Infectious Disease Surveillance
Modeling Infectious Diseases in Humans and Animals
Microbial Threats to Health
Modern Infectious Disease Epidemiology
The Development of Modern Epidemiology
Modern Infectious Disease Epidemiology
Emerging Infectious Diseases
Epidemiology
Kept Simple
Epidemiology for the Advanced Practice Nurse
Kucers' The Use of Antibiotics
Handbook of Infectious Disease Data Analysis
Disease Control Priorities, Third Edition
Oxford Handbook of Public Health Practice
An Introduction to Epidemiology
Pandemic Outbreaks in the 21st Century
Control of Communicable Diseases
Manual Molecular Tools and Technologies
Infectious Disease Epidemiology
Infections and Inequalities
Modern Infectious Disease Epidemiology
Second Edition
Essentials of Infectious Disease Epidemiology
Communicable Disease Epidemiology and Control
A Historical Introduction to Mathematical Modeling of Infectious Diseases
Modern Epidemiology
Modeling Infectious Disease Parameters Based on Serological and Social Contact Data
Infectious Disease Epidemiology
Modern Infectious Disease Epidemiology
Third Edition
Handbook of Spatial Epidemiology
Mathematical Epidemiology of Infectious Diseases
Eras in Epidemiology
Modern Epidemiology
The New Public Health
Epidemiology
Kept Simple
Infectious Disease Epidemiology: Theory and Practice
Concepts of Epidemiology
Genetics and Evolution of Infectious Diseases
Oxford Textbook of Infectious Disease Evolution and Co-Adaptation
The Impact of Globalization on Infectious Disease Emergence and Control
Concepts and Methods in Infectious Disease Surveillance
Public Health Systems and Emerging Infections
Evolution and Co-Adaptation
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Public Health Systems and Emerging Infections

Now in a fully revised Fourth Edition, Modern Epidemiology remains the gold standard text in this complex and evolving field. This edition continues to provide comprehensive coverage of the principles and methods for the design, analysis, and interpretation of epidemiologic research. Featuring a new format allowing space for margin notes, this edition reflects both the conceptual development of this evolving science and the increasing role that epidemiology plays in improving public health and medicine.

Kucers' The Use of Antibiotics is the definitive, internationally-authored reference, providing everything that infectious disease specialist and prescriber needs to know about antimicrobials in this vast and rapidly developing field. The much-expanded Seventh Edition comprises 4800 pages in 3 volumes in order to cover all new and existing therapies, and emerging drugs not yet fully licensed. Concentrating on the treatment of infectious diseases, the content is divided into four sections - antibiotics, anti-fungal drugs, anti-parasitic drugs, and anti-viral drugs - and is highly structured for ease of reference. Each chapter is organized in a consistent format, covering susceptibility, formulations and dosing (adult and pediatric), pharmacokinetics and pharmacodynamics, toxicity, and drug distribution, with detailed discussion regarding clinical uses – a feature unique to this title. Compiled by an expanded team of internationally renowned and respected editors, with expert contributors representing Europe, Africa, Asia, Australia, South America, the US, and Canada, the Seventh Edition adopts a truly global approach.

Infectious diseases are a global hazard that puts every nation and every person at risk. The recent SARS outbreak is a prime example. Knowing neither geographic nor political borders, often arriving silently and lethally, microbial pathogens constitute a grave threat to the health of humans. Indeed, a majority of countries recently identified the spread of infectious disease as the greatest global problem they confront. Throughout history, humans have struggled to control both the causes and consequences of infectious diseases and we will continue to do so into the foreseeable future. Following up on a high-profile 1992 report from the Institute of Medicine, Microbial Threats to Health examines the current state of knowledge and policy pertaining to emerging and re-emerging infectious diseases from around the globe. It examines the spectrum of microbial threats, factors in disease emergence, and the ultimate capacity of the United States to meet the challenges posed by microbial threats to human health. From the impact of war or technology on disease emergence to the development of enhanced disease surveillance and vaccine strategies, Microbial Threats to Health contains valuable information for researchers, students, health care providers, policymakers, public health officials, and the interested public.

