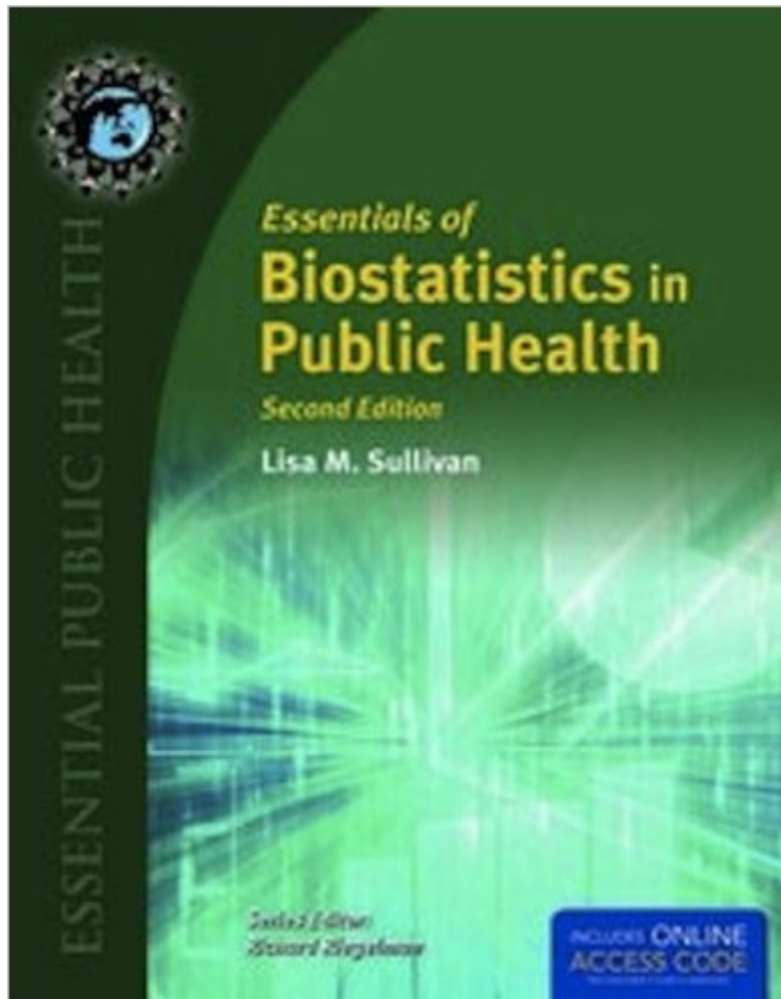


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# Essentials Of Biostatistics In Public Health (Essential Public Health)



## Synopsis

Essentials of Biostatistics in Public Health, Second Edition provides a fundamental and engaging background for students learning to apply and appropriately interpret biostatistics applications in the field of public health. Many examples are drawn directly from the author's remarkable clinical experiences with the renowned Framingham Heart Study, making this text practical, interesting, and accessible for those with little mathematical background. The examples are real, relevant, and manageable in size so that students can easily focus on applications rather than become overwhelmed by computations. The text is accompanied by an online workbook: Statistical Computing Using Microsoft Excel (for Mac or PC). New Features of the Second Edition:

- Learning objectives and more practice problems for every chapter
- A new chapter on survival analysis
- A new chapter on nonparametric statistics
- Coverage of sensitivity, specificity, and performance of screening tests connecting probability to real and important applications
- An expansion of the chapter on multivariable methods with more emphasis on interpretation of multivariable regression
- A bank of questions for the audience response system (clickers) for instructors

Looking for more real-life evidence? Check out Case 4 in Essential Case Studies in Public Health, Putting Public Health into Practice.

## Book Information

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## Customer Reviews

I bought this book as a requirement for a grad school class and I'm not happy with it. It's very wordy

and doesn't help much in understanding/solving math problems. Also, it uses a lot of graphs/tables and then references them in the text but the problem is that the text and the graph/table are on separate pages so you keep having to flip back and forth to see what she's talking about. I've read other explanations of a lot of her topics and find that it clicks much better when I'm reading explanations from other sources. I find myself re-reading what she's written multiple times without the concepts making too much sense. I wish her explanations were more concise so I wouldn't find myself zoning out while reading the wording commentary.

