

Cambridge University Press

978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Edited by David A. Young and Olutoyin A. Olutoye

Frontmatter

[More information](#)

Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

Cambridge University Press

978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Edited by David A. Young and Olutoyin A. Olutoye

Frontmatter

[More information](#)

Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Edited by

David A. Young

Associate Professor of Anesthesiology

Baylor College of Medicine/Texas Children's Hospital, Houston, TX, USA

Olutoyin A. Olutoye

Associate Professor of Anesthesiology

Baylor College of Medicine/Texas Children's Hospital, Houston, TX, USA



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom
Cambridge University Press is part of the University of Cambridge.
It furthers the University’s mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781107687585

© Cambridge University Press 2015

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2015

Printed and bound in the United Kingdom by Clays, St Ives plc

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

ISBN 978-1-107-68758-5 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

.....

Every effort has been made in preparing this book to provide accurate and up-to-date information which is in accord with accepted standards and practice at the time of publication. Although case histories are drawn from actual cases, every effort has been made to disguise the identities of the individuals involved. Nevertheless, the authors, editors and publishers can make no warranties that the information contained herein is totally free from error, not least because clinical standards are constantly changing through research and regulation. The authors, editors and publishers therefore disclaim all liability for direct or consequential damages resulting from the use of material contained in this book. Readers are strongly advised to pay careful attention to information provided by the manufacturer of any drugs or equipment that they plan to use.

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

This book is dedicated to all
anesthesiologists who provide perioperative
care to pediatric patients.

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

Contents

List of contributors xv
Preface xix
Acknowledgments xx
Legal disclaimer xxi

Section 1 – Critical incidents	
1	Crisis management: general principles 3 Mary A. Felberg
Part A – Airway/Pulmonary	
2	Airway fire 5 Tae W. Kim
3	Airway foreign body 7 John E. Fiadjoe
4	Bronchospasm 9 Luigi Viola and Senthilkumar Sadhasivam
5	Difficult airway 11 Diane Gordon and Jacquelyn Morillo-Delerme
6	Difficult ventilation 14 John E. Fiadjoe
7	Hemoptysis 17 Lisa D. Heyden
8	Hypercarbia 19 Rajeev Subramanyam and Senthilkumar Sadhasivam
9	Hypocarbica 22 Rajeev Subramanyam and Senthilkumar Sadhasivam
10	Hypoxemia 24 Normidaris Jimenez and Jacquelyn Morillo-Delerme
11	Increased peak airway pressures 26 Normidaris Jimenez and Jacquelyn Morillo-Delerme
12	Laryngospasm 28 Kha M. Tran
13	Pulmonary aspiration of gastric contents 30 Mary A. Felberg
14	Stridor 33 John E. Fiadjoe
15	Tension pneumothorax 35 Amanda K. Brown and Rhonda A. Alexis
16	Respiratory acidosis 37 Amy Graham-Carlson
17	Respiratory alkalosis 39 Amy Graham-Carlson
18	Upper airway obstruction 41 Carlos Rodriguez
Part B – Cardiac	
19	Anaphylaxis 43 Kha M. Tran
20	Asystole 45 Joanna Rosing and Jacquelyn Morillo-Delerme
21	Bradycardia 47 Amanda K. Brown and Rhonda A. Alexis

