TALMADGE E. KING, JR.
MARGARET B. WHEELER
ANDREW B. BINDMAN
ALICIA FERNANDEZ
KEVIN GRUMBACH
DEAN SCHILLINGER
TERESA J. VILLELA

2nd edition

MEDICAL MANAGEMENT OF VULNERABLE AND UNDERSERVED PATIENTS

PRINCIPLES, PRACTICE, AND POPULATIONS

Mc Graw Hill Education
LANGE®

Medical Management of Vulnerable and Underserved Patients

Principles, Practice, and Populations

Second Edition

Section Editors

PRINCIPLES

Andrew B. Bindman, MD

Professor, Department of Medicine, School of Medicine
University of California, San Francisco
San Francisco, California

Kevin Grumbach, MD

Professor and Chair, Department of Family and Community Medicine, School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

PRACTICE

Alicia Fernandez, MD

Professor, School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

Dean Schillinger, MD

Professor and Chief, Division of General Internal Medicine
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
University of California San Francisco
Center for Vulnerable Populations
School of Medicine
San Francisco, California

POPULATIONS

Teresa J. Villela, MD

Professor and Vice Chair, Department of Family Community Medicine
School of Medicine
University of California San Francisco
Chief of Service, Department of Family Community Medicine
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

Margaret B. Wheeler, MD, MS

Professor, Department of Medicine
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

Medical Management of Vulnerable and Underserved Patients

Principles, Practice, and Populations

Second Edition

Talmadge E. King, Jr., MD

Dean, School of Medicine
Vice Chancellor-Medical Affairs
University of California, San Francisco
San Francisco, California

Margaret B. Wheeler, MD, MS

Professor, School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

New York Chicago San Francisco Athens London Madrid Mexico City
Milan New Delhi Singapore Sydney Toronto

Medical Management of Vulnerable and Underserved Patients: Principles, Practice, and Populations, Second Edition

1 2 3 4 5 6 7 8 9 0 DSS/DSS 20 19 18 17 16

ISBN 978-0-07-183444-5
MHID 0-07-183444-3

T is book was set in Warnock Pro by Cenveo® Publisher Services.
T e editors were Amanda Fielding and Kim J. Davis.
T e production supervisor was Catherine Saggese.
Project management was provided by Kritika Kaushik, Cenveo Publisher Services.
Cover photo: Pamela Moore/istockphoto.
RR Donnelley was the printer and binder.

T is book is printed on acid-free paper.

NOTICE

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required. The authors and the publisher of this work have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication. However, in view of the possibility of human error or changes in medical sciences, neither the authors nor the publisher nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they disclaim all responsibility for any errors or omissions or for the results obtained from use of the information contained in this work. Readers are encouraged to confirm the information contained herein with other sources. For example, and in particular, readers are advised to check the product information sheet included in the package of each drug they plan to administer to be certain that the information contained in this work is accurate and that changes have not been made in the recommended dose or in the contraindications for administration. This recommendation is of particular importance in connection with new or infrequently used drugs.

Library of Congress Cataloging-in-Publication Data

Names: King, Talmadge E., Jr., editor. | Wheeler, Margaret B., editor.
Title: Medical management of vulnerable and underserved patients : principles, practice, and populations / [edited by] Talmadge E. King, Jr., Margaret B. Wheeler.
Description: Second edition. | New York : McGraw Hill Education Medical, [2016] | "A Lange medical book." | Includes bibliographical references and index.
Identif ers: LCCN 2015046071| ISBN 9780071834445 (pbk. : alk. paper) | ISBN 0071834443 (pbk. : alk. paper) | ISBN 9780071834018 (ebook) | ISBN 007183401X (ebook)
Subjects: | MESH: Delivery of Health Care | Vulnerable Populations | Health Services Accessibility | Minority Groups | Medical Indigency | Health Services Needs and Demand | United States
Classif cation: LCC RA418.5.P6 | NLM W 84 AA1 | DDC 362.1/0425—dc23 LC record available at http://lccn.loc.gov/2015046071

McGraw-Hill Education Professional books are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. To contact a representative, please visit the Contact Us pages at www.mhprofessional.com.

Talmadge E. King, Jr.:
I thank Mozelle for her love, support, and encouragement and to Talmadge and Almetta King for teaching me the value of hard work and education. In addition, I thank my daughters, Consuelo and Malaika, for their loving support and my granddaughters, Madison and Siena, for keeping it real.

Margaret B. Wheeler:
To my patients and teachers for their guidance and nurturing, my students and colleagues for their inspiration, and my family for unstinting support.

Andrew B. Bindman:
I thank my parents, Arthur and Bernice, who have encouraged me to contribute toward making a constructive difference in people's lives. I also thank my wife, Rebecca and our three wonderful children, Sarah, Julia, and Jacob, who have made an enormous positive impact on my own life.

Alicia Fernandez:
To the memory of my parents, Hector and Paulina B. Fernandez. De tal árbol, tal astilla.

Kevin Grumbach:
With appreciation to my family, colleagues, students, and patients, for all they have taught me.

Dean Schillinger:
I thank George Schillinger for demonstrating the potential for resilience in the face of vulnerability and for imbuing me with a belief that doctoring requires the head, hands, and heart; Zahava Schillinger for instilling in me the confidence and diligence to accomplish my goals; Nahum Joel for conveying his passion regarding science and the pursuit of social justice; Ariella Hyman for partnering with me in this struggle; and Eytan, Gabriel, and Micaela, who, when work becomes overwhelming, always bring me back to the simple joys of life.

Teresa J. Villela:
To Amado, Carolina, Elvira, Marcelo, Florentina, Gilberto, and Rosario, with great respect and gratitude, and to my brothers and sisters for all they have taught me.

Contents

Contributors

Nancy Adler, PhD

Director, Center for Health and Community
Professor, Department of Psychiatry
School of Medicine
University of California San Francisco (UCSF)
San Francisco, California

Soraya Azari, MD

Assistant Clinical Professor of Medicine
Division of General Internal Medicine (DGIM), Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
University of California San Francisco
San Francisco, California

Palav Babaria, MD, MHS

Medical Director, Highland Hospital Adult Medicine Clinic
Alameda Health System
Oakland, California
Assistant Clinical Professor, Department of Medicine
University of California San Francisco
San Francisco, California

John R. Balmes, MD

Professor, Department of Medicine
University of California, San Francisco
Professor, School of Public Health
University of California, Berkeley

Ann Smith Barnes, MD, MPH

Associate Professor,
Department of Medicine
Baylor College of Medicine
Houston, Texas

Patricia Barreto, MD, MPH

Senior Research Scientist
UCLA Center for Healthier Children, Families & Communities

Ellen Beck, MD

Professor of Medicine,
Department of Medicine, Division of General Internal Medicine (DGIM)
School of Medicine, University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

Kirsten Bibbins-Domingo, PhD, MD, MAS

Lee Goldman, MD Endowed Chair in Medicine
Professor of Medicine and of Epidemiology and Biostatistics
School of Medicine, University of California San Francisco
San Francisco, California

JudyAnn Bigby, MD

Senior Fellow
Mathematica Policy Research
Cambridge, Massachusetts

Andrew B. Bindman, MD

Professor
Department of Medicine
School of Medicine
University of California San Francisco (UCSF)
San Francisco, California

Nathan Birnbaum B.A.

Medical Student
School of Medicine
University of California, Irvine
Irvine, California

Thomas Bodenheimer, MD

Department of Family and Community Medicine
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
University of California, San Francisco
San Francisco, California

Katrina Booth, MD

Assistant Professor
Medical Director, Acute Care for Elders (ACE) Unit
Division of Gerontology, Geriatrics, and Palliative Care
University of Alabama at Birmingham
Birmingham VA Medical Center
Birmingham, Alabama

Paula Braveman, MD, MPH

Professor, Department of Family Community Medicine
School of Medicine, University of California San Francisco
San Francisco, California

Robert V. Brody, MD

Professor, Department of Medicine, Division of General Internal Medicine (DGIM) School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Carolyn Brown, DDS

Dental Director, Programs and Development
San Francisco Native American Health Center
San Francisco, California

Helen Chen, MD

Chief Medical Officer, Hebrew Rehabilitation
Center/Hebrew Senior Life
Boston, Massachusetts

Alice Hm Chen, MD, MPH

Chief Medical Officer, San Francisco Health Network;
Professor of Medicine,
School of Medicine, Division of General Internal Medicine (DGIM)
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Ricky Y. Choi, MD, MPH

Department Head of Pediatrics, Asian Health Services
Community Health Center
Oakland, California

Joanna Mimi Choi, MD, MPH

Assistant Professor, Department of Pediatrics
UCLA Fielding School of Public Health
Los Angeles, California

