Operating Room Leadership and Perioperative Practice Management

Edited by Alan D. Kaye, Richard D. Urman and Charles J. Fox, III
I dedicate this book to my wife, Dr. Kim Kaye, my son, Aaron Joshua Kaye, my daughter, Rachel Jane Kaye, and my many colleagues at LSU School of Medicine and Tulane School of Medicine in New Orleans. I am honored to be a part of your lives.

A. D. K.

I dedicate this book to my wife, Dr. Zina Mathyuk-Urman, my parents, and our daughters, Abigail Rose and Isabelle Grace; to my colleagues among physicians, nurses, and administrators at Harvard who supported my efforts in writing this book; and to my patients who I hope will be the ultimate beneficiaries of this work.

R. D. U.

I dedicate this book to my wife, Mary Beth, for her selfless devotion to our family, and to our kids, Chris, Mary Elise, Patrick, Julia, Claire, and Margaret, who enrich our lives more than we ever imagined.

C. J. F.
Contents

List of Contributors
Foreword 1
Foreword 2
Preface to the Second Edition

Section 1 Leadership and Strategy

1 Leadership Principles
  Christoph Egger and Alex Macario

2 The Path to Successful Operating Room Environment
  Ross Musumeci, Alan David Kaye, Omar A. Gafur, Charles J. Fox, and Richard D. Urman

3 Strategic Planning
  Michael R. Williams

4 Decision Making: The Art and the Science
  Michael R. Williams

5 Implications of Emotional Intelligence and Collaboration for Operating Room Leadership and Management
  Markus M. Luedi, Jonas Schnider, and Frank Stueber

6 Operating Room Culture Change
  Shilpadevi Patil, Debbie Chandler, Elyse M. Cornett, and Charles J. Fox

Section 2 Economic Considerations, Efficiency, and Design

7 Flow Disruptions in Surgery
  David S. Silver and Douglas P. Slakey

8 Influence of Operating Room Staffing and Scheduling on Operating Room Productivity
  Franklin Dexter and Richard H. Epstein

9 Operations Management and Financial Performance
  Seth Christian

10 Reengineering Operating Room Function
  Nigel N. Robertson

11 Operating Room Design and Construction: Technical Considerations
  Judith S. Dahle and Pat Patterson

6
Section 3 Surgical and Anesthesia Practice Management

18 Preoperative Evaluation and Management
Alicia G. Kalamas

19 Identifying Bottleneck Constraints to Improve the Preoperative Evaluation Process
Mitchell H. Tsai, Elie Sarraf, Kyle R. Kirkham, and Terrence L. Trentman

20 Anesthesia Practice Management
Sonya Pease

21 Defining the Anesthesia Value Proposition
Jody Locke

22 Anesthesia Billing, Coding, and Compliance
Devona Slater

23 Postanesthetic Care Unit Management: Building a Safe and Efficient Service
Henry Liu, Longqiu Yang, Michael Green, and Alan David Kaye

24 Pain Practice Management
Steven Waldman

25 Office-Based Surgery Practice
Jonathan P. Eskander, Cory Roberts, and Charles J. Fox

26 The Future of Perioperative Medicine
Section 4 Nursing

27 Operating Room Metrics
Todd Brown

28 Operating Room Staffing Guidelines
Todd Brown

29 Resource Management
Todd Brown

Section 5 Safety, Standards, and Information Technology

30 The Joint Commission, CMS, and Other Standards
Shermeen B. Vakharia and Zeev Kain

31 Procedural Sedation: Clinical and Safety Considerations
Ann Bui and Richard D. Urman

32 Medical Informatics in the Perioperative Period
Ori Gottlieb and Keith J. Ruskin

33 Simulation as a Tool to Improve Patient Safety
Valeriy Kozmenko, Lyubov Kozmenko, Melvin Wyche III, and Alan David Kaye