viii	Contents
22	Heart failure 49 Stephen Robert Hays
23	Hypertension 52 Catherine P. Seipel
24	Hypotension 54 Catherine P. Seipel
25	Inability to obtain vascular access 57 Graciela Argote-Romero and Jacquelyn Morillo-Delerme
26	Local anesthetic toxicity 59 Smokey Clay and Senthilkumar Sadhasivam
27	Myocardial ischemia 62 Stephen Robert Hays
28	Pericardial tamponade 65 Lisa D. Heyden
29	Prolonged QT interval 67 Catherine P. Seipel
30	Pulmonary hypertensive crisis 69 Stephen Robert Hays
31	Pulseless electrical activity 72 Julia Chen
32	Sinus tachycardia 74 Amanda K. Brown and Rhonda A. Alexis
33	Supraventricular tachycardia 76 Catherine P. Seipel
34	Tetralogy of Fallot spell 78 Lisa D. Heyden
35	Thrombotic pulmonary embolism 80 Lisa D. Heyden
36	Venous air embolism 82 Amanda K. Brown and Rhonda A. Alexis
37	Ventricular fibrillation 84 Kha M. Tran
38	Ventricular tachycardia 86 Matthew Mitchell and Jacquelyn Morillo-Delerme
	Part C – Metabolic
39	Acute adrenal insufficiency 89 Julia Chen
40	Hypercalcemia 91 Julia Chen
41	Hyperglycemia 94 Mary A. Felberg
42	Hyperkalemia 96 Luigi Viola and Senthilkumar Sadhasivam
43	Hypernatremia 98 Andrew J. Costandi and Senthilkumar Sadhasivam
44	Hyperthermia 100 Lisa D. Heyden
45	Hypocalcemia 102 Kha M. Tran
46	Hypoglycemia 104 Mary A. Felberg
47	Hypokalemia 106 Amanda K. Brown and Rhonda A. Alexis
48	Hypomagnesemia 108 Amanda K. Brown and Rhonda A. Alexis
49	Hyponatremia 110 Andrew J. Costandi and Senthilkumar Sadhasivam
50	Hypothermia 112 Paul A. Stricker
51	Malignant hyperthermia 114 Tae W. Kim
52	Metabolic acidosis 116 Paul A. Stricker

53 **Metabolic alkalosis** 118
Lisa D. Heyden

54 **Thyrotoxicosis** 120
Julia Chen

Part D – Neurologic

55 **Altered mental status** 123
Normidaris Jimenez and Jacquelyn Morillo-Delerme

