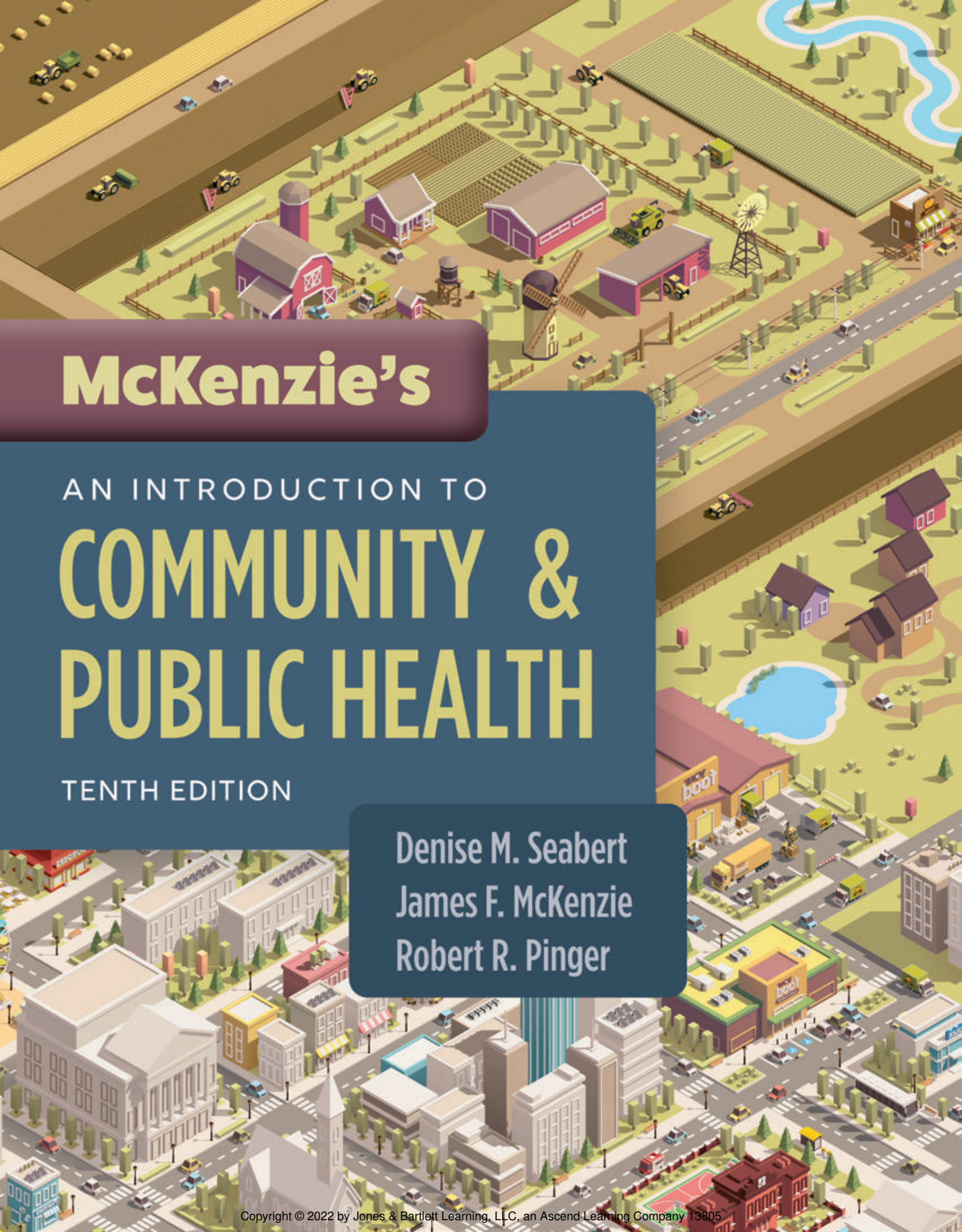

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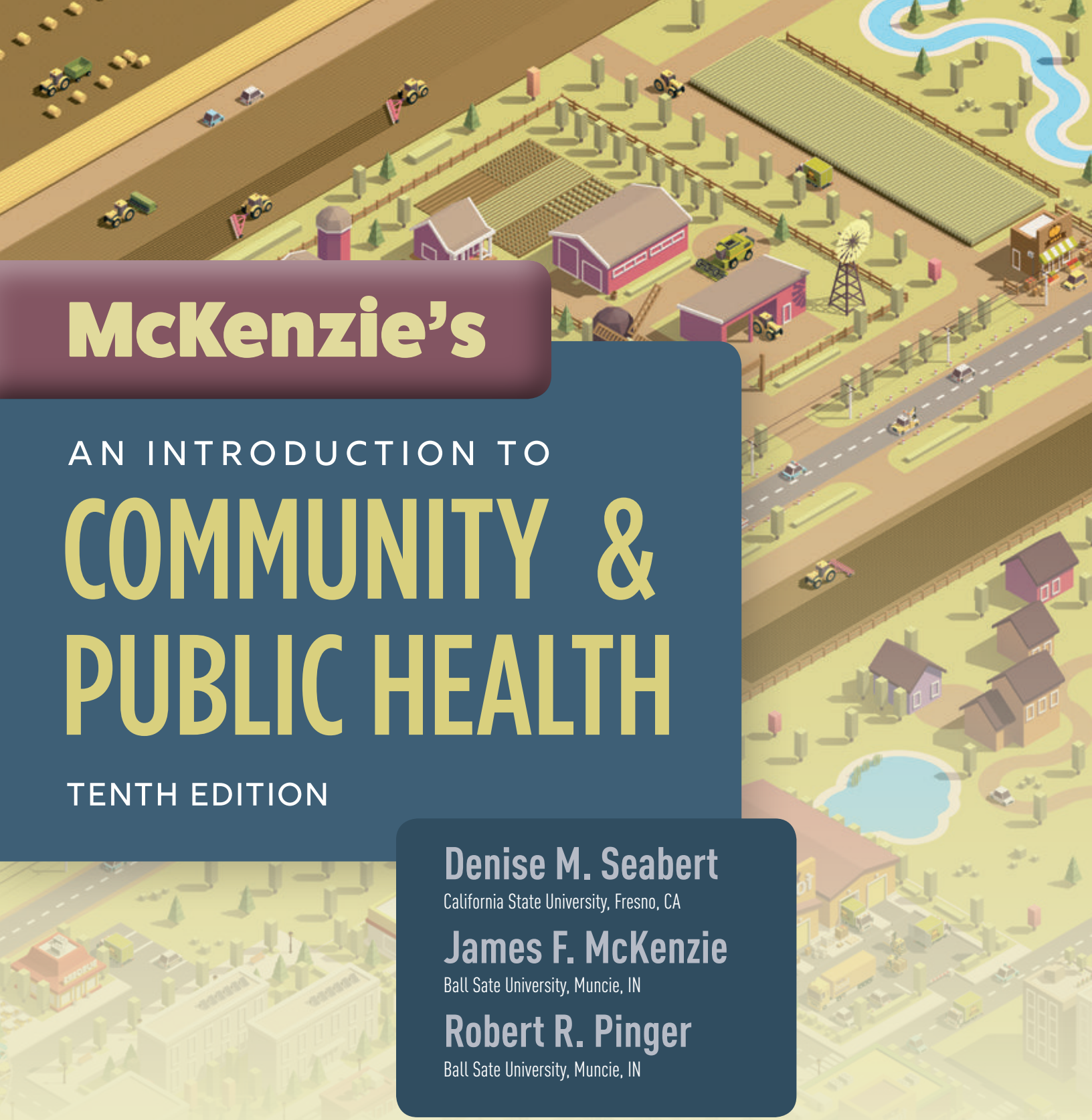

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World Headquarters
Jones & Bartlett Learning
5 Wall Street
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978-443-5000
info@jblearning.com
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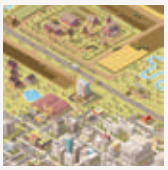

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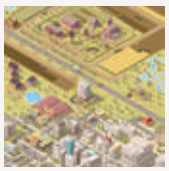

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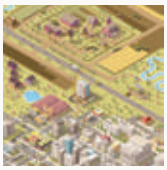

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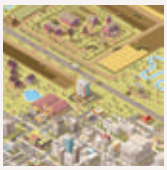

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PREFACE

As its title suggests, *McKenzie's An Introduction to Community & Public Health* was written to introduce students to community and public health. Our textbook combines the power of today's electronic technology, via the internet, with a traditional textbook presentation. We believe that students will find *McKenzie's An Introduction to Community & Public Health* easy to read, understand, and use. With careful reading of the chapters, responding to the chapter scenarios and review questions, as well as completing some of the chapter activities, we are confident users of this text will gain a comprehensive introduction to community and public health. *McKenzie's An Introduction to Community & Public Health* incorporates a variety of pedagogical elements that assist and encourage students to understand complex community and public health issues. Each chapter of the book includes:

- Chapter objectives
- Scenario
- Introduction
- Marginal definitions of key terms presented in boldface type
- Chapter summary
- Scenario analysis and response
- Review questions
- Activities
- References

Carefully selected figures, tables, boxes, and photos illustrate and clarify the concepts presented in the text. Select content in each chapter refers to the *Healthy People 2030* goals and objectives.

WHAT IS NEW TO THIS EDITION?

Although the format of this edition is similar to previous editions, much has changed. First, the content and statistics throughout the book have been reviewed and updated with the latest information. New tables, figures, boxes, and photographs have been added. Second, where possible, we have made changes requested by the reviewers of the previous edition.

The following describe the chapter-specific changes made to this edition:

- **Chapter 1** was revised with content related to twenty-first century public health challenges, such as opioid information and prioritization of public health preparedness in the United States and internationally.
- **Chapter 2** was revised with World Health Organization goals and COVID-related activities as well as updated content related to Health and Human Services (HHS) priorities and critical Centers for Disease Control and Prevention (CDC) activities.
- **Chapter 3** includes a number of new terms including *outbreak, reportable disease*, and *placebo*, as well as updated information on reportable diseases.
- **Chapter 4** includes updated content related to HIV and AIDS prevention measures and the new initiative, Ending the HIV Epidemic: A Plan for America.
- **Chapter 5** includes updated statistics and new information on evidence-based interventions, a new community assessment activity, and revised National Commission of Health Education Credentialing (NCHEC) Areas of Responsibility information.
- **Chapter 6** includes updates to the social and educational learning section, responsibilities of the school nurse, and information on the role of school-based health centers in providing mental health services.
- **Chapter 7** includes a major revision of the teenage births section and updates to Title X information to reflect recent regulations and preconception health checklist.
- **Chapter 8** has been updated with the most recently available data regarding the health of adolescents, young adults, and adults. American Cancer Society guidelines for cancer screenings have been updated as well.
- In **Chapter 9**, the section on geographical distribution of older adults has been revised and updated.
- **Chapter 10** has been changed from "Community and Public Health and Racial/Ethnic Populations" to "Disparate Populations and Community and Public Health" to better introduce the concepts of minority health and health disparities to the reader. A number of new sections have been added including, "Diversity and Equity in Minority Health." Terms have been updated and activities have been revised to reflect content on minority health disparities.
- **Chapter 11** includes new information on mental illness and college students, mental disorders and services among immigrants, peer support services for treating mental illness, as well as content on the 21st Century Cures Act.
- **Chapter 12** features added content regarding vaping, JUUL, e-cigarettes, and the Tobacco 21 movement. Updates regarding marijuana legalization have also been made.
- **Chapter 13**, which combines the structure and function of healthcare delivery in the United States, includes updated data and information throughout to reflect current issues related to healthcare delivery in the U.S.
- **Chapter 14** has added content on teenage e-cigarette use as well as an update to terms and definitions.
- **Chapter 15** includes revised chapter objectives, added information on suicide rates, and revised information on safe and healthy schools.
- **Chapter 16** has been updated to represent greater currency of information related to workplace injuries, including terms and definitions.

HOW TO USE THIS BOOK

Chapter Objectives

The chapter objectives identify the knowledge and competencies that students need to master as they read and study the chapter material, answer the end-of-chapter review questions, and complete the activities. To use the objectives effectively, students should review them before and after reading the chapters. This will help students focus on the major knowledge points in each chapter and facilitate answering the questions and completing the activities at the end of each chapter.

Chapter Objectives

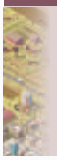
After studying this chapter, you will be able to:

1. Define the terms *health, community, community health, population health, public health, public health system,* and *global health*.
2. Briefly describe the five major determinants of health.
3. Explain the difference between personal and community health activities.
4. List and discuss the factors that influence a community's health.
5. Briefly relate the history of community and public health, including the recent U.S. history of community and public health in the twentieth and early twenty-first centuries.
6. Provide a brief overview of the current health status of Americans.
7. Describe the purpose of the *Healthy People 2030* goals and objectives as they apply to the planning process of the health of Americans.
8. Summarize the major community and public health problems facing the United States and the world today.

Scenarios

Short scenarios are presented at the beginning of each chapter. The purpose of these scenarios is to bridge the gap between your students' personal experiences and ideas discussed within the chapter. The chapter content will enable your students to propose solutions to the community or public health problem posed in the scenario.

Scenario



Amy and Eric are a young working couple who are easing into a comfortable lifestyle. They have good-paying jobs, drive nice cars, have two healthy preschool children, and, after living in an apartment for several years, are now buying a home in a good neighborhood. When Amy picked her children up from day care earlier in the day she was told that another parent had reported that his child was diagnosed with hepatitis. This news frightened Amy and made her begin to question the quality of the day care center. Amy told discussed whether or not they should take their children to day care as usual the following day, they discovered that they had many unanswered questions. How serious is hepatitis? What is the likelihood that their children will be at serious risk for getting the disease? What steps are being taken to control the outbreak? Is any state or local agency responsible for standardizing health practices at private day care centers in the community? Does the city, county, or state carry out any type of inspection when they license these facilities? And, if the children do not

Introduction

Each chapter begins with a brief introduction that informs the reader of the topics to be presented and explains how these topics relate to others in the book.

Introduction

Since 1900, tremendous progress had been made in the health and life expectancy of people who live in the United States (see **Box 1.1**) and elsewhere in the world. Infant mortality has dropped, many infectious diseases have been brought under control, and better family planning has become available. However, much still needs to be done to improve health, especially when it comes to health disparities found among certain ethnic and racial groups. Individual health behaviors, such as the use of tobacco, poor diet, and physical inactivity, have given rise to an unacceptable number of cases of illness and death from noninfectious diseases such as cancer, diabetes, and heart disease. Continued use of an outdated infrastructure, such as the old water pipes in Flint, Michigan, has exposed many to unnecessary health risks. New and emerging infectious diseases, such as the 2019 Novel Coronavirus and diseases caused by "superbugs" (i.e., drug-resistant pathogens), are stretching the resources available to control them. In addition, events stemming from natural disasters such as floods, tornadoes, and hurricanes; human-made disasters such as the Gulf oil spill; and terrorism, such as the 2013 bombings at the Boston Marathon have caused us to refocus our priorities. All of these events have severely disrupted Americans' sense of security[1] and sense of safety in the environment. In addition, many of these

Marginal Definitions

Understanding the key terms helps drive stronger comprehension of the core knowledge and competencies contained within the chapter. These terms are presented in **boldface** type in the text and defined in the margin. Before reading each chapter, we suggest that students review the chapter's key terms in preparation for encountering them in the text. The boldfaced terms also appear in the glossary at the end of the book.

