



Public Health 101

Healthy People–Healthy Populations

SECOND EDITION

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Production Credits

Executive Publisher: William Brottmillier
Publisher: Michael Brown
Associate Editor: Chloe Falivene
Associate Production Editor: Rebekah Linga
Senior Marketing Manager: Sophie Fleck Teague
Manufacturing and Inventory Control Supervisor: Amy Bacus
Composition: Cenveo Publisher Services
Cover Design: Theresa Day

Photo Research and Permissions Coordinator: Lauren Miller
Cover and Title Page Image (left to right, top to bottom):
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Printing and Binding: Edwards Brothers Malloy
Cover Printing: Edwards Brothers Malloy

To order this product, use ISBN: 978-1-284-04528-4

Library of Congress Cataloging-in-Publication Data

Riegelman, Richard K., author.

Public health 101 : healthy people—healthy populations / Richard Riegelman and Brenda Kirkwood.—2nd ed.
p. ; cm.

Public health one hundred one

Rev. ed. of: Public health 101 / Richard K. Riegelman. 1st ed. c2010.

Includes bibliographical references and index.

ISBN 978-1-284-04084-5 (pbk.)

I. Kirkwood, Brenda, author. II. Title. III. Title: Public health one hundred one.

[DNLM: 1. Public Health. WA 100]

RA425

362.1—dc23

2013039072

6048

Printed in the United States of America

18 17 16 15 14 10 9 8 7 6 5 4 3 2 1



Dedication

*To Nancy Alfred Persily, whose enthusiasm for
teaching public health to undergraduates inspired Public Health 101:
Healthy People–Healthy Populations.*

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Acknowledgments

Public Health 101: Healthy People–Healthy Populations, Second Edition, is the culmination of 15 years of effort aimed at introducing public health to undergraduates. The effort originated with the teaching of an introductory course in public health in 1998 at the then newly created The George Washington University School of Public Health and Health Services. The new course, organized by associate dean Nancy Alfred Persily, inspired efforts to teach and to learn from a new generation. The approach was designed as part of a liberal arts education, stimulating the movement that came to be called the Educated Citizen and Public Health.

Efforts to think through the content of an introductory course in public health have involved a large number of people throughout the United States. Public health, arts and sciences, and clinical educators all participated in the 2006 Consensus Conference on Public Health Education, which put forward the framework for Public Health 101 upon which this book is based. Among those who led and continue to lead this effort is Susan Albertine, whose insights into the relationship between public health and liberal education have formed the basis for much of the Educated Citizen and Public Health movement.

I have taught Public Health 101 since 2002, which has provided me with an opportunity to teach and to learn from over 400 undergraduate students at The George Washington University. Their feedback and input has been central to writing and rewriting this book. Madison Hardee and Katie Harter deserve special recognition for their extensive feedback on many chapters of the first edition. Yifen Liu provided important feedback for the second edition. I would also like to thank Alan Greenberg and Dante Verme, the chair and vice chair of the Department of Epidemiology and Biostatistics at The George Washington University School of Public Health and Health Services, for their support of my efforts to expand the audience for undergraduate public health.

A key change in the second edition is the addition of a second author. I am pleased to welcome and acknowledge the contributions of Brenda Kirkwood, MPH, DrPH. I first had the opportunity to work with Brenda while she was a DrPH student at The George Washington University. Dr. Kirkwood has made extraordinary contributions to the second edition. She has taken the primary responsibilities for writing and rewriting several chapters. Her careful reviews and dedication to getting the details right have been key to the quality of this edition. Brenda is truly exceptional and a pleasure to work with, as will be confirmed by all who work with her.

The draft of the second edition went through extensive review and feedback. I am grateful to all those who read chapters and provided constructive input. Mike Brown, Publisher of the Public Health and Health Administration line of products for Jones & Bartlett Learning, has made special contributions to this book and the series as a whole. His vision has helped craft the series, and his publishing expertise made it happen. The production, marketing, and editorial staff of Jones & Bartlett Learning deserve special recognition. Their commitment to this book and the entire *Essential Public Health* series has gone well beyond the expectations of their jobs.

Last, but by no means least, is my wife, Linda Riegelman, who encouraged this book and the *Essential Public Health* series from the beginning. She saw the need to reach out to students and make real the roles that public health plays in their everyday lives. Linda went the extra mile by reading and rereading both the first and the second edition. She deserves the credit for what works, but the blame for what fails is all mine.

Confronting the challenge of putting together *Public Health 101* has been one of the great joys of my professional life. I hope it will bring both joy and challenge to you as you enter into the important and engaging world of public health.

Richard Riegelman, MD, MPH, PhD

Preface: What Is *Public Health 101: Healthy People–Healthy Populations* All About?

Public health is more than a profession; it is a way of thinking. *Public Health 101: Healthy People–Healthy Populations* introduces you to the profession and also the way of thinking that we will call population health. Population health is an important way of looking at the world, whether you are going into public health as a profession, a clinically oriented health profession, business, law, international affairs, or a range of other professions.

