EIGHTH EDITION

Health Education

Elementary and Middle School Applications

Susan K. Telljohann | Cynthia W. Symons
Beth Pateman | Denise M. Seabert

Mc Graw Hill Education

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HEALTH EDUCATION: ELEMENTARY AND MIDDLE SCHOOL APPLICATIONS, EIGHTH EDITION

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PREFACE

VISION AND GOALS

The ideas, concepts, and challenges presented in this text have developed out of many different experiences: teaching elementary and middle-level children; teaching a basic elementary/middle school health course to hundreds of pre-service elementary, early childhood, and special education majors; working with numerous student teachers; and serving on a variety of local, state, and national curriculum and standards committees. Two of the authors of this book have taken sabbatical leaves from their university teaching positions and taught for a term in a local elementary and middle school. The third author receives ongoing feedback on health education strategies from preservice elementary education majors who teach health education lessons as part of their field experience in elementary K–6 classrooms. The fourth author has engaged with school-age children through volunteer teaching, school-based health fairs, and student-facilitated curriculum development projects. This has provided opportunities to use the strategies included in this eighth edition.

We have written this textbook with several groups in mind: (1) the elementary and middle-level education major who has little background or experience in health education but will be required to teach health education to her or his students in the future, (2) the health education major who will be the health specialist or coordinator in an elementary or middle school, (3) the school nurse who works in the elementary/middle school setting, and (4) those community health educators and nurses who increasingly must interact with elementary and/or middle school personnel. Our goal is to help ensure that elementary and middle school teachers and health specialists obtain the information, skills, and support they need to provide quality health instruction to students.

CONTENT AND ORGANIZATION

The eighth edition is divided into three sections. Section I, "Foundations of Health Education," includes Chapters 1 through 4. This section introduces the coordinated school health program, the relationship between health and learning, the national health initiatives, the development of the elementary/middle school health education curriculum, the concept of developmentally appropriate practice, lesson and unit planning, and assessment. The basics of effective health education and effective instruction approaches are provided, including a critical analysis of standards-based approaches to health education and strategies for creating a positive learning environment, managing time constraints, and handling controversial topics and issues.

Sections II and III reflect the Centers for Disease Control and Prevention's Health Education Curriculum Analysis Tool. Section II, "Helping Students Develop Skills for Positive Health Habits," includes Chapters 5 through 9 and focuses on the positive health habits students can adopt and maintain to help them live a healthy life. The chapters in Section II cover mental and emotional health, healthy eating, physical activity, safety and unintentional injury prevention, and personal health and wellness. Section III, "Helping Students Translate Their Skills to Manage Health Risks," focuses on the health risks students need to avoid or reduce to promote health. These chapters (10 through 14) cover intentional injury prevention and violence; tobacco use; the use of alcohol and other drugs; sexual health; and managing loss, death, and grief.

Sections II and III present the content and the personal and social skills that comprise the National Health Education Standards. Each chapter in these sections begins by discussing the prevalence and cost of *not* practicing the positive health behavior, the relationship between healthy behaviors and academic performance, and relevant risk and protective factors. Readers then are provided with information about what schools are currently doing and what they should be doing in relation to the health behavior. Chapters in these sections also provide background information for the teacher, developmentally appropriate strategies for learning and assessment, sample student questions with suggested answers (Chapters 11–14), and additional recommended resources, including evaluated commercial curricula, children's literature, and websites.

Three Appendices provide students with resources they can keep and use in the future:

- Appendix A, "2007 National Health Education Standards for Grades Pre-K–8," includes the latest version of the NHES standards and performance indicators.

- Appendix B, "RMC Rubrics for the National Health Education Standards," provides a standards-based framework teachers can use to evaluate student work. The rubrics were developed by the Rocky Mountain Center for Health Promotion and Education of Lakewood, Colorado.
- Appendix C, "Development Characteristics and Needs of Students in Elementary and Middle Grades," summarizes common growth and development characteristics and the corresponding needs of students in kindergarten through grade 9 that can serve as a foundation for age appropriate practice.

CHAPTER-BY-CHAPTER CHANGES OF THE EIGHTH EDITION

The new edition includes updated statistics throughout and more than twenty-five new "Strategies for Learning and Assessment."

Chapter 1: Coordinated School Health

- The section "Mental or Intellectual Health" has been updated to include a discussion of the specific impact of positive mental health in individuals and suggestions for achieving these results.
- Tables 1–5 through 1–12 have been updated based on the School Health Index (CDC).
- A new section highlights the 2014 collaborative "Whole School, Whole Community, Whole Child" model developed by the Centers for Disease Control and Prevention and ASCD.

Chapter 4: Building and Managing the Safe and Positive Learning Environment

- An updated section, "Cultivating Connectedness Through Parent Engagement," emphasizes the importance of parents and school staff working together to improve the health of children and adolescents.
- New discussion about building positive relationships with parents includes a list of suggestions for promoting these connections.
- New Teacher's Toolbox, "Solutions for Six Common Challenges to Sustaining Parent Engagement."

