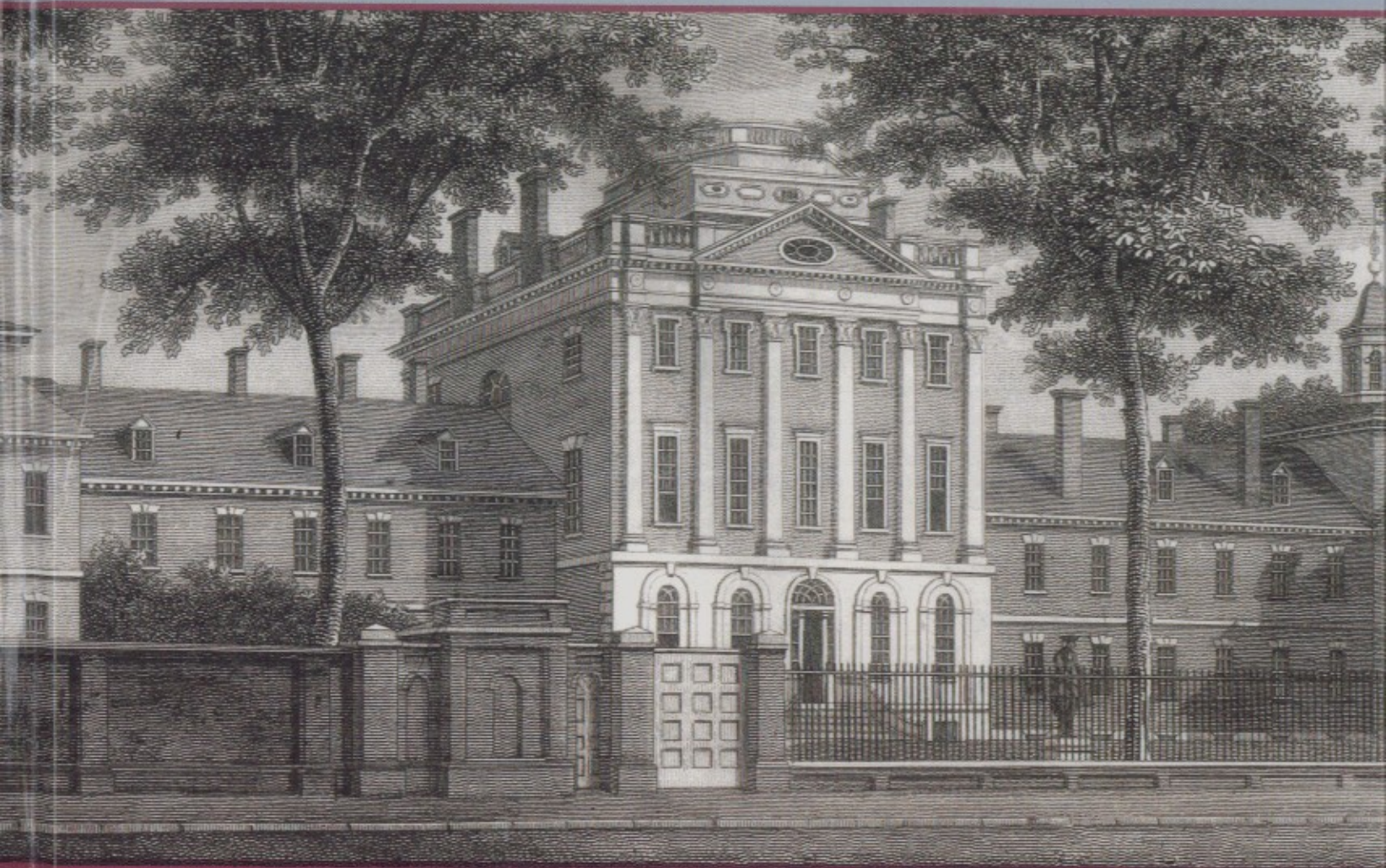


# Hospital Medicine

2nd Edition

Robert M. Wachter ■ Lee Goldman ■ Harry Hollander



LIPPINCOTT WILLIAMS & WILKINS

# Contents

Contributors xi  
Preface to the Second Edition xix  
Preface to the First Edition xxi