Population health is also a key way of thinking, which prepares you for the challenges of citizenship in a democracy. Many of the issues that come before us as a society stem from or benefit from a population health perspective. Whether we are dealing with AIDS, the impact of aging, climate change, or the costs of health care, the population perspective can help us frame the issues and analyze the options to intervene.

In addition, the population perspective leads us to look broadly at the way issues intertwine and interact with each other. We call this systems thinking. In population health, systems thinking is taking center stage as we increasingly struggle with complex problems that require us to look beyond the traditional boundaries of health and disease.

Until recently, public health was considered a discipline taught only at the graduate level. Today, undergraduate public health is booming at four-year colleges and is beginning to take hold at community colleges as well. Its roots in general and liberal education go back to the 1980s, when David Fraser, the president of Swarthmore and an epidemiologist who led the investigation of Legionnaires' disease, wrote a now classic article called "Epidemiology as a Liberal Art."¹

In 2003, the Institute of Medicine of the National Academies of Sciences recommended that "all undergraduates should have access to education in public health."² That recommendation encouraged the development of the Educated Citizen and Public Health initiative, a collaboration of undergraduate educators and public health educators to define and stimulate public health curricula for all undergraduates. *Public Health 101* was written to implement the recommendations that came out of this initiative and continue to form the basis for undergraduate education in public health.

This second edition of *Public Health 101* has been thoroughly updated and expanded. Each chapter includes new material designed to expand your understanding of public health. Two new chapters have been added, one on food and drugs as public health issues and the other on systems thinking as the future of population health. These chapters are designed to keep *Public Health 101* at the cutting edge of new developments and ways of thinking. In addition, each of the five sections includes new case studies challenging you to apply what you have learned.

Public Health 101: Healthy People–Healthy Populations will not try to overload your mind with facts. It is about providing you with frameworks for thinking, and applying these frameworks to real situations and thought-provoking scenarios. Each chapter begins and ends with vignettes designed to show you the types of situations you will confront in public health. After each section, there are cases studies that relate to one or more chapters in the section. They

provide realistic, engaging exercises and open-ended questions to help you think through the application of the key concepts presented in each section.

Public Health 101 is designed as a gateway to the world of public health. It provides an introduction to the *Essential Public Health* series, a comprehensive series designed primarily for undergraduate public health education. You should take advantage of the *Essential Public Health* series' website at www.essentialpublichealth.com. It provides information on all the books in the series.

Hopefully, you will come away from reading *Public Health 101* with an appreciation of how the health of the public is influenced by and can be improved by efforts directed at the population level, as well as at the individual level. Let us begin in Chapter 1 by exploring the ways that public health affects everyone's daily life.

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About the Authors

Richard Riegelman, MD, MPH, PhD, is professor of epidemiology–biostatistics, medicine, and health policy, and founding dean of The George Washington University School of Public Health and Health Services. His education includes an MD from the University of Wisconsin, plus an MPH and PhD in epidemiology from The Johns Hopkins University. Dr. Riegelman practiced primary care internal medicine for over 20 years.

Dr. Riegelman has over 70 publications, including 6 books for students and practitioners of medicine and public health. He is editor of the Jones & Bartlett Learning *Essential Public Health* series. The series provides books and ancillary materials for the full spectrum of curricula for undergraduate public health education.

Dr. Riegelman has spearheaded efforts to fulfill the Institute of Medicine's recommendation that "all undergraduates should have access to education in public health." His work with national public health and arts and sciences organizations has developed into the Educated Citizen and Public Health movement. This movement now includes efforts by the Association of Schools and Programs of Public Health (ASPPH) and the Association of American Colleges and Universities (AAC&U) to implement undergraduate public health education. He also co-chairs the Community College and Public Health project, which aims to incorporate public health education into community colleges as part of the continuum of public health education.

Richard Riegelman teaches medical school, undergraduate, and graduate public health courses, which include Public Health 101 and Epidemiology 101.

Brenda Kirkwood, MPH, DrPH, has experience in higher education spanning public and private institutions on the associate, baccalaureate, and graduate levels, including development and teaching of undergraduate and graduate public health courses, development and management of public health academic programs, student mentorship, and contributions to national educational initiatives. She has held faculty and administrative positions at the University at Albany, State University of New York, School of Public Health, The George Washington University School of Public Health and Health Services, American University College of Arts and Sciences, and George Mason University College of Health and Human Services. She currently works in academic administration at the University at Albany, State University of New York, School of Public Health.

Prior to her career in higher education, Dr. Kirkwood held positions with the New York State Cancer Registry and the Bureaus of Sexually Transmitted Disease Control and Injury Prevention within the New York State Department of Health. She received a bachelor of science from Ithaca College, master of public health from the University at Albany, State University of New York, and doctor of public health degree from The George Washington University.

Dr. Kirkwood has been actively involved in national efforts to expand public health education and strengthen the public health workforce. As a researcher and educator, she has collaborated with a number of academic and public health workforce organizations. Her recent research explored the adoption of public health curricula in community colleges, contributing to *Healthy People 2020*, a collaborative initiative of the U.S. Department of Health and Human Services. Her publications and presentations at numerous national professional conferences have focused on undergraduate public health education, contributing to the Educated Citizen and Public Health movement.