Medical Aspects of Biological Warfare
Edited by Zygmunt F. Dembek

Falls Church, Virginia: Office of The Surgeon General, United States Army; Washington, DC: Borden Institute, Walter Reed Army Medical Center, 2007.
694 pp., Illustrated. $72.25 (hardcover).

This update to the 2007 version of Medical Aspects of Biological Warfare is an excellent, comprehensive, and thorough scientific and historical review of biological weapon pathogens. It is written by some of the foremost experts in the field; most of the contributors are current or former researchers at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), an institution that is devoted to protecting soldiers from biological threats. The Department of the Army published this volume as part of their series Textbooks of Military Medicine. It is available in print and online at the Borden Institute Web site [1].

The text would be useful for any biological researcher interested in the complete historical narrative of research on many organisms of potential biodefense importance, and it provides many valuable references. Smallpox, anthrax, plague, viral hemorrhagic fevers, botulinum toxin, and a handful of other diseases are covered in individual chapters. In addition, the larger issues involved in responding to a biological weapons attack are explored, including laboratory identification of biological threats, the epidemiology of bioweapon and bioterrorism, consequence management, and the development of medical countermeasures to biodefense threats. This volume also describes subjects important to the practice of biodefense research, including biosafety principles and the ethical and legal dilemmas associated with such research. Readers looking for an in-depth discussion of the problems posed by genetically engineered threats or policy dilemmas in civilian response may be disappointed, although those topics are introduced.

Most of this book is useful for both civilian and military readers interested in clinical, epidemiological, or scientific information about biodefense. Some chapters, however, are more focused on the military than on civilian concerns. A chapter on laboratory identification of biological threats describes the network and capabilities of military clinical and field laboratories, including Air Force biological augmentation teams and the Navy’s forward deployable preventive medicine units. The linkages of these military laboratories to the laboratory response network for bioterrorism sponsored by the Centers for Disease Control and Prevention are described and may be useful to the civilian reader.

The Army’s “biosurety” program for security of biodefense research is also described at length. This program entails a strict set of requirements for handling dangerous pathogens that are categorized as Select Agents by the Centers for Disease Control and Prevention and US Department of Agriculture (and as defined in 42 Code of Federal Regulations Part 73). The basic tenets of biosurety, modeled after Army nuclear and chemical surety programs, include physical security measures, such as locks, key pads, and biometric readers; biosafety principles; biological agent accountability and record keeping; and personnel reliability. The Personnel Reliability program requires all those who have access to select agents to submit to medical evaluations and random drug testing, as well as scrutiny of work habits, financial history, and behavioral history. Not surprisingly, the “rigorous screening process and continuous intrusive monitoring” may lead to “the possibility of losing talented and well-trained researchers to other facilities and non-Department of Defense agencies with less stringent programs” [p. 552]. However, in light of recent Federal Bureau of Investigation allegations that an USAMRIID employee was responsible for the anthrax attacks in 2001, it is unlikely that Army biosurety program restrictions will be loosened, even if researchers move to less restrictive fields or research institutions.

One disturbing theme that runs throughout the volume, but that is particularly evident in the chapter on medical countermeasures, is the decreasing availability of Investigational New Drug vaccines to protect biodefense researchers. Some vaccines for biodefense pathogens have not been manufactured in decades, and the dwindling supplies are losing potency. Although research on new vaccine methods may be ongoing, the old vaccines may not be generally available to protect biodefense researchers in the meantime. Currently, the vaccines are only available through the Special Immunizations Program at USAMRIID; non-Department of Defense users can buy into the program, but researchers often do not budget for these vaccines.

This mistake could lead to unnecessary laboratory infections. For example, Francisella tularensis, the causative agent of tularemia, has a very low infectious dose of 10–50 organisms. It was the most common laboratory-acquired infection during the 25 years of the US Biological Warfare Program. Since 1959, researchers at USAMRIID have been administered a live-attenuated vaccine (NDBR 101) under an Investigational New Drug protocol.
that is commercially produced by the National Drug Company (Swiftwater, Pennsylvania) under contract to the US Army Medical Research and Materiel Command. The vaccine does not provide total protection against infection, but it ameliorates symptoms and is an important component for biosafety protection against tularemia. Considering the expansion of laboratory biodefense research since the anthrax attacks in October 2001 and the increase in the number of laboratory workers who would benefit from these vaccines, it is a shame (and dangerous) that the vaccines are not more available.

In conclusion, Medical Aspects of Biological Warfare is an essential compendium for scientists, epidemiologists, policy analysts, and clinicians who are focused on biodefense pathogens. It is an excellent reference tool. The most outstanding achievement of this text is that it provides an illuminating history of biological warfare, biodefense, and the years of clinical and scientific observation that have contributed to this field.

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Reference


Essential Infectious Disease Topics for Primary Care
Edited by Neil S. Skolnick
Totowa, New Jersey: Humana Press, 2008. 312 pp., Illustrated. $89.95 (hardcover).

Essential Infectious Disease Topics for Primary Care is a repository of mainly treatment recommendations for common infectious diseases. Most of these recommendations are derived from guidelines published by acknowledged authorities, such as the Infectious Diseases Society of America, the American Thoracic Society, and the Centers for Disease Control and Prevention. Diagnostic methods are also described, but compared with treatment recommendations, these are a considerably smaller component of the book. Therefore, the book is highly technical and requires careful reading.

The book is divided into 4 parts and 20 chapters. The first part, on upper respiratory tract infections, curiously starts with a chapter on community-acquired pneumonia and includes chapters on tuberculosis, chronic obstructive pulmonary disease exacerbations and acute bronchitis, pharyngitis, acute otitis media, and acute sinusitis. Perhaps this part would be more aptly titled “respiratory tract infections.” The other parts describe gastrointestinal infections; sexually transmitted diseases; skin, bone, and joint infections; and other infectious disease topics. The latter includes a thought-provoking chapter on clinical ethics and infectious disease in family medicine. The number of chapters per part ranges from 2 to 6.

Nearly all of the authors of the chapters are members of Family Practice Residency program staffs in Jenkintown or Philadelphia, Pennsylvania. The book includes scant advice for referral of patients with complex conditions, such as those with HIV infection, tuberculosis, meningitis, and infective endocarditis, leaving the reader with the impression that such referrals to appropriate specialists are not indicated. Such confidence in the capabilities of primary care physicians in this era of medical malpractice risk is certainly unfortunate, if not dangerous.

Recommendations are occasionally in conflict with standards of care. For example, in the chapter “Cellulitis and Skin Infection Associated with Bites,” tetanus toxoid vaccination is recommended, despite that fact that combined diphtheria, tetanus toxoid, and acellular pertussis vaccination would accomplish the goal of updating any and all immunizations at any health care provider contact.

This book might prove to be useful in a primary care practice in which quick access to treatment protocols via computer search is not feasible. If the clinician is uncomfortable without more-detailed information to provide the logic behind some of the recommendations, other more traditional reference books may be more valuable. I was troubled by comments such as, “A fluoroquinolone is the recommended treatment for chronic prostatitis. Other antibiotics are ineffective at treating chronic prostatitis” (p. 272). Internet access appears to have considerably reduced the usefulness of this type of publication.

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