Epidemiology Kept Simple introduces the epidemiological principles and methods that are increasingly important in the practice of medicine and public health. With minimum use of technical language it fully explains terminology, concepts, and techniques associated with traditional and modern epidemiology. Topics include disease causality, epidemiologic measures, descriptive epidemiology, study design, clinical and primary prevention trials, observational cohort studies, case-control studies, and the consideration of random and systematic error in studies of causal factors. Chapters on the infectious disease process, outbreak investigation, and screening for disease are also included. The latter chapters introduce more advanced biostatistical and epidemiologic techniques, such as survival analysis, Mantel-Haenszel techniques, and tests for interaction. This third edition addresses all the requirements of the American Schools of Public Health (ASPH) Epidemiological Competencies, and provides enhanced clarity and readability on this difficult subject. Updated with new practical exercises, case studies and real world examples, this title helps you develop the necessary tools to interpret epidemiological data and prepare for board exams, and now includes review questions at the end of each chapter. Epidemiology Kept Simple continues to provide an introductory guide to the use of epidemiological methods for graduate and undergraduate students studying public health, health education and nursing, and for all practicing health professionals seeking professional development.

Now in a fully revised Fourth Edition, Modern Epidemiology remains the gold standard text in this complex and evolving field. This edition continues to provide comprehensive coverage of the principles and methods for the design, analysis, and interpretation of epidemiologic research. Featuring a new format allowing space for margin notes, this edition reflects both the conceptual development of this evolving science and the increasing role that epidemiology plays in improving public health and medicine. It features new coverage of methods such as agent-based modeling, quasi-experimental designs, mediation analysis, and mediation modeling. It updates existing content on full Bayesian inference, confidence intervals, and sensitivity analysis. It continues to cover full Bayesian methods for analyzing treatment and contact data, including survival analysis, and provides an extensive coverage of modern regression methods including logistic and survival regression, splines, longitudinal and cluster-correlated/hierarchical data analysis, propensity scores and other scoring methods, and marginal structural models. It summarizes the history, specialized aspects, and future directions of topical areas, including among others social epidemiology, infectious disease epidemiology, genetic and molecular epidemiology, psychiatric epidemiology, injury and violence epidemiology, and pharmacoepidemiology.

Mathematical epidemiology of infectious diseases usually involves describing the flow of individuals between mutually exclusive infection states. One of the key parameters describing the transition from the susceptible to the infected class is the hazard of infection, often referred to as the force of infection. The force of infection reflects the degree of contact with potential for transmission between infected and susceptible individuals. The mathematical relation between the force of infection and effective contact patterns is generally assumed to be subjected to the mass action principle, which yields the necessary information to estimate the basic reproduction number, another key parameter in infectious disease epidemiology. It is within this context that the Center for Statistics (CenStat, I-Biostat, Hasselt University) and the Centre for the Evaluation of Vaccination and the Centre for Health Economic Research and Modelling Infectious Diseases (CEV, CHERMID, Vaccine and Infectious Disease Institute, University of Antwerp) have collaborated over the past 15 years. This book demonstrates the past and current research activities of these institutes and can be considered to be a milestone in this collaboration. This book is focused on the application of modern statistical methods and models to estimate infectious disease parameters. We want to provide the readers with software guidance, such as R packages, and with data, as far as they can be made publicly available.
Covers a range of essential topics from a survey of important historical epidemiologies to studies designs for infectious disease investigations. The first part of the text covers ID epidemiology background and methodology, whereas the second focuses on specific diseases as examples of different transmission modalities. TB, HIV and Influenza among the pathogens discussed in great detail. Includes four new chapters on immunology, measles, meningococcal disease, and vector-borne infections. The HIV chapter has been expanded to include issues of host genetics as well as a review of behavioral interventions.

Infectious Disease Epidemiology is a concise reference guide which provides trainees and practicing epidemiologists with the information that they need to understand the basic concepts necessary for working in this specialist area. Divided into two sections, part one comprehensively covers the basic principles and methods relevant to the study of infectious disease epidemiology. It is organised in order of increasing complexity, ranging from a general introduction to subjects such as mathematical modelling and sero-epidemiology. Part two examines key major infectious diseases that are of global significance. Grouped by their route of transmission for ease of reference, it includes diseases that present a particular burden or a high potential for causing mortality. This practical guide will be essential reading for postgraduate students in infectious disease epidemiology, health protection trainees, and practicing epidemiologists.

