

Ansgar M. Brambrink
Jeffrey R. Kirsch
Editors

Essentials of Neurosurgical Anesthesia & Critical Care

Strategies for Prevention, Early Detection,
and Successful Management
of Perioperative Complications

Second Edition

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Editors

Ansgar M. Brambrink
Department of Anesthesiology
Columbia University Medical Center
New York, NY
USA

Jeffrey R. Kirsch
Department of Anesthesiology
Oregon Health & Science University
Portland, OR
USA

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To our life mentors:

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Dr. Louis G. D'Alecy, Dr. Richard J. Traystman, and my loving and tolerant wife, Robin (JRK)

– Thank you

Foreword

The great success of the first edition of this book, *Essentials of Neurosurgical Anesthesia & Critical Care*, encouraged the editors, the authors, and the publisher to publish this second edition. It appeals to a wide variety of readers, including anesthesiologists, intensivists, neurosurgeons, neurologists, physician assistants, perioperative/advanced practice nurses, trainees, or even colleagues, interested in the “neuro” field. The essentials of neuroanesthesia and critical care are presented in a concise manner, guiding the reader from anatomical/pathophysiological backgrounds to scientific-based anesthetic treatment. It considers many special aspects of individual care, covering a wide variety of problems which may occur in patients with or without comorbidities over the whole perioperative period.

To my knowledge, there no other book on the market which in 100 chapters covers almost all aspects pertinent to modern neuroanesthesia and neuro-critical care. The editors are to be commended on gathering worldwide renowned experts as authors to present the state of the art for understanding neurosurgical/neurological diseases and their respective anesthetic/intensive care treatments of standard “and complex” neuro patients. For this second edition, each chapter has been rigorously updated with nine more chapters added. In addition, the problem-oriented approach helps the daily practitioner to understand not only the development of a patient’s condition during the course of treatment, but also the acutely changing situation of the patients, which may need a precise intervention, to ensure optimized treatment and recovery. All of this can be achieved only by a multidisciplinary approach which is reflected by the authors from different disciplines.

The new edition of *Essentials of Neurosurgical Anesthesia and Critical Care* closes the gap between classical textbooks and other available sources on neuroanesthesia/neuro-critical care and the need for a scientific-based reference guide with a focus on a day-to-day clinical practice.

Munich, Germany

Eberhard Kochs

Preface

Today, treatment decisions are expected to be evidence-based, and the pursuit of excellence in clinical practice is an essential element for achieving success in the current healthcare environment.

Perioperative care of patients with central nervous system diseases is evolving rapidly as increasing numbers of operative interventional techniques and strategies are developed. Physicians, nurses, nurse practitioners, and physician assistants treat patients throughout the immediate perioperative period, including during diagnostic procedures and interventional radiology procedures, and frequently participate in critical care treatment for this patient population.

We believe that the broad spectrum of neuroanesthesiology and neurocritical care providers should have a clear understanding of (1) the disease process including pathophysiology, specific diagnostics, and treatment options, (2) the concepts and relevant details of the available neurosurgical interventions and techniques, and (3) the means necessary to provide safe and comfortable anesthesia and perioperative care for these patients.

This book, *Essentials of Neurosurgical Anesthesia & Critical Care*, is intended to serve as a quick reference guide for those involved in the perioperative care of neurosurgical patients. It is not meant to substitute for a full-length textbook in this field.

As a guide, this book focuses on day-to-day clinical practice and supports the first-line healthcare provider by anticipating problems and complications in neurosurgical anesthesia and critical care, and by suggesting solutions and appropriate management. All chapters are dedicated to a single area of concern and are designed to walk the reader from the problem to the solution, using a structured, algorithmic approach. In addition, each chapter summarizes key knowledge for the practitioner in the field as necessary, and tables and illustrations are included for quick and easy reference. At the end of each chapter, the most important elements are highlighted, and references for further reading are provided.

Our book is conceived and edited out of the strong belief that perioperative medicine is a true multi-specialty discipline and that patient care is best delivered with a genuine collaborative approach. Therefore, we hope that it will be useful for all healthcare providers involved in the perioperative treatment of neurosurgical patients, including trainees in anesthesiology and neurosurgical critical care as well as faculty members in both fields, physician assistants, nurse practitioners, nurse anesthetists, and perioperative nurses.