Diana Coffa, MD

Residency Program Director, Family and Community Medicine
Assistant Professor
Department of Family and Community Medicine
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

LaVera Crawley, MD, MPH, MDiv(Eq)

Program Manager for Palliative Care Education
and Research;
Palliative Care Chaplain, Alta Bates Summit
Medical Center
Berkeley, California

Jeff Critchfield, MD

Professor, Department of Medicine, University of California San Francisco School of Medicine;
Chief Medical Experience Officer and Medical Director of Risk Management, Priscilla Chan and Mark Zuckerberg San Francisco General Hospital;
Professor, Department of Medicine, Division of Hospital Medicine,
School of Medicine,
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Elizabeth Davis, MD

Director of Care Coordination, San Francisco Health Network
Primary Care, San Francisco, California
Assistant Professor
Division of General Internal Medicine (DGIM),
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Janet Victoria Diaz, MD

Consultant, Pulmonary and Critical Care Medicine
California Pacific Medical Center
San Francisco, California

James W. Dilley, MD

Professor, Department of Psychiatry
School of Medicine, University of California
San Francisco
San Francisco, California

Leslie Dubbin, PhD, MS, RN

Assistant Adjunct Professor, Department of Social and Behavioral Sciences
School of Nursing, University of California San Francisco
San Francisco, California

Christopher Dunn, PhD

Associate Professor
Psychiatry and Behavioral Sciences
University of Washington
Seattle, Washington

David V. Evans, MD

Rosenblatt Family Endowed Professor of Rural Health, Associate Professor, Department of Family Medicine, University of Washington School of Medicine, Seattle, Washington

Joanna Eveland, MD

Department of Family and Community Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Alicia Fernandez, MD

Professor, Department of Medicine,
Division of General Internal Medicine (DGIM),
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Susan Fisher-Owens, MD, MPH

Associate Clinical Professor of Pediatrics; Associate Clinical Professor of Preventive and Restorative Dental Sciences,
School of Medicine, Division of General Internal Medicine (DGIM)
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Christopher B. Forrest, MD, PhD

Professor of Pediatrics and Health Care Management,
Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Ronald H. Goldschmidt, MD

Professor, Department of Family and Community Medicine
School of Medicine, University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Laura Gottlieb, MD, MPH

Department of Family and Community Medicine,
School of Medicine, University of California San Francisco,
San Francisco, California

Kevin Grumbach, MD

Professor and Chair, Department of Family and Community Medicine,
School of Medicine, University of California San Francisco,
San Francisco, California

Michael Guarnieri, MD, MPH

Fellow, Division of Pulmonary Medicine,
School of Medicine, University of California San Francisco,
San Francisco, California

Reena Gupta, MD

Assistant Professor of Medicine,
Department of Medicine
Division of General Internal Medicine (DGIM)
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Bruce Guthrie, MB, BChir, PhD

Professor of Primary Care Medicine, Population Health Sciences Division,
University of Dundee, Dundee, Scotland.

Lawrence A. Haber, MD

Assistant Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Neal Halfon, MD, MPH

Professor, Department of Pediatrics, Department of Health Policy and Management, UCLA Geffen School of Medicine; UCLA Fielding School of Public Health, Department of Health Policy and Management; UCLA Luskin School of Public Affairs, Department of Public Policy; Director, UCLA Center for Healthier Children Families and Communities, Los Angeles, California

Hali Hammer, MD

Director of Primary Care
San Francisco Department of Public Health
Professor Family and Community Medicine, School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Elizabeth Harleman, MD

Professor, Departments of Medicine and Obstetrics, Gynecology and Reproductive Sciences,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center,
San Francisco, California

Jessica E. Hawkins, MSE

Research Associate, Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Jennifer E. Hettema, PhD

Associate Research Professor, Department of Family and Community Medicine,
University of New Mexico,
Albuquerque, New Mexico

Jonas Z. Hines, MD

Staff Physician, Tom Waddell Health Center,
San Francisco Department of Public Health,
San Francisco, California

Claire Horton, MD, MPH

Associate Professor, Department of Medicine
School of Medicine, Division of General Internal Medicine (DGIM)
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Margaret Hutchison, MSN, CNM

Professor, Department of Obstetrics, Gynecology and Reproductive Sciences,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Lisa I. Iezzoni, MD, MSc

Professor of Medicine, Harvard Medical School; Director, Mongan Institute for Health Policy, Massachusetts General Hospital, Boston, Massachusetts

Elizabeth A. Jacobs, MD, MPP

Professor of Medicine and Population Health, University of Wisconsin School of Medicine and Public Health; Associate Vice Chair for Health Services Research, Department of Medicine and Health Innovation Program, University of Wisconsin-Madison, Madison, Wisconsin

Sharad Jain, MD

Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Debra Keller, MD, MPH

Assistant Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Toby Keys, MA, MPH

Education Specialist, RUOP
Medical Student Education Section
Department of Family Medicine
School of Medicine
University of Washington
Seattle, Washington

Leigh Kimberg, MD

Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Margot Kushel, MD

Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

C. Seth Landefeld, MD

Chair, Department of Medicine, Spencer Chair in Medical Science Leadership,
University of Alabama at Birmingham, Birmingham, Alabama

Daniel S. Lessler, MD, MHA

Chief Medical Officer, Washington State Health Care Authority,
Professor, Medicine and Health Services,
University of Washington, Olympia, Washington

Bernard Lo, MD

President and CEO, The Greenwall Foundation, New York, New York;
Professor of Medicine Emeritus;
Director Emeritus, Program in Medical Ethics,
University of California,
San Francisco, California

Courtney R. Lyles, PhD

Assistant Professor of Medicine, Division of General Internal Medicine,
School of Medicine, University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center,
San Francisco, California

Sarah Macfarlane, PhD, MSc

Professor, Department of Epidemiology and Biostatistics,
School of Medicine and Global Health Sciences, University of California, San Francisco, San Francisco, California

Megan Mahoney, MD

Associate Chief of Primary Care, Associate Professor, Division of General Medical Disciplines, Department of Medicine, Stanford University, Palo Alto, California

Rishi Manchanda, MD, MPH

President, HealthBegins, Los Angeles, California

Christina Mangurian, MD

Associate Professor, Department of Psychiatry,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Brigid McCaw, MD, MPH, MS

Medical Director, Family Violence Prevention Program,
Kaiser Permanente, Oakland, California

Steven Meltzer, PA

Faculty, MEDEX Northwest Physician Assistant Program,
Department of Family Medicine, University of Washington
School of Medicine, Seattle, Washington

Pooja Mittal, DO

Associate Professor, Department of Family and Community Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Erica Monasterio, MN, FNP-BC

Professor, Director, Family Nurse Practitioner Program, Family Health Care Nursing; Division of Adolescent and Young Adult Medicine,
School of Nursing, University of California San Francisco,
San Francisco, California

Susana Morales, MD

Associate Professor of Medicine,
Department of Medicine,
Weill Medical College of Cornell University,
New York, New York

Christopher Neumann, PhD

Assistant Professor,
Department of Family and Community Medicine,
School of Medicine, University of New Mexico,
Albuquerque, New Mexico

Carolyn Payne, MD

Resident, Department Obstetrics and Gynecology, Tufts Medical Center, Boston, Massachusetts

John D. Piette, PhD

Senior Research Career Scientist, VA Ann Arbor Center for Clinical Management Research; Professor of Health Behavior and Health Education, University of Michigan School of Public Health; Professor of Internal Medicine, University of Michigan Medical School; Director University of Michigan Center for Managing Chronic Disease, Ann Arbor, Michigan

Michael B. Potter, MD

Professor, Department of Family and Community Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Francisco Ramos-Gomez, DDS, MS, MPH

Professor, Section of Pediatric Dentistry,
School of Dentistry, University of California Los Angeles,
Los Angeles, California

Neda Ratanawongsa, MD, MPH

Associate Professor of Medicine, Division of General Internal Medicine,
School of Medicine, University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Patricia A. Robertson, MD

Professor and Director of Medical Student Education
Division of Maternal-Fetal Medicine
Department of Obstetrics, Gynecology and Reproductive Sciences,
School of Medicine,
University of California, San Francisco

Marisa Rogers, MD, MPH

Associate Professor of Medicine,
Perelman School of Medicine, University of Pennsylvania,
Philadelphia, Pennsylvania

Sara Rosenbaum, JD

Harold and Jane Hirsh Professor of Health Law and Policy,
Department of Health Policy, Milken Institute School of Public Health, George Washington University, Washington, DC

Anne Rosenthal, MD

Associate Medical Director, Maxine Hall Health Center
San Francisco Department of Public Health,
Assistant Professor, Department of Medicine,
School of Medicine
University of California San Francisco
San Francisco, California