Chapter 5: Promoting Mental and Emotional Health

- New discussion about a 2009 report from the Institute of Medicine about risk and protective factors in the development of emotional and behavioral problems in children over time.
- New table, "School Health Policies and Practices Study (SHPPS) 2012 Data Related to Mental Health and Social Services."

Chapter 6: Promoting Healthy Eating

New discussion of the 2013 USDA report on food insecurity and the reach of federal nutrition programs.

- Updated section on childhood obesity includes a list of the negative influences that can impact children's healthy food choices and physical activity.
- New Teacher's Toolbox 6.1, "School Health Guidelines to Promote Healthy Eating and Physical Activity."

Chapter 7: Promoting Physical Activity

- New section on the goals of Comprehensive School Physical Activity Programs.

Chapter 8: Promoting Safety and Preventing Unintentional Injury

- New Teacher's Toolbox 8.2, "Steps in the Safe Kids Helmet Fit Test."

Chapter 9: Promoting Personal Health and Wellness

- New information on the current state of HIV/AIDS in the United States and the kinds of interventions that should be used for those at the highest risk.
- New information about children with epilepsy and the Epilepsy Foundation's current Seizure Response Plan for the classroom.

Chapter 10: Preventing Intentional Injuries and Violence

- Completely updated section on bullying explores the spectrum of aggression, distinguishes cyberbullying, and gives suggestions for creating school climates that deter all forms of student bullying.
- New table, "Percentage of Districts Adopting Policy Requiring Schools to Teach Specific Health Topics."
- New table, "Percentage of State and Districts Who Provided Funding for or Offered Professional Development on How to Implement Policies and Programs Related to Violence Prevention."

INSTRUCTOR AND STUDENT ONLINE RESOURCES

The 8th edition of *Health Education: Elementary and Middle School Applications* is now available as a SmartBook™—the first and only adaptive reading experience designed to change the way students read and learn.

SmartBook creates a personalized reading experience by highlighting the most impactful concepts a student needs to learn at that moment in time. As a student engages with SmartBook, the reading experience continuously adapts by highlighting content based on what the student knows and doesn't know. This ensures that the focus is on the content he or she needs to learn, while simultaneously promoting long-term retention of material. Use SmartBook's real-time

reports to quickly identify the concepts that require more attention from individual students—or the entire class. The end result? Students are more engaged with course content, can better prioritize their time, and come to class ready to participate.

Key Student Benefits

- SmartBook engages the student in the reading process with a personalized reading experience that helps them study efficiently.
- SmartBook includes powerful reports that identify specific topics and learning objectives the student needs to study.
- Students can access SmartBook anytime via a computer and mobile devices.

Key Instructor Benefits

- Students will come to class better prepared because SmartBook personalizes the reading experience, allowing instructors to focus their valuable class time on higher level topics.
- SmartBook provides instructors with a comprehensive set of reports to help them quickly see how individual students are performing, identify class trends, and provide personalized feedback to students.

How Does SmartBook Work?

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- ***Read:*** Once they have *Previewed* the content, the student is prompted to *Read*. As he or she reads, SmartBook will introduce LearnSmart questions in order to identify what content the student knows and doesn't know.
- ***Practice:*** As the student answers the questions, SmartBook tracks their progress in order to determine when they are ready to *Practice*. As the students *Practice* in SmartBook, the program identifies what content they are most likely to forget and when.
- ***Recharge:*** That content is brought back for review during the *Recharge* process to ensure retention of the material.

Speak to your McGraw-Hill Learning Technology Consultants today to find out more about adopting SmartBook for *Health Education: Elementary and Middle School Applications, 8th edition*!

Online Learning Center

The Online Learning Center for the eighth edition of *Health Education* provides key teaching and learning resources in an easy-to-use format. It includes the following teaching tools, which have been updated for this edition by Christine Fisher of Rhode Island College:

- *Instructor's Manual to Accompany Health Education: Elementary and Middle School Applications.*
- *PowerPoint slides.* A complete set of PowerPoint slides is available for download from the book's Online Learning Center. Keyed to the major points in each chapter, these slide sets can be modified or expanded to better fit classroom lecture formats. Also included in the PowerPoint slides are many of the illustrations from the text, including the children's art.

- *Test bank*. The test bank includes true-false, multiple choice, short-answer, and essay questions. The test bank is also available with EZ Test computerized testing software. EZ Test provides a powerful, easy-to-use test maker to create printed quizzes and exams.

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We would also like to thank our chapter contributors:

Dr. Michele Wallen, Associate Professor of Health Education at East Carolina University, updated Chapter 8, Promoting Safety and Preventing Unintentional Injury.

Dr. Adrian Lyde, Assistant Professor of Health Education at Illinois State University, updated Chapter 10, Preventing Intentional Injuries and Violence.

Dr. JoEllen Tarallo-Falk, Executive Director of the Center for Health and Learning, updated Chapter 12, Alcohol and Other Drug Use Prevention.