Built environment "the design, construction, management, and land use of human-made surroundings as an interrelated whole, as well as their relationship to human activities over time."[20]

Chapter Summary

At the end of each chapter are several bulleted points that review the major concepts contained in each chapter. These provide a great way to review knowledge and comprehension of the material.

Chapter Summary

- A number of key terms are associated with the study of community and public health, including *health, community, community health, population health, public health, public health system,* and *global health*.
- The four factors that affect the health of a community are physical (e.g., community size), social and cultural (e.g., religion), community organization, and individual behaviors (e.g., exercise and diet).
- It is important to be familiar with and understand the history of community health to be able to deal with the present and future community and public health issues.
- The earliest community and public health practices went unrecorded; however, archeological findings of ancient societies (before 500 BCE) show evidence of concern for community and public health. There is evidence during the time of the classical cultures (500 BCE–500 CE) that people were interested in physical strength, medicine, and sanitation.
- The belief of many living during the Middle Ages (500–1500 CE) was that health and disease were associated with spirituality. Many epidemics were seen during this period.
- During the Renaissance period (1500–1700 CE), there was a growing belief that disease was caused by the environment, not spiritual factors.
- The eighteenth century was characterized by industrial growth. Science was being used more in medicine, and it was during this century that the first vaccine was discovered.
- The nineteenth century ushered in the modern era of public health. Germ theory was introduced during this time, and the last quarter of the century is known as the bacteriological period of public health.
- The twentieth century can be divided into several periods. The health resources development period (1900–1960) was a time when many public and private resources were used to improve health. The period of social engineering (1960–1973) saw the U.S. government's involvement in health insurance through Medicare and Medicaid. The health promotion period began in 1974 and continues today.
- *Healthy People 2030* and the National Prevention Strategy are important components of the community and public health agenda in the United States.
- Great concern continues to exist in the United States regarding health care, the environment, diseases caused by an impoverished lifestyle, the spread of communicable diseases (such as AIDS, Legionnaires' disease, Lyme disease, and Zika virus), the harm caused by alcohol and other drug abuse, and terrorism.
- Although the health of the world population is improving, communicable diseases, poor sanitation and unsafe drinking water, hunger, and migration are burdens for many and impact the people who are poor much more than those who are not poor.

Scenario: Analysis and Response

Following the chapter summary, students are provided with an opportunity to respond to the scenario presented earlier in the chapter. The content presented in the chapter will help student to formulate their responses or solutions.

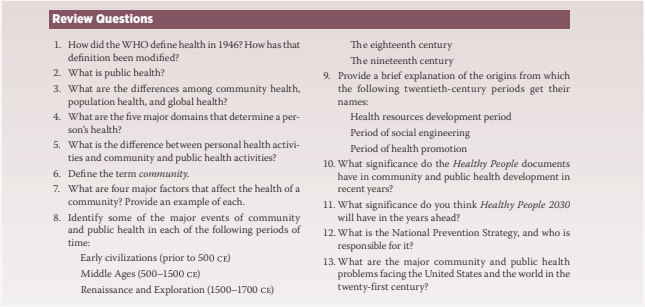
Scenario: Analysis and Response

The internet offers many sources of information that could help Amy and Eric with the decisions that they will have to make about the continued use of the day care center for their children. Use a search engine (e.g., Google, Bing) and enter (a) hepatitis and (b) hepatitis and day care centers. Print out the information that you find and use it in answering the following questions.

1. Based on the information you found on the internet, if you were Amy or Eric would you take your children to the day care center the next day? Why or why not?

Review Questions

Review questions at the end of each chapter provide students with feedback regarding their mastery of the chapter's content. The questions reinforce the chapter objectives and key terms.

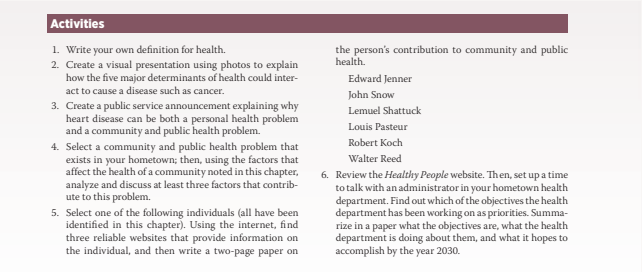


Review Questions

1. How did the WHO define health in 1946? How has that definition been modified?
2. What is public health?
3. What are the differences among community health, population health, and global health?
4. What are the five major domains that determine a person's health?
5. What is the difference between personal health activities and community and public health activities?
6. Define the term *community*.
7. What are four major factors that affect the health of a community? Provide an example of each.
8. Identify some of the major events of community and public health in each of the following periods of time:
   - Early civilizations (prior to 500 CE)
   - Middle Ages (500–1500 CE)
   - Renaissance and Exploration (1500–1700 CE)
   - The eighteenth century
   - The nineteenth century
9. Provide a brief explanation of the origins from which the following twentieth-century periods get their names:
   - Health resources development period
   - Period of social engineering
   - Period of health promotion
10. What significance do the *Healthy People* documents have in community and public health development in recent years?
11. What significance do you think *Healthy People 2030* will have in the years ahead?
12. What is the National Prevention Strategy, and who is responsible for it?
13. What are the major community and public health problems facing the United States and the world in the twenty-first century?

Activities

The activities at the end of each chapter provide an opportunity for students to apply new knowledge in a meaningful way. The activities, which are presented in a variety of formats, should appeal to the varying learning styles of students.



Activities

1. Write your own definition for health.
2. Create a visual presentation using photos to explain how the five major determinants of health could interact to cause a disease such as cancer.
3. Create a public service announcement explaining why heart disease can be both a personal health problem and a community and public health problem.
4. Select a community and public health problem that exists in your hometown; then, using the factors that affect the health of a community noted in this chapter, analyze and discuss at least three factors that contribute to this problem.
5. Select one of the following individuals (all have been identified in this chapter). Using the internet, find three reliable websites that provide information on the individual, and then write a two-page paper on the person's contribution to community and public health.
   - Edward Jenner
   - John Snow
   - Lemuel Shattuck
   - Louis Pasteur
   - Robert Koch
   - Walter Reed
6. Review the *Healthy People* website. Then, set up a time to talk with an administrator in your hometown health department. Find out which of the objectives the health department has been working on as priorities. Summarize in a paper what the objectives are, what the health department is doing about them, and what it hopes to accomplish by the year 2030.

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Contributors

I would like to thank the following individuals, who have brought their expertise to the writing team:

Chapter 3 Epidemiology: The Study of Disease, Injury, and Death in the Community

Salma Haidar, MPH, PhD
Associate Professor
Division of Public Health, School of Health Sciences
Central Michigan University

Ruben Juarez, MPH candidate
Division of Public Health, School of Health Sciences
Central Michigan University

Chapter 4 Communicable and Noncommunicable Diseases: Prevention and Control of Diseases and Health Conditions

Kristina Behan, PhD, MLS (ASCP)
Professor
Department of Medical Laboratory Sciences
University of West Florida

Chapter 5 Community Organizing/Building and Heath Promotion,

Chapter 12 Alcohol, Tobacco, and Other Drugs: A Community Concern

Patricia Barrington, EdD, MCHES®
Instructor
Department of Movement Sciences and Health
University of West Florida

Chapter 6 The School Health Program: A Component of Community and Public Health,

Chapter 7 Maternal, Infant, and Child Health,

Chapter 8 Adolescents, Young Adults, and Adults

Janet Kamiri, MPH, CHES®
Director of Health and Wellness
Indianapolis Urban League

Chapter 9 Older Adults

Andrea Nelson, PT, DPT, GCS, CLT
Clinical Assistant Professor
Department of Health Sciences and Administration
University of West Florida

Chapter 10 Disparate Populations and Community and Public Health

Jodi Brookins-Fisher, PhD, MCHES®, FESG
Director/Professor/Internship Coordinator
Division of Public Health, School of Health Sciences
Central Michigan University

Calvin E. Roberson, Jr., MHA, MPH
Vice President of Planning and Program Development
Indiana Minority Health Coalition, Inc.

Kaylan Fitch, MPH candidate
Division of Public Health
School of Health Sciences
Central Michigan University

Anita Ohmit, MPH
Vice President of Research
Indiana Minority Health Coalition, Inc.

Chapter 11 Community Mental Health

David V. Perkins, PhD
Professor Emeritus
Department of Psychological Sciences
Ball State University

Chapter 13 Healthcare Delivery in the United States

Andrew Kim, PhD, MPH
Assistant Professor
Division of Public Health, School of Health Sciences
Central Michigan University

Chapter 14 Community and Public Health and the Environment

Jamie H. Wright, MHS, MS, CHMM
Emergency Management Specialist
Consolidated Nuclear Security, LLC

Their expertise is both welcomed and appreciated.

Reviewers

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- Teresa Drake, PhD, RD, CHES, Bradley University
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- Eric Sweeney, MEd, PhD, Baldwin Wallace University

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UNIT ONE

Foundations of Community and Public Health

CHAPTER 1 Community and Public Health: Yesterday, Today, and Tomorrow

CHAPTER 2 Organizations That Help Shape Community and Public Health

CHAPTER 3 Epidemiology: The Study of Disease, Injury, and Death in the Community

CHAPTER 4 Communicable and Noncommunicable Diseases: Prevention and Control of Diseases and Health Conditions

CHAPTER 5 Community Organizing/Building and Health Promotion Programming

CHAPTER 6 The School Health Program: A Component of Community and Public Health

CHAPTER 1

Community and Public Health: Yesterday, Today, and Tomorrow

Chapter Outline

Scenario
Introduction
- Definitions
- Factors That Affect the Health of a Community

A History of Community and Public Health
- Earliest Civilizations
- The Eighteenth Century
- The Nineteenth Century
- The Twentieth Century
- The Twenty-First Century

Chapter Summary
Scenario: Analysis and Response
Review Questions
Activities
References

Chapter Objectives

After studying this chapter, you will be able to:

1. Define the terms *health, community, community health, population health, public health, public health system*, and *global health*.
2. Briefly describe the five major determinants of health.
3. Explain the difference between personal and community health activities.
4. List and discuss the factors that influence a community's health.
5. Briefly relate the history of community and public health, including the recent U.S. history of community and public health in the twentieth and early twenty-first centuries.
6. Provide a brief overview of the current health status of Americans.
7. Describe the purpose of the *Healthy People 2030* goals and objectives as they apply to the planning process of the health of Americans.
8. Summarize the major community and public health problems facing the United States and the world today.

Scenario

Amy and Eric are a young working couple who are easing into a comfortable lifestyle. They have good-paying jobs, drive nice cars, have two healthy preschool children, and, after living in an apartment for several years, are now buying a home in a good neighborhood. When Amy picked her children up from day care earlier in the day she was told that another parent had reported that his child was diagnosed with hepatitis. This news frightened Amy and made her begin to question the quality of the day care center. Amy told Eric of this situation when he got home. As the couple discussed whether or not they should take their children to day care as usual the following day, they discovered that they had many unanswered questions. How serious is hepatitis? What is the likelihood that their children will be at serious risk for getting the disease? What steps are being taken to control the outbreak? Is any state or local agency responsible for standardizing health practices at private day care centers in the community? Does the city, county, or state carry out any type of inspection when they license these facilities? And, if the children do not attend day care, which parent will stay home with them?

Introduction

Since 1900, tremendous progress had been made in the health and life expectancy of people who live in the United States (see **Box 1.1**) and elsewhere in the world. Infant mortality has dropped, many infectious diseases have been brought under control, and better family planning has become available. However, much still needs to be done to improve health, especially when it comes to health disparities found among certain ethnic and racial groups. Individual health behaviors, such as the use of tobacco, poor diet, and physical inactivity, have given rise to an unacceptable number of cases of illness and death from noninfectious diseases such as cancer, diabetes, and heart disease. Continued use of an outdated infrastructure, such as the old water pipes in Flint, Michigan, has exposed many to unnecessary health risks. New and emerging infectious diseases, such as the 2019 Novel Coronavirus and diseases caused by "superbugs" (i.e., drug-resistant pathogens), are stretching the resources available to control them. In addition, events stemming from natural disasters such as floods, tornadoes, and hurricanes; human-made disasters such as the Gulf oil spill; and terrorism, such as the 2013 bombings at the Boston Marathon have caused us to refocus our priorities. All of these events have severely disrupted Americans' sense of security[1] and sense of safety in the environment. In addition, many of these events revealed the vulnerability of the United States and the world in their ability to respond to such circumstances and highlighted the need for improvement in emergency response preparedness and the infrastructure of the public health system.

Despite all that has happened in recent years in the United States and around the world, the achievement of good health remains a worldwide goal of the twenty-first century. Governments, private organizations, and individuals throughout the world are working to improve health. Although individual actions to improve one's own personal health certainly contribute to the overall health of the community, organized community actions are often necessary when health problems exceed the resources of any one individual. When such actions are not taken, the health of the entire community is at risk.

This chapter introduces the concepts and principles of community and public health, explains how community and public health differ from personal health, and provides a brief history of community and public health. Some of the key health problems facing Americans are also described, and an outlook for the twenty-first century is provided.

Definitions

The word *health* means different things to different people. Similarly, there are other words that can be defined in various ways. Some basic terms we will use in this book are defined in the following paragraphs.

BOX 1.1 Ten Great Public Health Achievements—United States, 1900–1999 and 2001–2010

As the twentieth century came to a close, the overall health status and life expectancy in the United States were at all-time highs. Between 1900 and 2000 life expectancy at birth of U.S. residents increased by 62% from 47.3 years to 76.8 years;[2] 25 of these years have been attributed to advances in public health.[3] Currently, U.S. life expectancy is 78.8 years.[2] Many public health achievements can be linked to this gain in life expectancy. The Centers for Disease Control and Prevention (CDC), the U.S. government agency charged with protecting the public health of the nation, singled out "ten great public health achievements" in the United States between 1900 and 1999. Here is the list:[4]

1. Vaccination
2. Motor vehicle safety
3. Safer workplaces
4. Control of infectious diseases
5. Decline of deaths from coronary heart disease and stroke
6. Safer and healthier foods
7. Healthier mothers and babies
8. Family planning
9. Fluoridation of drinking water
10. Recognition of tobacco use as a health hazard

At the conclusion of 2010, public health scientists at the CDC were asked to nominate noteworthy public health achievements that occurred in the United States during 2001–2010. Below, in no specific order, are the ones selected from the nominations.[5]

- *Vaccine-preventable deaths*. Over the 10-year period, there was a substantial decline in cases, hospitalizations, deaths, and healthcare costs associated with vaccine-preventable diseases.
- *Prevention and control of infectious diseases*. Improvements in public health infrastructure, along with innovative and targeted prevention efforts, yielded significant progress in controlling infectious diseases (e.g., tuberculosis cases).
- *Tobacco control*. Tobacco still remains the single largest preventable cause of death and disease in the United States; adult smoking prevalence dropped to 13.7% in 2018[6] and 27 states have comprehensive smoke-free laws.[7]
- *Maternal and infant health*. During the 10-year period, there were significant reductions in the number of infants born with neural tube defects and an expansion of screening of newborns for metabolic and other heritable disorders.
- *Motor vehicle safety.* There were significant reductions in motor vehicle deaths and injuries, as well as pedestrian and bicyclist deaths. These reductions are attributed to safer vehicles, roads, and safer road use.
- *Cardiovascular disease prevention*. Death rates for both stroke and coronary heart disease continue to trend down. Most can be attributed to reduction in the prevalence of risk factors and improved treatments, medications, and quality of care.
- *Occupational safety*. Much progress was made in improving working conditions and reducing the risk for workplace-associated injuries over the 10-year period.
- *Cancer prevention.* A number of death rates due to various cancers dropped during the 10 years and much of the progress can be attributed to the implementation of the evidence-based screening recommendations.
- *Childhood lead poisoning prevention*. There was a steep decline in the percentage of children ages 1 to 5 years with blood levels ≥ 10 mcg/dL. Much of the progress can be traced to the 23 states in 2010 that had comprehensive lead poisoning prevention laws. As of 2012, experts use a reference level of 5 mcg/dL to identify children with high blood lead levels.[8]
- *Public health preparedness and response*. Following the terrorists' attacks of 2001 on the United States, great effort was put into both expanding and improving the capacity of the public health system to respond to public health threats.