George William Saba, PhD

Professor, Department of Family Community Medicine,
School of Medicine, University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Bradley W. Samuel, PhD

Associate Professor; Director, Behavioral Health Education;
Clinical Director, Behavioral Health Integration in Primary Care, Department of Family and Community Medicine,
University of New Mexico School of Medicine, Albuquerque,
New Mexico

Megan Sandel, MD, MPH

Associate Professor of Pediatrics and Public Health,
Boston University Schools of Medicine and Public Health,
Boston, Massachusetts

Urmimala Sarkar, MD, MPH

Associate Professor, Department of Medicine,
School of Medicine, Division of General Internal Medicine (DGIM)
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Ellen M. Scarr, PhD, FNP-BC

Professor, Family Health Care Nursing,
School of Nursing, University of California San Francisco,
San Francisco, California

Dean Schillinger, MD

Professor, Department of Medicine
Chief of Division of General Internal Medicine (DGIM)
School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Michelle Schneidermann, MD

Professor, Department of Medicine,
School of Medicine,
University of California, San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center, San Francisco, California

Naomi Schoenfeld, MS, FNP-BC

Nurse Practitioner, Family Health Center,
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center; Assistant Clinical Professor,
Family Nurse Practitioner Program, Family Health Care Nursing,
University of California San Francisco,
San Francisco, California

Tracy Schrider, LCSW, ACM

Administrative Supervisor of Social Work,
Sutter Health-Alta Bates Summit Medical Center,
Berkeley, California

Steven A. Schroeder, MD

Professor, Department of Medicine,
School of Medicine,
University of California San Francisco,
San Francisco, California

Hilary K. Seligman, MD, MAS

Associate Professor, Departments of Medicine
and Epidemiology and Biostatistics,
School of Medicine,
University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

J. Ryan Shackelford, MD

Assistant Professor
Department of Psychiatry
Medical Director of Behavioral Health Homes
Community Behavioral Health Services and
Community Oriented Primary Care
San Francisco Public Health Department
San Francisco, California

William B. Shore, MD

Professor of Clinical Family and Community Medicine,
University of California, San Francisco, School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Shane Snowdon, MA

Harvard Divinity School,
Cambridge, Massachusetts

Margaret Stafford, MD

Assistant Professor, Department of Family and Community Medicine;
School of Medicine
University of California San Francisco
Director of Education, Family Medicine Inpatient Service,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center,
San Francisco, California

Jody Steinauer, MD, MAS

Professor, Department of Obstetrics, Gynecology and Reproductive Sciences,
School of Medicine
University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Jeffrey N. Stoneberg, DO

Medical Director, Palliative Care,
Alta Bates Summit Medical Center,
Oakland, California

Stephanie Taché, MD, MPH

Director, Refugee Clinic, Dresden
Assistant Professor Family and Community Medicine
School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Emily H. Thomas, MD, MS

University of California, San Francisco
Resident in Internal Medicine
SFGH Primary Care
San Francisco, California

Cam-Tu Tran, MD, MS

Associate Professor,
Department of Pediatrics,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Jacqueline P. Tulsky, MD

Professor, Department of Medicine
School of Medicine
University of California, San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Maya Vijayaraghavan, MD, MAS

Assistant Professor,
Department of Medicine, Division of General Internal Medicine (DGIM)
School of Medicine
University of California San Francisco
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Teresa J. Villela, MD

Professor, Department of Family Community Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Alexander Y. Walley, MD, MSc

Assistant Professor of Medicine, Clinical Addiction Research and Education Unit, Section of General Internal Medicine, Boston University School of Medicine, Boston, Massachusetts

Emily A. Wang, MD, MAS

Associate Professor, Department of Internal Medicine,
Yale University School of Medicine,
New Haven, Connecticut

Margaret Wheeler, MD

Professor, Department of Medicine,
School of Medicine, University of California San Francisco,
Priscilla Chan and Mark Zuckerberg San Francisco
General Hospital and Trauma Center
San Francisco, California

Ellen-Marie Whelan, PhD, NP

Senior Advisor, CMS Center for Medicare and Medicaid Innovation, Baltimore, Maryland

Naomi Wortis, MD

Professor, Department of Family and Community Medicine, School of Medicine, University of California San Francisco, San Francisco, California
Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center
San Francisco, California

Sharon L. Youmans, PharmD, MPH

Professor of Clinical Pharmacy and Vice Dean, University of California San Francisco School of Pharmacy, San Francisco, California

Barry Zevin, MD

Clinical Lead, Transgender Health Services; Medical Director, Homeless Outreach Team, San Francisco Department of Public Health, San Francisco, California

Preface

In the near decade since we published the first edition of this book, research has firmly established that populations of lower socioeconomic status and from minority racial and ethnic backgrounds have worse health and often receive a lower standard of health care. Worse health outcomes attributed to inequity in distribution of resources, initially termed disparities in health and health care, are now more aptly and pointedly referred to as inequities in health and health care. These inequities are attributed to broad social forces that shape the way we live and how medicine is practiced. With this perspective, a person's and a community's health and the health care they receive are measures of social justice.

As clinicians, there is perhaps no more distressing medical research than that which suggests that health-care workers and the health-care system contribute to inequities in health for vulnerable populations. Studies reveal that health-care workers continue to feel ill prepared when caring for vulnerable patients, especially those who are chronically ill, the elderly, addicted, mentally ill, victims of violence, or from minority or disadvantaged backgrounds. Hence, health-care workers may be the third factor in a "triple jeopardy" vulnerable patients face when it comes to health care: not only are these patients more likely to be ill and to have difficulty accessing care, but when they do, the care they receive is more likely to be suboptimal. Fortunately, training health-care workers to care for vulnerable patients makes a difference. With training, they are more willing to work with these populations and provide better care.

We hope the second edition of our book will be part of an ongoing process of improving our professions' ability to discharge its obligation to enhance social justice by both delivering comprehensive care for all patients and challenging the policies that undermine health for underprivileged patients and health-care access and delivery. Although grounded in health care as it is practiced in the United States, we draw from evidence and practices worldwide and believe that the concepts and approaches are relevant to medical practice globally.

The purpose of this book is to offer the theoretical background and practical knowledge required to teach clinicians to care for vulnerable, underserved patients both at the individual and system levels. In this book, we aim to illuminate the complexities of caring for vulnerable, underserved patients. We provide both an appreciation of the need to address inequities at multiple levels and practical suggestions for how to improve the care of vulnerable populations. We aim to "enable" health-care workers, students, and other interested parties to contribute to the solution. We focus on issues of patient care that are common among underserved patients and suggest ways to use our materials as teaching tools for health professions trainees in both didactic and clinical settings.

Our book is intended as a basis for teaching the core principles and skills required to care for our most complex patients—the vulnerable and underserved—where our clinical skills must be the most astute. Our text is appropriate for students, residents and practitioners (medical students, nurses, pharmacists, physician's assistants, public health, and other health-care practitioners) both in clinical, community, or social medicine classes and in practical experiences, including, but not limited to, primary care rotations and clerkships in family medicine, pediatrics, internal medicine, women's medicine, and psychiatry. As teaching hospitals are the major providers of care to uninsured, poor, and minority patients in the United States, the book is also intended as a resource for teachers and trainees who practice in these settings as well as public health-care settings internationally. Postgraduate trainees (e.g., residents and fellows) from all disciplines could use this text for didactics in behavioral and clinical medicine, and quality improvement. Finally, it can also serve as a rapid, yet comprehensive reference for all practitioners.

