

DENTAL PUBLIC HEALTH & RESEARCH

Contemporary Practice
for the Dental Hygienist

Fourth Edition



Christine Nielsen Nathe

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Fourth Edition

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*This book is dedicated to my husband, Chris Nathe,
and our children, Rhen, Marissa and Chad Nathe,
who make every day of my life a joy,
and to my parents, John Nielsen and Susan Nielsen, RDH,
for their support and example.*

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Foreword

When Alfred Civilion Fones followed his dream to create within the dental staff a dental therapist whose focus would be the prevention of dental disease, his intention was not merely to have this person perform in dental offices. He recognized from the start that the most effective way to “spread the word” was to provide direct services, educational and clinical, to groups of people—to the masses. Ideally, those groups would be composed of children who would be taught at an early age the importance of dental health and prevention of dental disease. Where better to interface with children than in grammar schools? And so in time, what was known as the Bridgeport, Connecticut, School Dental Hygiene Corps was established, composed of members of Dr. Fones’ classes of 1914, 1915, and 1916. Ergo the first dental hygiene public health program.

I will fast-forward to the early 1950s when thirtythree young women and I were enrolled at the University of Bridgeport’s Fones School of Dental Hygiene. As part of our fieldwork rotation, we traveled to longestablished dental clinics throughout the city’s schools. I remember being extremely fond of that assignment because I liked interacting with the children. But the real thrill of those trips was coming face-to-face with members of those first classes who were still in charge of the various clinics. These

women knew Dr. Fones personally. During lunch hours, they had a captive audience and would relate to us how it all began: the first school in the carriage house adjacent to Dr. Fones’ and his father’s dental building; his perseverance and determination in convincing city fathers, the board of education, and the dental society to allow the early dental hygienists to conduct programs within the schools.

I know how proud and delighted they would be— Dr. Fones and “the pioneers”—to see how dental hygienists have positioned themselves today in various public health settings, and how impressed they would be with Christine Nathe’s *Dental Public Health and Research: Contemporary Practice for the Dental Hygienist*. It is a remarkable testimony to the premise that public health dental hygienists have the ability to play a valuable and critical role in the dental health of people everywhere.

Janet Carroll Memoli, RDH, MS
Retired Director, Fones School of Dental Hygiene
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Bridgeport, CT

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Preface

The guiding principles that served as the impetus for the first three editions of *Dental Public Health and Research* remain consistent with an added emphasis on the dental hygienist's understanding of research principles. The twenty-first century mandates a change in the practice and understanding of dental public health concepts. The dental hygiene practitioners who will be practicing in this century need information on how to effectively practice and conduct dental hygiene research in the dental public health setting.

The fourth edition expands on public health science from its inception and further explains the essence of dental public health. The chapter on dental care funding is expanded to focus on the current issues in dental care financing and the government's role in this area. Moreover, a chapter on the importance of collaboration in dental care, building coalitions to help advocate for the oral health of all people, and an introductory discussion on grant writing are included.

The second unit focuses on learning theories, populations, and programs. The cultural diversity chapter emphasizes the effect culture has on dental health, and the chapter on target populations has been expanded and diversified. This focus is necessary in a public health book because it helps future providers understand how cultures, populations, and health relate. The program planning chapter is significantly updated and expanded with regard to benchmarks and effective programs presently in place.

The research unit is greatly expanded to provide detailed information on the study of dental hygiene research. The focus of this unit is to comprehensively discuss the reasons research is necessary in dental hygiene and how research impacts the practicing dental hygienist. Areas of expansion include discussions on the pivotal role research plays in dental hygiene, ethics in research, evidenced-based principles of practice, the roles of government and private entities in dental research, oral epidemiology, and the measurement of oral diseases and conditions. Expansion of this unit should help colleges that teach research within the community dental/public health courses. Additionally, this unit may be useful in conjunction with other materials in stand-alone research courses.

Teaching and Learning Package

Additional student resources can be found at www.pearsonhighered.com/healthprofessionsrecources.

Follow this URL and select Dental Hygiene as your discipline. Click on this title to view extra practice questions and information for students to use outside of class to test their knowledge or for additional review of topics covered in each chapter.

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- A test bank of more than 550 questions
- Discussion items to provide ideas for classroom discussion
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The Instructor Resources also include a PowerPoint lecture package that contains key discussion points for each chapter. This feature provides dynamic, fully designed, integrated lectures that are ready to use and allows instructors to customize the materials to meet their specific course needs.

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Introduction to Dental Public Health



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- Chapter 1** Dental Public Health: An Overview
- Chapter 2** The Prevention Movement
- Chapter 3** Dental Care Delivery in the United States
- Chapter 4** Dental Hygiene Care Delivery in the Global Community
- Chapter 5** Financing of Dental Care
- Chapter 6** Federal and State Legislation Affecting Dental Hygiene Practice
- Chapter 7** Advocacy for Dental Care

The following excerpt eloquently states the need for educating dental hygienists about the need for dental public health:

Children live for months with pain that grown-ups would find unendurable. The gradual attrition of accepted pain erodes their energy and aspirations. I have seen children in New York with teeth that look like brownish, broken sticks. I have also seen teenagers who were missing half their teeth. But, to me, most shocking is to see a child with an abscess that has been inflamed for weeks and that he has simply lived with and accepts as part of the routine of life.*

* