Achieving STEEEP Health Care

David J. Ballard, MD, PhD,
Editor

Associate Editors:

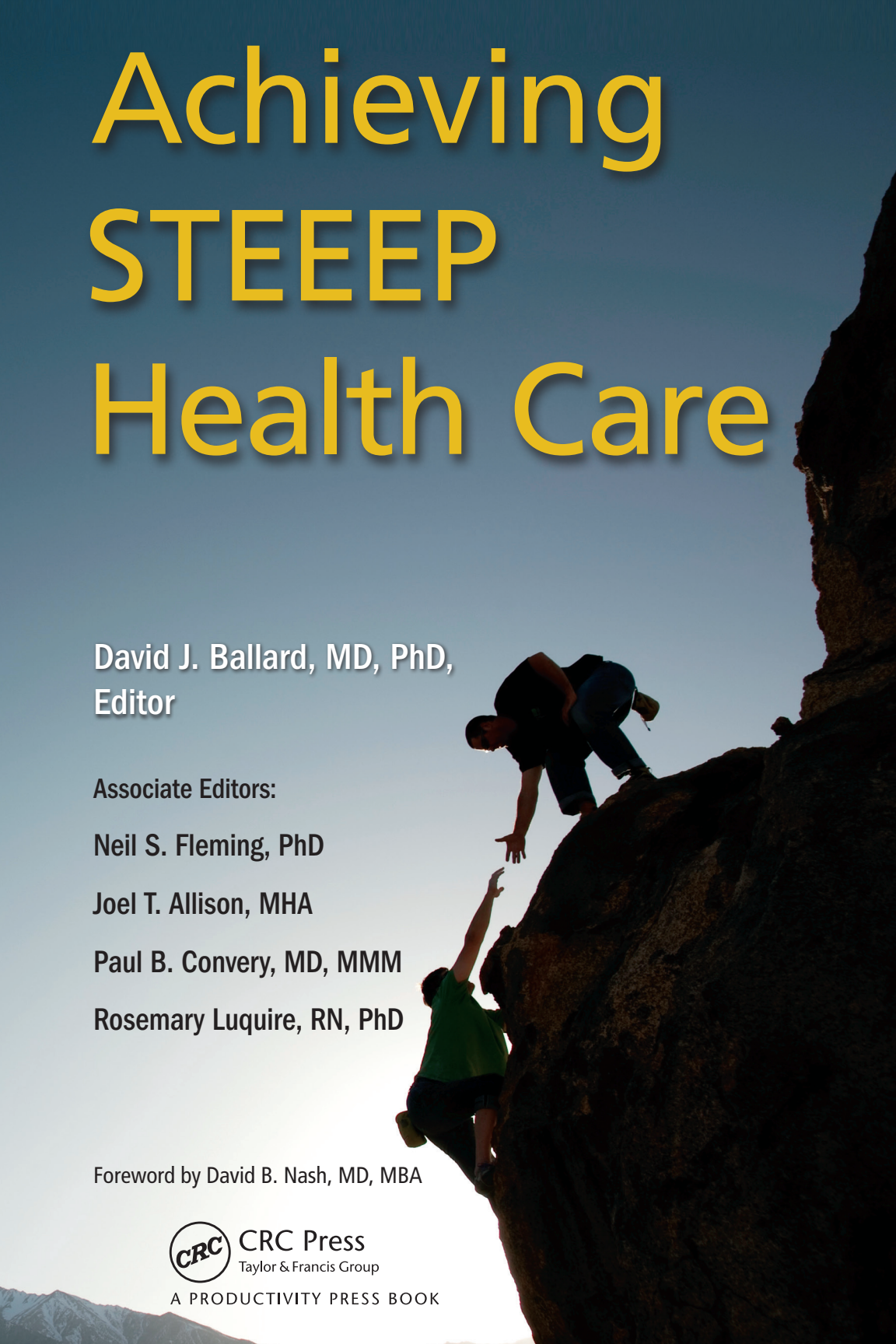
Neil S. Fleming, PhD

Joel T. Allison, MHA

Paul B. Convery, MD, MMM

Rosemary Luquire, RN, PhD

Foreword by David B. Nash, MD, MBA



CRC Press
Taylor & Francis Group
A PRODUCTIVITY PRESS BOOK

"The stewardship and focus of the Baylor Health Care System (BHCS) documented in *Achieving STEEEP Health Care* provides the multi-dimensional journey to sustainable quality improvement needed to address America's health system challenges. Under the clear direction of its board and senior leaders, BHCS has firmly addressed the vital components of culture, knowledge, teamwork, alignment of incentives, and change expectations to advance BHCS toward its vision. Embedding the Institute for Health Care Research and Improvement under the direction of BHCS Senior Vice President and Chief Quality Officer Dr. David Ballard and his team has provided the bench strength to implement and attain such needed change. Vision driving change to better care—an important read and roadmap to follow."

Arja P. Adair, Jr., MBA
President and Chief Executive Officer
Colorado Foundation for Medical Care

"Quality of care is the central tenet of the promise that every health care provider makes to the patient. This text is a must for all those who believe that a constant search for better ways to assure and improve quality is an important part of keeping that promise."

John Agwunobi, MD
Senior Vice President and President of Health and Wellness
Wal-Mart Stores, Inc.

"Inspiring, motivational, evidence-based, 'can do' blueprint for incorporating quality into the organizational DNA and culture of complex health care systems. Practical tips like making the chief financial officer a quality champion and creating infrastructure for sustaining quality through transforming the professional nurse practice environment make this volume a must read."

Linda H. Aiken, PhD, FAAN, FRCN, RN
Claire M. Fagin Leadership Professor of Nursing
Professor of Sociology
Director of the Center for Health Outcomes and Policy Research
University of Pennsylvania

"Achieving STEEEP Health Care is a compelling and comprehensive book on improving quality. Baylor Health Care System's commitment to better health care is unmatched, and in David Ballard they found a person who can not only lead change, but also capture and characterize the key insights that will help the rest of us get on the path to superb care."