56 **Blindness and perioperative vision loss** 125
Yang Liu

57 **Delayed emergence** 127
David A. Young

58 **Emergence agitation** 129
David Moore and Senthilkumar Sadhasivam

59 **Increased intracranial pressure** 131
Yang Liu

60 **Intraoperative awareness** 134
Carlos Rodriguez

61 **Peripheral nerve injury** 136
Vidya Chidambaran and Senthilkumar Sadhasivam

62 **Seizure** 139
Yang Liu

63 **Stroke** 141
Yang Liu

Part E – Equipment

64 **Anesthesia machine failure** 145
Carlos Rodriguez

65 **Line isolation monitor activation** 147
Stephen Robert Hays

66 **Power failure** 149
Stephen Robert Hays

Part F – Hematology

67 **Coagulopathy** 151
Paul A. Stricker

68 **Massive hemorrhage** 153
Paul A. Stricker

69 **Sickle cell crisis** 156
Tae W. Kim

70 **Transfusion reaction** 158
Tae W. Kim

Part G – Renal

71 **Oliguria** 161
Amy Graham-Carlson

72 **Polyuria** 163
Amy Graham-Carlson

Section 2 – Essential topics

Part A – Basic concepts in pediatric anesthesiology

73 **Development: general concepts** 167
Shakeel Siddiqui

74 **Anatomy: general concepts** 171
Shakeel Siddiqui

75 **Anatomy: airway** 173
Rachel A. Koll and Jacquelyn Morillo-Delerme

76 **Anatomy: central** 175
Nitin Wadhwa

77 **Anatomy: peripheral** 178
Nitin Wadhwa

78 **Pharmacology: general concepts** 181
Carlos Rodriguez

79 **Pharmacology: inhaled anesthetic agents** 183
Carlos Rodriguez

x	Contents
80	Pharmacology: hypnotics and anxiolytics 186 Kha M. Tran
81	Pharmacology: opioids, antagonists, and non-opioids 190 Luigi Viola and Senthilkumar Sadhasivam
82	Pharmacology: neuromuscular blocking and reversal agents 194 Julia Chen
83	Pharmacology: cardiovascular agents 198 Premal M. Trivedi and Pablo Motta
84	Pharmacology: local anesthetics 203 Smokey Clay and Jacquelyn Morillo-Delerme
85	Pharmacology: other 206 Shakeel Siddiqui
86	Fluid management: general concepts 210 Mary A. Felberg
87	Fluid management: crystalloid/colloid 214 Rebecca Laurich and Jacquelyn Morillo-Delerme
88	Fluid management: blood products 217 Premal M. Trivedi and Pablo Motta
89	Regional anesthesia: general concepts 221 Nitin Wadhwa
90	Regional anesthesia techniques: central 224 Amanda K. Brown and Rhonda A. Alexis
91	Regional anesthesia techniques: peripheral 227 Diane Gordon and Jacquelyn Morillo-Delerme
92	Airway management: general concepts 231 Graciela Argote-Romero and Jacquelyn Morillo-Delerme
93	Airway management techniques: direct 234 Paul A. Stricker
94	Airway management techniques: indirect 236 Paul A. Stricker
95	Malignant hyperthermia: general concepts 240 Tae W. Kim
96	Resuscitation: general concepts 243 Matthew D. Sjoblom and Jacquelyn Morillo-Delerme
97	Monitoring: general concepts 247 Olutoyin A. Olutoye
98	Monitoring: neurophysiologic monitors 250 Veronica O. Busso, Senthilkumar Sadhasivam and Mohamed Mahmoud
99	Preoperative care: general concepts 254 Mary A. Felberg
100	Preoperative care: separation anxiety/upper respiratory infections 258 Nancy S. Hagerman and Senthilkumar Sadhasivam
101	Postoperative care: general concepts 262 Carlos Rodriguez
102	Postoperative care: emergence agitation/PONV 264 David Moore and Senthilkumar Sadhasivam
103	Pediatric critical care medicine: general concepts 267 Amanda K. Brown and Rhonda A. Alexis

	Contents	xi
104 Pediatric critical care medicine: ECMO 270 Kha M. Tran	114 Cardiovascular system: pulmonary hypertension/heart failure 308 Premal M. Trivedi and Pablo Motta	
105 Medical genetics: general concepts 274 Vidya Chidambaran and Senthilkumar Sadhasivam	115 Nervous system: anatomy and physiology 312 Yang Liu	
106 Medical genetics: Down syndrome 277 Julia Chen	116 Nervous system: medical conditions 315 Yang Liu	
107 Medical genetics: other conditions 280 Shakeel Siddiqui	117 Nervous system: seizure disorder/ cerebral palsy/autism 319 Amanda K. Brown and Rhonda A. Alexis	
Part B – System-based topics in pediatric anesthesiology	118 Renal system: anatomy and physiology 322 Julia Chen	
108 Respiratory system: anatomy and physiology 285 Vanessa A. Olbrecht and Senthilkumar Sadhasivam	119 Renal system: medical conditions 324 Julia Chen	
109 Respiratory system: medical conditions 287 Vanessa A. Olbrecht and Senthilkumar Sadhasivam	120 Gastrointestinal system: anatomy and physiology 327 Amanda K. Brown and Rhonda A. Alexis	
110 Respiratory system: reactive airway disease/cystic fibrosis 290 Vanessa A. Olbrecht and Senthilkumar Sadhasivam	121 Gastrointestinal system: medical conditions 329 Amanda K. Brown and Rhonda A. Alexis	
111 Cardiovascular system: anatomy and physiology 293 Premal M. Trivedi and Pablo Motta	122 Hepatic system: anatomy and physiology 333 Yang Liu	
112 Cardiovascular system: medical conditions 297 Premal M. Trivedi and Pablo Motta	123 Hepatic system: medical conditions 336 Paul A. Stricker	
113 Cardiovascular system: valvular disorders/rhythm disorders 301 Premal M. Trivedi and Pablo Motta	124 Endocrine system: anatomy and physiology 338 Tae W. Kim	
	125 Endocrine system: medical conditions 342 Tae W. Kim	