We hope that you enjoy the changes and additions made in this eighth edition. We welcome any comments or suggestions for future editions. We wish all the best and success in teaching health education to children and preadolescents.

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SECTION I

Foundations of Health Education

Section I begins with a review of important definitions and concepts that frame current understandings about health and health promotion. Next, a rationale for the importance of school health programming as a mechanism to reduce health risks and promote school success is discussed. With the foundation of the *Healthy People* agenda and findings from the most recent School Health Policies and Practices Study, this section contains a review of the eight critical components of Coordinated School Health. Teachers in elementary and middle schools will be enriched by examining the ways in which the broad science about brain function and learning have been translated into strategies for improving health instruction. Information about the value of using health education theory to inform practice is introduced, and a critical analysis of standards-based approaches to health education is provided. Finally, this section highlights strategies for creating a positive learning environment, promoting connectedness, managing time constraints, and dealing with controversial content and associated instructional issues in health education and promotion.

1

(Morgan Hi'ilei Serna, age 11)

OUTLINE

Coordinated School Health

A Foundation for Health Promotion in the Academic Environment

DESIRED LEARNER OUTCOMES

After reading this chapter, you will be able to . . .

- **Define each of the domains of personal health.**
- **Identify behavioral risk factors that influence illness and death.**
- **Describe the link between student health and academic achievement.**
- **Discuss the influence of school health programs on improving school success.**
- **Summarize the role of each element of Coordinated School Health in improving the health of all stakeholders in the school community.**
- **Discuss the combined impact of the elements of Coordinated School Health on improving the health of all stakeholders in the school community.**

HEALTH: DEFINITIONS

A review of common understandings about health reveals that most people think in terms of physical well-being. As such, most people focus their thoughts and efforts on preventing or managing illnesses, participating in fitness activities, or modifying dietary behaviors. It is important, however, for teachers in elementary and middle schools to understand that health is a very broad concept that extends far beyond the limitations of the physical domain.

In 1947, the World Health Organization developed an informative definition of health defining it as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."[1] This definition made a critical contribution by clarifying that health is influenced by a number of interrelated and influential factors.

Today, health is best understood as the capacity to function in effective and productive ways, influenced by complex personal, behavioral, and environmental variables that can change quickly. Bedworth and Bedworth have defined health as "the quality of people's physical, psychological, and sociological functioning that enables them to deal adequately with the self and others in a variety of personal and social situations."[2] Further, Carter and Wilson have clarified that "health is a dynamic status that results from an interaction between hereditary potential, environmental circumstance, and lifestyle selection."[3] These definitions confirm that, although a great deal of personal control can be exerted over some sources of influence over health, the capacity for a person to be in complete control all such factors is limited. In summary, current definitions emphasize both the independent strength *and* the interactive effect of six influential domains of health: the physical, mental/intellectual, emotional, social, spiritual, and vocational.

Physical Health (Physical/Body)

The most easily observed domain of health is the physical. In addition to being influenced by infectious agents, physical well-being is influenced by the combined effects of hereditary potential, exposure to environmental toxins and pollutants, access to quality medical care, and the short- and long-term consequences of personal behaviors. As such, physical health results from a complex and changing set of personal, family, social, financial, and environmental variables.

Initial and often lasting impressions of the health of a friend or classmate is based on observed physical characteristics, including height, weight, energy level, and the extent to which the person appears to be rested. In addition, it is common to make judgments about health status based on observed behaviors. In this context, if friends participate in regular exercise or always wear a seatbelt, others are likely to conclude that they are healthy. Conversely, very different judgments often are made about the health of friends who are overweight or use tobacco products. Although a person's health outcomes might improve if they participated in fewer risky behaviors, such individuals might be very healthy in other influential domains.

Mental/Intellectual Health (Thinking/Mind)

The capacity to interpret, analyze, and act on information establishes the foundation of the mental or intellectual domain of health. Additional indicators of mental or intellectual health include the ability to recognize the sources of influence over personal beliefs and to evaluate their impact on decision making and behaviors. Observing the processes of reasoning, the capacity for short- and long-term memory, and expressions of curiosity, humor, logic, and creativity can provide clues about mental or intellectual health.[4]

Like the other domains, mental or intellectual health is important at every stage of life. In addition to exerting influence over all elements of well-being, positive mental health can contribute to the ability of people to:

- Realize their full potential.
- Manage stresses of daily living.
- Work productively.
- Make meaningful contributions.

Many factors, including those that are biological (e.g., genetics and brain chemistry) and life circumstances or experiences (e.g., trauma or abuse) can influence mental health. Importantly, positive mental health can be enriched by participating in enriching activities in the other domains of health including regular and vigorous physical activity, getting enough sleep, and maintaining positive relationships with others.