Data from: Centers for Disease Control and Prevention (1999). Ten Great Public Health Achievements—United States, 1900–1999. *Morbidity and Mortality Weekly Report, 48*(12), 241–243; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2011). Ten Great Public Health Achievements—United States, 2001–2010. *Morbidity and Mortality Weekly Report, 60*(19), 619–623.

Health

Health a dynamic state or condition of the human organism that is multidimensional in nature, a resource for living, and results from a person's interactions with and adaptations to his or her environment; therefore, it can exist in varying degrees and is specific to each individual and his or her situation

The word *health* is derived from *hal*, which means "hale, sound, whole." When it comes to the health of people, the word health has been defined in a number of different ways—often in its social context, as when a parent describes the health of a child or when an avid fan defines the health of a professional athlete. The most widely quoted definition of health was the one created by the World Health Organization (WHO) in 1946, which states "health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity."[9] Furthermore, the WHO has indicated that health is a "resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capabilities."[10] Others have stated that health cannot be defined as a state because it is ever changing. Therefore, we have chosen to define **health** as a dynamic state or condition of the

human organism that is multidimensional (i.e., physical, emotional, social, intellectual, spiritual, and occupational) in nature, a resource for living, and results from a person's interactions with and adaptations to his or her environment. Therefore, it can exist in varying degrees and is specific to each individual and his or her situation. "A person can have a disease or injury and still be healthy or at least feel well. There are many examples, but certainly Olympic wheelchair racers fit into this category."[11]

A person's health status is dynamic in part because of the many different factors that determine one's health. It is widely accepted that health status is determined by the interaction of five domains: genetics, social circumstances (e.g., education, employment, income, poverty, housing, crime, and social cohesion), environmental conditions where people live and work (e.g., toxic agents, microbial agents, and structural hazards), behavioral choices (e.g., diet, physical activity, substance use and abuse), and the availability of quality medical care.[12] "Ultimately, the health fate of each of us is determined by factors acting not mostly in isolation but by our experience where domains interconnect. Whether a gene is expressed can be determined by environmental exposures or behavioral patterns. The nature and consequences of behavioral choices are affected by social circumstances. Our genetic predispositions affect the health care we need, and our social circumstances affect the health care we receive"[13] (see **Figure 1.1**).

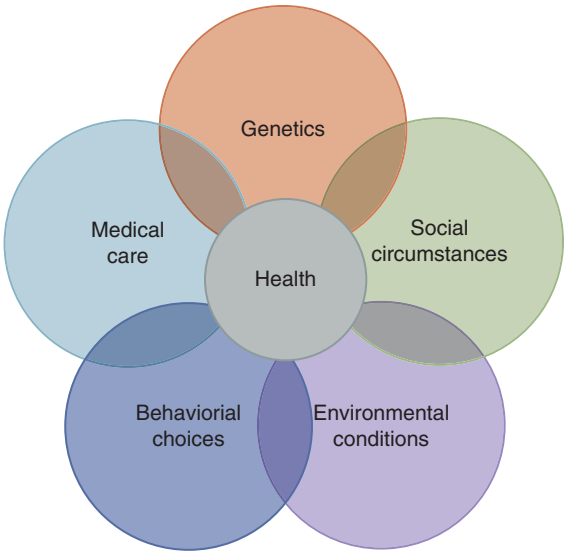

FIGURE 1.1 Interconnections of the determinants of health.

Community

Traditionally, a community has been thought of as a geographic area with specific boundaries—for example, a neighborhood, city, county, or state. However, in the context of community and public health, a **community** is "a collective body of individuals identified by common characteristics such as geography, interests, experiences, concerns, or values."[14] Communities are characterized by the following elements: (1) membership—a sense of identity and belonging; (2) common symbol systems—similar language, rituals, and ceremonies; (3) shared values and norms; (4) mutual influence—community members have influence and are influenced by each other; (5) shared needs and commitment to meeting them; and (6) shared emotional connection—members share common history, experiences, and mutual support.[15] Examples of communities include the people of the city of Columbus (location), the Asian community of San Francisco (race), the Hispanic community of Miami (ethnicity), seniors in the church (age), the business or the banking communities (occupation), the homeless of Indiana (specific problem), those on welfare in Ohio (particular outcome), local union members (common bond), or those who are members of an electronic social network (cyber). A community may be as small as the group of people who live on a residence hall floor at a university or as large as all of the individuals who make up a nation. "A healthy community is a place where people provide leadership in assessing their own resources and needs, where public health and social infrastructure and policies support health, and where essential public health services, including quality health care, are available."[16]

Public, Community, Population, and Global Health

Prior to defining the four terms *public health*, *community health*, *population health*, and *global health*, it is important to note that often the terms are used interchangeably by both laypeople and professionals who work in the various health fields. When the terms are used interchangeably, most people are referring to the collective health of those in society and the actions or activities taken to obtain and maintain that health. The definitions provided here for the four terms more precisely define the group of people in question and the origin of the actions or activities.

Community a collective body of individuals identified by common characteristics such as geography, interests, experiences, concerns, or values

Public health actions that society takes collectively to ensure that the conditions in which people can be healthy

Public health system the organizational mechanism of those activities undertaken within the formal structure of government and the associated efforts of private and voluntary organizations and individuals

Community health the health status of a defined group of people and the actions and conditions to promote, protect, and preserve their health

Population health "the health outcomes of a group of individuals, including the distribution of such outcomes within the group."[18]

Global health describes health problems, issues, and concerns that transcend national boundaries, may be influenced by circumstances or experiences in other countries, and are best addressed by cooperative actions and solutions

Of the four terms, public health is the most inclusive. The Institute of Medicine (IOM) defined **public health** in 1988 in its landmark report *The Future of Public Health* as "what we as a society do collectively to assure the conditions in which people can be healthy."[17] The **public health system**, which has been defined as "activities undertaken within the formal structure of government and the associated efforts of private and voluntary organizations and individuals,"[17] is the organizational mechanism for providing such conditions. Even with these formal definitions, some still see public health activities as only those efforts that originate in federal, state, and local governmental public health agencies such as the CDC and local (i.e., city and county) health departments.

Community health refers to the health status of a defined group of people and the actions and conditions to promote, protect, and preserve their health. For example, the health status of the people of Elizabethtown, Pennsylvania, and the private and public actions taken to promote, protect, and preserve the health of these people would constitute community health.

The term *population health* is similar to community health. Although the term has been around for a number of years, it is appearing more commonly in the literature today. As such, it has been defined in several different ways. The most common definition used for **population health** is "the health outcomes of a group of individuals, including the distribution of such outcomes within the group."[18]

Another term that has been increasingly used in recent years is *global health*. **Global health** is a term that describes "health problems, issues, and concerns that transcend national boundaries, may be influenced by circumstances or experiences in other countries, and are best addressed by cooperative actions and solutions."[19] Thus an issue such as Zika virus disease can be viewed as a global health issue. Much of the rise in concern about global health problems comes from the speed of international travel and how easy it is for people who may be infected with a disease to cross borders into another country.

Personal Health Activities versus Community and Public Health Activities

To further clarify the definitions presented in this chapter, it is important to distinguish between the terms *personal health activities* and community and *public health activities*.

Personal Health Activities

Personal health activities are individual actions and decision making that affect the health of an individual or his or her immediate family members or friends. These activities may be preventive or curative in nature but seldom directly affect the behavior of others. Choosing to eat wisely, to regularly wear a safety belt, and to visit the physician are all examples of personal health activities.

Community and Public Health Activities

Community and public health activities are activities that are aimed at protecting or improving the health of a population or community. Maintenance of accurate birth and death records, protection of the food and water supply, and participating in fund drives for voluntary health organizations such as the American Lung Association are examples of community health activities.

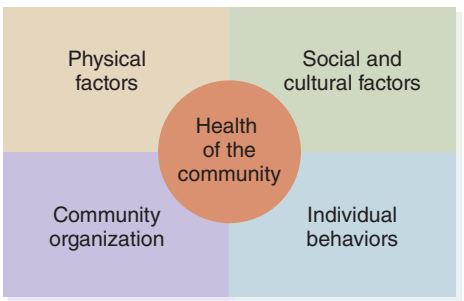

FIGURE 1.2 Factors that affect the health of the community.

Factors That Affect the Health of a Community

Many factors affect the health of a community. As a result, the health status of each community is different. These factors may be physical, social, and/or cultural. They also include the ability of the community to organize and work together as a whole as well as the individual behaviors of those in the community (see **Figure 1.2**).

Physical Factors

Physical factors include the influences of geography, the environment, community size, and industrial development.

Geography

A community's health problems can be directly influenced by its altitude, latitude, and climate. In tropical countries where warm, humid temperatures and rain prevail throughout the year, parasitic and infectious diseases are a leading community health problem (see **Figure 1.3**). In many tropical countries, survival from these diseases is made more difficult because poor soil conditions result in inadequate food production and malnutrition. In temperate climates with fewer parasitic and infectious diseases and a more than adequate food supply, obesity and heart disease are important community and public health problems.

FIGURE 1.3 In tropical countries, parasitic and infectious diseases are leading community health problems.

Environment

The quality of our natural environment is directly related to the quality of our stewardship of it. Many experts believe that if we continue to allow uncontrolled population growth and continue to deplete nonrenewable natural resources, succeeding generations will inhabit communities that are less desirable than ours. Many feel that we must accept responsibility for this stewardship and drastically reduce the rate at which we foul the soil, water, and air.

When speaking about the environment we must also consider the impact the built environment has on community and public health. The term **built environment** refers to "the design, construction, management, and land use of human-made surroundings as an interrelated whole, as well as their relationship to human activities over time."[20] It includes but is not limited to: transportation systems (e.g., mass transit); urban design features (e.g., bike paths, sidewalks, adequate lighting); parks and recreational facilities; land use (e.g., community gardens, location of schools, trail development); building with health-enhancing features (e.g., green roofs, stairs); road systems; and housing free from environmental hazards.[20,21,22] The built environment can be structured to give people more or fewer opportunities to behave in health-enhancing ways.

Community Size

The larger the community, the greater its range of health problems and the greater its number of health resources. For example, larger communities have more health professionals and better health facilities than smaller communities. These resources are often needed because communicable diseases can spread more quickly and environmental problems are often more severe in densely populated areas. For example, the amount of trash generated by the approximately 8.6 million people in New York City is many times greater than that generated by the entire state of Wyoming, with its population of 577,737.

It is important to note that a community's size can have both a positive and negative impact on that community's health. The ability of a community to effectively plan, organize, and utilize its resources can determine whether its size can be used to good advantage.

Industrial Development

Industrial development, like size, can have either positive or negative effects on the health status of a community. Industrial development provides a community with added resources for community health programs, but it may bring with it environmental pollution and occupational injuries and illnesses. Communities that experience rapid industrial development must eventually regulate (e.g., laws and ordinances) the way in which industries (1) obtain raw materials, (2) discharge by-products, (3) dispose of wastes, (4) treat and protect their employees, and (5) clean up environmental accidents. Unfortunately, many of these laws are usually passed only after these communities have suffered significant reductions in the quality of their life and health.

Built environment "the design, construction, management, and land use of human-made surroundings as an interrelated whole, as well as their relationship to human activities over time."[20]

Social and Cultural Factors

Social factors are those that arise from the interaction of individuals or groups within the community. For example, people who live in urban communities, where life is fast paced, experience higher rates of stress-related illnesses than those who live in rural communities, where life is more leisurely. On the other hand, those in rural areas may not have access to the same quality

or selection of health care (i.e., hospitals or medical specialists) than is available to those who live in urban communities.

Cultural factors arise from guidelines (both explicit and implicit) that individuals "inherit" from being a part of a particular society. Some of the factors that contribute to culture are discussed in the following sections.

Beliefs, Traditions, and Prejudices

The beliefs, traditions, and prejudices of community members can affect the health of the community. The beliefs of those in a community about such specific health behaviors as exercise and smoking can influence policymakers on whether or not they will spend money on bike lanes on the roads and recreational bike trails and work toward no-smoking ordinances. The traditions of specific ethnic groups can influence the types of food, restaurants, retail outlets, and services available in a community. Prejudices of one specific ethnic or racial group against another can result in acts of violence and crime. Racial and ethnic disparities will continue to put certain groups, such as black Americans or certain religious groups, at greater risk.

Economy

Both national and local economies can affect the health of a community through reductions in health and social services. An economic downturn means lower tax revenues (fewer tax dollars) and fewer contributions to charitable groups. Such actions will result in fewer dollars being available for programs such as food and housing assistance, community health care, and other community services. This occurs because revenue shortfalls cause agencies to undergo budget cuts. With fewer dollars available, these agencies often alter their eligibility guidelines, thereby restricting aid to just individuals with the greatest need. In this situation, many people who had been eligible for assistance before the economic downturn become ineligible.

As their income drops, employers usually find it increasingly difficult to provide health benefits for their employees. Those who are unemployed and underemployed face poverty and deteriorating health. Thus the cumulative effect of an economic downturn significantly affects the health of the community.

Politics

Politicians and government workers can improve or jeopardize the health of their community by the decisions (i.e., laws and ordinances) they make. In the most general terms, the argument is over greater or lesser governmental participation in health issues. For example, there has been a long-standing discussion in the United States regarding the extent to which the government should involve itself in health care. Historically, Democrats have been in favor of such action while Republicans have been against it. State and local politicians also influence the health of their communities each time they vote on health-related measures brought before them, such as increasing the minimum legal sales age for tobacco products to 21 years.

FIGURE 1.4 Religion can affect a community's health either positively or negatively.

Religion

A number of religions have taken a position on health care and health behaviors. For example, some religious communities limit the type of medical treatment their members may receive. Some do not permit immunizations; others do not permit their members to be treated by physicians. Others prohibit certain foods. For example, kosher dietary regulations permit Jews to eat only the meat of animals that chew cud and have cloven hooves and the flesh of fish that have both gills and scales. Still others, like the Native American Church of the Morning Star, use peyote, a hallucinogen, as a sacrament.

