

# Fundamentals of Health Care Improvement

A GUIDE TO  
IMPROVING YOUR  
PATIENTS' CARE

FIFTH EDITION



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# Foreword from Joint Commission

I am pleased to introduce the fifth edition of *Fundamentals of Health Care Improvement: A Guide to Improving Your Patients' Care*. This edition arrives at a defining moment for health care—one in which we are called not only to heal, but to transform. The challenges we face today are unprecedented and demand more than clinical excellence; they require a steadfast commitment to innovation, agility, and continuous learning.

At Joint Commission, we are transforming, too, and have made sweeping changes to the accreditation and certification process with the launch of Accreditation 360: The New Standard. This model is designed to reduce unnecessary burden and help health care organizations focus on what matters most: providing the highest quality, safest, and most compassionate care to patients.

True excellence in health care is achieved through a culture of continuous improvement, grounded in evidence-based practice and a deep understanding of the systems in which care is delivered. This book embodies those principles. It is not merely a textbook—it is a practical, forward-looking guide for clinicians, educators, and health care leaders who are determined to close quality gaps, eliminate disparities, and deliver care that is safe, effective, timely, efficient, and patient-centered.

*Fundamentals of Health Care Improvement* stands out for its emphasis on the power of data—not just as a tool for compliance, but as a catalyst for change. It equips learners to diagnose, measure, analyze, and lead systems improvement with clarity and purpose. By integrating the science of measurement with the art of collaboration, the book empowers health professionals to build dependable, high-performing systems of care.

Building on this foundation, the latest edition expands the conversation to address one of health care's most

urgent challenges: disparities. It includes a new chapter on the role of quality improvement in narrowing gaps and encourages us to confront the social drivers of health and design systems that serve all patients. It also uses real-world scenarios to underscore the importance of forming strong partnerships with the patients, families, and communities we serve to codesign and tailor quality improvement interventions that meet their needs.

As Joint Commission advances its initiatives in health care quality and patient safety, we view this book as an essential companion. From the foundational Model for Improvement to the practical application of Plan-Do-Study-Act cycles, from interprofessional teamwork to the thoughtful use of data, this guide offers a comprehensive and actionable framework for improvement. The practicality at the heart of this textbook is what makes it relevant for all health care providers.

To the students, residents, nurses, pharmacists, administrators, physicians, and other health care professionals who will use this book: You are the future of health care. Your commitment to improvement is the most powerful force we can harness to transform our systems. May this book inspire you, challenge you, and empower you to make care better—for every patient, every time.

Finally, I extend my deepest thanks both to the authors of this edition and to the Institute for Healthcare Improvement. Your dedication to advancing the science and practice of health care improvement is evident on every page. Through your work, you have equipped a new generation of professionals with the tools, insights, and inspiration to lead meaningful change.

Jonathan B. Perlin, MD, PhD, MSHA, MACP, FACMI  
President and Chief Executive Officer  
Joint Commission and Joint Commission International

# Foreword from Institute for Healthcare Improvement

Earlier in my career as a clinician and health system administrator, my discovery of the quality improvement (QI) approach was fortuitous. I discovered a method that helped me, as a pediatrician, take better, safer care of my patients and also helped me, as an administrator, take a more systematic approach to improving the efficiency, effectiveness, and patient-centeredness of the children's hospital where I was working. For too long, I had relied only on my clinical skills and my instincts, assuming that I was providing effective care without the opportunity to learn from how I was caring for my patients. As a newly minted administrator, I had little idea how to think in terms of systems, use psychology of change to help me influence my peers, or use data to track system performance in real time. Importantly, I did not know how to use learning systems to give me and everyone who worked in the hospital an opportunity to understand the current state and the effect of our improvement efforts. Unconscionably, I had not considered that the care I provided may not have been equitably delivered for the patients I served.

Although there has been progress in quality of care, there is still much to improve. Medical errors abound, and diagnostic errors are still frequent. Racial and ethnic disparities in health care access and outcomes remain largely unchanged over the past two decades. Health systems have been struggling to remain financially viable, and the well-being of those who work in these systems is increasingly undermined by dysfunctional health care systems. While these unacceptable levels of harm, inefficiency, inequity, and distress continue, there are also proven ways to help make health systems perform better. QI methods can be deployed at both the level of the individual practitioner as well as by those entrusted to lead quality efforts in large systems of care.

