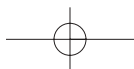
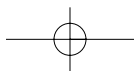
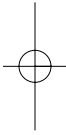
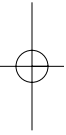


Public Health

What It Is and How It Works

Third Edition





Public Health

What It Is and How It Works

Third Edition

Bernard J. Turnock, MD, MPH
Clinical Professor of Community Health Sciences
School of Public Health
University of Illinois at Chicago
Chicago, Illinois



JONES AND BARTLETT PUBLISHERS

Sudbury, Massachusetts

BOSTON TORONTO LONDON SINGAPORE

World Headquarters

Jones and Bartlett Publishers
40 Tall Pine Drive
Sudbury, MA 01776
978-443-5000
info@jbpub.com
www.jbpub.com

Jones and Bartlett Publishers Canada
2406 Nikanna Road
Mississauga, ON L5C 2W6
CANADA

Jones and Bartlett Publishers International
Barb House, Barb Mews
London W6 7PA
UK

Copyright © 2004 by Jones and Bartlett Publishers, Inc.

All rights reserved. No part of the material protected by this copyright notice may be reproduced or utilized in any form, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without written permission from the copyright owner.

Library of Congress Cataloging-in-Publication Data

Turnock, Bernard J.

Public health: what it is and how it works/Bernard J. Turnock.—
3rd ed.

p.; cm.

Includes bibliographical references and index.

ISBN 0-7637-3215-X (pbk.)

1. Public health—United States. 2. Public health
administration—United States.

[DNLM: 1. Public Health Administration—United States. 2. Health
Services—United States. 3. Public Health—United States. WA 540 AA1
T95p 2004] I. Title.

RA445.T86 2004

362.1'0973—dc22 2003020187

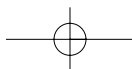
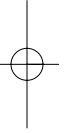
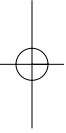
Production Credits

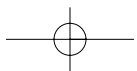
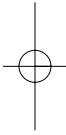
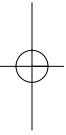
Publisher: Michael Brown
Associate Editor: Chambers Moore
Production Manager: Amy Rose
Production Assistant: Tracey Chapman
Marketing Manager: Joy Stark-Vancs
Manufacturing Buyer: Therese Bräuer
Composition: Shepherd Incorporated
Printing and Binding: Malloy, Inc.
Cover Printing: Malloy, Inc.

Printed in the United States of America

08 07 06 05 04 10 9 8 7 6 5 4 3 2 1

*In loving memory of my wife Colleen's parents,
Jim and Mary Hogan,
and my mother, Jane Turnock.*





Contents

Preface .....	.xi
Acknowledgments .....	.xv
Chapter 1: What Is Public Health? .....	.1
A Brief History of Public Health in the United States .....	.3
Images and Definitions of Public Health .....	.7
Public Health as a System .....	.11
Unique Features of Public Health .....	.14
Value of Public Health .....	.21
Conclusion .....	.27
Discussion Questions and Exercises .....	.28
Appendix 1-A: Selected History of Public Health Activities in Chicago, 1834–2003 .....	.31
Chapter 2: Understanding and Measuring Health .....	.39
Health in the United States .....	.39
Health, Illness, and Disease .....	.43
Measuring Health .....	.44
Influences on Health .....	.50
Analyzing Health Problems for Causative Factors .....	.66
Economic Dimensions of Health Outcomes .....	.68
Healthy People 2010 .....	.72
Conclusion .....	.78
Discussion Questions and Exercises .....	.78
Chapter 3: Public Health and the Health System .....	.83
Prevention and Health Services .....	.90
The Health System in the United States .....	.102
Changing Roles, Themes, and Paradigms in the Health System .....	.114
Conclusion .....	.118
Discussion Questions and Exercises .....	.119
Appendix 3-A: Managed Care and Public Health: Strange Bedfellows? .....	.122

