KODA-KIMBLE & YOUNG'S

APPLIED THERAPEUTICS

The Clinical Use of Drugs

TENTH EDITION

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Applied Therapeutics

The Clinical Use of Drugs

TENTH EDITION

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Dedication

The Editors wish to express their sincere thanks and longstanding admiration to the creators of Applied Therapeutics, Drs. Mary Anne Koda-Kimble and Lloyd Young. They are truly educational visionaries whom we deeply respect as the innovators and pioneers in the teaching of patient-centered drug therapeutics. Their passion has touched the lives of countless health care professional students, clinicians, and patients throughout the world. As their colleagues and friends, we are forever indebted for their contributions and we consider it a privilege to carry forward their legacy—renamed as Koda-Kimble and Young's Applied Therapeutics—into future editions.

Preface

It has been nearly 40 years since the first edition of Applied Therapeutics: The Clinical Use of Drugs was published. The landscape of health care has evolved radically during this time, much of it spurred by remarkable advancements in drug discovery and clinical therapeutics. Despite these changes, the founding principle for this innovative text—a patient-centric, case-based approach to learning—remains integral to the current edition. Our authors present more than 860 patient cases that stimulate the reader to integrate and apply therapeutic principles in the context of specific clinical situations. Students and practitioners are provided with a glimpse into the minds of clinicians as they assess and solve therapeutic problems toward the development of their own critical-thinking and problem-solving skills. Every chapter in this edition has been revised and updated to reflect our ever-changing knowledge of drugs and the application of this knowledge to the individualized therapy of patients. Additionally, content within several sections has been extensively reorganized, with new chapters introduced to expand important topics. Among these are new chapters in the Arthritic Disorders, Women's Health, Neurologic Disorders, Neoplastic Disorders, and Pediatrics sections.

Readers familiar with past editions of the text will notice some welcome changes in the tenth edition. The overall design has been updated for visual appeal and to allow the reader to more quickly distinguish cases from surrounding text. In lieu of the traditional chapter outline, all chapters now contain a Core Principles section at the beginning, which provides the most important "take home" information from the chapter. Each Core Principle is mapped to specific cases within the chapter where the principle is discussed in detail. Key references and websites are listed at the end of each chapter, whereas the full reference lists for each chapter have been moved online.

A particularly significant change to the tenth edition is the incorporation of online multimedia content, much of it author-created, for many of the chapters. These include images, videos, narrated presentations, animations, and podcasts, which can be found on the textbook's website (see the "Additional Resources" section, which follows this preface, for more information). The incorporation of supplemental multimedia into the tenth edition marks a commitment on the part of the editorial team to ensure that *Koda-Kimble and Young's Applied Therapeutics* increases its role as a viable and dynamic resource that can appeal to multiple learning styles and future generations. We welcome your feedback as we undertake planning for the next edition.

The authors have drawn on information from the literature, current standards, and their own clinical experiences to share the process involved in making sound and thoughtful therapeutic decisions. However, it remains the responsibility of every practitioner to evaluate the appropriateness of a particular opinion in the context of the actual clinical situation, bearing in mind any recent developments in the field. We strongly urge students and practitioners to consult

several appropriate information sources when working with new and unfamiliar drugs.

ACKNOWLEDGMENTS

We are deeply indebted to the many dedicated people who have given of themselves to complete the tenth edition of Koda-Kimble and Young's Applied Therapeutics. As always, we are most grateful to our contributing authors who have been attentive to meeting our stringent time deadlines and unique writing format. We especially thank those authors who graciously provided multimedia to accompany their chapter, and we gratefully recognize the additional time and effort this entailed. We hold their creativity in the highest regard. The exceptional work of our section editors, Judith Beizer, Marcia Buck, Shareen El-Ibiary, Marcus Ferrone, Patrick Finley, Timothy Ives, Mark Kirstein, Lisa Kroon, Kelly Lee, Myrna Munar, Jean Nappi, Tricia Russell, and Joseph Saseen, cannot be overstated. These content experts gave us critical feedback necessary in both the organizational structure of the textbook and in the individual editing of chapters; without their dedication and assistance, this edition would not be possible. We would also like to thank Facts and Comparisons for allowing us to use their data for the construction of some of our tables.

Two individuals from Lippincott Williams and Wilkins, Meredith Brittain and Loftin (Paul) Montgomery, Jr., deserve special recognition for their efforts. Their exceptional patience, attention to detail, and firm guidance helped us all stay on task. This edition would not have come to completion without their partnership. Mary Tod (copyediting), Ed Schultes, Jr. (multimedia production), and Jeri Litteral (typesetting) all played key roles in the production of the tenth edition, and we sincerely thank them for their assistance in completing this edition. Most importantly, we would be remiss not to acknowledge the love, understanding, and support of our spouses, children, and in some cases, grand-children. They selflessly gave to us the many early mornings, late nights, and weekends we spent writing and editing.

As in past editions, we continue to dedicate our work to our students who inspire us and to the many patients we have been privileged to care for. Our patients have repeatedly taught us how critical it is to tailor our knowledge to their specific circumstances, to listen well, and to welcome them as true partners in their care.

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Additional Resources

The Tenth Edition of *Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs* includes additional resources for both instructors and students, available on the book's companion website at http://thepoint.lww.com/AT10e.

STUDENT RESOURCES

Students who have purchased *Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs*, Tenth Edition have access to the following additional resources for each chapter:

- An audio recording of that chapter's core principles
- A full online reference list for that chapter

In addition, at least one of the following supplements each chapter to enhance the chapter content:

- Audio files (most recorded by author)
- PowerPoints (most created by author)
- PowerPoints with audio (most created/recorded by author)
- Animations

- Videos (some created by author)
- Additional content (created by author)
- Interactive versions of the algorithms found in the book
- Full-color images

INSTRUCTOR RESOURCES

Approved adopting instructors will be given access to the following additional resources:

- PowerPoint slides
- Image bank (includes all images and tables in the book)
- Pathophysiology image collection

In addition, purchasers of the text can access the searchable Full Text On-line by going to the *Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs,* Tenth Edition website at http://thepoint.lww.com/AT10e. See the inside front cover for more details, including the passcode you will need to gain access to the website.

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Brief Table of Contents

SECTION 1: GENERAL CARE 1

 Assessment of Therapy and Medication Therapy Management 1

Marilyn R. Stebbins, Timothy W. Cutler, and Patricia L. Parker

- 2 Interpretation of Clinical Laboratory Tests 16 Catrina R. Schwartz and Mark W. Garrison
- 3 Anaphylaxis and Drug Allergies 42 Robert K. Middleton
- 4 Managing Drug Overdoses and Poisonings 65 Judith A. Alsop
- 5 End-of-Life Care 88 Victoria F. Ferraresi
- 6 Nausea and Vomiting 98 Lisa K. Lohr
- 7 Pain and Its Management 112Lee A. Kral and Virginia L. Ghafoor
- 8 Perioperative Care 147
 Andrew J. Donnelly, Julie A. Golembiewski, and Andrei M. Rakic
- 9 Acid-Base Disorders 175 Luis S. Gonzalez, III and Raymond W. Hammond
- 10 Fluid and Electrolyte Disorders 188
 Alan H. Lau and Priscilla P. How
- **11 Vaccinations 217**Sherry Luedtke and Molly G. Minze
- 12 Anemias 232
 Cindy L. O'Bryant and Lisa A. Thompson

SECTION 2: CARDIAC AND VASCULAR DISORDERS 252

Section Editors: Joseph J. Saseen and Jean M. Nappi

13 Dyslipidemias, Atherosclerosis, and Coronary Heart Disease 252

Matthew K. Ito

- **14 Essential Hypertension 291** Joseph J. Saseen
- 15 Peripheral Vascular Disorders 331 Patricia M. Schuler and C. Wayne Weart
- 16 Thrombosis 345
 Ann K. Wittkowsky and Edith A. Nutescu
- **17 Chronic Stable Angina 377**Toby C. Trujillo and Paul E. Nolan
- **18 Acute Coronary Syndrome 407** Robert Lee Page, II and Jean M. Nappi
- **19 Heart Failure 436**Harleen Singh and Joel C. Marrs

20 Cardiac Arrhythmias 489

C. Michael White, Jessica C. Song, and James S. Kalus

- 21 Hypertensive Crises 520
 Kristin Watson, Brian Watson, Kelly Summers, and Robert Michocki
- **22 Shock 536**Andrew D. Barnes and Susan H. Lee

SECTION 3: PULMONARY DISORDERS 565

23 Asthma 565

Timothy H. Self, Cary R. Chrisman, and Christopher K. Finch

- 24 Chronic Obstructive Pulmonary Disease 601
 Philip T. Diaz and Daren L. Knoell
- **25 Acute and Chronic Rhinitis 619**Tina Penick Brock and Dennis M. Williams
- **26 Cystic Fibrosis 644**Paul M. Beringer and Michelle Condren

SECTION 4: GASTROINTESTINAL DISORDERS 660

- **27** Upper Gastrointestinal Disorders 660 Randolph V. Fugit and Rosemary R. Berardi
- 28 Lower Gastrointestinal Disorders 699 Geoffrey C. Wall
- **29 Complications of End-Stage Liver Disease** 720 Yasar O. Tasnif and Mary F. Hebert

SECTION 5: RENAL DISORDERS 743

Section Editor: Myrna Y. Munar

- **30 Acute Kidney Injury 743**Myrna Y. Munar and Donald F. Brophy
- **31 Chronic Kidney Disease 764**Darius L. Mason and Magdalene M. Assimon
- 32 Renal Dialysis 797
 Myrna Y. Munar
- **33 Dosing of Drugs in Renal Failure 811** David J. Quan and Francesca T. Aweeka

SECTION 6: SOLID ORGAN TRANSPLANTATION 827

34 Kidney and Liver Transplantation 827David J. Taber and Robert E. Dupuis

SECTION 7: NUTRITION ISSUES 861

Section Editor: Marcus Ferrone

- 35 Basics of Nutrition and Patient Assessment 861 Jeff F. Binkley
- **36 Obesity 872**Maria Ballod

