

Epidemiologic Research Principles And Quantitative Methods

This book will serve as a primer for both laboratory and field scientists who are shaping the emerging field of molecular epidemiology. Molecular epidemiology utilizes the same paradigm as traditional epidemiology but uses biological markers to identify exposure, disease or susceptibility. Schulte and Perera present the epidemiologic methods pertinent to biological markers. The book is also designed to enumerate the considerations necessary for valid field research and provide a resource on the salient and subtle features of biological indicators.

Epidemiologic Research Principles and Quantitative Methods John Wiley & Sons

Health researchers routinely evaluate health and illness across subgroups defined by their sex, gender, ethnicity, and race. All too often, these classifications are proffered as an explanation for any differences that may be detected, for example, in access to care, frequency of disease, or response to treatment. Relatively few researchers, however, have examined what these classifications mean on a theoretical level or in the context of their own research. Assume, for example, that a researcher concludes from his or her data that African-Americans utilize certain surgical procedures less frequently than whites. This conclusion may mean little without an examination of the various underlying issues. Is there such a construct as race at all? How were whites and African-Americans classified as such? Does this finding reflect inappropriate overutilization of the specific procedures among whites or inappropriate underutilization among African-Americans? To what extent are socioeconomic status and method of payment related to the less frequent use? Are there differences in the manner in which health care providers present the various treatment options to whites and to African-Americans that could account for these differences in utilization? Are there differences in health care-seeking and health care preferences between the two groups that would explain the difference in utilization? Is the racial classification a surrogate measure for another variable that has remained unidentified and unmeasured? All too often, unfortunately, such issues are ignored or lightly dismissed with an entreaty for additional research.

Featuring articles from the prestigious Encyclopedia of Biostatistics, many of which have been revised and updated to include recent developments, the Encyclopedia of Epidemiologic Methods also includes newly commissioned articles reflecting the latest thinking in Cancer Registries Birth Defect Registries Meta Analysis of Epidemiologic Studies Epidemiology Overview Sample Size Sex Ratio at Birth Software Design and Analysis Featuring contributions from leading experts in academia, government and industry, the Encyclopedia of Epidemiologic Methods has been designed to complement existing texts on the subject by providing further extensive, up-to-date coverage of specialised topics and by introducing the reader to the research literature. Offering a wealth of information in a single resource, the Encyclopedia of Epidemiologic Methods Offers an excellent introduction to a vast array of specialised topics Includes in-depth coverage of the statistical underpinnings of contemporary epidemiologic methods Provides concise definitions and introductions to numerous concepts found in the current literature Uses extensive cross-references, helping to facilitate further research, and enabling the reader to locate definitions and related concepts In addition to featuring extensive articles in the areas of descriptive and analytic epidemiology, the Encyclopedia also provides the reader with articles on case-control design and offers substantial coverage of allied statistical methods. Strategies for Study Design & Analysis Quantitative Methods for Health Research Molecular Epidemiology A Pocket Guide to Epidemiology Study Design and Data Analysis, Second Edition

In examining the relationship between nutritional exposure and disease aetiology, the importance of a carefully considered experimental design cannot be overstated. A sound experimental design involves the formulation of a clear research hypothesis and the identification of appropriate measures of exposure and outcome. It is essential that these variables can be measured with a minimum of error, whilst taking into account the effects of chance and bias, and being aware of the risk of confounding variables. The first edition of Design Concepts in Nutritional Epidemiology presented a thorough guide to research methods in nutritional epidemiology. Since publication of the 1st edition, we now have a much better understanding of the characteristics of nutritional exposure that need to be measured in order to answer questions about diet-disease relationships. The 2nd edition has been extensively revised to include the most up-to-date methods of researching this relationship. Included are new chapters on qualitative and sociological measures, anthropometric measures, gene-nutrient interactions, and cross-sectional studies. Design Concepts in Nutritional Epidemiology will be an essential text for nutritionists and epidemiologists, helping them in their quest to improve the quality of information upon which important public health decisions are made.