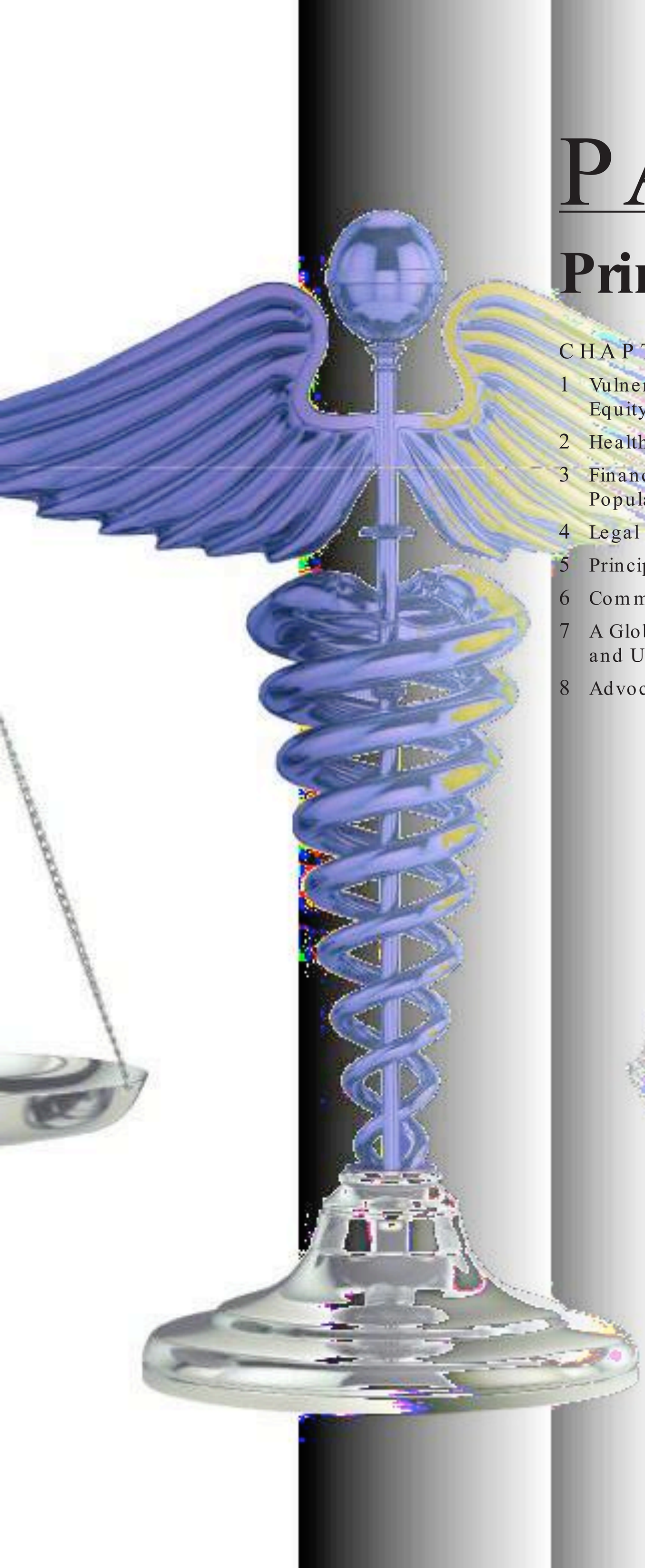
The book is organized into three sections: Principles, Practice, and Populations. Chapters in each section discuss ways in which both the individual practitioner and the health-care system may be more responsive to patients with these characteristics to assure they receive accessible, high-quality care, thereby reducing the inequities in health care that are both causes and consequences of vulnerability. We present clinical approaches to many issues that complicate caring for socially vulnerable patients. Many chapters feature both Key Concepts and Common Pitfalls, and end with a Core Competency highlighting important concepts and skills for quick and easy referencing.

Putting together a book of this scope and magnitude was no easy task and involved making certain decisions that not all readers may agree with. For example, while trying to keep the length of the book as manageable as possible, we were forced to exclude some relevant topics and decided to allow some overlap of content in those areas that are most critical. In addition, we welcomed differences of opinion among authors, provided the issues were clearly stated and the reasons for the author's opinion documented.

The first section, entitled Principles, lays out the theoretical groundwork of the book. Topics discussed include overview of the concepts of medical vulnerability and inequities in health and health care; financing and organization of health care for vulnerable populations; laws and regulations governing the care of medically underserved populations in the United States; and ethical dilemmas that arise in the clinical care of medically underserved populations. We also present chapters on engaging communities, on a global health-care perspective and promoting physician advocacy. The second section, Practice, considers overarching themes and skills necessary to care for patients. In particular, this section concentrates on population medicine and systems approaches to improving care to vulnerable patients. Topics discussed include the importance of building a therapeutic alliance and assessing for vulnerability; supporting health behavior change and adherence; principles of effective communication when cultural or literacy barriers may exist; models of care delivery to improve the effectiveness of medical care, such as the patient-centered medical home, group medical visits, and use of interactive health technologies; as well as quality improvement and case management programs. The third section, Populations, examines particular conditions or social circumstances that can lead to worse care. Chapters consider approaches to patients with histories of trauma, mental illness, intimate partner violence, and addiction, for example. Care of patients with limited English proficiency, history of incarceration, gay, lesbian and transgender patients, children, adolescents, and the elderly are subjects of others. In addition, this section addresses common situations that uniquely complicate the care of vulnerable populations such as environmental and occupational illnesses; the care of socially complicated hospitalized patients; end-of-life health care; chronic pain management; dental health; the care of patients with HIV/AIDS; and patients with disabilities. We end with a chapter that addresses the prevention of practitioner burnout.

We are deeply appreciative to the authors for their outstanding contributions to both editions of the book. Although the authors of some chapters have changed, we wish to acknowledge the influence and contribution of those who laid the foundation in the original chapters. We would also like to acknowledge the support and patience of the staff at McGraw-Hill. We especially wish to recognize the efforts of James Shanahan for believing in the project since its inception and to Amanda Fielding, Kim Davis, Laura Libretti, and Kritika Kaushik for bringing it to fruition. Finally, we are forever grateful to our patients for allowing us to participate in their care, our students for inspiring us to do better, and our families for their generous support.

Talmadge E. King, Jr., MD
Margaret B. Wheeler, MS, MD
Andrew B. Bindman, MD
Alicia Fernandez, MD
Kevin Grumbach, MD
Dean Schillinger, MD
Teresa J. Villela, MD



PART 1

Principles

CHAPTERS

Chapter 1

Vulnerable Populations, Health Disparities, and Health Equity: An Overview

Kevin Grumbach, MD, Paula Braveman, MD, MPH, Nancy Adler, PhD, and Andrew B. Bindman, MD

Objectives

- Define the terms vulnerable populations, health disparities, and health equity.
- Distinguish among differences in health, health disparities, and health-care disparities.
- Understand the relationship between social vulnerability and health disparities, and the pathways mediating this association.
- Recognize the ethical and human rights principles underlying efforts to achieve health equity
- Identify actions health professionals may take to change the social conditions that create vulnerability and produce health disparities.

INTRODUCTION

"Vulnerable" derives from the Latin word for wounded. Populations can be vulnerable for a variety of reasons. In this chapter, we focus on populations that are wounded by social forces that place them at a disadvantage with respect to their health. Vulnerability is visible in the variation across social groups in levels of resources and social influence and acceptance, as well as in the incidence, prevalence, severity, and consequences of health conditions.

This chapter provides an overview of the concept of vulnerability. It begins by introducing the notion of health disparities, distinguishing it from simple differences in health, and defining the closely related concept of health equity. It describes evidence of health disparities, particularly by socioeconomic status (SES) and race/ethnicity. It then discusses conceptual models for understanding the pathways between social vulnerability and poor health status. It concludes by suggesting that health professionals have a responsibility not only to develop their skills to respond effectively to the health-care needs of vulnerable patients but also to take action to change the fundamental social conditions that produce vulnerability.

WHAT ARE HEALTH AND HEALTH-CARE DISPARITIES?

Webster's dictionary defines disparity as a difference. "Difference" sounds like a neutral concept. It may seem logical that different people have different states of health, requiring different kinds and quantities of care. For example, elderly people are expected to be less healthy than young adults. People who ski are more likely to suffer leg fractures than people who do not.

Concern for health disparities is not about all differences in health, but rather about a subset of differences that are avoidable and suggest social injustice. Although few readers of this book probably were moved to righteous indignation by the health differences cited in the

example of skiers and more frequent broken bones, the following observations are likely to prompt qualitatively different reactions: A baby born to an African-American mother in the United States is more than twice as likely to die before reaching her or his first birthday as is a baby born to a white mother.[1] A World Bank study of 56 countries revealed that, overall and within virtually every country, infant and child mortality were highest among the poorest 20% of the population and lowest among the best-off 20% of the population; the disparities were large in absolute as well as relative terms.[2]

HEALTH DISPARITIES

"Health disparities" is a shorthand term denoting a specific kind of health difference between more and less privileged social groups. It refers to differences that adversely affect disadvantaged groups that are systematic and persistent, not random or occasional, and that are at least theoretically amenable to social intervention. The social groups being compared are differentiated by their underlying social position, that is, by their relative position in social hierarchies defined by wealth, power, and/or prestige; this includes socioeconomic, racial/ethnic, gender, and age groups and groups defined by disability, sexual orientation or identity, or other characteristics reflecting social privilege or acceptance.[3-5]

HEALTH-CARE DISPARITIES

Disparities in health care, as opposed to disparities in health, refer to systematic differences in health care received by people based on these same social characteristics. Although disparities in health care account for only a relatively small proportion of disparities in health, they are of particular importance to health-care providers and are discussed in detail in the next chapter.

