

SECTION I ■ Resuscitation Skills and Techniques 1

Chapter 1

Basic Airway Management 3

David A. Caro

Chapter 2

Advanced Airway Management 17

Aaron E. Bair and Erik G. Laurin

Chapter 3

Mechanical Ventilation 31

Robert J. Sigillito

Chapter 4

Circulatory Assessment and Support 39

Michael E. Winters

Chapter 5

Ultrasound-Guided Vascular Access 53

Emily Baran

Chapter 6

Dysrhythmias in Cardiorespiratory Arrest 59

Jeffrey D. Ferguson, Kostas Alibertis, and William J. Brady

Chapter 7

Trauma Resuscitation 77

Trevor J. Mills

Chapter 8

The Focused Assessment with Sonography for Trauma 85

Emily Baran

Chapter 9

Ethics of Resuscitation 93

Tammie E. Quest

Chapter 10

Emergency Medical Services and Disaster Medicine 97

Jennifer Avegno

Chapter 11

Procedural Sedation 111

Andy Godwin and Beranton Whisenant

Chapter 12

Local and Regional Anesthesia 121

Heather Murphy-Lavoie

Contents

Chapter 13

Resuscitation in Pregnancy 133

Susan B. Promes

Chapter 14

Newborn Resuscitation 139

Katherine Bakes and Kurt Whitaker

Chapter 15

Pediatric Resuscitation 153

Ghazala Q. Shariieff and Maureen McCollough

Chapter 16

Pediatric Trauma 163

Kurt Whitaker and Katherine Bakes

SECTION II ■ **Special Considerations in the Pediatric Patient** 179

Chapter 17

General Approach to the Pediatric Patient 181

Antonio E. Muñiz

Chapter 18

The First Weeks of Life 185

John Nelson Perret

Chapter 19

Infants and Toddlers 199

Mark S. McIntosh

SECTION III ■ **Head and Neck Injuries** 211

Chapter 20

Eye Emergencies 213

Kriti Bhatia and Rahul Sharma

Chapter 21

Ear Emergencies 233

Thomas Morrissey and Andy Godwin

Chapter 22

Dental Emergencies 247

Kip Benko

Chapter 23
Pharynx and Throat Emergencies 265
H. Gene Hern

Chapter 24
Maxillofacial Disorders 277
Laura J. Bontempo

SECTION IV ■ Gastrointestinal Diseases 289

Chapter 25
Approach to the Patient with Abdominal Pain 291
Jared N. Strote and David A. Townes

Chapter 26
Esophageal Disorders 301
Chad S. Crystal and Marc Levsky

Chapter 27
Diseases of the Stomach 313
Danielle Ware-McGee

Chapter 28
Gastrointestinal Bleeding 323
Sheryl L. Heron and Patricia Baines

Chapter 29
Mesenteric Ischemia 331
Kelly P. O'Keefe and Tracy G. Sanson

Chapter 30
Diverticulitis 341
Kelly P. O'Keefe and Tracy G. Sanson

Chapter 31
Inflammatory Bowel Disease 347
Michael I. Omori and Michael A. Gisondi

Chapter 32
Constipation 353
Kathleen Schrank

Chapter 33
Hernias 361
Chandra D. Aubin

Chapter 34
Appendicitis 371
Rita A. Manfredi and Claudia Ranniger

Chapter 35
Bowel Obstructions 379
Keith Boniface

Chapter 36
Anorectal Disorders 385
John M. Boe and Tara Roeder

Chapter 37
Hepatic Disease 395
Richard Paula

Chapter 38
Pancreatitis 407
Mitchell C. Sokolosky

Chapter 39
Biliary Disease 413
Sanjay Shetty

Chapter 40
Emergency Biliary Ultrasonography 425
Emily Baran

Chapter 41
Pediatric Abdominal Disorders 431
Russ Horowitz

Chapter 42
**Gastrointestinal Devices and
Procedures** 437
Kerin A. Jones

Chapter 43
Complications of Bariatric Surgery 447
Robert F. Poirier

SECTION V ■ Pulmonary Diseases 455

Chapter 44
**Asthma and Chronic Obstructive Pulmonary
Disease** 457
Rita K. Cydulka and Craig G. Bates

Chapter 45
Lung Infections 477
David S. Howes and Joseph F. Peabody

Chapter 46
Pneumothorax 487
David E. Manthey and Bret Nicks

Chapter 47
Pleural Effusion 497
Bret Nicks and David E. Manthey

Chapter 48
**The Lung Transplant Patient in the
Emergency Department** 505
Robert L. Rogers