We believe the reference guide format is best because it allows the clinician to have immediate access to solutions to problems in the operating room, post-anesthesia care unit, intensive care unit, or wherever they may occur. Even if the practitioner has the best text on the office shelf, it is not helpful when acute problems occur at the bedside. This book, however, will be portable to every place of practice and will make it easy for the practitioner to identify or quickly review several good solutions for a given problem at any time.

We have been fortunate that so many international leaders in the field agreed to contribute to our project, and we are convinced that clinicians in both private practice and academic medicine will benefit from the concise information provided by authorities from multiple institutions worldwide.

We hope that this book may help to improve further the safety and comfort of our patients who must undergo risky procedures to receive relief from diseases affecting the central nervous system.

New York, NY, USA
Portland, OR, USA

Ansgar M. Brambrink
Jeffrey R. Kirsch

Acknowledgments

The editors wish to express their great respect and gratitude for the contribution of W. “Scott” Jellish, MD, PhD to the field of anesthesiology and perioperative medicine in general, and to this book in particular. Scott was a gifted physician who served in multiple leadership positions at the Loyola University Medical Center/Stritch School of Medicine. He retired from Loyola as one of the longest serving Chairs in Anesthesiology in the United States. With his direction, anesthesia services across the disciplines flourished at Loyola. Scott was a highly regarded neuro-anesthesiologist, and a national leader with numerous prominent roles including President of the Illinois Society of Anesthesiologists and Full Examiner for board certification with the American Board of Anesthesiology. He also was an innovative researcher, a warm and generous educator, a talented editor, and a prolific writer. Above all, as a clinician, Scott had remarkable expertise in intraoperative management and critical care, and he supported patients with the most complex conditions through surgical procedures with grace and kindness.

The editors are tremendously grateful to Jennifer Young for her amazing dedication in developing and finalizing the second edition of this book. Her commitment to keeping us on track, tirelessly communicating between authors, editors, and the publisher, and skillfully managing the complex process of revising existing chapters and supporting new authors were of paramount importance in making this new publication possible.

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Contributors

Kenneth Abbey, MD, JD Operative Care Division, Portland Veterans Affairs Medical Center and Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Anthony R. Absalom, MBChB, FRCA, MD Department of Anesthesiology, University Medical Center Groningen, Groningen, The Netherlands

Gregory W. Albert, MD, MPH Division of Neurosurgery, Arkansas Children's Hospital and Department of Neurosurgery, University of Arkansas for Medical Sciences, Little Rock, AR, USA

Inger Aliason, MD Department of Anesthesiology, Pediatric Anesthesiology Associates Medical Group, Valley Children's Hospital, Fresno, CA, USA

Chloe Allen-Maycock, MD Department of Anesthesiology, Legacy Salmon Creek Medical Center, PeaceHealth Southwest Medical Center, Vancouver, WA, USA

John H. Arnold, MD Division of Critical Care Medicine, Children's Hospital Boston, Harvard Medical School, Boston, MA, USA

Umeshkumar Athiraman, MD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Joshua H. Atkins, MD, PhD Department of Anesthesiology and Critical Care, Perelman School of Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA, USA

Department of Otorhinolaryngology, Head & Neck Surgery, Department of Anesthesiology and Critical Care, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA, USA

Michael Aziz, MD Department of Anesthesiology & Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Catherine B. Barden, MD Department of Anesthesiology and Pain Management, UT Southwestern Medical Center, Dallas, TX, USA

Paul B. Bascom, MD Curry General Hospital, Gold Beach, OR, USA

Sarice L. Bassin, MD PeaceHealth Southwest Medical Center, Vancouver, WA, USA

Verna L. Baughman, MD Departments of Anesthesiology and Neurosurgery, University of Illinois Medical Center, Chicago, IL, USA

Audrée A. Bendo, MD, MS Department of Anesthesiology, SUNY Downstate Medical Center, Brooklyn, NY, USA

Miles Berger, MD, PhD Department of Anesthesiology, Duke University Medical Center, Durham, NC, USA

Michael Bernhard, MD Emergency Department, University Hospital of Duesseldorf, Duesseldorf, Germany

Thomas P. Bleck, MD, MCCM, FNCS Division of Stroke and Neurocritical Care, Northwestern University Feinberg School of Medicine, Chicago, IL, USA

