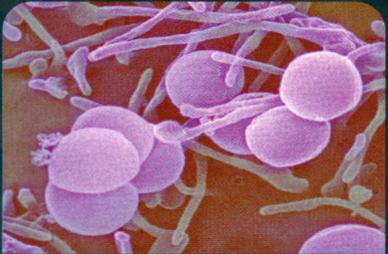
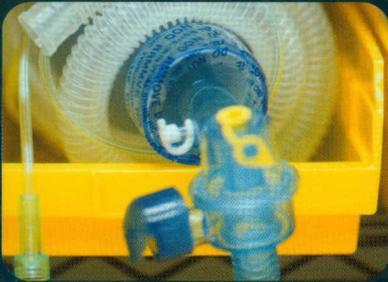


151489

CURRENT

Diagnosis & Treatment



CRITICAL CARE

third edition

FREDERIC S. BONGARD | DARRYL Y. SUE
JANINE R.E. VINTCH

Mc
Graw
Hill

LANGGE

INTERNATIONAL
EDITION

Authors	vii
Preface	xi

1. Philosophy & Principles of Critical Care 1

<i>Darryl Y. Sue, MD, & Frederic S. Bongard, MD</i>	
General Principles of Critical Care	1
Role of the Medical Director of the Intensive Care Unit	8
Critical Care Scoring	10
Current Controversies & Unresolved Issues	12

2. Fluids, Electrolytes, & Acid-Base 14

<i>Darryl Y. Sue, MD, & Frederic S. Bongard, MD</i>	
Disorders of Fluid Volume	14
Disorders of Water Balance	22
Disorders of Potassium Balance	34
Disorders of Phosphorus Balance	42
Disorders of Magnesium Balance	47
Disorders of Calcium Balance	51
Acid-Base Homeostasis & Disorders	56

3. Transfusion Therapy 71

<i>Elizabeth D. Simmons, MD</i>	
Blood Components	71
Blood Component Administration	79
Complications of Transfusion	79
Current Controversies & Unresolved Issues	82

4. Pharmacotherapy 88

<i>Darryl Y. Sue, MD</i>	
Pharmacokinetic Parameters	88
Pharmacokinetic Considerations	88
Medication Errors & Prevention in the ICU	95

5. Intensive Care Anesthesia & Analgesia 97

<i>Tai-Shion Lee, MD, & Biing-Jaw Chen, MD</i>	
Physiologic Effects of Anesthesia in the Critically Ill	97
Airway Management	101
Pain Management in the ICU	103
Muscle Relaxants in Intensive Care	106
Sedative-Hypnotics for the Critically Ill	110
Malignant Hyperthermia	115

6. Nutrition 117

<i>John A. Tayek, MD</i>	
Nutrition & Malnutrition in the Critically Ill Patient	117
Nutritional Therapy	126
Nutritional Support in Specific Diseases	130
New Treatment Strategies for the Malnourished Critically Ill Patient	134

7. Imaging Procedures 137

<i>Kathleen Brown, MD, Steven S. Raman, MD, & Nam C. Yu, MD</i>	
Imaging Techniques	137
Iodinated Contrast Agents	138
Use of Central Venous Catheters for Contrast Injection	139
Imaging of Support & Monitoring Devices in the ICU	139
Imaging in Pulmonary Diseases	144
Imaging in Pleural Disorders	161
Imaging of the Abdomen & Pelvis	167
Imaging of Acute Gallbladder & Biliary Tract Disorders	181
Imaging in Emergent & Urgent Genitourinary Conditions	184

8. Intensive Care Monitoring 187

<i>Kenneth Waxman, MD, Frederic S. Bongard, MD, & Darryl Y. Sue, MD</i>	
Electrocardiography	187
Blood Pressure Monitoring	188
Central Venous Catheters	193
Pulmonary Artery Catheterization	196
Cardiac Output	199
Pulse Oximetry	201
Airway CO ₂ Monitoring	203
Transcutaneous Blood Gases	204
Respiratory Mechanics	204
Respired Gas Analysis	206
Clinical Applications	206

9. Transport 208

<i>Samuel J. Stratton, MD, MPH</i>	
Interhospital Transport	208
Equipment & Monitoring	211
Education & Training	212
Reimbursement Standards & Costs	213
Current Controversies & Unresolved Issues	214

10. Ethical, Legal, & Palliative/End-of-Life Care Considerations 215

<i>Paul A. Selecky, MD</i>	
Ethical Principles	215
Conflicts Between Ethical Principles	216
Ethical Decision Making	216
Advance Care Planning	217
Medicolegal Aspects of Decision Making	217
Withholding & Withdrawing Life Support	218
Organ Donation	219
Role of the Health Care Professional	219
Web Sites for Health Care Ethics Information & Policies	221

