Principles and Practice of TOXICOLOGY in Public Health

SECOND EDITION

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Dedication

This text is dedicated to the memory of my parents for all that they have done for me, and to Arun Kulkarni, teacher, scholar, and friend. —I.R.

This text is dedicated to the memory of my father, Patrick Meagher, who lost his battle with Alzheimer’s disease. —M.B.
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Preface

Toxicology deals with the harmful effects that can potentially result from exposures to chemical agents in humans and other organisms. Before 1970, there were virtually no academic programs of study in toxicology. Today, there are hundreds of colleges and universities that offer programs at the bachelor’s level through the doctoral level, providing the requisite education for the student of toxicology. Recognition of the important role that the discipline plays in the protection of health and the environment has also led to the development of programs in the interdisciplinary academic setting that are geared toward students at schools and colleges of public health. Such beginning courses in toxicology are typically offered at the graduate level and attended by individuals with interests as diverse as environmental health, industrial hygiene, epidemiology, biostatistics, medicine, nursing, law, engineering, biology, and chemistry, as well as toxicology. Clearly, this is a very heterogeneous population of students, all viewing the practice of public health and public health issues from different perspectives.

Although the study of toxicology at a level commensurate with earning a graduate degree in this concentration may be beyond the scope of most students of public health, we should recognize that most, and perhaps all, public health students should be at least exposed to some of its content. The content selected in *Principles and Practice of Toxicology in Public Health, Second Edition* is intended to provide both groups of students with an understanding of the nature and scope of the discipline. This is necessary to participate in a meaningful way in the often highly visible problem-solving and decision-making processes required of public health professionals. Whether we are dealing with issues as diverse as a workers’ compensation claim for a job-related exposure and injury or the removal of toxic wastes from an urban community, we must be able to communicate with each other, the public, and our political leaders concerning how chemicals can, and the conditions under which they may, realistically produce harm. Understanding is a requirement for establishing rational and better ways to protect and manage individuals, populations, communities, and our environment from the potentially harmful
effects of chemical exposures. A required introduction to the scope and content of toxicology for public health students should therefore be viewed not as a punishment, but rather as an important part of a general education.

Public health professionals working in municipal departments of public health are generally very well informed about biological agents and perhaps less informed about chemical exposures and toxicity. In our “preparedness” for the general public, and especially in these troubled times, we recognize that both biological and chemical agents constitute important concerns, and it is anticipated that this text will provide some additional background and information for you as well.
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What’s New in the Second Edition

- Thoroughly updated with recent data and the latest information on topics such as carcinogen classification, environmental chemistry, and bacterial, plant, and animal toxins
- All new chapter on endocrine toxicology
- New “Case in Point” feature incorporating relevant current events and case studies
- New “A Closer Look” feature with toxicological information
- New glossary terms, as well as clarification of toxic and hazardous terminology
- New and updated tables and figures