

Lisa Sattenspiel and Alun Lloyd offer a means of breaking out of this cycle. They describe methods for modeling the geographic spread of infectious diseases and discuss interesting applications, including one of several requests by British health authorities for modelers to explore alternative disease-control policies. Authorities in the United States followed suit, initially in response to the perception that smallpox might be reintroduced by terrorists, then to attacks involving anthrax, more recently to the prospect that H5N1 would become a pandemic strain, and of course to the ongoing H1N1 pandemic. Evidently, infectious disease modeling has come of age.

In their early chapters, Sattenspiel and Lloyd review the elements of mathematical epidemiology. Modelers describe the means by which pathogens are transmitted between individuals or within and between groups whose members are, for purposes being modeled, sufficiently similar. Both approaches have strengths and weaknesses. In deference perhaps to the seminal contributions of social scientists, the authors introduce networks in the context of interconnected individuals. Because the global spread of pathogens involves air transportation, however, evidently nodes (the interconnected points forming a network) can also be urban centers. To date, network methods have been exploited more for sexually transmitted diseases than for other infectious diseases, possibly again because sexual partnership formation and dissolution interests social scientists.

Models also differ in other ways. One might model the spread of pathogens causing an infectious disease by virtue of the movement of people to, from, and among hubs in the air-transportation network, for example. Alternatively, one could model contacts among these different subpopulations simply as proportional to air traffic flows. With the first model, one could more easily evaluate the impact of international travel restrictions. In general, to evaluate promising new interven-

tions, or even proven ones that have not yet been implemented under circumstances of interest, mechanistic models are best. For other purposes, descriptive models suffice. In a chapter on geographers' methods, for example, the authors review maps and projections. Increasingly, geographic information systems offer a means of estimating the parameters of spatial models and evaluating their predictions.

Modelers have long explored the impact of hypothetical interventions to aid in mitigating infectious disease morbidity and mortality. Sattenspiel and Lloyd describe how specific questions and available information have shaped these modeling efforts. Every disease offers unique challenges, but measles is more easily distinguished from other rash illnesses than influenza is from other respiratory ones. Inferences from measles' relatively reliable surveillance permitted modelers to reproduce observed spatial as well as temporal patterns and, having done so, to aid in designing the vaccination programs that have eliminated this once important source of child mortality from entire continents, raising the hope that it might eventually be eradicated.

Modelers also endeavored to help during the severe acute respiratory syndrome (SARS) crisis. SARS spread from China to several Asian and North American countries via travelers sojourning in Hong Kong before the World Health Organization's travel advisories curtailed further international spread. Nonetheless, transmission among hospitals and between them and the communities they serve likely were important within affected countries. In Taipei, for example, patients from one hospital with documented nosocomial transmission were transferred to 15 others throughout Taiwan. Did this action protect others in that hospital or expose vulnerable patients elsewhere? Such missed opportunities for spatial modeling warrant a more critical assessment than Sattenspiel and Lloyd provide. A more general criticism is the authors' inattention to the growing literature on spatial

modeling to aid in designing facilities for infectious patients and practices for attending clinicians and other healthcare workers that mitigate the risk of outbreaks.

Infectious disease modeling requires expertise in medicine, and perhaps public policy as well as mathematics. Transmission occurs in space as well as time, but heretofore modelers have too often neglected the spatial dimension. Sattenspiel and Lloyd have encouraged future development in this area by making relevant information accessible to readers. Individuals interested in developing or using wisely tools developed to aid in evaluating alternative policies vis-à-vis infectious diseases should find this book of interest.

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Infections of Leisure, 4th Edition

Edited by David Schlossberg

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Dedicated leisure time was enshrined by the International Labour Organization in 1936, when a convention provided for 1 week's leave per year for workers, at least in developed countries [1]. This leave entitlement had expanded to 3 weeks by 1970 and 4 weeks by 1999 [1]. People spend their leisure time in different ways, but leisure is estimated by the United Nations World Tourism Organization to account for 75% of all international travel [1]. The aim of this Fourth Edition of *Infections of Leisure* is to "identify and organize the infectious risks associated with our leisure time activities" (p xiii) and provide Practical Tips for "prevention and

management of infections" (p xiii). *Infections of Leisure* has a dedication, a table of contents, list of contributors, a preface, a preface to the first edition, 19 chapters, and a comprehensive index. There is no foreword. References are given by chapter. The cover is attractive with a leisure theme and there is good use of the back cover for promoting other publications, although it is a pity that there was not some mention of the special attractions of the present textbook.

Chapters include At the Shore, Freshwater: From Lakes to Hot Tubs, The Camper's Uninvited Guests, Infections in the Garden, With Man's Best Friend, Around Cats, Feathered Friends, Less Common House Pets, With Man's Worst Friend: The Rate, Closed Due to Rabies, Sports: The Infectious Hazards, Traveling Abroad, From Boudoir to Bordello: Sexually Transmitted Diseases and Travel, Infections from Body Piercing and Tattoos, Infectious Diseases at High Altitude, Infectious Risks of Air Travel, Perils of the Petting Zoo, Infections on Cruise Ships, and Exotic and Trendy Cuisine. The *Infections of Leisure* is easy reading and has an infectious disease focus as its name suggests. Each chapter has extensive references. Highlights include the new chapter on Infectious Risks of Air Travel (chapter 16). Other new chapters are Perils of Petting Zoo (chapter 17) and Infections on Cruise Ships (chapter 18). The largest

chapter is that appropriately devoted to infectious diseases associated with the rat (30 pages in length). Discussion of emerging infectious diseases, such as Severe Acute Respiratory Syndrome and Avian influenza, have the potential to date a publication rapidly, particularly with the advent of pandemic influenza (H1N1) 2009. Nonetheless, the chapter on infectious diseases of air travel picks up on some of the generic aspects of pandemics. It may be useful for further editions to provide a little more structure within each chapter, perhaps with the inclusion of summary boxes, maps, and provision of further readings or links to further resources. Photos could be used more frequently for greater impact.

Little information is given concerning the editor; however, David Schlossberg is Professor at the Temple University School of Medicine and Medical Director, Tuberculosis Control Program, Philadelphia Department of Public Health, in Philadelphia, Pennsylvania. Interestingly, although there are 33 listed contributors, only 1 contributor is stated to be from outside the United States, with Dr Buddha Basnyat from Nepal being the only external contributor. This is consistent with the publisher being the American Society for Microbiology, which is based in the United States. Many of the contributors will be well known in the United States, and several have international profiles.

The *Infections of Leisure* is a very useful reference for those specializing in infectious disease, clinical microbiology, and travelers' health. The book will also appeal to physicians and nurses, who may often be the first point of clinical contact with infectious diseases of leisure. It would easily fit into the briefcase or desktop library. It has little in the way of competition, although some of the material may be covered in the many popular references in travel medicine [2, 3]. Academic and research departments of infectious disease and clinical microbiology should also consider the reference as an essential textbook for their libraries and postgraduate courses. This Fourth Edition of *Infections of Leisure* remains the definitive work in its area.

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