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 the advances and contributions to epidemiologic knowledge and the control of disease in specific areas such as cancer, 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, social epidemiology and nutrition. · Discusses methodological 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.

Occupational Health Practice, Third Edition is a comprehensive account of the practice of protecting and improving health in the workplace. Topics covered by this book include pre-placement screening; principles of toxicology; the mental health of people at work; and thermal stresses in occupations. The principles of occupational epidemiology, sickness absence, toxicity testing of industrial chemicals, ergonomics, and the use of protective clothing in the workplace are also discussed. This book is comprised of 28 chapters and begins by outlining developments in occupational health practice, along with the monitoring of occupational diseases. The chapters that follow explore the mental health of people at work and the health effects of vibration, noise, and ionizing radiation in the workplace. The text also considers emergency medical treatment in the workplace; vocational rehabilitation and resettlement of people with disabilities; occupational health services for migrant workers; and special problems in occupational health in developing countries. The final chapter describes health promotion and counseling in the workplace. Suggestions as to how the occupational health professional should deal with perturbations in the health of the worker and workplace are included. This monograph will be of value to occupational health practitioners.

Comprehensive in its coverage and suitable for graduate or upper-division undergraduate students in a wide range of health-related disciplines, this latest offering by William A. Oleckno is a full-scale, pedagogically rich introduction to fundamental ideas and procedures in epidemiology. The text covers the major concepts, principles, methods, and applications of both conventional and modern epidemiology using clear language and frequent examples to illustrate important points and facilitate understanding. While Oleckno provides thorough treatment of the more customary aspects of conventional and modern epidemiology, he also introduces several important design and analytical issues that are only rarely approached in fundamental epidemiology textbooks. Concepts as diverse as competing risks, maturation, fertility, and the prevalence and bias effects in the context of screening are just a few examples of the broad range of concepts covered in this text. A comprehensive glossary contains detailed definitions of over 700 terms used throughout the 14 chapters comprising the textbook. Aspiring public health professionals will appreciate the solid basis they gain from Epidemiology: Concepts and Methods and will want to keep a copy close by as a valuable reference throughout their careers.

Clinical Epidemiology
A Primer for Health Professionals
Applied Epidemiologic Principles and Concepts
Personal reports from those who were there
Encyclopedia of Epidemiologic Methods
Epidemiologic Research

As society has become increasingly aware of the potential threats to human health due to exposures to toxic chemicals in the environment and the workplace and in consumer products, it has placed increased demands upon the still-fledgling science of toxicology. This science is called upon to supply firm answers when pertinent information and fundamental knowledge are lacking, both the scientific and the social issues become confused and new tensions develop. One of the major purposes of this book is to focus on toxicology that pertain most to social issues—namely, analysis of risk for purposes of human health protection. Although it is apparent that the discipline of toxicology is not yet prepared to provide firm answers to many questions concerning human risk, it is derived information be used in the most objective and logical way to yield the closest approximation to the truth. This book is designed to supply as much guidance for such tasks as is permitted by the current state of our knowledge. Its emphasis is thus on data (broadly defined) for assessing risks to human health. In this way, it differs from other basic toxicology texts, most of which emphasize methods for performing studies or describe various toxicological endpoints and classes of toxic agents.

The book is organized so as to address in separate sections first the preparatory topics of medicine (clinical and epidemiological), science in general, and statistics (mathematical); then topics of epidemiological research proper; and, finally, topics of 'meta-epidemiological' research. In those two main sections, a further grouping is based on the distraction between objects and methods of study. In this framework, the particular topics are addressed both descriptively and quasi-prescriptively, commonly with a number of explicit examples intended to serve as a handbook for whomever is, in whatever way, concerned with epidemiological or 'meta-epidemiological' clinical research. But besides this, it is also intended to serve as a textbook for students in introductory courses on 'epidemiological research'. There is a suggested hierarchy of the concepts that might reasonably be covered.