37	Adult Enteral Nutrition	884
	Carol J. Rollins and Jennifer I	H. Bagg

38 Adult Parenteral Nutrition 908 Jane M. Gervasio and Jennifer L. Ash

SECTION 8: DERMATOLOGIC DISORDERS 925

Section Editor: Timothy J. Ives

39 Dermatotherapy and Drug-Induced Skin Disorders 925

Richard N. Herrier

40 Acne 944

Ellen R. DeGrasse and Jamie J. Cavanaugh

41 Psoriasis 956

Katie L. Kiser and Timothy J. Ives

42 Photosensitivity, Photoaging, and Burn Injuries 968 Katherine R. Gerrald and Timothy J. Ives

SECTION 9: ARTHRITIC DISORDERS 989

Section Editor: Tricia M. Russell

43 Osteoarthritis 989

Dominick P. Trombetta

44 Rheumatoid Arthritis 1002

Steven W. Chen, Rory E. O'Callaghan, and Alison M. Reta

45 Gout and Hyperuricemia 1039

KarenBeth H. Bohan

46 Connective Tissue Disorders 1054

Julie L. Olenak and Jonathan D. Ference

SECTION 10: WOMEN'S HEALTH 1066

Section Editor: Shareen Y. El-Ibiary

47 Contraception 1066

Shareen Y. El-Ibiary and Jennifer L. Hardman

48 Infertility 1090

Erin C. Raney

49 Obstetric Drug Therapy 1107

Kimey D. Ung and Jennifer McNulty

50 Disorders Related to the Menstrual Cycle 1149
Laura M. Borgelt and Karen M. Gunning

51 The Transition Through Menopause 1175
Louise Parent-Stevens

SECTION 11: ENDOCRINE DISORDERS 1186

Section Editor: Lisa A. Kroon

52 Thyroid Disorders 1186

Betty J. Dong and Eric F. Schneider

53 Diabetes Mellitus 1223
Lisa A. Kroon and Craig Williams

SECTION 12: EYE DISORDERS 1301

54 Eye Disorders 1301

Steven R. Abel and Suellyn J. Sorensen

SECTION 13: NEUROLOGIC DISORDERS 1323

55 Multiple Sclerosis 1323 Melody Ryan 56 Headache 1337

Brian K. Alldredge

57 Parkinson Disease and Other Movement Disorders 1358

Michael E. Ernst and Mildred D. Gottwald

58 Seizure Disorders 1387

James W. McAuley, Rex S. Lott, and Brian K. Alldredge

59 Cerebrovascular Disorders 1419

Timothy E. Welty

SECTION 14: INFECTIOUS DISEASE 1437

60 Principles of Infectious Diseases 1437B. Joseph Guglielmo

61 Antimicrobial Prophylaxis for Surgical Procedures 1461

Daniel J. G. Thirion

62 Central Nervous System Infections 1468

Gregory A. Eschenauer, Brian A. Potoski, and Victoria J. Dudas

63 Endocarditis 1489

Annie Wong-Beringer and Michelle Lee

64 Respiratory Tract Infections 1513

Heather M. Arnold, Eli N. Deal, Steven Gelone, and Scott T. Micek

65 Tuberculosis 1534

Michael B. Kays

66 Infectious Diarrhea 1559

Gail S. Itokazu, David T. Bearden, and Larry H. Danziger

67 Intra-Abdominal Infections 1581

Carrie A. Sincak and Sheila K. Wang

68 Urinary Tract Infections 1594

Douglas N. Fish

69 Sexually Transmitted Diseases 1619

Jeffery A. Goad and Karl M. Hess

70 Osteomyelitis and Septic Arthritis 1648

Bridgette L. Kram and Ralph H. Raasch

71 Traumatic Skin and Soft Tissue Infections 1661

James P. McCormack and Glen R. Brown

72 Prevention and Treatment of Infections in Neutropenic Cancer Patients 1672

Richard H. Drew

73 Pharmacotherapy of Human Immunodeficiency Virus Infection 1690

Jessica L. Adams, Julie B. Dumond, and Angela D.M. Kashuba

74 Opportunistic Infections in HIV-Infected Patients 1717

Amanda H. Corbett and Emily L. Heil

75 Fungal Infections 1746

John D. Cleary, Stanley W. Chapman, and Margaret M. Pearson

76 Viral Infections 1772

Milap C. Nahata, Neeta Bahal O'Mara, and Sandra Benavides

77 Viral Hepatitis 1790

Curtis D. Holt

78 Parasitic Infections 1828

I.V. Anandan

79 Tick-Borne Diseases 1846

Thomas E. Christian

SECTION 15: PSYCHIATRIC DISORDERS 1863

Section Editors: Patrick R. Finley and Kelly C. Lee

80 Anxiety Disorders 1863Sally K. Guthrie and Jolene R. Bostwick

81 Sleep Disorders 1900Julie A. Dopheide and Glen L. Stimmel

82 Schizophrenia 1921Jonathan P. Lacro, Sanaz Farhadian, and Rene A. Endow-Eyer

83 Mood Disorders I: Major Depressive Disorders 1949 Patrick R. Finley and Kelly C. Lee

84 Mood Disorders II: Bipolar Disorders 1983 James J. Gasper

85 Attention Deficit Hyperactivity Disorder in Children,Adolescents, and Adults 1999

Kimberly B. Tallian, Patrick R. Finley, Paul Perry, and Samuel Kuperman

SECTION 16: SUBSTANCE ABUSE 2011

86 Drug Abuse 2011 Wendy O. Zizzo and Paolo V. Zizzo

87 Alcohol Use Disorders 2033 George A. Kenna

88 Tobacco Use and Dependence 2055
Robin L. Corelli and Karen Suchanek Hudmon

SECTION 17: NEOPLASTIC DISORDERS 2080

Section Editor: Mark N. Kirstein

89 Neoplastic Disorders and Their Treatment: General Principles 2080

Makala B. Pace and Katherine Tipton Patel

90 Adverse Effects of Chemotherapy and Targeted Agents 2109Amy Hatfield Seung

91 Pediatric Malignancies 2143
David W. Henry, Mark T. Holdsworth, and Nicole A. Kaiser

92 Adult Hematologic Malignancies 2172

Lynn Weber, Steve Stricker, Casey B. Williams, and Katie A. Won

93 Breast Cancer 2197

Kellie L. Jones

94 Lung Cancer 2210

Mark N. Kirstein, Robert A. Kratzke, and Arkadiusz Z. Dudek

95 Colorectal Cancer 2223

Sachin R. Shah and Julian Hoyt Slade, III

96 Hematopoietic Cell Transplantation **2236** Kathleen G. E. Green and John R. Rogosheske

SECTION 18: PEDIATRICS 2265

Section Editor: Marcia L. Buck

97 Pediatric Pharmacotherapy 2265

Marcia L. Buck

98 Pediatric Fluid, Electrolytes, and Nutrition 2277
Michael F. Chicella and Jennifer W. Chow

99 Common Pediatric Illnesses 2293Michelle Condren and Mark R. Haase

100 Neonatal Therapy 2307

Donna M. Kraus and Jennifer Tran Pham

101 Care of the Critically III Child 2337
Elizabeth Anne Farrington and Marcia L. Buck

SECTION 19: GERIATRIC THERAPY 2359

Section Editor: Judith L. Beizer

102 Geriatric Drug Use 2359 Jiwon Kim and May Mak

103 Geriatric Dementias 2375
Nicole J. Brandt and Bradley R. Williams

104 Geriatric Urologic Disorders 2395 Michael R. Brodeur

105 Osteoporosis 2417Rebecca A. Rottman-Sagebiel

Drug Index 2434

Subject Index 2466

Detailed Table of Contents

SECTION 1: GENERAL CARE 1	Case 3-4, Questions 1–3 54
1 Assessment of Therapy and Medication Therapy	Case 3-5, Questions 1–4 55
Management 1	Organ-Specific Reactions 56
Marilyn R. Stebbins, Timothy W. Cutler, and Patricia L. Parker	Pseudoallergic Reactions 57
	Case 3-6, Questions 1–5 57 Case 3-7, Questions 1–3 59
Sources of Patient Information 2	Latex Allergy 61
Effective Communication and the Patient Interview 4	
Obtaining A Patient History 5	Prevention and Management of Allergic Reactions 61
Case 1-1, Questions 1–3 5	Case 3-8, Question 1 61 Case 3-9, Questions 1–5 62
Approach to and Assessment of Patient Therapy 7	Key References and Websites 63
Case 1-2, Question 1 8	Rey References and Websites 05
Case 1-3, Question 1 8	4.14
Case 1-4, Question 1 9	4 Managing Drug Overdoses and Poisonings 65
Medication Therapy Management Services in the Community	Judith A. Alsop
Pharmacy or Ambulatory Setting 10	General Management 68
Case 1-5, Questions 1–4 12	Assessment of Salicylate Ingestion 70
Medication Therapy Management in the Acute	Case 4-1, Questions 1–3 70
Care Setting 14	Case 4-2, Questions 1–6 71
Case 1-5, Question 5 14	Assessment of Iron Ingestion 74
Conclusion 14	Case 4-3, Questions 1–14 74
Acknowledgment 15	Assessment of Central Nervous System Depressant versus
Key References and Websites 15	Antidepressant Ingestion 78
	Case 4-4, Questions 1–17 78
2 Interpretation of Clinical Laboratory Tests 16	Assessment of Acetaminophen Ingestion 83
Catrina R. Schwartz and Mark W. Garrison	Case 4-5, Questions 1–15 83
General Principles 16	Summary 87
Fluids and Electrolytes 20	Key References and Websites 87
Case 2-1, Questions 1–3 20	,
Case 2-2, Questions 1–2 24	5 End-of-Life Care 88
Case 2-3, Question 1 25	Victoria F. Ferraresi
Multichemistry Panels 25	VICTORIA F. FERTAICSI
Case 2-4, Question 1 26	Hospice and Palliative Care 88
Proteins 27	Case 5-1, Questions 1–2 90
Cardiac Markers 27	Symptom Management 93
Case 2-5, Question 1 28	Case 5-1, Questions 3–4 93
Liver Function Tests 29	Pain Management 95
Case 2-6, Question 1 30	Case 5-2, Question 1 95
Case 2-7, Question 1 30	Case 5-3, Questions 1–3 96
Miscellaneous Tests 31	Key References and Websites 97
Hematology 32	
Case 2-8, Question 1 34	6 Nausea and Vomiting 98
Case 2-9, Question 1 35	Lisa Lohr
Case 2-10, Question 1 35	
Urinalysis 36	Definition 99
Case 2-11, Question 1 40	Epidemiology and Clinical Presentation 99
Therapeutic Drug Monitoring 40	Pathophysiology 99
Patient-Directed Monitoring and Testing 41	Diagnosis 99
Key References and Websites 41	Motion Sickness 100
Rey References and Websites 41	Case 6-1 , Questions 1–2 100
3 Anaphylaxis and Drug Allergies 42	Chemotherapy-Induced Nausea and Vomiting 101
Robert K. Middleton	Case 6-2, Questions 1–3 101
Robert IX, Milduleton	Radiation-Induced Nausea and Vomiting 107
Case 3-1, Questions 1–4 46	Case 6-3, Question 1 107
Generalized Reactions 49	Postoperative Nausea and Vomiting 109
Case 3-2, Questions 1–3 49	Case 6-4, Question 1 109
Case 3-3, Questions 1–3 52	Key References and Websites 111

7 Pain and Its Management 112 Lee A. Kral and Virginia L. Ghafoor	10 Fluid and Electrolyte Disorders 188 Alan H. Lau and Priscilla P. How
Low Back Pain 117	Basic Principles 190
Case 7-1, Questions 1–6 119	Case 10-1, Question 1 190
Fibromyalgia and Myofascial Pain 123	Disorders in Volume Regulation 192
Case 7-2, Questions 1–3 125	Case 10-2, Questions 1–2 192
Neuropathic Pain and Postherpetic Neuralgia 126	Case 10-3, Questions 1–2 193
Case 7-3, Questions 1–4 128	Disorders in Osmoregulation 194
Complex Regional Pain Syndrome 130	Case 10-4, Question 1 195
Case 7-4, Questions 1–2 131	Case 10-5, Questions 1–2 195
Pharmacotherapy Options for Chronic Pain in	Case 10-6, Question 1 197
the Elderly 132	Case 10-7, Question 1–5 197
Case 7-5, Questions 1–4 132	Clinical Use of Diuretics 201
Functional Abdominal Pain Syndrome 135	Potassium 202
Case 7-6, Questions 1–6 135	Case 10-8, Questions 1–3 203
Cancer Pain and Symptom Management 138	Case 10-9, Question 1 205
	Case 10-10, Questions 1–2 206
Case 7-7, Questions 1–9 139	Calcium 207
Key References and Websites 146	
9 Deview eventive Cover 147	Case 10-11, Questions 1–3 208
8 Perioperative Care 147	Phosphorus 211
Andrew J. Donnelly, Julie A. Golembiewski, and	Case 10-12, Questions 1–4 212
Andrei M. Rakic	Magnesium 213
Preoperative Medications 148	Case 10-13, Questions 1–4 214
Case 8-1, Question 1 150	Case 10-14, Questions 1–3 216
Case 8-2, Question 1 151	Key References and Websites 216
Intravenous Anesthetic Agents 152	
Case 8-3, Question 1 153	11 Vaccinations 217
Case 8-4, Question 1 153	Sherry Luedtke and Molly G. Minze
Case 8-5, Question 1 153	Sherry Ededike and Wony G. While
Case 8-6, Question 1 154	Vaccine Principles 219
Volatile Inhalation Agents 154	Case 11-1, Question 1 219
Case 8-7, Question 1 156	Guidelines 221
Case 8-8, Question 1 157	Case 11-2, Question 1 221
Neuromuscular Blocking Agents 157	Case 11-3 , Question 1 221
5 5	Inactivated Vaccines 221
Case 8-9, Questions 1–2 158	Case 11-4, Question 1–2 221
Case 8-10, Question 1 159	Case 11-5, Question 1 222
Local Anesthetics 160	Case 11-6, Question 1 223
Case 8-11, Question 1 161	Case 11-7 , Question 1 224
Case 8-12, Question 1 162	Case 11-8, Question 1 224
Antiemetic Agents and Postoperative Nausea	Case 11-9, Question 1 224
and Vomiting 162	Case 11-10, Question 1 225
Case 8-13, Question 1–4 163	Case 11-11, Question 1 225
Analgesic Agents and Postoperative Pain Management 166	Case 11-12, Questions 1–2 226
Case 8-14, Questions 1–7 167	Case 11-13, Question 1 227
Case 8-15, Questions 1–6 170	Live Attenuated Vaccines 227
Case 8-16, Question 1 172	Case 11-14, Question 1 227
Key References and Websites 173	Case 11-15, Question 1 228
	Case 11-16, Questions 1–2 229
9 Acid–Base Disorders 175	Administration Techniques 229
Luis S. Gonzalez, III and Raymond W. Hammond	-
Acid-Base Physiology 175	Case 11-17, Question 1 230
Evaluation of Acid–Base Disorders 178	Legal Requirements 230
Metabolic Acidosis 178	Case 11-18, Question 1 230
	Key References and Websites 231
Case 9-1, Questions 1-6 179	
Case 9-2, Questions 1-4 180	12 Anemias 232
Metabolic Alkalosis 182	Cindy L. O'Bryant and Lisa A. Thompson
Case 9-3, Questions 1-4 183	Omay 2. O Digant and Lisa 11. Thompson
Respiratory Acidosis 184	Iron Deficiency Anemia 235
Case 9-4, Questions 1–4 184	Case 12-1, Questions 1–10 235
Respiratory Alkalosis 185	Megaloblastic Anemias 238
Case 9-5, Questions 1–4 185	Case 12-2, Questions 1–3 239
Mixed Acid–Base Disorders 186	Case 12-3, Question 1 241
Case 9-6 , Questions 1–3 186	Case 12-4, Questions 1–2 241
Key References and Websites 187	Case 12-5, Questions 1–2 242