Mental health challenges are common, and help is available. However, even though most people are willing to seek professional help when they are physically ill, many unfortunately are hesitant or even refuse to pursue therapeutic interventions when confronted with mental health challenges. Importantly, when care is provided by a trained professional, many people feel improvement in their mental health status, and others can recover completely.[5]

Emotional Health (Feelings/Emotions)

The emotional domain of health is represented by the ways in which feelings are expressed. Emotionally healthy people communicate self-management and acceptance and express a full range of feelings in socially acceptable ways. Experiencing positive emotions and managing negative ones in productive ways contribute balance to emotional health. Importantly, emotionally robust individuals practice a range of coping skills that enable them to express negative feelings (sadness, anger, disappointment, etc.) in ways that are not self-destructive or threatening to others. In this way, emotional health contributes to and is reflected in perceived quality of life.

Many people who feel isolated, inadequate, or overwhelmed express feelings in excessive or abusive ways. Others suppress or bottle up strong emotions. Routinely attempting to cope with negative feelings by burying them has been demonstrated to contribute to stress-related illnesses, including susceptibility to infections and heart disease. Fortunately, counseling, support groups, and medical

therapies can help people manage emotional problems of many types. An important starting resource for those attempting to manage such problems is their family doctor. This professional, with whom people are familiar and comfortable, can diagnose, treat, or make referrals for effective therapies to support and enrich emotional health.[6]

Social Health (Friends/Family)

Humans live and interact in a variety of social environments, including homes, schools, neighborhoods, and workplaces. Social health is characterized by practicing the requisite skills to navigate these diverse environments effectively. People with strength in the social domain of health maintain comfortable relationships characterized by strong connections, mutuality, and intimacy. In addition, socially healthy people communicate respect and acceptance of others and recognize that they can enrich and be enriched by their relationships.[7]

Unfortunately, many people are unable to function in comfortable and effective ways in the company of others. Such individuals can't integrate a range of important social skills into daily living. Often, this is a consequence of being self-absorbed. Such limited focus can compromise one's ability to recognize needs and issues of importance to others. As a consequence, poorly executed social skills and the associated behavioral consequences can place significant limitations on the ability to initiate and maintain healthy relationships. Such limitations compromise personal health and the quality of life of others.

Spiritual Health (Spiritual/Soul)

The spiritual domain of health is best understood in the context of a combination of three important elements:

- Comfort with self and the quality of interpersonal relationships with others.
- The strength of one's personal value system.
- The pursuit of meaning and purpose in life.[8]

Spiritually healthy people integrate positive moral and ethical standards such as integrity, honesty, and trust into their relationships. These individuals demonstrate strong concern for others regardless of gender, race, nationality, age, sexual orientation, or economic status. Although some people believe that spiritual well-being is enriched by their participation in formal religious activities, the definition of spiritual health is not confined to sacred terms or practices.

People with compromised spiritual health might not be guided by moral or ethical principles that are broadly accepted or believe that a higher being or something beyond themselves contributes meaning to their lives. Among such individuals, short-term economic objectives, self-interest, or personal gain at the expense of others could be of primary importance. People with compromised spiritual health are likely to feel isolated and have difficulty finding meaning in activities, making decisions about significant issues, or maintaining productive relationships with others.

Vocational Health (Work/School)

The vocational domain of health relates to the ability to collaborate with others on family, community, or professional projects. Vocationally healthy people are committed to contributing their fair share of effort to projects and activities. This commitment is demonstrated by the high degree of integrity with which individuals approach tasks. In addition to personal enrichment, the vocational domain of health is manifested in the degree to which a person's work makes a positive impact on others or in the community. The behaviors of people with compromised vocational health threaten personal work-related goals and have a negative impact on the productivity of professional associates and the collaborative community of the school or workplace.

Lōkahi: A Model of "Balance, Unity, and Harmony"

When evaluating the quality of a person's health, it is important to remember that balance across the domains is as important as maintaining an optimal level of functioning within each. In this context, a middle school student who uses a wheelchair because of a disabling condition might produce very high-quality academic work and have confident and effective relationships with classmates. Conversely, a person who is very healthy in the physical domain might be limited in the ability to express emotions productively or to behave in ways that confirm a poorly developed moral or ethical code.

All cultures have developed ways to communicate about shared beliefs, values, and norms that influence behaviors within the group. In Hawaiian culture the term *lōkahi,* meaning "balance, unity, and harmony," is used to express this ideal. Depicted in Figure 1–1, the Lōkahi Wheel is a culturally specific depiction of the domains of health.[9] Readers will note that names for each part of the Lōkahi Wheel have been linked to the corresponding name of each domain of health discussed. In addition, this illustration reinforces the importance of maintaining a solid balance across the domains as a foundation for maintaining personal, family, and community health.

With a focus on the health of students in elementary and middle schools, examination of the Lōkahi Wheel reinforces the negative impact that an imbalance in the health of one person can exert on the "balance, unity, and harmony" of their family, school, and community. In this way, a student who uses tobacco, alcohol, or other drugs is likely to face negative health, academic, family, and/or legal consequences. Simultaneously, such behaviors can threaten the health of family and friends. Also, the behavioral risks of one student will disrupt the functional "balance" at school, in the workplace, and in the community. As such, it is clear that unhealthy risk behaviors can have significant personal and far-reaching negative consequences.

Lōkahi serves as a foundation for the Hawaiian term *e ola pono*. Though this term has a number of related interpretations, generally it is translated as "living in the proper

Thinking About Health in Hawai'i

The Lōkahi Wheel

Lōkahi
(Harmony, Balance, Unity)

Physical/Body	Spiritual/Soul
Friends/Family	Work/School
Thinking/Mind	Feelings/Emotions

FIGURE 1–1 | **The Lōkahi Wheel**

Source: Native Hawaiian Safe and Drug-Free Schools Program, *E Ola Pono (Live the Proper Way): A Curriculum Developed in Support of Self-Identity and Cultural Pride as Positive Influences in the Prevention of Violence and Substance Abuse* (Honolulu, HI: Kamehameha Schools Extension Education Division, Health, Wellness, and Family Education Department, 1999).

way" or "living in excellence." When students live their lives in a way that is orderly, successful, and true to what is in their best interest, the elements of their health are in balance and simultaneously enrich the well-being of their family, school, and community.[10]

As discussed in Chapter 2 of this text, to be effective, developmentally appropriate health education learning activities for students in elementary and middle schools must enable learners to translate general or abstract concepts into understandings or representations that have personal meaning or relevance. To enrich student understanding of the influence of each domain of health and the combined importance of a balance between them, teachers are encouraged to explore the learning activity described in Consider This 1.1.

DETERMINANTS OF HEALTH

In 1979, the U.S. government embarked on a sweeping initiative to improve the health of all Americans. This multidecade agenda was launched with the publication of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*. This document confirmed that the

Consider This 1.1

Health: A Personal Evaluation

At the beginning of each chapter in this text, readers will find artwork done by students in middle school health education classes. An example of correlated instruction (see Chapter 4), the drawings reveal student understandings about critical issues discussed in that chapter. Additional drawings reinforce Coordinated School Health, a concept discussed later in this chapter, and the National Health Education Standards discussed in Chapter 3.

Importantly, the artistic depiction at the beginning of Chapter 1 was done by a sixth grader. This Lōkahi Wheel provides a very personal view through the eyes of this middle school student of each domain of health and the balance of their combined effects. To enrich understanding and personalize the concept of health, teachers are encouraged to have students draw their own Lōkahi Wheels. The inclusion of color, personally meaningful depictions, and family characteristics should be encouraged. As a way to extend the learning activity, students could be asked to write a journal entry or share their "health story" with family members. In addition, the class could create a composite Lōkahi Wheel representing events, conditions, and circumstances that influence the health of the group as a whole. Finally, this learning activity could be correlated with social studies instruction as a way to explore ways in which people depict and communicate about issues of cultural and historical significance.

leading causes of illness and death among Americans had undergone dramatic change between the beginning and the end of the twentieth century. In the early 1900s, the greatest number of Americans died as a result of infectious or communicable diseases, including influenza and pneumonia, tuberculosis, and diarrhea and related disorders. Fortunately, due to measures such as improved sanitation and medical discoveries, Americans living just a century later enjoyed significantly longer, healthier lives.[11]

During the past century between 1900 and 2000, the average life span of Americans lengthened by greater than thirty years. Many factors contributed to such dramatic improvement in the health and life span of Americans during the twentieth century. In 1999, the Centers for Disease Control and Prevention (CDC) compiled a list of ten specific achievements that made a "great" impact on improving the nation's health during that 100-year period. These achievements are reviewed in Table 1–1.[12] It is important to recognize and celebrate the kinds of individual, community, and governmental activities that made these advancements possible. Such efforts continue to influence improvements in the health of all Americans today.

Although there were dramatic increases in the length and the quality of life of Americans since 1900, *Healthy People* reinforced the need to address factors that continue to cause premature death. This report confirmed that approximately

TABLE 1–1

Ten Great Public Health Achievements in the United States, 1900–1999

1. *Vaccination*: resulted in eradication of smallpox, elimination of polio in the Americas, and control of measles, rubella, tetanus, and other infections in the United States and around the world
2. *Improvements in motor-vehicle safety:* include engineering advancements in highways and vehicles, increased use of safety restraints and motorcycle helmets, and decreased drinking and driving
3. *Safer workplaces:* better control of environmental hazards and reduced injuries in mining, manufacturing, construction, and transportation jobs, contributing to a 40 percent decrease in fatal occupational injuries since 1980
4. *Control of infectious disease:* resulted from clean water, improved sanitation, and antibiotic therapies
5. *Decline in deaths due to heart disease and stroke:* a 51 percent decline in cardiovascular death since 1972—related to decreased smoking, management of elevated blood pressure, and increased access to early detection and better treatment
6. *Safer and healthier foods:* decreased microbe contamination, increased nutritional content, and food-fortification programs that have nearly eliminated diseases of nutritional deficiency
7. *Healthier moms and babies:* better hygiene and nutrition, available antibiotics, greater access to early prenatal care, and technological advances in maternal and neonatal medicine—since 1900, decreases in infant (90 percent) and maternal (99 percent) death rates
8. *Family planning:* improved and better access to contraception, resulting in changing economics and roles for women, smaller families, and longer intervals between births; some methods related to reduced transmission of human immunodeficiency virus (HIV) and other sexually transmitted diseases
9. *Fluoridation of drinking water:* tooth decay prevented regardless of socioeconomic status; reduced tooth loss in adults
10. *Recognition of the health risks of tobacco use:* reduced exposure to environmental tobacco smoke; declining smoking prevalence and associated deaths

While not ranked in order of significance or degree of contribution, the accomplishments on this list continue to help Americans live longer and healthier lives.

