Biodefense Principles and Pathogens
Edited By M. S. Bronze and R. A. Greenfield
Norfolk, United Kingdom: Horizon Bioscience, 2005. 838 pp. $380.00 (hardcover).

This book, with 838 pages plus an introduction, provides a remarkable and comprehensive overview of a wide number of biodefense issues of potential interest to a variety of readers. The book is divided into 3 main parts: general issues in biopreparedness, diseases potentially resulting from deployment of agents or toxins, and specific issues pertaining to agroterrorism. The content of each of the 23 chapters can stand alone, with minimal overlap of information among chapters, and direct contact information for the senior author of each chapter is provided. Authors generally decoded various acronyms commonly used by molecular biologists, clinicians, and microbiologists, which should assist those not conversant in such specialized terminology.

Readers who have already spent many weary hours searching for bioterrorism information on the usual Web sites or scouring journal articles will immediately be impressed by the scale and depth of the research shown. This book provides significantly more than the usual recitation of the Centers for Disease Control and Prevention categories A, B, and C lists, and it sparingly reiterates information otherwise provided at the Centers for Disease Control and Prevention Web site (http://www.bt.cdc.gov).

In part 1, several chapters on topics that are not usually found in bioterrorism source books—including overviews of public health preparedness, policy, and legal issues, hospital-level preparedness planning, surveillance approaches, and psychosocial issues associated with bioterrorism or the response to it by emergency workers—are described. These chapters may be best appreciated by US-based emergency responders or those who execute such plans, because planning, policies, or public health care delivery as it exists in other countries is only minimally discussed. Lay readers who do not have a strong background in microbiology or molecular biology but who are attempting to learn more about this subject, to create training scenarios, or to undertake response planning will find the overviews in part 1 to be very useful, but they may find a significant amount of the subsequent science in parts 2 and 3 to be beyond their level of understanding.

Part 2 describes diseases and features associated with the usual category A and B agents, such as anthrax, plague, botulism, tularemia, brucellosis, melioidosis, smallpox, and viral hemorrhagic fever viruses as well as agents or toxins less likely to be considered as threats. These chapters are well written in clear language suitable for readers with a background in microbiology and molecular biology. Each pathogen or toxin is described with respect to laboratory-based characteristics, known or conjectured virulence factors, clinical presentations, current molecular or other detection methods, therapies, pre- or post-exposure prophylaxis, vaccines (should they exist), as well as a summary of research approaches for the next generation of vaccines. Pathogens that primarily affect humans, that are known zoonotic agents, or that affect only animals or plants (and so directly impact on agribusiness) are all described, with emphasis in part 3 on international consensus planning, policies, and description of specific agents thought to be of greatest concern as agroterrorism threats.

This compilation of topics is the greatest strength of this book, because all of this information is provided in a single-source volume instead of being scattered among many Web sites, journal articles, and texts. Many science-based libraries or scientists working in this field may choose to acquire this book, because it does attempt to provide a snapshot of current information on pathogens, toxins, or diseases commonly associated with bioterrorism while also reviewing a variety of preparedness topics, thereby potentially being of benefit to many different types of readers or response situations.

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Severe Pneumonia
Edited By Michael Niederman
Boca Raton: Taylor and Francis Group, 2005. 422 pp. $199.95 (hardcover).

Severe Pneumonia is the 206th volume in the Lung Biology in Health and Disease series (executive editor Claude Lenfant). Perhaps surprisingly, there are few other volumes in this series that are dedicated to lower respiratory tract infections, although there have been other recent volumes devoted to Pneumocystis pneumonia, respiratory infections and asthma, nosocomial pneumonia, and tuberculosis.

My first question was “why focus just on severe pneumonia?” Although it is not explicitly stated in the preface or implied in the title, the table of contents indicates a clear emphasis on critical care.
ics covered are slanted towards the pathogenesis and management of pneumonia that either is severe enough to warrant admission to the intensive care unit or is acquired in the intensive care unit. Of the 15 chapters, 9 discuss issues relating to ventilator-associated pneumonia, including risk factors, diagnosis, treatment, and prevention. Other chapters cover the definition and assessment of severe pneumonia, risk factors for severe pneumonia, bacteriology of severe community-acquired pneumonia, mechanisms of antimicrobial resistance in the intensive care unit, and pulmonary host defenses.

The chapters are generally well-written, well-researched, and cover important issues relating to severe pneumonia. There is a thorough explanation and critical appraisal of the various severity-assessment tools for community-acquired pneumonia. These severity-prediction rules have emerged over the past 2 decades and vary considerably in their complexity. With these tools, it is now possible to assess severity of community-acquired pneumonia by predicting those patients at risk of death and those patients best managed in the hospital. However, further work is needed to determine the impact of these tools on outcome, and I agree with the concluding statement that clinical expertise will remain the final arbiter of decision making.

Four chapters cover empiric antibiotic therapy, antibiotic resistance, and optimizing antibiotic therapy. These are important issues that are made problematic by the progressive emergence of antibiotic resistance and the limited ability of the microbiology laboratory to make etiological diagnoses for both community-acquired and nosocomial pneumonia. The chapter on mechanisms of antimicrobial resistance in the intensive care unit is, if anything, too comprehensive. For a readership that is likely to mainly comprise respiratory physicians and intensivists, a more concise chapter with a greater focus on pneumonia would be more appropriate. Intensive care units are notorious for their over-use and misuse of antibiotics, and important messages about preventing resistance should not be diluted. Indeed, this chapter has only a relatively small section on the prevention of resistance, located at the very end of the chapter, which makes it seem as though this section was added as an afterthought. Another chapter provides a useful summary of the role of microbiological surveillance in the management of ventilator-associated pneumonia. My only criticism of this section is that it omits some practical issues about surveillance (e.g., the issue of which samples should be tested as part of a targeted surveillance program).

There is a reasonable amount of repetition between chapters, which may not in itself be a problem if this book is used as a reference tool, with individual chapters read in isolation. For example, the role of severity-assessment prediction rules is discussed in detail in chapter 1 (“Severe Pneumonia: Definition of Severity”) and is discussed again in chapter 4 (“Community-Acquired Pneumonia: Defining the Patient at Risk of Severe Illness and the Role of Mortality Prediction Models on Patient Management”). Similarly, chapters 8 (“The Clinical Diagnosis of Ventilator-Associated Pneumonia”) and 9 (“Establishing the Diagnosis of Ventilator-Associated Pneumonia: An Invasive/Microbiologic Approach Compared to a Clinical Approach”) both discuss the clinical versus microbiologic approach to the diagnosis of ventilator-associated pneumonia, and chapters 10 (“Mechanisms of Antimicrobial Resistance in the Intensive Care Unit”) and 11 (“What are the Optimal Regimens for Adequate Empiric Therapy of Ventilator-Associated Pneumonia and How can De-escalation Therapy be Achieved?”) both contain information on antimicrobial-resistance patterns of bacterial pathogens encountered in the intensive care unit. Disappointingly, there are also many errors that have been overlooked in the editing process. The spelling mistakes, in particular, were frequent enough to be distracting.

More attention could also have been given to the tables, which frequently contained abbreviations that were not defined in footnotes. Overall, these shortcomings are relatively minor, and this book contains a wealth of information that is relevant to the management of pneumonia in intensive care units.

Acknowledgments


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New Books Received

