Jeffrey Ryan’s edited book, *Pandemic Influenza: Emergency Planning and Community Preparedness*, was published just months before the World Health Organization’s official proclamation of the H1N1 pandemic in spring, 2009. The book is an excellent compilation of the diverse and interdisciplinary components involved during an epidemic or pandemic: Chapters 1 and 2 regarding political, economic, and medical contexts of historical pandemics; Chapters 3 and 4 about biochemical, physiological, and clinical aspects of influenza; Chapter 5 covering Avian Flu (H5N1) and the important contexts of animal-human interactions and community response; Chapter 6 with comprehensive summary of federal interventions and programs for pandemics; Chapter 7 with in-depth discussion of planning and management at the local level; Chapter 8 regarding strategies for minimizing the impact on businesses and the economy; Chapter 9 about the significant yet often ignored aspects of managing a surge in fatalities; and Chapter 10 with a broad summary integrating the various domains to reinforce the critical importance of planning for the inevitable threats of pandemic medical disasters. Throughout the book, the various authors included an outstanding set of online and published references for those that want to delve further into any of the specific topic areas regarding planning and managing pandemic health threats.

The selection of chapter topics appeals to a variety of audiences, ranging from interests in disaster management to public health policy and legislation, from undergraduates to researchers and practitioners concerned with planning for and minimizing the impact of epidemics and pandemics. On one hand, experts in any one of the fields addressed in the book may perhaps find their expertise-related chapter simplistic, but on the other hand, would then benefit from the presentations made by the other disciplinary perspectives. Overall, the book is more sophisticated and detailed than the level for a “lay audience”, yet can be used by program and community leaders to introduce key concepts, components and strategies to stimulate interest and concern to plan for medical disasters. The book’s authors provide personalized anecdotes and summary tables and charts to interest journalists, students, and policy makers wanting to understand and communicate this domain of planning and management for health/medical disasters. Because the authors include economic, housing, agriculture, transportation, and
political dimensions of dealing with pandemics, the book also should appeal to both urban and rural civic and business leaders, along with managers and directors of health and social services.

Readers may choose to delve into or skim through technical sections or personalized anecdotes throughout the discussions of specific emergency planning aspects covered in this book, returning as needed for later referencing as they address the complex and interdisciplinary domains needed to plan for pandemics and other medical disasters. In a world of international trade, travel, and economic interdependence, we no longer have the luxury of “NIMBY” regarding the threat of communicable diseases.

Ryan’s first chapter alone, “Past Pandemics and Their Outcome,” is worth the read, summarizing key pathogen, host, and environmental factors associated with major pandemics in the history of western civilization since the Middle Ages (i.e., plague, cholera, AIDS, and influenza). Olsen’s chapter follows with an insightful discussion of 1918 Spanish Flu that affected approximately a quarter of the U.S. population. She put the medical and economic consequences of this devastating epidemic into historical context of the events at that time (i.e., WWI exposures, minimal medical, pharmaceutical and public health measures for interventions, and the toxic living, working and environmental conditions that compounded the public’s vulnerability). In turn, these chapters help readers put the current media’s communication of H1N1 or H5N1 threats into more appropriate perspectives given today’s medical technological developments and priorities of public health resources for safer social and environmental conditions.

The next two chapters provide a broad scope of details about the physiology, pathology, and clinical aspects of influenza viruses. Ryan’s intention in Chapter 3 is for readers not in medical science fields to “know thy enemy” in order to better understand the strategies for predicting and managing an outbreak. Discussion of viral anatomical and biochemical structures help to understand the scientific challenges to develop a “cure” because of these viruses’ inherent defense systems and rapid mutation. Terminology and abbreviations are defined to help readers outside these scientific fields follow the jargon. In Kirchner’s Chapter 4, pathogenic and clinical aspects of influenza are described in detail and excellently summarized in tables. Signs and symptoms are compared for various types of influenza as well as considerations for vaccination. A shortfall, perhaps, is that the author did not address issues regarding the limited access to vaccinations, both in production constraints world-wide and the complexity of determining which strain to develop. Although there is overlapping content between these two chapters, it may prove helpful for readers to better grasp unfamiliar information about microanatomy and pathology of viruses.

In Chapter 5, Wright, Nusbaum and Wenzel present important considerations regarding biosecurity, epidemiological control, and community responses to Avian flu (H5N1). Their discussion regarding agricultural and animal sources of diseases provides a conceptual model for readers not familiar with animal-human transference of diseases. Attention is given to the importance of expanding medical management of communicable diseases to include public
health, agricultural and veterinary expertise. Although the authors do not delve into methods for developing community responses, they provide an overview of the important considerations and complexity regarding mitigation, recognition, response, recovery and even the psychological first aid needed in followup for these types of epidemic outbreaks.