xii	Contents
126	Endocrine system: diabetes mellitus/diabetes insipidus/ SIADH 346 Tae W. Kim
127	Endocrine system: thyroid disorders/adrenal disorders 351 Tae W. Kim
128	Hematology system: anatomy and physiology 355 Shakeel Siddiqui
129	Hematology system: medical conditions 358 Shakeel Siddiqui
130	Hematology system: sickle cell disease/von Willebrand/ hemophilia 362 Tae W. Kim
	Part C – Clinical-based areas in pediatric anesthesiology
131	Cardiac surgery: general considerations 367 Erin A. Gottlieb
132	Cardiac surgery: acyanotic lesions 371 Premal M. Trivedi and Pablo Motta
133	Cardiac surgery: cyanotic lesions 375 Premal M. Trivedi and Pablo Motta
134	Cardiac surgery: non-cardiac surgery 379 Erin A. Gottlieb
135	Cardiac surgery: pacemaker/ICD management 383 Erin A. Gottlieb
136	Cardiac surgery: cardiac bypass 387 Premal M. Trivedi and Pablo Motta
137	Cardiac surgery: cardiac transplantation 391 Premal M. Trivedi and Pablo Motta
138	Fetal surgery: general considerations 396 Kha M. Tran
139	Fetal surgery: EXIT procedure 400 Kha M. Tran
140	General surgery: general considerations 403 Mary A. Felberg
141	General surgery: laparoscopy/abdominal procedures 405 Mary A. Felberg
142	Neonatal surgery: general considerations 408 Carlos Rodriguez
143	Neonatal surgery: PDA ligation/CDH 410 Carlos Rodriguez
144	Neonatal surgery: necrotizing enterocolitis/abdominal wall defects 412 Carlos Rodriguez
145	Neurosurgery: general considerations 414 Yang Liu
146	Neurosurgery: hydrocephalus/VP shunts 417 Julia Chen

147	Neurosurgery: brain tumors/neural tube defects 420	157	Pain medicine: chronic pain management 453
	Yang Liu		Alexandra Szabova and Kenneth Goldschneider
148	Ophthalmologic surgery: general considerations 423	158	Plastic surgery: general considerations 457
	Mary A. Felberg		Rajeev Subramanyam and Senthilkumar Sadhasivam
149	Ophthalmologic surgery: retinopathy of prematurity/strabismus surgery 426	159	Plastic surgery: craniofacial reconstruction 460
	Mary A. Felberg		Rajeev Subramanyam and Senthilkumar Sadhasivam
150	Orthopedic surgery: general considerations 430	160	Plastic surgery: cleft lip and palate surgery 463
	Andrew J. Costandi and Senthilkumar Sadhasivam		Smokey Clay and Jacquelyn Morillo-Delerme
151	Orthopedic surgery: scoliosis surgery 433	161	Providing anesthesia in remote locations: general considerations 466
	Luigi Viola and Senthilkumar Sadhasivam		David Moore and Senthilkumar Sadhasivam
152	Otolaryngology: general considerations 437	162	Thoracic surgery: general considerations/lung isolation techniques 469
	John E. Fiadjoe		Kha M. Tran
153	Otolaryngology: adenotonsillectomy/otologic procedures 439	163	Thoracic surgery: mediastinal masses 474
	John E. Fiadjoe and Senthilkumar Sadhasivam		Andrew J. Costandi and Senthilkumar Sadhasivam
154	Otolaryngology: airway surgery/airway foreign body 442	164	Thoracic surgery: video thoracoscopic procedures/pectus excavatum 478
	John E. Fiadjoe		Jagroop Mavi and Senthilkumar Sadhasivam
155	Pain medicine: general considerations 446	165	Transplant surgery: general considerations 481
	Andrew J. Costandi and Senthilkumar Sadhasivam		Paul A. Stricker
156	Pain medicine: acute pain management 449	166	Transplant surgery: hepatic 483
	Vidya Chidambaran and Senthilkumar Sadhasivam		Yang Liu

