

Chapters 11 and 12 are important if you are involved in study design. Chapter 11 uses the experience with the left-ventricular-assist device to provide detail on studies without a concurrent control and sham procedure. They also describe their use of a gatekeeper for reviewing eligibility in their trial. Chapter 12 addresses the ethics of sham procedures, "when the benefits derived from the study outweigh the risks from exposure to the sham procedure."

In Chapter 18 an eminent pathologist enlightens us on the detailed examinations possible for devices. His research work is on heart valves and how the study of failed artificial valves benefited understanding of valve design. I suggest that future editions include some guidance on how this experience can be generalized to other devices and fields.

I enjoyed reading this book and I learned new information. Many pulmonary devices are in development or clinical evaluation, and this book will help respirologists learn from other fields. Coronary devices created the field of interventional cardiology several decades ago, and bronchial devices may give interventional pulmonology similar growth in the coming years.

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Study Design and Statistical Analysis: A Practical Guide for Clinicians. Mitchell H Katz. Cambridge United Kingdom: Cambridge University Press. 2006. Soft cover, illustrated, 188 pages, \$39.99.

As a developing medical writer, I spent considerable time learning what I wanted to know about biostatistics—without drowning in what I didn't want to know. Years later, as one who now teaches how to interpret and report statistics, I know my frustration is shared by more than a few students and health-care professionals. The sad truth is that most people are leery of studying statistics, and those who teach the topic are not always skilled in doing so, especially to those who do not aspire to be stat-

isticians. Thus, it was a pleasure to read Mitchell Katz's **Study Design and Statistical Analysis: A Practical Guide for Clinicians**. The author has a keen sense of audience, which by itself is an endorsement of the book. In addition, he presents an excellent overview of a difficult topic, by organizing the material in a familiar way and by explaining the concepts in familiar terms. As a result, I recommend this book highly to those looking for an introduction to clinical research and statistical analysis.

The author is well qualified to write this book. He is a Clinical Professor of Medicine, Epidemiology, and Biostatistics at the University of California, San Francisco, and the Director of the San Francisco Department of Public Health, as well as an attending physician at San Francisco General Hospital. He is clearly knowledgeable about the topic from personal experience and obviously comfortable with writing about it.

Although the book's subtitle indicates that the target audience is clinicians, this book should be valuable for anyone who wants an introduction to clinical research. In particular, the book will be appreciated by university students and professionals in the fields of health and clinical medicine, especially those who need to understand the medical literature or who are considering careers in some aspect of clinical research.

The book is primarily an overview of research, but it might also be used as a guide to planning research. Although the author does not explicitly recommend that new investigators consult with a statistician before beginning their research (an almost universal recommendation among seasoned researchers), I believe he did not intend this book to be their only guide to research. In fact, the book should help new investigators ask the right questions of statisticians and help them put the statistician's responses into perspective. Also, despite being relatively short (180 pages), the book will serve as a reference for some time to come; the underlying principles of clinical research and statistical analysis are not likely to change markedly in the next several years.

The book's 12 chapters are organized chronologically, around the steps in planning, conducting, interpreting, and publishing clinical research. Most of the chapters are 13 or 14 pages long, though the chapters on research designs (Chapter 2) and bivariate analysis (Chapter 5) are understandably longer, at 30 and 54 pages, respectively. The longer chapters do not detract from the

flow of the book, however, despite addressing broader topics.

The Introduction (Chapter 1) establishes the value of statistics, with both the standard coin-toss examples and examples from clinical medicine. In fact, the clinical examples throughout the book are well-chosen and keep the discussion focused on practical applications.

Chapter 2, on choosing a research question and a study design, does a nice job of explaining the characteristics of a good research question and the need to address the question with an appropriate research design. The major observational and experimental designs are nicely described and are discussed in the context of the need to control for error, confounding, and bias—concepts nicely summarized in this chapter.

Often unaddressed in introductory books on statistics is the art and science of data management. Chapter 3 offers sound advice on this important aspect of research and reflects the author's hands-on expertise in conducting research.

Chapters 4, 5, and 6 contain most of the information on statistical analyses. With the intimidating titles of "Univariate Statistics," "Bivariate Statistics," and "Multivariable Statistics," these chapters are organized in the conventional way—that is, from the perspective of the field of statistics, rather than from that of an audience unfamiliar with the field. My only criticism of the book is this conventional approach, which is nearly universal in the field. One could argue that readers need to see the terminology and concepts of the field if they are to learn them, but my experience is that too much too soon is *the* major problem in teaching statistics. Headings such as "How do I test an association between a dichotomous variable with an interval variable?" will empty a lecture hall in record time. That said, readers who push through their fear will find these chapters readily understandable, and, I think, will be able to appreciate the underlying elegance of statistics.