The book’s section on response begins with Chapter 6’s examination of U.S. and international programs for epi- and pandemic monitoring and control as well as the assets mobilized for these programs. Cash and Lavender’s overview of the organizations and economics is extremely helpful to simplify the complexity of these domains. This discussion helps highlight that health care in the U.S. is really a sick-care system and that significant economic and ethical barriers need to be addressed to truly develop preventive strategies for pandemic threats. The authors provide an outstanding summary table of national strategies for preparedness, surveillance, response and containment. In addition, they have included a listing of internet resources for readers to delve further and keep updated on the status of disease outbreaks and prevalence.

In Chapter 7, Ryan and Glarum present methods and important factors to consider at the local level to assess hazards, vulnerability, and capabilities for planning and management of communicable disease threats. The authors emphasize the importance of time and distance considerations for public health preparedness and clinical management. Various severity and exposure measures used by the CDC and others are described. Pros and cons of strategies for vaccination and other types of containment are examined. The authors provide an informative discussion of logistical and legal considerations in planning for medical surge capacity, not only for medical personnel and supplies, but also for support functions, space, and communication networks.

Grady-Erickson presents in Chapter 8 the applications of operations planning for pandemics for public and private organizations and businesses. The approach is an all hazards model to understand the impact on human capital, not just for loss of those stricken by disease but also for productivity loss of those caring for the ill. Fundamental philosophical differences are highlighted that bias setting priorities for dealing with labor shortfalls and revenue costs. The author emphasizes the importance of family preparedness along with workplace and institutional living settings exercising hazard scenarios to minimize the broad social consequences of a pandemic disaster.

Chapter 9 provides a rare but critical perspective needed for planning and management of medical disasters—“Fatality Management’. Hardin and Ahrens identify the roles of personnel and organizations involved with this necessary but often avoided element in disaster planning. Routine demands increase in volume and time expectations for medical examiners, coroners, police, EMTs, forensic specialists, funeral homes, ambulance transport, and those issuing death certificates and associated legal processing. Changes in geographic jurisdictions need to be authorized. The authors emphasize that normal procedures of notification and management of fatalities, typically through 9-1-1, hospitals and physicians, will not be adequate. Search and
recovery, mortality surveillance and pronouncement, and rumor control present extraordinary challenges for existing community resources. Unlike natural disasters, pandemic disasters require social distancing, thus necessitating alternative strategies for management of pandemic disasters.

In the Epilogue, Ryan and Glarum quoted a familiar proverb, “He who fails to plan, plans to fail,” concluding that emergency/disaster planning and management must incorporate training and strategies for the health domain threats, whether dealing with medical consequences of natural disasters or community and economic consequences of health-related disasters. Contrasting time frames of natural disasters, the long-term and wave-like phases of pandemics threaten fundamental social and economic functioning. The authors present the ethical dilemmas created by limited resources to manage these threats, in turn, forcing priorities to be set for who will have access to help and when and who will inevitably have to wait. How do we minimize social and economic disruptions? How to we develop and implement this different paradigm for social optimization versus that used in the current health care delivery system?

Coming from a professional background mixing perspectives of medicine, public health, urban planning, and disaster planning, this reviewer would highly recommend this book for students and personnel in each of these domains. In addition, the following for further reading is suggested regarding health planning for disaster management (listed alphabetically):

References


This slim volume is a quick read, and is well worth the time you will spend on it. The author, an Assistant Professor in sociology at the University of Colorado in Boulder, shows a good grasp of the basic social science research on disasters and pushes the reader to rethink some things we thought we knew. She explicitly places her work within the vulnerability approach, and shows that species should be added to the list of factors influencing vulnerability to harm in natural or anthropogenic disasters. The aim of the book is in fact to urge society to “create more secure conditions” for animals (p. 8), in other words, reduce their vulnerability. Irvine’s work is based on interviews, reviews of published materials including news media accounts and technical reports, and ethnographic data from field work. This book consists of an Introduction; four chapters covering the four categories of animals that are viewed, valued, and treated very differently by society; and a Conclusion with recommendations for policy changes.

The sociozoologic scale “ranks animals in a structure of meaning that allows humans to define, reinforce, and justify their interactions with other beings.” Some animals are accorded “nearly human status”, because of their usefulness to humans as companions and servants. Yet these animals can be quickly demoted in status and disposed of if they do not comply with our social rules (p. 7). This book examines the treatment of four categories of animals that are valued differently: pets and service animals, food animals, research subjects, and wildlife. The first three of these are directly dependent on humans for their existence, so most people would agree that they should be especially important in ethical terms, but in this interdependent world, wildlife does not escape the results of human error and the author argues for more careful consideration of their treatment as well. By adopting a “welfare” perspective rather than a “rights” perspective (p. 16), Irvine recognizes the practical limits of what can be accomplished in a world that is dependent on using animals and hopes to improve the general welfare of animals. This will reduce their vulnerability and, in many cases, ours as well.