Marc J. Bloom, MD, PhD Department of Anesthesiology, Perioperative Medicine and Pain Management, UHealth Tower/Sylvester Comprehensive Cancer Center, Miami, FL, USA

Bernd W. Böttiger, MD, DEAA, FESC, FERC Department of Anesthesiology and Intensive Care Medicine, University of Cologne School of Medicine, Cologne, Germany

Carrie Bowman-Dalley, MS, PhD Georgetown University, School of Nursing and Health Studies, Washington, DC, USA

Ansgar M. Brambrink, MD, PhD Department of Anesthesiology, College of Physicians and Surgeons, Columbia University Medical Center/New York Presbyterian Hospital, New York, NY, USA

Melissa Brockerville, MD, FRCPC Department of Anesthesia, Toronto Western Hospital, University Health Network, University of Toronto, Toronto, ON, Canada

Evgeni Brotfain, MD Department of Anesthesiology and Critical Care, Soroka University Medical Center, Ben-Gurion University of the Negev, Beer-Sheva, Israel

Benjamin B. Bruins, MD Department of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, PA, USA

Guillermo Buggedo, MD Department of Intensive Care Medicine, Pontificia Universidad Catolica de Chile, Santiago, Chile

Christoph S. Burkhardt, MD Department of Anaesthesia, Kantonsspital Graubunden, Chur, Switzerland

Matthew T. V. Chan, MBBS, PhD, FANZCA, FHKCA, FHKAM The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, NT, Hong Kong

Daniel J. Cole, MD Department of Anesthesiology, University of California at Los Angeles, Los Angeles, CA, USA

Olaf L. Cremer, MD, PhD Department of Intensive Care Medicine, University Medical Center Utrecht, Utrecht, The Netherlands

Edward Crosby, MD, FRCPC Department of Anesthesiology, University of Ottawa and Ottawa Hospital, General Campus, Ottawa, ON, Canada

Martin H. Dauber, MD Private Practice, Lincolnwood, IL, USA

Andrew Davidson, MBBS, MD, FANZCA, FAAHMS Department of Anaesthesia and Pain Management, The Royal Children's Hospital Melbourne, Melbourne, VIC, Australia

Irene Dehghan-Paz, MD Department of Internal Medicine, Section of Hematology, Rush University Medical Center, Chicago, IL, USA

Alejandro E. Delfino, MD, MMedEd Department of Anesthesia, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

Jayant Deshpande, MD, MPH Departments of Pediatrics and Anesthesiology, Arkansas Children's Hospital, University of Arkansas for Medical Sciences, Little Rock, AR, USA

Nina Deutsch, MD Department of Anesthesiology, Pain, and Perioperative Medicine, Children's National Medical Center, Washington, DC, USA

Judith Dinsmore, MBBS, FRCA Department of Anaesthesia and Intensive Care Medicine, St. George's University Hospital Trust, London, UK

Justin P. Dodge, MD Department of Radiology, Madigan Army Medical Center, Tacoma, WA, USA

Shuji Dohi, MD, PhD Department of Anesthesiology and Pain Medicine, Gifu University Graduate School of Medicine, Gifu, Japan

Karen B. Domino, MD, MPH Department of Anesthesiology and Pain Medicine, University of Washington, Seattle, WA, USA

F. Cole Dooley, MD Department of Anesthesiology, UF Health-Shands Hospital, Gainesville, FL, USA

Elizabeth Dryland, DO Department of Anesthesiology, SUNY Downstate Medical Center, Brooklyn, NY, USA

Miko Enomoto, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Kirstin M. Erickson, MD Department of Anesthesiology, Mayo Clinic College of Medicine, Rochester, MN, USA

Tacson Fernandez, FRCA, FCARCSI, FFPMCAI, FIPP Department of Anaesthetics and Pain Medicine, Royal National Orthopedic Hospital, London, UK

R. Ryan Field, MD Departments of Anesthesiology and Perioperative Care, Neurosurgery, and Neurocritical Care, UC Irvine Health, Orange, CA, USA

Giuliana Geng-Ramos, MD Departments of Anesthesiology and Critical Care Medicine, George Washington School of Medicine and Health Sciences and Johns Hopkins University School of Medicine, Baltimore, MD, USA