Recent years have seen an explosion in new kinds of data on infectious diseases, including data on social contacts, whole genome sequences of pathogens, biomarkers for susceptibility to infection, serological panel data, and surveillance data. The Handbook of Infectious Disease Data Analysis provides an overview of many key statistical methods that have been developed in response to such new data streams and the associated ability to address key scientific and epidemiological questions. A unique feature of the Handbook is the wide range of topics covered. Key features Contributors include many leading researchers in the field Divided into four main sections. Basic concepts, Analysis of Outbreak Data, Analysis of Seroprevalence Data, Analysis of Surveillance Data Numerous case studies and examples throughout Provides both introductory material and key reference material

Globalization is by no means a new phenomenon; transcontinental trade and the movement of people date back at least 2,000 years, to the era of the ancient Silk Road trade route. The global spread of infectious disease has followed a parallel course. Indeed, the emergence and spread of infectious disease are, in a sense, the epime of globalization. Although some experts mark the fall of the Berlin Wall as the beginning of this new era of globalization, others argue that it is not so new. The future of globalization is still in the making. Despite the successful attempts of the developed world during the course of the last century to control many infectious diseases and even to eradicate some deadly afflictions, 13 million people worldwide still die from such diseases every year. On April 16 and 17, 2002, the Forum on Emerging Infectious held a working group discussion on the influence of globalization on the emergence and control of infectious diseases. The contents of the unattributed sections are based on the presentations and discussions that took place during the workshop. The Impact of Globalization on Infectious Disease Emergence and Control report summarizes the presentations and discussions related to the increasing cross-border and cross-continental movements of people and how this can exacerbate the emergence and global spread of infectious diseases. This report also summarizes the means by which sovereign states and nations must adopt a global public health mind-set and develop a new organizational framework to maximize the opportunities and overcome the challenges created by globalization and build the necessary capacity to respond effectively to emerging infectious disease threats.

Arranged to facilitate use and highlight key concepts, this clear and concise text also includes many practical exercises, case studies, and real-world applications. Utilizing the modern biostatistical approach to studying disease, Epidemiology Kept Simple, Second Edition will provide readers with the tools to interpret epidemiological data, understand disease concepts, and prepare for board exams. The author fully explains all new terminology and minimizes the use of technical language, while emphasizing real-life practice in modern public health and biomedical research settings.

Fully revised and updated for the third edition, the Oxford Handbook of Public Health Practice remains the first resort for all those working in this broad field. Structured to assist with practical tasks, translating evidence into policy, and providing concise summaries and real-world issues from across the globe, this literally provides a world of experience at your fingertips. Easy-to-use, concise and practical, it is structured into seven parts that focus on the vital areas of assessment, data and information, direct action, policy, health-care systems, personal effectiveness and organisational development. Reflecting recent advances, the most promising developments in practical public health are presented, as well as maintaining essential summaries of core disciplines. This handbook is designed to assist students and practitioners around the world, for improved management of disasters, epidemics, health behaviour, acute and chronic disease prevention, community and government action, environmental health, vulnerable populations, and more.

Highly practical yet authoritative, the new edition of Modern Infectious Disease Epidemiology has been thoroughly updated and revised in line with changing health concerns. This successful book continues to outline the tools available to the infectious disease student or clinician seeking a thorough background in the epidemiology of infectious and communicable diseases. Building on many case studies and practical scenarios included, the book then uses the tools learnt to illustrate the fundamental concepts of the study of infectious diseases, such as infection spread, surveillance and control, infectivity, incubation periods, sero-epidemiology, and immunity in populations. New edition of this popular book, completely revised and updated Retains the clarity and down-to-earth approach praised in previous editions Successfully combining theory with practical, the book explains the principles of infectious disease epidemiology in an accessible way. Includes four new chapters on immunology, measles, meningococcal disease, and vector-borne infections. The HIV chapter has been expanded to include issues of host genetics as well as a review of behavioral interventions.