Source: Centers for Disease Control and Prevention, "Ten Great Public Health Achievements—United States, 1900–1999," *MMWR* 48, no. 12 (1999): 241–43.

50 percent of premature morbidity (illness) and mortality (death) among Americans was linked to variables largely beyond personal control. These variables include heredity (20 percent); exposure to environmental hazards, toxins, and pollutants (20 percent); and inadequate access to quality medical care (10 percent).[13] It is significant to note, however, that *Healthy People* confirmed that the remainder of premature illness and death (approximately 50 percent) could be traced to participation in risky health behaviors.[14] Table 1–2[15, 16] contrasts past and current leading causes of death among Americans.

Examination of Table 1–2 contrasts the devastating impact of communicable/infectious diseases on previous generations with the consequences of chronic diseases (those that last a year or longer and require medical attention or limit daily activity) on the length and quality of life of Americans today. Conditions including heart disease, stroke, cancer, diabetes, and arthritis are among the most common, costly, and preventable of all health problems. The combined effects of just three conditions—heart disease, cancer, and stoke—account for more than 50 percent of all American deaths each year. Importantly, the combined effects of chronic diseases account for seven of every ten American deaths every year.[17] Almost one of every two American adults has at least one chronic disease. In addition to their prevalence, such conditions cause limitations in the daily activities among nearly one-fourth of people who are affected by them.[18] As a nation, 75 percent of health care spending goes to the treatment of chronic diseases. These persistent conditions are the causes of deaths that could have been prevented, lifelong disability, compromised quality of life, and an overwhelming burden of health care costs.[19]

TABLE 1–2

Leading Causes of Death Among Americans in 1900 and Today
(ranked in order of prevalence)

1900	Today
Pneumonia	Heart disease
Tuberculosis	Cancer
Diarrhea/enteritis	Chronic respiratory diseases
Heart disease	Stroke
Liver disease	Unintentional injuries
Injuries	Alzheimer's disease
Cancer	Diabetes
Senility	Nephritis and other kidney disorders
Diphtheria	Influenza and pneumonia
	Suicide

Sources: U.S. Department of Health, Education and Welfare, Public Health Service, *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (Washington, DC: U.S. Government Printing Office, 1979). Centers for Disease Control and Prevention, "QuickStats: Number of Deaths from 10 Leading Causes—National Vital Statistics System, United States, 2010," *Morbidity and Mortality Weekly Report (MMWR)* 62, no. 8 (March 1, 2013).

Note: In 1900, the leading causes of death for most Americans were communicable or infectious conditions. Today, however, most Americans die as a result of chronic conditions.

An important first step to understand and address the complex burden of chronic diseases, is to recognize that the majority of these conditions have been linked to participation in relatively few health-risk behaviors. Recent evidence suggests that four modifiable health-risk behaviors—the lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption—account for much of the illness, suffering, cost, and early deaths related to chronic diseases.[20] Data in Table 1–3 identify the risk behaviors that undergird the actual causes of most American deaths.[21, 22]

TABLE 1–3

Underlying Risk Behaviors—Actual Causes of Death in the United States in 2000

Risk Behavior	Approximate Number of Deaths	Approximate Percent of Annual Deaths
Tobacco	435,000	18.1
Poor diet and physical inactivity	365,000	15.2
Alcohol	85,000	3.5
Infections	75,000	3.1
Toxic agents	55,000	2.3
Motor vehicles	43,000	1.8
Firearms	29,000	1.2
Sexual behavior	20,000	0.8
Drug use	17,000	0.7

Sources: A. H. Mokdad et al., "Actual Causes of Death in the United States, 2000," *Journal of the American Medical Association* 291, no. 10 (March 10, 2004): 1238–45; Centers for Disease Control and Prevention, *Chronic Diseases and Health Promotion* (www.chronicdisease/overview/index.htm, 2013).

Note: It is important to exert influence over the common lifestyle risk behaviors linked to many of the causes of premature death. These health risks represent the actual leading causes, rather than the clinical diagnoses provided at the time of death for the majority of Americans.

Consistent with the information found in this table, although a physician might indicate a clinical diagnosis of heart disease on a death certificate, the root cause of the heart disease could be traced to the cumulative effects of participation in any number of underlying risk behaviors.