E. Paige Gerbic, MD Columbia Anesthesia Group, Vancouver, WA, USA

Shankar P. Gopinath, MD Department of Neurosurgery, Baylor College of Medicine, Houston, TX, USA

Heike Gries, MD, PhD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Amy E. Guthrie, MSN, CNS, CPHQ, ACHPN Department of Patient Relations, Oregon Health & Science University, Portland, OR, USA

Casey H. Halpern, MD Department of Neurosurgery, Stanford University, Palo Alto, CA, USA

Ola Harrskog, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Viraat Harsh, MBBS Department of Neurosurgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India

Hironobu Hayashi, MD Department of Anesthesiology, Nara Medical University, Kashihara, Nara, Japan

Katherine O. Heller, MD Department of Anesthesiology and Pain Medicine, University of Washington and Veterans Affairs Puget Sound Health Care System, Seattle, WA, USA

Kory S. Herrick, MD Department of Neurology and Critical Care, Swedish Medical Center, Everett, WA, USA

Mali Hetmaniuk, MD Department of Anesthesiology and Pain Medicine, Seattle Children's Hospital, University of Washington School of Medicine, Seattle, WA, USA

James G. Hilliard, MS, CRNA Department of Anesthesiology and Perioperative Medicine, Oregon Health & Sciences University, Portland, OR, USA

Nicholas Hirsch, FRCA, FRCP, FFICM Department of Neuroanesthesia, National Hospital for Neurology and Neurosurgery, London, UK

Susan Ironstone, MD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Michael L. James, MD Departments of Anesthesiology and Neurology, Duke University Medical Center, Durham, NC, USA

Leslie C. Jameson, MD Department of Anesthesiology, University of Colorado Hospital, Aurora, CO, USA

Daniel J. Janik, MD Department of Anesthesiology, University of Colorado Hospital, Aurora, CO, USA

Jan-Peter A. H. Jantzen, MD, PhD, DEAA Department of Anaesthesiology, Intensive Care Medicine and Pain Management, Academic Teaching Hospital Hannover Nordstadt, Hannover, Germany

W. Scott Jellish, MD, PhD Department of Anesthesiology, Loyola University Medical Center, Maywood, IL, USA

Zeev N. Kain, MD Department of Anesthesiology and Perioperative Care, University of California, Irvine Medical Center, Orange, CA, USA

Patricia K. Y. Kan, MBBS, FANZCA, FHKCA, FHKAM The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, NT, Hong Kong

Balvinder Kaur, MBBS, FANZCA Department of Anaesthesia and Pain Management, The Royal Children's Hospital Melbourne, Melbourne, VIC, Australia

Masahiko Kawaguchi, MD Department of Anesthesiology, Nara Medical University, Kashihara, Nara, Japan

Todd J. Kilbaugh, MD Department of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, PA, USA

Matthew A. Kirkman, MBBS, MRCS, MEd Victor Horsley Department of Neurosurgery, The National Hospital for Neurology and Neurosurgery, University College London Hospitals, London, UK

Jeffrey R. Kirsch, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Jürgen Knapp, MD, PhD Department of Anesthesiology and Pain Medicine, University Hospital of Bern, Bern, Switzerland

Jeffrey L. Koh, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Antoun H. Koht, MD Department of Anesthesiology, Neurological Surgery and Neurology, Northwestern University Feinberg School of Medicine, Chicago, IL, USA

Nerissa U. Ko, MD Department of Neurology, Division of Neurovascular and Critical Care, University of California, San Francisco, San Francisco, CA, USA

Kirk Lalwani, MB, BS, FRCA, MCR Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Arthur M. Lam, MD, FRCPC, FNCS Department of Anesthesiology, University of California, San Diego, San Diego, CA, USA

Mary Landrigan-Ossar, MD, PhD, FAAP Boston Children's Hospital, Harvard Medical School, Anesthesia, Perioperative and Pain Medicine, Boston, MA, USA

Gregory J. Latham, MD Department of Anesthesiology and Pain Medicine, Seattle Children's Hospital, University of Washington School of Medicine, Seattle, WA, USA

Chanhung Z. Lee, MD, PhD Department of Anesthesia and Perioperative Care, University of California San Francisco School of Medicine, San Francisco, CA, USA

