Book, Software, and Web Site Reviews


All quality-control (QC) programs have two things in common: collect data on a predefined system and use these for evaluation. What data, how frequently they are collected, and how they are used to the best effect should be a function of the systems that are being monitored.

This book provides guidance that clinical laboratories will find useful for meeting their needs. It contains clear explanations of current thinking for monitoring performance of clinical laboratory tests, taking into account the improved performance of modern systems compared with those available when Levey and Jennings first published their scheme in 1950. The author meets the difficult challenges of establishing an effective system, starting with creation of goals for each analyte, through providing help with using QC to identify corrective actions. Keys to this book are that "one-size does not fit all" for goals (ideal vs practical), as discussed in Chapter 3 (Aligning Laboratory Results with Quality Specifications), and choosing what QC rules apply for each need, as discussed in Chapter 5 (Choosing Our Own Rules). Other chapters and appendices can be very useful as an aid in troubleshooting problems. The worksheets are especially helpful to systemize the data and information to arrive at appropriate conclusions about performance. Reminders about differences of random variability vs "special causes" and how to evaluate and manage them should reduce the number of false rejections in today's busy laboratories. Also emphasized is that 100% yield (all results are acceptable) is a worthy and achievable goal if systems are used that meet the defined quality specifications of the director and medical staff.

I found the use of the first person plural to be pedantic and not worthy of the content. In addition, I would like to see additions to the Glossary of Terms that include international terminology, such as "repeatability" (comparable to within-run precision) and "reproducibility" (precision to include additional components, such as day-to-day or laboratory-to-laboratory performance), so that readers can become familiar with the vocabulary of the growing numbers of international standards. Some diagrams of gaussian distributions need improvement; with the graphic capabilities available today, bell curves should not have to look like gumdrops.

All the rules in this book are based on the assumption of gaussian-shaped variability, but today, when long-term calibrations are often used, small but obvious drift can be observed. Ms. Brooks mentions drift briefly as a potential problem, but fails to address when it might impact the establishment and use of performance-driven QC.

Finally, the area in which laboratories most often need advice is on how to assign appropriate means for QC charts (as an estimate of truth), so a fair comparison can be made of performance to quality specifications. Recommendations are based on retrospective data: historical performance, use of peer group data from interlaboratory schemes, or reluctantly, from QC material package inserts. A mechanism for assigning a prospective or current mean would be of special interest to the laboratory (and to this reviewer) so that a laboratory has confidence that its QC program will be effective and efficient right from the start.

Performance-Driven Quality Control is a challenging task, but it is one worth doing. This book should be a mainstay for any laboratory's quality assurance officer to meet that challenge and, more importantly, meet the needs of the patients and healthcare providers who are served.

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Genomics Protocols was compiled as a comprehensive manual for whole-genome research and analysis. The topics can be put loosely into five categories: gene mapping (including discovery, identification, and localization), expression profiling, protein structure and function, gene therapy, and bioinformatics. Therefore the content is broader than genomics, covering "genomic-scale" research. The book is written for researchers in the field who want to expand their genomic analysis as well as researchers who want to enter into this world. Each section is complete with background information, detailed materials, step-by-step methods, and notes.

Different authors contributed to each of the more than 30 chapters in this book. An advantage of numerous contributors is that each chapter is written by experts who have performed the experiments successfully. Because of the multiple contributors, similar procedures are outlined in several chapters, although examining overlapping methods of different laboratories may be useful in setting up the procedure in your laboratory. Chapters also differ slightly in the detail provided.

Although this is a comprehensive book, the editors may not have achieved the goal to provide a guide for beginners in the field. The methods are detailed, but a true beginner may have difficulty with some of the terminology. An exciting potential exists to transition some of these methods into the clinical laboratory. Near-future clinical applications include single-nucleotide polymorphism (SNP) haplotyping for complex genetic diseases, expression profiling for cancers, and gene therapy. Clinicians interested in setting up these methods will need to modify the protocols to meet clinical needs.

Highlights of the book include...