Some religious communities actively address moral and ethical issues such as abortion, premarital intercourse, and homosexuality. Still other religions teach health-promoting codes of living to their members. For these reasons, religion can affect a community's health positively or negatively (see **Figure 1.4**).

Social Norms

The influence of social norms on community and public health can be positive or negative and can change over time. Cigarette smoking is a good example. During the 1940s, 1950s, and 1960s, it was socially acceptable to smoke in most settings. As a matter of fact, in 1965, 51.2% of American men and 33.7% of American women smoked. Thus, in 1965 it was socially acceptable to be a smoker, especially if you were male. Now, as we enter the third decade of the twenty-first century, those percentages have dropped to 15.6% (for males) and 12.0% (for females),[6] and in most public places it has become socially unacceptable to smoke. The lawsuits against tobacco companies by both the state attorneys general and private citizens provide further evidence that smoking has fallen from social acceptability. Because of this change in the social norm, there is less secondhand smoke in many public places, and in turn the health of the community has improved.

Unlike smoking, alcohol consumption represents a continuing negative social norm in America, especially on college campuses. The normal expectation seems to be that drinking is fun (and almost everyone wants to have fun). Despite the fact that most college students are too young to drink legally, approximately 58.4% of college students drink.[23] In the same survey, when college students were asked what percentage of other college students consumed alcohol the mean response was 92.9%.[23] It seems fairly obvious that the American alcoholic-beverage industry has influenced our social norms.

Socioeconomic Status

Differences in socioeconomic status (SES), whether "defined by education, employment, or income, both individual- and community-level socioeconomic status have independent effects on health."[24] There is a strong correlation between SES and health status—individuals in lower SES groups, regardless of other characteristics, have poorer health status. This correlation applies both across racial groups and within racial groups.[25]

Community Organizing

The way in which a community is able to organize its resources directly influences its ability to intervene and solve problems, including health problems. **Community organizing** is "the process by which community groups are helped to identify common problems or change targets, mobilize resources, and develop and implement strategies for reaching their collective goals."[26] It is not a science but an art of building consensus within a democratic process.[27] If a community can organize its resources effectively into a unified force, it "is likely to produce benefits in the form of increased effectiveness and productivity by reducing duplication of efforts and avoiding the imposition of solutions that are not congruent with the local culture and needs."[16] For example, many communities in the United States have faced community-wide drug problems. Some have been able to organize their resources to reduce or resolve these problems, whereas others have not.

Individual Behavior

The behavior of the individual community members contributes to the health of the entire community. It takes the concerted effort of many, if not most, of the individuals in a community to make a program work. For example, if each individual consciously recycles his or her trash each week, community recycling will be successful. Likewise, if each occupant wears a safety belt, there could be a significant reduction in the number of traumatic injuries and deaths from car crashes for the entire community. As another example, the more individuals who become immunized against a specific communicable disease, the slower the disease will spread and the fewer people will be exposed. This concept is known as **herd immunity**.

Community organizing the process by which community groups are helped to identify common problems or change targets, mobilize resources, and develop and implement strategies for reaching their collective goals

Herd immunity the resistance of a population to the spread of an infectious agent based on the immunity of a high proportion of individuals

A History of Community and Public Health

The history of community and public health is almost as long as the history of civilization. This summary provides an account of some of the historical accomplishments and failures in community and public health. It is hoped that knowledge of the past will enable us to better prepare for future challenges to our community's health.

FIGURE 1.5 Archeological findings reveal community and public health practices of the past.

Earliest Civilizations

In all likelihood, the earliest community health practices went unrecorded. Perhaps these practices involved taboos against defecation within the tribal communal area or near the source of drinking water. Perhaps they involved rites associated with burial of the dead. Certainly, the use of herbs for the prevention and curing of diseases, and communal assistance with childbirth are practices that predate archeological records.

Excavations at sites of some of the earliest known civilizations, dating from about 2000 BCE, have uncovered archeological evidence of community health activities (see **Figure 1.5**). A combination of additional archeological findings and written history provides much more evidence of community and public health activities through the seventeenth century. **Box 1.2** provides a timeline and some of the highlights of that history for the Ancient Societies (before 500 BCE), the Classical Cultures (500 BCE–500 CE), the Middle Ages (500–1500 CE), and the period of Renaissance and Exploration (1500–1700 CE).

The Eighteenth Century

The eighteenth century was characterized by industrial growth. Despite the beginnings of recognition of the nature of disease, living conditions were hardly conducive to good health. Cities were overcrowded, and water supplies were inadequate and

BOX 1.2 Timeline and Highlights of Community and Public Health Prior to 1700 CE

A. Early Civilizations

1. Ancient Societies (before 500 BCE)
   a. Prior to 2000 BCE: Archeological findings provide evidence of sewage disposal and written medical prescriptions.
   b. Circa 1900 BCE: Perhaps the earliest written record of public health was the Code of Hammurabi; it included laws for physicians and health practices.[26,28]
   c. Circa 1500 BCE: Bible's Book of Leviticus written; includes guidelines for personal cleanliness and sanitation.[26,28]
2. Classical Cultures (500 BCE–500 CE)
   a. Fifth and sixth centuries BCE: Evidence that Greek men participated in games of strength and skill and swam in public facilities.[27,29]
   b. Greeks were involved in practice of community sanitation; involved in obtaining water from sources far away and not just local wells.[28,30]
   c. Romans were community minded; improved on community sanitation of Greeks; built aqueducts to transport water from miles away; built sewer systems; created regulation for building construction, refuse removal, and street cleaning and repair;[27,29] created hospitals as infirmaries for slaves.[29,31]
   d. Christians created hospitals as benevolent charitable organizations.[29,31]
   e. 476 CE: Roman Empire fell and most public health activities ceased.

B. Middle Ages (500–1500 CE)

1. 500–1000 CE (Dark Ages): Growing revulsion for Roman materialism and a growth of spirituality; health problems were considered to have both spiritual causes and spiritual solutions,[29,31] a time referred to as the **spiritual era of public health**.
2. Failure to take into account the role of the physical and biological environment in the causation of communicable diseases resulted in many unrelenting epidemics in which millions suffered and died.
   a. Deadliest epidemics were from plague ("Black Death"); occurred in 543 CE and 1348 CE (this one killed 25 million; half of population of London lost and in some parts of France only 1 in 10 survived).[26,28]
   b. 1200 CE: More than 19,000 leper houses.
   c. Other epidemics of period: Smallpox, diphtheria, measles, influenza, tuberculosis, anthrax, and trachoma.
   d. 1492 CE: Syphilis epidemic was last epidemic of the period.

C. Renaissance and Exploration (1500–1700 CE)

1. Rebirth of thinking about the nature of world and humankind.
2. Belief that disease was caused by environmental, not spiritual, factors; for example, the term malaria, meaning bad air, is a direct reference to humid or swampy air.
3. Observation of ill led to more accurate descriptions of symptoms and outcomes of diseases; observations led to first recognition of whooping cough, typhus, scarlet fever, and malaria as distinct and separate diseases.[28,30]
4. 1662: John Graunt published the *Observations on the Bills of Mortality*, which was the beginning of vital statistics.
5. Epidemics (e.g., smallpox, malaria, and plague) still rampant; plague epidemic killed 68,596 (15% of the population) in London in 1665.
6. Explorers, conquerors, and merchants and their crews spread disease to colonists and indigenous people throughout the New World.

BOX 1.3 Timeline and Highlights of Community and Public Health from 1700 to 1848

A. Eighteenth Century (1700s)

1. 1790: First U.S. census.
2. 1793: Yellow fever epidemic in Philadelphia.[32]
3. 1796: Dr. Edward Jenner successfully demonstrated smallpox vaccination.
4. 1798: Marine Hospital Service (forerunner to U.S. Public Health Service) was formed.
5. By 1799: Several of America's largest cities, including Boston, Philadelphia, New York, and Baltimore, had municipal boards of health.

B. First Half of the Nineteenth Century (1800–1848)

1. U.S. government's approach to health was *laissez faire* (i.e., noninterference).
2. 1813: First visiting nurse in United States.

often unsanitary. Streets were usually unpaved, filthy, and heaped with trash and garbage. Many homes had unsanitary dirt floors.

Workplaces were unsafe and unhealthy. A substantial portion of the workforce was made up of the poor, which included children, who were forced to work long hours as indentured servants. Many of these jobs were unsafe or involved working in unhealthy environments, such as textile factories and coal mines (see **Box 1.3**).

Spiritual era of public health a time during the Middle Ages when the causation of communicable disease was linked to spiritual forces

Modern era of public health the era of public health that began in 1850 and continues today

The Nineteenth Century

Epidemics continued to be a problem in the nineteenth century, with outbreaks in major cities in both Europe and America. In 1854, another cholera epidemic struck London. Dr. John Snow studied the epidemic and hypothesized that the disease was being caused by the drinking water from the Broad Street pump. He obtained permission to remove the pump handle, and the epidemic was abated (see **Figure 1.6**). Snow's action was remarkable because it predated the discovery that microorganisms can cause disease. The predominant theory of contagious disease at the time was the "miasmas theory," which postulated that vapors, or miasmas, were the source of many diseases. The miasmas theory remained popular throughout much of the nineteenth century.

In the United States in 1850, Lemuel Shattuck drew up a health report for the Commonwealth of Massachusetts that outlined the public health needs for the state. It included recommendations for the establishment of boards of health, the collection of vital statistics, the implementation of sanitary measures, and research on diseases. Shattuck also recommended health education and controlling exposure to alcohol, smoke, adulterated food, and nostrums (quack medicines).[28] Although some of his recommendations took years to implement (the Massachusetts Board of Health was not founded until 1869), the significance of Shattuck's report is such that 1850 is a key date in American public health; it marks the beginning of the **modern era of public health**.

Real progress in the understanding of the causes of many communicable diseases occurred during the last third of the nineteenth century. One of the obstacles to progress was the theory of spontaneous generation, the idea that living organisms could arise from inorganic or nonliving matter. Akin to this idea was the thought that one type of contagious microbe could change into another type of organism.

In 1862, Louis Pasteur of France proposed his germ theory of disease. Throughout the 1860s and 1870s, he and others carried out experiments and made observations that supported this theory and disproved spontaneous generation. Pasteur is generally given credit for providing the death blow to the theory of spontaneous generation.

It was the German scientist Robert Koch who developed the criteria and procedures necessary to establish that a particular microbe, and no other, causes a particular disease. His first demonstration, with the anthrax bacillus, was in 1876. Between 1877 and the end of the century, the identity of numerous bacterial disease agents was established, including those that caused gonorrhea,

FIGURE 1.6 In London, England, in 1854, John Snow helped interrupt a cholera epidemic by having the handle removed from this pump, located on Broad Street.

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BOX 1.4 Timeline and Highlights of Community and Public Health for the Second Half of Nineteenth Century (1848–1900)

1. 1849, 1854: London cholera epidemics.
2. 1850: Modern era of public health begins.
3. 1850: Shattuck's report was published.
4. 1854: Snow had pump handle removed from Broad Street pump.
5. 1863: Pasteur proposed germ theory.
6. 1872: American Public Health Association founded.
7. 1875–1900: Bacteriological period of public health.
8. 1876: Koch established relationship between a particular microbe and a particular disease.
9. 1900: Reed announced that yellow fever was transmitted by mosquitos.

typhoid fever, leprosy, tuberculosis, cholera, diphtheria, tetanus, pneumonia, plague, and dysentery. This period (1875–1900) has come to be known as the **bacteriological period of public health**.

Although most scientific discoveries in the late nineteenth century were made in Europe, significant public health achievements were occurring in America as well. The first law prohibiting the adulteration of milk was passed in 1856, the first sanitary survey was carried out in New York City in 1864, and the American Public Health Association was founded in 1872. The Marine Hospital Service gained new powers of inspection and investigation under the Port Quarantine Act of 1878.[28] In 1890, the pasteurization of milk was introduced, and in 1891 meat inspection began. It was also during this time that nurses were first hired by industries (in 1895) and schools (in 1899). Also in 1895, septic tanks were introduced for sewage treatment. In 1900, Major Walter Reed of the U.S. Army announced that mosquitoes transmitted yellow fever (see **Box 1.4**).

The Twentieth Century

As the twentieth century began, life expectancy was still less than 50 years.[2] The leading causes of death were communicable diseases—influenza, pneumonia, tuberculosis, and infections of the gastrointestinal tract. Other communicable diseases, such as typhoid fever, malaria, and diphtheria, also killed many people.

There were other health problems as well. Thousands of children were afflicted with conditions characterized by noninfectious diarrhea or by bone deformity. Although the symptoms of pellagra and rickets were known and described, the causes of these ailments remained a mystery at the turn of the century. Discovery that these conditions resulted from vitamin deficiencies was slow because some scientists were searching for bacterial causes.

Vitamin deficiency diseases and one of their contributing conditions, poor dental health, were extremely common in the slum districts of both European and American cities. The unavailability of adequate prenatal and postnatal care meant that deaths associated with pregnancy and childbirth were also high.

Bacteriological period of public health the period from 1875–1900, during which the causes of many bacterial diseases were discovered

Health resources development period the years of 1900–1960, a time of great growth in healthcare facilities and providers

Reform phase of public health the years of 1900–1920, characterized by social movements to improve health conditions in cities and in the workplace

Health Resources Development Period (1900–1960)

Much growth and development took place during the 60-year period from 1900 to 1960. Because of the growth of healthcare facilities and providers, this period of time is referred to as the **health resources development period**. This period can be further divided into the reform phase (1900–1920), the 1920s, the Great Depression and World War II, and the postwar years.

The Reform Phase (1900–1920)

During the first 20 years of the twentieth century (i.e., the **reform phase of public health**), there was a growing concern about the many social problems in America. The remarkable discoveries in microbiology made in the previous years had not dramatically improved the health of the average citizen. By 1910, the urban population had grown to 45% of the total population (up from 19% in 1860). Much of the growth was the result of immigrants who came to America for the jobs created by new industries (see **Figure 1.7**). Northern cities were also swelling from the

FIGURE 1.7 Ellis Island immigration between 1860 and 1910 resulted in dramatic increases in urban population in America.

Courtesy of Library of Congress, Prints & Photographs Division [reproduction number LC-USZ62-7386].

northward migration of black Americans from the southern states. Many of these workers had to accept poorly paying jobs involving hard labor. There was also a deepening chasm between the upper and lower classes, and social critics began to clamor for reform.

In 1906, the plight of the immigrants working in the meat packing industry was graphically depicted by Upton Sinclair in his book *The Jungle*. Sinclair's goal was to draw attention to unsafe working conditions. What he achieved was greater governmental regulation of the food industry through the passage of the Pure Food and Drugs Act of 1906.