Genetics and Evolution of Infectious Diseases, Second Edition, discusses the constantly evolving field of infectious diseases and their continued impact on the health of populations, especially in resource-limited areas of the world. Students in public health, biomedical professionals, clinicians, public health practitioners, and decisions-makers will find valuable information in this book that is relevant to the control and prevention of neglected and emerging worldwide diseases that are a major cause of global morbidity, disability, and mortality. Although substantial gains have been made in public health interventions for the treatment, prevention, and control of infectious diseases during the last century, in recent decades the world has witnessed a worldwide human immunodeficiency virus (HIV) pandemic, increasing antimicrobial resistance, and the emergence of many new bacterial, fungal, parasitic, and viral pathogens. The economic, social, and political burden of infectious diseases is most evident in developing countries which must confront the dual burden of death and disability due to infectious and chronic illnesses. Takes an integrated approach to infectious diseases Includes contributions from leading authorities Provides the latest developments in the field of infectious disease.

A Historical Introduction to Mathematical Modeling of Infectious Diseases: Seminar Papers in Epidemiology offers step-by-step help on how to navigate the important historical papers on the subject, beginning in the 18th century. The book carefully, and critically, guides the reader through seminal writings that helped revolutionize the field. With pointed questions, prompts, and analysis, this book helps the mathematician develop their own perspective, relying purely on a basic knowledge of algebra, calculus, and statistics. By learning from the important work in the field, from its conception to the 21st century, it enables readers to mature into competent practitioners of epidemiologic modeling. Presents a refreshing and in-depth look at key historical works of mathematical epidemiology Provides all the basic knowledge of mathematics readers need in order to understand the fundamentals of mathematical modeling of infectious diseases Includes questions, prompts, and answers to help apply historical solutions to modern day problems.
Highly practical yet authoritative, the new edition of Modern Infectious Disease Epidemiology Concepts Methods Mathematical Models And Public Health Statistics For Biology And Health

Features: Includes application-based cases, tools, and calculations throughout to help students develop practical epidemiologic skills Provides background and understanding of health disparities and determinants subject. Also included is an important Biostatistics Primer, relevant content from Healthy People 2030, and an “Epidemiology in Practice” section focusing on examples from different epidemiology arenas. Key features: Includes application-based cases, tools, and calculations throughout to help students develop practical epidemiologic skills Provides background and understanding of health disparities and determinants of health Includes relevant information from Healthy People 2030 Includes discussion questions, learning objectives, terminology review, tables, and figures in each chapter Delivers up-to-date information on

Infectious disease surveillance has evolved at an extraordinary pace during the past several decades, and continues to do so. It is increasingly used to inform public health practice in addition to its use as a tool for early detection of epidemics. It is therefore crucial that students of public health and epidemiology have a sound understanding of the concepts and principles that underpin modern surveillance of infectious disease. Written by leaders in the field, who have vast hands-on experience in conducting surveillance and teaching applied public health, Concepts and Methods in Infectious Disease Surveillance is comprised of four sections. The first section provides an overview, a description of systems used by public health jurisdictions in the United States and legal considerations for surveillance. The second section presents chapters on major program-area or disease-specific surveillance systems, including those that monitor bacterial infections, foodborne diseases, healthcare-associated infections, and HIV/AIDS. The following section is devoted to methods for conducting surveillance and also approaches for data analysis. A concluding section summarizes communication of surveillance findings, including the use of traditional and social media, in addition to showcasing lessons learned from the New York City Department of Health’s experience in surveillance and epidemiology training. This comprehensive new book covers major topics at an introductory to intermediate level, and will be an excellent resource for instructors. Suitable for use in graduate level courses in public health, human and veterinary medicine, and in undergraduate programs in public-health-oriented disciplines, Concepts and Methods in Infectious Disease Surveillance is also a useful primer for frontline public health practitioners, hospital epidemiologists, infection control practitioners, laboratorians in public health settings, infectious disease researchers, and medical and public health informaticians interested in a concise overview of infectious disease surveillance.

Dr. Joshua Lederberg - scientist, Nobel laureate, visionary thinker, and friend of the Forum on Microbial Threats - died on February 2, 2008. It was in his honor that the Institute of Medicine’s Forum on Microbial Threats convened a public workshop on May 20-21, 2008, to examine Dr. Lederberg’s scientific and policy contributions to the marketplace of ideas in the life sciences, medicine, and public policy. The resulting workshop summary, Microbial Evolution and Co-Adaptation, demonstrates the extent to which conceptual and technological developments have, within a few short years, advanced our collective understanding of the microbiome, microbial genetics, microbial communities, and microbe-host-environment interactions.

