

# PREFACE

**T**his book is intended to help healthcare professionals meet the challenges and take advantage of the opportunities found in healthcare today. We believe that the answers to many of the dilemmas faced by the healthcare system, such as increasing costs, decreasing profitability, inadequate access, and poor quality, lie within organizational operations—the nuts and bolts of healthcare delivery. The healthcare arena is filled with opportunities for significant operational improvements. We hope that this book will encourage healthcare management students and working professionals to find ways to improve the management and delivery of healthcare to increase the effectiveness and efficiency of tomorrow’s healthcare system.

Manufacturing organizations have successfully employed the programs, techniques, and tools of operations improvement for many years. Recently, leading healthcare organizations have begun to employ the same tools. Although many operations management texts are available, few focus on *healthcare* operations, and none take an *integrated* approach. Students interested in healthcare process improvement have difficulty seeing the applicability of the science of operations management when most texts focus on widgets and production lines, while the students’ focus is on patients and providers.

This book not only covers the basics of operations improvement, but also provides an overview of the significant environmental trends in the healthcare industry. We focus on the strategic implementation of process improvement programs, techniques, and tools in the healthcare environment with its complex web of reimbursement systems, physician relations, workforce challenges, and strong governmental regulations. This integrated approach will help healthcare professionals gain an understanding of strategic operations management and, more importantly, its applicability to the healthcare industry.

## ***How This Book Is Organized***

We have organized this book into five parts:

1. Introduction to healthcare operations;
2. Setting goals and executing strategy;

3. Performance improvement tools, techniques, and programs;
4. Applications to contemporary healthcare operations issues; and
5. Putting it all together for operational excellence.

Although this structure will be helpful for most readers, each chapter stands alone and can be covered or read in any order that makes sense for a particular course or student.

The first part of the book, Introduction to Healthcare Operations, provides an overview of the challenges and opportunities found in today's healthcare environment (Chapter 1). We follow that with a history of the field of management science and operations improvement (Chapter 2). Next, we discuss two of the most influential environmental changes facing healthcare today, evidence-based medicine and pay-for-performance (Chapter 3).

In Part II, Setting Goals and Executing Strategy, Chapter 4 highlights the importance of tying the strategic direction of the organization to operational initiatives. This chapter outlines the use of the balanced scorecard technique to execute and monitor these initiatives to achieve organizational objectives. Typically, strategic initiatives are large in scope, and the tools of project management (Chapter 5) are needed to successfully manage them. Indeed, the use of project management tools can help to ensure the success of any size project. Strategic focus and project management provide the organizational foundation for the remainder of this book.

The next part of the book, Performance Improvement Tools, Techniques, and Programs, provides an introduction to the basic decision-making and problem-solving processes and describes some of the associated tools (Chapter 6). Almost all process improvement initiatives (Six Sigma, Lean, etc.) follow this same process and make use of some or all of the tools in Chapter 6. Good decisions and effective solutions are based on facts, not intuition. Chapter 7 provides an overview of data collection and analysis to enable fact-based decision making.

Six Sigma, Lean, simulation, and supply chain management are more specific philosophies or techniques that can be used to improve processes and systems. The Six Sigma (Chapter 8) methodology is the latest manifestation of the use of quality improvement tools to reduce variation and errors in a process. The Lean (Chapter 9) methodology is focused on eliminating waste in a system or process. Many healthcare decisions and processes can be modeled and optimized or improved by using computer simulation (Chapter 10).

The fourth section of the book, Applications to Contemporary Healthcare Operations Issues, begins with an integrated approach to applying the various tools and techniques for process improvement in the healthcare environment (Chapter 11). We then focus on a special but important case of process improvement, patient scheduling in the ambulatory environ-

ment (Chapter 12). Supply chain management extends the boundaries of the system to include both upstream suppliers and downstream customers, and this is the focus of the final chapter in the section (Chapter 13).

The book's last section, Putting It All Together for Operational Excellence, concludes the book with a discussion, in Chapter 14, of strategies for implementing and maintaining the focus on continuous improvement in healthcare organizations.

We have included many features in this book that we believe will enhance student understanding and learning. Most chapters begin with a vignette, called Operations Management in Action, that offers real-world examples related to the content of the particular chapter. Throughout the book we use a fictitious but realistic organization, Vincent Valley Hospital and Health System, to illustrate the various tools, techniques, and programs discussed. Each chapter concludes with questions for discussion, and Parts II through IV include exercises to be solved.

We have included many examples throughout the text of the use of various contemporary software tools essential for effective operations management. Healthcare leaders and managers must be experts in the application of these tools and stay current with their latest versions. Just as we ask healthcare providers to stay up to date with the latest clinical advances, so too must healthcare managers stay current with these basic tools.

### ***Student Resources***

We have developed an extensive companion website with links to a vast amount of supplementary material. This website, [ache.org/books/OpsManagement](http://ache.org/books/OpsManagement), provides links to material we have developed, as well as other supplemental material. In particular, we have developed, and make available, various Excel templates, Arena models, tutorials, exercises, and PowerPoint presentations for each chapter. Additionally, links to many of the cited articles and books can be found on this website. Finally, the site provides links to a wide variety of information and material related to specific topics, including videos, webcasts, web demonstrations, exercises, and tutorials. Because new and valuable information is constantly being added to the web, we encourage readers to share any relevant sites they find so that we can include them on the companion website. A password is not necessary for access to the website.

Included with this book is the student version of Arena software. This simulation software provides a powerful tool to model and optimize healthcare processes such as patient flow and scheduling. The animation features of Arena provide the healthcare professional with an accessible and easily understood tool to engage colleagues in the intense and complex work of operations improvement.

***Instructor Resources***

For instructors who choose to use this book in their courses, accompanying resources are available online. For access information, e-mail [hapl@ache.org](mailto:hapl@ache.org). Contained in these resources are answers or discussion points for the end-of-chapter questions and exercises; teaching tips; and recommended teaching cases, with links to sources as needed.

We hope that this text is helpful to you and your organization on your journey along the path of continuous improvement. We are interested in your progress whether you are a student of healthcare administration, new member of the health administration team, seasoned department head, or physician leader. Please use the e-mail addresses on the companion website to inform us of your successes and let us know what we could do to make this a better text so that we, too, can continuously improve.

—Dan McLaughlin

—Julie Hays