Antibiotics in Laboratory Medicine, 5th Edition
Edited by Victor Lorain
Philadelphia: Lippincott Williams & Wilkins, 2005
832 pp., illustrated. $199.00 (cloth).

The field of antimicrobial agents and susceptibility testing has changed significantly over the past decade, demanding a new level of sophistication and technological understanding from laboratorians and physicians. This fifth edition of Antibiotics in Laboratory Medicine takes an innovative approach to the dramatic and exciting advances in the field. A diverse team of authors present an authoritative and comprehensive text that describes cutting-edge laboratory methods for evaluating the efficacy of antibiotics and the mechanisms of bacterial resistance. The topics discussed include the new molecular techniques for antibiotic susceptibility testing, the new discipline of pharmacogenomics, and the use of computers to monitor resistance trends.

This long-awaited book is authored by distinguished physicians and scientists who are experts in their particular areas, clear in their vision, and recognized worldwide. In comparison with the fourth edition, published 9 years ago, most of the chapters have been expanded and reworked to represent current science and practice. In addition, 5 new chapters have been included that address recent subjects and concepts in this ever developing field: drug-susceptibility breakpoints, molecular techniques for susceptibility testing, testing of HIV-1 and hepatitis viruses for susceptibility to antiviral agents, and testing of disinfectant and antiseptic techniques.

This edition has responded well to the expansion of new classes of antifungal and antiviral agents, the implementation of molecular methods and computer algorithms, and the identification of genetic resistance of microorganisms, as well as to the tracking of trends of resistance locally, nationally, and internationally.

The fifth edition is partitioned into 19 logical chapters, each of which deals with a unique aspect of the field. Each is well written and well referenced and stands on its own merit. The topics of the chapters include routine phenotypic antibacterial susceptibility assays, the introduction of antimycobacterial and antifungal agents, several specific phenotypic antimicrobial susceptibility assays, the introduction of molecular testing mechanisms for detection of antibacterial and antiviral resistance, and several other special aspects of the field, including the dynamic epidemiological patterns in antibiotic resistance. As a diagnostic molecular microbiologist, I particularly applaud the beautiful work in the chapters “Genetic and Biochemical Mechanisms of Bacterial Resistance to Antimicrobial Agents,” “Molecular Methods for the Detection of Antibacterial Resistance Genes,” “Molecular Mechanisms of Action for Antimicrobial Agents: General Principals and Mechanisms for Selected Classes of Antibiotics,” and “The Antivirogram and the Nodes of Action of Antiviral Agents, HIV-1, Hepatitis, Influenza, and Cytomegalovirus.” These explanations about the molecular arm of the field are truly original and illuminating.

Although a time gap between the completion of the manuscripts and the publication of the book is to be expected, some cutting-edge problems in the field were not able to be addressed in this edition, such as community-associated infection with methicillin-resistant Staphylococcus aureus. Some of the illustrations are hard to interpret, because they are presented in black and white (e.g., figures 7.1, 7.2, 10.2, 10.4, 13.5, and 13.6). Given its price, the book should include color plates to enhance the usefulness of these illustrations. The quality of some of the illustrations included in chapter 10 could be improved.

This forward-looking text will allow the novice to obtain a total picture of the field of antimicrobial agents and susceptibility testing, as well as allow the veterans to stay in touch with all of the state-of-the-art techniques currently in use in diagnostic microbiology laboratories around the world. It is extremely useful and practical for diagnostic microbiologists who are involved in the daily routine of antimicrobial susceptibility testing. It positions itself to be a critical resource today and well into the future for clinical microbiologists, pathologists, infectious diseases specialists, pharmacists, and their associated technologists and trainees.

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Edited by Ebbing Lautenbach and Keith Woeltje, in conjunction with The Society for Healthcare Epidemiology of America
373 pp., illustrated. $94.95 (cloth).

Since this book was first published, the field of healthcare epidemiology has expanded to encompass a wide continuum...
of health care settings, including the home. In addition, the mandate of the healthcare epidemiologist has gone beyond the prevention of infections to include prevention of noninfectious adverse events, attention to patient and health care worker safety issues, and performance of quality and outcome measurements in the midst of increasing patient complexity and consumer interest. With today’s rapid communication technologies, including electronic journals and texts, the role of textbooks in learning and establishing basic precepts could easily be forgotten. The editors have addressed all of these issues to produce a useful entry-level text for aspiring healthcare epidemiologists. The book provides a framework with which to build the myriad of skills and critical thinking needed to meet the responsibilities and the important and challenging role of the hospital epidemiologist.