Sickle Cell Anemia 243	16 Thrombosis 345
Case 12-6, Questions 1–3 244	Ann K. Wittkowsky and Edith A. Nutescu
Case 12-7, Questions 1–6 245	
Anemia of Chronic Disease 247	General Principles 345
Case 12-8, Question 1 248	Deep Venous Thrombosis 352
Case 12-9, Question 1 249	Case 16-1, Questions 1–12 352
Case 12-10, Question 1–2 249	Case 16-2, Question 1 356
Acknowledgment 250	Case 16-3, Questions 1–2 357
Key References and Websites 250	Case 16-4, Question 1 358
	Pulmonary Embolism 359 Case 16-5, Questions 1–6 359
CECTION O CARRIAG AND MACCHIAR	Case 16-6, Questions 1-6 363
SECTION 2: CARDIAC AND VASCULAR	Case 16-7, Question 1 367
DISORDERS 252	Case 16-8, Question 1 368
Section Editors: Joseph J. Saseen and Jean M. Nappi	Prevention of Cardiogenic
	Thromboembolism 369
13 Dyslipidemias, Atherosclerosis, and Coronary Heart	Case 16-9, Questions 1–3 369
Disease 252	Case 16-10, Question 1 371
Matthew K. Ito	Case 16-11, Question 1 371
Hamanikalantanalamia 207	Bridge Therapy 371
Hypercholesterolemia 267	Case 16-12, Question 1 371
Case 13-1, Questions 1–10 267	Case 16-13, Question 1 373
Case 13-2, Questions 1–6 274	Drug Interactions 373
Case 13-3, Questions 1–4 281	Case 16-14, Question 1 373
Mixed Hyperlipidemia 282	Case 16-15, Question 1 374
Case 13-4, Questions 1–12 282	Case 16-16, Question 1 375
Case 13-5, Questions 1–2 288 Case 13-6, Question 1 289	Case 16-17 , Question 1 375
Key References and Websites 289	Key References and Websites 375
Rey References and Websites 209	·
44.5 (111)	
14 Essential Hypertension 291	17 Chronic Stable Angina 377
Joseph J. Saseen	Toby C. Trujillo and Paul E. Nolan
Introduction 291	Chronic Stable Angine 270
Clinical Evaluation 301	Chronic Stable Angina 378 Overview of Drug and Nondrug Therapy 384
Case 14-1, Questions 1–6 301	Clinical Presentation of Chronic Stable Angina 388
Principles of Treatment 303	Case 17-1, Questions 1–24 388
Case 14-1, Questions 7–10 303	Case 17-1, Questions 1–24 388 Case 17-2, Questions 1–4 395
Hypertension Management 304	Case 17-2, Questions 1–4 399 Case 17-3, Questions 1–3 398
Case 14-1, Questions 11–17 304	Revascularization 399
Case 14-2, Questions 1–4 306	Case 17-3, Questions 4–8 399
Case 14-3, Questions 1–6 307	Variant Angina (Coronary Artery Spasm) 403
Clinical Scenarios 311	Case 17-4, Questions 1–4 403
Case 14-4, Questions 1–10 311	Microvascular Ischemia (Syndrome X) 405
Case 14-5, Question 1 316	Case 17-5, Question 1 405
Case 14-6, Questions 1–10 317	Key References and Websites 405
Case 14-7 , Questions 1–2 321	,
Case 14-8, Question 1 322	
Case 14-9 , Questions 1–3 322	18 Acute Coronary Syndrome 407
Case 14-10, Questions 1–10 323	Robert Lee Page, II and Jean M. Nappi
Case 14-11, Questions 1–3 325	- 1
Case 14-12, Questions 1–4 326	Acute Coronary Disease 408
Case 14-13, Questions 1–3 327	Overview of Drug and Nondrug Therapy 413
Case 14-14, Questions 1–4 328	Clinical Presentation of ACS 422
Case 14-15, Questions 1–4 329	Case 18-1, Questions 1–6 422
Key References and Websites 329	Treatment for ST Segment Elevation Myocardial Infarction 424
15 Peripheral Vascular Disorders 331	Case 18-1, Questions 7–23 424
Patricia M. Schuler and C. Wayne Weart	Treatment for Unstable Angina or Non-ST Segment Elevation
·	Myocardial Infarction 430
Peripheral Arterial Disease 331	Case 18-2, Questions 1–4 430
Case 15-1, Questions 1-11 333	Long-Term Therapy 432
Raynaud's Phenomenon 339	Case 18-3, Questions 1-9 432
Case 15-2, Questions 1-4 340	Lifestyle Modifications 434
Nocturnal Leg Muscle Cramps 342	Case 18-3, Questions 10 434
Case 15-3, Questions 1–5 342	Summary 434
Key References and Websites 344	Key References and Websites 434

19 Heart Failure 436	Hemodynamic Monitoring 538
Harleen Singh and Joel C. Marrs	Etiologic Classification of Shock and
	Common Mechanisms 540
Patient Evaluation 449	Hypovolemic Shock 540
Case 19-1, Questions 1–5 449	Case 22-1, Questions 1–13 541
Treatment 452	Cardiogenic Shock 547
Case 19-1, Questions 6–20 452	Case 22-2, Questions 1–10 547
Case 19-2, Questions 1–9 468	
Case 19-3, Questions 1–2 474	Case 22-3, Questions 1–5 552
Case 19-4, Questions 1–3 476	Septic Shock 555
Case 19-5, Questions 1–4 480	Case 22-4, Questions 1–8 556
Case 19-6, Questions 1–2 483	Disseminated Intravascular Coagulation 562
Heart Failure With Preserved Left Ventricular Ejection	Case 22-4, Questions 9–12 562
Fraction 484	Glossary 564
Case 19-7, Question 1 484	
Case 19-8, Question 1 487	SECTION 3: PULMONARY DISORDERS 565
Key References and Websites 488	
	23 Asthma 565
20 Cardiac Arrhythmias 489	Timothy H. Self, Cary R. Chrisman, and
C. Michael White, Jessica C. Song, and James S. Kalus	Christopher K. Finch
G. Wilchael Willie, Jessieu G. Bong, and Julies B. Rulus	
Electrophysiology 490	Asthma 566
Supraventricular Arrhythmias 493	Acute Asthma 573
Case 20-1, Questions 1–13 495	Case 23-1, Questions 1–9 573
Case 20-2, Question 1 502	Case 23-2, Questions 1–12 580
Case 20-3, Questions 1–3 502	Chronic Asthma 584
Case 20-4, Questions 1–6 503	Case 23-3 , Questions 1–4 584
	Case 23-4, Question 1 585
Case 20-5, Questions 1–2 505	Case 23-5, Questions 1–6 585
Conduction Blocks 505	Case 23-6, Question 1 590
Case 20-6, Questions 1–2 505	
Ventricular Arrhythmias 506	Case 23-7, Questions 1–3 590
Case 20-7, Questions 1–2 508	Case 23-8, Question 1 592
Case 20-8, Question 1 509	Case 23-9, Question 1 592
Case 20-9 , Questions 1–3 509	Case 23-10, Question 1 593
Case 20-10 , Questions 1–5 512	Exercise-Induced Asthma 593
Cardiopulmonary Arrest 515	Case 23-11, Question 1 593
Case 20-11, Questions 1–4 515	Case 23-12, Question 1 594
Case 20-12, Question 1 518	Patient Education 594
Case 20-13, Question 1 518	Case 23-13, Questions 1–3 594
	Nocturnal Asthma 596
Key References And Websites 518	Case 23-14, Question 1 596
	Drug-Induced Asthma 598
21 Hypertensive Crises 520	Case 23-15, Question 1 598
Kristin Watson, Brian Watson, Kelly Summers, and	, ,
Robert Michocki	Outcomes 599
	Case 23-16 , Questions 1–3 599
Clinical Presentation of Hypertensive Urgency 521	Complementary Alternative Therapies 600
Clinical Presentation of Hypertensive Emergency 521	Case 23-16, Question 4 600
Overview of Treatment 522	Key References and Websites 600
Hypertensive Urgencies 522	
Case 21-1, Questions 1–6 522	24 Chronic Obstructive Pulmonary Disease 601
Hypertensive Emergencies 527	Philip T. Diaz and Daren L. Knoell
Case 21-2, Questions 1–11 527	Thinp I. Diaz and Daten L. Mioch
Case 21-3, Questions 1–6 530	Diagnosis and Patient Assessment 607
	General Management Considerations 609
Case 21-4, Questions 1–2 531	Pharmacotherapy 609
Case 21-5, Questions 1–3 532	Pharmacologic Therapy by Disease Severity 611
Case 21-6, Questions 1–3 534	COPD Exacerbation 611
Case 21-7, Question 1 535	
Key References and Websites 535	Stage I (Mild) COPD 612
	Case 24-1, Questions 1–3 612
22 Shock 536	Stage II (Moderate) COPD 613
	Case 24-2, Questions 1–5 613
Andrew D. Barnes and Susan H. Lee	Stage III (Severe) COPD 615
Introduction 536	Case 24-3, Questions 1–3 615
Causes 537	Stage IV (Very Severe) COPD 616
Pathophysiology 537	Case 24-4, Question 1 616
	Case 24-5, Questions 1–2 617
Clinical Presentation and diagnosis 537	Key References and Website 618
Treatment Overview 538	incy increments and wedsite 018