The reform movement was broad, involving both social and moral as well as health issues. In 1909 it was noted that "[i]ll health is perhaps the most constant of the attendants of poverty."[33] The reform movement finally took hold when it became evident to the majority that neither the discoveries of the causes of many communicable diseases nor the continuing advancement of industrial production could overcome continuing disease and poverty. Even by 1917, the United States ranked 14th of 16 "progressive" nations in maternal death rate.[33]

Although the relationship between occupation and disease had been pointed out 200 years earlier in Europe, occupational health in America in 1900 was an unknown quantity. However, in 1910 the first International Congress on Occupational Diseases was held in Chicago.[34] That same year, the state of New York passed a tentative Workman's Compensation Act, and over the next 10 years most other states passed similar laws. Also in 1910, the U.S. Bureau of Mines was created and the first clinic for occupational diseases was established in New York at Cornell Medical College.[33] By 1910, the movement for healthier conditions in the workplace was well established.

This period also saw the birth of the first national-level volunteer health agencies. The first of these agencies was the National Association for the Study and Prevention of Tuberculosis (TB), which was formed in 1902. It arose from the first local voluntary health agency, the Pennsylvania Society for the Prevention of Tuberculosis, organized in 1892.[35] The American Cancer Society was founded in 1913. That same year, the Rockefeller Foundation was established in New York. This philanthropic foundation has funded a great many public health projects, including work on hookworm and pellagra, and the development of a vaccine against yellow fever.

Another movement that began about this time was that of public health nursing. The first school nursing program was begun in New York City in 1902. In 1918, the first school of public health was established at Johns Hopkins University in Baltimore. This was followed by establishment of the Harvard School of Public Health in 1923. Also occurring in 1918 was the birth of school health instruction as we know it today.

These advances were matched with similar advances by governmental bodies. The Marine Hospital Service was renamed the Public Health and Marine Hospital Service in 1902 in keeping with its growing responsibilities. In 1912, it became the U.S. Public Health Service.[28]

By 1900, 38 states had state health departments. The rest followed during the first decades of the twentieth century. The first two local (county) health departments were established in 1911, one in Guilford County, North Carolina, and the other in Yakima County, Washington.

The 1920s

In comparison with the preceding period, the 1920s represented a decade of slow growth in public health, except for a few health projects funded by the Rockefeller and Millbank Foundations. Prohibition resulted in a decline in the number of alcoholics and alcohol-related deaths. Although the number of county health departments had risen to 467 by 1929, 77% of the rural population still lived in areas with no health services.[35] However, it was during this period in 1922 that the first professional preparation program for health education specialists was begun at Columbia University by Thomas D. Wood, MD, whom many consider the father of health education. The life expectancy in 1930 had risen to 59.7 years.

The Great Depression and World War II

Until the Great Depression (1929–1935), individuals and families in need of social and medical services were dependent on friends and relatives, private charities, voluntary agencies, community chests, and churches. By 1933, after 3 years of economic depression, it became evident that private resources could never meet the needs of all the people who needed assistance. The drop in tax revenues during the Depression also reduced health department budgets and caused a virtual halt in the formation of new local health departments.[35]

Beginning in 1933, President Franklin D. Roosevelt created numerous agencies and programs for public works as part of his New Deal. Much of the money was used for public health, including the control of malaria, the building of hospitals and laboratories, and the construction of municipal water and sewer systems.

The Social Security Act of 1935 marked the beginning of the government's major involvement in social issues, including health. This legislation provided substantial support for state health departments and their programs, such as maternal and child health, and sanitary facilities. As progress against the communicable diseases became visible, some turned their attention toward other health problems, such as cancer. The National Cancer Institute was formed in 1937.

America's involvement in World War II resulted in severe restrictions on resources available for public health programs. Immediately following the conclusion of the war, however, many of the medical discoveries made during wartime made their way into civilian practice. Two examples are the antibiotic penicillin, used for treating pneumonia, rheumatic fever, syphilis, and strep throat, and the insecticide DDT, used for killing insects that transmit diseases.

During World War II, the Communicable Disease Center was established in Atlanta, Georgia. Now called the Centers for Disease Control and Prevention (CDC), it has become the premier epidemiological center of the world.

The Postwar Years

Medicare government health insurance for older adults and those with certain disabilities

Medicaid government health insurance for the poor

Following the end of World War II, there was still concern about medical care and the adequacy of the facilities in which that care could be administered. In 1946, the U.S. Congress passed the National Hospital Survey and Construction Act (the Hill-Burton Act). The goal of the legislation was to improve the distribution of medical care and to enhance the quality of hospitals. From 1946 through the 1960s, hospital construction occurred at a rapid rate with relatively little thought given to planning. Likewise, attempts to set national health priorities or to establish a national health agenda were virtually nonexistent.

The two major health events in the 1950s were the development of a vaccine to prevent polio and President Eisenhower's heart attack. The latter event helped America to focus on its number one killer, heart disease. When the president's physician suggested exercise, some Americans heeded his advice and began to exercise on a regular basis.

Period of Social Engineering (1960–1973)

The 1960s marked the beginning of a period when the federal government once again became active in health matters. The primary reason for this involvement was the growing realization that many Americans were still not reaping any of the benefits of 60 years of medical advances. These Americans, most of whom were poor or elderly, either lived in underserved areas or simply could not afford to purchase medical services.

In 1965, Congress passed the Medicare and Medicaid bills (amendments to the Social Security Act of 1935). **Medicare** assists in the payment of medical bills for older adults and certain people with disabilities, and **Medicaid** assists in the payment of medical bills for the poor. These pieces of legislation helped provide medical care for millions who would not otherwise have received it; this legislation also improved standards in healthcare facilities. Unfortunately, this influx of federal dollars accelerated the rate of increase in the cost of health care for everyone. As a result, the 1970s, 1980s, and 1990s saw repeated attempts and failures to bring the growing costs of health care under control (see **Box 1.5**).

Period of Health Promotion (1974–Present)

By the mid-1970s, it had become apparent that the greatest potential for saving lives and reducing healthcare costs in America was to be achieved through means other than health care.

> Most scholars, policymakers, and practitioners in health promotion would pick 1974 as the turning point that marks the beginning of health promotion as a significant

BOX 1.5 Timeline and Highlights of Community and Public Health for the Health Resources Development Period (1900–1960)

A. The Reform Phase (1900–1920)
1. 1902: First national-level voluntary health agency created.
2. 1906: Sinclair's *The Jungle* published.
3. 1910: First International Congress on Diseases of Occupation.
4. 1910: 45% of U.S. population was in the cities.
5. 1911: First local health department established.
6. 1913: American Cancer Society founded.
7. 1917: United States ranked 14th of 16 in maternal death rate.
8. 1918: Birth of school health instruction.
9. 1918: First school of public health established in United States.

B. 1920s
1. 1922: Wood created first professional preparation program for health education specialists.
2. 1930: Life expectancy in the United States was 59.7 years.

C. The Great Depression and World War II
1. 1933: New Deal; included unsuccessful attempt at national healthcare program.
2. 1935: Social Security Act passed.
3. 1937: National Cancer Institute formed.

D. Postwar Years
1. 1946: National Hospital Survey and Construction (Hill-Burton) Act passed.
2. 1952: Development of polio vaccine.
3. 1955: Eisenhower's heart attack.

E. Period of Social Engineering (1960–1973)
1. 1965: Medicare and Medicaid bills passed.

Healthy People 2030 the fifth set of health goals and objectives for the United States that defines the nation's health agenda and guides its health policy

component of national health policy in the twentieth century. That year Canada published its landmark policy statement, *A New Perspective on the Health of Canadians*.[36] In 1976, the United States Congress passed PL 94-317, the Health Information and Health Promotion Act, which created the Office of Health Information and Health Promotion, later renamed the Office of Disease Prevention and Health Promotion.[37]

In the late 1970s, the CDC conducted a study that examined premature deaths (defined then as deaths prior to age 65, but now as deaths prior to age 75) in the United States in 1977. That study revealed that approximately 48% of all premature deaths could be traced to one's lifestyle or health behavior—choices that people make. Lifestyles characterized by a lack of exercise, unhealthy diets, smoking, uncontrolled hypertension, and the inability to control stress were found to be contributing factors to premature mortality.[38] This led the way for the U.S. government's publication *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*.[39] "This document brought together much of what was known about the relationship of personal behavior and health status. The document also presented a "personal responsibility" model that provided Americans with the prescription for reducing their health risks and increasing their chances for good health."[40]

Healthy People was followed by the release of the first set of health goals and objectives for the nation, called *Promoting Health/Preventing Disease: Objectives for the Nation*.[41] ***Healthy People 2030*** is the fifth edition of these goals and objectives. Since their inception, these *Healthy People* documents have defined the nation's health agenda and guided its health policy since their inception (see **Box 1.6**).

All five editions of the *Healthy People* documents include several overarching goals and many supporting objectives for the nation's health. The goals provide a general focus and direction, whereas the objectives are used to measure progress within a specified period of time. Formal reviews (i.e., measured progress) of these objectives are conducted both at midcourse (i.e., halfway through the 10-year period) and again at the end of 10 years. The midcourse review provides an opportunity to update the document based on the events of the first half of the decade for which the objectives were written.

Healthy People 2030 was released in August 2020, and it includes a vision statement, a mission statement, foundational principles, five overarching goals (see **Table 1.1**), a plan of action, and 355 core science-based objectives spread over 62 different topic areas (see **Table 1.2**).[42] On the Healthy People.gov website each topic has its own webpage. At a minimum, each page contains a concise goal statement, a brief overview of the topic that provides the background and context for the topic, a statement about the importance of the topic backed up by appropriate evidence, and references.

The developers of *Healthy People 2030* have developed Tools for Action to support communities, states, and organizations use the *Healthy People* objectives to priorities (see **Figure 1.8**). *Healthy People 2030* users are encouraged to follow four steps: (1) Identify needs and priority populations in order to make the case for a program, secure resources, and build partnerships; (2) Set local targets that contribute to national success; (3) Find inspiration and practical tools

BOX 1.6 Timeline and Highlights of Community and Public Health for the Period of Health Promotion (1974–Present)

A. Late Twentieth Century

1. 1974: Nixon's unsuccessful attempt at national healthcare program.
2. 1974: *A New Perspective on the Health of Canadians* published.
3. 1976: Health Information and Health Promotion Act passed.
4. 1979: *Healthy People* published.
5. 1980: *Promoting Health/Preventing Disease: Objectives of the Nation* published.
6. 1990: *Healthy People 2000* published.
7. 1997: Clinton's unsuccessful attempt at a national healthcare program.

B. Early Twenty-First Century

1. 2000: *Healthy People 2010* published.
2. 2010: Affordable Care Act becomes law.
3. 2010: *Healthy People 2020* published.
4. 2020: *Healthy People 2030* published.

TABLE 1.1 *Healthy People 2030* Vision, Mission, Foundational Principles, Overarching Goals, and Plan of Action

Vision
A society in which all people can achieve their full potential for health and well-being across the lifespan.
Mission
To promote, strengthen, and evaluate the nation's efforts to improve the health and well-being of all people.
Foundational Principles
The following foundational principles guide decisions about *Healthy People 2030*: • The health and well-being of all people and communities is essential to a thriving, equitable society. • Promoting health and well-being and preventing disease are linked efforts that encompass physical, mental, and social health dimensions. • Investing to achieve the full potential for health and well-being for all provides valuable benefits to society. • Achieving health and well-being requires eliminating health disparities, achieving health equity, and attaining health literacy. • Healthy physical, social, and economic environments strengthen the potential to achieve health and well-being. • Promoting and achieving health and well-being nationwide is a shared responsibility that is distributed across the nation, state, tribal, and community levels, including the public, private, and not-for-profit sectors. • Working to attain the full potential for health and well-being of the population is a component of decision-making and policy formulation across all sectors.
Overarching Goals
• Attain healthy, thriving lives and well-being free of preventable disease, disability, injury, and premature death. • Eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all. • Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all. • Promote healthy development, healthy behaviors, and well-being across the life stages. • Engage leadership, key constituents, and the public across multiple sectors to take action and design policies that improve the health and well-being of all.
Plan of Action
• Set national goals and measurable objectives to guide evidence-based policies, programs, and other actions to improve health and well-being. • Provide accurate, timely, and accessible data that can drive targeted actions to address regions and populations that have poor health or are at high risk for poor health. • Foster impact through public and private efforts to improve health and well-being for people of all ages and the communities in which they live. • Provide tools for the public, programs, policymakers, and others to evaluate progress toward improving health and well-being. • Share and support the implementation of evidence-based programs and policies that are replicable, scalable, and sustainable. • Report biennially on progress throughout the decade from 2020 to 2030. • Stimulate research and innovation toward meeting *Healthy People 2030* goals and highlight critical research, data, and evaluation needs. • Facilitate the development and availability of affordable means of health promotion, disease prevention, and treatment.

Data from: U.S. Department of Health and Human Services. (2020). *About Healthy People 2030.* Available at https://health.gov/healthypeople/about

TABLE 1.2 *Healthy People 2030* Topic Areas

Health Conditions	
Addiction	Heart Disease and Stroke
Arthritis	Infectious Disease
Blood Disorders	Mental Health and Mental Disorders
Cancer	Oral Conditions
Chronic Kidney Disease	Osteoporosis
Chronic Pain	Overweight and Obesity

(*continues*)

TABLE 1.2 *Healthy People 2030* Topic Areas *(continued)*

Health Conditions	
Dementia	Pregnancy and Childbirth
Diabetes	Respiratory Disease
Foodborne Illness	Sensory or Communication Disorders
Healthcare-Associated Infections	Sexually Transmitted Diseases
Health Behaviors	
Child and Adolescent Development	Physical Activity
Drug and Alcohol Use	Preventive Care
Emergency Preparedness	Safe Food Handling
Family Planning	Sleep
Health Communication	Tobacco Use
Injury Prevention	Vaccination
Nutrition and Healthy Eating	Violence Prevention
Populations	
Adolescents	Older Adults
Children	Parents or Caregivers
Infants	People with Disabilities
LGBT	Women
Men	Workforce
Settings and Systems	
Community	Hospital and Emergency Services
Environmental Health	Housing and Homes
Global Health	Public Health Infrastructure
Health Care	Schools
Health Insurance	Transportation
Health IT	Workplace
Health Policy	
Social Determinants of Health	
Economic Stability	Neighborhood and Built Environment
Education Access and Quality	Social and Community Context
Health Care Access and Quality	

Data from: U.S. Department of Health and Human Services. (2020). *Healthy People 2030: Objectives and Data*. Available at https://health.gov/healthypeople/objectives-and-data

by reviewing successful programs, policies, and interventions; and (4) Monitor national progress and use local data to inform policy and planning.[42]

In addition to the *Healthy People* initiative, the United States developed the National Prevention Strategy (Strategy), which was released in 2011. The Affordable Care Act (ACA) "created the National Prevention Council (NPC) and called for the development of the Strategy to realize the benefits of prevention for the health of all Americans. The Strategy is critical to the prevention focus of the ACA and builds on the law's efforts to lower healthcare costs, improve the quality of care, and provide coverage options for the uninsured."[43]

The NPC provided leadership for the Strategy under the guidance of representatives from 20 federal departments, agencies, and offices and the U.S. Surgeon General. Although the NPC "provides coordination and leadership at the federal level and identifies ways that agencies

FIGURE 1.8 Practical steps to follow to achieve *Healthy People* goals.