HEALTH EQUITY

For individuals concerned about vulnerable and underserved populations, one overarching objective is eliminating health disparities. A slightly different way of framing this aspiration is to state that the goal is to achieve health equity. This frames the objective as a positive one (achieving equity) rather than a negative one (eliminating disparities). This approach mirrors defining health as a positive state of well-being and not just the absence of disease. Health equity may be understood as a desired state of social justice in the domain of health, and health disparities as the metric used to measure progress toward this state. A reduction in health disparities is evidence of making progress toward greater health equity.[6]

ROLE OF SOCIOECONOMIC CLASS AND RACE/ETHNICITY IN HEALTH DISPARITIES

Profound and pervasive disparities in health associated with a range of socioeconomic factors such as income or wealth, education, and occupation have repeatedly been documented in the United States and globally.[2,7-9] Despite ongoing debates about whether causation has been definitively established, considerable evidence has accumulated demonstrating, at a minimum, the biological plausibility of those associations.[10,11] Similarly, virtually wherever data on health according to race or ethnic group have been measured, racial or ethnic disparities in health also have often been observed; these disparities sometimes, but not always, have disappeared or been markedly reduced once socioeconomic and other contextual differences have been accounted for.[12-14]

SOCIOECONOMIC STATUS

Social class shows a strong association with health and longevity. Higher SES provides individuals with more material, psychological, and social resources, which can benefit their health. There is no standardized method for defining or measuring social class in the clinical setting, and this information is not routinely collected as a part of health-care encounters. Some of the typical dimensions of social class used in research studies include occupation, income, and education level, which are all components of what is generally referred to as socioeconomic status.

Some of the most compelling evidence about the association between SES and health comes from the Whitehall study in the United Kingdom. This research on British civil servants demonstrated a linear association of higher occupational grade with lower 10-year mortality.[15] This was a striking finding because significant differences in mortality occurred in a population in which all participants were employed and had health-care coverage. Despite the relative homogeneity of the group, those in higher occupational grades had significantly lower rates of a number of diseases as well as lower mortality. These differences remained 25 years later, even after some of the civil servants had retired from their jobs.[16] A similar SES and health gradient has been observed in the United States. A 2010 study using national data observed stepwise incremental gradients of health improving as either income or educational level rose, for scores of indicators across the life course.[8]

INCOME AND HEALTH

Analyses of the SES gradient generally reveal a sharp drop in mortality as income increases from the most extreme

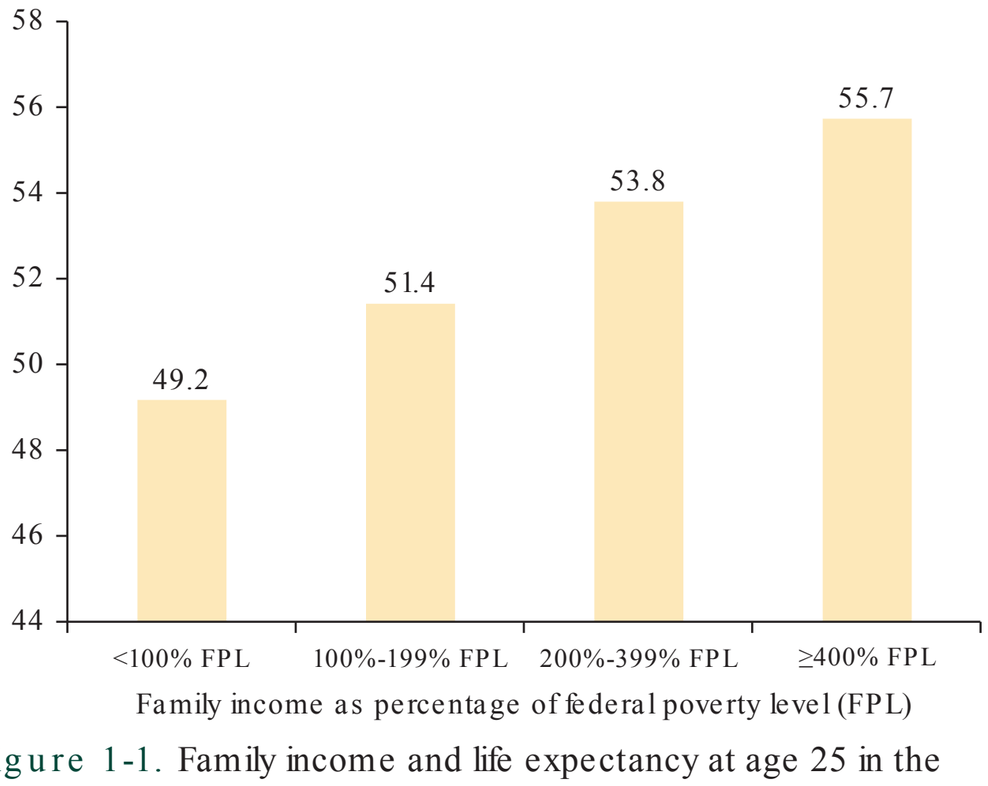


Figure 1-1. Family income and life expectancy at age 25 in the United States. This figure describes the number of years that adults in different income groups can expect to live beyond age 25. For example, a 25-year-old man with a family income below 100% of the federal poverty level can expect to live 49.2 additional years and reach an age of 74.2 years. (Source: CDC/NCHS, National Health Interview Survey Linked Mortality File, 2006. National Center for Health Statistics. Health, United States 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD: 2012. http://www.cdc.gov/nchs/data/hus/2011/fig32.pdf.)

categories of poverty toward more moderate poverty, and a continued but more gradual drop in mortality as incomes rises above this moderate poverty level. The National Longitudinal Mortality Survey in the United States showed a difference of more than 6 years of life expectancy at age 25, between those who were poor and those with incomes more than four times the poverty level; there was a 2-year difference in life expectancy at age 25 between those with intermediate-level incomes (200–399% of poverty) and the higher-income group (Figure 1-1).[8]

Above and beyond one's own economic status, there is some evidence that the distribution of income across a population makes a difference. Although still being debated, income inequality itself may be bad for people's health, irrespective of the average overall standard of living in a society. As discussed in Chapter 7, cross-national comparisons indicate that nations with less income inequality have better overall health indicators than nations at a comparable level of economic development with more unequal income distribution.[17]

Wealth is another measure of economic status. Wealth includes not just income, but also the value of assets such as home ownership, real estate, and investments—assets that often accumulate among families over generations. Wealth tends to have an even more inequitable distribution across a population than does income.

EDUCATION AND HEALTH

In contrast to the relationship between income and health, which demonstrates a continued drop in mortality

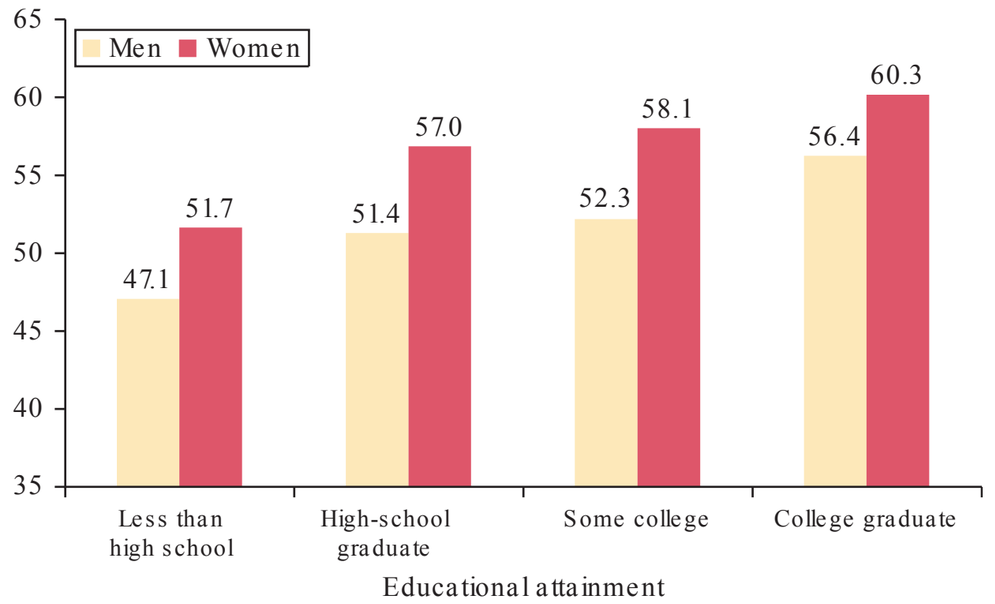


Figure 1-2. Educational attainment and life expectancy at age 25 in the United States. This figure describes the number of years that adults in different education groups can expect to live beyond age 25. For example, a 25-year-old man with a high school diploma can expect to live 51.4 additional years and reach an age of 76.4 years. (Source: CDC/NCHS, National Health Interview Survey Linked Mortality File, 2006. National Center for Health Statistics. Health, United States 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD: 2012. http://www.cdc.gov/nchs/data/hus/2011/fig32.pdf.)

as income increases (albeit with a sharper drop in the lower portion of the distribution), the association between mortality and education is more discontinuous. For all-cause mortality and each of the specific causes, the death rates are lower for those with more education (Figure 1-2). To the extent that education provides information, knowledge, and skills that improve health, each additional year of education should contribute somewhat equally to improved health. However, educational attainment also serves a credentialing function. As a result, there is a greater benefit of achieving years of schooling that result in a degree or credential than of additional years that do not. Thus, the benefit of completing the 12th year of schooling, which results in a high school degree, is greater than the benefit of completing any other single year of high school (referred to as the "sheepskin" effect).