25 Acute and Chronic Rhinitis 619 Tina Penick Brock and Dennis M. Williams	28 Lower Gastrointestinal Disorders 699 Geoffrey C. Wall
Definition 619	Overview of Inflammatory Bowel Disease 700
Causes and Classifications 620	Ulcerative Colitis 705
Epidemiology and Impact 621	Case 28-1, Questions 1–13 705
Anatomy and Physiology 621	Case 28-2, Question 1 710
Etiology of Allergic Rhinitis 622	Crohn's Disease 710
Pathophysiology 622	Case 28-3, Questions 1–7 710
Clinical Presentation and Assessment of Rhinitis 623	Irritable Bowel Syndrome 714
General Management of Rhinitis 625	Case 28-4, Questions 1–4 715
Specific Therapeutic Options 628	Case 28-5, Questions 1–2 717
Case 25-1 , Questions 1–8 628	Key References and Websites 718
Case 25-2, Questions 1–3 632	
Case 25-3 , Questions 1–9 633	29 Complications of End-Stage Liver Disease 720
Case 25-4, Questions 1–2 636	Yasar O. Tasnif and Mary F. Hebert
Case 25-5, Question 1 636	Overview 721
Case 25-6, Questions 1–6 637	Pathogenesis of Cirrhosis 721
Drug-Induced Nasal Congestion: Rhinitis	Complications of Cirrhosis 722
Medicamentosa 639	Case 29-1, Question 1 724
Case 25-7, Questions 1–2 639	Ascites 724
Idiopathic Rhinitis 641	Case 29-1, Questions 2–12 724
Case 25-8, Questions 1–2 641 MIxed Allergic-Nonallergic Rhinitis 642	Esophageal Varices 730
Case 25-9, Questions 1–2 642	Case 29-2, Questions 1–6 730
Summary 642	Hepatic Encephalopathy 735
Acknowledgments 642	Case 29-3, Questions 1–6 735
Key References and Websites 642	Hepatorenal Syndrome 739
,,	Case 29-3 , Questions 7–8 739
26 Cystic Fibrosis 644	Key References and Websites 742
Paul M. Beringer and Michelle Condren	SECTION 5: RENAL DISORDERS 743
Genetic Basis 645	Section Editor: Myrna Y. Munar
Clinical Manifestations 646	,
Diagnosis 649	30 Acute Kidney Injury 743
Case 26-1, Question 1 650	Myrna Y. Munar and Donald F. Brophy
Early Interventions and Therapy 650	
Case 26-1, Questions 2–3 650	Definition 744
Case 26-2, Questions 1-3 653	Epidemiology 744 Prognosis 745
Case 26-3, Questions 1–3 656 Lung Transplantation 658	Clinical Course 745
Key References and Websites 659	Pathogenesis 745
Rey References and Websites 639	Clinical Evaluation 746
CECTION 4 CACEDOINTECTINAL DICORDEDG //O	Prerenal and Functional Acute Kidney Injury 750
SECTION 4: GASTROINTESTINAL DISORDERS 660	Case 30-1, Questions 1–3 750
27 Upper Gastrointestinal Disorders 660	Case 30-2, Questions 1–4 751
Randolph V. Fugit and Rosemary R. Berardi	Intrinsic Acute Kidney Injury 752
	Case 30-3 , Questions 1–5 752
Upper Gastrointestinal Disorders 661	Tubulointerstitial Diseases 754
Physiology of the Upper Gastrointestinal Tract 661 Pharmacotherapy of Drugs Used to Treat Acid Polated	Case 30-4, Question 1 754
Pharmacotherapy of Drugs Used to Treat Acid-Related Disorders 663	Case 30-5 , Questions 1–4 755
Disorders 665 Dyspepsia 667	Case 30-6, Questions 1–3 756
Peptic Ulcer Disease 669	Case 30-7 , Questions 1–2 758
Helicobacter Pylori–Related Peptic Ulcer 675	Postrenal Acute Kidney Injury 759
Case 27-1, Questions 1–10 675	Case 30-8, Questions 1–2 760
Nonsteroidal Anti-Inflammatory Drug-Induced	Supportive Management of Acute Kidney Injury 761
Peptic Ulcer 679	Case 30-9, Questions 1–2 761
Case 27-2, Questions 1–10 679	Key References and Websites 763
Zollinger-Ellison Syndrome 682	21 Chronic Kidnov Discoss 744
Gastroesophageal Reflux Disease 683	31 Chronic Kidney Disease 764 Darius I. Mason and Mardalene M. Assimon
Case 27-3, Questions 1–4 685	Darius L. Mason and Magdalene M. Assimon
Case 27-4, Questions 1–3 687	Introduction 765
Case 27-5 , Questions 1–2 690	End-Stage Renal Disease (Stage 5 Chronic
Upper Gastrointestinal Bleeding 692	Kidney Disease) 772
Case 27-6 Questions 1-4 605	Diahetic Nephropathy 773

Key References 697

Case 31-1, Questions 1–4 773

Fluid and Electrolyte Complications 775	Case 34-11, Questions 1–2 858
Case 31-1, Questions 5–9 775	Liver Transplantation 849
Anemia of Chronic Kidney Disease 777	Key References and Websites 860
Case 31-1, Questions 10–12 777	
Cardiovascular Complications 782	
Case 31-2, Questions 1–3 782	SECTION 7: NUTRITION ISSUES 861
Mineral and Bone Disorders 783	Section Editor: Marcus Ferrone
Case 31-3, Questions 1–2 783	Section Editor. Marcus Ferrone
Other Complications of CKD 789	35 Basics of Nutrition and Patient Assessment 861
Case 31-3, Questions 3–6 789	Jeff F. Binkley
Clamorular Disease 701	•
Glomerular Disease 791 Case 31-5, Questions 1–2 792	Nutrition Basics 862
Case 31-6, Questions 1–2 793	Malnutrition 864
Case 31-7, Question 1 794	Nutrition Screening 864
Key References and Websites 795	Patient Assessment: Woman with Crohn's Disease 867
They restricted that vicestics 777	Case 35-1, Questions 1–7 867
	Acknowledgments 870 Key References and Websites 870
32 Renal Dialysis 797	Rey References and Websites 8/0
Myrna Y. Munar	0/ 0/ 1: 070
Hemodialysis 799	36 Obesity 872
Case 32-1, Questions 1–2 801	Maria Ballod
Peritoneal Dialysis 806	Definitions 872
Case 32-2, Questions 1–7 807	Epidemiology 873
Key References and Websites 810	Etiology and Pathophysiology 874
•	Clinical Features 876
	Case 36-1, Questions 1–3 876
33 Dosing of Drugs in Renal Failure 811	Management and Treatment 878
David J. Quan and Francesca T. Aweeka	Case 36-1, Questions 8–10 880
Basic Principles 811	Key References and Websites 883
Pharmacokinetics and Pharmacodynamics of Specific Drugs	
in Renal Failure 814	37 Adult Enteral Nutrition 884
Case 33-1, Questions 1–8 814	Carol J. Rollins and Jennifer H. Baggs
Case 33-2, Questions 1–2 819	
Case 33-3, Questions 1–4 819	Case 37-1, Questions 1–2 884
Case 33-4, Questions 1–2 820	Case 37-2, Question 1 886
Case 33-5 , Questions 1–4 821	Formula Selection 887
Case 33-6, Question 1 823	Case 37-2, Questions 2–7 887 Case 37-3, Questions 1–2 893
Case 33-7, Question 1 823	Renal Failure 897
Effect of Renal Failure on Metabolized Drugs 824	Case 37-3, Question 3 897
Case 33-8, Questions 1–4 824	Case 37-4, Question 1 898
Case 33-9, Question 1 825	Monitoring Enteral Nutrition Support 899
Summary 826	Case 37-4, Question 2 899
Key References and Websites 826	Medications and Enteral Nutrition by Tube 902
	Case 37-4, Questions 3–4 902
SECTION 6: SOLID ORGAN	Case 37-5 , Question 1 905
	Case 37-6 , Question 1 905
TRANSPLANTATION 827	Key References and Websites 907
34 Kidney and Liver Transplantation 827	
David J. Taber and Robert E. Dupuis	38 Adult Parenteral Nutrition 908
•	Jane M. Gervasio and Jennifer L. Ash
Introduction to Transplantation 828	Jane W. Gervasio and Jenniner L. Asir
Transplantation Immunology 829	Venous Access Sites 909
Immunosuppressive Agents 831 Kidney Transplantation 837	Components of Parenteral Nutrient Formulations 909
Case 34-1, Questions 1–10 837	Parenteral Nutrition 910
Case 34-2, Questions 1–4 842	Case 38-1 , Questions 1–9 910
Case 34-3, Questions 1–2 844	Case 38-2, Questions 1–16 913
Case 34-4, Question 1 845	Case 38-3, Questions 1–3 919
Case 34-5, Questions 1–3 846	Use of Parenteral Nutrition in Special Disease
Case 34-6, Questions 1–3 847	States 920
Case 34-7, Questions 1–9 849	Case 38-4, Questions 1–2 920
Case 34-8, Question 1 853	Case 38-5, Questions 1-4 922
Case 34-9, Question 1 854	Case 38-6, Questions 1–3 923
Case 34-10, Questions 1–4 855	Case 38-7, Questions 1–2 924
	Key References and Websites 924