While new evidence-based knowledge continues to grow exponentially, there are also emerging opportunities to ensure that we deliver that evidence-based care every day, for every patient. Growing systems complexity can be increasingly managed by leveraging available electronic health record data for tracking system performance and by responsibly harnessing artificial intelligence (AI) to improve efficiency and reliability of systems of care.

The latest edition of *Fundamentals of Health Care Improvement* provides updated, highly practical guidance and associated tools that can help practitioners interested in improving the performance of their care, as well as health quality leaders who are striving for more reliable, safer, and more patient-centered care across their health systems. The book explores common quality gaps across specialties and highlights the role of technology, data, and AI in improving system performance. A new chapter provides a focus on health equity, emphasizing how social drivers influence patient outcomes. The book introduces frameworks, such as the socio-ecological model, to help teams design equity-focused QI initiatives and reduce disparities.

For those seeking practical guidance on how to undertake improvement work, the book outlines a step-by-step approach, using the Model for Improvement, to set SMART goals, analyze processes, identify areas for change, and use data-driven decision-making. The book illuminates the crucial topic of change management, as well as strategies for sustaining and spreading improvements. It explains how measurement tools like run charts and statistical process control help teams track progress and refine interventions. Recognizing the complexity of health care systems, the book underscores the need to adapt evidence-based interventions to local contexts and

introduces the reader to important frameworks, borrowed from implementation science, for studying context. Finally, it highlights the importance of publishing QI work and promoting a culture of continuous learning and improvement. Through real-world examples and frameworks, this book empowers health care professionals to drive meaningful, lasting change in patient care.

The book's fifth edition could not come at a more critical time, providing a practical approach to discover, test, and scale up solutions to the expanding challenges faced by health providers and leaders who are striving, under increasingly difficult conditions, to provide safe, effective, efficient, and equitable care.

Pierre M. Barker, MD, MBChB  
Chief Scientific Officer  
Institute for Healthcare Improvement

# Introduction

*Fundamentals of Health Care Improvement: A Guide to Improving Your Patients' Care*, Fifth Edition, is designed for health professions learners (medicine, nursing, pharmacy, and so on) and other health care professionals who are beginning their efforts to learn about and do clinical quality improvement (QI).

This book is intended to help health professions learners diagnose, measure, analyze, change, and lead systems improvement in health care. By applying these tools as well as the knowledge and skills you have acquired throughout your courses of study and training, you will learn how to create and shape reliable, high-quality systems of care in partnership with your patients.

In this fifth edition, we add a new chapter that focuses on the “forgotten aim” of health equity. Disparities exist at many levels of the health care system, and improvers have an opportunity to identify gaps in care and use systematic methods to improve the quality, value, and safety of health care services for all. The integral role of health equity in QI is incorporated throughout the book. From the search for the strongest scientific evidence that is applicable across patient populations to stratifying data for the patients in your practice, the fifth edition, with the guidance of coauthors Allyson Hall, PhD, MBA, MHS, and Tara Burra, MA, MD, FRCPC, weaves health and health equity throughout all chapters.

The fifth edition also augments the concept of coproduction of the improvement of health care services in partnership with patients, families, and communities, illustrating the importance of engaging a patient on the improvement team with specific examples. Finally, this edition includes alignment of QI

approaches with implementation science models, particularly in making and monitoring changes in a system. The names of the clinicians and patients in the vignettes are fictional, as are the incidents. Any resemblance to actual persons, living or dead, or actual events is purely coincidental.

## Overview of Contents

This book provides 10 informative chapters with relevant, timely content and updated figures, tables, and information. An appendix offers a variety of engaging tools and resources, many of which are downloadable for use.