viii *Contents*

Chapter 4: Law, Government, and Public Health	129
American Government and Public Health	130
Public Health Law	133
Governmental Public Health: Federal Health Agencies	137
Governmental Public Health: State Health Agencies	148
Governmental Public Health: Local Public Health Organizations	155
Intergovernmental Relationships	161
Conclusion	168
Discussion Questions and Exercises	169
Appendix 4-A: Administrative Law	171
Chapter 5: Core Functions and Public Health Practice	175
Public Health Functions and Practice Before the IOM Report	176
Public Health Practice and Core Functions After the IOM Report	181
Post-IOM Report Initiatives	191
Twenty-First Century Community Public Health Practice	199
Core Function Performance Through 2002	206
New Opportunities for Improving Public Health Practice	218
Conclusion	219
Discussion Questions and Exercises	220
Chapter 6: The Infrastructure of Public Health	223
Infrastructure, Ingredients, and Inputs	224
Human Resources in Public Health	225
Organizational Resources	241
Information Resources	246
Fiscal Resources	265
Healthy People 2010 Infrastructure Objectives	268
Conclusion	270
Discussion Questions and Exercises	270
Chapter 7: Public Health Interventions	275
Interventions, Programs, and Services	276
Categorizing Programs and Services of Public Health	278
Evidence-Based Community Preventive Services	284
Program Management in Public Health	295
Conclusion	308
Discussion Questions and Exercises	310
Chapter 8: Public Health Emergency Preparedness and Response	313
Public Health Roles in Emergency Preparedness and Response	313
National Public Health Preparedness and Response Coordination	326
State and Local Preparedness Coordination	332

Contents ix

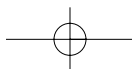
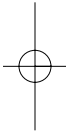
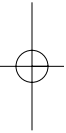
State and Local Bioterrorism Preparedness Grants341
Conclusion354
Discussion Questions and Exercises357

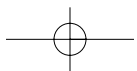
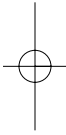
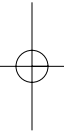
Chapter 9: Future Challenges for Public Health in America359

Lessons from a Century of Progress in Public Health360
Limitations of Twenty-First-Century Public Health365
The Future of Public Health in 1988 and 15 Years Later369
Conclusion: The Need for a More Effective Public Health System374
Discussion Questions and Exercises377

Glossary379

Index405





Preface

The dawn of the twenty-first century provides a unique opportunity to reflect on where we have been and what we have accomplished as a nation and as a society. For public health, it is truly an opportunity to examine what we might call, for lack of a better phrase, a Century of Progress. And what a spectacular century it has been!

My grandparents were children at the turn of the last century. At that time, they lived in a young and rapidly developing nation whose 75 million people held not unreasonable hopes of a long and healthy life. They also faced an alarmingly large number of health hazards and risks that, when taken together, offered them the prospect of an average life expectancy of only about 47 years. Smallpox, tuberculosis, pneumonia, diphtheria, and a variety of diarrheal diseases were frequent, although unwelcome, visitors. It was not uncommon for families to bury several of their children before they reached adulthood.

By the time my parents were children in the 1920s and 1930s, a variety of economic, social, and scientific advances offered more than one additional decade of average life expectancy, despite even the massive social and economic disruption of the Great Depression. Still, tuberculosis, scarlet fever, whooping cough, measles, and other diseases were common. Fewer childhood deaths occurred, but many families still experienced one or more deaths among their children.

Members of the post World War II Baby Boom Generation such as me and my four siblings enjoyed the prospect of living to and even beyond age 65 and the Golden Years. When I was a child, polio was one of the few remaining childhood infectious disease threats. Some of my most vivid childhood memories are of the mass immunization programs that took place in my home town. Childhood deaths were an uncommon experience and more likely due to causes other than infectious diseases.

As the twenty-first century unfolds, more than 270 million Americans, my children and yours, now look forward to an average life expectancy of about 80 years. Today there are no fewer than 22 different conditions for which immunizations are available—11 of which are recommended for use in all children—to prevent virtually all of the conditions that threatened their parents, grandparents, and great grandparents during the twentieth century.

xii *Preface*

Today children are even being immunized against cancer through the hepatitis B immunization preparations! Overall, childhood deaths have declined more than 95% from their levels a century earlier! That means that 19 of the 20 deaths that used to occur to children in this country no longer take place!

