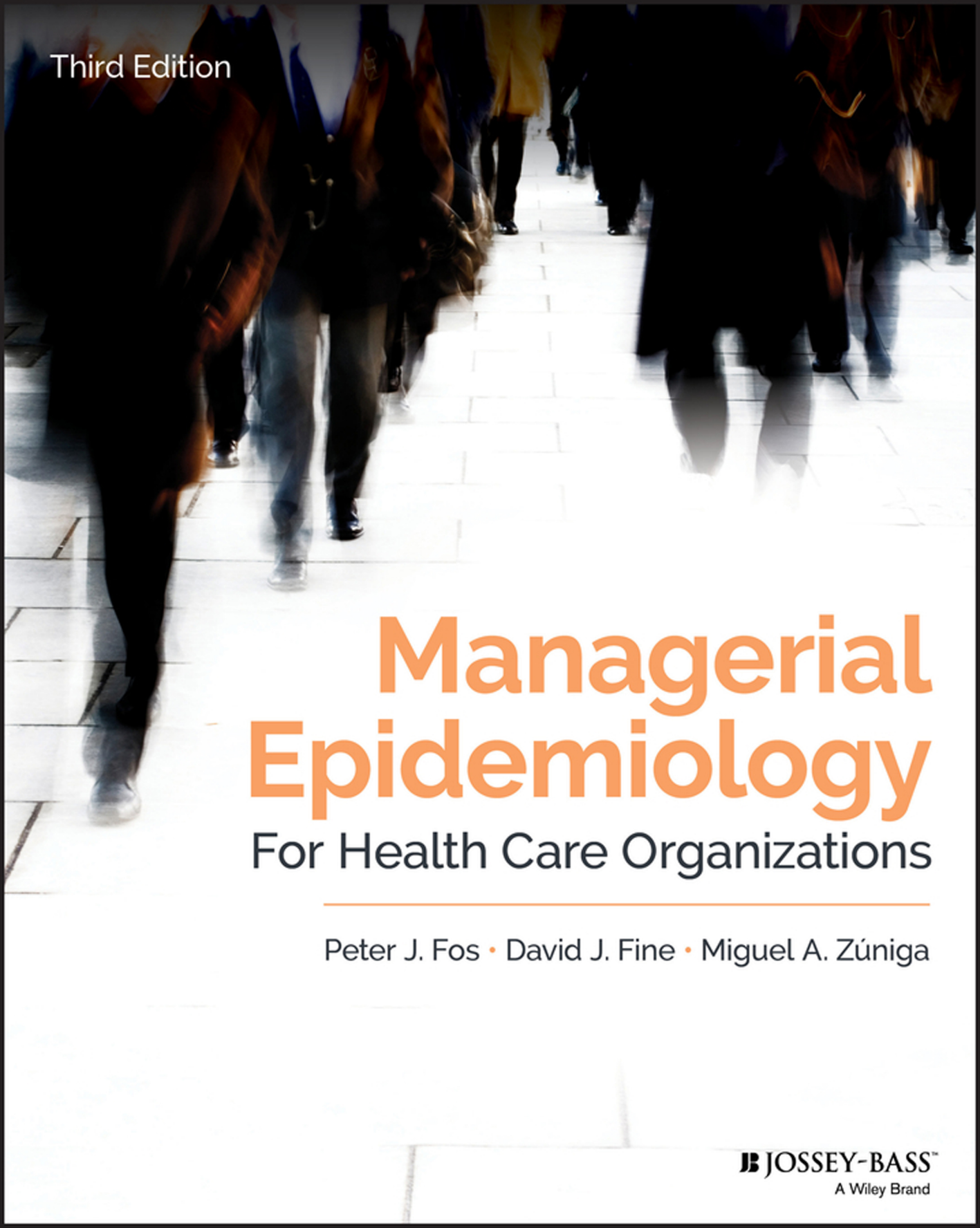




Third Edition

Managerial Epidemiology

For Health Care Organizations

Peter J. Fos • David J. Fine • Miguel A. Zúniga

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Managerial Epidemiology for Health Care Organizations



MANAGERIAL EPIDEMIOLOGY FOR HEALTH CARE ORGANIZATIONS

THIRD EDITION

Peter J. Fos
David J. Fine
Miguel A. Zúniga

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For Scarlett, Stella, and Piper
PJF

