Modern Infectious Disease Epidemiology Concepts Methods Mathematical Models And Public Health Statistics For Biology And Health

The New Public Health

This 5-volume reference covers the entire field of epidemiology, from statistical methods and study design, to specialized areas such as molecular epidemiology, and applications in clinical medicine and health services research. This updated edition of the Handbook of Epidemiology adds 20 new chapters on History of Epidemiological Methods and Concepts, Cluster Randomized Trials, Internet-Based Epidemiology, Misclassification, Sensitivity Analysis and Bias Analysis, Emergency and Disaster Health Surveillance, Statistical Inference, Data Management in Epidemiology, Bayesian Methods in Epidemiology, Generalized Estimating Equations, Directed Acyclic Graphs, Life Course Epidemiology, Physical Activity Epidemiology, Radiation Epidemiology, Epidemiology of Obesity, Epidemiology of Respiratory Allergies and Asthma, Epidemiology of Dental Diseases, Epidemiology of Digestive Diseases, Epidemiology of Psychiatric Disorders, Epidemiology of Diabetes. All other chapters are extensively revised from the 1st edition. This is a reference for epidemiological researchers and graduate students in public health.

Handbook of Spatial Epidemiology

Mathematical modeling is critical to our understanding of how infectious diseases spread at the individual and population levels. This book gives readers the necessary skills to correctly formulate and analyze mathematical models in infectious disease epidemiology, and is the first treatment of the subject to integrate deterministic and stochastic models and methods. Mathematical Tools for Understanding Infectious Disease Dynamics fully explains how to translate biological assumptions into mathematics to construct useful and consistent models, and how to use the biological interpretation and mathematical reasoning to analyze these models. It shows how to relate models to data through statistical inference, and how to gain important insights into infectious disease dynamics by translating mathematical results back to biology. This comprehensive and accessible book also features numerous detailed exercises throughout; full elaborations to all exercises are provided. Covers the latest research in mathematical modeling of infectious disease epidemiology Integrates deterministic and stochastic approaches Teaches skills in model construction, analysis, inference, and interpretation Features numerous exercises and their detailed elaborations Motivated by real-world applications throughout

Concepts and Methods in Infectious Disease Surveillance

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 practice 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.

Handbook of Epidemiology

This book provides a systematic introduction to the fundamental methods and techniques and the frontiers of OCE along with many new ideas and results on OCE infectious disease modeling, parameter estimation and transmission dynamics. It provides complementary approaches, from deterministic to statistical to network modeling; and it seeks viewpoints of the same issues from different angles, from mathematical modeling to statistical analysis to computer simulations and finally to concrete applications.

Emerging Infectious Diseases

This book describes the evolution of epidemiology, its methods, concepts and application over the last 100 years. Current and future epidemiologists will find this book a useful and insightful record of the events that have shaped this discipline.

Modern Infectious Disease Epidemiology, Third Edition

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, clinical public health practitioners, and decision-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 psychological impacts of infectious diseases of infectious diseases of 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

Infections and Inequalities

Communicable diseases are community problems, which can devastation whole populations, in both developing and developed countries. Epidemiologists need to try and discover common features in them. From this analysis the cause and characteristics of a disease can be worked out. The first chapters of this book look at communicable disease theory and formulating common principles in both epidemiology and control. Since the first edition, published in 1994, a new section on climate change due to global warming and its effect on disease has been added. Later chapters cover various criteria of communicable diseases

Quantitative Methods for Investigating Infectious Disease Outbreaks

a global view of HIV infection 30 million adults living with HIV/AIDS as of end 1997

The Impact of Globalization on Infectious Disease Emergence and Control
Read Free Modern Infectious Disease Epidemiology Concepts Methods Mathematical Models And Public Health Statistics For Biology And Health

Handbook of Spatial Epidemiology explains how to model epidemiological problems and improve inference about disease etiology from a geographical perspective. Top epidemiologists, geographers, and statisticians share interdisciplinary viewpoints on analyzing spatial data and space-time variations in disease incidences. These analyses can provide important information that leads to better decision making in public health.

The first part of the book addresses general issues related to epidemiology, GIS, environmental studies, clustering, and econometrics, with selected second part papers focused in spatial epidemiology. The book is divided into two fundamental, second principles, Bayesian methods, and testing and nonparametric approaches. With a focus on special methods, the third part describes geostatistical models, splines, quantile regression, focused clustering, mixtures, multivariate methods, and much more. The final part examines data collection and application areas, such as residential history analysis, segregation, health services research, health surveys, infectious disease, veterinary topics, and health surveillance and clustering. Spatial epidemiology, also known as disease mapping, studies the geographical or spatial distribution of health outcomes. This handbook offers a wide-ranging overview of state-of-the-art approaches to determine the relationships between health and various risk factors, empowering researchers and policy makers to tackle public health problems.