This book marks the 50th anniversary of the foundation of the International Epidemiological Association (IEA). It is a unique compendium by the world’s leading epidemiologists of how the field has developed, and how it can (and has been) applied to the control of common conditions and threats to public health. Five distinct sections guide the reader through the wealth of material: – Gives a historical account of the concepts and ideas, and current importance of epidemiology to global health issues and to organisations such as the WHO. – Discusses the advances and contributions to epidemiologic knowledge and the control of disease in communities such as cancer, respiratory, infectious, maternal and child health, non-biologic disorders such as cardiovascular, mental and mental health, and new infectious diseases. Outlines the use of epidemiology in areas such as public health, health services, occupational and environmental medicine, social epidemiology and nutrition. – Discusses methodological developments such as statistics, information sources, investigation of disease outbreaks and clinical epidemiology. This book is of interest to every medical specialist and student. Includes more than 35 emerging infection cases based on the following criteria: newly emerged or re-emerged recently acquired significance in clinical medicine, epidemiology and public health practice.

This book covers recently emerged infectious diseases based on real cases and provides comprehensive information including different aspects of the infections. Written in a ‘teaching’ style, this book is of interest to every medical specialist and student. Includes more than 35 emerging infection cases based on the following criteria: newly emerged or re-emerged recently acquired significance in clinical medicine, epidemiology and public health practice.

Written by nurses for nurses, this graduate-level text disseminates the core principles of epidemiology within a population health framework and provides practical knowledge nurses can use to analyze and improve healthcare in the community. Informed by the evolution of epidemiological science resulting from the Covid-19 pandemic, this book demonstrates how epidemiology can have a profound impact on health. It starts with foundational settings and importance and practicality of this discipline. Clear and concise, this text explains the basic data of population health followed by epidemiology concepts and designs. It is distinguished by its application-based case studies, analytical tools of epidemiology, and calculations, which foster skill development and necessary familiarity of the subject. Also included is an important Biostatistics Primer, relevant content from Healthy People 2030, and an “Epidemiology in Practice” section focusing on examples from different epidemiology arenas. Key features: Includes application-based cases, tools, and calculations throughout to help students develop practical epidemiologic skills Provides background and understanding of health disparities and determinants of health Includes relevant information from Healthy People 2030 Includes discussion questions, learning objectives, terminology review, tables, and figures in each chapter Delivers up-to-date information on

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Health Statistics For Biology And Health

The New Public Health has established itself as a solid textbook throughout the world. Translated into 7 languages, this work distinguishes itself from other public health textbooks, which are either highly locally

Disease Surveillance includes over 45 chapters from over 100 contributors, and topics organized into six sections based on major themes. Section One highlights the critical role surveillance plays in public health and

Communicable diseases are community problems, which can devastate whole populations, in both developing and developed countries. Epidemiology is the science of communities that looks at many individuals

This fully updated edition of Infectious Disease Surveillance is for frontline public health practitioners, epidemiologists, and clinical microbiologists who are engaged communicable disease control. It is also a

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economic crisis for health Public health law, ethics, scientific d health technology advances and assessment Global Health environment, Millennium Development Goals and international NGOs

The Forum on Emerging Infections was created in 1996 in response to a request from the Centers for Disease Control and Prevention and the National Institutes of Health. The goal of the forum is to provide structured opportunities for representatives from academia, industry, professional and interest groups, and government to examine and discuss scientific and policy issues that relate to research, prevention, detection, and management of emerging infectious diseases. A critical part of this mission has been the convening of a series of workshops. Public Health Systems and Emerging Infections summarizes the fourth in a series of five workshops. With a focus on our knowledge and understanding of the role of private and public health sectors in emerging infectious disease surveillance and response, the participants explored the effects of privatization of public health laboratories and the modernization of public health care. The issues discussed included epidemiological investigation, surveillance, communication, coordination, resource allocations, and economic support.