34 Education in Operating Room Management
Sanjana Vig, Steven D. Boggs, Richard D. Urman, and Mitchell H. Tsai

35 Organizations Dedicated to and Current Overview of Enhanced Recovery After Surgery
Bret D. Alvis, Adam B. King, Matthew D. McEvoy, and Jesse M. Ehrenfeld

36 Checklist Utility in the Perioperative Care Environment
Blas Catalani and Ezekiel B. Tayler

37 Anesthesiology Disaster Management and Emergency Preparedness
Ezekiel B. Tayler, Blas Catalani, Jill Cooley, and Chris Sharp

38 Novel Technology for Patient Engagement
Matthew B. Novitch, Peter A. Gold, Aiden Feng, and Mark R. Jones

Index
Contributors

Bret D. Alvis, MD
Nashville Veterans Affairs Medical Center, Nashville, TN, USA

Steven D. Boggs, MD, MBA
The University of Tennessee College of Medicine, Memphis, TN, USA

Todd Brown, RN, MBA
Director Alvarez & Marsal/Adjunct Professor at IUPUI, Indianapolis, IN

Ann Bui, MD
Oakland Medical Center, Department of Anesthesiology, 2nd Floor, 3600 Broadway Oakland, CA, USA

Blas Catalani, MD, MPH
University of Tennessee Health Science Center, Memphis, TN, USA

Debbie Chandler, MD
LSU Health Shreveport, Shreveport, LA, USA

Seth Christian, MD, MBA
Perioperative Management Fellow, Department of Anesthesiology, Tulane University School of Medicine, New Orleans, LA, USA

Jill Cooley, MD
University of Tennessee Health Sciences Center, Department of Anesthesiology, Memphis, TN, USA

Elyse M. Cornett, PhD
LSU Health Shreveport, Shreveport, LA, USA

Judith S. Dahle, MS, MSG, RN
Senior Clinical Director – Perioperative Services, OR Efficiencies Perioperative Consulting Team, OR Efficiencies LLC, Naples, FL

Franklin Dexter, MD, PhD
University of Iowa, Iowa City, IA, USA

Dietrich Doll, MD, PhD
St. Marienhospital Vechta, Vechta, Germany

Christoph Egger, MD, MBA, FACHE
Klinik Beau-Site, Bern, Switzerland

Jesse M. Ehrenfeld, MD, MPH
Vanderbilt University Medical Center, Nashville, TN, USA

Richard H. Epstein, MD, CPHIMS
University of Miami, Coral Gables, FL, USA

Jonathan P. Eskander, MD, MBA
Department of Anesthesiology, LSU Health Shreveport, Shreveport, LA, USA

Charles J. Fox, MD
Louisiana State University Health Sciences Center, Shreveport, LA, USA

William R. Furman, MD, MMHC
Surveyor, The Joint Commission, Oakbrook Terrace, IL, USA

Aiden Feng, MD, MBA
Brigham and Women’s Hospital, Boston, MA, USA

Omar A. Gafur, MD
Instructor of Anesthesiology, Boston University School of Medicine

Brenda A. Gentz, MD
University of Arizona, Tucson, AZ, USA

Peter A. Gold, MD
Northwell Health Orthopedic Institute, Great Neck, NY, USA

Ori Gottlieb, MD, FASA
Associate Professor of Anesthesia & Critical Care, Department of Anesthesia & Critical Care, University of Chicago, Chicago, IL

Michael Green, DO
Drexel University College of Medicine, Philadelphia, PA, USA

Michael R. Hicks, MD, MBA, MHCM, FACHE
University of North Texas Health Science Center, Fort Worth, TX, USA

Mark R. Jones, MD
Beth Israel Deaconess Medical Center, Boston, MA, USA

Zeev Kain, MD, MBA
University of California School of Medicine, Irvine, CA, USA

Alicia G. Kalamas, MD
Medical Director, Preoperative Clinic and Associate Clinical Professor, Department of Anesthesia and Perioperative Care, University of California, San Francisco, CA, USA