After a review of the tragic situations faced by many pet owners and their animals in the chaotic evacuation of New Orleans, the first chapter recounts Irvine’s experiences as a volunteer with the Humane Society of Boulder Valley that deployed to the staging area for animal rescue located at the Lamar-Dixon Exposition Center in Gonzales, about forty miles from New Orleans. The facility was established by the Louisiana SPCA, but required volunteers from all over the country to care for the over 6,000 animals that were processed there. Although it can be tempting to see the people who left their pets behind as “villains”, Irvine shows that these families and
individuals were often “victims” themselves of inadequate evacuation planning and contradictory advice by the local authorities, and faced cruel choices as they attempted to do the best they could for the human and animal members of their families.

The second chapter covers animals located in large-scale agricultural operations at the time of disasters. The situation of these animals illustrates the utility of the vulnerability perspective, because these animals are bred to have characteristics that reduce their capacity to survive stress, and are prevented from fleeing danger by their enclosures. Rescuing these animals is a difficult proposition both legally and logistically. By concentrating pigs, chickens, and other food animals in vast numbers, we have not only increased their vulnerability, but our own as well; they contribute to water pollution during normal operations and the pollution is greatly increased by floods and other disasters.

It is hard to pick a saddest case out of those covered by this book, but there is an undeniable “cute” factor that has made people sit up and take notice when they see images of oil-covered birds and mammals after petroleum production and transport accidents. Irvine here challenges the standard definition of disaster as an event that injures or kills humans. She argues that the animals affected by these events deserve to have their lives counted on moral grounds if we wish to have any claim to be an ethical society. There has been a great deal of improvement in rescue techniques since the huge volunteer effort to clean animals and release them back into the wild after the 1969 Santa Barbara spill, but the success rate is still far from one hundred percent. As long as we use petroleum there will be some risk to the wildlife living around extraction or transportation zones. Since we benefit from using the product, “we face a moral imperative to remedy the damage for which we are responsible” but we must find ways to remedy the damage without causing more (p. 83).

The final chapter shows the importance of the “sociozoologic scale”. The vast majority of laboratory animals are rats and mice, species sometimes treated as pets or even honored as in certain parts of India, but most often considered pests that steal our food and transmit loathsome diseases. Society does not often therefore notice or care when thousands die; in fact their deaths are usually described in the media as data losses, of concern only to the researchers because the animals’ lives have no intrinsic worth. In fact, the principal legislation that has been passed to protect lab animals (Laboratory Animal Welfare Act, Public Law 89-554, first passed in 1966) does not cover rats and mice, although NIH guidelines do. Despite this, Irvine describes heroic efforts to rescue lab animals in disasters such as Tropical Storm Allison. Unfortunately these efforts were not very successful because the scale of the problem was so great and the level of preparation so low. Once again, the dominance of the animal model in biological research means that these animals, many bred only for research and unlikely to compete well in the wild, will be highly vulnerable in disasters unless more effort is taken to ensure their successful evacuation.

The Conclusion offers suggestions for each of the categories of animals covered, starting with sensible advice for pet owners to do serious evacuation planning and preparation that includes their animals. Better regulations and monitoring of concentrated animal feeding
operations would go a long way to reduce the suffering of these animals, but reducing the subsidies for large scale operations would also be effective, as would increasing the availability of USDA-inspected slaughterhouses for small, sustainably-run farms. These changes would also benefit humans by reducing watershed pollution, the overuse of antibiotics that is contributing to the development of drug-resistant bacteria, and the spread of disease through contaminated meat.

The strict enforcement of the polluter pays principle would encourage greater safety levels in the production and transport of petroleum, and we can hope that the reduction of petroleum use will have as one of its effects a reduction of major oil spills. As for other disasters such as wildfires and snowstorms that affect wildlife, “the answer to the question of what to do for wildlife in disasters depends on the species and the situation. Our goal should be to avoid causing harm to the animals through our well-intended actions” (p 119). A regulatory solution couple with strict enforcement is also recommended for laboratory research animals. Congress should amend the Laboratory Animal Welfare Act to cover all animals used for research, and take seriously the admonition (included in the 1985 Animal Welfare Act) to reduce the number of animals used in research, refine procedures to minimize pain and suffering, and replace animal subjects with other scientific procedures such as human trials and epidemiological studies whenever possible.

The final recommendation to stretch our imaginations to develop more complete plans and procedures to deal with disasters applies to plans for human populations as well. There are obstacles to this beyond the “positive asymmetry” found by Cerulo (2006). Funding for emergency management in general is too low to allow for really good and complete plans, let alone testing of such plans through realistic drills and exercises. The excuse of “we never imagined this would happen” is often just that, an excuse to cover social reluctance to challenge the status quo and change economic systems that expose the least powerful among us to a share of risk greater than that borne by those who make decisions about their lives.

With a lively style and short chapters, this book will be popular for students, but scholars will benefit from it as well. Irvine pushes the reader to reexamine beliefs about the place of animals in human society and to increase the amount of attention society pays to protecting their welfare, on ethical, economic, and environmental grounds.