To many of us, a century seems like a long time. In the grand scheme of things, however, it is not, and it seems even shorter when we consider how our lifetimes are so interconnected. Just look at the connections linking each of us with our grandparents and our children and even our children's children, each of whom held, hold, or my hold quite different expectations for their lives and health. These links and connections play critical roles when it comes to understanding the value and the benefits of the work of public health. At the turn of the next century, an estimated 570 million Americans will be enjoying the fruits of public health's labors over the preceding centuries. The vast majority of the people who will benefit from what public health does are yet to be born!

As someone who has spent 15 years in public health practice and another 15 years in teaching and researching the field, I have been concerned about why those who work in the field and those who benefit from its work do not better understand something so important and useful. Throughout my career as a public health physician, I have developed a profound respect for the field, the work, and the workers. I must admit, however, that even while serving as director of a large state health department, I lacked a full understanding and appreciation of this unique enterprise.

What has become clear to me is that the story of public health is not simple to tell. There is no one official at the helm, guiding it through the turbulence that is constantly encountered. There is no clear view of its intended destination and of what work needs to be done, and by whom, to get there. We cannot turn to our family physicians, elected officials, or even to distinguished public health officials, such as our Surgeon General, for vision and direction. Surely, these people play important roles, but public health is so broadly involved with the biologic, environmental, social, cultural, behavioral, and service utilization factors associated with health that no one is accountable for addressing everything. Still, we all share in the successes and failures of our collective decisions and actions, making us all accountable to each other for the results of our efforts. My hope is that this book will present a broad view of the public health system and deter current and future public health workers from narrowly defining public health in terms of only what they do. At its core, the purpose of this book is to describe public health simply and clearly in terms of what it is, what it does, how it works, and why it is important to all of us.

Although there is no dearth of fine books in this field, there is most certainly a shortage of understanding, appreciation, and support for public health and its various manifestations. Many of the current texts on public health attempt to be comprehensive in covering the field without the benefit of a conceptual framework understandable to insiders and outsiders alike. The dynamism and complexity of the field suggest that public health texts are likely to become even larger and more comprehensive as the field advances. In contrast, this book aims to present the essentials of public health, with an

emphasis on comprehensibility, rather than comprehensiveness. It presents fundamental concepts but links those concepts to practice in the real world.

These are essential topics for public health students early in their academic careers, and they are increasingly important for students in the social and political sciences and other health professions, as well. This book is intended as much for public health practitioners, however, as it is for students. It represents the belief that public health cannot be adequately taught through a text, that it needs to be learned through exploration and practice of its concepts and methods. In that light, this book should be viewed as a framework for learning and understanding public health, rather than the definitive catalog of its principles and practices. Its real value will be its ability to encourage thinking “outside the book.”

The first four chapters cover topics of interest to general audiences. Basic concepts underlying public health are presented in Chapter 1, including definitions, historical highlights, and unique features of public health. This and subsequent chapters focus largely on public health in the United States, although information on global public health and comparisons among nations appear in Chapters 2 and 3. Health and illness and the various factors that influence health and quality of life are discussed in Chapter 2. This chapter also presents data and information on health status and risk factors in the United States and introduces a method for analyzing health problems to identify their precursors. Chapter 3 addresses the overall health system and its intervention strategies, with a special emphasis on trends and developments that are important to public health. It highlights interfaces between public health and a rapidly changing health system. Chapter 4 examines the organization of public health responsibilities in the United States by reviewing its legal basis and the current structure of public health agencies at the federal, state, and local levels. Together, these four chapters serve as a primer on what public health is and how it relates to health interests in modern America.