Troyen A. Brennan, MD
Executive Vice President and Chief Medical Officer
CVS Caremark

"The International Society for Quality in Health Care has taken a number of initiatives in its quest to 'inspire, promote and support continuous improvement in the quality and safety of healthcare worldwide,' one of which is to seek to enhance the quality of the 'patient journey.' I was impressed therefore to reference in this excellent publication from Baylor Health Care System to meeting '…the needs of the individual patient across the continuum of care.'

Achieving STEEEP Health Care comprehensively guides us through the operationalizing of the delivery of safe, timely, effective, efficient, equitable and patient-centered care and as such it provides both a welcome focus and a useful practical guide to all who want the best for those in their care."

Peter Carter
Chief Executive Officer
International Society for Quality in Health Care

"The American health care system is undergoing much needed and dramatic change driven by the need to be more efficient and more effective in delivering high quality and safe care that improves the overall health of the population and does not bankrupt the country in the process. What will this health care system of the future look like? The Baylor Health Care System, which this book outlines in such detail that it could be a cookbook for how to create a future health care system. David Ballard is the architect, STEEEP is the foundation, and this book is a roadmap of how Baylor Health Care System has made the journey to this new destination. Any health care leader faced with this inevitable transformation of their organization will find this book an essential part of their survival guide in the rapidly changing landscape that is the American health care system."

David Classen, MD, MS
Chief Medical Information Officer
Pascal Metrics
Associate Professor of Medicine and Consultant in Infectious Diseases
University of Utah School of Medicine

"This book is a 'must read' for leaders in health care—Baylor Health Care System leaders have been wonderful national contributors and a catalytic force in the quality and safety arena. The practical strategies and tactics they put forth will save lives, save money, and create value in the communities we serve."

Charles Denham, MD
Founder and Chairman
Texas Medical Institute of Technology

"'Vision without execution is hallucination,' Thomas A. Edison said. Baylor Health Care System developed a vision and executed it. Ballard and his colleagues have led a terrific transformational process of the health care system in which they work. *Achieving STEEEP Health Care* documents this process and measures the results in terms of quality improvement and patient safety. This book is a very useful tool for those aiming to lead change, not only in U.S. health care organizations, but also in other health care systems worldwide."

Carlo Favaretti, MD
President and Founder
Italian Society of Health Technology Assessment
Former Chief Executive Officer
Udine University Hospital (Italy)

"Dr. Ballard and his colleagues strongly make the point that the journey to health care excellence requires a committed transformation of leadership, operations, and every aspect of the enterprise. Best care is not the result of a stand alone 'initiative.'"

Ziad Haydar, MD, MBA
Senior Vice President and Chief Medical Officer
Ascension Health

"While the journey may be STEEEP, Dr. Ballard's accomplishments demonstrate that higher quality is attainable. The roadmap provides inspiration to all those dedicated to achieving a better health care system."

Trent Haywood, MD, JD
Chief Medical Officer
Blue Cross and Blue Shield Association

"Transforming health care delivery in a large health system like the Baylor Health Care System is no mean feat. In this book, David Ballard and his team spell out their journey over the past decade to achieve such change based on STEEEP as a practical approach to high-quality care in its broadest sense. This book is a great basis for those less advanced on such a journey, and will accelerate the travels of those who read it."

J. Michael Henderson, MD
Chief Quality Officer
Cleveland Clinic

"Enhancing and ensuring the quality of health care delivery in the 21st century is the principal obligation of all health care executives and providers. *Achieving STEEEP Health Care* will greatly assist leaders in fulfilling that critical obligation."

Ira J. Isaacson, MD, MBA
Senior Vice President/Partner
Phillips, DiPisa, & Associates

"At the heart of quality improvement lies W. Edwards Deming's idea of fundamental knowledge—the concept that there is a difference between theory and reality. Theory is always an abstraction. Reality is the devil lurking in the details, down in the mud and weeds. Said another way, some talk about it; a relatively few actually do it.

You hold in your hands the detailed journey map of a group who has done it, with elegance and flair. It tracks the transformation as theory becomes functional reality. Those seeking to move to the safety of the high ground in an increasingly difficult health care delivery world will find it valuable beyond compare."

Brent James, MD, MStat
Chief Quality Officer
Executive Director of the Institute for Health Care Delivery Research
Intermountain Healthcare

"All too often, case studies of health care organizations that are actively involved in transforming their delivery of care focus on only a single element of that transformation, as if it were the 'magic bullet' that could solve all problems. By contrast, Ballard and his colleagues have set forth a comprehensive look at the multiple initiatives—from simple to quite complex—that are enabling the Baylor Health Care System to play a leading role in transforming health care in the U.S. Every leader who aspires to achieve safe, timely, effective, efficient, equitable, patient-centered care should read and learn from this book."

William F. Jessee, MD, FACMPE
Senior Vice President and Senior Advisor
Integrated Healthcare Strategies

"This book provides a lens into one organization's journey to safe, timely, effective, efficient, equitable and patient-centered care. Full of insights, strategies, lessons and resources, this is an important read for any health care organization striving for improvement."

Maulik Joshi, DrPH
President
Health Research & Educational Trust
Senior Vice President of Research
American Hospital Association

"This book represents a tremendous contribution by a highly respected organization that is fully grounded in the challenges and opportunities of American medicine. Table I.1 alone is worth many times the price of any book—it is essentially a playbook for forward-looking, progressive organizations, and one that meets them where they currently are, and takes them forward. David Ballard and Baylor Health Care System's national leadership reach a new level with this book's publication."

Thomas H. Lee, MD
Chief Medical Officer
Press Ganey Associates, Inc.

"In this monograph, Dr. David Ballard and colleagues describe how they have embedded the basic dimensions of the Institute of Medicine framework for quality (i.e., safe, timely, effective, efficient, equitable and patient-centered care), into a practical set of tools used by the Baylor Health Care System—but applicable to any other health care system in the country—into day-to-day operations designed to improve care. They describe the essential components that make their system work, including leadership commitment, use of standardized measurement and quality improvement tools, care coordination across the continuum and the creation of a safety culture. As a health care professional for 35 years, but also a stage IV cancer patient for the last 2 years, I can only hope all health care professionals read and take to heart the advice contained in this book."