## SECTION I: GENERAL ISSUES IN HOSPITAL MEDICINE 1

---

- 1 Models of Hospital Care 3  
*Robert M. Wachter*
  - 2 The Economics of Hospital Medicine 11  
*David Meltzer and Chad Whelan*
  - 3 Practice Management in Hospital Medicine 17  
*John R. Nelson*
  - 4 Hospital Interfaces 23  
*Winthrop F. Whitcomb and John R. Nelson*
  - 5 Hospital Discharge 31  
*Preetha Basaviah and Mark V. Williams*
  - 6 Bayesian Reasoning and Diagnostic Testing 37  
*Warren S. Browner*
  - 7 Decision Analysis 43  
*Warren S. Browner*
  - 8 Evidence-Based Medicine 51  
*Holger J. Schünemann and Gordon H. Guyatt*
  - 9 Cost-Effectiveness 59  
*Joel Tsevat*
  - 10 Hospital Information Systems 63  
*Saverio M. Maviglia, Gilad J. Kuperman, and Blackford Middleton*
  - 11 Effective Clinical Teaching in the Inpatient Setting 71  
*Karen E. Hauer and David M. Irby*
  - 12 Assessment and Improvement of Quality and Value 79  
*Robert M. Wachter and Niraj L. Sehgal*
  - 13 Practice Guidelines and Clinical Pathways 87  
*Scott Weingarten*
  - 14 Patient Satisfaction with Hospital Care 93  
*Haya R. Rubin*
  - 15 Nutritional Issues in the Hospitalized Patient 99  
*Annette Stralovich-Romani and Christopher R. Pennington*
  - 16 Approach to the Hospitalized Older Patient 111  
*C. Seth Landefeld, C. Bree Johnston, and Mary Anne Johnson*
  - 17 Ethical Issues in the Hospitalized Patient 119  
*Steven Z. Pantilat and Bernard Lo*
  - 18 Pain Management in the Hospitalized Patient 129  
*Robert V. Brody*
  - 19 End-of-Life Care in the Hospital 139  
*Daniel J. Fischberg, Paolo Manfredi, and Diane E. Meier*
  - 20 Patient Safety in the Hospital Setting 147  
*Kaveh G. Shojania*
  - 21 Medication Safety in the Hospital 157  
*David W. Bates*
- ## SECTION II: CRITICAL CARE MEDICINE 161
- 

- 22 Approach to the ICU Patient 163  
*Neal H. Cohen*
- 23 Ventilator Management 173  
*Stephen E. Lapinsky and Arthur S. Slutsky*
- 24 Acute Respiratory Failure 183  
*Mark R. Tonelli and Leonard D. Hudson*
- 25 Hypotension, Shock, and Multiple Organ Failure 191  
*Bradley D. Freeman and Charles Natanson*
- 26 Sepsis Syndrome 201  
*Todd W. Rice and Gordon R. Bernard*
- 27 Procedures in Hospital Medicine 207  
*Rachel L. Chin*

## SECTION III: MEDICAL CONSULTATION 233

---

- 28 Medical Consultation 235  
*Geno J. Merli and Howard H. Weitz*

- 29 **Key Principles of Anesthesiology** 241  
*Neal Cohen*
- 30 **Preoperative Evaluation** 249  
*Joshua S. Adler*
- 31 **Postoperative Care** 261  
*Richard H. Savel, Jeanine P. Wiener-Kronish, and Michael A. Gropper*
- 32 **Medical Complications of Pregnancy** 271  
*Jeffery Pickard, Linda A. Barbour, and Raymond O. Powrie*
- 33 **Care of Special Populations: Psychiatry** 279  
*David F. Gitlin and Bernard Vaccaro*
- 34 **Trauma** 287  
*Deborah M. Stein, Ronald Rabinowitz, and Ellis Caplan*

## **SECTION IV: CARDIOVASCULAR MEDICINE 295**

---

- 35 **Signs, Symptoms, and Laboratory Abnormalities in Cardiovascular Diseases** 297  
*Randall H. Vagelos, Rachel Marcus, and J. Edwin Atwood*
- 36 **Diagnostic Tests in Cardiology** 315  
*Karen P. Alexander and Eric D. Peterson*
- 37 **Angina and Unstable Angina** 329  
*Daniel B. Mark*
- 38 **Acute Myocardial Infarction** 343  
*Daniel I. Simon, James C. Fang, and Naomi Kenmotsu Rounds*
- 39 **Heart Failure** 359  
*Carey D. Kimmelstiel, David DeNofrio, and Marvin A. Konstam*
- 40 **Heart Transplantation** 373  
*Maria Ansari and Teresa DeMarco*
- 41 **Valvular Heart Disease** 381  
*Richard A. Lange and L. David Hillis*
- 42 **Atrial Fibrillation, Atrial Flutter, and Other Supraventricular Tachyarrhythmias** 393  
*Leonard I. Ganz*
- 43 **Ventricular Arrhythmias and Cardiac Arrest** 409  
*Graham Gardner, H. Leon Greene, and Peter Zimetbaum*
- 44 **Syncope** 423  
*Wishwa N. Kapoor and David J. McAdams*

- 45 **Bradycardia and Pacemakers** 431  
*Richard H. Hongo and Nora F. Goldschlager*
- 46 **Pericardial Disease** 441  
*Fady Malik and Elyse Foster*

## **SECTION V: VASCULAR MEDICINE 453**

---

- 47 **Signs, Symptoms, and Laboratory Abnormalities in Peripheral Arterial Disease** 455  
*Stanley G. Rockson*
- 48 **Urgent and Emergent Hypertension** 463  
*William B. White*
- 49 **Aortic Intramural Hematoma and Dissection** 471  
*Lee Goldman*
- 50 **Aortic Aneurysm** 479  
*Frank A. Lederle*
- 51 **Peripheral Arterial Disease** 485  
*Eric P. Brass, William R. Hiatt, and Mark R. Nehler*
- 52 **Deep Venous Thrombosis** 495  
*David A. Garcia and Mark A. Crowther*
- 53 **Pulmonary Embolism** 505  
*Thomas M. Hyers*

## **SECTION VI: PULMONARY MEDICINE 515**

---

- 54 **Signs, Symptoms, and Laboratory Abnormalities in Pulmonary Medicine** 517  
*Meshell D. Johnson and Paul G. Brunetta*
- 55 **Chronic Obstructive Pulmonary Disease** 531  
*Matthew B. Stanbrook and Kenneth R. Chapman*
- 56 **Exacerbations of Asthma** 539  
*Homer A. Boushey*
- 57 **Interstitial Lung Disease** 549  
*Talmadge E. King, Jr.*
- 58 **Lung Transplantation and Lung Volume Reduction Surgery** 561  
*Steven G. Peters and David E. Midthun*
- 59 **Pulmonary Hypertension** 569  
*Lewis J. Rubin*
- 60 **Pleural Effusion and Pneumothorax** 577  
*Steven A. Sahn and John E. Heffner*
- 61 **Pulmonary Nodules and Mass Lesions** 587  
*Michael K. Gould and Glen A. Lillington*

**SECTION VII: INFECTIOUS DISEASES 595**

- 62 Signs, Symptoms, and Laboratory Abnormalities in Infectious Diseases 597  
*Richard A. Jacobs and Karen C. Bloch*
- 63 Infections in Immunocompromised Hosts 613  
*Nesli Basgoz*
- 64 Parenteral Antibiotics and Antibiotic Resistance 623  
*Lisa G. Winston and Henry F. Chambers III*
- 65 Community-Acquired Pneumonia 633  
*Ethan A. Halm and Michael J. Fine*
- 66 Hospital-Acquired Pneumonia 645  
*Donald E. Craven, Catherine A. Fleming, and Kathleen A. Steger Craven*
- 67 Tuberculosis 655  
*Charles L. Daley and Phillip C. Hopewell*
- 68 Urinary Tract Infection 667  
*Thomas M. Hooton*
- 69 Cellulitis and Necrotizing Fasciitis 675  
*Dennis L. Stevens*
- 70 Meningitis 683  
*Allan R. Tunkel and W. Michael Scheld*
- 71 Endocarditis 693  
*Paul M. Sullam*
- 72 Catheter-Associated Infection and Bacteremia 703  
*Isaam I. Raad and Hend A. Hanna*
- 73 Bioterrorism 711  
*Thomas E. Tenrdrup and Sarah D. Nafziger*

**SECTION VIII: HIV DISEASE 719**

- 74 Signs, Symptoms, and Laboratory Abnormalities in HIV Disease 721  
*Harry Hollander*
- 75 Pulmonary Manifestations of HIV Infection 729  
*Laurence Huang and Philip C. Hopewell*
- 76 Neurologic Complications of HIV Disease 739  
*Christina M. Marra*

**SECTION IX: GASTROENTEROLOGY 749**

- 77 Signs, Symptoms, and Laboratory Abnormalities in Gastrointestinal Disease 751  
*Kenneth McQuaid*

- 78 Acute Gastrointestinal Bleeding 767  
*Jonathan P. Terdiman and Peter K. Lindenauer*
- 79 Esophageal Disorders 781  
*Asyia Ahmad and James C. Reynolds*
- 80 Peptic Ulcer Disease and Stress-Related Mucosal Disease 789  
*Brennan M. R. Spiegel and Gareth S. Dulai*
- 81 Inflammatory Bowel Disease 799  
*Stephen B. Hanauer and Sunanda V. Kane*
- 82 Acute Hepatitis and Liver Failure 809  
*Marina Berenguer and Teresa L. Wright*
- 83 Cirrhosis and Its Complications 819  
*Don C. Rockey*
- 84 Disorders of The Biliary System 829  
*Douglas B. Nelson, Paul Druck, and Martin L. Freeman*
- 85 Liver Transplantation 839  
*Rapheal B. Merriman*
- 86 Acute Pancreatitis 849  
*Douglas A. Corley*
- 87 Other Abdominal Emergencies: Appendicitis, Diverticulitis, and Ischemic Bowel 859  
*Lily C. Chang and E. Patchen Dellinger*
- 88 Ileus and Obstruction of the Gastrointestinal Tract 873  
*Daniel T. Dempsey and Sean P. Harbison*

