Disaster Medicine

Edited by David E. Hogan and Jonathan L. Burstein. 431 pp., illustrated. Philadelphia, Lippincott Williams & Wilkins, 2002. \$79.95. ISBN 0-7817-2625-5.

- 5 Disaster medicine is perhaps the most interdisciplinary of all fields of medicine, and yet because disasters are relatively infrequent, few physicians are familiar with its principles, unique organizational demands, and clinical nuances. Because many of these concepts are novel to the general medical readership, the opening part of such a book should orient the reader to the basics: the defining characteristics of a disaster, the public's role in an immediate response, the role of
- 10 emergency-medical-services agencies, the role of hospitals, and the integration of all these resources into a coordinated municipal response. This, however, is not the case with Disaster Medicine.
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Part I, the first of six parts, begins with a discussion of what the authors call "Basic Physics of Disasters" — an unusual description that has little to do with the physical forces of natural and human-generated hazards on structures and populations. Aside from the chapter on triage, each of

- 15 human-generated hazards on structures and populations. Aside from the chapter on triage, each of the subsequent chapters addresses a specialized issue: pediatrics, infectious diseases, pharmaceuticals, critical-incident stress, and complex humanitarian emergencies. A reader without basic knowledge of disasters might find this a disorienting sequence.
- The subsequent parts of the book are more consistent with their titles and make for worthwhile reading. Part II, "Disaster Response Planning and Coordination," begins with a solid primer on organizing a hospital's response to disasters. Written before the 2001 anthrax outbreak, however, the chapter lacks the insights gleaned from that unique emergency. Consequently, there is no discussion of the sizable demands on hospital laboratories, infection-control procedures, or the collaboration with public health departments that is critical in a biologic or other large-scale communicable-
- 25 disease emergency. Other chapters address local, municipal, and federal disaster planning and responses, which are important to the understanding of a coordinated response because disasters are complex events that involve many agencies and jurisdictions. The well-written chapter entitled "The United States Federal Response Plan" takes a complex hierarchy and, through graphics and clear writing, outlines the primary and secondary federal agencies that would be activated in a disaster.
- 30 Another key chapter in part II describes the advantages and limitations of the infrastructure of major types of communication. The final chapter in this part of the book addresses disasters in austere environments. Although this topic is found in books about wilderness medicine, it also merits a place here, since in a remote setting, even a handful of patients can overwhelm local resources and require outside assistance.
- 35 The next three parts of the book address natural disasters; industrial, technologic, and transportation disasters; and conflict-related disasters. Part III, "Natural Disasters," describes the natural forces that cause structural damage and their medical consequences. Among the special considerations and management strategies discussed are cutaneous abrasions from tornado-driven particulate matter, vector-borne illnesses after flooding, and crush injuries associated with structural failures caused by earthquakes.

Part IV, "Industrial, Technologic, and Transportation Disasters," covers maritime disasters as well as disasters relating to radiation, chemicals, and mass gatherings. The differences between contamination and irradiation are discussed, as are the realities of the medical care of contaminated patients in unstable condition. Similar concerns are discussed in the chapter on hazardous materials,

45 with emphasis on decontamination (either in the field or in the hospital) from substances capable of causing ongoing injury to patients or adverse effects in medical personnel. A chapter on emergencies at sea points out interesting parallels with land-based emergency planning and describes the creative use of space on a ship for an auxiliary infirmary, the use of passengers with

medical training to help the shipboard medical team, and the role of lifeboats as the "ambulance of last resort."

Part V, "Conflict-Related Disasters," addresses an important set of topics that are not often well covered in a single source. Among the noteworthy chapters is one on terrorist bombings that

- 5 describes special considerations related to ballistics and barotrauma. The chapter on nuclear detonations helps clarify the difference between previously described accidents involving industrial radiation and injuries and illness caused by a thermonuclear detonation or explosions of conventional devices laden with radioactive materials. Three additional and unique contributions focus on medical care after mass shootings, emergency medical care during law-enforcement
- 10 operations, and the impact of biologic weapons. The chapter on biologic weapons describes the agents that are classified in category A and discusses how the release of even a small amount of such agents might overwhelm health care providers and cause social disruption. They stress the need to familiarize the medical community with the syndromes these agents can produce, since most of them "cause diseases that are not part of everyday clinical practice," and are not "even
- 15 discussed in medical school curricula." Epidemiologic clues that suggest when an intentional biologic attack might have occurred are presented. Unfortunately, despite the book's laudable objectives, some of the chapters are unnecessarily redundant. For example, there are similar descriptions of triage strategies in the chapters "Triage" and "Earthquakes." The use of inconsistent terminology to refer to the same concept ("incident").
- 20 command system" in one chapter and "incident management system" in another) can be confusing, as can the varying time frames cited for caring for crush injuries (from two to three hours to six hours). Uniform editing could have resulted in enhanced readability. A notable shortcoming of this book is the minimal discussion of the consequences of disasters on public health. Virtually every natural and human-generated hazard involves displaced populations;
- 25 the need for clean water, sanitation, food, and shelter; and situations that require congregate living. This is only hinted at in the chapters about hurricanes and floods. In addition, the loss of the health care infrastructure to entire segments of the population can have adverse consequences for people with chronic diseases, even if they were not directly affected by the disaster itself. A comprehensive book about disaster medicine should either address these issues in the context of individual hazards
- 30 or include a section on the effect of disasters on public health that describes the integration of public health workers, laboratory workers, sanitarians, and epidemiologists in immediate and delayed responses.

In the past few decades, physicians have responded increasingly effectively to disasters that affect human populations. Although other books address bioterrorism, emergency medicine, and the

35 public health consequences of disasters in detail, the editors and authors of this book address, in one volume, these challenging and changing medical situations and provide a valuable introduction to this subject matter. Steven J. Rottman, M.D.

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