These chapters, then, describe how to summarize data sets (a topic called descriptive statistics, Chapter 4); how to test for associations and differences between 2 variables (Chapter 5), and how to predict the value of a response variable from the values of 2 or more explanatory variables (multiple linear, multiple logistic, and Cox proportional hazards regression analyses, Chapter 6). Through simple, worked examples, readers are taken through the calculation of

chi-square analyses, risk and odds ratios, hypothesis testing (p values), analysis of variance (ANOVA), correlation, simple linear regression analysis, and time-to-event analysis (survival analysis).

Many published studies did not have samples large enough to rule out clinically important differences, even if such differences were to be found in the data. Thus, the fact that sample-size calculations are described in their own chapter (Chapter 7) appropriately emphasizes this important, if neglected, aspect of study design.

Chapter 8 describes the logic behind diagnostic test characteristics and prognostic studies, such as sensitivity, predictive values, likelihood ratios, receiver operating characteristics curves, and Bayes's theorem. By nature, these concepts are difficult to understand in the short-term. Any difficulty encountered by readers should be attributed to the concepts, not to the text, which, as in the rest of the book, provides clear explanations and illustrative examples.

Chapters 9 and 10 cover other topics of interest, such as the notion of causality, differences between clinical and statistical significance, differences between absolute and relative risk, and how to use statistical software programs.

Publication is the final stage of research, and an appealing part of the book is Chapter 11, which describes how to write and publish a scientific article. The important points are addressed, including issues of authorship, journal selection, rejection, and even dealing with the media.

The book closes with a list of the steps to follow in planning and conducting clinical research. The index is adequate.

In summary, this book does what the author intended it to do, and does so with great skill and grace. It is reasonably priced and will be a valued reference for some time to come. What's not to like?

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Bronchial Asthma: A Guide for Practical Understanding and Treatment, 5th edition. M Eric Gershwin MD and Timothy E Albertson MD MPH PhD, editors. *Current Clinical Practice* series, Neil S Skolnik MD, series editor. Totowa, New Jersey: Humana Press. 2006. Hard cover, illustrated, 405 pages, \$125.

Bronchial Asthma: A Guide for Practical Understanding and Treatment, 5th edition, has 19 chapters, which cover the epidemiology of asthma, diagnosis, testing, management, and medication in various patient groups, including children, pregnant women and perioperative patients. In addition there are interesting sections on living with asthma, complementary/alternative therapies, and asthma and the law. The editors are physician-scientists trained in clinical immunology and pharmacology (Gershwin) and pulmonary/critical care medicine (Albertson). The contributors are practitioners and researchers from the United States. This 5th edition incorporates information on new pharmaceuticals and has a chapter on the effects of foods and additives.

The Introduction indicates that the book was designed to be a resource for family physicians, internists, allergists, and nurse practitioners, and it does achieve that, and more. One might ask why a textbook such as this is needed on asthma, particularly when the National Heart, Lung, and Blood Institute guidelines are readily available online, as are review articles and nearly all peer-reviewed publications. However, this book provides in one place a compilation, interpretation, and summary of scholarly work and guidelines into largely clinically relevant topics.

One of the greatest problems with textbooks, in general, is the time lag caused by the editing, printing, and distribution process. In many chapters in this book the most recent research cited is from 2003 or 2004, which is not a critique of any of the authors, but rather a problem of medical textbooks in general. However, one of the greatest problems with the medical literature is the seemingly endless number of articles on a topic; therefore, a resource that compiles masses of information into a format that both educates and provides clinically useful information in less than 400 pages is invaluable.

There are some particular gems among the chapters in this text. The third chapter, on pulmonary function testing, is excellent;

it provides a comprehensive enough overview of the concepts and measurements, as well as indications and interpretations, to make it a useful guide to primary-care physicians, house officers, and fellows. Similarly, the chapter on childhood asthma provides useful information, sensibly organized, and includes medication overviews and dosing.

The chapter on infectious and environmental triggers is one of the most comprehensive reviews I have read on this topic. The chapters on special problems in asthma, such as foods and additives, are particularly timely and well done, because there has been so much information in the lay press; so this is a topic about which primary-care and other physicians are probably interested and seeking knowledge.

There are a few problems with the text: there are some unusual abbreviations, grammatical errors, incorrect references, and factual errors. There is also marked variability among the chapters, in organization and presentation of recommendations. Several authors are very clear on which assertions and recommendations are based on research, versus on expert or consensus opinion, and which recommendations represent the author's own opinion, but this is not the case in all the chapters. In the vast majority of chapters, however, the material is presented in a very organized and useful manner.

Acknowledging those minor limitations, this textbook provides in a single volume a large compilation of what has become an overwhelming amount of information about asthma. It is more than just a clinical resource, as it incorporates and summarizes decades of research to inform the clinician on theories and the direction of asthma research. This is an excellent resource for those interested in more than just the dose of a medication or a management strategy; it's got everything, and is thus a tremendous resource for primary-care practitioners, subspecialists, and fellows in training.

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