Healthcare epidemiology training should be an integral part of any infectious diseases fellowship program. The editors address this need by discussing key issues and core knowledge areas essential for competence as a healthcare epidemiologist. The chapters, written by individuals who have cut their teeth in applied healthcare epidemiology, are lucid, concise, and contain up-to-date bibliographies. The tables and figures stand on their own and complement the text. A busy infectious diseases fellow could easily review this handbook in a short time or refer to it when problems arise. That I read this handbook cover to cover is a tribute to its clarity, readability, and first-class editing.

The editors presume that the reader has some familiarity with health care–associated infections and patient and health care worker safety issues. The volume is divided into 6 sections. The first focuses on the important roles of the healthcare epidemiologist in the era of managed care and delineates the competencies necessary to implement and sustain successful surveillance, prevention, and control programs in a variety of health care settings. The hospital epidemiologist is challenged to embrace the administrative skills needed to get things accomplished, to build a business case for the hospital epidemiology program, and to market the position to health care administrators. The contents of this section also underscore the critical behaviors essential for success in implementing policies and gaining support for interventions—effective communication, listening, self-effacement, respect for patients and colleagues, and rational use of laboratory resources.

Section 2, entitled “Surveillance and Analysis,” describes the epidemiological methods for conducting surveillance, investigating outbreaks, and managing sentinel health care–associated infections (e.g., pneumonia, surgical site infection, and intravascular catheter-associated infections). Hidden in this section is a wonderful chapter, “Exposure Work-Ups,” which could easily have been named “Friday Afternoon with the Hospital Epidemiologist Beeper.” Essential information is provided on how to manage infectious disease exposures. It is an excellent resource to have at one’s fingertips, especially at the start of a weekend or holiday. In fact, the issues addressed in this chapter are so important, arising time and time again, that it might have been better to expand the chapter into a separate ready reference section for exposure management.

The next 3 sections continue to enhance the reader’s overall understanding of hospital epidemiology. The section “Support Functions” addresses the role of the microbiology laboratory and molecular typing in the performance of surveillance activities, outbreak investigations, interventions, and the monitoring of outcomes. I was very pleased with the emphasis on epidemiologically directed requests for microbiological analysis. Computer systems and computing issues relevant to surveillance, reporting, use of spreadsheets for data collection, and data analysis are discussed. Other pertinent topics are also examined: antimicrobial resistance, antibiotic stewardship in health care settings, hand hygiene, employee health, tuberculosis in health care settings, patient safety, building-construction issues, and infection control in outpatient and long-term care facilities.

Section 6 familiarizes the healthcare epidemiologist with the daunting administrative, compliance, and regulatory issues that are crucial for a successful program, including development of infection control policies and guidelines. This section does a superb job of mitigating the fear and trepidation that surround the Occupational Safety and Health Administration and the Joint Commission on Accreditation Healthcare Organization and affirms the important roles they play in the enhancement of patient and health care worker safety.

Is there anything that I do not like about this book? The few complaints I have are niggling and minor irritations, but they do not detract from the volume. First, there are too many acronyms. Although we must learn to live with them, I hope the editors reduce the inordinate use of acronyms in the next edition. Second, I dislike the overuse of the literary device of making a statement, then qualifying it by saying that further discussion is beyond the scope of the book. A chapter addressing diagnostic work-ups for exposure in pregnant women would have been useful, because questions regarding pregnancy issues commonly arise in most health care settings. Finally, the chapter on methods of epidemiological analysis should have reviewed confounding and effect modification—important when dealing with $2 \times 2$ tables and risk adjustment.

Readers will glean information on the basis of their own experience, academic interests, and personal goals. I particularly liked the chapter entitled “How to Get Paid for Healthcare Epidemiology: A Practical Guide.” It outlines a navigational course for the new hospital epidemiologist on the “how to’s” of setting up a program and making a difference. The chapter “Ethical Aspects of Infection Control” im-
parts applicable real-life knowledge by tackling true ethical and moral issues, rather than putative, abstract concepts.

This book will appeal to a broad audience interested in infection control and healthcare epidemiology: students, residents, and fellows; both budding and experienced health care professionals; and yes, even managed care and long-term care administrators. It can be read completely to build a firm knowledge base or more selectively, depending on the interests of the reader. Used in conjunction with other references, this text will enable the healthcare epidemiologist to make a substantial difference in patient outcomes.

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New Books Received