Chris C. Lee, MD, PhD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Lorri A. Lee, MD Department of Anesthesiology, Kadlec Regional Medical Center, Richland, WA, USA

Mitchell Y. Lee, MD Department of Anesthesiology, New York University School of Medicine, New York, NY, USA

Akiva Leibowitz, MD Department of Anesthesia, Critical Care and Pain Medicine, Harvard Medical School, Beth Israel Deaconess Medical Center, Boston, MA, USA

Min Li, MD Department of Anesthesiology, The 3rd Teaching Hospital, Peking University Health Science Center, Beijing, China

Pamela A. Lipsett, MD, MHPE, MCCM Department of Surgery, Johns Hopkins University Schools of Medicine and Nursing, Baltimore, MD, USA

Kenneth C. Liu, MD Departments of Neurological Surgery and Radiology, University of Virginia Health System, Charlottesville, VA, USA

Francisco A. Lobo, MD Department of Anesthesiology, ICU and Peri-operative Medicine, Hamad General Hospital, Hamad Medical Corporation, Doha, Qatar

Pirjo Manninen, MD, FRCPC Department of Anesthesia, Toronto Western Hospital, University Health Network, University of Toronto, Toronto, ON, Canada

Edward M. Manno, MD, FCCM, FAAN, FAHA NorthWestern Medical group, Chicago, IL, USA

Ross Martini, MD Barrow Neurological Institute, Valley Anesthesiology Consultants, Phoenix, AZ, USA

Timothy W. Martin, MD, MBA, FAAP Division of Pediatric Anesthesiology, Department of Anesthesiology, University of Florida College of Medicine, Gainesville, FL, USA

George A. Mashour, MD, PhD Department of Anesthesiology, University of Michigan Medical School, Ann Arbor, MI, USA

Panagiotis Mastorakos, MD Department of Neurological Surgery, University of Virginia Health System, Charlottesville, VA, USA

Basil Matta, MD, FRCA, FFICM Department of Perioperative Care, Cambridge University Hospitals, Cambridge, UK

Kimberly Mauer, MD Department of Anesthesiology and Perioperative Medicine and OHSU Comprehensive Pain Management Center, Oregon Health & Science University, Portland, OR, USA

Craig D. McClain, MD, MPH Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children's Hospital, Boston, MA, USA

Department of Anesthesiology, Critical Care and Pain Medicine, Boston Children's Hospital, Harvard Medical School, Boston, MA, USA

David L. McDonagh, MD Departments of Anesthesiology and Pain Management, Neurology and Neurotherapeutics, and Neurosurgery, UT Southwestern Medical Center, Dallas, TX, USA

Michael L. McManus, MD, MPH Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children's Hospital, Harvard Medical School, Boston, MA, USA

Travis Melin, DO, MS Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Lingzhong Meng, MD Division of Neuro Anesthesia, Department of Anesthesiology, Yale University School of Medicine, New Haven, CT, USA

Margaret K. Menzel Ellis, MD Portland Veterans Affairs Medical Center and Department of Anesthesiology and Perioperative Medicine and Oregon Health & Science University, Portland, OR, USA

Andrew H. Milby, MD Department of Orthopaedic Surgery, University of Pennsylvania, Philadelphia, PA, USA

Paul D. Mongan, MD Department of Anesthesiology, University of Colorado Hospital, Aurora, CO, USA

Laurel E. Moore, MD Department of Anesthesiology, University of Michigan Medical School, Ann Arbor, MI, USA

Debra Elayne Morrison, MD Department of Anesthesiology and Perioperative Care, University of California, Irvine Medical Center, Orange, CA, USA

Wibke S. Müller-Forell, MD, PhD University Medical Center Johannes Gutenberg University, Clinic and Policlinic of Neuroradiology, Mainz, Rhineland-Palatine, Germany

Hernán R. Muñoz, MD, MSc Department of Anesthesia, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

David J. Murray, MD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Mary Newton, MBBS, FRCA The National Hospital for Neurology and Neurosurgery, London, UK

Huong G. Nguyen, MD Department of Anesthesiology and Pain Management, UT Southwestern Medical Center, Dallas, TX, USA