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

xiv	Contents
167	Transplant surgery: renal 487 Paul A. Stricker
168	Trauma surgery: general considerations 490 Carlos Rodriguez
169	Trauma surgery: burn surgery 492 Carlos Rodriguez
170	Urologic surgery: general considerations 496 Kha M. Tran
	<hr/> <i>Index</i> 499

Contributors

- Rhonda A. Alexis, MD**
Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Perelman School of Medicine at the University of Pennsylvania, The Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania
- Graciela Argote-Romero, MD**
Assistant Professor, Department of Anesthesiology, The Ohio State University, Nationwide Children’s Hospital, Columbus, Ohio
- Amanda K. Brown, MD**
Assistant Professor, Department of Anesthesiology, Mercer University School of Medicine, Macon, Georgia
- Veronica O. Busso, MD**
Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children’s Hospital and Medical Center, Cincinnati, Ohio
- Julie Chen, MD**
Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children’s Hospital, Houston, Texas
- Vidya Chidambaran, MB, BS, MD**
Associate Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio
- Smokey J. Clay, MD**
Assistant Professor, Department of Anesthesiology and Pediatrics, University

- of Cincinnati College of Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio
- Andrew J. Costandi, MD**
Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio
- Mary A. Felberg, MD, FAAP**
Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children’s Hospital, Houston, Texas
- John Fiadjo, MD**
Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Perelman School of Medicine at the University of Pennsylvania, The Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania
- Kenneth R. Goldschneider, MD, FAAP**
Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio
- Diane Gordon, MD**
Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio
- Erin A. Gottlieb, MD**
Assistant Professor, Department of Anesthesiology, Division of Pediatric Cardiovascular Anesthesiology, Baylor

xvi	List of contributors
-----	----------------------

College of Medicine, Texas Children's Hospital, Houston, Texas

Amy Graham-Carlson, MD
Assistant Professor, Department of Anesthesiology, The University of Texas Health Science Center at Houston, Children's Memorial Hermann Hospital, Houston, Texas

Nancy S. Hagerman, MD
Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Stephen Robert Hays, MS, MD, FAAP
Associate Professor, Department of Anesthesiology and Pediatrics, Vanderbilt University School of Medicine, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, Tennessee

Lisa D. Heyden, MD
Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Normidaris Jimenez, MD
Department of Anesthesiology, Nemours Health System, Wolfson Children's Hospital, Jacksonville, Florida

Tae W. Kim, MD
Professor, Department of Anesthesiology, University of Minnesota School of Medicine, University of Minnesota Children's Hospital, Minneapolis, Minnesota

Rachel A. Koll, MD
Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Rebecca Laurich, MD
Assistant Professor, Department of Anesthesiology, Texas A&M Health Science Center College of Medicine, McLane Children's Hospital, Temple, Texas

Yang Liu, MD
Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Mohamed Mahmoud, MD
Associate Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Jagroop Mavi, MD
Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio,

Matthew Mitchell, DO
Assistant Professor, Department of Anesthesiology, The Ohio State University, Nationwide Children's Hospital, Columbus, Ohio

David L. Moore, MD
Associate Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Jacquelyn W. Morillo-Delerme, MD
Associate Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Pablo Motta, MD

Assistant Professor, Department of Anesthesiology, Division of Pediatric Cardiovascular Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Vanessa A. Olbrecht, MD

Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Olutoyin A. Olutoye, MD, MSc, FAAP

Associate Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Carlos L. Rodriguez, MD

Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Joanna L. Rosing, MD

Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Senthilkumar Sadhasivam, MD, MPH

Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Catherine P. Seipel, MD

Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Shakeel A. Siddiqui, MD, FAAP

Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

Matthew D. Sjoblom, MD

Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Paul Stricker, MD

Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Perelman School of Medicine at the University of Pennsylvania, The Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