Building an up-to-date understanding of the methodologies that can be used to shape public health policies, Epidemiology: Study Design and Data Analysis, Second Edition encompasses the study of epidemiology from the observation of associations between variables to the use of practical, data-supported analyses. It presents study designs commonly used for a wide range of purposes, and covers the spectrum of statistical principles and analytical tools used in epidemiological research, such as techniques used in report writing, statistical models and synthesis of evidence. New Material in This Edition Includes: Systematic evaluation Meta-analysis Regression dilution Case-cohort studies Case-crossover studies Pooled logistic regression Companion Web site containing data sets for R and Stata code for examples, a sample size calculator, and a SAS floating absolute risk macro The second edition of a popular textbook, this book emphasizes quantitative and design aspects of epidemiological research. The author favors the use of basic mathematical methods over complicated mathematical proofs, making this an ideal textbook that is comprehensive yet accessible to graduate students in epidemiology, statistics, public health studies, and/or medical research.

Now updated with new data and examples throughout, Clinical Epidemiology: Principles, Methods, and Applications for Clinical Research, Second Edition is a comprehensive resource that introduces the reader to the basics of clinical epidemiology and explores the methods that can be used to obtain quantitative evidence on the effects of interventions and on the diagnosis, etiology, and prognosis of disease. The everyday challenges of clinical research and the quantitative knowledge required to practice medicine are addressed in a valuable reference for both graduate and undergraduate students in medicine and related disciplines, as well as for professionals involved in the design and conduct of clinical research.

Basic Principles and Practical Applications in Epidemiological Research
Study Design and Data Analysis, Third Edition
Gender, Ethnicity, and Health Research
Epidemiology
Design Concepts in Nutritional Epidemiology
A Self-Learning Text

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. · Features new coverage of methods such as agent-based modeling, quasi-experimental designs, mediation analysis, and causal modeling. · Updates coverage of methods such as concepts of interaction, bias analysis, and time-varying designs and analysis. · Continues to cover the full breadth of epidemiologic methods and concepts, including epidemiologic measures of occurrence and effect, study designs, validity, precision, statistical interference, field methods, surveillance, ecologic designs, and use of secondary data sources. · Includes data analysis topics such as Bayesian analysis, probabilistic bias analysis, time-to-event analysis, and an extensive overview 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. · 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.

Occupational epidemiology has emerged as a distinct subdiscipline of epidemiology and occupational medicine, addressing fundamental public health and scientific questions relating to the specification of exposure-response relationships, assessment of the adequacy of occupational exposure guidelines, and extrapolation of hazardous effects to other settings. This book reviews the wide range of principles and methods used in epidemiologic studies of working populations. It describes the historical development of occupational epidemiology, the approaches to characterizing workplace exposures, and the methods for designing and implementing epidemiologic studies. The relative strengths and limitations of different study designs are emphasized. Also included are more advanced discussions of statistical analysis, the estimation of doses to biological targets, and applications of the data derived from occupational epidemiology studies to disease modeling and risk assessment. The volume will serve both as a textbook in epidemiology and occupational medicine courses and as a practical handbook for the design, implementation, and interpretation of research in this field.

A comprehensive introduction to the role of epidemiology in veterinary medicine This fully revised and expanded edition of Veterinary Epidemiology introduces readers to the field of veterinary epidemiology. The new edition also adds new chapters on the design of observational studies, validity in epidemiological studies, systematic reviews, and statistical modelling, to deliver more advanced material. This updated edition begins by offering an historical perspective on the development of veterinary medicine. It then addresses the full scope of epidemiology, with chapters covering causality, disease occurrence, determinants, disease patterns, disease ecology, and much more. Veterinary Epidemiology, Fourth Edition: ? Features updates of all chapters to provide a current resource on the subject of veterinary epidemiology ? Presents new chapters essential to the continued advancement of the field ? Includes examples from companion animal, livestock, and avian medicine, as well as aquatic animal diseases ? Focuses on the principles and concepts of epidemiology, surveillance, and diagnostic-test validation and performance ? Includes access to a companion website providing multiple choice questions Veterinary Epidemiology is an invaluable reference for veterinary general practitioners, government veterinarians, agricultural economists, and members of other disciplines interested in animal disease. It is also essential reading for epidemiology students at both the undergraduate and postgraduate levels.

