

# Table of Contents

**Foreword** .....vii  
*Susan Dentzer*

**Introduction** .....xi  
*Eugene Litvak, Ph.D.*

## I. Tutorials

**Chapter 1. The Problem of Patient Flow** .....3  
*Marilyn E. Rudolph, R.N., B.S.N., M.B.A.*

**Chapter 2. Impact of Patient Flow Issues on Nursing Staff and Patients** .....15  
*Peter I. Buerhaus, Ph.D., R.N., F.A.A.N.; Anne Miller, Ph.D., R.N.*

**Chapter 3. Assessment of Patient Flow** .....29  
*Brad Prenney, M.S., M.P.A.*

**Chapter 4. Strategies for Managing Patient Flow** .....57  
*Sandeep Green Vaswani, M.B.A.; Michael C. Long, M.D.; Brad Prenney, M.S., M.P.A.; Eugene Litvak, Ph.D.*

**Chapter 5. Measurement and Evaluation of Patient Flow: The Right Data, Measures, and Analyses** .....75  
*Kathleen Kerwin Fuda, Ph.D.*

## II. Case Studies

**Chapter 6. Cincinnati Children’s Hospital Medical Center: Redesigning Perioperative Flow Using Operations Management Tools to Improve Access and Safety** .....97  
*Frederick C. Ryckman, M.D.; Elena Adler, M.D.; Amy M. Anneken, M.S.; Cindi A. Bedinghaus, R.N., M.S.N.; Peter J. Clayton, M.P.A.; Kathryn R. Hays, M.S.N., R.N.; Brenda Lee; Jacquelyn W. Morillo-Delerme, M.D.; Pamela J. Schoettker, M.S.; Paul A. Yelton; Uma R. Kotagal, M.B.B.S., M.Sc.*

**Chapter 7. Kaiser Permanente Southern California, Kaiser Foundation Hospital in Anaheim: Optimizing Patient Flow** .....113  
*Judy Kibler, R.N., M.Ed.; Marlean Free, Ph.D.; Maria Lee, Ph.D., M.B.A.; Kirk Rinella, M.B.A., R.C.P., M.B.A.; Judy White; Ed Ellison, M.D.; Julie Miller-Phipps; Lisa Schilling, R.N., M.P.H.*

**Chapter 8. Improving Hospitalwide Patient Flow at Northwest Community Hospital** ...129  
*Barbara Weintraub, R.N., M.S.N., M.P.H., A.P.N., C.E.N.; Kirk Jensen, M.D., M.B.A., F.A.C.E.P.; Karen Colby, R.N., M.S., C.N.A.A.-B.C.*

**Index** .....153

# Contents

|   |           |
|---|-----------|
| Acknowledgments . . . . .   | .v        |
| Foreword by Harvey V. Fineberg, MD, PhD . . . . .   | vii       |
| Introduction by Eugene Litvak, PhD . . . . .  | ix        |
| Prologue: Lewis Blackman: Lessons Learned from a Ninth Grader<br>by Ellis “Mac” Knight, MD, MBA, FACP, FACHE, FHM. . . . .  | .xiii     |
| <b>PART I: CEO Perspectives: Committing to Optimized Patient Flow. . . . .</b>  | <b>1</b>  |
| Chapter 1: How We Improved Care and Added Millions to the Bottom Line:<br>An Outsider’s Perspectives by James M. Anderson, JD, Hon. DSc. . . . .                                  | 3         |
| Chapter 2: Using Operations Management to Reduce Variability<br>in Surgical Demand by Jack Kitts, MD. . . . .   | 9         |
| Chapter 3: A Proactive Initiative to Improve OR Scheduling by William C. Rupp, MD . . .   | 17        |
| Chapter 4: Using Science and Design to Improve Patient Flow<br>by John B. Chessare, MD, MPH, FACHE. . . . .   | 21        |
| <b>PART II: The Mechanics of Flow. . . . .</b>  | <b>27</b> |
| Chapter 5: Reduction and Management of Variability in Health Care Delivery<br>by Julia L. Krol, RN, BSN, MBA and Michael C. Long, MD . . . . .                                    | 29        |
| Chapter 6: Using Variability Methodology to Improve Patient Flow:<br>Three Projects Offering Tangible Results by Julia L. Krol, RN, BSN, MBA<br>and Michael C. Long, MD . . . . . | 39        |
| Chapter 7: Variability Methodology: Tools & Techniques by Cheri Ward, MPH, DPT<br>and Kristy Zhou, BSc, BComm, MM in Operations Research . . . . .                                | 67        |

|  |            |
|--|------------|
| <b>PART III: How We Did It: The Case Studies</b> . . . . .   | <b>95</b>  |
| <b>Chapter 8: Right Focus, Right Solution: How Reducing Variability in Admission and Discharge Improves Hospital Capacity and Flow</b> by <i>Peter Viccellio, MD, FACEP; Katherine Ardalan Hochman, MD, FHM; Peter P. Semczuk, DDS, MPH; Carolyn Santora, MS, RN, NEA-BC, CSHA, CPHQ.</i> . . . . .              | <b>97</b>  |
| <b>Chapter 9: New Jersey’s Collaborative on Patient Throughput</b> by <i>Mary A. Ditri, DHA, MA, CHCC; Aline M. Holmes, DNP, MSN, RN; Patricia A. McNamee, RN, MS; Robert G. Lahita, MD, PhD, FACP, MACR, FRCP; and Elizabeth Ryan, JD.</i> . . . . .  | <b>113</b> |
| <b>Chapter 10: Rightsizing Inpatient Medical Units: Developing Telemetry ADT Criteria</b> by <i>Robert G. Lahita, MD, PhD, FACP, MACR, FRCP and Jennifer Crist-Muñoz, APN-C</i> . . . . .  | <b>127</b> |
| <b>Chapter 11: Standardizing Admission, Transfer, and Discharge Processes to Reduce Artificial and Clinical Variability</b> by <i>Daniel J. Beckett, FRCP, MBChB (Hons), MSc, BSc (Hons); David A. McDonald, ProfD, BSc (Hons), MCSP; Patrick Rafferty, BN; and Martin Hopkins, MA (Cantab.), MBA.</i> . . . . . | <b>137</b> |
| <b>PART IV: Whole System Flow: Beyond the Hospital Setting.</b> . . . . .  | <b>157</b> |
| <b>Chapter 12: Bottlenecks in Flow to Post-Acute Care</b> by <i>Alan Forster, MD, FRCPC, MSc; Renate Ilse, RN, DHA; Daniel Kobewka, MD, MSc; and Kednapa Thavorn, PhD.</i> . . . . .   | <b>159</b> |
| <b>Chapter 13: Pulling Out All the Stops: Delivering Whole System Flow</b> by <i>David Fillingham, MA (Cantab.), MBA, CBE; Bryan Jones, PhD; and Penny Pereira, MA (Cantab.)</i> . . . . .   | <b>173</b> |
| <b>Index.</b> . . . . .  | <b>191</b> |