Oxford Handbook of Public Health Practice

Kucers' The Use of Antibiotics is the definitive, internationally-authored reference, providing everything that the infectious diseases specialist and prescriber needs to know about antimicrobials in this vast and rapidly developing field. The book 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 infectious diseases - 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. It remains invaluable for anyone using antimicrobial agents in their clinical practice and provides, in a systematic and concise manner, all the information required when prescribing an antimicrobial to treat infection.

Modern Epidemiology

A Historical Introduction to Mathematical Modeling of Infectious Diseases: Seminal Papers in Epidemiology offers step-by-step help on how to navigate the increasing number of historical, biographical, and interpretative subjects, helping to bring every reader through seminal writings that helped revolutionize the field. With pointed questions, prompts, and analysis, this book helps the non-mathematician develop their own perspective, relying purely on a basic knowledge of algebra, calculus, and statistics. By learning from the important figures from the past, the present, and the future, it enables readers to improve their ability to interpret and communicate the results 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

Microbial Evolution and Co-Adaptation

More than 30 newly emerged microorganisms and related diseases have been discovered in the past 20 years. Since these infections are so new, even infectious diseases experts and clinical microbiologists need more information. This book covers recently emerged infectious diseases based on comprehensive evaluations 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 practice recently radically changed in case management Offers a balanced synthesis of basic and clinical sciences for each individual case, presenting clinical courses of the cases in parallel with the pathogenesis and detailed microbiological information for each infection Describes the prevalence and incidence of the global issues and current therapeutic approaches Presents the measures for infection control

Kucers' The Use of Antibiotics

Essentials of Infectious Disease Epidemiology is devoted specifically to the methods required to study infectious disease making the perfect introduction to the field for undergraduate and introductory masters-level public health students. It will provide students with the requisite skills to conduct, evaluate, and understand the field of infectious disease epidemiology.

The Development of Modern Epidemiology

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 be (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 an historical account of the concepts and ideas, and current importance of epidemiology to global health issues and to organisations such as the WHO. - illustrates and contributes to discussions of specific areas of epidemiology and the control of diseases such as cardiovascular disease, respiratory disease, tuberculosis, maternal and child health, non-biologic disorders such as war and disasters, and new infectious diseases. - outlines the use of epidemiology in areas such as public health, health services, occupational and environmental medicine, and community medicine and discusses developments such as statistics, information sources, investigation of disease outbreaks and clinical epidemiology. - looks at how the subject has developed internationally, with perspectives on regions such as the Americas, Poland, Spain, Eastern Mediterranean, New Zealand, China, Thailand and Japan. This remarkable insight into how epidemiology has developed is essential reading for both existing and aspiring epidemiologists.

Infectious Disease Epidemiology: Theory and Practice

Epidemiology is a population science that underpins health improvement and health care, by exploring and establishing the patterns, frequency, trends, and causes of a disease. Concepts of Epidemiology comprehensively describes the application of core epidemiological concepts and principles to the real world, including the link between current research and findings in epidemiology and the control of disease, and the control of diseases such as cardiovascular disease, respiratory disease, tuberculosis, maternal and child health, non-biologic disorders such as war and disasters, and new infectious diseases. The book covers the geographical or spatial distribution of health outcomes. This handbook offers a wide-ranging overview of state-of-the-art approaches to determine the relationships between health and various risk factors, empowering researchers and policy makers to tackle public health problems.

Infectious Disease Surveillance

Harda dany 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 the aspects of infectious disease 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 epidemiology of some classes of infectious diseases characterised by modes of transmission. This book can therefore bridge the gap between the different scientific research and 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.
An Introduction to Epidemiology

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 examples 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, seroepidemiology, 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 combines epidemiological theory with the principles of infectious disease treatment and control. A highly experienced author brings a personal and unique approach to this important subject. All students of epidemiology, infectious disease medicine and microbiology will find this text invaluable, ensuring its continued popularity.

Communicable Disease Epidemiology and Control

Argues that illnesses such as AIDS and drug-resistant tuberculosis, malaria, and typhoid target poor communities.

Genetics and Evolution of Infectious Diseases

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 technology and minimizes the use of technical language, while emphasizing real-life practice in modern public health and biomedical research settings.

The Development of Modern Epidemiology

Infectious Disease Epidemiology is a concise reference guide which provides trainees and practicing epidemiologists with the information 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 organized in order of increasing complexity, ranging from a general introduction to subjects such as mathematical modelling and zero-epidemiology. Part two examines specific diseases, with particular emphasis on global significance. Given the rapid pace of transmission for ease of reference, they include 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.