Quantitative Research Methods for Health Professionals: A Practical Interactive Course is a superb introduction to epidemiology, biostatistics, and research methodology for the whole health care community. Drawing examples from a wide range of health research, this practical handbook covers important contemporary health research methods such as survival analysis, Cox regression, and meta-analysis, the understanding of which go beyond introductory concepts. The book includes self-assessment exercises throughout to help students explore and reflect on their understanding and a clear distinction is made between a) knowledge and concepts that all students should ensure they understand and b) those that can be pursued by students who wish to do so. The authors incorporate a program of practical exercises in SPSS using a prepared data set that helps to consolidate the theory and develop skills and confidence in data handling, analysis and interpretation.

Proceedings of a Workshop
Toxic Substances and Human Risk
Surveys, Epidemiological Research, Programme Evaluation, Clinical Trials
Epidemiological Research Methods
Solutions Manual for Epidemiologic Research
Environmental Epidemiology

This textbook describes the basics of research in medical, clinical, and biomedical settings as well as the concepts and application of epidemiologic designs in research conduct. Design transcends statistical techniques, and no matter how sophisticated a statistical modeling, errors of design/sampling cannot be corrected. The authors of this textbook have presented a complex field in a very simplified and reader-friendly manner with the intent that such presentation will facilitate the understanding of design process and epidemiologic thinking in clinical and biomedical research. Covers these relevant topics in epidemiology: Case-Cohort Design Prospective Case-Control Quantitative Evidence Synthesis (QES) Instant Cohort Design & Case-Crossover Design Effect Modification & Interaction Epidemiologic Tree - Molecular Epidemiology & Health Disparities Epidemiologic Challenge – “Big Data”, mHealth, Social Media 3 “Ts” - Team Science, Transdisciplinary Research, Translational Research Bias, Random error, Confounding Systems Science & Evidence Discovery Research is presented as an exercise around measurement, with measurement error inevitable in its conduct—hence the inherent uncertainties of all findings in clinical and biomedical research. Concise Epidemiologic Principles and Concepts covers research conceptualization, namely research objectives, questions, hypothesis, design, implementation, data collection, analysis, results, and interpretation. While the primary focus of epidemiology is to assess the relationship between exposure (risk or predisposing factor) and outcome (disease or health-related event), causal association is presented in a simplified manner, including the role of quantitative evidence synthesis (meta-analysis) in causal inference. Epidemiology has evolved over the past three decades resulting in several fields being developed. This text presents in brief the perspectives and future of epidemiology in the era of the molecular basis of medicine. With molecular epidemiology, we are better equipped with tools to identify molecular biologic indicators of risk as well as biologic alterations in the early stages of disease.

Bias analysis quantifies the influence of systematic error on an epidemiology study's estimate of association. The fundamental methods of bias analysis in epidemiology have been well described for decades, yet are seldom applied in published presentations of epidemiologic research. More recent advances in bias analysis, such as probabilistic bias analysis, appear even more rarely. We suspect that there are both supply-side and demand-side explanations for the scarcity of bias analysis. On the demand side, journal reviewers and editors seldom request that authors address systematic error aside from listing them as limitations of their particular study. This listing is often accompanied by explanations for why the limitations should not pose much concern. On the supply side, methods for bias analysis receive little attention in most epidemiology curriculums, are often scattered throughout textbooks or absent from them altogether, and cannot be implemented easily using standard statistical computing software. Our objective in this text is to reduce these supply-side barriers, with the hope that demand for quantitative bias analysis will follow.

Based on the concept of 'conjecture and refutation' from the Popperian philosophy of science, i.e. looking for alternative causes, this book simplifies the design and inferences of human observational studies into two types: descriptive and causal. It clarifies how and why causal inference should be considered from the search for alternative explanations or causes, and descriptive inference from the sample at hand to the source population. Furthermore, it links the health policy and epidemiological concept with decisional questions, for which the basic measurement can be quality-adjusted survival time or quality-adjusted life year.

