Reviews and Resources

BOOK

One Health – People, Animals, and the Environment

Emerging infectious diseases pose challenges for the microbiology, medical, veterinary, environmental health, and public health communities in the United States and around the world. Reviews of the historical experience indicate that no country is free of the risk of disease emergence, and that two-thirds to three-quarters of recent emerging diseases are vectorborne or zoonotic diseases, with the majority of those originating in wildlife. During the 21st century, the drivers of infectious disease emergence will likely intensify, and additional challenges will include climate change, food and water insecurity, and global health security. Addressing these threats will require a multidisciplinary approach as exemplified by the One Health concept which emphasizes the interdependence of human health, animal health (both domestic animals and wildlife), and ecosystem health and stresses the need for transdisciplinary collaboration to anticipate and confront these threats.

The purpose of this volume co-edited by two champions of the One Health concept is to provide information on the concept and its rationale (five chapters), zoonotic and environmental drivers of disease emergence (six chapters), antimicrobial resistance (one chapter), disease surveillance (four chapters), and operationalizing One Health (four chapters). Fifteen of the twenty are written by multiple authors; all 74 contributors have experience and expertise in their topical area. Two-thirds are based in the United States, but all continents are represented. The vast majority are microbiologists, veterinarians (both domestic animal and wildlife perspectives are represented), environmental health scientists, and ecologists. Only a few physician authors are included.

Many chapters contain useful examples of successful application of One Health interdisciplinary approaches and a summary of important lessons learned (e.g., the importance of mutual trust and commitment to collaboration involving multidisciplinary teams with rotating leadership, transparency, and the need for external funding to ensure sustainability). Tables and color figures are clear and add value. All chapters are well-referenced, with citations through 2012 with a few citations from 2013. The index is comprehensive and useful.

From my personal perspective in infectious diseases and public health with a particular interest in emerging and re-emerging infectious diseases, the chapters on the value of the One Health approach with its emphasis on upstream prevention and early detection and response, the human-animal interface, ecological approaches to zoonoses, RNA viruses, rabies, foodborne salmonellosis, cholera, bat white nose syndrome, antibiotic resistance, surveillance networks and Web-based systems, West Nile virus introduction into the United States, crossing bureaucratic boundaries, and lessons learned from work in East Africa were of particular interest. Readers new to the field will find the first chapter on the need for a One Health approach and the final chapter on the future of One Health of particular value. All of the target audiences will likely find multiple chapters to be relevant to their work.

When the time comes to consider a second edition, some suggestions are to consider including a historical perspective on One Health and a compilation of definitions of the concept that have been proposed. Some of this information currently appears in multiple chapters but could be consolidated.

Correction

In the June 2014 issue, p. 249, the affiliation of the author was omitted. It should read as follows:

Lundsey Hutt-Fletcher is a Professor in the Department of Microbiology & Immunology, Louisiana State University Health Sciences Center, Shreveport.

Microbe regrets the error.
into one introductory chapter and eliminated from the others. One or two additional chapters stressing the relevance of One Health to human medicine, one or two on plant diseases and on the marine environment, and one or two on relevant noninfectious disease issues would add value and help make an even stronger case for the increasing importance of the One Health concept in the 21st century. A chapter on research priorities would also be a useful addition.

In summary, I would highly recommend this book to all those with an interest in emerging and re-emerging infectious diseases, drivers of disease emergence, cross-species transmission, discovery of new microbial agents, and prevention, early detection, and rapid response to pandemic threats. It would be a particularly useful reference in courses in One Health curricula that are being developed in academic institutions around the world.

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