Rajeev Subramanyam MBBS, DNB, MNAMS, MD, MS

Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Alexandra Szabova, MD

Assistant Professor, Department of Anesthesiology and Pediatrics, University of Cincinnati College of Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Kha M. Tran, MD

Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Perelman School of Medicine at the University of Pennsylvania, The Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

Premal M. Trivedi, MD

Assistant Professor, Department of Anesthesiology, Division of Pediatric

Cambridge University Press
978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology
Edited by David A. Young and Olutoyin A. Olutoye
Frontmatter
[More information](#)

xviii	List of contributors
-------	----------------------

Cardiovascular Anesthesiology, Baylor College of Medicine, Texas Children’s Hospital, Houston, Texas

Luigi Viola, MD
Assistant Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children’s Hospital, Houston, Texas

Nitin Wadhwa, MD
Assistant Professor, Department of Anesthesiology, The University of Texas

Health Science Center at Houston, Children’s Memorial Hermann Hospital, Houston, Texas

David A. Young MD, MEd, MBA, FAAP
Associate Professor, Department of Anesthesiology, Division of Pediatric Anesthesiology, Baylor College of Medicine, Texas Children’s Hospital, Houston, Texas

Cambridge University Press

978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Edited by David A. Young and Olutoyin A. Olutoye

Frontmatter

[More information](#)

Preface

There has been an exponential increase in the amount of knowledge expected of physicians. This increase in required knowledge has especially occurred in subspecialty areas such as pediatric anesthesiology. Novice learners find it very challenging to correctly identify the essential topics to master. Advanced learners find it equally challenging to rapidly acquire vital facts. Furthermore, many learners feel that the ideal format for review is not the same as for initial exposure to a topic.

A significant portion of providing anesthesia care in pediatric anesthesiology is focused around risk identification, early detection, and immediate management of critical incidents. None of the previously available books in pediatric anesthesiology provide a mixture of essential topics and can also act as a bedside reference to manage a critical incident. This was the main driving force for the creation of the *Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology*.

Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology is the first book written by practicing full-time pediatric anesthesiologists that will provide the reader with a bedside reference for the management of critical incidents and an effective approach for mastering the key topics within pediatric anesthesiology. The purpose of this book was to develop a two-step approach for providing a focused reference to the essential topics and the most commonly encountered critical incidents within pediatric anesthesiology.

The first main section of *Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology* consists of the Critical Incidents section related to the anesthetic management of pediatric patients. The Critical Incidents are listed in alphabetical order to allow rapid identification by the reader. Seventy of the most common critical incidents in pediatric anesthesiology are presented in a standardized format consisting of presentation, differential diagnosis, risk factors, management and prevention, which should aid the reader in the quick and accurate management of patients while also improving the safety for future patients. The second main section of the book contains Essential Topics in a focused and very efficient review format. The 100 most common issues in pediatric anesthesiology are presented in a condensed format, identifying key facts for the novice reader and also providing a quick reference review for the experienced clinician.

We truly hope that you will be able to incorporate this book into your practice to more effectively care for your patients while also promoting life-long learning.

David A. Young
Olutoyin A. Olutoye

Acknowledgments

We gratefully acknowledge the continued encouragement from our families, participation of the authors, and support from Cambridge University Press which all together made this book become a reality.

David A. Young
Olutoyin A. Olutoye

Cambridge University Press

978-1-107-68758-5- Handbook of Critical Incidents and Essential Topics in Pediatric Anesthesiology

Edited by David A. Young and Olutoyin A. Olutoye

Frontmatter

[More information](#)

Legal disclaimer

Medicine is an ever-changing field. New research and clinical experiences may result in changes to treatment and drug therapy. All readers are advised to check the most current product information provided by the drug manufacturer of each drug to be administered to verify the recommended indications, dose, duration of administration, and contraindications. It is the responsibility of the treating physician, relying on experience, judgment, and knowledge of the specific patient, to determine the best treatment for each individual patient. Neither the publisher, editors, nor contributors assume any liability for any injury and/or damage to persons or property arising from this publication.