Jerod M. Loeb, PhD
Executive Vice President
Division of Healthcare Quality Evaluation
The Joint Commission

"This book will find a permanent place within quick reach of anyone working to implement clinical quality and safety improvement in the real world. It is filled with in-the-trenches wisdom on topics ranging from effective leadership at the top to getting the details right in the front lines of care."

Michael L. Millenson
President
Health Quality Advisors LLC
Author, *Demanding Medical Excellence: Doctors and Accountability in the Information Age*

"Achieving STEEEP Health Care describes the Baylor Health Care System's bold experiment to align teams, evidence, systems, and a culture of caring in the unwavering pursuit of higher value health care. The result is a continuously learning health care system poised, along with new partners, to tackle one of the most urgent and significant challenges confronting our nation—optimizing the health of populations while maximizing increasingly finite resources. The valuable lessons from Baylor Health Care System's journey accelerate the capacity of health systems in all communities to assume a leadership role in addressing this challenge."

Mary D. Naylor, PhD, FAAN, RN
Marian S. Ware Professor in Gerontology
Director of New Courtland Center for Transitions and Health
University of Pennsylvania School of Nursing

"In today's health care world of swirling, conflicting reform pressures and 24/7 information overload, a book has to exceed a very high bar to merit executive attention. David Ballard and colleagues' *Achieving STEEEP Health Care* clears that bar with truly exceptional room to spare. This is the book that will explain why physician leadership is essential and possible, and how it can effectively align complex organizations and the larger health system culture to the triple aim vision of better care, better health, and lower cost. It represents a major contribution to the science of performance improvement precisely because it explains *how* it was institutionalized in a large and diverse Dallas, Texas institution in the last 14 years. This is the story of how American health care can reform and sustain itself, if it but will."

Len M. Nichols, PhD
Director
Center for Health Policy Research and Ethics
Professor of Health Policy
College of Health and Human Services
George Mason University

"Baylor Health Care System has been at the forefront of quality in health care for many years. Dr. Ballard and his colleagues, by describing the approach used at Baylor, have created a useful blueprint for others in health care that should speed their journey in quality improvement."

David B. Pryor, MD
Executive Vice President
Ascension Health
President and Chief Executive Officer
Ascension Clinical Holdings

"Achieving STEEEP Health Care presents not only a roadmap but also a how-to manual for health systems striving to achieve the Triple Aim. Within these pages, those interested in improving America's health care will learn how to transform the elements of the Institute of Medicine's ideal state of American health care into action. This book should be read by all health care leaders on their journey to safe, quality health care."

Robert W. Pryor, MD, MBA, CPE, FAAP, FCCM, FCCP
President and Chief Executive Officer
Scott & White Healthcare

"Like a basic scientist who takes a discovery from the bench to the bedside, Ballard and his colleagues at Baylor Health Care System (BHCS) have taken quality improvement from hypothesis testing to application in a large delivery system. Their description of the historical context of quality improvement at BHCS and 'lessons learned' is especially authentic for health care CEOs who attempt to walk the tightrope of performance improvement without a net. At the VCU Health System, we have used the STEEEP acronym for years in our own journey toward quality improvement. The experience at BHCS, as described in Ballard's book, is both illuminating and sobering—this is a race without a finish line. *Continuous* improvement is the only option."

Sheldon M. Retchin, MD, MSPH
Senior Vice President for Health Sciences
Virginia Commonwealth University
Chief Executive Officer
VCU Health System

"This book, by the Baylor Health Care System enterprise, should be a bellweather mark for our industry, as Baylor is *living* where health care needs to be in the near future. We must find a way to engage the industry to focus on quality and safety as the way to control costs and to effectively lower hospital expenses; rather than working on quality as separate from costs. This is an example of one system's approach and other models will follow. A great body of work, from a strong national example of high quality care."

Dan Stultz MD, FACHE, FACP
President and Chief Executive Officer
Texas Hospital Association

"The Institute of Medicine's six aims provide a sound framework for those dedicated to transforming the care we deliver to our patients and communities. David Ballard and his colleagues describe a remarkable journey operationalizing this framework across all six dimensions in a complex, growing health system. Their story is both instructive and inspirational. This book, with its detailed descriptions of approaches, lessons learned, and real-life examples, is a must-read for health care leaders and quality professionals."

Gary Yates, MD
President
Healthcare Performance Improvement, LLC
President
Sentara Healthcare Quality Care Network
Former Senior Vice President and Chief Medical Officer
Sentara Healthcare

Achieving STEEEP Health Care

David J. Ballard, MD, PhD, Editor

Associate Editors:

Neil S. Fleming, PhD

Joel T. Allison, MHA

Paul B. Convery, MD, MMM

Rosemary Luquire, RN, PhD

Foreword by David B. Nash, MD, MBA

CRC Press
Taylor & Francis Group
Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

A PRODUCTIVITY PRESS BOOK

CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742

Version Date: 20130617

International Standard Book Number-13: 978-1-4665-6538-8 (eBook - PDF)

Contents

Foreword

It is no secret that our health care system is at a crossroads. We, as a nation, must decide how to implement the Patient Protection and Affordable Care Act (PPACA) signed into law in March 2010. Through its implementation, we hope to achieve the "Triple Aim" of improving the patient care experience (including quality, access, and reliability), improving the health of populations, and reducing the per capita cost of health care.

While many experts view the Triple Aim as the "organizing framework" for the PPACA, few organizations have created the infrastructure and, more importantly, established the organizational will to implement its important goals. Baylor Health Care System (BHCS) is one of those few.

The United States, then, needs to chart a course for implementing a health care system that simultaneously operates through management of population health and meets the needs of the individual patient across the continuum of care. We need a detailed roadmap for changing the very culture of the major health care delivery systems in our country and positioning them appropriately to accomplish the Triple Aim.

The good news is that Dr. Ballard and his team, I believe, have created such a roadmap. I hope the rest of the country is ready to accept the challenges and solutions they lay out.