Section Editor: Timothy J. Ives

39 Dermatotherapy and Drug-Induced Skin Disorders 925

Richard N. Herrier

Anatomy and Physiology of the Skin 925

Inflammatory Lesions 926

Dermatologic Drug Delivery Systems 926

Assessing the Dermatologic Patient 929

Case 39-1, Question 1 929

Topical Corticosteroids 931

Case 39-2, Questions 1-10 933

Case 39-3, Questions 1–2 938

Xerosis 938

Case 39-4, Question 1 938

Drug Eruptions 938

Case 39-5, Question 1 941

Allergic Contact Dermatitis: Poison Ivy, Poison Oak, or

Poison Sumac 941

Case 39-6, Question 1 942

Case 39-7, Questions 1-3 942

Key References and Websites 943

40 Acne 944

Ellen R. DeGrasse and Jamie J. Cavanaugh

Clinical Assessment 947

Case 40-1, Questions 1-7 947

Case 40-2, Questions 1-3 950

Case 40-3, Questions 1-8 952

Case 40-4, Question 1 955

Acknowledgment 955

Key References and Websites 955

41 Psoriasis 956

Katie L. Kiser and Timothy J. Ives

Epidemiology 956

Case 41-1, Questions 1–3 957

Treatment of Mild Psoriasis 959

Case 41-1, Questions 4-6 959

Treatment of Severe Psoriasis 962

Case 41-2, Question 1 962

Systemic Pharmacotherapy 963

Case 41-2, Questions 2-3 964

Psoriatic Arthritis 965

Case 41-3, Ouestions 1-2 965

Key References and Websites 967

42 Photosensitivity, Photoaging, and Burn Injuries 968

Katherine R. Gerrald and Timothy J. Ives

Ultraviolet Radiation (UVR) Exposure 969

Case 42-1, Questions 1–9 972

Case 42-2, Questions 1–3 978

Case 42-3, Question 1 979

Case 42-4, Questions 1–3 980

Photoaging 981

Case 42-5, Questions 1–5 981

Burn Injuries 982

Case 42-6, Question 1 984

Key References and Websites 988

43 Osteoarthritis 989

Dominick P. Trombetta

Section Editor: Tricia M. Russell

Incidence, Prevalence, and Epidemiology 990

Etiology 990

Pathogenesis 991

Overview of Drug Therapy 991

Clinical Manifestations 992

Case 43-1, Questions 1-3 992

Treatment of Osteoarthritis 993

Case 43-1, Questions 4–7 994

Case 43-2, Questions 1–6 995

Case 43-3, Questions 1-3 1000

Key References and Websites 1000

44 Rheumatoid Arthritis 1002

Steven W. Chen, Rory E. O'Callaghan, and Alison M. Reta

Early and Progressive Rheumatoid Arthritis 1013

Case 44-1, Questions 1–5 1013

Case 44-2, Question 1 1019

Case 44-3, Questions 1-2 1019

Case 44-4, Question 1 1019

Case 44-5, Questions 1–7 1020

Case 44-6, Questions 1–9 1022

Case 44-7, Questions 1–13 1025

Case 44-8, Question 1 1030

Case 44-9, Questions 1-5 1033

Juvenile Idiopathic Arthritis 1034

Case 44-10, Questions 1-4 1034

Case 44-11, Questions 1–2 1036

Case 44-12, Question 1 1036

Case 44-13, Questions 1–2 1036

Case 44-14, Questions 1–2 1037

Key References and Websites 1038

45 Gout and Hyperuricemia 1039

KarenBeth H. Bohan

Pathophysiology 1040

Acute Gout 1040

Case 45-1, Questions 1-3 1041

Case 45-2, Questions 1–6 1042

Case 45-3, Questions 1-2 1048

Hyperuricemia 1048

Case 45-3, Questions 3-5 1048

Case 45-4, Question 1 1051

Case 45-5, Question 1 1052

Case 45-6, Question 1 1052

Key References and Websites 1052

46 Connective Tissue Disorders 1054

Julie L. Olenak and Jonathan D. Ference

Introduction 1055

General Signs and Symptoms 1055

Selected Connective Tissue Diseases 1055

Lupus Erythematosus 1055

Case 46-1, Questions 1–3 1056

Case 46-2, Questions 1–2 1059

Systemic Sclerosis (Scleroderma) 1060

Case 46-3, Questions 1–3 1060

Polymyalgia Rheumatica and Temporal Arteritis

(Giant Cell Arteritis) 1061

Case 46-4, Questions 1–3 1062 Reiter Syndrome 1063 Case 46-5, Question 1 1063 Polymyositis and Dermatomyositis 1063 Case 46-6, Question 1 1064 Key References and Websites 1065 SECTION 10: WOMEN'S HEALTH 1066 Section Editor: Shareen Y. El-Ibiary	Lactation 1144 Case 49-10, Questions 1–2 1144 Case 49-11, Question 1 1145 Drug Excretion in Human Milk 1145 Case 49-12, Question 1 1146 Case 49-13, Question 1 1147 Acknowledgment 1147 Key References and Websites 1147 Medication Use in Pregnancy and Lactation 1148
47 Contraception 1066	General Information 1148 50 Disorders Related to the Menstrual Cycle 1149
Shareen Y. El-Ibiary and Jennifer L. Hardman Epidemiology 1067	Laura M. Borgelt and Karen M. Gunning
Hormonal Contraception Background and Pharmacology 1067 Combination Hormonal Contraceptives 1067 Case 47-1, Questions 1–6 1067 Contraceptive Patch and Ring 1076 Case 47-1, Questions 7–8 1076 Case 47-1, Questions 1–8 1079 Case 47-2, Questions 1–8 1079 Case 47-3, Questions 1–2 1082 Progestin-Only Contraceptives 1083 Case 47-3, Questions 3–6 1083 Intrauterine Device and Intrauterine System 1085 Case 47-3, Question 7 1085 Other Nonhormonal Contraception 1085 Case 47-4, Questions 1–2 1085 Emergency Contraception 1088 Case 47-4, Question 3 1088 Medical Abortion 1088 Key References and Websites 1089 48 Infertility 1090 Erin C. Raney Introduction 1091 Pathophysiology and Diagnosis 1091	Menstrual Cycle Physiology 1150 Polycystic Ovary Syndrome 1150 Case 50-1, Questions 1–7 1153 Dysmenorrhea 1159 Case 50-2, Questions 1–8 1159 Endometriosis 1162 Case 50-3, Questions 1–4 1163 Case 50-4, Question 1 1167 Case 50-5, Question 1 1168 Premenstrual Syndrome and Premenstrual Dysphoric Disorder 1169 Case 50-6, Questions 1–4 1170 Key References and Websites 1173 51 The Transition Through Menopause 1175 Louise Parent-Stevens Incidence, Prevalence, and Epidemiology 1175 Pathophysiology 1176 Clinical Presentation 1176 Case 51-1, Questions 1–6 1177 Case 51-2, Questions 1–3 1183 Key References and Websites 1185 SECTION 11: ENDOCRINE DISORDERS 1186
Case 48-1, Questions 1–7 1091 Treatment Approaches 1095	Section Editor: Lisa Kroon
Case 48-1, Questions 8-12 1095 Case 48-2, Questions 1-11 1098 Key References and Websites 1106	52 Thyroid Disorders 1186 Betty J. Dong and Eric F. Schneider
49 Obstetric Drug Therapy 1107 Kimey D. Ung and Jennifer McNulty	Overview 1187 Thyroid Function Tests 1191 Case 52-1, Questions 1–2 1194
Case 49-1, Questions 1–5 1109 Teratogenicity 1112	Case 52-2, Question 1 1195 Case 52-3, Question 1 1195
Case 49-1, Question 6 1112 Management of Conditions in Pregnancy 1116	Case 52-4, Question 1 1195 Hypothyroidism 1196
Case 49-1, Questions 7-11 1116	Case 52-5, Questions 1–5 1196
Urinary Tract Infections 1118	Case 52-6, Question 1 1199
Case 49-1, Questions 12–13 1120	Case 52-7, Question 1 1199
Diabetes Mellitus 1120	Case 52-8, Questions 1–2 1199
Case 49-2, Questions 1–4 1120	Case 52-9, Questions 1–2 1201
Case 49-3, Questions 1–2 1122	Case 52-10, Questions 1–2 1202
Case 49-4, Questions 1–4 1123	Case 52-11, Questions 1–3 1202
Hypertension and Pre-Eclampsia 1125	Case 52-12, Question 1 1204
Case 49-5, Questions 1–13 1125 Drug Therapy Management in Labor and Delivery 1131	Case 52-13, Question 1 1204 Hyperthyroidism 1205
Case 49-6, Questions 1–5 1131	Case 52-14, Questions 1–4 1205
Case 49-7, Questions 1–1 1134	Case 52-15, Questions 1–12 1206
Case 49-8, Questions 1–2 1140	Case 52-16, Question 1 1212
Postpartum Hemorrhage 1141	Case 52-17, Question 1 1212
Case 49-8, Questions 3-4 1141	Case 52-18, Question 1 1213
Prevention of Rh D Alloimmunization 1143	Case 52-19, Question 1 1213
Case 49-9 , Questions 1–5 1143	Case 52-20, Questions 1–2 1214

Case 52-21, Question 1 1215	Case 54-3, Question 1 1312
Case 52-22, Questions 1–2 1215	Ocular Emergencies 1312
Case 52-23, Questions 1–2 1216	Case 54-4, Question 1 1312
Drug-Induced Thyroid Disease 1217	Common Ocular Disorders 1317
Case 52-24, Question 1 1217	Case 54-5, Question 1 1317
Case 52-25, Question 1 1218	Case 54-6, Question 1 1317
Case 52-26, Question 1 1218	Case 54-7, Question 1 1318
Case 52-27, Question 1 1219	Ophthalmic Corticosteroids 1318
Case 52-28, Question 1 1219	Case 54-8, Question 1 1318
Nodules 1220	Case 54-9, Question 1 1319
Case 52-29, Question 1 1220	Systemic Side Effects From Ophthalmic Medication 1319
Case 52-30, Question 1 1220	Case 54-10, Question 1 1319
Case 52-31, Question 1 1220	Ocular Nonsteroidal Anti-Inflammatory Drugs 1319
Case 52-32, Question 1 1220	Case 54-11, Question 1 1319
Key References and Websites 1221	Ocular Herpes Simplex Virus Infections 1320
50 D. L. M. H. 4000	Case 54-12, Question 1 1320
53 Diabetes Mellitus 1223	Age-Related Macular Degeneration 1321
Lisa A. Kroon and Craig Williams	Case 54-13, Question 1 1321
Case 53-1, Questions 1–2 1231	Key References and Websites 1322
Insulin 1236	
Treatment of Type 1 Diabetes: Clinical Use of Insulin 1239	SECTION 13: NEUROLOGIC DISORDERS 1323
Case 53-2, Questions 1–17 1239	
Case 53-3, Question 1 1251	55 Multiple Sclerosis 1323
Case 53-4, Questions 1–7 1252	Melody Ryan
Case 53-5, Question 1 1254	Natural Course of the Disease and Prognosis 1324
Case 53-6, Question 1 1254	Pathophysiology 1325
Case 53-7, Question 1 1255	Epidemiologic and Genetic Features 1326
Case 53-8, Question 1 1256	Clinical Presentation 1326
Case 53-9 , Question 1 1256	Diagnosis 1327
Case 53-10, Question 1 1256	Overview of Treatment 1327
Case 53-11, Questions 1–3 1258	Case 55-1, Questions 1–9 1330
Case 53-12, Question 1 1260	Case 55-2, Questions 1–3 1334
Diabetic Ketoacidosis 1261	Key References and Website 1336
Case 53-13, Questions 1–5 1261	
Treatment of Type 2 Diabetes: Antidiabetic Agents 1264	56 Headache 1337
Treatment of Patients With Type 2 Diabetes 1279	Brian K. Alldredge
Case 53-14, Questions 1–8 1279	Migraine Headache 1340
Case 53-15, Question 1 1284	Case 56-1, Questions 1–15 1341
Case 53-16, Question 1 1285	Case 56-2, Question 1 1350
Case 53-17, Questions 1–7 1286	Case 56-3, Question 1 1351
Case 53-18, Question 1 1289	Case 56-4, Question 1 1352
Case 53-19, Question 1 1290 Case 53-20, Questions 1–2 1290	Cluster Headache 1352
	Case 56-5, Questions 1–3 1353
Case 53-21, Question 1 1291	Tension-Type Headache 1355
Case 53-22, Questions 1–6 1291	Case 56-6, Questions 1–2 1356
Case 53-23, Question 1 1293 Case 53-24, Questions 1–6 1294	Key References and Websites 1357
Case 53-25, Questions 1–3 1296	
Drug-Induced Alterations in Glucose Homeostasis 1298	57 Parkinson Disease and Other Movement
=	Disorders 1358
Case 53-26, Question 1 1298	Disorders 1358 Michael E. Ernst and Mildred D. Gottwald
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299	Michael E. Ernst and Mildred D. Gottwald
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301 Steven R. Abel and Suellyn J. Sorensen	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374 Case 57-3, Questions 1–2 1377 Case 57-4, Questions 1–2 1378
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301 Steven R. Abel and Suellyn J. Sorensen Ocular Anatomy and Physiology 1302	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374 Case 57-3, Questions 1–2 1377
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301 Steven R. Abel and Suellyn J. Sorensen Ocular Anatomy and Physiology 1302 Glaucoma 1303	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374 Case 57-3, Questions 1–2 1377 Case 57-4, Questions 1–2 1378 Restless Leg Syndrome and Periodic Limb Movements of
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301 Steven R. Abel and Suellyn J. Sorensen Ocular Anatomy and Physiology 1302 Glaucoma 1303 Primary Open-Angle Glaucoma 1303	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374 Case 57-3, Questions 1–2 1377 Case 57-4, Questions 1–2 1378 Restless Leg Syndrome and Periodic Limb Movements of Sleep 1380
Case 53-26, Question 1 1298 Case 53-27, Question 1 1299 Case 53-28, Question 1 1299 Key References and Websites 1299 SECTION 12: EYE DISORDERS 1301 54 Eye Disorders 1301 Steven R. Abel and Suellyn J. Sorensen Ocular Anatomy and Physiology 1302 Glaucoma 1303 Primary Open-Angle Glaucoma 1303 Case 54-1, Questions 1–7 1306	Michael E. Ernst and Mildred D. Gottwald Parkinson Disease 1359 Clinical Presentation of Parkinson disease 1360 Case 57-1, Questions 1–2 1360 Treatment of Parkinson disease 1364 Case 57-1, Questions 3–18 1364 Case 57-2, Questions 1–3 1374 Case 57-3, Questions 1–2 1377 Case 57-4, Questions 1–2 1378 Restless Leg Syndrome and Periodic Limb Movements of Sleep 1380 Case 57-5, Questions 1–4 1380