Data from: U.S. Department of Health and Human Services. (2020). *Healthy People 2030: Tools for Action*. Available at https://health.gov/healthypeople/tools-action

can work individually, as well as together, to improve our nation's health,"[43] public and private partners provided much input in creating the Strategy. Such input was provided by the Advisory Group on Prevention, Health Promotion, and Integrative and Public Health, referred to as the Prevention Advisory Group. This group was also created by the ACA and comprised 21 nonfederal members appointed by the president.[43]

The goal of the Strategy was to "increase the number of Americans who are healthy at every stage of life."[43] At the foundation of the Strategy are four strategic directions that include Healthy and Safe Community Environments, Clinical and Community Preventive Services, Empowered People, and Elimination of Health Disparities (see **Figure 1.9**). "Each Strategy direction can stand alone and can guide actions that will demonstrably improve health. Together, the strategic

FIGURE 1.9 National Prevention Strategy.

Reproduced from: National Prevention Council, U.S. Department of Health and Human Services, Office of the Surgeon General (2011). *National Prevention Strategy*. Available at https://www.hhs.gov/sites/default/files/disease-prevention-wellness-report.pdf

directions create the web needed to fully support Americans in leading longer and healthier lives."[43] The Strategy included seven targeted priorities (Tobacco-Free Living, Preventing Drug Abuse and Excessive Alcohol Use, Healthy Eating, Active Living, Injury and Violence Free Living, Reproductive and Sexual Health, and Mental and Emotional Well-Being). The priorities were "designed to improve health and wellness for the entire U.S. population, including those groups disproportionately affected by disease and injury."[43] Preference was given to efforts that would "have the greatest impact on the largest number of people and can be sustained over time."[43]

The Strategy includes: key facts and documents; a list of recommended policies, programs, and system approaches to address each of the strategic directions and priorities; and actions for both the federal government and for the partners. The actions for the partners are specific to type of partners, which include: (1) state, tribal, local, and territorial governments; (2) employers; (3) healthcare organizations, insurers, and clinicians; (4) educational organizations; (5) community groups; and (6) faith-based organizations. In addition, within each of the strategic directions and priorities are key indicators that will be used to measure the progress toward the overarching goal based on 10-year targets. In addition to measuring progress in prevention, the indicators "will be used to plan and implement future prevention efforts. Key indicators will be reported for the overall population and by subgroups, as data become available. Indicators and 10-year targets are drawn from existing measurement efforts, especially *Healthy People 2020*. As data sources and metrics are developed or enhanced, the key indicators and targets of the National Prevention Strategy will be updated."[43]

The Twenty-First Century

Now, at the start of the third decade of the twenty-first century, the need to improve community and public health continues. In the sections that follow we have outlined some of the major problems still facing the United States and the world.

U.S. Community and Public Health in the Twenty-First Century

With one-fifth of the twenty-first century behind us, it is widely agreed that although decisions about health are an individual's responsibility to a significant degree, society has an obligation to provide an environment in which the achievement of good health is possible and encouraged. Furthermore, many recognize that certain segments of our population whose disease and death rates exceed the general population may require additional resources, including education, to achieve good health.

The American people face a number of serious public health problems. These problems include the continuing rise in healthcare costs, growing environmental concerns, the ever-present lifestyle diseases, emerging and reemerging communicable diseases, serious substance abuse problems, and disasters, both natural and human-made. In the paragraphs that follow, we have elaborated on each of these problems briefly because they seem to represent a significant portion of the community and public health agenda for the years ahead.

Healthcare Delivery

In 2010, significant changes were made to the U.S. healthcare system with the passage of the Patient Protection and Affordable Care Act (PPACA; Public Law 111-148) and the Health Care and Education Reconciliation Act of 2010 (HCERA; Public Law 111-152). These two acts were consolidated shortly thereafter with other approved legislation and are now referred to as the *Affordable Care Act* (ACA). Though the law has many components, the primary focus was to increase the number of Americans with health insurance. The ACA does this, but by providing health insurance to millions of Americans who did not have it before, the costs will also go up, which will continue to make U.S. health care the most expensive in the world. In 2018, national health expenditures grew 4.6%, reaching $3.6 trillion, accounting for 17.7%[44] of the gross domestic product (GDP), and were expected to reach $5.96 trillion (19.4% of the GDP) by 2027.[45] The United States spends more per capita annually on health care (estimated at $11,172 in 2018)[44] than any other nation. The cost of health care is an issue that still needs to be addressed.

Environmental Problems

Millions of Americans live in communities where the air is unsafe to breathe, the water is unsafe to drink, or solid waste is disposed of improperly. With a few minor exceptions, the rate at which we pollute our environment continues to increase. Many Americans still believe that our natural resources are unlimited and that their individual contributions to the overall pollution are insignificant. In actuality, we must improve on our efforts in resource preservation and energy conservation if our children are to enjoy an environment as clean as ours. These environmental problems are compounded by the fact that the world population continues to grow; it is now more than 7.5 billion people and expected to reach 8 billion by the year 2025.[46]

Lifestyle Diseases

The leading causes of death in the United States today are not communicable diseases, which were the fear 100 years ago, but chronic illnesses. The four leading causes of death as we enter the third decade of the twenty-first century are heart disease, cancer, unintentional injuries, and chronic lower respiratory diseases.[47] Although it is true that everyone has to die from some cause, at some time, too many Americans die prematurely. More than two-thirds of all deaths among Americans each year are from one or more of these five chronic diseases: heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes.[48] In addition, more than 75% of all healthcare spending in the United States is for people with chronic conditions.[48] Chronic diseases are not only the most common, deadly, and costly conditions, they are also the most preventable of all health problems in the United States.[49] They are the most preventable because four modifiable risk behaviors—lack of exercise or physical activity, poor nutrition, tobacco use, and excessive alcohol use—are responsible for much of the illness, suffering, and early death related to chronic diseases.[49] In fact, one study estimates that all causes of mortality could be cut by 55% by never smoking, engaging in regular physical activity, eating a healthy diet, and avoiding being overweight[50] (see **Table 1.3**).

Communicable Diseases

Although communicable (infectious) diseases are no longer among the leading causes of death in the United States, they remain a concern for several reasons. First, they are the primary reason for days missed at school or at work. The success in reducing the life-threatening

TABLE 1.3 Comparison of the Most Common Causes of Death and Actual Causes of Death

Most Common Causes of Death, United States, 2017	Actual Causes of Death, United States, 2000
1. Heart disease	1. Tobacco
2. Cancer	2. Poor diet and physical inactivity
3. Unintentional injuries	3. Alcohol consumption
4. Chronic lower respiratory disease	4. Microbial agents
5. Stroke	5. Toxic agents
6. Alzheimer's disease	6. Motor vehicles
7. Diabetes	7. Firearms
8. Influenza and pneumonia	8. Sexual behavior
9. Nephritis	9. Illicit drug use
10. Suicide	

Data from: Centers for Disease Control and Prevention. (2019). *Fatal injury data*. Available at https://www.cdc.gov/injury/wisqars/fatal.html; Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *Journal of the American Medical Association, 291*(10), 1238–1245; Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2005). Correction: Actual causes of death in the United States, 2000. *Journal of the American Medical Association, 293*(3), 293–294.

FIGURE 1.10 AIDS is one of the most feared communicable diseases today.

nature of these diseases has made many Americans complacent about obtaining vaccinations or taking other precautions against contracting these diseases. With the exception of smallpox, none of these diseases has been eradicated, although several should have been, such as measles.

Second, as new communicable diseases emerge, old ones, such as tuberculosis reemerge, sometimes in drug-resistant forms (i.e., caused by superbugs), demonstrating that communicable diseases still represent a serious community health problem in America. Legionnaires' disease, Lyme disease, acquired immunodeficiency syndrome (AIDS), severe acute respiratory syndrome (SARS), Zika virus, and 2019 Novel Coronavirus are diseases that were unknown only 60 years ago. The first cases of AIDS were reported in June 1981.[51] By August 1989, 100,000 cases had been reported,[52] and it took only an additional 2 years to report the second 100,000 cases.[53] At the end of 2016, an estimated 1.1 million people in the U.S. had HIV[54] (see **Figure 1.10**). The total number of cases continues to grow with more than 35,000 new HIV cases being diagnosed each year.[54] In addition, diseases that were once only found in animals are crossing over to human populations and causing much concern and action. Included in this group of diseases are avian flu, *Escherichia coli* O157:H7, hantavirus, mad cow disease, and SARS.

Third, and maybe the most disturbing, is the use of communicable diseases for bioterrorism. **Bioterrorism** involves "the threatened or intentional release of biological agents (virus, bacteria, or their toxins) for the purpose of influencing the conduct of government or intimidating or coercing a civilian population to further political or social objectives. These agents can be released by way of the air (as aerosols) food, water or insects."[11] Concern in the United States over bioterrorism was heightened after September 11, 2001 (9/11), and the subsequent intentional distribution of *Bacillus anthracis* spores through the U.S. postal system (the anthrax mailings).

Since then, a heightened awareness of potential threats posed by chemical and biological weapons and low-grade nuclear materials have prompted public officials nationwide to review and revamp the [public health] system. Large-scale bioterrorism has not yet occurred, but global unrest amid the rise of extremism makes it a real possibility in the future.[55]

Bioterrorism the threatened or intentional release of biological agents for the purpose of influencing the conduct of government or intimidating or coercing a civilian population to further political or social objectives

Alcohol and Other Drug Abuse

Drug abuse and addiction due to the use of tobacco, alcohol, and illegal drugs have a number of negative effects on individuals and society, including but not limited to failure in school, child abuse, disintegration of the family, domestic violence, loss of employment, violent crimes, and even death. Estimates of the total overall costs of substance abuse in the United States, including lost productivity, and health- and crime-related costs, exceed $740 billion annually.[56] Federal, state, and local governments as well as private agencies attempt to address the supply and demand problems associated with the abuse of alcohol and other drugs, but a significant challenge remains for America. A recent example of this challenge has been the response to opioid pain reliever overdose. "In 2014, more than 18,000 people died from an opioid pain reliever overdose, or nearly 50 people per day, and over 10,000 died from heroin-related overdoses, a rate that has more than quadrupled since 2002."[57] Due to the addictive nature of opioids, opioid users are seeking nonprescription pain relief from withdrawal symptoms caused by addiction to doctor-prescribed opioids. Synthetic opioids, such as illicit fentanyl, have now "surpassed prescription opioids as the most common drug involved in overdose deaths in the U.S."[58] In response to the increase in major overdose deaths, two major steps have been taken. The first was the U.S. Food and Drug Administration (FDA)'s approval of intranasal naloxone—a nasal spray formulation of the medication designed to rapidly reverse opioid overdose. This provides family members, caregivers, and first responders with an alternative to injectable naloxone for use during a suspected opioid overdose.[59] The second

was the development by the CDC of guidelines for prescribing opioids for chronic pain that provide "recommendations for the prescribing of opioid pain medication for patients age 18 years and older in primary care settings."[60]

Health disparities the difference in health among different populations

Health Disparities

It has long been "recognized that some individuals lead longer and healthier lives than others, and that often these differences are closely associated with social characteristics such as race, ethnicity, gender, location, and socioeconomic status."[61] These gaps between groups have been referred to as health disparities (also called health inequalities in some countries). More formally, **health disparities** have been defined as the difference in health among different populations. Health disparities are a problem in the United States in that the health status of many minority groups, on many different measures, is not as good as that of the white population. Efforts have been put forth to eliminate the disparities, as evidenced by one of the *Healthy People 2030* overarching goals to "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being for all."[42] Many experts think these differences have been caused by two health inequities: (1) lack of access to health care, and (2) when health care is received the quality has not been as good for those in minority groups. Whatever the reason, health disparities continue to be a problem, and much more needs to be done.

Disasters

Disasters can be classified into two primary categories—natural (or conventional) and human-made (or technological disasters).[1] Whereas natural disasters are the result of the combination of the forces of nature (e.g., hurricane, flood, blizzard, tornado, earthquake, landslide) and human activities,[62] human-made disasters result from either unintentional (e.g., spill of a toxic substance into the environment) or intentional (e.g., bioterrorism) human activities, often associated with the use or misuse of technology. Both types of disasters have the potential to cause injury, death, disease, and damage to property on a large scale.[1] In recent years, the United States has felt the large-scale impact of both types of disasters via wildfires, the BP Gulf oil spill, Hurricanes Katrina and Harvey, severe flooding, and the bombings in Sri Lanka, Mogadishu, and at the 2013 Boston Marathon (see **Figure 1.11**). All of these events showed us that the preparation for such disasters was not adequate and that each type of disaster required different resources and responses.

Even though the causes of the two categories of disasters are different, preparedness for them has many common elements. It has been noted that preparedness for natural disasters is the foundation for preparedness for human-made disasters.[63] That is, in preparing for natural disasters, the basic components of an adequate disaster response system have been defined, and the steps necessary to build disaster preparedness capacity have been established.[63] What needs to be added are specific steps to deal with the peculiarity of the human-made disasters. An example of this would be the need for decontamination following exposure to a biological agent.

Even given the devastating consequences of natural disasters, such as hurricanes, flooding, or the wildfires that consume many thousands of acres of woodlands each year, it has been the intentional human-made disasters—specifically, terrorism—that have occupied much of our attention in recent years.

Mention was made earlier of the use of a communicable disease as part of terrorism. In fact, a number of agents could be used for terrorism. Since the anthrax mailings, community and public health professionals have focused on the possibility that future terrorism

FIGURE 1.11 Terrorism has become a concern throughout the world.

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Public health preparedness the capability of the public health and healthcare systems, community, and individuals to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those in which scale, timing, or unpredictability threatens to overwhelm routine capabilities

could include chemical, biological, radiological, and/or nuclear (CBRN) agents, resulting in mass numbers of casualties. Such concern led to an evaluation of community and public health emergency preparedness and response. "Determining the level of state and local health departments' emergency preparedness and response capacities is crucial because public health officials are among those, along with firefighters, emergency medical personnel, and local law enforcement personnel, who serve on 'rapid response' teams when large-scale emergency situations arise."[16] Results of that evaluation showed that the public health infrastructure was not where it should be to handle large-scale emergencies, as well as a number of more common public health concerns.

> The public health infrastructure has suffered from political neglect and from the pressure of political agendas and public opinion that frequently override empirical evidence. Under the glare of a national crisis, policymakers and the public became aware of vulnerable and outdated health information systems and technologies, an insufficient and inadequately trained public health workforce, antiquated laboratory capacity, a lack of real-time surveillance and epidemiological systems, ineffective and fragmented communications networks, incomplete domestic preparedness and emergency response capabilities, and communities without access to essential public health services.[16]

Based on the results of several different evaluations that exposed many weaknesses in emergency preparedness in general and in the public health infrastructure more specifically, investment in public health preparedness has increased since 9/11. Those federal departments that have been responsible for most of the effort have been the U.S. Departments of Homeland Security (DHS) and Health and Human Services (HHS). The DHS has the responsibility of protecting America, whereas the HHS has taken the leadership for public health and medical preparedness. **Public health preparedness** has been defined as "the capability of the public health and health care systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those in which scale, timing, or unpredictability threatens to overwhelm routine capabilities."[64] Information about emergency preparedness and response can be found on the websites of all HHS agencies; however, those that have been most visible have been the CDC, the Health Resources and Services Administration (HRSA), and the Agency for Healthcare Research and Quality (AHRQ).