Alan David Kaye, MD, PhD
Louisiana State University Health Science Center, New Orleans, LA, USA

Adam B. King, MD
Nashville Veterans Affairs Medical Center, Nashville, TN, USA

Kyle R. Kirkham, MD, FRCPC
University of Toronto, ON, Canada

Lyubov Kozmenko, BSN
LSU School of Nursing Faculty, Acting Director of the Simulation Center, LSU School of Medicine, New Orleans, LA, USA

Valeriy Kozmenko, MD
Department of Anesthesiology, LSU School of Medicine, New Orleans, LA, USA
Henry Liu, MD  
*Drexel University College of Medicine, Philadelphia, PA, USA*

Jody Locke, MA  
*Anesthesia Business Consultants, Jackson, MI, USA*

Markus M. Luedi, MD, MBA  
*Bern University Hospital Inselspital, Bern, Switzerland*

Alex Macario, MD, MBA  
*Stanford University School of Medicine, Stanford, CA, USA*

Matthew D. McEvoy, MD  
*Nashville Veterans Affairs Medical Center, Nashville, TN, USA*

Ross Musumeci, MD, MBA  
*Anaesthesia Associates of MA, Assistant Professor of Anesthesia, Boston University School of Medicine, Boston, MA, USA*

Matthew B. Novitch, BS  
*Medical College of Wisconsin, Wausau, WI, USA*

Juhan Paiste, MD, MBA  
*University of Alabama at Birmingham School of Medicine, Birmingham, AL, USA*

Shilpadevi Patil, MD  
*LSU Health Shreveport, Shreveport, LA, USA*

Pat Patterson, BA  
*Editor, OR Manager Newsletter, Rockville, MD, USA*

Sonya Pease, MD, MBA  
*Chief Medical Officer, TeamHealth Anesthesia, Knoxville, TN, USA*

Cory Roberts, BS  
*Medical Student, Tulane School of Medicine, New Orleans, LA*

Nigel N. Robertson, MB, ChB, FANZCA  
*Staff Specialist Anesthesiologist, Auckland City Hospital, Auckland, New Zealand*

Keith J. Ruskin, MD  
*Professor of Anesthesiology and Neurosurgery, Yale University School of Medicine, New Haven, CT, USA*

Laurie Saletnik, RN, DNP  
*Johns Hopkins Hospital, Baltimore, MD, USA*

Elie Sarraf, MD  
*University of Vermont College of Medicine, Burlington, VT, USA*

John Schlitt, MD  
*Capitol Anesthesiology Association, Austin, TX, USA*

Jonas Schnider, MD, MBA  
*Bern University Hospital Inselspital, Bern, Switzerland*
Chris Sharp, MD
University of Tennessee Health Sciences Center, Department of Anesthesiology, Tennessee TN

Thomas J. Sieber, MD, MBA
Kantonsspital Graubuenden, Chur, Switzerland

David S. Silver, BS
Medical Student, Tulane School of Medicine, New Orleans, LA

Douglas P. Slakey, MD, MPH
Regents Professor and Chairman of Surgery, Department of Surgery, Section of General Surgery, Tulane Medical Center Surgery & GI Clinic, New Orleans, LA

Devona Slater, CHC, CMCP, CHA
ACE President & Sr. Compliance Auditor, Anesthesia & Pain Management Compliance Auditors, KS, USA

Brian C. Spence, MD, MHCDS
Dartmouth Geisel School of Medicine, Lebanon, NH, USA

Frank Stueber, MD
Bern University Hospital Inselspital, Bern, Switzerland

Ezekiel B. Tayler, DO
Main Line HealthCare ICU Intensive Medicine, Philadelphia, PA, USA

Terrence L. Trentman, MD
Mayo Clinic, Phoenix, AZ, USA

John M. Trummel, MD
Dartmouth Geisel School of Medicine, Lebanon, NH, USA

Mitchell H. Tsai, MD, MMM
University of Vermont College of Medicine, Burlington, VT, USA

