comments from both faculty and participants, suggest that the amalgamation of the two previous objectives results in a synergistic compounding benefit beyond the benefit derived from non–health care-specific training programs in QI techniques.

The ABC curriculum contains two major components:

- Specific principles of CQI that cover team building, feedback skills, process modeling, data system design, Pareto techniques, statistical process control, and cost-quality relations
- Clinical improvement modules that cover customer service skills, safety, equity, and chronic care

Five ABC courses target different members of the health care community. The four-session core course, which is aimed at change leaders (physicians and nursing and administrative leaders), entails didactic instruction and design, implementation, and evaluation of a QI initiative. The course introduces administrative and clinical leaders to QI methods and ways to measure and analyze evaluations; helps them to understand the relationship between quality and cost; and provides a general understanding of statistical variation, the tools of patient safety, and leadership strategies for QI.

In Session 1, course participants learn about the urgency for QI in health care, improvement tools, evidence-based care, basic statistics, and methods for improved communication. Sessions 2 and 3 focus on different modules of health care QI, including patient safety, service excellence, health care equity, and improvement of chronic care. The modules include a general

Table. ABC Baylor modules

	Session 1		Session 2	Session 3		Session 4
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Morning	Introductory lectures that create a sense of urgency around the need to adopt health care quality improvement methods and introduce the notion of process improvement rather than punitive approaches	Introductory discussion of statistical methods to understand variation and separate true signals from noise Coaching session in which participants select their quality improvement projects	Discussion of data monitoring in quality improvement Coaching session in which participants report their progress	Learning from quality improvement The financials of health care quality improvement*	Equity module*	Graduation
Afternoon	Communication skills for quality improvement Change leadership	Tools of quality improvement: process mapping, brainstorming, prioritization	Safety module*	Service improvement module*	Disease management module*	

*Health care-specific modules.

lecture, a discussion of the current state of BHCS with regard to the module focus, identification of improvement opportunities, and examples of QI projects. In Session 4, course participants present QI projects of their own design (Table). To date, 1316 clinical and administrative leaders have completed the ABC Baylor course, becoming QI champions and leading projects in their own environments.

Other ABC Baylor programs are also offered:

- “ABC Fast Track,” a 1-day course aimed at frontline caregivers that provides training for participants to support quality initiatives introduced by change leaders
- A half-day “Introduction to Quality Improvement” program, which focuses on practicing physicians and involves a physician group retreat
- A version targeting residents in training in several BHCS residency programs, which consists of three half-day sessions held 6 weeks apart, augmented by coaching received from residency directors and including projects completed by participating residents
- Shorter customized versions of the core course delivered for special settings, including nursing homes and home care

The targeted audience for ABC Baylor includes both internal BHCS teams and external customers. Internal teams can be geographic (e.g., from a certain hospital), functional (e.g., financial officers from diverse BHCS entities), or clinical process-based interdisciplinary teams (e.g., the pneumonia team, the acute myocardial infarction team). External customers consist of health systems, hospitals, physician groups, and health maintenance organizations using any combination of services ranging from full best care operationalization to specific training programs. Modules can be detached from the ABC Baylor course and delivered independently for specific customers.

ABC Baylor has grown rapidly since its implementation in 2001, partly because of accountability structures imposed

by institutional goals cascaded down to all enterprise units. Rapid growth has also been stimulated by the BHCS pay-for-performance program, which links executive compensation to hospital and system success in achieving increased compliance with CMS core measures and has increased the sense of urgency for health care QI (35).

Program success and dissemination to other health care settings

ABC Baylor has been studied and implemented in a variety of settings and has spread its success to other organizations, especially small and rural hospitals. The core course was incorporated in a BHCS-led Agency for Healthcare Research-funded randomized controlled trial of health information technology and QI education on quality of care in 47 rural Texas hospitals (22, 25). The study examined ways to translate CQI education to small rural hospitals.

In 2006, BHCS entered into collaboration with Jefferson Medical College of Thomas Jefferson University in Pennsylvania to conduct a QI demonstration project that provided training in rapid-cycle QI techniques to select Pennsylvania community hospitals. Participants successfully implemented a variety of QI projects, showing that CQI programs developed by large health care systems can be adapted and applied successfully in other settings, especially smaller rural and community hospitals that lack the necessary resources to establish such programs independently (27).

Hazleton General Hospital was one of two rural area community hospitals selected to participate in Accelerating Best Care in Pennsylvania. Five projects were undertaken for the demonstration: provision of heart failure discharge instructions to eligible patients, surgical antibiotic prophylaxis, care of the stroke patient, administration of an antibiotic within 4 hours to pneumonia patients, and pneumococcal vaccine administration

to eligible patients. From January 2007 to June 2008, compliance with these measures rose from 79% to 93% for provision of heart failure discharge instructions; 70% to 96% for timely antibiotic administration for emergency department patients with pneumonia; 85% to 92% for pneumococcal vaccination of inpatients who met the criteria; 13% to 100% for computed tomography scans within 20 minutes for stroke patients presenting to the emergency department; and 20% to 83% for prophylactic antibiotics given to patients within an hour of particular types of surgery (36). These improvements suggest that the principles taught in ABC Baylor can lead to improvements in health care quality in community hospitals (13).