Dr. Ballard's career mirrors the evolution of the field of quality measurement and improvement. For nearly 30 years and at leading organizations such as the Mayo Clinic and the University of North Carolina, he has demonstrated unwavering focus in his drive to measure and improve what we do each and every day at the bedside. His career trajectory is a symbol of the progress we have made in creating a bona fide science out of the theories linking industrial process improvement to health care quality and safety. His idea to align a health care system's long-term quality goals with the six domains of improvement outlined by the Institute of Medicine in 2001 was an inspired and galvanizing approach. This approach, encapsulated by the STEEEP acronym registered as a trademark by BHCS in 2007, not only provided an

organizational framework for quality improvement within BHCS, but makes the organization's mission of providing care that is safe, timely, effective, efficient, equitable, and patient-centered clearly identifiable and accessible to all its members. By grasping the importance of these dimensions, the entire organization was motivated to move in the right direction.

Each of the principal sections of this book serves as a "deep dive" into the infrastructure and tools necessary to deliver STEEEP care. They provide a host of rich examples, even on a service-line basis, including care of patients with high priority conditions, such as cardiovascular disease, cancer, and diabetes.

Congratulations, then, to Dr. Ballard and his team for creating a roadmap for achieving the Triple Aim under the aegis of PPACA. My hunch is that other organizations will embrace the book and its underlying message that, although the organizational and cultural change required to achieve the Triple Aim is vast and at times disruptive, it is achievable.

Who should read this book? I fervently hope that all major health care organizations and their leaders will embrace the key tenets of STEEEP care. I also hope they will start now educating their executive, clinical, and administrative directors about the science of performance improvement, which lays the groundwork for implementation of the Triple Aim. Culture change is a decades-long journey, but, regrettably, we don't have that kind of time left. We must start immediately and this book will put us on the right track today.

David B. Nash, MD, MBA
Founding Dean, Jefferson School of Public Health, Thomas Jefferson University
Philadelphia, Pennsylvania

Preface

This book describes practical strategies and tactics Baylor Health Care System (BHCS) has used to operationalize the delivery of safe, timely, effective, efficient, equitable, patient-centered (STEEEP) care. BHCS has been committed to the delivery of high-quality health care since the organization was founded as Texas Baptist Memorial Sanitarium in 1903. My focus, since joining BHCS as the organization's first chief quality officer in 1999 and founding the Institute for Health Care Research and Improvement,[1,2] has been the development and implementation of strategies to improve health care quality across the system and the communities served by BHCS.

The origins of this book, as well as my health care quality improvement efforts, date back to the late 1970s, when I was an undergraduate economics student as a Morehead Scholar at the University of North Carolina at Chapel Hill (UNC) and developed a tool to detect inappropriate hospital admissions for the North Carolina Memorial Hospital Utilization Review Committee. In the 1980s, as a doctoral student in the UNC Schools of Medicine and Public Health, I collaborated with my faculty advisor and mentor, Ed Wagner, to characterize and develop interventions to improve the process and outcomes of medical care in the management of hypertension,[3–5] and then went on to shape, with Denis Cortese, the Chair of the Mayo Clinical Practice Committee, Mayo Clinic's health care quality improvement strategies and tactics.[6] The latter engagement included leading Mayo's participation in the Working Group of the Appropriateness Project of the Academic Medical Center Consortium, which was ahead of its time in terms of trying to address the overuse of care.[7–10]

In the 1990s, I served as president of the Kerr L. White Institute for Health Services Research, which focused on population-based health care quality and efficiency research. The institute included among its member organizations five state-level health care quality improvement organizations[11] (then called peer-review organizations (PROs)) created by Congress in 1984 to monitor the cost and quality of care received by Medicare beneficiaries. To do this, the Health Care Financing Administration engaged the PROs through a

series of contracts. One of these contracts initiated the Health Care Quality Improvement Program in 1990 as an application of the principles of continuous quality improvement. My work with these five PROs provided me with valuable insight into leading quality improvement efforts and creating infrastructure to support quality improvement on a large scale.[12–21]

When I joined BHCS in 1999, I recognized that it was a complex organization and would require strong infrastructure, robust measurement tactics, leadership alignment, and other elements to enhance the delivery of high-quality health care. Around the time of my arrival at BHCS, the organization renewed its focus on organizational development. In early 2000, the chair of the BHCS Board of Trustees established an ad hoc committee, which I chaired, to develop the BHCS strategic plan to focus its efforts on the organization's goal "to deliver the best and safest care available, focusing on wellness, prevention, early detection, acute and subacute care, and supported at every point by education, research, and improvement."[1]

During this time, the Institute for Healthcare Improvement was seeking proposals for its Pursuing Perfection Initiative, which challenged hospitals and physician organizations to improve patient outcomes dramatically by "pursuing perfection" in all major care processes.[22] As BHCS developed a proposal for the initiative, we considered our approaches to health care quality improvement and realized we needed effective ways to communicate our quality improvement goals and strategies to internal stakeholders (employees) as well as external stakeholders and potential partners. As the Institute of Medicine (IOM) was then developing its report "Crossing the Quality Chasm,"[23] we considered the six IOM dimensions of high-quality health care (safety, timeliness, effectiveness, efficiency, equity, and patient centeredness) and their relationship to the transition of a state of ideal health care delivery. My BHCS colleague, John Anderson (then BHCS senior vice president for Clinical Integration), and I imagined the analogy of climbing a mountain and the acronym STEEEP was born.[2] Embracing the elements of STEEEP care lent BHCS the IOM's authority to convey to internal and external stakeholders the importance of improving health care quality, and also helped align our work with national health care priorities.

Meanwhile, the health care quality improvement strategic committee—especially committee member Bill Aston, who was then chair of the Baylor University Medical Center Board of Trustees—recognized that BHCS had a history of linking leader compensation to financial performance and suggested the organization extend that focus on performance to other areas.[24] Over the next several years, BHCS modified its performance award program to include the areas of People (employee retention); Quality (hospital-standardized inpatient mortality ratio, readmissions, and delivery of evidence-based processes of care); and Service (patient satisfaction) as well as Finance. Although many health care organizations have a culture that precludes linking compensation to performance, BHCS was able to implement a robust approach to

designing incentives linked to quality improvement goals. Currently, BHCS has approximately 20,000 employees, all with their own goals in the areas of People, Quality, Service, and Finance, and annual performance reviews and associated annual merit compensation changes are based, in part, on the extent to which they have achieved these goals.