Modern Epidemiology

The thoroughly revised and updated Third Edition of the acclaimed Modern Epidemiology reflects both the conceptual development of this evolving science and the increasingly sophisticated tools for applying epidemiology to 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, study designs, field methods, threats to validity, and assessing methods 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, social epidemiology, infectious disease epidemiology, genetic and molecular epidemiology, nutritional epidemiology, environmental epidemiology, reproductive epidemiology, and clinical epidemiology.

Modeling and Dynamics of Infectious Diseases

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 health.

Essentials of Infectious Disease Epidemiology

Annotation This volume discusses health system policies (including financing global health, quality of care, and strengthening regulatory systems in low- and middle-income countries), as well as the methods and resources used throughout all DCP3 volumes.

Molecular Tools and Infectious Disease Epidemiology

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 tobacco use, drug use, foodborne infections, and HIV/AIDS. The final section provides general guidelines on data analysis and surveillance, and advanced methods. 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.

Infectious Disease Epidemiology

Statistical ideas have been integral to the development of epidemiology and continue to provide the tools needed to interpret epidemiological studies. Although epidemiologists do not need a highly mathematical background in statistical theory to conduct and interpret such studies, they do need more than an encyclopedia of “recipes.” Statistics for Epidemiology achieves just the right balance between the two approaches, building an intuitive understanding of the methods most important to practitioners and the skills to use them effectively. It develops the techniques for analyzing simple risk factors and disease data, with step-by-step extensions that include the use of binary regression. It covers the logistic regression model in detail and contrasts it with the Cox model for time-to-incidence data. The book also provides a comprehensive overview, a description of systems used by public health jurisdictions in the United States and legal considerations for surveillance. This successful book presents 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.

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Epidemiology Kept Simple

Covers a range of essential topics from a survey of important historical epidemics to study 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. Th, HIV and Influenza are 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.
Eras in Epidemiology

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. It is often assumed to be 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, Nancy, France)† of the Evaluation of Vaccination and the Centre for Health Economic Research and Modelling Infectious Diseases (CEV, CHERDID, 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.

A Historical Introduction to Mathematical Modeling of Infectious Diseases

At its core, epidemiology is concerned with changes in health and disease. The discipline requires counts and measures of: births, health disturbances (diseases), and in order to make sense of these counts it requires a population base defined by place and time. Epidemiology relies on clearly 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, public health has always been a key driver of public health, a 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 humors of Hippocrates, it moves forward through the dawn of observational methods in the 16th century, the development of statistical reasoning by John Graunt and in 18th century epidemiology, the influence of the 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.

Concepts of Epidemiology

For epidemiologists, evolutionary biologists, and health-care professionals, particularly those involved in the design and interpretation of large-scale epidemiological studies and concerned with a variety of epidemiological problems in human populations, a key set of tools has been the development of mathematical models. Depending on the size and context of the problem, there is a range of models from simple one species models of disease spreading in a population, to highly sophisticated models for predicting disease patterns in space and time. Models may be based on experience, but they are often driven by the need to understand the underlying causes of disease spread. Epidemiologists are guided by these concepts, and have often contributed to their development. Because the disciplinary focus is on health and disease in populations, public health has always been a key driver of public health, a 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 humors of Hippocrates, it moves forward through the dawn of observational methods in the 16th century, the development of statistical reasoning by John Graunt and in 18th century epidemiology, the influence of the 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.

Modern Infectious Disease Epidemiology

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 research questions. A unique feature of this handbook is the extensive overview of modern regression methods including logistic and survival regression, splines, hierarchical (multilevel) regression, interference, and causal diagrams. Topics in data analysis range from Bayesian analysis, sensitivity analysis, and bias analysis, with an extensive overview of modern regression methods including logistic and survival regression, splines, hierarchical (multilevel) regression, interference, and causal diagrams. This book provides a systematic treatment of the mathematical underpinnings of work in the theory of outbreak dynamics and their control, covering balanced perspectives between theory and practice including new material on contemporary topics in the field of infectious disease epidemiology.

Handbook of Infectious Disease Data Analysis

This book provides a systematic treatment of the mathematical underpinnings of work in the theory of outbreak dynamics and their control, covering balanced perspectives between theory and practice including new material on contemporary topics in the field of infectious disease epidemiology. Specifically, it presents a unified mathematical framework linked to the distribution theory of non-negative random variables; the many examples used in the text, are introduced and discussed in light of theoretical perspectives. The book is organized into 9 chapters: The first motivates the presentation of the material on subsequent chapters; Chapter 2-3 provides a review of basic concepts of probability models for the lifetime of a new concept, with the distributions of random counts and counting processes, which are linked to phenomenological models. Chapters 4 focuses on dynamic behaviors of a disease outbreak during the initial phase while Chapters 5-6 broadly cover compartment models to investigate the consequences of interventions as the outbreak moves beyond the initial stage. Chapters 7-8 covers models in earlier and later stages of infection, and Chapters 9 focus on the data generating processes and statistical issues of fitting models to data as well as specific mathematical epidemic modeling applications, respectively. This book is aimed at a wide audience ranging from graduate students to established scientists from quantitative fields of work in epidemiology. The numerous examples and illustrations help understanding the mathematics of disease transmission and control accessible. Furthermore, the examples and exercises, make the book suitable for motivated students in applied mathematics, either through a lecture course, or through self-study. This text could be used in graduate schools or special summer schools covering research problems in mathematical biology.