SECTION VI ✦ **Cardiac Diseases** 513

Chapter 49

Cardiac Imaging and Stress Testing 515

Andra L. Blomkalns and Rhonda S. Cadena

Chapter 50

Congestive Heart Failure 523

Joshua M. Kosowsky

Chapter 51

Bradyarrhythmias 537

Sarah A. Stahmer and Robert Cowan

Chapter 52

Tachycardias 551

Keith A. Marill

Chapter 53

Pericarditis, Pericardial Tamponade, and Myocarditis 573

Amal Mattu and Joseph P. Martinez

Chapter 54

Cardiac Valvular Emergencies 589

Todd C. Rothenhaus

Chapter 55

Endocarditis 597

Osman R. Sayan and Wallace A. Carter

Chapter 56

Pediatric Cardiac Emergencies 617

Nathan W. Mick

Chapter 57

Chest Pain 627

Matthew Strehlow and Jeffrey A. Tabas

Chapter 58

Emergencies Associated with Implanted Cardiac Devices 635

Daniel Cabrera, Amy Jo Irvin, and Wyatt W. Decker

Chapter 59

Acute Coronary Syndrome 645

David F. M. Brown

SECTION VII ■ **Vascular Diseases** 665

Chapter 60

Aortic Dissection 667

Nima Afshar and Chris Newton

Chapter 61

Abdominal Aortic Aneurysm 679

Danielle Ware-McGee and Jamie Collings

Chapter 62

Aortic Ultrasound 689

Emily Baran and Mary Ann Edens

Chapter 63

Peripheral Arterial Disease 693

Christopher Ross and Theresa Schwab

Chapter 64

Hypertensive Crisis 703

Philip Shayne and Tara D. Director

Chapter 65

Pulmonary Embolism 715

D. Mark Courtney

Chapter 66

Venous Thrombosis and Venous Disorders 725

James V. Ritchie

Chapter 67

Emergency Lower Extremity Venous Ultrasonography for Deep Vein Thrombosis 735

Emily Baran

SECTION VIII ■ Injuries to Bones and Organs 741

Chapter 68

Traumatic Brain Injury 743

Daniel Davis

Chapter 69

How to Read a Head CT Scan 753

Andrew D. Perron

Chapter 70

Spine Trauma and Spinal Cord Injury 765

Michelle Lin and Swaminatha V. Mahadevan

Chapter 71

Facial Trauma 783

John H. Burton and Nicholas Armellino

Chapter 72

Penetrating Neck Trauma 797

Niels K. Rathlev, Mark E. Bracken, and Ron Medzon

Chapter 73

Thoracic Trauma 805

John Bailitz

Chapter 74

Blunt Abdominal Trauma 827

Carlo L. Rosen, Eric L. Legome, and Richard E. Wolfe

- Chapter 75
Penetrating Abdominal Trauma 841
Eric L. Legome and Carlo L. Rosen
- Chapter 76
Pelvic Fractures 851
Leigh A. Patterson
- Chapter 77
Genitourinary Trauma 857
Michael S. Runyon and Michael A. Gibbs
- Chapter 78
Hip and Femur Injuries 869
Philip Bossart
- Chapter 79
Knee and Lower Leg Injuries 875
Christy McCowan
- Chapter 80
Foot and Ankle Injuries 897
Jorge del Castillo
- Chapter 81
Tendinitis and Bursitis 911
Erin M. Lareau and Ted Koutouzis
- Chapter 82
Injuries to the Shoulder Girdle 923
M. Scott Linscott
- Chapter 83
Forearm Fractures 933
Trevor J. Mills
- Chapter 84
Hand and Wrist Injuries 939
John C. Southall
- Chapter 85
Arterial and Venous Trauma and Great Vessel Injuries 953
Stephen J. Wolf and Gail Braunholtz
- Chapter 86
Acute Compartment Syndrome 961
David A. Peak
- Chapter 87
Low Back Pain 969
Gerard S. Doyle
- Chapter 88
Pediatric Orthopedic Emergencies 977
Russ Horowitz