58 Seizure Disorders 1387 James W. McAuley, Rex S. Lott, and Brian K. Alldredge	Pharmacokinetics and Pharmacodynamics 1457 Case 60-1, Questions 12-13 1457
Clinical Assessment and Treatment of Epilepsy 1395	Antimicrobial Failure 1458
Case 58-1, Questions 1–6 1395	Case 60-1, Questions 14–17 1458 Key References and Websites 1459
Case 58-2, Questions 1–4 1397	Rey References and Websites 1439
Case 58-3, Questions 1–3 1402	61 Antimicrobial Prophylaxis for Surgical
Case 58-4, Question 1 1403	Procedures 1461
Case 58-5, Question 1 1403	Daniel J. G. Thirion
Case 58-6, Question 1 1404	
Case 58-7, Question 1 1404	Risk Factors for Infection 1461
Case 58-8, Questions 1–9 1405	Classification of Surgical Site Infections 1462
Case 58-9, Question 1 1409	Principles of Surgical Antimicrobial Prophylaxis 1462
Case 58-10, Questions 1–3 1409	Case 61-1, Questions 1–4 1462
Antiepileptic Drug Interactions and Adverse Effects 1410	Case 61-2, Questions 1–3 1464
Case 58-11, Question 1 1410	Case 61-3, Question 1 1465
Case 58-12, Questions 1–3 1411	Case 61-4, Questions 1–2 1465
Case 58-13, Questions 1–2 1412	Case 61-5, Questions 1–2 1466
Women's Issues in Epilepsy 1413	Case 61-6, Question 1 1466
Case 58-14, Questions 1–2 1413	Case 61-7, Questions 1–2 1466
Status Epilepticus 1415	Optimizing Surgical Antimicrobial Prophylaxis 1467
Case 59-15, Questions 1–7 1415	Key References and Websites 1467
Key References and Websites 1418	62 Central Nervous System Infections 1468
59 Cerebrovascular Disorders 1419	Gregory A. Eschenauer, Brian A. Potoski, and Victoria J. Dudas
Timothy E. Welty	Review of Central Nervous System 1469
Transient Ischemic Attacks 1420	Meningitis 1469
Primary prevention 1423	Case 62-1 , Questions 1–12 1472
Case 59-1, Questions 1–2 1423	Case 62-2, Questions 1–5 1480
Secondary Prevention and Transient Ischemic	Case 62-3 , Questions 1–3 1482
Attacks 1425	Case 62-4 , Questions 1–4 1483
Case 59-2, Questions 1–7 1425	Brain Abscess 1485
Cerebral Infarction and Ischemic Stroke 1429	Case 62-5 , Questions 1–3 1486
Case 59-3, Questions 1–11 1429	Key References and Websites 1488
Subarachnoid Hemorrhage 1434	
Case 59-4, Questions 1–4 1434	63 Endocarditis 1489
Key References and Websites 1436	Annie Wong-Beringer and Michelle Lee
	Infective Endocarditis 1490
SECTION 14: INFECTIOUS DISEASE 1437	Streptococcus Viridans Endocarditis 1491
	Case 63-1 , Questions 1–4 1491
60 Principles of Infectious Diseases 1437	Staphylococcus Epidermidis: Prosthetic Valve Endocarditis
B. Joseph Guglielmo	1497
Approaching the Problem 1437	Case 63-2, Questions 1–3 1497
Establishing the Presence of an Infection 1438	Staphylococcus Aureus Endocarditis 1500
Case 60-1, Question 1 1438	Case 63-3, Questions 1–4 1500
Establishing the Severity of an Infection 1438	Enterococcal Endocarditis 1503
Case 60-1, Questions 2 1438	Case 63-4, Questions 1–6 1503
Problems in the Diagnosis of an Infection 1440	Fungal Endocarditis Caused by Candida Albicans 1507
Case 60-1, Questions 3 1440	Case 63-5, Questions 1–3 1507
Establishing the Site of the Infection 1441	Gram-Negative Bacillary Endocarditis Caused by Pseudomonas
Case 60-1, Questions 4 1441	Aeruginosa 1508
Determining Likely Pathogens 1441	Case 63-5 , Questions 5 1508
Case 60-1 , Questions 5 1441	Culture-Negative Endocarditis 1509
Microbiologic Tests and Susceptibility of Organisms 1443	Case 63-5, Questions 6–7 1509
Case 60-1, Questions 6 1443	Prophylactic Therapy 1509
Determination of Isolate Pathogenicity 1448	Case 63-6, Questions 1–2 1509
Case 60-1, Questions 7 1448	Home Intravenous Antibiotic Therapy 1511
Antimicrobial Toxicities 1448	Case 63-7 , Question 1 1511
Case 60-1, Questions 8 1448	Key References 1511
Antimicrobial Costs of Therapy 1452	(A.B. 1.1. T. 11.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Case 60-1, Questions 9 1452	64 Respiratory Tract Infections 1513
Route of Administration 1452	Heather M. Arnold, Eli N. Deal, Steven Gelone, and
Case 60-1, Questions 10 1452	Scott T. Micek
Antimicrobial Dosing 1452	Acute Bronchitis 1514
Case 60-1, Questions 11 1452	Case 64-1, Questions 1–8 1515

Acute Exacerbaton of Chronic Obstructive Pulmonary	Case 66-11, Questions 1–3 1571
Disease 1516	Travelers' Diarrhea (TD) 1572
Case 64-2, Questions 1–7 1517	Case 66-12, Questions 1–5 1572
Prevention of Common Respiratory Infections	Postinfectious Irritable Bowel Syndrome (PI-IBS) 1574
_ ·	Case 66-12, Questions 6–7 1574
by Vaccination 1520	
Community-Acquired Pneumonia 1520	Escherichia coli O157:H7 1575
Case 64-3 , Questions 1–6 1521	Case 66-13, Questions 1–5 1575
Case 64-4, Questions 1–3 1525	Clostridium difficile-Associated Diarrhea 1576
Hospital-Acquired Pneumonia, Health Care-Associated	Case 66-14, Questions 1–8 1576
Pneumonia, and Ventilator-Associated Pneumonia 1526	Case 66-15 , Questions 1–6 1578
Case 64-5, Questions 1–2 1527	Case 66-16, Questions 1–2 1579
Case 64-6, Questions 1–3 1528	Key References and Websites 1580
Case 64-7, Questions 1–4 1530	
Key References and Websites 1532	67 Intra-Abdominal Infections 1581
65 Tuberculosis 1534	Carrie A. Sincak and Sheila K. Wang
Michael B. Kays	Introduction 1581
Wilchael B. Ixays	Infections of the Biliary Tract 1582
Case 65-1, Questions 1–7 1538	•
Treatment of Active Disease 1541	Case 67-1, Questions 1–4 1582
Case 65-1, Questions 8–14 1541	Primary Peritonitis 1585
	Case 67-2, Questions 1–4 1585
Treatment of Latent Tuberculosis Infection 1548	Case 67-3, Questions 1–2 1587
Case 65-2, Question 1 1548	Secondary Peritonitis 1588
Adverse Drug Events 1549	•
Case 65-2, Questions 2 1549	Case 67-4, Questions 1-4 1589
Case 65-3, Questions 1–3 1549	Case 67-5 , Questions 1–4 1590
	Case 67-6, Question 1 1592
Case 65-4, Question 1 1551	Infections after Abdominal Trauma and Postoperative
Special Treatment Considerations 1551	Complications 1592
Case 65-5, Question 1 1551	Case 67-7, Questions 1–2 1592
Case 65-6, Questions 1–2 1552	Case 67-8, Question 1 1592
Case 65-7, Questions 1–5 1553	
Case 65-8, Question 1 1556	Key References 1593
Case 65-9, Question 1 1556	
	68 Urinary Tract Infections 1594
Case 65-10, Question 1 1556	Douglas N. Fish
Case 65-11, Question 1 1557	
Key References and Websites 1558	Urinary Tract Infection 1595
	Lower Urinary Tract Infection 1599
66 Infectious Diarrhea 1559	Case 68-1, Questions 1–6 1599
Gail S. Itokazu, David T. Bearden, and Larry H. Danziger	Case 68-2, Questions 1–3 1605
Gail 3. Hokazu, David 1. Deardell, alid Larry 11. Daliziger	
Prevalence and Etiology 1560	Case 68-3, Question 1 1606
Definitions 1561	Treatment of Lower-Tract Infection in Renal Failure 1607
Pathogenesis 1561	Case 68-4, Question 1 1607
<u>e</u>	Case 68-5 , Questions 1–5 1607
Management Overview 1561	Recurrent Urinary Tract Infections 1609
Evaluation and Treatment of Patients with Infectious	Case 68-6, Questions 1–11 1609
Diarrhea 1562	
Case 66-1 , Questions 1–2 1562	Case 68-7, Questions 1-4 1612
Clinical Presentation 1563	Symptomatic Abacteriuria 1613
	Case 68-8, Questions 1–2 1613
Case 66-1, Questions 3 1563	Hospital-Acquired Acute Urinary Tract Infection 1613
Viral Gastroenteritis 1563	Case 68-9, Questions 1–2 1614
Case 66-1, Questions 4 1563	Case 68-10, Questions 1–3 1614
Vibrio Species 1563	Asymptomatic Bacteriuria 1615
Case 66-2, Questions 1–3 1564	, 1
Case 66-3, Questions 1–2 1564	Case 68-11, Questions 1–2 1615
	Prostatitis 1616
Staphylococcus Aureus, Bcillus Cereus, and	Case 68-12, Questions 1–2 1617
Clostridium Perfringens 1565	Key References and Websites 1617
Case 66-4, Question 1 1565	•
Case 66-5 , Question 1 1565	69 Sexually Transmitted Diseases 1619
Cryptosporidium Parvum 1565	
Case 66-6, Question 1 1565	Jeffery A. Goad and Karl M. Hess
	Gonorrhea 1620
Salmonella 1566	
Case 66-7 , Questions 1–7 1566	Case 69-1, Questions 1–9 1621
Case 66-8, Questions 1–7 1568	Case 69-2, Questions 1–4 1625
Shigella species 1570	Pelvic Inflammatory Disease 1625
Case 66-9, Questions 1–5 1570	Case 69-3, Question 1 1626
Case 66-10, Question 1 1571	Complicated Gonorrhea 1627
Campylobacter Jejuni 1571	Case 69-4, Questions 1–4 1627
	Vast U7-7, Questions 1-4 104/

Chlamydia Trachomatis 1628	Case 72-1, Questions 2–3 1675
Case 69-5 , Questions 1–5 1629	Infections in Neutropenic Cancer Patients 1679
Case 69-6, Questions 1–2 1630	Case 72-1, Questions 4–6 1679
Syphilis 1630	Empiric Antibiotic Therapy 1680
Case 69-7 , Questions 1–5 1631	Case 72-1, Questions 7–10 1680
Case 69-8, Questions 1–3 1634	Case 72-2, Questions 1–3 1682
Chancroid 1635	Antibiotic Dosing, Administration, and Monitoring
Case 69-9, Questions 1–2 1635	Considerations 1684
Vaginitis 1635	Case 72-2, Questions 4–5 1684
Case 69-10, Questions 1–2 1636	Host Factors Influencing Response to Therapy 1684
Case 69-11, Questions 1–12 1636	Case 72-2, Question 6 1684
Case 69-12, Questions 1–3 1640	Modifying Initial Empiric Antibiotic Therapy 1684
Case 69-13, Questions 1–2 1640	Case 72-3, Questions 1–2 1684
Genital Herpes 1641	Case 72-4, Questions 1–4 1685 Antimicrobial Adjuvants 1688
Case 69-14, Questions 1–7 1641	Case 72-4, Questions 5 1688
Case 69-15, Question 1 1645 Case 69-16, Question 1 1645	Key References and Websites 1689
Genital Warts 1645	ney references and websites 1009
Case 69-17, Question 1 1645	73 Pharmacotherapy of Human Immunodeficiency Virus
Key References and Websites 1646	Infection 1690
ney references and viebsites 1010	Jessica L. Adams, Julie B. Dumond, and Angela D.M. Kashuba
70 Osteomyelitis and Septic Arthritis 1648	
·	Introduction 1691
Bridgette L. Kram and Ralph H. Raasch	Epidemiology 1691
Osteomyelitis 1649	Pathophysiology 1692
Case 70-1, Questions 1–7 1650	Pharmacotherapy 1695
Case 70-2, Questions 1–4 1653	Diagnosis 1699
Case 70-3, Questions 1–2 1654	Case 73-1, Question 1 1699
Case 70-4, Question 1 1655	Surrogate Marker Data 1700
Case 70-5 , Questions 1–4 1655	Case 73-1, Questions 2 1700 Antiretroviral Therapy 1701
Case 70-6, Questions 1–3 1656	Case 73-1, Question 3–10 1701
Septic Arthritis 1657	Case 73-2, Question 1 1709
Case 70-7, Questions 1–3 1658	Resistance, Viral Genotyping, Phenotyping, and Viral
Case 70-8, Questions 1–3 1659	Fitness 1710
Key References and Websites 1660	Case 73-2, Questions 2 1710
71 Traumatic Skin and Soft Tissue Infections 1661	Special Circumstances 1711
	Case 73-2, Questions 3 1711
James P. McCormack and Glen R. Brown	Case 73-3, Question 1 1713
Cellulitis 1662	Case 73-4, Question 1 1714
Case 71-1, Questions 1–6 1662	Case 73-5, Question 1 1714
Case 71-2, Questions 1–4 1664	Case 73-6, Question 1 1714
Case 71-3, Questions 1–3 1665	Keeping Current 1715
Soft Tissue Infections in Diabetic Patients 1666	Conclusions 1715
Case 71-4, Questions 1–4 1666	Key References and Websites 1716
Case 71-5, Question 1 1668	
Erysipelas 1668	74 Opportunistic Infections in HIV-Infected Patients
Case 71-6, Question 1 1668	1717
Acute Traumatic Wounds 1668	Amanda H. Corbett and Emily L. Heil
Case 71-7, Question 1 1669	Pneumocystis jiroveci Pneumonia 1722
Case 71-8, Question 1 1669	Case 74-1, Questions 1–3 1723
Animal Bite Wounds 1669	Toxoplasma gondii Encephalitis 1726
Case 71-9, Questions 1–2 1669	Case 74-2, Questions 1–8 1726
Human Bite Wounds 1670	Cytomegalovirus Disease 1728
Case 71-10, Question 1 1670	Case 74-3, Questions 1–10 1728
Case 71-11, Question 1 1670 Key References and Websites 1671	Cryptococcosis 1735
Key References and Websites 1671	Case 74-4, Questions 1–8 1735
72 Prevention and Treatment of Infections in	Mycobacterium tuberculosis 1737
Neutropenic Cancer Patients 1672	Case 74-5, Questions 1–2 1737
Richard H. Drew	Case 74-6, Question 1 1738
	Case 74-7, Question 1 1738
Risk Factors for Infection 1673	Mycobacterium avium Complex disease 1740
Most Common Pathogens 1675	Case 74-8, Questions 1–6 1740
Case 72-1 , Question 1675 1	Enteric Infections 1743
RISK stratification 1675	Case 74-9, Question 1 1743
Prophylaxis Against Infection 1675	Esophageal Disease 1745

