Statistical Methods in Diagnostic Medicine, 2nd Edition
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DESCRIPTION

Praise for the First Edition

"... the book is a valuable addition to the literature in the field, serving as a much-needed guide for both clinicians and advanced students."—Zentralblatt MATH

A new edition of the cutting-edge guide to diagnostic tests in medical research

In recent years, a considerable amount of research has focused on evolving methods for designing and analyzing diagnostic accuracy studies. Statistical Methods in Diagnostic Medicine, Second Edition continues to provide a comprehensive approach to the topic, guiding readers through the necessary practices for understanding these studies and generalizing the results to patient populations.

Following a basic introduction to measuring test accuracy and study design, the authors successfully define various measures of diagnostic accuracy, describe strategies for designing diagnostic accuracy studies, and present key statistical methods for estimating and comparing test accuracy. Topics new to the Second Edition include:

* Methods for tests designed to detect and locate lesions
Recommendations for covariate-adjustment

- Methods for estimating and comparing predictive values and sample size calculations

- Correcting techniques for verification and imperfect standard biases

- Sample size calculation for multiple reader studies when pilot data are available

- Updated meta-analysis methods, now incorporating random effects

Three case studies thoroughly showcase some of the questions and statistical issues that arise in diagnostic medicine, with all associated data provided in detailed appendices. A related web site features Fortran, SAS®, and R software packages so that readers can conduct their own analyses.

Statistical Methods in Diagnostic Medicine, Second Edition is an excellent supplement for biostatistics courses at the graduate level. It also serves as a valuable reference for clinicians and researchers working in the fields of medicine, epidemiology, and biostatistics.

About the Author

Xiao-Hua Zhou, PhD, is Professor of Biostatistics at the University of Washington and Director and Research Career Scientist at the Biostatistics Unit of the Veterans Affairs Puget Sound Healthcare System. He is a Fellow of the American Statistical Association and the author of more than 100 published articles on statistical methods in diagnostic medicine and causal inferences.

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