As an organization, BHCS recognized that, to build a culture of quality improvement that would extend to all its employees, a core group of leaders would need an in-depth understanding of quality improvement methods, tools, and language. From 2001 through 2003, BHCS sent 40 quality leaders to the Intermountain Healthcare mini-Advanced Training Program course led by Brent James.[25] James shared his educational templates with BHCS, and we adapted them, with his approval, to provide BHCS-based examples relevant to our employees. Over the past decade, more than 1,500 BHCS physicians and nursing and administrative leaders have received health care quality improvement training through the resulting "ABC Baylor" course (now, the STEEEP Academy), either in its full form or in one of the tailored adaptations designed to meet the specific needs of certain group leaders (e.g., those who needed a "Fast Track" course).[26,27]

BHCS leaders understood that, in addition to the STEEEP Academy training and the incentives provided by linking leader compensation to clinical quality performance, the organization would need structures to support a commitment to quality improvement. When I led quality efforts at the Mayo Clinic, I was impressed by how clinical, financial, and operational leaders came together through the Mayo Clinical Practice Committee to address approaches to high-quality health care delivery.[28] Over time at BHCS, we have crafted an approach that brings these leaders to a common table through the STEEEP Governance Council (SGC), which promotes improvement efforts that encompass and achieve synergy across all domains of STEEEP care. The SGC structure has enabled BHCS to apply clinical, financial, and operational frames of reference to organizational decisions about health care initiatives.

As our STEEEP journey evolves, many of these decisions will focus on the shift from volume-based to population-based health care. Berwick et al.[29] described the "Triple Aim" of health care delivery systems that seek to improve the overall health of populations while reducing costs: (1) improve the patient care experience (including quality, access, and reliability); (2) improve the health of populations; and (3) reduce the per capita cost of health care. The Triple Aim has become the organizing framework for the U.S. National Quality Strategy called for under the 2010 Patient Protection and Affordable Care Act[30] and for public and private health organizations around the world, including BHCS. Despite the acknowledged need for population-based care, tensions can arise when health care delivery organizations must make decisions that represent the right thing to do for patients, but that pose problems for organizational financial performance over the short term (e.g., the elimination of clinically unnecessary and/or inappropriate cardiovascular procedures[31]).

One current challenge BHCS faces involves its efforts to refocus its contracts with payers from volume-based to population-based care delivery. This is a particularly complicated task in the Dallas–Fort Worth Metroplex, which is less mature in terms of its focus on population health and the total cost of care than many other markets in the United States.

BHCS is addressing the shift toward population-based health care through several large-scale initiatives, including the founding of its accountable care organization, the Baylor Quality Alliance[32,33] and the formation of the Diabetes Health and Wellness Institute, both described in this book. BHCS is also broadening its quality improvement focus to address overuse of care, defined as the provision of health services for which the potential risks outweigh the potential benefits,[23] and to promote more widespread use of effective care. Such strategies will enable the system to more effectively and efficiently use scarce resources to optimize the health of a given population. In addition, BHCS enjoys collegial relationships with health care delivery systems in Texas that have historically had a strong population focus, such as Scott & White Healthcare, which has had a health care plan since 1982 and an impressive, more recent history in applying Lean thinking, culture, and tools to improve care. These strengths and strategies will help to support BHCS during the next segment of its quality journey, when, like many other health care delivery organizations, it will need to transition its work from volume-based to population-based care, and use health care resources as efficiently as possible.

David J. Ballard, MD, MSPH, PhD, FACP

REFERENCES

1. Ballard, D. J. 2003. Indicators to improve clinical quality across an integrated health care system. *International Journal for Quality in Health Care* 15 (Suppl 1): i13–23.
2. Ballard, D. J., B. Spreadbury, and R. S. Hopkins, III. 2004. Health care quality improvement across the Baylor Health Care System: The first century. *Proceedings* (Baylor University Medical Center) 17 (3): 277–288.
3. Ballard, D. J., D. S. Strogatz, E. H. Wagner, D. S. Siscovick, S. A. James, D. G. Kleinbaum, L. M. Cutchin, and M. A. Ibrahim. 1988. Hypertension control in a rural southern community: Medical care process and dropping out. *American Journal of Preventive Medicine* 4 (3): 133–139.
4. Ballard, D. J., D. S. Strogatz, E. H. Wagner, D. S. Siscovick, S. A. James, D. G. Kleinbaum, C. A. Williams, L. M. Cutchin, and M. A. Ibrahim. 1986. The Edgecombe County High Blood Pressure Control Program: The process of medical care and blood pressure control. *American Journal of Preventive Medicine* 2 (5): 278–284.
5. Siscovick, D. S., D. S. Strogatz, E. H. Wagner, D. J. Ballard, S. A. James, S. Beresford, D. G. Kleinbaum, L. M. Cutchin, and M. A. Ibrahim. 1987. Provider-oriented interventions and management of hypertension. *Medical Care* 25 (3): 254–258.