Case 74-10, Question 1 1745 Acknowledgments 1745 Key References and Websites 1745	Case 77-7, Question 1 1803 Case 77-8, Question 1 1804 Case 77-9, Question 1 1805
75 Fungal Infections 1746 John D. Cleary, Stanley W. Chapman, and Margaret M. Pearson	Case 77-10, Questions 1–2 1805 Case 77-11, Question 1 1805 Case 77-12, Questions 1–14 1805 Hepatitis C Virus 1814
Mycology 1747	Case 77-13, Questions 1–9 1817
Antimycotics 1749	Case 77-14, Question 1 1823
Superficial and Cutaneous Mycoses 1751	Hepatitis D Virus 1823
Case 75-1, Questions 1–3 1751	Hepatitis E Virus 1826
Subcutaneous Mycoses 1752	Summary 1827
Case 75-2, Questions 1–3 1752 Systemic Mycoses 1754	Key References and Websites 1827
Case 75-3, Questions 1–11 1754	
Case 75-4, Question 1 1762	78 Parasitic Infections 1828
Case 75-5, Questions 1–3 1763	J.V. Anandan
Case 75-6, Questions 1–3 1764	Malaria 1829
Case 75-7, Questions 1–3 1767	Case 78-1, Questions 1–2 1830
Case 75-8 , Questions 1–3 1768	Case 78-2, Questions 1–2 1833
Case 75-9, Questions 1–3 1769	Case 78-3, Question 1 1835
Key References and Websites 1771	Case 78-4, Questions 1–2 1835
	Amebiasis 1835
76 Viral Infections 1772	Case 78-5, Questions 1–2 1836
Milap C. Nahata, Neeta Bahal O'Mara, and Sandra Benavides	Case 78-6, Questions 1–2 1837
•	Case 78-7, Question 1 1837
Herpes Simplex Virus Infections 1773	Giardiasis 1838
Case 76-1, Questions 1-4 1773	Case 78-8, Questions 1–3 1838
Case 76-2, Questions 1–3 1775 Case 76-3, Question 1 1777	Enterobiasis 1839
Case 76-4, Questions 1–2 1777	Case 78-9, Questions 1–3 1839
Case 76-5, Question 1 1777	Cestodiasis 1840
Case 76-6, Question 1 1777	Case 78-10, Questions 1–4 1841 Case 78-11, Questions 1–3 1842
Varicella-Zoster Infections 1778	Pediculosis 1842
Case 76-7, Question 1 1778	Case 78-12, Questions 1–3 1843
Case 76-8, Questions 1–2 1778	Scabies 1844
Case 76-9, Questions 1–3 1779	Case 78-13, Question 1 1844
Case 76-10, Questions 1–2 1781	Key References and Websites 1844
Influenza 1781	
Case 76-11, Questions 1–2 1782	79 Tick-Borne Diseases 1846
Case 76-12, Questions 1–2 1783	Thomas E. Christian
Respiratory Syncytial Virus Infections 1784	
Case 76-13, Questions 1–3 1784 Case 76-14, Questions 1–2 1785	Overview 1847
Hantavirus Infections 1785	Lyme Disease 1847
Case 76-15, Questions 1–2 1786	Case 79-1, Question 1 1849
West Nile Virus 1786	Erythema Migrans 1849 Case 79-2, Questions 1–2 1849
Case 76-16, Questions 1–2 1786	Lyme Disease Treatment 1850
Severe Acute Respiratory Distress Syndrome 1787	Case 79-2, Questions 3–4 1850
Case 76-17, Questions 1–2 1787	Case 79-3, Question 1 1851
The Common Cold 1788	Case 79-4 , Question 1 1851
Case 76-18, Question 1 1788	Case 79-5, Question 1 1851
Key References and Websites 1788	Endemic Relapsing Fever (TBRF) 1852
	Case 79-6, Questions 1–2 1853
77 Viral Hepatitis 1790	Case 79-7 , Question 1 1853
Curtis D. Holt	Other Bacterial Diseases: Tularemia 1853
Causative Agents and Characteristics 1791	The Rickettsia: Rocky Mountain Spotted Fever, Rickettsia
Hepatitis A Virus 1791	Parkeri Infection, Ehrlichiosis, and Anaplasmosis 1854
Case 77-1, Questions 1–3 1793	Case 79-8, Question 1 1858 The Protogon Rabesiasis 1858
Case 77-2, Question 1 1795	The Protozoa: Babesiosis 1858 Case 79-9, Questions 1–2 1859
Case 77-3, Question 1 1796	The Viruses: Colorado Tick Fever and Tick-Borne
Hepatitis B Virus 1797	Encephalitis 1860
Case 77-4, Questions 1–4 1800	Case 79-10, Question 1 1860
Case 77-5, Questions 1–2 1801	The Toxins: Tick Paralysis 1861
Case 77-6, Questions 1–3 1802	Case 79-11, Question 1 1861

Mixed Infections 1861 Summary 1861 Key References and Websites 1862

SECTION 15: PSYCHIATRIC DISORDERS 1863

Section Editors: Patrick R. Finley and Kelly C. Lee

80 Anxiety Disorders 1863

Sally K. Guthrie and Jolene R. Bostwick

Case 80-1, Question 1 1866

Generalized Anxiety Disorder 1869

Case 80-2, Questions 1-6 1872

Case 80-3, Question 1 1876

Case 80-4, Questions 1-2 1877

Case 80-5, Question 1 1879

Case 80-6, Questions 1-3 1879

Panic Disorder 1882

Case 80-7, Questions 1-4 1884

Social Anxiety Disorder and Specific Phobias 1886

Case 80-8, Questions 1-3 1888

Posttraumatic Stress Disorder and Acute Stress

Disorder 1889

Case 80-9, Questions 1-3 1891

Obsessive-Compulsive Disorder 1892

Case 80-10, Questions 1-5 1895

Case 80-11, Questions 1-3 1895

Key References and Websites 1898

81 Sleep Disorders 1900

Julie A. Dopheide and Glen L. Stimmel

Societal Impact 1901

Epidemiology 1901

The Sleep Stages 1902

Neurochemistry of Sleep-Wake Cycle 1903

Patient Assessment 1903

Case 81-2, Questions 1-9 1905

Insomnia in a Medically Ill Patient 1908

Case 81-2, Questions 1-4 1908

Insomnia and Psychiatric Disorders 1911

Case 81-3, Questions 1-4 1911

Insomnia in the Elderly 1913

Case 81-4, Questions 1-5 1913

Pediatric Insomnia 1915

Case 81-5, Questions 1-3 1915

Pregnancy and Lactation 1916

Case 81-6, Question 1 1916

Formulary Management of Hypnotics 1917

Case 81-7, Question 1 1917

Sleep Apnea 1917

Case 81-8, Questions 1-3 1917

Narcolepsy 1918

Case 81-9, Questions 1-4 1919

Key References and Websites 1920

82 Schizophrenia 1921

Jonathan P. Lacro, Sanaz Farhadian, and Rene A. Endow-Eyer

Epidemiology 1921

Economic Burden 1922

Etiology (Neurobiology) 1922

Clinical Presentation 1923

Case 82-1, Questions 1–3 1926

Treatment 1927

Case 82-1, Questions 4–34 1928

Considerations in specific populations 1946

Case 82-1, Questions 35–36 1946

Key References and Websites 1947

83 Mood Disorders I: Major Depressive Disorders 1949

Patrick R. Finley and Kelly C. Lee

Introduction 1950

Major Depressive Disorder 1959

Case 83-1, Questions 1-2 1959

Drug Management 1961

Case 83-1, Questions 3-15 1961

Case 83-2, Questions 1-4 1971

Case 83-3, Questions 1-2 1974

Case 83-4, Questions 1-4 1975

Case 83-5, Question 1 1976

Case 83-6, Question 1 1977

Case 83-7, Questions 1–2 1978

Case 83-8, Question 1 1978

Case 83-9, Questions 1–5 1979

Case 83-10, Questions 1–2 1981

Key References and Websites 1982

84 Mood Disorders II: Bipolar Disorders 1983

James J. Gasper

Introduction 1983

Clinical Assessment 1986

Case 84-1, Questions 1-3 1986

Treatment of Acute Mania 1987

Case 84-1, Questions 1–8 1987

Case 84-2, Questions 1-8 1989

Case 84-3, Question 1 1991

Case 84-4, Questions 1–2 1992 Case 84-5, Questions 1–2 1993

Case 84-6, Question 1 1994

Treatment of Acute Bipolar Depression 1995

Case 84-7, Question 1 1995

Maintenance Therapy of Bipolar Disorder 1996

Case 84-8, Questions 1–4 1996

Key References and Websites 1998

85 Attention Deficit Hyperactivity Disorder in Children, Adolescents, and Adults 1999

Kimberly B. Tallian, Patrick R. Finley, Paul Perry, and Samuel Kuperman

Epidemiology 2000

Pathophysiology 2000

Diagnosis 2000

Comorbidity and Prognosis 2001

Signs and Symptoms 2001

Case 85-1, Question 1 2001

Treatment 2002

Case 85-1, Questions 2–6 2008

Case 85-2, Question 1 2008

Case 85-3, Questions 1–2 2008

Key References and Websites 2010

SECTION 16: SUBSTANCE ABUSE 2011

86 Drug Abuse 2011

Wendy O. Zizzo and Paolo V. Zizzo

Addiction 2012

Case 86-1, Question 1 2012

Opioids 2012	Case 88-6, Questions 1–4 2078
Case 86-2, Questions 1–3 2012	Key References and Website 2079
Case 86-3, Question 1 2014	
Case 86-4, Question 1 2014	SECTION 17: NEOPLASTIC DISORDERS 2080
Case 86-5, Question 1 2014	
Case 86-6, Question 1 2015	Section Editor: Mark N. Kirstein
Case 86-7, Questions 1–4 2015	
Case 86-8, Question 1 2017	89 Neoplastic Disorders and Their Treatment: General
Case 86-9, Questions 1–4 2018	Principles 2080
	Makala B. Pace and Katherine Tipton Patel
Case 86-10, Questions 1–3 2018	Introduction to Noonlastic Disorders 2001
Sedative-Hypnotics 2020	Introduction to Neoplastic Disorders 2081
Case 86-11, Questions 1–2 2020	Case 89-1, Question 1 2085
Case 86-12, Question 1 2021	Case 89-2, Question 1 2086
Central Nervous System Stimulants 2022	Case 89-3, Question 1 2087
Case 86-13, Questions 1–5 2022	Case 89-4, Question 1 2088
Case 86-14, Questions 1–3 2024	Case 89-5 , Question 1 2088
Dissociative Drugs: Phencyclidine, Ketamine, and	Treatment 2090
Dextromethorphan 2025	Case 89-6, Question 1 2090
Case 86-15, Questions 1–3 2025	Case 89-7 , Question 1 2099
Hallucinogens 2026	Case 89-8, Question 1 2100
Case 86-16, Questions 1–3 2026	Case 89-9, Question 1 2100
Case 86-17, Questions 1–3 2027	Case 89-10 , Question 1 2101
Marijuana 2028	Case 89-11, Question 1 2106
Case 86-18, Questions 1–3 2029	Handling of Cytotoxic Drugs 2106
Inhalants 2030	Case 89-12, Questions 1–4 2106
Case 86-19, Questions 1–3 2031	Acknowledgment 2108
Acknowledgment 2031	Key References and Website 2108
Key References and Websites 2031	,,,
ncy references and websites 2031	90 Adverse Effects of Chemotherapy and Targeted
87 Alcohol Use Disorders 2033	Agents 2109
George A. Kenna	Amy Hatfield Seung
George A. Kenna	miny matricia bearing
Alcohol Content and Definitions 2034	Common and Acute Toxicities 2110
Neuroscience and Neurobehavior 2035	Case 90-1 , Questions 1–6 2111
Alcohol Toxicity 2037	Case 90-2, Questions 1–3 2115
Case 87-1, Questions 1–5 3037	Case 90-3 , Question 1 2118
Alcohol Withdrawal 2039	Case 90-4, Questions 1–7 2119
Case 87-2, Questions 1–4 2039	Case 90-5 , Question 1 2124
Adjunctive Treatments 2043	Specific Organ Toxicities 2126
Case 87-2, Questions 5 2043	Case 90-6, Questions 1–4 2126
Pharmacotherapy of Alcohol Dependence 2043	Case 90-7 , Questions 1–4 2129
Case 87-3, Questions 1–2 2043	Case 90-8, Questions 1–2 2132
Disulfiram 2045	Case 90-9, Questions 1–3 2134
Case 87-4, Question 1 2047	Case 90-10, Questions 1–4 2135
Acamprosate 2047	Case 90-11, Question 1 2136
Case 87-4, Questions 2 2048	Case 90-12, Questions 1–2 2139
Naltrexone 2048	Case 90-13, Question 1 2140
	Case 90-14, Questions 1–2 2140
Combination Pharmacotherapy 2050	Key References and Websites 2141
Case 87-4, Questions 3 2050	Key References and Websites 2141
Alternative Pharmacotherapy 2050	91 Pediatric Malignancies 2143
Case 87-5, Questions 1–3 2050	
Drug Interactions 2052	David W. Henry, Mark T. Holdsworth, and Nicole A. Kaiser
Case 87-6, Question 1 2052	Pediatric Malignancies 2144
Key References and Websites 2053	Pediatric Solid Tumors 2145
	Case 91-1, Questions 1–5 2148
88 Tobacco Use and Dependence 2055	Case 91-2, Questions 1–5 2150
Robin L. Corelli and Karen Suchanek Hudmon	Case 91-3, Questions 1–4 2151
Epidemiology of Tobacco Use and	Case 91-4, Questions 1–3 2153
Dependence 2056	Acute Lymphoblastic Leukemia of Childhood 2154
	Overview of Treatment 2158
Pharmacotherapy for Treating Tobacco Use and	Case 91-5, Questions 1–15 2158
Dependence 2067	
Case 88-1, Questions 1–5 2067	Case 91-6, Questions 1-5 2164
Case 88-2, Questions 1-4 2070	Case 91-7, Questions 1–3 2167
Case 88-3, Question 1 2075	Pediatric Non-Hodgkin Lymphoma 2167
Case 88-4, Questions 1–3 2076	Case 91-8, Questions 1–4 2169
Case 88-5, Questions 2 2077	Key References and Websites 2170