The second edition of Modern Infectious Disease Epidemiology, in line with changing health concerns, is a thorough revision of the first. Written from an infectious disease perspective throughout, the book aims to teach epidemiology to those with a background in this field. It seeks to fill the gap between the standard textbooks of epidemiology, which rarely approach the subject from an infectious disease perspective, and standard books on infection surveillance and control, which tend to slant more towards microbiology and practical measures than towards analytical epidemiology. Divided into two parts, the first covers the tools of epidemiology much like other textbooks, but always from an infectious disease perspective. The second covers the role of contact pattern from an assessment angle, and uses the tools learnt to illustrate the study of fundamental infectious disease concepts, such as infectivity, incubation periods, seroepidemiology and immunity. This detailed theoretical epidemiology textbook is clearly set out, with an expanded chapter on practical statistical methods, and a new chapter on descriptive epidemiology. Key features include new clinical examples and infectious disease problems of recent interest, such as tuberculosis and VCI. All students of epidemiology, infectious disease medicine, and microbiology will find this an invaluable guide.

Hardly a day goes by without news headlines concerning infectious disease threats. Currently the spectre of a pandemic of influenza A(H1N1) is raising its head, and heated debates are taking place about the pro's and con's of vaccinating young girls against human papilloma virus. For an evidence-based and responsible communication of infectious disease topics to avoid misunderstandings and overreaction of the public, we need solid scientific knowledge and an understanding of all aspects of infectious diseases and their control. The aim of our book is to present the reader with the general picture and the main ideas of the subject. The book introduces the reader to methodological aspects of epidemiology that are specific for infectious diseases and provides insight into the evolution of some classes of infectious diseases characterized by their main modes of transmission. This choice of topics bridges the gap between scientific research on the clinical, biological, mathematical, social and economic aspects of infectious diseases and their applications in public health. The book will help the reader to understand the impact of infectious diseases on modern society and the instruments that policy makers have at their disposal to deal with these challenges. It is written for students of the health sciences, both of curative medicine and public health, and for experts that are active in these and related domains, and it may be of interest for the educated layman since the technical level is kept relatively low.

Molecular Tools and Infectious Disease Epidemiology examines the opportunities and methodologic challenges in the application of modern molecular genetic and biologic techniques to infectious disease epidemiology. The application of these techniques dramatically improves the measurement of disease and putative risk factors, increasing our ability to detect and track outbreaks, identify risk factors and detect new infectious agents. However, integration of these techniques into epidemiologic studies also poses new challenges in the design, conduct, and analysis. This book presents the key points of consideration when integrating molecular biology and epidemiology, discusses how using molecular tools in epidemiologic research affects program design and conduct; considers the ethical concerns that arise in molecular epidemiologic studies; and provides a context for understanding and interpreting scientific literature as a foundation for subsequent practical experience in the laboratory and in the field. The book is recommended for graduate and advanced undergraduate students studying infectious disease epidemiology and molecular epidemiology, and for the epidemiologist wishing to integrate molecular techniques into his or her studies. Presents the key points of consideration when integrating molecular biology and epidemiology. Discusses how using molecular tools in epidemiologic research affects program design and conduct. Considers the ethical concerns that arise in molecular epidemiologic studies. Provides a context for understanding and interpreting scientific literature as a foundation for subsequent practical experience in the laboratory and in the field.

This text for advanced undergraduate and graduate students can also serve as a reference for epidemiologists working in the field, industrial hygienists, infectious disease nurses, and staff epidemiologists. Coverage progresses from foundations, disease concepts, and epidemiological measures of heal.

At its core, epidemiology is concerned with changes in health and disease. The discipline requires counts and measures of births, health disorders, and deaths, and in order to make sense of these counts it requires a population base defined by place and time. Epidemiology relies on closely defined concepts of cause - experimental or observational - of the physical or social environment, or in the laboratory. Epidemiologists are guided by these concepts, and have often contributed to their development. Because the disciplinary focus is on health and disease in populations, epidemiology has always been an integral driver of public health, the vehicle that societies have evolved to combat and contain the scourges of mass diseases. In this book, the authors trace the evolution of epidemiological ideas from earliest times to the present. Beginning with the early concepts of magic and the horrors of Hippocrates, it moves forward through the dawn of observational methods, the systematic counts of deaths initiated in 16th-century London by John Graunt and William Petty, the late 18th-century Enlightenment and the French Revolution, which established the philosophical argument for health as a human right, the national public health system began in 19th-century Britain, up to the development of eco-epidemiology, which attempts to re-integrate the fragmented fields as they currently exist. By examining the evolution of epidemiology as it follows the evolution of human societies, this book provides insight into our shared intellectual history and shows a way forward for future study.