6. Ballard, D. J., S. C. Bryant, P. C. O'Brien, D. W. Smith, M. B. Pine, and D. A. Cortese. 1994. Referral selection bias in the Medicare hospital mortality prediction model: Are centers of referral for Medicare beneficiaries necessarily centers of excellence? *Health Services Research* 28 (6): 771–784.
7. Ballard, D. J., J. A. Etchason, L. H. Hilborne, M. E. Campion, C. Kamberg, D. Solomon, L. L. Leape, J. P. Kahan, R. E. Park, and R. H. Brook. 1992. *Abdominal aortic aneurysm surgery: A literature review and ratings of appropriateness and necessity.* Santa Monica, CA: RAND.
8. Nevitt, M. P., D. J. Ballard, and J. W. Hallett, Jr. 1989. Prognosis of abdominal aortic aneurysms. A population-based study. *New England Journal of Medicine* 321 (15): 1009–1014.
9. Herrin, J., J. A. Etchason, J. P. Kahan, R. H. Brook, and D. J. Ballard. 1997. Effect of panel composition on physician ratings of appropriateness of abdominal aortic aneurysm surgery: Elucidating differences between multispecialty panel results and specialty society recommendations. *Health Policy* 42 (1): 67–81.
10. Ballard, D. J. 1994. The RAND/AMA/AMCC Clinical Appropriateness Initiative: Insights for multi-site appropriateness studies derived from the abdominal aortic aneurysm surgery project. *International Journal for Quality in Health Care* 6 (2): 187–198.
11. Ballard, D. J. 1997. A little statistical compassion linked to an intense and creative look at healthcare evidence: The genius of Kerr White. *Health Services Research* 32 (1): 5–10.
12. Grant, J. B., R. P. Hayes, R. D. Pates, K. S. Elward, and D. J. Ballard. 1996. HCFA's health care quality improvement program: The medical informatics challenge. *Journal of the American Medical Informatics Association* 3 (1): 15–26.
13. Cangialose, C. B., A. E. Blair, J. S. Borchardt, T. B. Ades, C. L. Bennett, K. Dickersin, D. H. Gesme, Jr., et al. 2000. Purchasing oncology services. Kerr L. White Institute/American Cancer Society Task Force on Purchasing Oncology Services. *Cancer* 88 (12): 2876–2886.
14. Cook, S. S., C. B. Cangialose, D. M. Sieburg, S. M. Kieszak, R. Boudreau, L. H. Hoffman, K. S. Elward, and D. J. Ballard. 1999. Red blood cell transfusions for elective hip and knee arthroplasty: Opportunity to improve quality of care and documentation. *Clinical Performance and Quality Health Care* 7 (1): 5–16.
15. Elward, K. S., D. Martin, E. Merwin, R. P. Hayes, and D. J. Ballard. 1994. The role of the principal clinical coordinator in the Health Care Financing Administration's Health Care Quality Improvement Initiative. *Clinical Performance and Quality Health Care* 2 (2): 73–79.
16. Grant, J. B., R. P. Hayes, D. W. Baker, C. B. Cangialose, S. M. Kieszak, and D. J. Ballard. 1997. Informatics, imaging, and healthcare quality management: Imaging quality improvement opportunities and lessons learned from HCFA's Health Care Quality Improvement Program. *Clinical Performance and Quality Health Care* 5 (3): 133–139.
17. Hayes, R., D. Bratzler, B. Armour, L. Moore, C. Murray, B. R. Stevens, M. Radford, et al. 2001. Comparison of an enhanced versus a written feedback model on the management of Medicare inpatients with venous thrombosis. *The Joint Commission Journal on Quality Improvement* 27 (3): 155–168.
18. Hayes, R. P., and D. J. Ballard. 1995. Review: Feedback about practice patterns for measurable improvements in quality of care—a challenge for PROs under the Health Care Quality Improvement Program. *Clinical Performance and Quality Health Care* 3 (1): 15–22.

19. Hayes, R. P., M. T. Lundberg, and D. J. Ballard. 1994. Peer review organizations: Scientific challenges in HCFA's health care quality improvement initiative. *Medical Care Review* 51 (1): 39–60.
20. Meehan, T. P., J. Hennen, M. J. Radford, M. K. Petrillo, P. Elstein, and D. J. Ballard. 1995. Process and outcome of care for acute myocardial infarction among Medicare beneficiaries in Connecticut: A quality improvement demonstration project. *Annals of Internal Medicine* 122 (12): 928–936.
21. Hayes, R. P., D. W. Baker, J. C. Luthi, R. L. Baggett, W. McClellan, D. Fitzgerald, F. R. Abrams, D. Bratzler, and D. J. Ballard. 2002. The effect of external feedback on the management of Medicare inpatients with congestive heart failure. *American Journal of Medical Quality* 17 (6): 225–235.
22. Institute for Healthcare Improvement. Pursuing perfection: Raising the Bar for Health Care Performance. Online at http://www.ihi.org/offerings/Initiatives/PastStrategicInitiatives/PursuingPerfection/Pages/default.aspx (accessed March 20, 2013).
23. Corrigan, J. M., M. S. Donaldson, L. T. Kohn, S. K. Maguire, and K. C. Pike. 2001. *Crossing the quality chasm: A new health system for the 21st century.* Washington, DC: National Academy Press.
24. Herrin, J., D. Nicewander, and D. J. Ballard. 2008. The effect of health care system administrator pay-for-performance on quality of care. *The Joint Commission Journal for Quality Patient Safety* 34 (11): 646–654.
25. Intermountain Healthcare. 20-day course for executives & QI leaders—Advanced Training Program (ATP). Online at http://intermountainhealthcare.org/qualityandresearch/institute/courses/atp/Pages/home.aspx (accessed March 21, 2013).
26. Haydar, Z., M. Cox, P. Stafford, V. Rodriguez, and D. J. Ballard. 2009. Accelerating best care at Baylor Dallas. *Proceedings* (Baylor University Medical Center) 22 (4): 311–315.
27. Haydar, Z., J. Gunderson, D. J. Ballard, A. Skoufalos, B. Berman, and D. B. Nash. 2008. Accelerating Best Care in Pennsylvania: Adapting a large academic system's quality improvement process to rural community hospitals. *American Journal of Medical Quality* 23 (4): 252–528.
28. Berry, L., and K. Seltman. 2008. *Management lessons from Mayo Clinic: Inside one of the world's most admired service organizations.* New York: McGraw-Hill.
29. Berwick, D. M., T. W. Nolan, and J. Whittington. 2008. The triple aim: Care, health, and cost. *Health Affairs* (Millwood) 27 (3): 759–769.
30. Patient Protection and Affordable Care Act. Public Law 111–148—March 23, 2010. 124 Stat. 119. Online at http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf
31. Ballard, D. J., and B. M. Leonard. 2011. National priorities partnership focus on eliminating overuse: Applications to cardiac revascularization. *American Journal of Medical Quality* 26 (6): 485–490.
32. Ballard, D. J. 2012. The potential of Medicare accountable care organizations to transform the American health care marketplace: Rhetoric and reality. *Mayo Clinic Proceedings* 87 (8): 707–709.
33. Couch, C. E. 2012. Why Baylor Health Care System would like to file for Medicare Shared Savings accountable care organization designation but cannot. *Mayo Clinic Proceedings* 87 (8): 723–726.