Richard D. Urman, MD, MBA
Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, USA

Shermeen B. Vakharia, MD, MBA
University of California School of Medicine, Irvine, CA, USA

Thomas R. Vetter, MD, MPH
Dell Medical School at the University of Texas at Austin, Austin, TX, USA

Sanjana Vig, MD, MBA
University of California, San Diego, CA, USA

Steven Waldman, MD, JD
Clinical Professor of Anesthesiology, University of Missouri at Kansas City School of Medicine, Kansas City, MO, USA

John J. Wellik, CPA, MBA
Senior Vice President, Chief Administrative Officer, United Surgical Partners International, Inc., Addison, TX, USA
Michael R. Williams, DO, MD, MBA
Chief Executive Officer, Hill Country Memorial, Fredericksburg, TX, USA; Executive Vice President, AnesthesiaCare, an EmCare Affiliate, Dallas, TX, USA

Melvin Wyche III, MD
Director of Simulation and Assistant Professor, Department of Anesthesia, LSU School of Medicine, New Orleans, LA, USA

Longqiu Yang, MD
Huangshi Central Hospital, Huangshi Shi, Hubei Province, China
Evolution describes our past. Revolution defines our future. Surgical services are in a period of revolutionary change, and financial and operational efficiency will remain important. However, it is no longer sufficient to simply refine our current processes. We must reengineer our models, designing toward our future of bundled care, shared risk, and value-based payments to determine our success.

We must also look outside of our traditional temporal and geographic boundaries. The days when a surgical encounter is viewed as an event in isolation must be put behind us. To maximize the value provided to our patients, we will include preconditioning efforts prior to surgery, and examine the longer-term outcomes and effects of our actions during the perioperative and recovery periods. Through integrating multidisciplinary teams into the entire care process, we will draw on the unique talents and knowledge of each group, maximizing safety, efficacy, and patient satisfaction.

Expanding our geography will ensure that our patients receive care in the most convenient and cost-effective location. Ambulatory, office-based, and nontraditional procedural locations such as radiology and gastroenterology suites are experiencing increasing demands for service. Applying the knowledge held by experts in OR suite management will be critical for the success of these areas.

This textbook highlights processes, techniques, and expert knowledge to prepare today’s and tomorrow’s leaders for these challenges. Only through exemplary leadership will we be able to realize the success which is critical for our sustained vision of providing excellence to the patients we serve.

Paul St. Jacques, MD  
President, Association of Anesthesia Clinical Directors (AACD)  
Quality and Patient Safety Director,  
Department of Anesthesiology,  
Vanderbilt University Medical Center,  
The Vanderbilt Clinic,  
Nashville, TN
Foreword 2

Healthcare delivery, surgery, anesthesia, and operating rooms (ORs) have all undergone astonishing changes in the past decades. Coupled with scientific advancement, all areas of medicine now recognize the importance of providing cost-effective care. For this reason, it is somewhat surprising that a standardized curriculum has not been developed for anesthesia residents and anesthesiologists who are interested in leading and managing operating suites. Individuals wanting to assume leadership in these areas must have specialized knowledge over unique areas of finance, operations, management, legal issues, and electronic records. This second edition of *Operating Room Leadership and Perioperative Practice Management* by Drs. Kaye, Fox, and Urman goes a long way in bridging this gap. The standardization of an essential corpus of knowledge that should be mastered for OR leadership will be another step in this process. The International Consortium on OR Management, Education and Training (iCORMET) fully supports such steps and commends the authors of this volume.