In addition, BHCS's QI efforts, including ABC Baylor, have led to substantial recent recognition. BHCS was the 2008 recipient of the National Quality Foundation National Quality in Healthcare Award (which is awarded annually to a single health care organization to recognize the organization for its "proactive and exemplary response to the national call for QI and accountability") and the 2007 recipient of the Leapfrog Patient-Centered Care Award (granted to the hospital or health system whose board has most successfully driven the creation of a true partnership between patients and their caregivers). BHCS also ranked third among 73 health care systems across the United States in performance on publicly reported clinical quality measures, including CMS core measures (37).

One example of an ABC Baylor project that led to substantial QI is the reduction of prolonged intubation after cardiac surgery at one of BHCS's hospitals, Baylor Medical Center at Irving. The Society of Thoracic Surgeons identifies prolonged intubation beyond 24 hours after surgery as a defect in health care (7). The interdisciplinary improvement team at Baylor Medical Center at Irving recognized the lack of an extubation protocol as a cause of this defect and developed a standard protocol. Results of the application of this protocol are shown in the *Figure*. Prolonged intubation has not occurred for the last several months.

DISCUSSION

BHCS has been widely successful in its improvement journey, reaching high reliability in the use of core measures (37) and winning several national awards. ABC Baylor training and consulting is only a part of the overall culture and infrastructure responsible for the successes of BHCS.

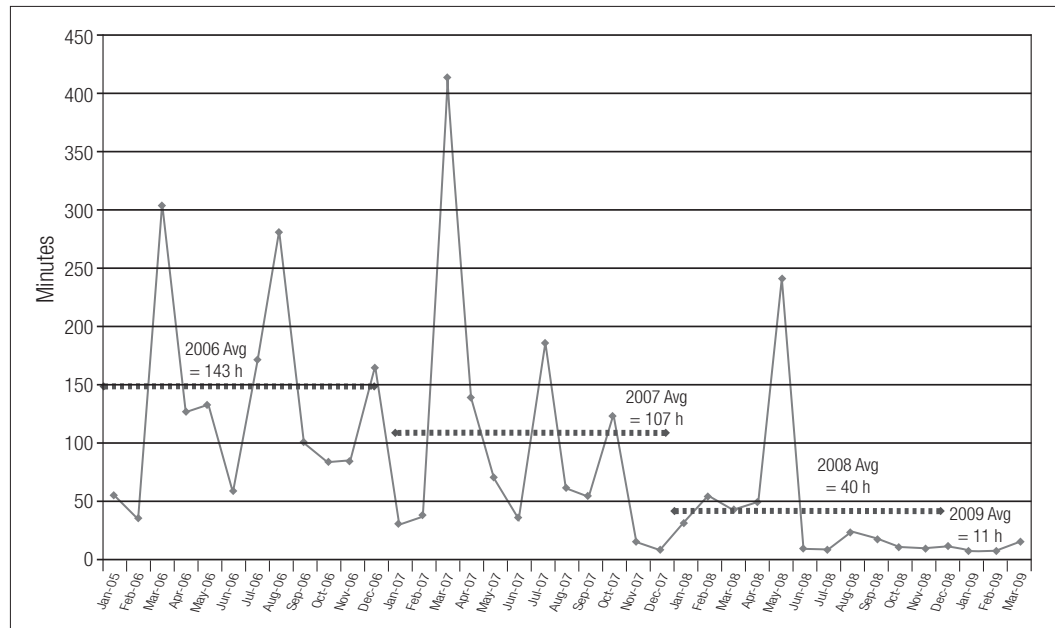


Figure. Intubation times in cardiovascular surgical patients at Baylor Medical Center at Irving.

The QI principles taught in ABC Baylor have been successfully disseminated to and implemented in a variety of settings, including academic teaching hospitals, community hospitals, and small rural hospitals. The program's success in improving reliability across health care settings has been due to its use of examples that include clinical care; the simplicity of the material and its exclusion of advanced statistical concepts; and the modules that focus on health care safety, service, equity, and chronic disease management. Thus, the program is accessible to a variety of health care employees.

As BHCS has successfully adopted useful dashboards addressing various clinical quality indicators, ABC Baylor serves as an essential set of tools targeting the improvement priorities identified by the dashboards. The culture of rapid-cycle QI facilitated by ABC Baylor serves to link BHCS's vision and goals to practical execution.

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