

Preface

This book aims to fill the need for a short, down-to-earth, high-yield survey of biostatistics, and judging by the demand for a fourth edition, it seems to have succeeded so far.

One big change in this edition: in anticipation of an expected major expansion of the material to be included in the USMLE Content Outline, with the inclusion of Epidemiology and Population Health, this book covers much more material. The USMLE (US Medical Licensing Examination) is also focusing more and more on material that will be relevant to the practicing physician, who needs to be an intelligent and critical reader of the vast amount of medical information that appears daily, not only in the professional literature but also in pharmaceutical advertising, news media, and websites, and are often brought in by patients bearing printouts and reports of TV programs they have seen. USMLE is taking heed of these changes, which can only be for the better.

This book aims to cover the complete range of biostatistics, epidemiology, and population health material that can be expected to appear in USMLE Step 1, without going beyond that range. For a student who is just reviewing the subject, the mnemonics, the items marked as high-yield, and the ultra-high-yield review will allow valuable points to be picked up in an area of USMLE that is often neglected.

But this book is not just a set of notes to be memorized for an exam. It also provides explanations and (I hope) memorable examples so that the many medical students who are confused or turned off by the excessive detail and mathematics of many statistics courses and textbooks can get a good understanding of a subject that is essential to the effective practice of medicine.

Most medical students are not destined to become producers of research (and those that do will usually call on professional statisticians for assistance)—but all medical decisions, from the simplest to the most complex, are made in the light of knowledge that has grown out of research. Whether we advise a patient to stop smoking, to take an antibiotic, or to undergo surgery, our advice must be made on the basis of some kind of evidence that this course of action will be of benefit to the patient. How this evidence was obtained and disseminated, and how we understand it, is therefore critical; there is perhaps no other area in USMLE Step 1 from which knowledge will be used every day by every physician, no matter what specialty they are in, and no matter what setting they are practicing in.

I have appreciated the comments and suggestions about the first three editions that I have received from readers, both students and faculty, at medical schools throughout the United States and beyond. If you have any ideas for changes or improvements, or if you find a biostatistics question on USMLE Step 1 that you feel this book did not equip you to answer, please drop me a line.

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