Steven D. Boggs, MD, MBA
President, iCORMET,

Steven Dale Boggs, MD, FASA, MBAPresident and ChairDepartment of AnesthesiologyThe University of Tennessee College of MedicineMemphis, TN
Preface to the Second Edition

With the operating room (OR) and practice management science constantly evolving, we undertook a laborious task of writing a second edition to this already popular textbook. We changed the title of the book to reflect the inclusion of topics related to perioperative practice management, adding topics that are important for anesthesiologists, surgeons, nurses, and administrators. Thus this new edition is now entitled Operating Room Leadership and Perioperative Practice Management. We hope that you find the additional topics useful in your daily clinical practice or administrative activities, especially given the constantly evolving regulatory and payer environments and published research. We have significantly updated and expanded each section of the book, with an emphasis on areas such as leadership training, teamwork, and OR culture change; perioperative surgical home; non-OR locations; efficiency, scheduling, and budgeting; anesthesia practice management and post-anesthesia care unit. Three chapters speak exclusively about nursing, education, and checklists.

We believe that our book currently represents the only up-to-date, evidence-based text that encompasses the “A to Z” of OR management: metrics, scheduling, human resource management, leadership principles, economics, quality assurance, recovery, information technology, ambulatory practice, and topics specific to surgeons, anesthesiologists, and pain service providers.

Years ago, the OR stood alone, and little attention was given to the perioperative period. This is because until the 1980s the OR generated large profits, despite its inefficiencies. Thus, hospital administrators allowed it a great deal of autonomy. However, today’s administrators realize that, although the OR is typically one of the biggest sources of revenue for a hospital, it is also one of the largest areas of expense. This, coupled with increasing requirements for cost containment in healthcare and a demand for accountability to the federal and state governments, insurance companies, hospital administrators, surgeons, and patients, has magnified the need for an effective and efficient perioperative process. While there was little centralized leadership in the perioperative period of the past, perioperative management is now a critical feature of successful hospitals.

As mentioned above, today’s perioperative practice of medicine has evolved significantly and is now influenced by a vast array of factors, both medical and administrative. Because of this, knowledge of hospital economics and administration, OR mechanics and metrics, preoperative patient optimization strategies, human resources, financial planning, governmental policy and procedures, and clinical perioperative management is necessary in order to succeed. A good management team must bring together these diverse components to maximize productivity. Today there are more regulations, quality measures, and outcome expectations, which push innovation and result in additional burdens and challenges for hospitals. The need for this expensive technology, to compete with other hospitals, forces reform and new thoughts for traditional ways of the past. Staffing ratios, preoperative visits, and postoperative care will be highly scrutinized financially, while clinical and administrative “multitasking” is now expected. Putting an emphasis on quality data definition and collection, leadership style, simulation, and OR design will lead to the creation of a more productive and efficient perioperative process.

We should not lose sight of the fact that the OR is where miracles happen every single day through teamwork, natural talent, hard work, and empathy. From all of this, we create game-changing and life-
altering experiences for patients. Without effective and efficient leadership from all areas – nursing, administration, surgery, and anesthesia services – we are doomed to fail. Let us also remember that all of us will be patients one day, and so let us strive to make a first-class OR in the best interests of everyone.

As we have observed from our real-life experiences collectively accumulated over the past three decades, the science of perioperative patient care is constantly evolving. This speaks to the enormous complexities in all aspects of management and development of a winning OR. We applaud all the authors for their hard work and dedication. Their chapters give a practical insight into creating a successful perioperative program.

We all face challenges in the OR environment. We hope the ideas and practical solutions discussed in this expanded second edition will benefit any stakeholder in administration, surgery, anesthesia, or nursing services, as we all do our best to move forward into the future. Alan D. Kaye, MD, PhD New Orleans, LA Richard D. Urman, MD, MBA Boston, MA Charles J. Fox III, MD Shreveport, LA
Section 1

Leadership and Strategy
1

Leadership Principles

Christoph Egger and Alex Macario

Contents

Evolution of Leadership
Significance of Leadership for Healthcare Organizations
Challenges of OR Leadership
Game Theory in the OR context
Conclusion
References