11. Shock & Resuscitation 222

<i>Frederic S. Bongard, MD</i>	
Hypovolemic Shock	222
Distributive Shock	230
Cardiac Shock	242

12. Respiratory Failure 247

<i>Darryl Y. Sue, MD, & Janine R. E. Vintch, MD</i>	
Pathophysiology of Respiratory Failure	247
Treatment of Acute Respiratory Failure	253
Acute Respiratory Failure from Specific Disorders	280

13. Renal Failure 314

<i>Andre A. Kaplan, MD</i>	
Nondialytic Therapy for Acute Renal Failure	330
Dialytic Therapy for the Critically Ill Patient	334
Critical Illness in Patients with Chronic Renal Failure	342

14. Gastrointestinal Failure in the ICU 345

<i>Gideon P. Naudé, MD</i>	
Pancreatitis	345
Bowel Obstruction	351
Obstruction of the Large Bowel	354
Adynamic (Paralytic) Ileus	355
Diarrhea & Malabsorption	356
Pancreatic Insufficiency	357
Lactase Deficiency	357
Diarrhea	357

15. Infections in the Critically Ill 359

<i>Laurie Anne Chu, MD, & Mallory D. Witt, MD</i>	
Sepsis	359
Community-Acquired Pneumonia	362
Urosepsis	365
Infective Endocarditis	367

Necrotizing Soft Tissue Infections	370
Intraabdominal Infections	372
Infections in Special Hosts	373
Principles of Antibiotic Use in the ICU	376
Evaluation of the ICU Patient with New Fever	379
Nosocomial Pneumonia	379
Urinary Catheter–Associated Infections	382
Intravenous Catheter–Associated Infections	384
<i>Clostridium Difficile</i> –Associated Diarrhea	386
Hematogenously Disseminated Candidiasis	388
Antimicrobial Resistance in the ICU	389
Botulism	392
Tetanus	394

16. Surgical Infections 397

<i>Timothy L. Van Natta, MD</i>	
Evaluation and Management of Infection by Body Site	400

17. Bleeding & Hemostasis 409

<i>Elizabeth D. Simmons, MD</i>	
Approach to the Bleeding Patient	427
Current Controversies & Unresolved Issues	427

18. Psychiatric Problems 431

<i>Stuart J. Eisendrath, MD, & John R. Chamberlain, MD</i>	
Delirium	431
Depression	436
Anxiety & Fear	438
Staff Issues	440

19. Care of the Elderly Patient 443

<i>Shawkat Dhanani, MD, MPH, & Dean C. Norman, MD</i>	
Physiologic Changes with Age	443
Management of the Elderly Patient in the ICU	445
Special Considerations	447

20. Critical Care of the Oncology Patient 451

<i>Darrell W. Harrington, MD, & Darryl Y. Sue, MD</i>	
Central Nervous System Disorders	451
Metabolic Disorders	457
Superior Vena Cava Syndrome	465

21. Cardiac Problems in Critical Care 467

<i>Shelley Shapiro, MD, PhD, & Malcolm M. Bersohn, MD, PhD</i>	
Atrial Arrhythmias	486
Ventricular Arrhythmias	488