SECTION IX ■ Neurologic Diseases 983

Chapter 89

Altered Mental Status and Coma 985

Jeremy L. Cooke and William G. Barsan

Chapter 90

Cranial Nerve Disorders 993

Ernest E. Wang

Chapter 91

Vertigo 1007

Gretchen S. Lent and Andrew K. Chang

Chapter 92

Peripheral Nerve Disorders 1031

Phillip Andrus and Andy Jagoda

Chapter 93

Demyelinating Disorders 1043

Scott E. Rudkin

Chapter 94

Seizures 1051

Asim F. Tarabar, Andrew S. Ulrich, and Gail D'Onofrio

Chapter 95

Transient Ischemic Attack and Acute Ischemic Stroke 1063

Scott Jolley and Todd L. Allen

Chapter 96

Headache 1083

Joshua N. Goldstein and Jonathan A. Edlow

Chapter 97

Intracranial and Other Central Nervous System Lesions 1093

Steven M. Zahn

Chapter 98

Intracranial Hemorrhages 1105

J. Stephen Huff and Chris Ghaemmaghami

Chapter 99

Syncope 1117

James Quinn

Chapter 100

Delirium and Dementia 1123

Yasuharu Okuda and Andy Jagoda

Chapter 101

Neurologic Procedures 1133

Edward C. Jauch and Brian A. Stettler

SECTION X ■ Allergic, Inflammatory, and Autoimmune Disorders 1139

Chapter 102
Allergies, Allergic Disease, and Anaphylaxis 1141
T. Paul Tran and Robert L. Muelleman

Chapter 103
Arthritis and Inflammatory Joint and Synovial Disorders 1157
Kathleen Schrank and Amy Zosel

Chapter 104
Systemic Lupus Erythematosus 1175
James G. Adams and Clare Sercombe

Chapter 105
Connective Tissue and Inflammatory Disorders 1183
Raveendra S. Morchi

Chapter 106
Vasculitis Syndromes 1195
Paul J. Allegretti

SECTION XI ■ Genitourinary and Renal Diseases 1207

Chapter 107
Male Genitourinary Emergencies 1209
Jonathan E. Davis

Chapter 108
Nephrolithiasis 1217
Carl R. Menckhoff

Chapter 109
Hematuria 1227
Edward John Ward

Chapter 110
Pediatric Genitourinary and Renal Disorders 1231
Ingrid T. Lim and N. Ewen Wang

Chapter 111
Renal Failure 1243
Troy P. Coon and Michael A. Miller

Chapter 112
Emergency Renal Ultrasonography 1253
Emily Baran

Chapter 113
Dialysis-Related Emergencies 1257
Yi-Mei Chng and Gregory H. Gilbert

Chapter 114
Renal Transplant Complications 1265
Gerald Maloney

SECTION XII • Women's Health and Gynecologic Diseases 1271

Chapter 115
The Healthy Pregnancy 1273
Jon D. Van Roo and Matthew Kippenhan

Chapter 116
Disorders of Early Pregnancy 1285
Matthew Kippenhan

Chapter 117
**First-Trimester Ultrasonography: Evaluation
for Intrauterine Pregnancy** 1299
Mary Ann Edens and Emily Baran

Chapter 118
**Complications of Third Trimester
Pregnancy** 1307
Sally A. Santen and Robin R. Hemphill

Chapter 119
**Emergency Delivery and Peripartum
Emergencies** 1317
Rachel Reisner and Jeremy Branzetti

Chapter 120
Postpartum Emergencies 1331
Fiona E. Gallahue

Chapter 121
**Gynecologic Pain and Vaginal
Bleeding** 1341
Colleen Roche

Chapter 122
**Complications of Gynecologic Procedures,
Abortion, and Assisted Reproductive
Technology** 1349
Christine Yang-Kauh and Tara Khan