Acknowledgments

A book of this kind is a collaboration among many individuals. I am appreciative of the efforts of my associate editors, Neil Fleming, Joel Allison, Paul Convery, and Rosemary Luquire, as well as the contributions of the book's authors. I am also grateful to Kathleen Richter, Tara Marathe, Kelli Trungale, and Briget da Graca, who provided editorial support during the production of the book; and to Scott Ranson of the University of North Texas Health Science Center and Arja P. Adair, Jr. of CFMC for their careful review of earlier drafts.

The story of the Baylor Health Care System (BHCS) quality journey could not have been told without the contribution of John Anderson, former BHCS senior vice president for Clinical Integration, who first coined the acronym "STEEEP" in a discussion we had in 2000. Over a decade ago, he and I envisioned the analogy of climbing a mountain to represent the transition from the current state of health care delivery to one that could be characterized by the Institute of Medicine's six domains of ideal care: safety, timeliness, effectiveness, efficiency, equity, and patient centeredness.

I also am appreciative of the vision of the late Bill Aston, former chair of the Baylor University Medical Center Board of Trustees, who in 2000 drafted the board resolution to prioritize quality throughout BHCS. This resolution has been the basis for quality improvement at BHCS for the past 13 years. In addition, I am grateful to the late Dale Jones, former chair of the BHCS Board of Trustees, who in 2000 gave me the charter to develop a quality improvement plan for BHCS that has provided the framework for the organization's journey to STEEEP care.

As I complete the final editing of the book galleys on the occasion of my mother's 94th birthday, I want to recognize the role modeling of a commitment to STEEEP health care by my parents, Margaret S. Ballard, RN, and the late Joseph A. Ballard, MD, who began their health care careers in the throes of World War II serving for the U.S. Army, long before the founding of the Institute of Medicine and its landmark publication, Crossing the Quality

Chasm. Finally, I want to thank my wife, Michela Caruso, MD, a Texas Oncology radiation oncologist, who has been a sounding board and source of support throughout my health care quality journey since we first met in 1985 as residents at the Mayo Clinic.

David J. Ballard, MD, MSPH, PhD, FACP

Introduction

Baylor Health Care System (BHCS) has been guided by its commitment to providing high-quality health care to all of the residents of Dallas–Fort Worth since its original founding over 100 years ago. This dedicated focus is reflected in the question that the Rev. George W. Truett, pastor of the First Baptist Church of Dallas, asked of the city's business leaders and citizens in 1903: "Is it not now time to begin the erection of a great humanitarian hospital, one to which men of all creeds and those of none may come with equal confidence?"

Later that year, the Texas Baptist Memorial Sanitarium was established with 25 beds in a 14-room renovated house. This modest community hospital developed during the twentieth century into Baylor University Medical Center, and then the multifacility BHCS. The BHCS network now includes more than 300 multiprovider access points of care, including:

- 30 hospitals that are owned, operated, joint ventured, or affiliated with BHCS
- 28 ambulatory surgery/endoscopy centers
- 209 locations for the HealthTexas Provider Network (the BHCS-affiliated ambulatory care physician network) with 60 primary care medical homes
- 91 satellite outpatient facilities for imaging, rehabilitation, and pain
- 3 senior health centers
- 6 retail pharmacies
- 3 Baylor Research Institute locations
- 1 accountable care organization

During the past century, BHCS has developed into a complex system whose facilities, departments, and employees are all aligned toward a common vision (to be trusted as the best place to give and receive safe, quality, compassionate health care); mission (founded as a Christian ministry of healing, Baylor exists to serve all people through exemplary health care, education, research, and community service); and values (integrity, servanthood, quality,

FIGURE I.1 The Baylor Health Care System Circle of Care.

innovation, and stewardship) (Figure I.1). In contrast to its modest beginnings as a small community hospital, by July 2013, BHCS had grown to include:

- 21,388 employees
- 4,735 medical staff members
- 3,420 active physicians
- 3,653 licensed beds

and annually:

- $5.3 billion in total assets
- $4.1 billion in total operating revenue
- 2.8 million patient encounters
- 122,007 inpatient admissions
- 20,094 babies born
- 409,375 emergency department visits
- 603,155 outpatient registrations

TIMELINE: HEALTH CARE QUALITY JOURNEY

The timeline at http://www.baylorhealth.com/about/Pages/Timeline.aspx describes in more depth some of the important events and milestones in the BHCS quality journey.[1,2]

Operationalizing the Delivery of STEEEP Care

BHCS's century of growth has required an unwavering commitment to health care quality. To continually improve health care quality, BHCS has operationalized the delivery of safe, timely, effective, efficient, equitable, patient-centered (STEEEP) care. According the Institute of Medicine (IOM),[1] STEEEP care is care that is:

- Safe—avoiding injury to patients from care that is intended to help them, without accidental error or inadvertent exposures;
- Timely—reducing waits and harmful delays impacting smooth flow of care;
- Effective—providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding overuse and underuse);
- Efficient—using resources to achieve best value by reducing waste and reducing production and administrative costs;
- Equitable—providing care that does not vary in quality according to personal characteristics, such as gender, income, ethnicity, location; and
- Patient-centered—providing care that is respectful of and responsive to individual patient preferences, needs, and values.

Originally improvised at BHCS in 2000, the STEEEP acronym was trademarked by BHCS to communicate the challenge of achieving its objective to provide ideal care in terms of the IOM call for care that is safe, timely, effective, efficient, equitable, and patient-centered.[1]

This book presents the evidence-based strategies and tactics BHCS has used to operationalize the delivery of STEEEP care, and describes its contribution to the improvements achieved in patient, clinical, and organization operational outcomes.