The data linking education and health can more clearly be interpreted as a causal effect of education and health than is the case for income and health. While poor health can reduce one's income,[18] education occurs earlier in life than do most serious diseases, and this temporal ordering provides a strong rationale for attributing the association to the impact of education on health.

Data in the United States on SES and health have been limited. While public health monitoring and epidemiologic surveys frequently collect information on race and ethnicity, they less often include information on income or education. Until recently, death certificates had only data on race and ethnicity, but now include information on education but not occupation, income, wealth, or other SES variables.

RACE/ETHNICITY

Race and ethnicity often are combined and referred to as one concept. Nevertheless, the concept of race as commonly used tends to evoke differences in skin color and other superficial secondary characteristics, whereas ethnicity incorporates the concept of culture.[19]

The health implications of classification of both racial and ethnic groups derive primarily from the social construction and impact of being labeled as belonging to one or another group. Apart from a small number of genes that code for skin color and other superficial secondary characteristics, and a few genes that are linked to geographic origin which confer risk for specific diseases, there is little biologic basis for health disparities among racial and ethnic groups. Advances in genomics have exposed the concept of race as predominantly a social construct, rooted in historical biases and social stratification based on ancestry and superficial phenotype rather than emanating from fundamental genetic differences among populations perceived to be of different "races." There is no gene or set of genes that are exclusive to one race and that can be used to define those belonging to a race. Stated another way, one cannot look at a person's DNA and tell definitively that she or he is Asian, African American, Latino, or white. The genetic variation among people within a racial and ethnic group is much greater than the variation across groups.[20]

Despite the lack of definitive genetic determinants, race and ethnicity have important influences on health. Based on historical conventions, US federal agencies use a two-item approach to classification. The first item is considered to represent race, and includes five major groups: African American or black, American Indian or Alaska native, Asian, native Hawaiian or other Pacific Islander, and white. The second item is considered to measure ethnicity, and consists solely of a dichotomous categorization of Hispanic or non-Hispanic. In our view, such categorical distinctions between the concept of race and ethnicity are an oversimplification of this socially defined construct, and we use the term "race–ethnicity" to communicate a more holistic notion of this concept.

Disparities by race–ethnicity are present in the United States for such diverse health indicators as infant mortality, cancer mortality, coronary heart disease mortality, and the prevalence of diabetes, HIV infection, or stroke (Table 1-1). Two clear observations can be made about these health outcomes categorized by race and ethnicity. First, African Americans experience the greatest morbidity and mortality on every reported indicator, and the gap often is substantial. For example, African Americans experience 12.7 deaths for every 1000 live births, compared with Asian or Pacific Islanders, who experience 4.5 deaths. Second, no other group shows consistently poor health outcomes across all indicators. Whites show poorer outcomes than groups other than African Americans on many of the reported health indicators (e.g., overall cancer mortality). American Indians and Alaska natives have the second highest rates of infant mortality, and Hispanics or Latinos have the second highest prevalence of diabetes. Asian Americans and Pacific Islanders show the most favorable profile.

One limitation of these conclusions is that they are based on large groupings by race–ethnicity. These broad categories may obscure substantial variation in health within some of the groups. Members of the same major racial–ethnic group from different countries and areas of origin have different degrees of disadvantage and health risk. For example, among Latinos and Hispanics in the United States, the infant mortality rate is 4.9 among Cubans and 7.3 among Puerto Ricans. The importance of looking at subgroups also may differ by disease. For example, Asian Indians have the lowest rates of all-cause mortality, yet they have relatively high rates of coronary heart disease compared with other Asian groups.[21]

Table 1-1. Health Disparities by Condition and Race–Ethnicity

Health Condition and Specific Example	Race/Ethnicity				
	White	Black/African American	Hispanic/Latino	Asian and Pacific Islander	American Indian and Alaska Native
Infant mortality: rate per 1000 live births	5.5	12.7	5.6	4.5	8.4
Cancer mortality: rate per 100,000	173	206	120	108	158
Lung cancer mortality: rate per 100,000	49	52	21	25	40
Female breast cancer mortality: rate per 100,000	22	31	15	11	15
Coronary heart disease: mortality rate per 100,000	118	141	87	67	92
Stroke: mortality rate per 100,000	38	56	30	32	30
Homicides, per 100,000	2.6	19.9	6.6	2.2	9.0
HIV infection: prevalence per 100,000 adults	17	128	50	15	32
Diabetes: prevalence per 100 adults	6.8	11.3	11.5	10.2	DSU

DSU, data are statistically unreliable.
Source: CDC Health Disparities and Inequalities Report, United States, 2013. MMWR 2013;62(Suppl), No. 3; National Cancer Institute, SEER Cancer Statistics Review 1975–2011.

DUAL EFFECT OF SOCIOECONOMIC STATUS AND RACE/ETHNICITY

The overlap between race/ethnicity and SES makes it difficult to disentangle the relative contributions of each of these factors toward health.[22] Both African Americans and Hispanics are overrepresented in lower SES categories. Data from the 2010 census reveal that 30.3% of whites 25 years of age and older are college graduates, compared with 19.8% of African Americans and 13.9% of Hispanics. Similarly, there are large differences in income by race/ethnicity. For example, in 2009 the median family income was $38,409 for African Americans, whereas it was $62,545 for whites. If one uses a measure of net worth (wealth) instead of income, the economic differences by race/ethnicity are even more dramatic.

For some health outcomes, differences in the United States between African Americans and whites become much less significant once analyses control for income and/or education. For other health outcomes there continue to be differences associated with race/ethnicity that are not explained by socioeconomic class alone[23] (Figure 1-3).

The relative emphasis on disparities according to race–ethnicity and SES varies in nations across the globe, reflecting differences in both demographic characteristics and social history. A comparative analysis of US and EU approaches to health equity observed, "With a history marked by the legacy of slavery and discrimination, the United States has adopted a racially oriented perspective on certain social concerns to ensure equitable treatment under the law and safeguard civil rights. In Europe, by contrast, experience with ethnic group genocide during World War II has caused great reluctance to segment or even identify populations on racial or ethnic grounds. Consequently, authorities in many European countries have made a deliberate decision not to collect data on race and ethnicity."[24]

As social scientists continue to investigate the complex interplay among race–ethnicity, social statuses, and health status, the prevailing wisdom is that both race–ethnicity and SES matter.[7] Race–ethnicity can confer a vulnerability rooted in experiences of racism and social oppression that is not completely reducible to socioeconomic disadvantage. At the same time, focusing exclusively on disparities by racial and ethnic groups overlooks the contribution of socioeconomic inequalities to these disparities. The following section examines in detail the pathways through which social vulnerabilities such as minority race–ethnicity or low SES translate into poor health status.