Chapter 123
Gynecologic Infections 1371
Jamil Bayram and Mamta Malik

Chapter 124
Breast Disorders 1389
Karen Jubanyik

Chapter 125
Pediatric Gynecological Disorders 1407
Jennifer Anders

Chapter 126
Intimate Partner Violence 1415
Beatrice D. Probst

Chapter 127

Sexual Assault 1421

Matthew P. Lazio and Jamie Collings

Chapter 128

Emergency Contraception 1429

Tomer Begaz

SECTION XIII ■ Environmental Injuries 1435

Chapter 129

Heat-Related Injuries 1437

Catherine McLaren Oliver

Chapter 130

Hypothermia and Frostbite 1445

Robert L. Stephen

Chapter 131

Lightning and Electrical Injuries 1451

Christopher B. Colwell

Chapter 132

Dysbarism, Dive Injuries, and Decompression Illness 1459

David Ulick and Heather Murphy-Lavoie

Chapter 133

Submersion Injuries 1473

Mohammed A. Abu Aish and Niranjan Kissoon

Chapter 134

Acute Radiation Emergencies 1481

David A. Caro

Chapter 135

Smoke Inhalation 1487

Thomas Kunisaki and Andy Godwin

Chapter 136

Chemical and Nuclear Agents 1493

Rick G. Kulkarni

SECTION XIV ■ Toxicologic Emergencies 1499

Chapter 137

General Approach to the Poisoned Patient 1501

Victor Tuckler and Jorge Martinez

Chapter 138

Acetaminophen, Aspirin, and NSAIDs 1515

Heather Long

- Chapter 139
Anticholinergics 1525
Jessica A. Fulton and Lewis S. Nelson
- Chapter 140
Insecticides, Herbicides, and Rodenticides 1533
Robert Cannon and Anne-Michelle Ruha
- Chapter 141
Antidepressants and Antipsychotics 1547
Sean M. Bryant
- Chapter 142
Cardiovascular Drugs 1557
Kirk Cumpston
- Chapter 143
Sympathomimetics 1573
Gar Ming Chan and Lewis S. Nelson
- Chapter 144
Hallucinogens and Drugs of Abuse 1581
Mark B. Mycyk
- Chapter 145
Toxic Alcohols 1589
Mark B. Mycyk
- Chapter 146
Hydrocarbons 1597
David D. Gummin
- Chapter 147
Inhaled Toxins 1607
Trevonne M. Thompson and Steven E. Aks
- Chapter 148
Ethanol and Opioid Intoxication and Withdrawal 1615
Michael J. Schmidt and Cynthia Galvan
- Chapter 149
Sedative-Hypnotic Agents 1627
James W. Rhee and Timothy B. Erickson
- Chapter 150
Anticonvulsant Drugs 1635
Victor Tuckler and Michael Catenacci
- Chapter 151
Antimicrobial Drugs 1641
Victor Tuckler
- Chapter 152
Hypoglycemic Agent Overdose 1649
Mark Su
- Chapter 153
Over-the-Counter Medications 1655
Tri Chau Tong

Chapter 154
Pediatric Overdoses 1665
Jennifer E. McCain and Erica L. Liebelt

SECTION XV ■ Bites, Stings, and Injuries from Animals 1675

Chapter 155
Mammalian Bites 1677
Ashley Booth

Chapter 156
Venomous Snakebites in North America 1683
Robert L. Norris

Chapter 157
Arthropod Bites and Stings 1695
Rais Vohra and Richard F. Clark

Chapter 158
Non-Snake Reptile Bites 1705
Troy E. Madsen and Stephen C. Hartsell

Chapter 159
Marine Envenomation and Injuries 1711
Christopher G. Jenson and Francis L. Counselman

SECTION XVI ■ Metabolic and Endocrine Disorders 1717

Chapter 160
Fluid Management 1719
Alan C. Heffner and Matthew T. Robinson

Chapter 161
Acid-Base Disorders 1727
Matthew T. Robinson and Alan C. Heffner

Chapter 162
Alcoholic Ketoacidosis 1735
Christopher R. Carpenter

Chapter 163
Diabetes and Hyperglycemia 1739
Matthew N. Graber

Chapter 164
Hypoglycemia 1751
Wesley H. Self

Chapter 165
Sodium and Water Balance 1765
Michael C. Wadman

- Chapter 166
Potassium 1771
Sandy Sineff and Michael A. Gisondi
- Chapter 167
Calcium, Magnesium, and Phosphorus 1783
Rawle A. Seupaul and Ryan Pursley
- Chapter 168
Thyroid Disorders 1795
David Hackstadt and Frederick Korley
- Chapter 169
Adrenal Crisis 1803
Brian K. Nelson
- Chapter 170
Rhabdomyolysis 1809
Bruce D. Adams and Jill A. Grant
- Chapter 171
Pituitary Apoplexy 1821
Brian K. Nelson
- SECTION XVII ■ Infections** 1825
- Chapter 172
Child with a Fever 1827
James E. Colletti and Erik P. Hess
- Chapter 173
Meningitis, Encephalitis, and Brain Abscess 1835
Amandeep Singh and Susan B. Promes
- Chapter 174
Sepsis 1845
Michael J. Schmidt
- Chapter 175
Infections in the Immunocompromised Host 1851
Fredrick M. Abrahamian
- Chapter 176
Viral Infections 1859
Deepi G. Goyal, Kristine Thompson, and Annie T. Sadosty
- Chapter 177
Human Immunodeficiency Virus Infection 1871
Ellen M. Slaven
- Chapter 178
Fungal Infections 1879
Richard Paula