**SECTION X: HEMATOLOGY–ONCOLOGY 883**

- 89 Signs, Symptoms, and Laboratory Abnormalities in Hematology-Oncology 885  
*Hope S. Rugo*
- 90 Principles of Chemotherapy 897  
*Robert J. Ignoffo*
- 91 Principles of Transfusion Medicine 907  
*Susan A. Galel and Edgar G. Engleman*
- 92 Oncologic Emergencies 917  
*Judith A. Luce*
- 93 Leukemia 929  
*David A. Rizzieri, Gwynn D. Long, and Nelson J. Chao*
- 94 Lymphoma 937  
*Ranjana H. Advani, Steven M. Horwitz, and Sandra J. Horning*
- 95 Chronic Myeloproliferative Disorders 947  
*Ayalew Tefferi*

- 96 **Hematopoietic Cell Transplantation** 955  
*Frederick R. Applebaum*
- 97 **Sickle Cell Disease** 965  
*Martin H. Steinberg and Harrison W. Farber*
- 98 **Hemorrhagic and Thrombotic Disorders** 975  
*Julie Hambleton and Marc Shuman*

**SECTION XI: RENAL DISEASE 993**

---

- 99 **Signs, Symptoms, and Laboratory Abnormalities in Renal Disease** 995  
*Rudolph A. Rodriguez and Burl R. Don*
- 100 **Acute Renal Failure** 1007  
*Ravindra L. Mehta and Frank Liu*
- 101 **Management of the Hospitalized Patient on Dialysis** 1017  
*Glenn M. Chertow*
- 102 **Renal Transplantation** 1027  
*William J.C. Amend, Jr. and Flavio Vincenti*
- 103 **Renal Stone Disease and Obstruction** 1037  
*David S. Goldfarb and Fredric L. Coe*
- 104 **Common Electrolyte Disorders** 1045  
*Kerry C. Cho*
- 105 **Common Acid-Base Disorders** 1055  
*Orson W. Moe, Daniel Fuster, and Robert J. Alpern*

**SECTION XII: ENDOCRINOLOGY 1067**

---

- 106 **Signs, Symptoms, and Laboratory Abnormalities in Endocrinology** 1069  
*Kenneth A. Woerber*
- 107 **The Management of Hyperglycemia and Diabetes Mellitus in Hospitalized Patients** 1079  
*Harold E. Lebovitz*
- 108 **Acute Presentations of Thyroid Disease** 1093  
*Leonard Wartofsky*
- 109 **Adrenal Insufficiency and Crisis** 1103  
*David G. Gardner*

**SECTION XIII: RHEUMATOLOGY 1109**

---

- 110 **Signs, Symptoms, and Laboratory Abnormalities in Rheumatology** 1111  
*Jeffrey Critchfield*

- 111 **Vasculitis** 1121  
*Gary S. Hoffman, Carol A. Langford, and Leonard H. Calabrese*
- 112 **Acute Presentations of Selected Rheumatic Disorders** 1135  
*Kenneth H. Fye and Kenneth E. Sack*
- 113 **Acute Arthritis** 1143  
*John H. Stone and David B. Hellmann*
- 114 **Back Pain** 1153  
*Jerry D. Joines and Nortin M. Hadler*

**SECTION XIV: NEUROLOGY AND PSYCHIATRY 1161**

---

- 115 **Signs, Symptoms, and Diagnostic Tests in Neurology** 1163  
*John W. Engstrom*
- 116 **Stroke** 1175  
*Wade S. Smith*
- 117 **Central Nervous System Hemorrhage and Increased Intracranial Pressure** 1185  
*Ellen Deibert and Michael N. Diringer*
- 118 **Seizures** 1199  
*Paul A. Garcia*
- 119 **Depression in the Hospitalized Patient** 1209  
*Richard J. Goldberg*

**SECTION XV: TOXICOLOGY AND ALLERGY 1219**

---

- 120 **Allergic Reactions and Anaphylaxis** 1221  
*Neil Winawer and Mark V. Williams*
- 121 **Drug Overdoses and Dependence** 1229  
*Josef G. Thundiyil, Jon K. Beauchamp, and Kent R. Olson*
- 122 **Acute Alcohol Intoxication and Alcohol Withdrawal** 1243  
*Robert H. Lohr*