

Public Health

What It Is and How It Works

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Fourth Edition

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DEDICATION

*To Caleb,
the first of the next generation of Turnocks, and his proud parents,
Brooke and Patrick*

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Preface

The first decade of a new 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. What a spectacular century it has been!

My grandparents were children at the turn of the previous 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 approximately 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, like me and my four siblings, enjoyed the prospect of living to and even beyond the age of 65 years and the so-called 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 because of causes other than infectious diseases.

As the 21st century unfolds, more than 300 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—more than a dozen 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 20th century. Today, our children are even being immunized against cervical and liver cancer! 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 lifetimes and generations 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 will 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 20 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 professional, 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 these efforts. My hope is that this book presents a broad view of the public health system and deters 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 and that it is best 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 presented from an ecological perspective 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 first 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 and essential services 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 the basic building blocks of the public health system, including human, informational, and fiscal resources. Outputs of the public health system, intervention strategies 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 describes 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 we near the end of the first decade of a new century, building on the lessons learned 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 uses a variety of figures and tables 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. Eight of the chapters include Public Health Spotlights that provide a focused examination, case study, or problem-solving exercise for issues or topics germane to that chapter. 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 book's content offers 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.

Many of the core competencies established by the Association of Schools of Public Health for graduates of master's in public health degree programs are addressed in this book, especially those in the professionalism, leadership, systems thinking, health policy and management, and program planning categories. A partial list of those competencies includes proficiency in the following:

1. Embracing a definition of public health that captures the unique characteristics of the field (e.g., population-focused, community-oriented, prevention-motivated, and rooted in social justice) and how these contribute to professional practice
2. Articulating an achievable mission, set of core values and vision for public health
3. Discussing sentinel events in the history and development of the public health profession and their relevance for practice in the field
4. Applying basic principles of ethical analysis (e.g., Public Health Code of Ethics, human rights framework, other moral theories) to issues of public health practice and policy
5. Promoting high standards of personal and organizational integrity, compassion, honesty, and respect for all people

6. Describing how social, behavioral, environmental, and biological factors contribute to specific individual and community health outcomes
7. Analyzing determinants of health and disease using an ecological framework
8. In collaboration with others, prioritizing individual, organizational, and community concerns and resources for public health programs
9. Distinguishing between population and individual ethical consideration in relationship to the benefits, costs, and burdens of public health programs
10. Appreciating the importance of working collaborative with diverse communities and constituencies (e.g., practitioners, agencies, organizations, and researchers)
11. Identifying the main components and issues of the organization, financing, and delivery of health services and public health systems in the United States
12. Describing the legal and ethical basis for public health and health services
13. Analyzing the potential impacts of legal and regulatory environments on the conduct of ethical public health practice
14. Applying the core functions of assessment, policy development, and assurance in the analysis of public health problems and their solutions
15. Analyzing the effects of political, social, and economic policies on public health systems at the local, state, national, and international levels
16. Describing the attributes of leadership in public health
17. Describing alternative strategies for collaboration and partnership among organizations, focused on public health goals
18. Using collaborative methods for achieving organizational and community health goals
19. Identifying key characteristics of public health systems
20. Identifying unintended consequences produced by changes made to a public health system
21. Illustrating how changes in public health systems (including input, processes, and outputs) can be measured
22. Applying evidence-based principles and the scientific knowledge base to critical evaluation and decision making in public health
23. Applying principles of program planning, development, budgeting, management, and evaluation in organizational and community initiatives
24. Describing the tasks necessary to assure that program implementation occurs as intended
25. Preparing a program budget with justification
26. Explaining the contribution of logic models in program development, implementation, and evaluation
27. Differentiating among goals, measurable objectives, related activities, and expected outcomes for a public health program

28. Differentiating the purposes of process and outcome evaluation
29. Explaining how the findings of a program evaluation can be used
30. Explaining methods of ensuring community health safety and preparedness

Whatever wisdom might be found in this book has filtered through to me from my mentors, colleagues, co-workers, students, 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/4e>.

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 3,000 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. Over the years, I have had the opportunity to work with public health practice leaders at the Centers for Disease Control and Prevention, several of whom deserve special acknowledgment for their encouragement and contributions, especially Ed Baker, Paul Halverson, and Bill Dyal. Other valuable contributions came from public health colleagues, including John Lumpkin, Chris Atchison, Laura Landrum, Judith Munson, and Patrick Lenihan. Arden Handler has long been my colleague and collaborator on many public health capacity-building projects. 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.

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About the Author

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