### Chapter 1: Identifying Gaps in Quality and Working in Teams to Close Those Gaps

Chapter 1 explains the concept of a quality gap and describes ways in which health care can be improved through analysis of the quality gap. We present various models to further emphasize the importance of identifying gaps in health care and continuously working to improve patient care. This chapter also describes the positive outcomes that arise from productive teamwork and provides a set of criteria for identifying effective teamwork. In addition to learning how to assess factors that affect the way teams function, you'll learn the necessity of creating an improvement team of multiple health care professionals in partnership with patients and families.

### Chapter 2: The Forgotten Aim

Chapter 2 introduces the intersection of QI and health equity. The chapter begins with an overview of the six

aims of improvement and then delves into the definitions and concepts that underpin health disparities and equity. Improvement activities play a key role in narrowing gaps in care, but without thoughtful intervention there is a risk of unintentionally exacerbating inequities in a system. Finally, the chapter identifies examples of improving health equity through QI work and outlines how you can do the same as you work through the subsequent chapters in this book.

### **Chapter 3: Finding Scientific Evidence for Clinical Improvement**

In Chapter 3, learn steps to take when collecting and evaluating evidence for the improvement of care. Gain a clear understanding of how to: find evidence on the basis of a properly formulated question, evaluate the quality of evidence and research, and identify the most appropriate resources to use in finding evidence, with an emphasis on evidence that is specific to subpopulations.

### **Chapter 4: Identifying a Focus for Improvement**

Chapter 4 offers valuable information on getting started with effective improvement work. After reading this chapter, you will be able to identify and narrow the focus for your improvement work. This culminates in organizing your improvement goals by writing a clear aim statement.

### **Chapter 5: Process Literacy, Context, Culture, and Systems in Health Care**

In Chapter 5, learn the importance of describing the process of care as well as steps for choosing the most appropriate method for communicating about the process. Also included are instructions for considering the context and the nested systems of care that influence clinical processes. After reading this chapter, you will know how to create an understandable, useful process model.

### **Chapter 6: Measurement Part 1: Data Analysis for Decision-Making in Health Care**

Chapter 6 emphasizes the necessity of using data to improve health care and explains that different types of data are used to support different objectives. This chapter also discusses using a balanced set of measures for improvement work and introduces the value equation so you can identify a balanced set of measures, including social drivers of health, for your improvement work.

### **Chapter 7: Measurement Part 2: Using Run Charts and Statistical Process Control Charts to Gain Insight into Systems**

Chapter 7 discusses the benefits of analyzing data over time so you can monitor the changes that occur in a system. Common-cause variation and special-cause variation are compared and contrasted in detail to provide an overview of what types of variation you might uncover in a system. The examples and figures show the progression of data over time and provide a quick reference for how to analyze and take action based on your analysis.

### **Chapter 8: Understanding and Making Changes in a System**

Chapter 8 brings together all the elements of improvement that have been presented in prior chapters. You will learn how to manage complex system change and how to identify barriers to change. In this chapter, we define complex adaptive systems and present several examples of Plan-Do-Study-Act (PDSA) cycles to illustrate testing changes on a small scale and assessing the results of those tests.

### **Chapter 9: Spreading Improvements**

Chapter 9 contains an in-depth case study of making and spreading change in a system. This chapter will help you to identify strategies for sustaining and spreading change. As you read the practical, three-

step approach for planning a successful spread effort, you will also learn how to overcome barriers to successful spread.

## Chapter 10: Publishing and Presenting Quality Improvement

Chapter 10 introduces the Standards for Quality Improvement Reporting Excellence (SQUIRE) publication guidelines. If you are interested in publishing or presenting your QI work, this chapter offers tips and strategies to help you achieve success in this endeavor. The chapter includes templates for QI posters as well as an in-depth discussion of how to distinguish between research and QI to work with your Institutional Review Board (IRB) or ethics committee.

## Appendix: Tools to Help Your Improvement Work

This appendix contains tools and links to tools that are important for any improvement project. They range from an improvement project worksheet (that aligns with the content in this book) to skills for improvement team meetings to a methodology for checking the reliability of source information when conducting literature reviews. Many of these tools and principles augment and supplement material presented in this book; others are presented as additional resources that may be helpful for your improvement work.

Select tools featured in this appendix are downloadable so that you can use them in your own improvement efforts.