Carl Helge Nielsen, MD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Dolores B. Njoku, MD Department of Anesthesiology and Critical Care Medicine, George Washington School of Medicine and Health Sciences and Johns Hopkins University School of Medicine, Baltimore, MD, USA

Yulia Obelez, MD Department of Anesthesiology and Pain Medicine, University of Washington, Seattle, WA, USA

Amy S. Odefey, MD Department of Anesthesiology, University of Michigan Medical School, University of Michigan Hospital System, Ann Arbor, MI, USA

Andrea Orfanakis, MD Oregon Anesthesiology Group, Portland, OR, USA

Chanannait Paisansathan, MD Department of Anesthesiology, University of Illinois at Chicago, Chicago, IL, USA

Jonathan Z. Pan, MD, PhD Department of Anesthesia and Perioperative Care, Brain and Spinal Injury Center (BASIC), University of California San Francisco, San Francisco, CA, USA

Pratik V. Patel, MD Department of Anesthesiology and Pain Medicine, University of Washington, Seattle, WA, USA

James Peyton, MBChB, MRCP, FRCA Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children's Hospital, Harvard Medical School, Boston, MA, USA

Amit Prakash, MBBS, MD, FRCA, EDIC Department of Anaesthesia, Addenbrookes Hospital, Cambridge, UK

Sadeq A. Quraishi, MD, MHA, MMSc Department of Anesthesiology and Perioperative Medicine, Tufts University School of Medicine, Boston, MA, USA

Radhakrishnan Muthuchellappan, MD, DM (Neuroanaesth) National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, India

Justin D. Ramos, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

G. S. Umamaheswara Rao, MD National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, India

Daniel M. S. Raper, MBBS Department of Neurological Surgery, University of Virginia Health System, Charlottesville, VA, USA

Girija Prasad Rath, MBBS, MD, DM Department of Neuroanaesthesiology & Critical Care, Neurosciences Centre, All India Institute of Medical Sciences (AIIMS), New Delhi, India

Ugan Reddy, BSc, MBBCH, FRCA, FFICM National Hospital for Neurology and Neurosurgery, Neuroanaesthesia and Neurocritical Care, London, UK

Debra A. Reeves, RN, BS, BSN Division of Perioperative Services, Oregon Health & Science University, Portland, OR, USA

Denise H. Rhoney, PharmD, FCCP, FCCM, FNCS Division of Practice Advancement and Clinical Education, UNC Eshelman School of Pharmacy, Chapel Hill, NC, USA

Robert Hugo Richardson, MD Departments of Pulmonary and Critical Care Medicine, General Medicine and Geriatrics, Oregon Health & Science University, Portland, OR, USA

Claudia S. Robertson, MD Department of Neurosurgery, Baylor College of Medicine, Houston, TX, USA

Sydney E. Rose, BA, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Abraham Rosenbaum, MD Department of Anesthesiology and Perioperative Care, University of California, Irvine Medical Center, Orange, CA, USA

Allison Kinder Ross, MD Departments of Anesthesiology and Pediatrics, Duke University School of Medicine, Durham, NC, USA

Steven Roth, MD Department of Anesthesiology, University of Illinois Medical Center, Chicago, IL, USA

Neil E. Roundy, MD Department of Neurosurgery, Riverbend Medical Clinic, Springfield, OR, USA

Irene Rozet, MD Department of Anesthesiology and Pain Medicine, University of Washington and Veterans Affairs Medical Center, Puget Sound Health Care System, Seattle, WA, USA

Haley Sands, MN, RN, CNOR Division of Perioperative Services, Oregon Health & Science University, Portland, OR, USA

Katie J. Schenning, MD, MPH Department of Anesthesiology & Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

R. Alexander Schlichter, MD Department of Anesthesiology and Critical Care, University of Pennsylvania School of Medicine, Philadelphia, PA, USA

Martin Schott, MD, DESA Department of Anesthesiology, Intensive Care, Emergency and Pain Management, DIAKOVERE Friederikenstift, Hannover, Germany

Ursula G. Schulz, MD, DPhil Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK

James M. Schuster, MD, PhD Department of Neurosurgery, University of Pennsylvania, Philadelphia, PA, USA

Pablo O. Sepúlveda V., MD Clínica Alemana Santiago de Chile, Anesthesiology and Pain, Vitacura, Santiago, Chile