This book provides practical knowledge to clinicians and biomedical researchers using biological and biochemical specimen/samples in order to understand health and disease processes at cellular, clinical, and population levels. Concepts and techniques provided will help researchers design and conduct studies, then translate data from bench to clinics in attempt to improve the health of patients and populations. This book presents the extreme complexity of epidemiologic research in a concise manner that will address the issue of confounders, thus allowing for more valid inferences and yielding results that are more reliable and accurate.

Ethics and Epidemiology
Environmental Health Perspectives
Research Methods in Community Medicine
Applying Quantitative Bias Analysis to Epidemiologic Data
Principles and Practices
Critical Issues in Patient Safety

Tailored for multiple purposes including learning about and being equipped to evaluate research studies, conducting thesis/dissertation/capstone projects, and publishing scientific results, Epidemiologic Research Methods in Public Health Practice covers the full breadth of epidemiologic study designs and topics (case, case-control, and cohort studies).

Biostatistics and Epidemiology: A Primer for Health Professionals focuses on the underlying framework of the field and offers practical guidelines for research and interpretation. In addition to major sections devoted to statistics and epidemiology, the book includes a comprehensive exploration of the scientific method, probability, and clinical trials. New to the second edition are: -a reorganization of the material -new information on survival analysis such as the Cox proportional hazards model -topics in nonparametric statistics -expanded discussion of probability and its applications in epidemiology -an entirely new chapter on areas relevant to behavioral research and change scores, reliability, validity, and responsiveness -new appendices providing specific and clear instructions on how to carry out several additional statistical calculations and tests Biostatistics and Epidemiology describes principles and methods applicable to medicine, public health, allied health, psychology and education and will be useful not only to physicians doing clinical as well as

basic science research, but also to students at undergraduate, graduate and medical school levels.

An excellent introduction for all those coming to the subject for the first time. New material has been added to the second edition and the original six chapters have been modified. The previous edition sold 9500 copies world wide since its release in 1996. Based on numerous courses given by the author to students and researchers in the health sciences and is written with such readers in mind. Provides a "user-friendly" layout and includes numerous illustrations and exercises. Written in such a way so as to enable readers learn directly without the assistance of a classroom instructor. Throughout, there is an emphasis on presenting each new topic backed by real examples of a survival analysis investigation, followed up with thorough analyses of real data sets. Evaluating the strength or persuasiveness of epidemiologic evidence is inherently challenging, both for those new to the field and for experienced researchers. There are a myriad of potential biases to consider, but little guidance about how to assess the likely impact on study results. This book offers a strategy for assessing epidemiologic research findings, explicitly describing the goals and products of epidemiologic research in order to better evaluate its successes and limitations. The focus throughout is on practical tools for making optimal use of available data to assess whether hypothesized biases are operative and to anticipate concerns at the point of study design in order to ensure that needed information is generated. Specific tools for assessing the presence and impact of selection bias in both cohort and case-control studies, bias from non-response, confounding, exposure measurement error, disease measurement error, and random error are identified and evaluated. The potential value of each approach as well as its limitations are discussed, using examples from the published literature. Such information should help those who generate and interpret epidemiologic research to apply methodological principles more effectively to substantive issues, leading to a more accurate appraisal of the current evidence and greater clarity about research needs.