Heart Block	491	Hyperglycemia	594
Cardiac Problems During Pregnancy	493	Hypoglycemia	595
Toxic Effects of Cardiac Drugs	494	Other Complications of Diabetes Mellitus	597
22. Coronary Heart Disease	498	27. HIV Infection in the Critically Ill Patient	598
<i>Kenneth A. Narahara, MD</i>		<i>Mallory D. Witt, MD, & Darryl Y. Sue, MD</i>	
Physiologic Considerations	498	Complications of HIV Disease: An Overview	598
Myocardial Ischemia (Angina Pectoris)	499	Other Infectious Causes of Pneumonia and Respiratory Failure	604
Acute Coronary Syndromes: Unstable Angina and Non-ST-Segment-Elevation Myocardial Infarction	502		
Acute Myocardial Infarction with ST-Segment Elevation	505	28. Dermatologic Problems in the Intensive Care Unit	609
23. Cardiothoracic Surgery	514	<i>Kory J. Zipperstein, MD</i>	
<i>Edward D. Verrier, MD, & Craig R. Hampton, MD</i>		Common Skin Disorders	609
Aneurysms, Dissections, & Transections of the Great Vessels	514	Drug Reactions	612
Postoperative Arrhythmias	518	Purpura	619
Bleeding, Coagulopathy, & Blood Product Utilization	520	Life-Threatening Dermatoses	623
Cardiopulmonary Bypass, Hypothermia, Circulatory Arrest, & Ventricular Assistance	525	Cutaneous Manifestations of Infection	626
Postoperative Low-Output States	529	29. Critical Care of Vascular Disease & Emergencies	632
24. Pulmonary Disease	534	<i>James T. Lee, MD, & Frederic S. Bongard, MD</i>	
<i>Darryl Y. Sue, MD, & Janine R. E. Vintch, MD</i>		Vascular Emergencies in the ICU	632
Status Asthmaticus	534	Critical Care of the Vascular Surgery Patient	651
Life-Threatening Hemoptysis	540	30. Critical Care of Neurologic Disease	658
Deep Venous Thrombosis & Pulmonary Thromboembolism	545	<i>Hugh B. McIntyre, MD, PhD, Linda Chang, MD, & Bruce L. Miller, MD</i>	
Anaphylaxis	562	Encephalopathy & Coma	658
Angioedema	563	Seizures	662
25. Endocrine Problems in the Critically Ill Patient	566	Neuromuscular Disorders	666
<i>Shalender Bhasin, MD, Piya Ballani, MD, & Ricky Phong Mac, MD</i>		Cerebrovascular Diseases	673
Thyroid Storm	566	31. Neurosurgical Critical Care	680
Myxedema Coma	570	<i>Duncan Q. McBride, MD</i>	
Acute Adrenal Insufficiency	572	Head Injuries	680
Sick Euthyroid Syndrome	576	Aneurysmal Subarachnoid Hemorrhage	686
26. Diabetes Mellitus, Hyperglycemia, & the Critically Ill Patient	581	Tumors of the Central Nervous System	688
<i>Eli Ipp, MD, & Chuck Huang, MD</i>		Cervical Spinal Cord Injuries	690
Diabetic Ketoacidosis	581	32. Acute Abdomen	696
Hyperglycemic Hyperosmolar Nonketotic Coma	593	<i>Allen P. Kong, MD, & Michael J. Stamos, MD</i>	
Management of the Acutely Ill Patient with Hyperglycemia or Diabetes Mellitus	594	Specific Pathologic Entities	700
		Current Controversies & Unresolved Issues	701

33. Gastrointestinal Bleeding 703*Sofiya Reicher, MD, & Viktor Eysselein, MD*

Upper Gastrointestinal Bleeding	703
Lower Gastrointestinal Bleeding	710

34. Hepatobiliary Disease 714*Hernan I. Vargas, MD*

Acute Hepatic Failure	714
Acute Gastrointestinal Bleeding from Portal Hypertension	716
Ascites	717
Hepatorenal Syndrome	719
Preoperative Assessment & Perioperative Management of Patients with Cirrhosis	720
Liver Resection in Patients with Cirrhosis	720

35. Burns 723*David W. Mozingo, MD, William G. Cioffi, Jr., MD,
& Basil A. Pruitt, Jr., MD*

I. Thermal Burn Injury	723
Initial Care of the Burn Patient	727
Principles of Burn Treatment	730
Care of the Burn Wound	735
Postresuscitation Period	741
Nutrition	743
II. Chemical Burn Injury	749
III. Electrical Burn Injury	750

36. Poisonings & Ingestions 752*Diane Birnbaumer, MD*

Evaluation of Poisoning in the Acute Care Setting or ICU	752
Treatment of Poisoning in the ICU	754
Management of Specific Poisonings	757

37. Care of Patients with Environmental Injuries 786*James R. Macho, MD, & William P. Schecter, MD*

Heat Stroke	786
Hypothermia	788
Frostbite	791
Near-Drowning	793
Envenomation	795
Electric Shock & Lightning Injury	798
Radiation Injury	800

38. Critical Care Issues in Pregnancy 802*Marie H. Beall, MD, & Andrea T. Jelks, MD*

Physiologic Adaptation to Pregnancy	802
General Considerations in the Care of the Pregnant Patient in the ICU	804
Management of Critical Complications of Pregnancy	807

39. Antithrombotic Therapy 821*Elizabeth D. Simmons, MD*

Physical Measures	821
Antiplatelet Agents	821
Anticoagulants	825
New Anticoagulants	831
Defibrinating Agents	832
Oral Anticoagulants	832
Thrombolytic Therapy	836
Antithrombotic Therapy in Pregnancy	838
Antiphospholipid Antibody Syndrome	839
Thrombosis in Cancer Patients	840
Future Directions	840

Index	843
-------	-----