Valerie Sera, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Robert E. Shangraw, MD, PhD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Deepak Sharma, MBBS, MD, DM Department of Anesthesiology & Pain Medicine, University of Washington, Seattle, WA, USA

Frederick Sieber, MD Department of Anesthesiology and Critical Care Medicine, Johns Hopkins Medicine Bayview Medical Center, Baltimore, MD, USA

Sanjeev Sivakumar, MD Division of Neurosciences Critical Care, Departments of Anesthesiology and Critical Care Medicine, Neurology, and Neurosurgery, The Johns Hopkins University, Baltimore, MD, USA

Tod B. Sloan, MD, MBA, PhD Department of Anesthesiology, School of Medicine, University of Colorado School of Medicine, Aurora, CO, USA

Edward R. Smith, MD Department of Neurosurgery, Boston Children's Hospital, Harvard Medical School, Boston, MA, USA

Martin Smith, MBBS, FRCA, FFICM Department of Neuroanaesthesia and Neurocritical Care, National Hospital for Neurology and Neurosurgery, University College London Hospitals, London, UK

Mary Denise Smith, RN, MSN, CNS Departments of Internal Medicine and Palliative Medicine, Oregon Health & Sciences University, Portland, OR, USA

Martin Soehle, MD, PhD, MHBA Department of Anesthesiology and Intensive Care Medicine, University of Bonn, Bonn, Germany

Jennifer D. Sokolowski, MD, PhD Departments of Neurological Surgery and Radiology, University of Virginia Health System, Charlottesville, VA, USA

Sulpicio G. Soriano, MD Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children's Hospital, Boston, MA, USA

Michael J. Souter, MB, ChB, FRCA, FNCS Department of Anesthesiology & Pain Medicine, Harborview Medical Center, University of Washington, Seattle, WA, USA

Luzius A. Steiner, MD, PhD Department for Anesthesia, Surgical Intensive Care, Prehospital Emergency Medicine and Pain Therapy, University Hospital Basel, Basel, Switzerland

José I. Suarez, MD Department of Neurology, Baylor College of Medicine Medical Center, McNair Campus, Houston, TX, USA

Dieter Suhr, MD Department of Anesthesiology, International Neuroscience Institute (INI), Hannover, Germany

Brad M. Taicher, DO, MBA Departments of Anesthesiology and Pediatrics, Duke University School of Medicine, Durham, NC, USA

Javiera Benavides Tala, MD División de Anestesiología, Hospital Clínico Universidad Católica de Chile, Santiago, Chile

Pekka Talke, MD Department of Anesthesia and Perioperative Care, University of California, San Francisco, San Francisco, CA, USA

René Tempelhoff, MD Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO, USA

Eric Tesoriero, DO Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA, USA

Concezione Tommasino, MD Department of Biomedical, Surgical and Odontoiatric Sciences, University of Milano, Milan, Italy

Polo Universitario Ospedale San Paolo, Anestesia e Rianimazione, Milan, Italy

Punita Tripathi, MD Department of Anesthesiology and Critical Care Medicine, Johns Hopkins Medicine Bayview Medical Center, Baltimore, MD, USA

Kamila Vagnerova, MD Department of Anesthesiology and Perioperative Medicine, Oregon Health & Science University, Portland, OR, USA

Walter M. van den Bergh, MD, PhD Department of Intensive Care, Academic Medical Center, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands

David W. Van Wyck, DO Department of Neurology, Duke University Medical Center, Durham, NC, USA

Panayiotis N. Varelas, MD, PhD Departments of Neurology & Neurosurgery, Henry Ford Hospital, Detroit, MI, USA

Monica S. Vavilala, MD Departments of Anesthesiology and Pain Medicine and Neurological Surgery, Radiology, University of Washington and Harborview Injury Prevention and Research Center, Harborview Medical Center, Seattle, WA, USA

Maria Magdalena Vera, MD Department of Intensive Care Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile

Jason D. Walls, MD Department of Anesthesiology and Critical Care, Perelman School of Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA, USA

Tian-Long Wang, MD Department of Anesthesiology, Xuan Wu Hospital of Capital Medical University, Beijing, China

Tony R. Wang, MD Departments of Neurological Surgery and Radiology, University of Virginia Health System, Charlottesville, VA, USA