The final five chapters flesh out the skeleton of public health introduced in the first half of the book. They examine how public health does what it does, addressing issues of the inner workings of public health that are critical for the more serious students of the field. Chapter 5 reviews the core functions of public health and both how and how well these are currently being addressed. This chapter identifies key processes or practices that operationalize public health’s core functions and tools that have been developed to improve public health practice. Chapter 6 builds on the governmental structure of American public health (from Chapter 4) and examines other inputs of the public health system, including human, informational, and fiscal resources. Outputs of the public health system, in the form of programs and services, are the subject of Chapter 7. Evidence-based public health practice is examined in terms of its population-based community prevention services and clinical preventive services, and an approach to program planning and evaluation for public health interventions is presented. Chapter 8 examines the emergency preparedness and response roles of public health, including the opportunities afforded by increased public health expectations and a substantial influx of federal funding. The final chapter looks to the future of public health as it embarks upon a new century, building on the lessons learned

xiv *Preface*

from the preceding century. Emerging problems, opportunities afforded by the expansion of collaborations and partnerships, and obstacles impeding public health responses are also examined in the concluding chapter.

Each chapter includes a variety of figures, tables, and exhibits to illustrate the concepts and provide useful resources for public health practitioners. A glossary of public health terminology is provided for the benefit of those unfamiliar with some of the commonly used terms, as well as to convey the intended meaning for terms that may have several different connotations in practice. At the end of each chapter are discussion questions and exercises, many of which involve Internet-based resources that complement the topics presented and provide a framework for thought and discussion. These allow the text to be used more flexibly in public health courses at various levels, using different formats for learners at different levels of their training and careers.

Together, the chapters present a systems approach to public health, grounded in a conceptual model that characterizes public health by its mission, functions, capacity, processes, and outcomes. This model is the unifying construct for this text. It provides a framework for examining and questioning the wisdom of our current investment strategy that directs 100 times more resources toward medical services than it spends for population-based prevention strategies—even though treatment strategies contributed only 5 of the 30 years of increased life expectancy at birth that have been achieved in the United States since 1900.

Whatever wisdom might be found in this book has filtered through to me from my mentors, colleagues, co-workers, and friends. For those about to toil in this vineyard of challenge and opportunity, this is meant to be a primer on public health in the United States. It is a book that seeks to reduce the vast scope, endless complexities, and ever-expanding agenda to a format simple enough to be understood by first-year students and state health commissioners alike.

Internet-based resources for courses based on this text are available at:
<http://publichealth.jbpub.com/turnock/>

Acknowledgments

Many people have shaped the concepts and insights provided in this text. This book evolved from an introductory course on public health concepts and practice that I have been teaching at the University of Illinois at Chicago School of Public Health since 1991. During that time, more than 2,000 current and aspiring public health professionals have influenced the material included in this book. Their enthusiasm and expectations have challenged me to find ways to make this subject interesting and valuable to learners at all levels of their careers.

Many parts of this book rely heavily on the work of public health practitioners and public health practice organizations. The Public Health Practice Program Office (PHPPO) at the Centers for Disease Control and Prevention deserves special acknowledgment for its contributions, especially those of Ed Baker (former Director of PHPPO) and Paul Halverson. The contributions and collaborations of Bill Dyal, formerly with PHPPO, are readily apparent throughout this text. Other valuable contributions came from public health colleagues, including John Lumpkin, Chris Atchison, Laura Landrum, Judith Munson, and Patrick Lenihan. In several chapters, I have drawn on the work of two public health agencies at which I have worked during my career, the Illinois Department of Public Health and the Chicago Department of Public Health. The influence of some outstanding public health figures who have served as mentors and role models—Jean Pakter, Paul Peterson, Quentin Young, George Pickett, and C. Arden Miller—is also apparent in this book.

Lloyd Novick provided early encouragement and support for this undertaking, as well as useful suggestions on the scope and focus of this text. Mike Brown, Chambers Moore, and Tracey Chapman at Jones & Bartlett Publishers have consistently provided valuable suggestions and guidance. Arden Handler has long been my colleague and collaborator on many public health capacity-building projects. I am grateful for the many and varied contributions from all of these sources.