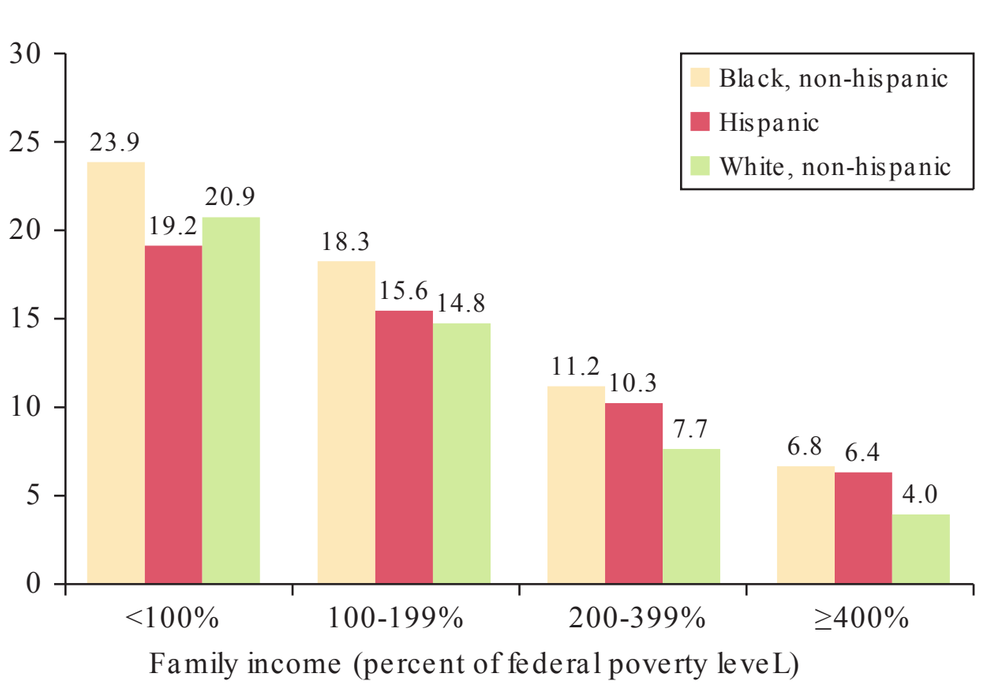


Figure 1-3. Self-rated health status according to race–ethnicity and income in the United States. (Source: CDC/NCHS, National Health Interview Survey 2010, Family Core and Sample Adult Questionnaire. National Center for Health Statistics. Health, United States 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD: 2012. www.cdc.gov/nchs/data/hus/2011/056.pdf.)

HEALTH DISPARITIES AND PATHWAYS OF VULNERABILITY

Phyllis Gripman has been driving a bus for 22 years. The stress of keeping on schedule despite traffic congestion and impatient commuters contributes to her poorly controlled blood pressure. She often skips taking her diuretic medication when working to avoid the need for bathroom stops, which could put her behind schedule. Frequently, passenger complaints about the bus service are coupled with derogatory comments about the fact that she is a woman and African American.

Tho Van fled his native Cambodia to escape the Pol Pot regime. He has nightmares reliving watching his brother being tortured to death. He often must rely on his daughter to translate during his medical visits. He avoids discussing his nightmares in front of his daughter. He worries about his teenage son, who has joined a gang and is truant from school.

Walter Jones has been homeless since his discharge from the army following the Iraq War. He has been in and out of rehabilitation programs for his heroin addiction. He is managing to stay clean while in a methadone maintenance program. He initiated evaluation for other medical problems at the Veteran's Administration medical center, but did not follow up for treatment after he overheard a physician refer to him as "that noncompliant homeless drug addict who's wasting our time and money."

These three examples identify individuals with social characteristics that make them vulnerable to experiencing health disparities. Viewed within the framework of health disparities, defined in the preceding as health differences between more and less privileged groups, "vulnerability" consists of those social characteristics, such as minority race–ethnicity and low SES, that are associated with health disparities. How do these characteristics ultimately result in inferior health status?

PATHWAYS BETWEEN DEMOGRAPHIC CHARACTERISTICS AND HEALTH STATUS

The conceptual model displayed in Figure 1-4 synthesizes ideas from a variety of models that have been proposed to explain the pathways between demographic characteristics and health status.[25-29]

This model proposes that poor health culminates from several major forces:

1. Genetic endowment and epigenetic processes. Everyone is born with a genetic endowment that offers relative protection against, or vulnerability to, certain conditions. Ms. Gripman, the bus driver, may have inherited a disposition to develop essential hypertension. Mr. Jones, the homeless veteran, may have a genetic susceptibility to opiates that abetted his addiction to heroin. However, health and illness are determined not just by one's genetic makeup but by "epigenetic" processes. Exposures and experiences across one's life can determine whether specific genes are activated or are suppressed. The occurrence of disease thus depends not just on the "hardwiring" of genetics but also on the "software" of epigenetics.
2. Physical environment. The air, water, food, toxins, and physical dangers to which one is exposed may have a profound impact on health. Minorities and the poor are more likely to reside in neighborhoods and work settings with unhealthful physical environments; therefore, this is a socially mediated influence on their health (see Chapter 25). For example, housing is often crowded, noise is pervasive, pollutants and toxins are prevalent, and facilities for exercise are sparse. Mr. Jones' lack of housing is a particularly glaring example of vulnerability in his physical environment.
3. Social environment. Vulnerable populations also often face an oppressive social environment, including factors such as institutional and other forms of racism, housing segregation, and low levels of social capital (generally defined as the resources that come from strong community and interpersonal relationships). Communities with greater social capital and collective efficacy (i.e., more able to organize and garner resources) have lower morbidity and mortality.[30,31] Mr. Van's experience of political violence and social disruption as a refugee from Cambodia poignantly represents a social environment that has adverse effects on health and the receipt of health care (see Chapter 29 and 36).
4. Behavior and lifestyle. Unhealthful behaviors such as smoking and substance use are more prevalent among people with less education, and sedentary lifestyles and high-fat diets are more common among African Americans and those with low SES.[32] The reasons for these high rates of prevalence are complex and also are heavily influenced by differences in physical and social environments, chronic stress, and delivery of health care (see Part 3: Populations).
5. Chronic stress. Researchers have begun to identify the toxic effects of chronic stress related to lack of economic and social resources or experiences of discrimination. McEwen[33] developed the concept of "allostatic load" to describe the biological processes involved in responses to chronic stress. Allostatic load scores have been found to be higher among African Americans than among whites and greater among those with less education.[34] Allostatic load scores, in turn, have been shown in a sample of older adults to predict physical and cognitive decline, the onset of new cardiovascular disease, and mortality over a 7-year period.[35,36] The types of occupational stresses experienced by Ms. Gripman have also been associated with unfavorable health outcomes.[37]
6. Health care. Inadequate access to and quality of health care is a final pathway to health disparities. Structural inequalities in the distribution of health-care resources, such as physicians and hospitals, across communities, may lead to inequity in access to and quality of care. The interpersonal process of delivering care may be deficient because of factors such as discrimination or lack of cultural or non-English language competence among health-care workers. For example, a clinic with greater availability of interpreters and culturally appropriate mental health services might afford Mr. Van greater opportunity for effective treatment of his posttraumatic stress disorder, resulting in better health status and well-being (see Chapters 14, 29, 31, 33).

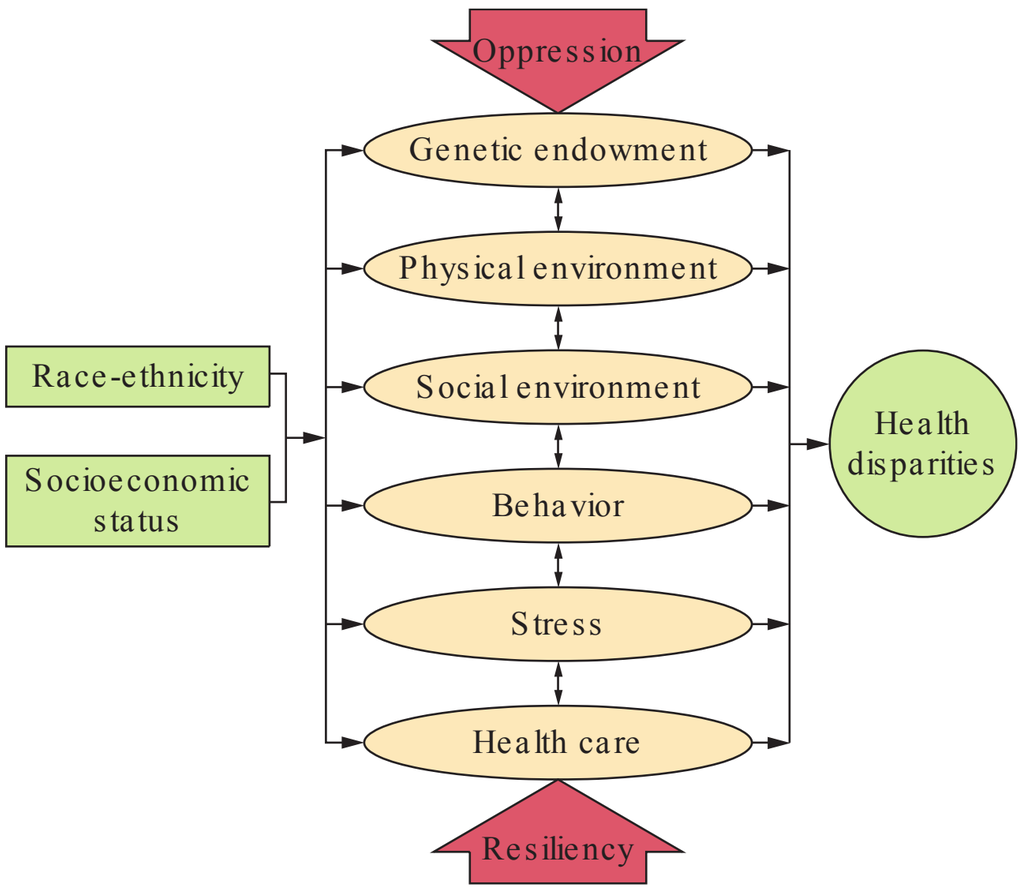


Figure 1-4. A conceptual model that synthesizes ideas from a variety of models proposed to explain the pathways between demographic characteristics and health status. This model proposes that poor health culminates from several major forces.