The thoroughly revised and updated Third Edition of the acclaimed Modern Epidemiology reflects both the conceptual development of this evolving science and the increasingly focal role that epidemiology plays in dealing with public health and medical problems. Coauthored by three leading epidemiologists, with sixteen additional contributors, this Third Edition is the most comprehensive and cohesive text on the principles and methods of epidemiologic research. The book covers a broad range of concepts and methods, such as basic measures of disease frequency and associations, study design, field methods, threats to validity, and assessing precision. It also covers advanced topics in data analysis such as Bayesian analysis, bias analysis, and hierarchical regression. Chapters examine specific areas of research such as disease surveillance, ecologic studies, infectious disease epidemiology, genetic and molecular epidemiology, nutritional epidemiology, environmental epidemiology, reproductive epidemiology, and clinical epidemiology.

Mathematical Epidemiology of Infectious Diseases Model Building, Analysis and Interpretation O. Diekmann University of Utrecht, The Netherlands J. A. P. Heesterbeek Centre for Biometry Wageningen, The Netherlands The mathematical modelling of epidemics in populations is a vast and important area of study. It is about translating biological assumptions into mathematics, about mathematical analysis aided by interpretation and about obtaining insight into epidemic phenomena when translating mathematical results back into population biology. Model assumptions are formulated in terms of, usually stochastic,
behaviour of individuals and then the resulting phenomena, at the population level, are unravelled. Conceptual clarity is attained, assumptions are stated clearly, hidden working hypotheses are attained and mechanistic links between different observables are exposed. Features: * Model construction, analysis and interpretation receive detailed attention * Uniquely covers both deterministic and stochastic viewpoints * Examples of applications given throughout * Extensive coverage of the latest research into the mathematical modelling of epidemics of infectious diseases * Provides a solid foundation of modelling skills The reader will learn to translate, model, analyse and interpret, with the help of the numerous exercises. In literally working through this text, the reader acquires modelling skills that are also valuable outside of epidemiology, certainly within population dynamics, but even beyond that. In addition, the reader receives training in mathematical argumentation. The text is aimed at applied mathematicians with an interest in population biology and epidemiology, at theoretical biologists and epidemiologists. Previous exposure to epidemic concepts is not required, as all background information is given. The book is primarily aimed at self-study and ideally suited for small discussion groups, or for use as a course text.

The Oxford Textbook of Infectious Disease Control: A Geographical Analysis from Medieval Quarantine to Global Eradication is a comprehensive analysis of spatial theory and the practical methods used to prevent the geographical spread of communicable diseases in humans. Drawing on current and historical examples spanning seven centuries from across the globe, this indispensable volume demonstrates how to mitigate the public health impact of infections in disease hotspots and prevent the propagation of infection from such hotspots into other geographical locations. Containing case studies of longstanding global killers such as influenza, measles and poliomyelitis, through to newly emerged diseases like SARS and highly pathogenic avian influenza in humans, this book integrates theory, data and spatial analysis and locates these quantitative analyses in the context of global demographic and health policy change. Beautifully illustrated with over 100 original maps and diagrams to aid understanding and assimilation, in six sections the authors examine surveillance, quarantine, vaccination, and forecasting for disease control. The discussion covers theoretical approaches, techniques and systems central to mitigating disease spread, and methods that deliver practical disease control. Essential information is also provided on the geographical eradication of diseases, including the design of early warning systems that detect the geographical spread of epidemics, enabling students and practitioners to design spatially-targeted control strategies. Despite the early hope of eradication of many communicable diseases after the global eradication of smallpox by 1979, the world is still working at the control and elimination of the spatial spread of newly-emerging and resurgent infectious diseases. Learning from past examples and incorporating modern surveillance and reporting techniques that are used to design value-for-money spatially-targeted interventions to protect public health, the Oxford Textbook of Infectious Disease Control is an essential resource for all those working in, or studying ways to control the spread of communicable diseases between humans in a timely and cost-effective manner. It is ideal for specialists and students in infectious disease control as well as those in the medical sciences, epidemiology, demography, public health, geography, and medical history.