After 9/11, the federal government, through a variety of funding sources and programs, has worked to strengthen homeland security, emergency preparedness, and response at all levels. The funding was used to create or enhance the various components needed in disaster situations (i.e., communication, coordination, and the workforce). The funding also had to be used to bring much of the public health system up to date (e.g., laboratories, personnel, and surveillance) after many years of neglect. However, in part because of the lull in the economy, there has been a decrease in public health preparedness funding the past few years,[65] which has begun to erode a decade's worth of progress.[61]

Though the United States is better prepared than prior to 9/11, much still needs to be done. In February 2019, the Trust for America's Health (TFAH), a nonprofit, nonpartisan organization, and the Robert Wood Johnson Foundation released their report on the state of public health preparedness in the United States.[66] Central to the report is a scorecard that rates all 50 states and the District of Columbia based on 10 priority indicators to assess health emergency preparedness capabilities. States are making progress in public health funding and participation in coalitions, however we have stalled or lost ground in areas such as flu vaccination and hospital patient safety.[66]

Data from the report showed that 17 states and the District of Columbia cut public health funding from fiscal year 2017 to 2018. Flu vaccination coverage dropped during the 2017–2018 season, from 47% in 2016–2017 to 43% of residents 6 months or older being vaccinated in 2017–2018.[66] In addition, with only 55% of employed state residents, on average, having access to paid time off, there is a risk of spreading infectious disease in the work setting.[66] Obviously, there is still much work to be done.

World Community and Public Health in the Twenty-First Century

Like the United States, much progress has been made in the health of people throughout the world in recent years. Global life expectancy has increased by 5.5 years between 2000 and 2016,[67] due primarily to (1) social and economic development, (2) the wider provision of safe water and sanitation facilities, and (3) the expansion of national health services.[68] And, like in the United States, a number of public health achievements took place in the first 10 years of the twenty-first century (see **Box 1.7**). However, all people of the world do not share in this increased life expectancy and better health. "There is still a major rich–poor divide: people in high-income countries continue to have a much better chance of living longer than people in low-income countries."[69]

BOX 1.7 Ten Great Public Health Achievements—Worldwide 2001–2010

At the conclusion of 2010, experts in global public health were asked to nominate noteworthy public health achievements that occurred outside of the United States during 2001–2010. From their responses, 10 were selected. Below, in no specific order, are the ones selected from the nominations.[70]

- *Reductions in child mortality*. Currently, an estimated 5.3 million children die each year before reaching their fifth birthday, which is equivalent to 1 in 28 children dying before reaching age 5 compared to 1 in 11 in 1990. Almost all (~99%) childhood deaths occur in low-income and middle-income countries, with 80% of the under-5 deaths in 2018 occurring in just five countries: India, Nigeria, Pakistan, Ethiopia, and the Democratic Republic of Congo.
- *Vaccine-preventable deaths*. Over the 10-year period an estimated 2.5 million deaths were prevented each year among children less than 5 years of age through the use of measles, polio, and diphtheria-tetanus-pertussis vaccines.
- *Access to safe water and sanitation*. Diarrhea, most of which is related to inadequate water, sanitation, and hygiene (WASH), kills 1.5 million children younger than 5 years of age annually.[71] The proportion of the world's population with access to improved drinking water sources increased from 83% to 87% (covering an additional 800 million persons), and the proportion with access to improved sanitation increased from 58% to 61% (covering an additional 570 million persons).
- *Malaria prevention and control*. Malaria is the fifth leading cause of death from infectious disease worldwide and the second leading cause in Africa. Increased coverage with insecticide-treated bed nets, indoor residual spraying, rapid diagnosis and prompt treatment with artemisinin combination therapy, and intermittent preventive treatment during pregnancy resulted a 21% decrease in estimated global malaria deaths between 2000 and 2009.
- *Prevention and control of HIV/AIDS*. The HIV epidemic continues to be a global health challenge with 37.9 million people living with HIV at the end of 2018.[72] However, a number of public health interventions including provider-initiated HIV testing and counseling, prevention of mother-to-child HIV transmission, expanded availability and use of condoms and sterile injection equipment, improved blood safety, and antiretroviral therapy (ART) have helped to reduce the number of new infections.
- *Tuberculosis control*. Due in large part to the World Health Organization's directly observed therapy, short-course (DOTS) strategy for TB control; focusing on finding and successfully treating TB cases with standardized regimens and rigorous treatment; and program monitoring, during the decade case detection and treatment success rates each have risen nearly 20%, with incidence and prevalence declining in every region.
- *Control of neglected tropical diseases*. Neglected tropical diseases affect approximately 1 billion people worldwide. Three of these diseases have been targeted for elimination or eradication: dracunculiasis (Guinea worm disease), onchocerciasis (river blindness) in the Americas, and lymphatic filariasis. Programs targeting dracunculiasis and onchocerciasis in the Americas are on the verge of success, and the lymphatic filariasis programs are making progress.
- *Tobacco control*. The global tobacco epidemic kills more than 7 million people each year.[73] However, during the decade 168 countries adopted WHO's first global health treaty aimed at tobacco, 163 countries tracked tobacco use via surveys, and the total global population covered by smoke-free laws increased.
- *Increased awareness and response for improving global road safety*. Approximately 1.35 million people die on the world's roads each year (3,700 every day),[74] and this number is projected to double by 2030. Although the number of road deaths did not slow down during the past 10 years, a significant global effort was made to create a plan to reduce the forecasted growth in road fatalities.
- *Improved preparedness and response to global health threats*. During the 10-year period of time, the public health community has improved preparedness for and detection of pandemic threats and is now responding more effectively than before. This is due in part to modernization of the international legal framework, better disease surveillance techniques, better public health networking, and better global disease detection systems.

Data from: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2011). Ten Great Public Health Achievements—Worldwide, 2001–2010. *Morbidity and Mortality Weekly Report, 60*(24), 814–818. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6024a4.htm

In the following sections, we have identified some of the community and public health issues that the people of the world will be facing in years ahead.

Communicable Diseases

Even though information presented in Box 1.7 suggests that there have been a number of achievements with regard to communicable diseases throughout the world between 2001 and 2010, the burden of communicable diseases worldwide is still great. It is most vivid when looking at mortality. The leading causes of death in the world do not look much different than the leading causes of death in the United States. In fact, heart disease and stroke are the number one and two killers worldwide. However, when the leading causes of death are broken down by the wealth of the countries, big differences appear. Five of the 10 leading causes of death are infectious diseases (e.g., lower respiratory infections, HIV/AIDS, diarrheal disease, malaria, and tuberculosis) in low- and middle-income countries, whereas nine of the 10 leading causes are noncommunicable diseases in high-income countries.[75] Similar trends appear when life expectancy is compared with the wealth of the countries. "A boy born in 2012 in a high-income country can expect to live to 75.8 years—more than 15 years longer than a boy born in a low-income country (60.2 years). For girls, the difference is even more marked; a gap of 18.9 years separates life expectancy in high-income (82.0 years) and low-income countries (63.1 years)."[68]

Poor Sanitation and Unsafe Drinking Water

Closely related to the problem of communicable diseases and related death are unsafe drinking water and poor sanitation. Worldwide, nearly one out of every five deaths in children under the age of 5 years is due to a water-related disease.[76] Furthermore, approximately 80% of all illnesses in developing countries are linked to poor water quality and unsanitary conditions.[76] For those individuals who grew up in a high-income country, the thought of not having clean water and sanitary conditions is hard to understand. Yet, worldwide one in nine people do not have access to safe and clean drinking water, with over one-third of those people living in sub-Saharan Africa.[76] In addition, an estimated 2.4 billion people (more than 32% of the world's population) lack basic sanitation.[77] Access to safe drinking water, adequate sanitation, and proper hygiene education are essential to reducing illness and death, which in turn leads to improved health, poverty reduction, and socioeconomic development.[77] Access to safe drinking water, sanitation, and hygiene (WASH) are basic human rights.

Hunger

Hunger can be defined in several different ways but the definition that applies here is the severe lack of food.[78] World hunger is not a problem of the amount of food but rather the maldistribution of the available food. Too many people are too poor to buy the available food, lack the land and resources to grow it themselves, or live in a climate that is not conducive to food production. The increase in conflict and violence in several parts of the world and climate-related events also contribute to food security and nutrition problems.[79] Despite a 27% reduction in hunger worldwide since 2000[80] and an 11% decline in malnourished children in developing countries since 1990,[81] an estimated 1.8 billion people were food insecure in 2015.[82] Furthermore, "malnutrition remains the underlying cause of death in an estimated 35% of all deaths among children under 5 years of age."[81]

Migration and Health

Recent political events in the Middle East and North Africa have ignited a dramatic increase in migration and the number of displaced people. In 2016, there were 70.8 million individuals worldwide who had been forcibly displaced as a result of persecution, conflict, generalized violence, or human rights violations. Of this number, 25.9 million were refugees, 41.3 million were internally displaced persons (IDPs), and 3.5 million were asylum seekers.[83] Millions of people have lost everything.

The surge of refugees and migrants creates challenges that require adequate preparedness, rapid humanitarian responses, and increased technical assistance. Unexpected pressure on health systems, social services, and employment systems can result in economic crisis and other

resource challenges when host countries are not adequately prepared for the influx.[84] Consider how difficult it is sometimes to get the appropriate health care in a resource-rich country like the United States, then consider how difficult it might be to receive appropriate health care in a new country where you are not familiar with the structure of the healthcare system, where you do not speak the language, where you lack transportation, and where you lack resources to pay for the services. What makes this situation even worse is that many of the refugees and migrants are in countries that lack enough resources for their own residents and are therefore overwhelmed by the influx of people.

Chapter Summary

- A number of key terms are associated with the study of community and public health, including *health*, *community*, *community health*, *population health*, *public health*, *public health system*, and *global health*.
- The four factors that affect the health of a community are physical (e.g., community size), social and cultural (e.g., religion), community organization, and individual behaviors (e.g., exercise and diet).
- It is important to be familiar with and understand the history of community health to be able to deal with the present and future community and public health issues.
- The earliest community and public health practices went unrecorded; however, archeological findings of ancient societies (before 500 BCE) show evidence of concern for community and public health. There is evidence during the time of the classical cultures (500 BCE–500 CE) that people were interested in physical strength, medicine, and sanitation.
- The belief of many living during the Middle Ages (500–1500 CE) was that health and disease were associated with spirituality. Many epidemics were seen during this period.
- During the Renaissance period (1500–1700 CE), there was a growing belief that disease was caused by the environment, not spiritual factors.
- The eighteenth century was characterized by industrial growth. Science was being used more in medicine, and it was during this century that the first vaccine was discovered.
- The nineteenth century ushered in the modern era of public health. Germ theory was introduced during this time, and the last quarter of the century is known as the bacteriological period of public health.
- The twentieth century can be divided into several periods. The health resources development period (1900–1960) was a time when many public and private resources were used to improve health. The period of social engineering (1960–1973) saw the U.S. government's involvement in health insurance through Medicare and Medicaid. The health promotion period began in 1974 and continues today.
- *Healthy People 2030* and the National Prevention Strategy are important components of the community and public health agenda in the United States.
- Great concern continues to exist in the United States regarding health care, the environment, diseases caused by an impoverished lifestyle, the spread of communicable diseases (such as AIDS, Legionnaires' disease, Lyme disease, and Zika virus), the harm caused by alcohol and other drug abuse, and terrorism.
- Although the health of the world population is improving, communicable diseases, poor sanitation and unsafe drinking water, hunger, and migration are burdens for many and impact the people who are poor much more than those who are not poor.

Scenario: Analysis and Response

The internet offers many sources of information that could help Amy and Eric with the decisions that they will have to make about the continued use of the day care center for their children. Use a search engine (e.g., Google, Bing) and enter (a) hepatitis and (b) hepatitis and day care centers. Print out the information that you find and use it in answering the following questions.

1. Based on the information you found on the internet, if you were Amy or Eric would you take your children to the day care center the next day? Why or why not?

2. Do you believe the hepatitis problem in day care centers is a personal health concern or a community health concern? Why?
3. Which of the factors noted in this chapter that affect the health of a community play a part in the hepatitis problem faced by Amy and Eric?
4. Why does the hepatitis problem remind us of the health problems faced by people in this country prior to 1900?
5. Under which of the focus areas in the *Healthy People 2030* would hepatitis fall? Why?

Review Questions

1. How did the WHO define health in 1946? How has that definition been modified?
2. What is public health?
3. What are the differences among community health, population health, and global health?
4. What are the five major domains that determine a person's health?
5. What is the difference between personal health activities and community and public health activities?
6. Define the term *community*.
7. What are four major factors that affect the health of a community? Provide an example of each.
8. Identify some of the major events of community and public health in each of the following periods of time:

   Early civilizations (prior to 500 CE)

   Middle Ages (500–1500 CE)

   Renaissance and Exploration (1500–1700 CE)

   The eighteenth century

   The nineteenth century
9. Provide a brief explanation of the origins from which the following twentieth-century periods get their names:

   Health resources development period

   Period of social engineering

   Period of health promotion
10. What significance do the *Healthy People* documents have in community and public health development in recent years?
11. What significance do you think *Healthy People 2030* will have in the years ahead?
12. What is the National Prevention Strategy, and who is responsible for it?
13. What are the major community and public health problems facing the United States and the world in the twenty-first century?

Activities

1. Write your own definition for health.
2. Create a visual presentation using photos to explain how the five major determinants of health could interact to cause a disease such as cancer.
3. Create a public service announcement explaining why heart disease can be both a personal health problem and a community and public health problem.
4. Select a community and public health problem that exists in your hometown; then, using the factors that affect the health of a community noted in this chapter, analyze and discuss at least three factors that contribute to this problem.
5. Select one of the following individuals (all have been identified in this chapter). Using the internet, find three reliable websites that provide information on the individual, and then write a two-page paper on the person's contribution to community and public health.

   Edward Jenner

   John Snow

   Lemuel Shattuck

   Louis Pasteur

   Robert Koch

   Walter Reed
6. Review the *Healthy People* website. Then, set up a time to talk with an administrator in your hometown health department. Find out which of the objectives the health department has been working on as priorities. Summarize in a paper what the objectives are, what the health department is doing about them, and what it hopes to accomplish by the year 2030.

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CHAPTER 2

Organizations That Help Shape Community and Public Health

Chapter Outline

Scenario
Introduction
Governmental Health Agencies
- International Health Agencies
- National Health Agencies
- State Health Agencies
- Local Health Departments
- Whole School, Whole Community, Whole Child (WSCC) Model

Quasi-Governmental Health Organizations
- The American Red Cross (ARC)
- Other Quasi-Governmental Organizations

Nongovernmental Health Agencies
- Voluntary Health Agencies
- Professional Health Organizations/ Associations
- Philanthropic Foundations
- Service, Social, and Religious Organizations
- Corporate Involvement in Community and Public Health

Chapter Summary
Scenario: Analysis and Response
Review Questions
Activities
References

Chapter Objectives

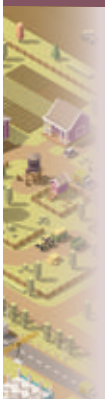
After studying this chapter, you will be able to:

1. Summarize the need for organizing to improve community and public health.
2. Explain what a governmental health organization is and give an example of one at each of the following levels—international, national, state, and local.
3. Discuss the role the World Health Organization (WHO) plays in community and public health.
4. Briefly describe the structure and function of the U.S. Department of Health and Human Services (HHS).
5. State the three core functions of public health.
6. List the 10 essential public health services.
7. Describe the relationship between a state and local health department.
8. Explain what is meant by Whole School, Whole Community, Whole Child (WSCC).
9. Define the term *quasi-governmental*, and explain why some health organizations are classified under this term.
10. List the four primary activities of most voluntary health organizations.
11. Explain the purpose of a professional health organization/association.
12. Demonstrate how philanthropic foundations contribute to community and public health.