Biostatistics and Epidemiology
Principles of Data Interpretation
Outbreak Investigation, Prevention, and Control in Health Care Settings: Critical Issues in Patient Safety
Introduction to Epidemiologic Research Methods in Public Health Practice
Concepts and Methods
Veterinary Epidemiology

Epidemiologic Research Principles and Quantitative Methods David G. Kleinbaum, Ph.D. Lawrence L. Kupper, Ph.D. Hal Morgenstern, Ph.D. *Epidemiologic Research covers the principles and methods of planning, analysis and interpretation of epidemiologic research studies. It supplies the applied researcher with the most up-to-date methodological thought and practice. Specifically, the book focuses on quantitative (including statistical) issues arising from epidemiologic investigations, as well as on the questions of study design, measurement and validity. Epidemiologic Research emphasizes practical techniques, procedures and strategies. It presents them through a unified approach which follows the chronology of issues that arise during the investigation of an epidemic. The book's viewpoint is multidisciplinary and equally useful to the epidemiologic researcher and to the biostatistician. Theory is supplemented by numerous examples, exercises and applications. Full solutions are given to all exercises in a separate solutions manual. Important features:*

- * Thorough discussion of the methodology of epidemiologic research
- * Stress on validity and hence on reliability
- * Balanced approach, presenting the most important prevailing viewpoints
- * Three chapters with applications of mathematical modeling

A simple and systematic guide to the planning and performance of investigations concerned with health and disease and with health care. Offers researchers help in choosing a topic and to think about shaping objectives and ideas and to link these with the appropriate choice of method. Fully updated with new sections on the use of the Web and computer programmes freely available in the planning, performance or analysis of studies.

Written by epidemiologists, ethicists and legal scholars, this book provides an in-depth account of the moral problems that often confront epidemiologists, including both theoretical and practical issues. The topics covered include informed consent, privacy and confidentiality protection, the balancing of risks and benefits, ethical issues in the study of vulnerable populations, the institutional review board system, and professional education. The solid, up-to-date analyses of these issues will be very helpful to epidemiologists in their practice, research and teaching. They encourage the latest developments in the field and include detailed bibliographies.

This informative book is valuable to a broad spectrum of individuals active in the environmental and health sciences, including chemists, epidemiologists, and mathematics modelers, as well as those involved with measurement and effects of numerous kinds of drinking water contamination and both indoor and ambient air pollution. Environmental researchers involved with human exposure to toxic substances, regulators and administrators will also find this work of value.

Interpreting Epidemiologic Evidence

Epidemiologic Research: Terms and Concepts

Concise Epidemiologic Principles and Concepts

Quantitative Epidemiology

The Epidemiology of Childhood Disorders

Guidelines for Clinicians and Biomedical Researchers

Highly praised for its broad, practical coverage, the second edition of this popular text incorporated the major statistical models and issues relevant to epidemiological studies. Epidemiology: Study Design and Data Analysis, Third Edition continues to focus on the quantitative aspects of epidemiological research. Updated and expanded, this edition

This book gathers the research efforts of the last quarter century in pediatric epidemiology under a single cover for the first time. It draws on the experience of an international group of pediatric epidemiologists, all of whom are world authorities in their fields. In a consistent format they discuss biological considerations, patterns of occurrence, risk factors, and the impact of interventions for each type of disorder. The disorders reviewed include not only the old morbidity of childhood such as infections, birth defects, asthma, and cerebral palsy, but also the new morbidity: emotional problems, intentional and non-intentional injuries, and suicide. These reviews are grouped in five parts: perinatal disorders, infectious disorders, mental and behavioral disorders, injuries and violence, and chronic disorders. This book is aimed at a wide audience: pediatricians, epidemiologists, nurses, physical and occupational therapists, health administrators, and those in maternal and child health care. One reason it succeeds is that the contributors have the personal expertise and background to enable them to cross the disciplinary lines between pediatrics and epidemiology.

In the nearly three years since the publication of the ActivEpi companion text, the authors received several suggestions to produce an abbreviated version that narrows the discussion to the most "essential" principals and methods. A Pocket Guide to Epidemiology contains less than half as many pages as the ActivEpi Companion Text and is a stand-alone introductory text on the basic principals and concepts of epidemiology.