This book is god awful when it comes to structure, variety, and explaining in a concise manner. Starting with structure, the book is very table and detail heavy. This makes for a frustrating combination because while details are typically appreciated especially in a statistics book, certain paragraphs will refer to tables that are sometimes a few pages over either because there is so much detail or so many damn tables. This involves flipping back and forth constantly between pages so you can figure out what the author is talking about and that makes studying this material absolutely tedious. As for variety, there is not much of a wide breadth of studies that make the book interesting. It deals with the Framington Heart Study heavily and little else. This may have its advantages insofar as its consistency keeps readers from getting confused but it makes for one of the most monotonous reads I have ever had in a textbook or any book for that matter. Finally, though I previously mentioned that details can be good for statistics books there is a point where too much detail can confuse the reader because it gives them too much to keep track of. That is certainly the case here and no additional favors are granted to this by the poor structure either. The only thing that honestly makes this book worth it is the online workbook which gives you a helpful hand in learning functions and statistical analysis in excel. Be warned though, because they put about a year and half limit as to how long you can access the workbook. This also means that if you want the most useful part of the textbook you pretty much have to buy a new copy out of sheer necessity. If your professor assigns this book, make sure you have lots of time to read it because its trifecta of unnecessary frustrations will take you a while to drudge through. I would recommend supplemental reading as well like that of *Biostatistics: The Bare Essentials* by Norman and Streiner. They actually manage to add humor to *Biostatistics* while avoiding the aforementioned problems. Only bad thing is that they don't use excel so you would still have to buy Sullivan's loathsome book.

This book is a basic text in most of the important aspects of biostatistics that are useful in public health research. It is designed for an introductory level course most likely for undergraduate majors

in public health. A valuable aspect of the book is the author's experience with the Framingham Heart Study. Many of the examples are drawn from the data in that study. Also, the author provides some background about this famous study. There are plenty of examples. Figures, tables, key ideas and formulas are displayed in block form. The author does a very good job describing various types of research studies including clinical trials. Case - control studies which are important in epidemiology and hence for public health are covered nicely but a little more depth would have been helpful considering the importance of these studies to public health. For example there is no discussion of the various types of matching methods such as propensity score matching. It is an interesting point that high ratios of controls to cases do not add much accuracy over 2:1 or 3:1 ratios. But some examples illustrating the point would have helped a lot. Group sequential and adaptive designs are omitted. These designs are getting a lot of use in the pharmaceutical and medical device industries regarding clinical trials used to support NDAs and PMAs. The FDA has a great deal of interest in these trials and even published a guidance document about their use. Although the topic is somewhat advanced it is an important area in biomedical research and should be discussed in basic terms. Contingency table analysis is essential to biostatistics in public health. While it is treated in Chapter 4 and Chapter 9, I believe it deserves a more thorough treatment, perhaps even a whole chapter. The chi square test is mentioned but the limitations are not. Because it is an approximate method that is inaccurate when cells are sparse these limitations should be discussed. Also there is no mention of Fisher's exact test which is always available even when there are sparse cells. I agree that all the topics covered in the book are essential and some excellently chosen topics are not covered in most texts (e.g. the chapter on quantifying the extent of a disease). The essential topics covered are (1) study designs (2) quantifying the extent of disease, (3) summary statistics and graphics, (4) fundamentals of probability, (5) confidence intervals and hypothesis tests, (6) determining sample size and power, (7) contingency tables, (8) regression and correlation (9) logistic regression, (10) nonparametric tests and (11) survival analysis including Kaplan-Meier estimates and Cox proportional hazard models. Topics that I consider essential which I included in my recent text but are not covered in Sullivan's book include (1) longitudinal data analysis and repeated measures analysis of variance, (2) parametric survival models, (3) bioequivalence and non-inferiority testing (4) meta analysis, (5) stem-and-leaf diagrams, (6) pie charts, (7) group sequential and adaptive designs and (8) basic resampling ideas. Although probably not essential I think that cure rate models can also be covered along with survival models and tests such as McNemar's test. There is good coverage of box-and-whisker plots, histograms, bar charts and summary statistics such as mean, median and mode, and standard deviation and interquartile range

(covering both location and dispersion measures). Also the distinctions between dichotomous, ordinal, categorical, discrete and continuous variables are covered carefully. There is some coverage of diagnostic testing but mostly in the chapter on the role of probability rather than separately included as a special form of hypothesis testing. Overall, I think this is a good book for its intended audience. Unfortunately, I think it misses a few of the essentials of biostatistics and treads too lightly on some of the important concepts that are covered.

I had a very hard time with the majority of this text - which is primarily computations. The chapters are poorly organized and make tracking the process of computations very difficult. Especially if you have little math or stats experience as I do.

This book is fairly easy to understand. The only negative aspect about it is that there is no 'key' or answers to the practice questions at the end of the chapter. My professor emailed the publisher and is waiting for the answers to be sent to him. It is the 4th week of class, however, and my professor has not received the answer key.

Absolutely one of the worse statistics books I've ever encountered. Poorly written with little that seems to flow from one chapter to another. Also, the book seems almost useless without the code that allows for online access to quizzes and related materials (which in my case was unavailable as I rented a used copy from ). Frankly, I and several others have learned more using information available online (e.g., YouTube, Google) than we ever could have experienced using this book. Be warned...

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