Disease Control Priorities, Third Edition

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 contributions from sixteen experts in a variety of epidemiologic sub-disciplines, this new edition is by far the most comprehensive and cohesive text on the principles and methods of epidemiologic research. The book covers a broad range of concepts and methods, including epidemiologic measures of occurrence and effect, study designs, validity, precision, statistical interference, and causal diagrams. Topics in data analysis range from Bayesian analysis, sensitivity analysis, and bias analysis, with an extensive overview of modern regression methods including logistic and survival regression, splines, hierarchical (multilevel) regression, interference, and causal diagrams. This book provides a systematic treatment of the mathematical underpinnings of work in the theory of outbreak dynamics and their control, covering balanced perspectives between theory and practice including new material on contemporary topics in the field of infectious disease epidemiology.

Modern Epidemiology

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 oriented or, if international, lack the specificity of local issues. The authors’ understandings of their students’ needs are highly respected: many students appreciate books that are both Whipcord and 1st Editions’ students and practitioners-specifically for courses in MPH programs, community health and preventive medicine programs, community health education programs, and community health nursing programs, as well as programs for other medical professionals such as pharmacy, physiotherapy, and other public health courses. Changes in infectious and chronic disease epidemiology including vaccines, health promotion, human resources for health and health technology Lessons from H1N1, pandemic threats, disease eradication, nutritional health Trends of health systems and reforms and consequences of current economic crisis for health Public health law, ethical dimensions of health technology advances and assessment. Global Health environment, Millennium Development Goals and Societies.
Epidemiology Kept Simple
Dr. Joshua Lederberg - scientist, Nobel laureate, visionary thinker, and friend of the Forum on Microbial Threats - died on February 2, 2009. It was discovered that the Forum on Microbial Threats convened by the National Academies of Sciences, Engineering, and Medicine's Life Sciences Division and other organizations 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 in a few short decades, two expert years, advanced collective understanding of the microbiome, microbial genetics, microbial communities, and microbe-host-environment interactions.

Modeling Infectious Disease Parameters Based on Serological and Social Contact Data
This fully updated edition of Infectious Disease Surveillance is for frontline public health practitioners, epidemiologists, and clinical microbiologists engaged in communicable disease control. It is also a foundational text for trainees in public health, applied epidemiology, postgraduate medicine, and nursing programs. The second edition portrays both the conceptual framework and practical aspects of infectious disease surveillance. It is a compendious resource designed to improve the tracking of infectious diseases and to serve as a starting point in the development of new surveillance systems. Infectious 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 it provides an overview of the current international health regulations. Section Two explores the historical development of public health and epidemiology. Section Three covers the full breadth of epidemiological methods and concepts, including epidemiologic measures of occurrence and effect, study designs, validity, precision, and decision frameworks. Section Four presents an overview of modern regression methods including logistic and survival analysis, generalized linear models, and an extensive overview of modern regression methods including logistic and survival analysis. Section Five summarizes the state of the art in infectious disease epidemiology and molecular epidemiology, and for the epidemiologist wishing to integrate molecular techniques into his or her studies.

Control of Communicable Diseases Manual
Molecular Tools and Infectious Disease Epidemiology examines the opportunities and methodologic challenges in the application of modern molecular genetic and biotechnical 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 of studies. 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 challenges 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.

Statistics for Epidemiology
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 trials, and control trials. The book studies case control studies; the consideration of random error in studies of causal factors. Chapters on the infectious disease process, outbreak investigation, and screening for disease are also included. The chapters introduce more advanced biostatistical and epidemiologic techniques, such as survival analysis, Mantel-Haenszel techniques, and tests for interaction. This third edition updates all the requirements of the American Schools of Public Health (ASPH) Epidemiologic Competencies, and provides an 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 also 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.

Modern Infectious Disease Epidemiology
Globalization is by no means a new phenomenon; transcontinental trade and the movement of people date back at least 3,000 years, to the era of the ancient Silk Road trade routes. The global spread of infectious disease has followed a parallel course. Indeed, the emergence and spread of infectious diseases are, in a sense, the epitome 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 not 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 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 Infections 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 transcontinental movements of people and how this could 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 mindset 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.

Modeling Infectious Diseases in Humans and Animals
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 exercises included, the book then uses the tools illustrated to illustrate the fundamental concepts of the study of infectious