It is important to remember that the greatest majority of adults who participate in risk behaviors initiated those health habits during their youth. Public health professionals at the CDC identified six priority health behaviors to guide educational programmers and intervention specialists. Owing to the demonstrated link between these behaviors and the leading causes of illness and death among Americans, curriculum developers and teachers should target educational strategies at reducing the risks associated with the following:

- Tobacco use.
- Poor eating habits.
- Alcohol and other drug risks.
- Behaviors that result in intentional or unintentional injuries.
- Physical inactivity.
- Sexual behaviors that result in HIV infection, other sexually transmitted diseases, or unintended pregnancy.[23]

In addition to addressing specific personal health risks, school-based professionals must remember that human behavior in general, and health behavior specifically, is influenced by complex sources. While it is important to equip students with the functional knowledge and essential skills to manage personal health risks, it is equally important to recognize that such behaviors do not happen in a vacuum. Public health researchers have identified five major sources of influence on American health. Similar to the causes of premature death identified in the 1979 *Healthy People* and those actions discussed in Table 1–1, today's influential variables include:

- *Biology and genetics:* Examples of such determinants of health include age, sex, and inherited conditions. Importantly, some biological and genetic factors affect some people more than others. In specific, older adults are more prone to poorer health outcomes than their adolescent counterparts and sickle-cell disease is most common among people with ancestors from West African nations.
- *Social factors:* The social determinants of health include physical conditions and other factors in the environment in which people are born, live, learn, play, and work. Examples of importance include the availability of resources to meet daily needs, prevalent and powerful social norms and attitudes, transportation options, public safety, and quality schools.
- *Health services:* Both access to, and the quality of available health services influence health outcomes for all Americans. Examples of barriers to medical care include limited availability of specialized services in a local area, high cost, poor insurance coverage, and limited language access. In this context, if people don't have health insurance, research has demonstrated that they are less likely to participate in preventive care and to delay seeking medical treatment for illness or injury.
- *Public policy:* Local, state, and federal laws and policy initiatives have been demonstrated to influence the health of individuals and the population as a whole. For example, when taxes on tobacco sales are increased, the health of the people living in that region is improved by reducing the number of people using tobacco products. Readers are encouraged to review the influence of the federal Affordable Care Act in this regard.
- *Individual behavior:* As discussed, positive changes in individual behaviors including reducing dietary risks, increasing physical activity, and reducing or eliminating the use of tobacco, alcohol, and other drugs, can reduce chronic diseases. In addition, the simple act of hand washing is one of the most important individual acts with the potential to reduce the short-term impact of infections.[24]

Although each of these factors exerts independent influence, the interaction among them is significant. In this context, it is clear that health is rooted in homes, schools, neighborhoods, workplaces, and communities. While individual behaviors such as eating well, staying active, not smoking, and seeing a doctor for preventive care or when sick can influence health, well-being also is influenced by their cumulative effects. Social determinants and environmental factors including access to quality schools, availability of clean water, air and healthy foods, and enriching social relationships help to clarify why some people are healthier than others. Only when people understand and can address the independent and combined effects of these sources of influence, will it be possible to achieve the highest

quality of health for all. Given the complexity of this challenge, the coordinated efforts of individuals, families, schools, civic groups, faith-based organizations, and governmental agencies will be necessary to address the complex health challenges confronting youth.[25]

HEALTHY YOUTH, HEALTHY AMERICANS

Since the publication of *Healthy People* in 1979, local, state, and federal agencies have assumed leadership for a long-term broad and collaborative initiative to promote health and prevent disease among Americans. Every ten years, the U.S. Department of Health and Human Services (HHS) has gathered the latest data, analyzed accumulated information, and reviewed the best science about trends and innovations collected across the previous decade. Then, the best of this evidence is used to establish and monitor national health objectives targeting a broad range of health issues. These specific and measurable objectives establish a foundation to help individuals and communities make and act on informed health decisions.[26]

In addition to the focus on a range of critical health issues, this decades-long agenda has been organized around measurable objectives targeting diverse ages and groups of Americans. Among these targeted groups are children and youth. Since its inception, *Healthy People* has encouraged collaboration among influential stakeholders and institutions to protect and promote the health of this age group.[27]

Adolescence has been confirmed to be a period characterized by significant developmental transition. Youth between the ages of 10 and 19 are confronted with complex challenges associated with puberty and the task of cultivating skills to negotiate requisite developmental tasks. Although generally a healthy time of life, pertinent issues of significance can take root during adolescence. Tobacco and other substance use and abuse, sexual risks, motor vehicle crashes, and suicidal thoughts or acts can determine current health status or influence the development of chronic diseases that will be manifested in adulthood. Research has demonstrated that adolescents particularly are sensitive to contextual influences in their environment. Factors including cues from family members, peers, those in their neighborhoods, and expectations and norms presented in the media can challenge or support their health. This is particularly true of the school environment in which policies, practices, and influential others can exert a powerful impact on the decision making and behaviors of youth.[28]

Quality health education can help empower children in all domains of health.

In addition to the developmental issues that challenge adolescents, a growing body of research has documented the importance of early childhood (birth to age 8) as a period in which the physical, cognitive, and social-emotional foundation for lifelong health and learning are established. During this developmental stage, the brain grows to 90 percent of its adult size and children learn to regulate their emotions, cultivate skills to form attachments, and develop language and critical motor skills. All of these milestones can be delayed if young children experience significant environmental stress or other risks that affect the brain or compromise physical, social-emotional, or cognitive growth.