Although Figure 1-4 presents this model in a relatively linear form, it is important to recognize that the forces producing health disparities function in a more dynamic, multidirectional manner involving interactions and feedback loops among all the elements displayed. For example, chronic stress from war trauma may have contributed to Mr. Jones' adoption of unhealthful behaviors such as alcohol and drug use as a mechanism to cope with stress. Poor health or a chronic medical condition, such as Ms. Gripman's hypertension, may increase stress levels. Moreover, these factors all operate at multiple levels, ranging from the individual to the broader community and social institutions. The cumulative negative force of these pathways may be viewed as representing the social vulnerability that produces health disparities.

Most analyses have concluded that health care explains only about 10–20% of population health outcomes, with social, environmental, and behavioral factors being the most powerful determinants. As one leading public health advocate in the United States concluded about the powerful effect of social and environmental conditions, "Your ZIP code may be more important to your health than your genetic code."[38]

RESILIENCE

In contrast, individual and collective resilience—the capacity to develop positively despite harmful environments and experiences—represents the positive vector of these pathways that may act as a countervailing force and produce better health outcomes. One example of the positive effects that can result from individual and collective resiliency is reflected in the finding that first-generation immigrants appear to have a health advantage across virtually every group.[39] This may partially result from the "healthy immigrant" effect, in which there is differential selection for those who have the characteristics (including better health) that allow them to emigrate to the United States.[40] It may also reflect protective effects of traditional diets, supportive social networks, or other health practices of first-generation immigrants. The finding of lower mortality among older Mexican Americans living in neighborhoods with a higher density of Mexican Americans supports this view.[41] The researchers attributed this difference to the protective effects of the concentration, which may buffer Mexican Americans from the "unhealthful aspects of US culture."

ETHICAL AND HUMAN RIGHTS PRINCIPLES

Ethical and human rights principles underlie the notion of health equity. "Distributive justice," that is, normative ethical principles designed to allocate resources in limited supply relative to demand, is especially relevant to health disparities.[42]

DISTRIBUTIVE JUSTICE

The ethicist John Rawls has provided a framework for considering the principle of distributive justice and its application to health equity. In defining how one would know what was just an allocation of resources to different groups in a society, Rawls[43] introduced the notion of "the veil of ignorance." In his view, policies allocating resources should be made as if one were operating behind a "veil of ignorance" about the social group into which one had been born. If I did not know whether I would be born rich or poor, black or white, male or female, into a family living in a rural area or one in an urban area, how would I recommend allocating resources? Rawls believed that, under those circumstances, most people would prefer that resources be allocated according to need.

HUMAN RIGHTS AND THE RIGHT TO HEALTH

Human rights frameworks and principles provide a universally recognized frame of reference for initiatives to reduce health disparities between more and less advantaged social groups. When the term "human rights" is encountered, most people think of civil and political rights, such as freedom of speech and freedom from cruel or arbitrary punishment. However, human rights also encompass economic, social, and cultural rights, such as the right to a decent standard of living, which in turn includes rights to adequate food, water, shelter, and clothing requisite for health as well as the right to health itself.

Almost every country in the world has signed agreements that include health-related rights. The right to health is a cornerstone underlying efforts to achieve health equity. The World Health Organization's constitution[44] defined the right to health as the right of everyone to enjoy the highest possible level of health. The right to health can be operationalized as the right of all social groups (defined by social position) to attain the level of health enjoyed by the most privileged group in society. The right to health thus provides the basis for comparing the health experienced by different social groups, always using as the reference group the most privileged group in a given category.[4]

RACISM AND HEALTH

One final conceptual framework useful for understanding vulnerability derives from a model developed by Jones for understanding racism and its impact on health.[45] Jones proposes that racism operates at three levels: institutionalized, personally mediated, and internalized.

Institutionalized racism refers to the structural elements of racism that are "codified in our institutions of customs, practice and law so there need not be an identifiable perpetrator." Examples are housing segregation, school inequality, and the history of Jim Crow laws in the United States. Personally mediated racism is the prejudice and discrimination experienced in daily encounters, ranging from overt racial slurs to the less explicit racism of the prejudicial judgments made by teachers, clinicians, shopkeepers, and other social contacts. Internalized racism is defined as "acceptance by members of the stigmatized races of negative messages about their own abilities and intrinsic worth." Internalized racism manifests itself as lack of self-esteem and devaluing of the sense of self-worth. These types of racism may interact: for example, one study found that the impact of reported experiences of discrimination on risk of cardiovascular disease of African-American men was moderated by internalized racial group attitudes.[46]

Although developed for understanding racism, Jones' model is applicable to all the "-isms" that create social vulnerability. For example, the levels proposed by Jones apply to sexism. Sexism operates at an institutional level (e.g., objectification of women by mass media and entertainment, inadequate laws, and lax enforcement to protect women against violence and sexual abuse), interpersonal level (e.g., prejudice in hiring and promotion decisions), and internalized level (e.g., victimization, lowered expectations for achievement). The same principles apply to vulnerabilities based on social class, sexual orientation, gender identity, immigrant status, and other characteristics.[7]

TREATING VULNERABILITY: ADDRESSING THE ROOT CAUSES

For health professionals to successfully attend to the health needs of vulnerable populations, they must recognize how vulnerability manifests itself at each of these levels for each patient's particular constellation of vulnerabilities. Social consciousness is required to identify the factors that perpetuate vulnerability at the institutional level, whether in health-care organizations or other community institutions; to change these conditions requires translating awareness into social advocacy. Insight and reflection are necessary to enhance awareness of the biases and misassumptions—both obvious and subtle—that reinforce vulnerability at the personally mediated level. Finally, for clinicians to effectively care for vulnerable populations also require healing of patients' internalized wounds—the despair and devaluation of self-worth that thwart healthful living and healthy relationships.

What health-care providers can do to promote health equity by improving health care for socially vulnerable and underserved patients is addressed throughout this book. Subsequent chapters comprehensively discuss approaches to delivering more accessible, effective, and responsive health care and social services to vulnerable patients. However, the most effective treatment for the problems of vulnerable patients would be to change the fundamental social conditions that are the sources of vulnerability and primary determinants of health disparities.

Is it appropriate to expect health-care professionals to engage in arenas (e.g., health-care policy making) for which they are not trained? Without becoming policy makers themselves, health professionals have made major contributions to health-care policy debates by speaking out in diverse forums, contributing their time to support other activities of groups advocating for policies to reduce health-care disparities, and/or providing financial support for such groups.

At some time, nearly every health-care provider has experienced the frustration of providing an effective treatment for a patient's health problem, only to send the patient back to the same circumstances in the physical or social environment that caused or triggered the illness. An example is treating an asthma attack and then discharging the patient to the same substandard housing permeated with allergens. Virtually every clinician knows the frustration of prescribing regimens of medications, diet, and/or exercise to patients whose life circumstances make the successful implementation of those care plans very unlikely. For example, people who live in neighborhoods without stores that sell affordable fresh produce or in which outdoor exercise is unsafe or infeasible do not have the same opportunities to follow recommended regimens as those who live in more health-promoting neighborhoods.

However, most health-care professionals probably feel that fulfilling their own personal professional expectations as providers of high-quality health care, informed by the latest evidence, is difficult enough without adding expectations that they change their patients' life circumstances as well. In addition, health-care professionals feel ill equipped to change circumstances outside of the realm of health care that they are trained and experienced to provide. However, there are many feasible ways in which health-care providers can contribute to health equity, beyond their influence on reducing disparities in health care. Pragmatic strategies for engaging in advocacy to address social and environmental determinants of health are discussed in Chapter 8. Methods for integrating interventions to address social determinants into routine clinical practice are discussed in Chapter 9.

Health-care organizations as diverse as Kaiser Permanente in the United States and the Cuban National Health Service are finding common ground on a shared focus on the goal of population health, not just the health of individual patients. This focus is providing motivation and