EPIDEMIOLOGY
FOR THE
HEALTH SCIENCES

Seventh Printing

Epidemiology for the Health Sciences

A PRIMER ON EPIDEMIOLOGIC CONCEPTS AND THEIR USES

By

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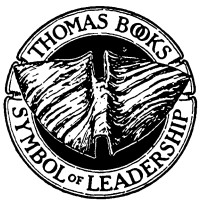

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PREFACE

THIS MANUAL had its origin in a teaching aid we developed for our graduate students in a basic epidemiology course at the School of Public Health, University of California, Berkeley. Each chapter was subjected to extensive student evaluation in subsequent classes at the University of California and was revised on the basis of those evaluations. It has helped students achieve an understanding of epidemiologic concepts with a freshness, ease and directness not possible with standard textbooks.

This manual is not intended to replace classic standard textbooks such as Fox et al and MacMahon et al; rather, we hope the interest in certain topics generated by this manual will encourage the serious student to pursue interests in those texts and in other literature.

The manual is intended primarily for non-epidemiology majors who must gain and retain a basic understanding of epidemiologic principles in their courses of *epidemiology* or *preventive medicine* wherein there is neither the time, interest, nor sophistication to read the standard textbooks. It will, therefore, be of value to medical students, students in schools of public health, nursing schools, dental schools, pharmacy schools and indeed of value to students in all the health sciences.

D.F.A.
S.B.W.

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EPIDEMIOLOGY
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Chapter I

HOW TO USE THIS MANUAL

THIS MANUAL is not the kind that looks impressive sitting on a bookshelf—but since you have it, read it. Skip over the parts that you already know and the parts that are easy. If everything in it is easy for you, give the manual to somebody else or return it. Save any hard parts for a time when you can think about them a bit, like when it is quiet. None of it is really hard, but you are likely to miss a point if you try to read it while watching a sunset, listening to stereo, or eating a sandwich.

This manual was not written to satisfy a publisher or an editor, so we have taken some literary liberties with grammar and such. If that bothers you, you may prefer a textbook. This was written to help people who aren't in tune with the subject of epidemiology become people who are. It is written in conversational English, and some may feel insulted at certain points. Even so, after finishing this manual, you should understand the key concepts of epidemiology and be able to rap knowledgeably with epidemiologists, if for some reason you ever wanted to.

Each chapter is devoted to one or two concepts and there is a glossary of sorts in the back. You might scan through the glossary to see if we agree on meanings. If we don't, check a text; we're fallible.

Incidentally, you don't have to do any complex statistics to *understand* epidemiology (just adding, subtracting, multiplying, and dividing).

Chapter II

WHAT IS EPIDEMIOLOGY AND WHY

Development

EPIDEMIOLOGY is the study of how and why diseases are distributed in the population the way they are . . . in other words, the study of why some get sick and some don't. Epidemiologists consider epidemiology to be a science. Some also claim it is a philosophy, an art, or a methodology. Actually, epidemiology is just a way of looking at things in a slightly different way . . . because you appreciate what things are important. (Like after you read a book on psychology or anatomy you look at people slightly differently than you did before . . . because you have become aware of ids or egos or where the liver is, etc.) Two things epidemiologists keep in mind when making epidemiological considerations are called "the population at risk" and rates. These are explained later.

Non-historical people might skip this section. A long time ago people made their decisions based on observations and common sense. (Some still do.) For instance, people who noticed that those who ate the yellow snow made faces, like yech!, decided not to eat yellow snow. If people who lived near a river got sick more often than people who didn't, then the observant thinkers moved away from the river. Evidently, being near the river was risky. Epidemiologists today might say "Residing in proximity to the river is a risk factor." But the ancient types didn't say that. They just moved or got sick. Very observant and interested ancients noticed that a lot of other things affected the patterns of illness. Hippocrates discussed many of them in his treatise *On Airs, Waters, and Places.* Modern epidemiologists really turn on reading this, possibly because Hippocrates was so advanced for his time. (This makes a good gift for an epidemiologist if you're trying to make points.) The other possibility is that today's