92 Adult Hematologic Malignancies 2172 Lynn Weber, Steve Stricker, Casey B. Williams,	Case 96-3 , Questions 1–9 2247 Case 96-4 , Question 1 2251
and Katie A. Won	Graft-versus-Host Disease 2252
A mate Mondail Londonnia 2172	Case 96-5 , Questions 1–9 2252
Acute Myeloid Leukemia 2173	Infectious Complications 2258
Case 92-1, Questions 1–8 2175	Case 96-6, Questions 1–3 2258
Case 92-2, Questions 1–2 2178 Chronic Myelogenous Leukemia 2179	Case 96-7, Questions 1–5 2261
Chronic Myelogenous Leukemia 2179 Case 92-3, Questions 1–4 2180	Issues of Survivorship After Hematopoietic Stem Cell
Chronic Lymphocytic Leukemia 2182	Transplantation 2263
Case 92-4, Questions 1–5 2183	Case 96-8, Question 1 2263 Key References and Websites 2264
Multiple Myeloma 2185	ncy references and websites 2204
Case 92-5 , Questions 1–5 2186	
Lymphoma 2189	SECTION 18: PEDIATRICS 2265
Case 92-6, Questions 1–3 2191	Section Editor: Marcia L. Buck
Case 92-7 , Questions 1–2 2193	
Case 92-8, Questions 1–3 2194	97 Pediatric Pharmacotherapy 2265
Key References and Websites 2196	Marcia L. Buck
00.0 0407	Growth and Development during Childhood 2266
93 Breast Cancer 2197	Case 97-1, Question 1 2261
Kellie L. Jones	Pediatric Pharmacokinetic Differences 2267
Breast Cancer 2197	Case 97-2, Question 1 2267
Case 93-1, Questions 1–2 2199	Case 97-3, Questions 1–6 2267
Case 93-2, Question 1 2200	Case 97-4, Questions 1–4 2270
Case 93-3, Questions 1–9 2200	Case 97-5, Questions 1–2 2272
Metastatic Breast Cancer 2207	Case 97-6, Question 1 2272
Case 93-4, Questions 1–5 2207	Case 97-7, Question 1 2273
Key References and Websites 2209	Pediatric Pharmacodynamic Differences 2273
	Case 97-8 , Question 1 2273
94 Lung Cancer 2210	Case 97-9, Questions 1–2 2273
Mark N. Kirstein, Robert A. Kratzke, and Arkadiusz Z. Dudek	Medication Dosing in Children 2274
Lung Cancer 2210	Case 97-10, Question 1 2274
Case 94-1, Questions 1–4 2212	Preventing Medication Errors in Children 2274
Case 94-2, Questions 1–7 2215	Case 97-10, Questions 2–3 2274
Case 94-3, Questions 1–6 2219	Increasing Availability of Pediatric Medication
Key References and Websites 2221	Information 2275
	Case 97-10, Questions 4 2275 Key References and Websites 2276
95 Colorectal Cancer 2223	Rey References and Websites 2270
Sachin R. Shah and Julian Hoyt Slade, III	98 Pediatric Fluid, Electrolytes, and Nutrition 2277
Colorectal Cancer 2224	Michael F. Chicella and Jennifer W. Chow
Case 95-1, Questions 1–2 2225	•
Case 95-2, Questions 1–6 2226	Fluid and Electrolyte Maintenance 2278
Case 95-3, Questions 1–6 2231	Case 98-1, Questions 1–2 2278
Chemotherapy and Radiation for Early-Stage Rectal	Case 98-2, Questions 1–3 2280
Cancer 2234	Case 98-3, Questions 1–3 2281
Key References and Websites 2235	Infant Enteral Nutrition 2283
	Case 98-4, Questions 1–5 2283
96 Hematopoietic Cell Transplantation 2236	Case 98-5, Question 1 2285
Kathleen G.E. Green and John R. Rogosheske	Case 98-6, Questions 1–4 2286 Case 98-7, Questions 1–11 2288
Overview 2237	Key References and Websites 2292
Autologous Hematopoietic Stem Cell Transplantation 2238	ncy references and websites and
Case 96-1, Questions 1–6 2238	00 Camanan Badiataia Illanaana 2202
Allogeneic Hematopoietic Stem Cell Transplantation 2242	99 Common Pediatric Illnesses 2293
Case 96-2, Questions 1–7 2242	Michelle Condren and Mark R. Haase
Comparison of Supportive Care Strategies Between	Administering Medication to Children 2294
Autologous and Allogeneic Myeloablative Hematopoietic	Case 99-1, Question 1 2294
Stem Cell Transplantation 2246	Infant Care 2295
Case 96-2, Questions 8 2246	Case 99-2, Questions 1–2 2295
Comparison of Supportive Care Strategies Between	Case 99-3, Questions 1–2 2296
Allogeneic Myeloablative and Nonmyeloablative	Case 99-4, Questions 1–2 2296
Hematopoietic Stem Cell Transplantation 2247	Case 99-5 , Question 1 2297
Case 96-2, Questions 9 2247	Case 99-6, Question 1 2298
Complications Associated with Hematopoietic Stem Cell	Viral Gastroenteritis 2299
Transplantation 2247	Case 99-7 , Questions 1–3 2299

Gastroesophageal Reflux 2301	Age-Related Physiological, Pharmacokinetic, and
Case 99-8, Questions 1–2 2302	Pharmacodynamic Changes 2360
Common Pediatric Infections 2304	Case 102-1, Questions 1–4 2361
Case 99-9, Questions 1–2 2304	Pharmacodynamic Changes 2362
Case 99-10, Questions 1–2 2305	Problems Associated With Drug Use in
Key References and Websites 2306	Older Adults 2364
100 Neonatal Therapy 2307	Case 102-2, Question 1 2364 Discuss Specific Conjugating Days Thornty 2265
Donna M. Kraus and Jennifer Tran Pham	Disease-Specific Geriatric Drug Therapy 2365 Case 102-3, Questions 1–11 2365
Donna W. Kraus and Jenniler Tran Phani	Case 102-4, Questions 1–2 2368
Neonatal Therapy 2308	Case 102-4, Questions 1–2 2368 Case 102-5, Questions 1–6 2369
Respiratory Distress Syndrome 2308	Case 102-6, Question 1 2371
Case 100-1, Questions 1–6 2309	Case 102-7, Questions 1–2 2371
Bronchopulmonary Dysplasia 2312	Long-Term Care Facilities 2372
Case 100-2, Questions 1–5 2312	Case 102-8, Questions 1–2 2372
Patent Ductus Arteriosus 2317	Key References and Websites 2373
Case 100-3, Questions 1–9 2319	ney hererenees and websites 2575
Necrotizing Enterocolitis 2322	
Case 100-4, Questions 1–6 2322	103 Geriatric Dementias 2375
Neonatal Sepsis and Meningitis 2326	Nicole J. Brandt and Bradley R. Williams
Case 100-5, Questions 1–2 2326	
Congenital Infections 2330	Geriatric Dementias 2376
Case 100-6, Question 1 2330	Alzheimer Disease 2378
Apnea of Prematurity 2331	Case 103-1, Questions 1–7 2379
Case 100-7, Questions 1–3 2331	Lewy Body Dementias 2386
Neonatal Seizures 2333	Case 103-2, Questions 1–2 2386
Case 100-8, Questions 1–5 2333	Vascular Dementias 2387
Key References and Websites 2336	Case 103-3, Questions 1–3 2387
404 6 (1) 6 111 111 611 10007	Behavioral Disturbances in Dementia 2390
101 Care of the Critically III Child 2337	Case 103-4, Questions 1–5 2391
Elizabeth Anne Farrington and Marcia L. Buck	Pseudodementia 2393
Pediatric Cardiopulmonary Resuscitation 2338	Case 103-5, Questions 1–2 2393
Case 101-1, Question 1 2339	Acknowledgement 2393
Respiratory Distress 2339	Key References and Websites 2394
Case 101-1, Questions 1–3 2339	
Medications for Intubation and Mechanical Ventilation 2341	104 Geriatric Urologic Disorders 2395
Case 101-1, Questions 4 2341	Michael R. Brodeur
Pediatric Shock 2344	
Case 101-3, Questions 1–3 2344	Urinary Incontinence 2395
Sepsis and Septic Shock in Infants and Children 2345	Case 104-1, Questions 1–4 2398
Case 101-4, Questions 1–2 2346	Case 104-2, Questions 1–2 2400
Initial Management of Pediatric Septic Shock 2348	Benign Prostatic Hyperplasia 2401
Case 101-4, Questions 3 2348	Case 104-3, Questions 1–7 2402
Cardiovascular Drug Therapy 2349	Sexual Dysfunction 2408
Case 101-4, Questions 4–5 2350	Case 104-4, Questions 1–14 2410
Corticosteroid Administration in Pediatric Septic	Key References and Websites 2416
Shock 2352	
Case 101-4, Questions 6 2352	105 Octooperasis 2/17
Adjunctive Therapies 2352	105 Osteoporosis 2417 Rebecca A. Rottman-Sagebiel
Congenital Heart Disease 2352	Rebecca II. Rottillair-bagebier
Case 101-5, Question 1 2352	Incidence, Prevalence, and Epidemiology 2417
Pediatric Traumatic Brain Injury 2353	Case 105-1, Questions 1–3 2419
Case 101-6, Questions 1–6 2353	Case 105-2, Questions 1–8 2422
Case 101-7 , Question 1 2357	Case 105-3, Questions 1–2 2427
Key References and Websites 2357	Case 105-4, Questions 1–3 2431
CECTION 40 CERLATRIC THEFT AND COLOR	Osteoporosis in Men 2432
SECTION 19: GERIATRIC THERAPY 2359	Case 105-5, Questions 1–5 2432
Section Editor: Judith L. Beizer	Key References and Websites 2433

SE

102 Geriatric Drug Use 2359

Jiwon Kim and May Mak

Demographic and Economic Considerations 2360

Drug Index 2434 Subject Index 2466