Recently, Scott & White Healthcare and BHCS announced their intent to merge, which will create the largest not-for-profit health system in the state of Texas.[3] Scott & White, unlike BHCS, includes an owned and operated health care plan in its operations, and is farther along its journey in applying Lean thinking to the quality improvement journey. As collaboration between the organizations is growing while the merger discussions move forward, we asked Scott & White authors to contribute chapters on these topics to provide a more complete picture of the quality improvement tools and strategies that can contribute to achieving STEEEP care. We anticipate that the two organizations will benefit from each other's respective experience with implementing STEEEP and Lean principles following the merger, facilitating more rapid spread across the newly created entity as well as greater gains in quality and efficiency stemming from the complementary nature of these improvement and management approaches.

To place our quality improvement work in the broader context of the initiatives playing out at the national and international levels, we have framed the first three sections around the Institute for Healthcare Improvement's (IHI's) Seven Leadership Leverage Points for Organization-Level Improvement in Health Care.[4]

Section I: System Alignment for STEEEP Care

Ultimately, health care quality improvement at BHCS stands on the foundation of strong leadership and a commitment across the entire organization to deliver STEEEP care. Leaders at all levels throughout BHCS continue to build on the efforts of those who embraced the original challenge of achieving BHCS's goal of ideal care. The first section of the book focuses on the elements of governance; leadership; organizational structures; alignment, goal setting, and incentives; financial leadership; physician leadership; and nurse leadership; and how these components align to drive STEEEP care across the system (Chapter 1 to Chapter 7).

Section II: Infrastructure and Tools for STEEEP Care

Aligning a complex health care system to achieve STEEEP care requires not only a commitment to quality, but also a variety of specific tools and infrastructure elements. The second section of the book describes the infrastructure BHCS has established to improve health care quality, including the STEEEP Academy's rapid-cycle quality improvement course; applications of Lean to STEEEP care improvement; the STEEEP Analytics department, which guides and supports data-driven improvement; and the STEEEP Care Operations department, which operationalizes quality improvement and patient safety initiatives. It also discusses methods BHCS has used to evaluate clinical and financial outcomes to determine best practices, techniques it has used to drive STEEEP care across its multiple hospitals, and methods to drive STEEEP care across a physician provider network (Chapter 8 to Chapter 14).

Section III: Achieving STEEEP Care

The third section of the book provides real-world examples of strategies and tactics BHCS has used to improve care in the areas of safety, clinical excellence (timeliness and effectiveness), efficiency, equity, and patient centeredness. It describes successes as well as residual challenges associated with these approaches. The chapters in this section also present lessons BHCS has learned as it has applied and evaluated various strategies and tactics to improve its quality across the six domains of STEEEP care (Chapter 15 to Chapter 19).

Section IV: STEEEP Care in Practice: Service Lines and Other Lines of Business

Driving STEEEP care across a large, complex health care system requires the application of STEEEP care improvement principles to a variety of service lines and other lines of business. The fourth section of the book describes concrete approaches and methods associated with improving STEEEP care in the areas of cardiovascular care, emergency services, critical care, oncology, surgical services, orthopedic services, the accountable care organization, and the Diabetes Health and Wellness Institute. This section of the book also discusses application of quality improvement methods by Scott & White Healthcare to drive STEEEP care through a health care delivery system-owned and -operated health care plan (Chapter 20 to Chapter 28).

Elements of the Quality Journey

If the BHCS vision and mission comprise the compass guiding BHCS on its quality journey, the STEEEP framework is the map to which this compass is applied. Table I.1 highlights key components of effective health care delivery systems—including administration and governance, physician and nurse leadership, quality improvement programs and expertise, data and analytics, and reputation and accreditation—and how these components must evolve along the quality journey. Readers who are interested in improving health care quality in their own organizations can identify the book chapters that are most relevant to their needs and goals based on the stage their organization has reached on the quality journey: initiation, foundation building, operationalizing, or continuous quality improvement.

David J. Ballard and Neil S. Fleming

REFERENCES

1. Corrigan, J. M., M. S. Donaldson, L. T. Kohn, S. K. Maguire, and K. C. Pike. 2001. *Crossing the quality chasm: A new health system for the 21st century.* Washington, DC: National Academy Press.
2. Wilsey, H. L. 2004. *How we care: Centennial history of Baylor University Medical Center and Baylor Health Care System, 1903–2003.* Dallas, TX: Baylor Health Care System.
3. Scott & White Health Care Fact Sheet. January 2013. Online at: www.sw.org (accessed April 9, 2013).
4. Reinertsen, J. L., M. Bisognano, and M. D. Pugh. 2008. *Seven leadership leverage points for organization-level improvement in health care*, 2nd ed. Cambridge, MA: Institute for Healthcare Improvement.

TABLE I.1 Achieving STEEEP health care is a journey that requires a commitment to quality improvement (QI) from the highest levels of leadership combined with the interdependent development of several key components of health care delivery: administration and governance, clinical leadership, program development, data analytics, and accreditation. Book chapters most relevant to organizations based on their stage of development in the STEEEP quality journey (initiation, foundation building, operationalizing, or continuous QI) are indicated.

Organizational Component	STAGE			
	Initiation	Foundation Building	Operationalizing	Continuous QI
Administration and Governance	• Often unaware of potential benefits of QI • Often do not view QI as their responsibility and instead delegate to clinicians **Ch. 1**	• Understand the necessity of becoming involved in and providing leadership in QI • Become engaged in QI initiatives **Ch. 2, 3**	• Directly involved in driving the organization to a culture of QI • Actively measure and reward improvement **Ch. 4**	• Fully engaged in, and see themselves as accountable for driving QI • Quality is an integral part of their, and the organization's incentive program **Ch. 5**
Physician and Nurse Leadership	• Often have marginal involvement in QI initiatives • Focus is primarily on clinical delivery and organizational issues **Ch. 2**	• Active engagement in some QI initiatives • Represent the clinicians *and* the patient in QI discussions and decisions **Ch. 6, 7**	• Work together to identify and lead QI initiatives • Become the voice of the patient as well as the clinician **Ch. 6, 7**	• Fully engaged in QI and drive innovation within their disciplines • Often responsible for engaging their professional communities in QI efforts **Ch. 6, 7, 20–28**