Epidemiology is a population science that underpins health improvement and health care, by exploring and establishing the pattern, frequency, trends, and causes of a disease. Concepts of Epidemiology comprehensively describes the application of core epidemiological concepts and principles to readers interested in population health research, policy making, health service planning, health promotion, and clinical care. The book provides an overview of study designs and practical framework for the geographical analysis of diseases, including accounting for error and bias within studies. It discusses the ways in which epidemiological data are presented, explains the distinction between association and causation, as well as relative and absolute risks, and considers the theoretical and ethical basis of epidemiology both in the past and the future. This new edition places even greater emphasis on interactive learning. Each chapter includes learning objectives, theoretical and numerical exercises, questions and answers, a summary of the key points, and exemplar panels to illustrate the concepts and methods under consideration. Written in an accessible and engaging style, with a specialized glossary to explain and define technical terminology, Concepts of Epidemiology is ideal for postgraduate students in epidemiology, public health, and health policy. It is also perfect for clinicians, undergraduate students and researchers in medicine, nursing and other health disciplines who wish to improve their understanding of fundamental epidemiological concepts.

A Practical Interactive Guide to Epidemiology and Statistics

Supplements

Concepts of Epidemiology

Survival Analysis

Research Methods in Occupational Epidemiology

Measuring Psychosocial Variables in Epidemiologic Studies of Cardiovascular Disease

In today's era, we are forced to realize that outbreaks can occur at any moment. From anthrax to the avian flu, potential outbreaks can spread rapidly through air, water, and other means. Hospital personnel are now being trained to understand and monitor outbreaks in health care facilities. Professionals both in the private health care sector and the public health system now need to recognize, investigate, control and prevent these outbreaks. Outbreak Investigation, Prevention, and Control in Health Care Settings is a timely resource for health care professionals inside and outside of the hospital covering topics such as: Epidemiology Surveillance Programs in Hospital Settings Organisms and Diseases Associated with Outbreaks Ambulatory Care Acute Care Long-Term Care Pseudo-Outbreaks Investigation Control The Second Edition has been completely updated with current information, tables, statistics and suggested readings. Advanced Trace Analysis in six chapters, by eminent scientists, discusses statistical approaches to verify trace element analysis data, trace analysis techniques like ICPMS and XRF, ion beam analysis techniques, speciation analysis of uranium relevant to waste disposal and management along with the use of greener techniques for trace elemental speciation analysis. This book is designed to train graduate students across disciplines within the fields of public health and medicine, with the goal of guiding them in the transition to independent researchers. It focuses on theories, principles, techniques, and methods essential for data processing and quantitative analysis to address medical, health, and behavioral challenges. Students will learn to access to existing data and process their own data, quantify the distribution of a medical or health problem to inform decision making; to identify influential factors of a disease/behavioral problem; and to support health promotion and disease prevention. Concepts, principles, methods and skills are demonstrated with SAS programs, figures and tables generated from real, publicly available data. In addition to various methods for introductory analysis, the following are featured, including 4-dimensional measurement of distribution and geographic mapping, multiple linear and logistic regression, Poisson regression, Cox regression, missing data imputing, and statistical power analysis.

The concepts of epidemiology, the science that uses statistical methods to investigate associations between risk factors and disease outcomes in human populations, are developed using examples involving real data from published studies. The relevant statistical methods are developed systematically to provide an integrated approach to observational and experimental studies. After covering basic measurement, study design, and study credibility issues, the author continues with basic statistical methods and techniques for adjusting risk estimates for confounders. Statistical models including logistic regression and the proportional hazards model for survival analysis are explained in detail in the following chapters, concluding with an explanation of the general methods for determining the sample size and power requirements for an epidemiological study. Taking advantage of the power, accessibility and user-friendliness of modern computer packages, the author uses a variety of interesting data sets and graphical displays to illustrate the methods. Epidemiological Research Methods will be of interest to students and research workers who need to learn and appreciate modern approaches to the subject. Without unnecessary emphasis on mathematics or theory, the book will enable the reader to gain a greater level of understanding of the underlying methods than is normally provided in books on epidemiology.

Principles and Quantitative Methods

The Development of Modern Epidemiology

Integrating the Ideas, Theories, Principles, and Methods of Epidemiology

Occupational Health Practice

Modern Epidemiology

Advanced Trace Analysis