

Preface

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This new text replaces *Pharmacoepidemiology: An Introduction*, which was the first published textbook of pharmacoepidemiology and emerged from a successful series on pharmacoepidemiology published in *The Annals of Pharmacotherapy* in 1987. For many of us this series defined the scope of pharmacoepidemiology. It certainly unified the field. Numerous advances and data have entered the field since the third edition of the *Introduction* books was published—so many that a significantly expanded text, in both size and topics, merits a new, rather than just updated, presentation.

The past several years have produced a sea of changes from the prior approach to drug safety, often situational or even haphazard in response to signal detection, to a more systematic approach supporting the clinical uses of drugs throughout their life cycle and positively guiding our appreciation of the balance of benefits and risks of the product in actual use. The information presented here reflects the current regulatory thinking of the United States Food and Drug Administration (FDA) and the European Medical Evaluation Agency (EMA), as well as the responsible leadership of all other parties involved in drug safety, particularly the pharmaceutical industry. This new formulation, as we describe in the book, emerged formally in United States legislation through amendments to the Prescription Drug User Fee Act jointly proposed by the pharmaceutical industry and the FDA.

As a reader, you may observe that we consider therapeutic risk management to be not a minor extension of pharmacoepidemiology but an integral topic area that deserves significant coverage. Consequently, you will find a comprehensive presentation on pharmacoepidemiology and a separate section on therapeutic risk management. Pharmacoepidemiology has evolved greatly over the last few years and other fields have contributed so much to our knowledge. For example, the adoption of novel statistical methods has contributed analytical techniques such as propensity scores, allowing us to handle confounding in a different manner.

Bayesian statisticians have expanded analytic methods in pharmacovigilance by providing the statistical underpinning of data mining techniques useful in secondary signal detection. The behavioral sciences have contributed significantly to our approaches to therapeutic risk management and our understanding of what health statuses and outcomes patients value. These topic areas are deservedly discussed in this text by the experts in these fields.

We have also found it important to present therapeutic risk management through a number of case studies to illustrate the principles of pharmacoepidemiology reasoning.

Drug utilization has found a new “utilization” and new applications—even a new “home” in the International Society for Pharmacoepidemiology—necessitating more than one presentation here. Medications have found an increased application as quality indicators for the practice of medicine, and approaches have emerged to establish the epidemiologic principles underlying pay-for-performance systems.

Pharmacoepidemiology and Therapeutic Risk Management has a dramatically expanded scope compared with the introductory texts, in its depth as well as its reach, reflecting pharmacoepidemiology’s expanding contribution to society. However, as drugs are the most regulated entity in the healthcare system (and, as others have observed, the most commonly prescribed therapeutic modality and the most cost-effective of all treatments—with notable exceptions, also mentioned in our text), a book such as ours can not and must not pretend to be either complete or entirely up to date. Rather, we hope to provide you with a framework and a context within which to understand many of the factors and relationships that define the drug utilization and safety protection process in our society. Therefore, we urge you to directly consult the official guidances cited in this compendium and published by the FDA and the EMEA as the definitive sources for current required practice. Up-to-date sources of information on legislation impinging on pharmacoepidemiology are also accessible to all. The United States legislation is published in the Code of Federal Regulations (CFR; www.gpoaccess.gov), for Europe, in the Council Directives or Council Regulation (<http://europa.eu.int>). Individual country legislation should be consulted as a final source of information by the reader for local compliance and other requirements. Our field is dynamic and moving rapidly. While we try to anticipate some of these changes, the professional in the field should closely follow deliberations on future regulation and legislation. These are in the public domain and comments often are solicited as new regulation is proposed.

Increasingly more information is available on the Web. Listings of new drugs in development are posted at the Pharmaceutical Research and

Manufacturers Association (PhRMA) Web site (www.PhRMA.org). Clinical trials are required to be registered and some protocols are posted at the National Institutes of Health Web site (www.clinicaltrials.gov). The current United States drug labels are available at the National Library of Medicine, National Institutes of Health (<http://dailymed.nlm.nih.gov/dailymed/about.cfm>), and the FDA Web site (www.accessdata.fda.gov/scripts/cder/drugsatfda/). Guidances issued by the FDA are posted on the Web and form outstanding background material (www.fda.gov/CDER/guidelines.htm; www.fda.gov/CDER/guidance/index.htm). Web-based video broadcasts of the advisory committee deliberations on New Drug Applications are made accessible to the public through commercial vendors. These and other Web sites provide the most up-to-date and important sources of information for all involved in pharmacoepidemiology. Both the FDA and EMEA have made great strides in fostering the transparency of the regulatory process. Taken together, these remarkable strides in public information dramatically change the role of a textbook such as this one. Rather than pretending to give the most current version of such readily available materials, we have instead focused on digging below the surface to try to provide understanding and the tools for independent fact-finding.

Pharmacoepidemiology and Therapeutic Risk Management has been designed to reach many different audiences. On the one hand, it is intended for use in academia: in graduate classes and by upper level undergraduates with an interest in pharmacoepidemiology and for faculty, including those who have to fulfill the American Association of Colleges of Pharmacy requirements for teaching pharmacoepidemiology in professional programs. However, practicing professionals in the field will also find it useful, both as a refresher for those with a different set of quantitative skills making a career shift toward pharmacoepidemiology and as a skill and knowledge builder for those established in their pharmacoepidemiology career but wishing to expand their horizons and reconnect with the cutting edge.

As the editors, we eagerly seek your comments, suggestions, and experiences as you use this book to strengthen your practice, learning, or teaching of this exciting subject matter. With your help we will continue to be able to strengthen future editions.

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