Chapter Objectives

13. Discuss the role that service, social, and religious organizations play in community and public health.
14. Identify the major reason why corporations are involved in community and public health, and describe some corporate activities that contribute to community and public health.

Scenario



Mary is a hardworking senior at the local university. She is majoring in physical education and looking forward to teaching elementary physical education after graduation. Mary has always been involved in team sports and has been a lifeguard at the local swimming pool for the past 4 years. Mary has a fair complexion with honey-blonde hair and blue eyes. She has always tanned easily, so has not bothered very much with sunscreens. For the past few weeks, Mary has noticed a red, scaly, sharply outlined patch of skin on her forehead. She has put creams and ointments on it, but it will not go away and may be getting larger. Her roommate, Clare, suggests that she should make an appointment with the campus health services office. Mary lets it go another week and then decides to see the doctor.

After looking at the patch of skin, the doctor refers Mary to a specialist, Dr. Rice, who is a dermatologist. The dermatologist suggests a biopsy be taken of the lesion to test for skin cancer. The specialist tells Mary that if it is cancer, it is probably still in its early stages and so the prognosis is good.

A potential diagnosis of cancer often raises a lot of questions and concerns. Are there any resources in the community to which Mary can turn for help?

Introduction

The history of community and public health dates to antiquity. For much of that history, community and public health issues were addressed only on an emergency basis. For example, if a community faced a drought or an epidemic, a town meeting would be called to deal with the problem. It has been only in the last 100 years or so that communities have taken explicit actions to deal aggressively with health issues on a continual basis.

Today's communities differ from those of the past in several important ways. Although individuals are better educated, more mobile, and more independent than in the past, communities are less autonomous and are more dependent on state and federal funding for support. Contemporary communities are too large and complex to respond effectively to sudden health emergencies or to make long-term improvements in community and public health without community organization and careful planning. Better community organizing and careful long-term planning are essential to ensure that a community makes the best use of its resources for health, both in times of emergency and over the long run.

The ability of today's communities to respond effectively to their own problems is hindered by the following characteristics: (1) highly developed and centralized resources in our national institutions and organizations; (2) continuing concentration of wealth and population in the largest metropolitan areas; (3) rapid movement of information, resources, and people made possible by advanced communication and transportation technologies that eliminate the need for local offices where resources were once housed; (4) the globalization of health; (5) limited horizontal relationships between/among organizations; and (6) a system of **top-down funding** (an approach where money is transmitted from either the federal or state government to the local level) for many community programs.[1]

Top-down funding a method of funding in which funds are transmitted from federal or state government to the local level

In this chapter, we discuss organizations that help to shape a community's ability to respond effectively to health-related issues by protecting and promoting the health of the community and its members. These community organizations can be classified as governmental, quasi-governmental, and nongovernmental—according to their sources of funding, responsibilities, and organizational structure.

Governmental health agencies health agencies that are part of the governmental structure (federal, state, or local) and that are funded primarily by tax dollars

World Health Organization (WHO) the most widely recognized international governmental health organization

Governmental Health Agencies

Governmental health agencies are part of the governmental structure (federal, state, tribal and/or territorial, or local). They are funded primarily by tax dollars and managed by government officials. Each governmental health agency is designated as having authority over some geographical area. Such agencies exist at the four governmental levels—international, national, state, and local.

International Health Agencies

The most widely recognized international governmental health organization today is the **World Health Organization (WHO)** (see **Figure 2.1**). Its headquarters is located in Geneva, Switzerland, and there are six regional offices around the world. The names, acronyms, and cities and countries of location for WHO regional offices are as follows: Africa (AFRO), Brazzaville, Congo; Americas (PAHO), Washington, DC, United States; Eastern Mediterranean (EMRO), Cairo, Egypt; Europe (EURO), Copenhagen, Denmark; Southeast Asia (SEARO), New Delhi, India; and Western Pacific (WPRO), Manila, Philippines.[2]

Although the WHO is now the largest international health organization, it is not the oldest. Among the organizations (listed with their founding dates) that predate WHO are the following:

- International D'Hygiène Publique (1907); absorbed by the WHO
- Health Organization of the League of Nations (1919); dissolved when the WHO was created
- United Nations Relief and Rehabilitation Administration (1943); dissolved in 1946—its work is carried out today by the Office of the United Nations High Commissioner for Refugees (UNHCR) (1950)
- United Nations Children's Fund (UNICEF) (1946); formerly known as the United Nations International Children's Emergency Fund
- Pan American Health Organization (PAHO) (1902); still an independent organization but is integrated with WHO in a regional office

FIGURE 2.1 Ethiopia's Dr. Tedros Adhanom Ghebreyesus, Director–General of the World Health Organization, has made numerous speeches this year regarding the coronavirus pandemic.

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Because the WHO is the largest and most visible international health agency, it is discussed at greater length in the following sections.

History of the World Health Organization

Planning for the WHO began when a charter of the United Nations was adopted at an international meeting in 1945. Contained in the charter was an article calling for the establishment of a health agency with wide powers. In 1946, at the International Health Conference, representatives from all of the countries in the United Nations succeeded in creating and ratifying the constitution of the WHO. However, it was not until April 7, 1948, that the constitution went into force and the organization officially began its work. In recognition of this beginning, April 7 is commemorated each year as World Health Day.[2] The sixtieth anniversary of the WHO was celebrated in 2008.

Organization of the World Health Organization

"WHO works worldwide to promote health, keep the world safe, and serve the vulnerable" with the goal of ensuring universal health coverage, protect people from health emergencies, and provide individuals with better health and well-being.[3] Membership in the WHO is open to any nation that has ratified the WHO constitution and receives a majority vote of the World Health Assembly. Currently there are 194 member states. The World Health Assembly comprises the delegates of the member nations. This assembly, which meets in general sessions annually and in special sessions when necessary, has the primary tasks of determining policies, appointing the director–general, supervising financial policies, and reviewing and approving the proposed program budget.[4]

The WHO is administered by a staff that includes an appointed director–general, deputy director–general, seven assistant directors–general, and six regional directors. Great care is taken to ensure political balance in staffing WHO positions, particularly at the higher levels of administration. The WHO includes more than 7,000 people working in 150 country offices, six regional offices, as well as the headquarters in Geneva, Switzerland.[2]

Purpose and Work of the World Health Organization

The mission of the WHO "shall be the attainment by all peoples of the highest possible level of health." The WHO supports its mission through the following types of activities:

- Providing technical assistance to countries
- Setting international health standards
- Providing guidance on important health issues
- Coordinating and supporting international response to health emergencies, such as disease outbreaks
- Promoting and advocating for better global health

The WHO's key objective for the 2019–2023 period is "ensuring healthy lives and promoting well-being for all at all ages." The WHO has established three strategic priorities, called the "triple billion target," which will focus on: (1) helping 1 billion more people benefit from universal health coverage, (2) ensuring 1 billion more people are better protected against emergencies, and (3) helping 1 billion more people enjoy better health and well-being.[5]

The work of the WHO is financed by its member states with assessed and voluntary contributions. Each member state is assessed according to its ability to pay; the wealthiest countries contribute the most. Voluntary contributions also come from the member states and account for 80% of the budget financing.[6]

Although the WHO has sponsored and continues to sponsor many worthwhile programs, an especially noteworthy one was the work of the WHO in helping to eradicate smallpox. At one time smallpox was the world's most feared disease, until it was eradicated by a collaborative global vaccination program led by the WHO.[2] The year 2019 marked the fortieth anniversary of this eradication.[7] In 1967, smallpox was active in 31 countries. During that year, 10 to 15 million people contracted the disease, and of those, approximately 2 million died. Many millions of others were permanently disfigured or blinded. The last known natural case of smallpox was diagnosed on October 26, 1977, in Somalia.[2] In 1978, a laboratory accident in Birmingham, England, resulted in one death and a limited outbreak of the acute disease. In 1979, the World Health Assembly declared the global eradication of this disease. Using the smallpox mortality figures from 1967, it can be estimated that more than 60 million lives have been saved since the eradication.

More recently, the WHO has led the efforts to contain the outbreaks of the coronavirus (SARS-CoV-2). Within weeks of the outbreak, the WHO convened a global research and innovation forum to mobilize response to the outbreak. Major research funders and over 300 scientists and researchers gathered to examine all aspects of the outbreak, ways to control it, and urgent global research priorities.[8]

The work of the WHO is outlined in its "general programme of work." This document, which is a requirement of the WHO constitution, "provides a vision and is used to guide the work of the organization during a pre-determined period of time."[5] At the time this text was

being revised, the WHO was working under the *Thirteenth General Programme of Work,*[5] which covers the 5 years from 2019 to 2023.

In addition to the program of work, work of the WHO has been outlined in the United Nations Millennium Declaration.[9] The declaration set out principles and values in seven areas (peace, security, and disarmament; development and poverty eradication; protecting our common environment; human rights, democracy, and good governance; protecting the vulnerable; meeting special needs of Africa; and strengthening the United Nations) that should govern international relations in the twenty-first century. Following the summit, the *Road Map* was prepared, which established goals and targets to be reached by 2015 in each of the seven areas.[9] The resulting eight goals in the area of development and poverty eradication are referred to as the Millennium Development Goals (MDGs). More specifically, the MDGs were aimed at reducing poverty and hunger, and tackling ill health, gender inequality, lack of education, lack of access to improved drinking water, and environmental degradation. The MDGs were met with much success. Unified efforts have produced data that prove the MDGs have saved millions of lives and improved conditions from targeted interventions, sound strategies, and adequate resources. The momentum must continue, because uneven achievements and shortfalls still exist; therefore, the work must progress into the new development era[10] (see **Table 2.1**). As noted earlier, the MDGs were not exclusively aimed at health, but there were interactive processes between health and economic development that create a crucial link. That is, better health is "a prerequisite and major contributor to economic growth and social cohesion. Conversely, improvement in people's access to health technology is a good indicator of the success of other development processes."[9]

Strategies for achieving large-scale and rapid progress toward meeting the MDGs involved strong government leadership, and policies and strategies that meet the needs of the poor, combined with sufficient funding and technical support from the international community.[10]

The work behind the MDGs has proven to be effective in monitoring development through measurable data to track interventions, performance, and accountability. Although much progress has been made, there is still much more work to be done. A new universal and transformative post-2015 development agenda of MDGs, supported by a set of 17 goals referred to as the **Sustainable Development Goals (SDGs)**. SDGs were established to be interconnected, and they are concentrated toward eradicating poverty, addressing climate change, and increasing economic growth. The goals were developed by world leaders in

Sustainable Development Goals (SDGs) goals created by the WHO to build on the work accomplished via the Millennium Development Goals.

TABLE 2.1 Selected Achievements Found in the Millennium Development Goals

- Extreme poverty has declined significantly over the last 2 decades. In 1990, nearly half of the population in the developing world lived on less than $1.25 a day; that proportion dropped to 14% in 2015.
- The primary school net enrollment rate in the developing regions has reached 91% in 2015, up from 83% in 2000.
- Many more girls are now in school compared to 15 years ago. The developing regions as a whole have achieved the target to eliminate gender disparity in primary, secondary, and tertiary education.
- The global under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1,000 live births between 1990 and 2015.
- Since 1990, the maternal mortality ratio has declined by 45% worldwide, and most of the reduction has occurred since 2000.
- New HIV infections fell by approximately 40% between 2000 and 2013, from an estimated 3.5 million cases to 2.1 million.
- Ozone-depleting substances have been virtually eliminated since 1990, and the ozone layer is expected to recover by the middle of this century.
- Official development assistance from developed countries increased by 66% in real terms between 2000 and 2014, reaching $135.2 billion.

From The Millennium Development Goals Report: New York. © 2015 United Nations. Reprinted with the permission of the United Nations. Available at http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2015/English2015.pdf.

TABLE 2.2 Seventeen Sustainable Development Goals	
Goal 1	End poverty in all its forms everywhere.
Goal 2	Zero hunger.
Goal 3	Ensure healthy lives and promote well-being for all at all ages.
Goal 4	Ensure access to inclusive, quality education.
Goal 5	Achieve gender equality and empower all women and girls.
Goal 6	Ensure access to water and sanitation for all.
Goal 7	Ensure access to affordable, reliable, sustainable, and modern energy for all.
Goal 8	Promote sustained and inclusive economic growth, employment, and decent work for all.
Goal 9	Build resilient infrastructure, promote sustainable industrialization and foster innovation.
Goal 10	Reduce inequality within and among countries.
Goal 11	Make cities inclusive, safe, resilient, and sustainable.
Goal 12	Ensure sustainable consumption and production patterns.
Goal 13	Take urgent action to combat climate change and its impacts.
Goal 14	Conserve and sustainably use the oceans, seas, and marine resources.
Goal 15	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.
Goal 16	Promote just, peaceful, and inclusive societies.
Goal 17	Revitalize the global partnership for sustainable development.

Data from: United Nations. (2020). *Sustainable Development Goals: 17 Goals to Transform Our World*. Available at http://www.un.org/sustainabledevelopment/.

September 2015 to build on the MDGs and improve the lives of people through a global, unified effort.[11] SDGs are not considered legally binding; however, they do seek improved availability, quality, and timeliness of data, national level analyses, and global-level outcome.[11] **Table 2.2** provides a list of the 17 SDGs.

National Health Agencies

Each national government has a department or agency that has the primary responsibility for the protection of the health and welfare of its citizens. These national health agencies meet their responsibilities through the development of health policies, the enforcement of health regulations, the provision of health services and programs, the funding of research, and the support of their respective state and local health agencies.

In the United States, the primary national health agency is the Department of Health and Human Services (HHS). The mission of HHS is to enhance and protect the health and well-being of all Americans. HHS does this by providing health and human services and advancing medicine, public health, and social services.[12] It is important to note, however, that other federal agencies also contribute to the betterment of our nation's health. For example, the U.S. Department of Agriculture (USDA) inspects meat and dairy products and coordinates the Special Supplemental Nutrition Program for Women, Infants, and Children, better known as the WIC food assistance program; the Environmental Protection Agency (EPA) regulates hazardous wastes; the Department of Labor houses the Occupational Safety and Health Administration (OSHA), which is concerned with safety and health in the workplace; the Department of Commerce, which includes the Bureau of the Census, collects much of the national data that drive our nation's health programs; and the Department of Homeland Security (DHS) deals with all aspects of terrorism within the United States. A detailed description of the HHS follows.