More than any other stages of development, early and middle childhood (ages 6 to 12 years) set the stage for developing health literacy and practicing self-management, decision making, and the skills to negotiate conflicts with others. Typical and nonfatal conditions including asthma, obesity, and developmental and behavioral disorders can affect the health and education outcomes of those at this developmental stage. Importantly, health risks encountered during early and middle childhood can affect the well-being of the adolescents and adults who children will become.[29]

To review important health promotion targets for children and youth contained in *Healthy People 2020*, readers are encouraged to examine Table 1–4. Listed are the objectives that identify actions for many influential stakeholders in school communities designed to promote the health of youth.[30]

HEALTH IN THE ACADEMIC ENVIRONMENT

Today, youth are confronted with health, educational, and social challenges on a scale and at a pace not experienced by previous generations of young Americans. Violence, alcohol and other drug use, obesity, unintended pregnancy, and disrupted family situations can compromise both their short- and long-term health prospects.[31]

Educational institutions are in a unique and powerful position to improve health outcomes for youth. In the United States, nearly 60 million students are enrolled in more than 1,30,000 public and private elementary and secondary schools. In this context, schools have direct contact

TABLE 1–4

***Healthy People 2020* Objectives That Specify Action for Advocates and Stakeholders in Schools**

Adolescent Health (AH)		
AH	HP2020–5:	Increase the percentage of middle and high schools that prohibit harassment based on a student's sexual orientation or gender identity.
AH	HP2020–6:	Decrease the percentage of adolescents who did not go to school at least once in the past month because of safety concerns.
AH	HP2020–7:	Decrease the percentage of public middle and high schools with a violent incident.
AH	HP2020–8:	Increase the percentage of adolescents who are connected to a parent or other positive adult caregiver.
AH	HP2020–9:	Decrease the percentage of adolescents who have been offered, sold, or given an illegal drug on school property.
AH	HP2020–10:	Increase the percentage of vulnerable adolescents who are equipped with the services and skills necessary to transition into an independent and self-sufficient adulthood.
Disability and Secondary Conditions (DSC)		
DSC	HP2020–2:	Reduce the proportion of children and adolescents with disabilities who are reported to be sad, unhappy, or depressed.
DSC	HP2020–5:	Increase the proportion of children and youth with disabilities who spend at least 80% of their time in regular education programs.
Early and Middle Childhood (EMC)		
EMC	HP2020–3:	Increase the proportion of elementary, middle, and senior high school that require school health education.
Educational and Community-Based Programs (ECBP)		
ECBP	HP2020–2:	Increase the proportion of elementary, middle, and senior high schools that provide comprehensive school health education to prevent health problems in the following areas: unintentional injury; violence; suicide; tobacco use and addiction; alcohol or other drug use; unintended pregnancy, HIV/AIDS, and STD infection; unhealthy dietary patterns; and inadequate physical activity.
ECBP	HP2020–4:	Increase the proportion of the Nation's elementary, middle, and senior high schools that have a nurse-to-student ratio of at least 1:750.
ECBP	HP2020–11:	Increase the proportion of elementary, middle, and senior high schools that have health education goals or objectives that address the knowledge and skills articulated in the National Health Education Standards (high school, middle, elementary).
Environmental Health (EH)		
EH	HP2020–19:	Increase the proportion of the Nation's elementary, middle, and senior high schools that have official school nurse policies and engage in practices the promote a healthy and safe physical school environment.
EH	HP2020–25:	Decrease the number of new schools sited within 500 feet of a freeway or other busy traffic corridors.
Family Planning (FP)		
FP	HP2020–12:	Increase the proportion of adolescents who received formal instruction on reproductive health topics before they were 18 years old.
Hearing and Other Sensory or Communication Disorders (Ear, Nose, Throat-Voice, Speech, and Language) (ENT)		
ENT	HP2020–21:	Increase the proportion of young children with phonological disorders, language delay, or other developmental language problems who have participated in speech-language or other intervention services.
Injury and Violence Prevention (IVP)		
IVP	HP2020–8:	Increase use of safety belts.
IVP	HP2020–13:	Reduce physical fighting among adolescents.
IVP	HP2020–14:	Reduce weapon carrying by adolescents on school property.
IVP	HP2020–23:	Increase the proportion of bicyclists who regularly wear a bicycle helmet.
IVP	HP2020–28:	Increase the proportion of public and private schools that require students to wear appropriate protective gear when engaged in school-sponsored physical activities.
IVP	HP2020–41:	Reduce bullying among adolescents.
Mental Health and Mental Disorders (MHMD)		
MHMD	HP2020–2:	Reduce the rate of suicide attempts by adolescents.
MHMD	HP2020–4:	Reduce the proportion of adolescents who engage in disordered eating behaviors in an attempt to control their weight.

(*Continued*)