Chapter 179

Helminths, Lice, and Scabies

Infections 1889

Kathleen J. Clem

Chapter 180

Tetanus 1899

Lisa D. Mills

Chapter 181

Rabies 1907

Lisa D. Mills

Chapter 182

Tick-Borne Diseases 1917

Jonathan A. Edlow

Chapter 183

Tuberculosis 1927

Jennifer L. Isenhour and D. Matthew Sullivan

Chapter 184

Epidemic Infections in Bioterrorism 1935

Amer Aldeen

Chapter 185

Food and Water-Borne Infections 1943

David K. Zich

Chapter 186

Skin and Soft Tissue Infections 1953

Ellen M. Slaven

SECTION XVIII ■ Wounds and Skin Injuries 1959

Chapter 187

Wound Repair 1961

E. Parker Hays, Jr.

Chapter 188

Soft Tissue Injury 1973

Matthew R. Levine and Jill F. Lehrman

Chapter 189

Thermal Burns 1985

Jeffrey Druck

Chapter 190

Chemical Burns 1993

Jeffrey Druck

SECTION XIX ■ Rashes 1999

Chapter 191

Rash in the Acutely Ill Patient 2001

Guido F. Valdés

Chapter 192
**Localized Rashes, Generalized Rashes, and
Pediatric Exanthems** 2013
David N. Zull, David Salzman, and Jamie Collings

SECTION XX ■ Emergency Psychiatric Disorders 2035

Chapter 193
**The Emergency Psychiatric
Assessment** 2037
Douglas M. Char

Chapter 194
**Psychosis and Psychotropic
Medication** 2043
Lynda Daniel-Underwood and Tae Eung Kim

Chapter 195
The Violent Patient 2047
Eric Isaacs

Chapter 196
Self-Harm and Danger to Others 2057
Keith Borg

Chapter 197
Anxiety and Panic Disorders 2063
Christopher S. Kang and Benjamin P. Harrison

Chapter 198
**Conversion Disorder, Psychosomatic Illness,
and Malingering** 2069
Robin A. C. Marshall

Chapter 199
Addiction 2075
Randall S. Jotte

Chapter 200
**Anorexia Nervosa and Bulimia
Nervosa** 2085
Jason E. Liebzeit

SECTION XXI ■ Hematology and Oncology Management 2091

Chapter 201
**Introduction to Oncologic
Emergencies** 2093
Jeremy D. Sperling

Chapter 202
**Cardiovascular and Neurologic Oncologic
Emergencies** 2107
Jacob W. Ufberg and Manish Garg

Chapter 203
White Blood Cell Disorders 2121
Jay Lemery

Chapter 204
Emergency Management of Red Blood Cell Disorders 2131
Ugo A. Ezenkwele

SECTION XXII ■ Leadership, Communication, and Administration 2145

Chapter 205
Leadership and Emergency Medicine 2147
J. Stephen Bohan

Chapter 206
The Quality Movement in Health Care: A Primer 2151
Azita G. Hamedani and Elizabeth Mort

Chapter 207
Patient Safety in Emergency Medicine 2161
Cherri D. Hobgood

Chapter 208
Conflict Resolution in Emergency Medicine 2171
Gus M. Garmel

Chapter 209
Informed Consent and Assessing Decision-Making Capacity in the Emergency Department 2187
Diane B. Heller

Chapter 210
Regulatory and Legal Issues in the Emergency Department 2193
Paul D. Biddinger

Chapter 211
**Medical-Legal Issues in Emergency
Medicine** 2199
Gregory L. Henry

Chapter 212
Coding and Billing 2215
James K. Takayesu

Index 2221

**Bonus content available only
on the companion Expert
Consult website**

Appendix 1
Evidence-Based Medicine
Jaime Vasquez

Appendix 2
**Antibiotic Recommendations for Empirical
Treatment of Selected Infectious Diseases**
Ellen M. Slaven

Bonus Chapter 1
Basic Emergency Ultrasound
Emily Baran

Bonus Chapter 2
**Cardiac Emergency Ultrasound: Evaluating
for Pericardial Effusion and Cardiac Activity**
Emily Baran