Silent Victories: The History and Practice of Public Health in Twentieth-Century America

John W. Ward and Christian Warren, editors

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The 20th century witnessed some notable public health triumphs in America: improvements in the water supply, further control of several infectious diseases through vaccines and antimicrobial drugs, and increases in life expectancy with enormous improvements in survival rates of mothers and their infants. What made these improvements possible? For anyone who has ever wondered, this book is an excellent place to start looking for answers.

The stated purpose of the book is not to provide a comprehensive history of public health in America but to discuss 10 key public health advances of the 20th century. This is a broad objective in itself, which this volume richly achieves. The advances, originally chosen for MMWR (Morbidity and Mortality Weekly Report) in 1999, are each expanded into a section of the book: Control of Infectious Diseases, Control of Disease through Vaccination, Maternal and Infant Health, Nutrition, Occupational Health, Family Planning, Fluoridation, Vehicular Safety, Cardiovascular Disease, and Tobacco and Disease Prevention.

The facts and figures are all there, of course, and they are generally very well presented and referenced. Infectious diseases are well represented; their respective chapters are excellent and informative. But it would be a pity if the reader stopped there. A unique strength of the book is the pairing of these expository chapters with essays by social scientists and historians who explore aspects of the social or political context. This combination makes it a book to savor. Experienced practitioners having a hard day may be encouraged to learn that many public health triumphs we take for granted today (the apt title Silent Victories is from a 1923 lecture by C.-E.A. Winslow) were made possible only by heroic and sustained effort.

One theme that emerges is the importance of coalitions, often including not only the medical community and health departments (and sometimes industry), but also activists, reformers, and even ordinary citizens who became passionate about a cause. Getting recognition and consensus within the medical community was essential, and not always easy, as in the development of occupational health, or even pasteurization at first. Wolf's article, for example, notes that ensuring clean pasteurized milk required 30 years of effort, during which time many infants died. In traffic safety, discussed by Albert, the activists were often the ones who pushed government into taking action. With regard to the more recent efforts toward tobacco cessation, Brandt argues that the 1964 Surgeon General's Report was a watershed comparable to John Snow's work on cholera, as it developed the foundations not only for tobacco cessation but also for chronic disease epidemiology.

But, of course, public health cannot rest on these laurels. As Koplan and Thacker note in the Epilogue, public health in the coming century will face many challenges. Some are a continuation of 20th-century trends, such as emerging infectious diseases, healthy lifestyle choices, and ensuring that basic public health measures are available globally. Others will be new, including the aging of large segments of the population. As this book demonstrates, one of the best ways to meet the new challenges may well be to fully appreciate how these past successes were achieved.

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Emerging Viruses in Human Populations

Edward Tabor, editor

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With increasing international travel and globalization of the world's economies, changing climates, and altered human behavior and demographics, multiple viruses have emerged to occupy expanded ecologic niches, producing disease syndromes in parts of the world where they had never before existed. Because most emerging viral diseases in humans in the 21st century have been zoonotic, Emerging Viruses in Human Populations focuses on this group of viruses. The resulting overview is a book useful for anyone interested in a diverse group of viral agents that have recently elicited novel disease syndromes in human populations around the world. This text does an excellent job of encompassing a wide variety of contact-transmitted enzootic viruses including severe acute respiratory syndrome–associated coronavirus, Nipah and Hendra viruses, influenza virus, hantaviruses, monkeypox viruses, and vector-transmitted agents including Crimean-Congo hemorrhagic fever, dengue, West Nile, and Japanese encephalitis viruses.

Two especially informative chapters, the first and last, introduce several emerging viral disease agents that affect humans. The authors provide a synthesis of factors that could be associated with the emergence of novel viral agents, such as environmental change, altered human demographics, and human behavior. They also discuss the defining mechanisms through which emerging viral disease can be identified and monitored.

The text outlines basic virologic characterization such as replication strategy and the role of known viral proteins in viral pathogenesis, diagnostics, treatment, and vaccine availability. Additionally, it covers epidemiology of agents, relative disease manifestation, and disease patterns identified in human populations. My only criticism regarding this fine resource is the lack of a consistent level of information presented for each viral agent. In some cases, for example, extensive information was presented on the role of all known viral proteins in replication of the virus and how these proteins contribute to disease manifestations. For other agents, the epidemiology was highlighted with relatively no coverage of viral pathogenesis.

Many of the chapters are easily readable by the general public, yet the level of detail within most of the sections makes this also an excellent reference text for research and public health professionals. I recommend this book for anyone interested in obtaining a broad perspective on the emergence of viral diseases that affect humans.

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Francisella tularensis: Biology, Pathogenicity, Epidemiology, and Biodefense

Yusef Abu Kwaik, Dennis W. Metzger, Francis Nano, Anders Sjöstedt, and Richard Titball, editors

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I am pleased to recommend *Francisella tularensis*: Biology, Pathogenicity, Epidemiology, and Biodefense, published by Blackwell Publishing Limited on behalf of the New York Academy of Sciences. This book is a much-needed comprehensive overview of recent research on the causative agent of tularemia, a potentially serious illness that occurs naturally in the United States. *F. tularensis* is a marvel among vector-borne agents of infectious disease. It has a wide geographic distribution (covering most of the Northern Hemisphere) and can be transmitted through a variety of routes including 1) tick or insect bites; 2) handling of infected animals; 3) contact with or ingestion of water, food, or soil; and 4) inhalation of contaminated aerosols. Indeed, *F. tularensis* is notorious for infecting laboratory workers and is a potential bioterrorism agent. The bacterium includes 4 biovars, with the pathogenic type A recently shown to consist of at least 2 subtypes in North America. Natural transmission cycles of *F. tularensis* are complex and poorly understood.

Research on a broad variety of topics was carried out between the 1914 recognition of *F. tularensis* as a disease agent in humans and the 1970s, but few studies focused on this pathogen during the 1980s and 1990s. The recent designations of *F. tularensis* by the National Institute of Allergy and Infectious Diseases as a priority A pathogen and a potential bioterrorism agent has resulted in an explosion of new studies on this intriguing pathogen. Primary focal points of these studies have included vaccine development, improved pathogen detection methods, evaluation of the genetic variability of *F. tularensis* biovars commonly associated with human disease, description of the *F. tularensis* genome, and determination of virulence factors. The wealth of information gained from recent studies is elegantly outlined by an impressive group of world leaders in the field of tularemia research. Chapter topics vary from molecular epidemiology, evolution, and ecology of *Francisella* to genetics, genomics, and proteomics of *F. tularensis,* molecular and genetic basis of pathogenesis of *F. tularensis*, animal models, immunity and immunopathogenesis, diagnosis and therapy, vaccine development, and biosafety issues.

Reflecting a disturbing paucity of epidemiologic and field-oriented studies in the past 20 years, especially in North America, only a few chapters include some information on epidemiology, natural transmission cycles of *F. tularensis*, and the role of different transmission routes to humans. As the field of *F. tularensis* and tularemia research moves forward in the 21st century, the explosion of knowledge related to genetics, immunology, and pathogenesis of *F. tularensis* needs to be complemented by renewed studies on natural transmission cycles, transmission routes to humans, and epidemiology.

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