In loving memory of Christopher Lee Fine
DJF

For Miguel and Toñita
MAZ

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PREFACE

This book is intended to introduce the student and practitioner of health care management to the notion of health care for populations and the science of epidemiology. When the first edition of this book, *Designing Health Care for Populations: Applied Epidemiology in Health Care Administration* (Jossey-Bass, 2000), was written almost 20 years ago, outside the field, epidemiology was viewed by many as a questionably relevant, but certainly complicated set of terms, formulas, and statistics. This view was also prevalent when the second edition, *Managerial Epidemiology for Health Care Organizations* (2nd edition; Jossey-Bass, 2005), was published. However, given the recent changes in health care reform, epidemiology is now recognized as a core discipline pertinent to all branches of health care, including management. The initial motivating purpose of the text was to illustrate both the relevance and benefit of epidemiology in the field of health care management and population health management.

This is still the case with this latest edition. This revised edition has been jointly written by authors who bring a medical, managerial, and epidemiological perspective to the work. Contemporary applications of epidemiology in health care management include monitoring quality and effectiveness of clinical services, strategic and program planning, marketing,

and insurance and managed care—as well as such traditional uses as tumor registries, infection control programs, and public health programming. This newest version has been written to introduce epidemiology principles, reinforce the traditional uses of contemporary epidemiology, and attempt to illustrate clearly the contemporary uses in planning, evaluating, and managing health care for populations. Health care reform initiatives are discussed throughout, with emphasis on the influence of epidemiological principles.

Perhaps the most important purpose of this book is teaching the practical application of epidemiology in health care management. Each chapter has been written to present epidemiologic principles, followed by examples and applications. Concepts, examples, and case studies are presented to allow the student and practitioner a way to understand epidemiology and its application in the design and management of health care for populations.

The text is organized in the following manner. Chapter One introduces the reader to the science of epidemiology. Definitions of epidemiology and an overview of its history in management are presented. Also, the transition from the traditional role of health care management to its new role in population health is outlined. A historical perspective on the development of epidemiology into a scientific discipline is presented. Recent health care reform is presented.

Chapter Two discusses the health and needs of populations and its use in management. Included in this chapter is a discussion of commonly available sources of data. Chapter Three presents epidemiological measures used in health care, with emphasis on those measures of importance to managers. Chapter Four presents study designs and measures of association of the cause and effect relationship of health and disease across and among populations. Clinical trials, as an example of experimental study designs, are presented, along with the more commonplace observational designs. Chapter Five introduces the concept of confounding, the problem of misleading data interpretation, and methods to address this problem. Included in this chapter is a discussion of the standardization of epidemiologic data and risk adjustment.

Chapter Six introduces clinical epidemiology as the core discipline of clinical outcomes research, clinical effectiveness, and medical management. This chapter covers topics including validity and reliability and other measures of test performance. Chapter Seven, which is a new chapter in this edition, presents infectious disease epidemiology, including epidemiological

surveillance and monitoring infections. Health care–associated infections are discussed. Chapter Eight, another new chapter, covers reimbursement methods in use today and the role of epidemiology in determining reimbursement and performance. Chapter Nine provides a discussion of health outcomes assessment and the relationship between traditional epidemiological concepts; benchmarking, best practice, practice guidelines, and the measurement of quality of care are presented.

Chapter Ten describes the relationship between epidemiology and economic analysis, including the manner in which epidemiological measures are used in the evaluation of health care delivery and the formulation of health care policy for populations. Burden of disease is discussed, with a focus on the economic impact of disease.

Chapters Eleven through Fourteen present case studies of the application of epidemiology to the planning for and management of health care for populations. Chapter Eleven presents a case study focusing on hospital inpatient services. The intent of this chapter is to apply general concepts presented throughout the text to establishing a plan for realignment of inpatient hospital services. Chapter Twelve presents a case study focusing on long-term care. Chapter Thirteen presents a case study illustrating the application of epidemiology to the study of emergency room services in a hospital network. Chapter Fourteen presents a case study focusing on physician practices.

Each chapter is supplemented with study questions. The purpose of the study questions is to aid the reader in understanding and applying the epidemiologic concepts presented within a management context.

We anticipate that the primary users of this text will be health care management students and practitioners, for whom we have presented the material in a practical and applied manner. This book can serve as a classroom text as well as an on-the-job reference for practitioners. After reading and using this book, we expect that the student or practitioner will understand and appreciate the relevance of epidemiology and look forward to using it in everyday health care management practice.

The preparation of this work has been the result of a multiyear collaboration, whose first product was the previously mentioned text. The authors of the first two editions have worked together for more than 30 years. This edition has a third author, who was our student and now is a colleague.

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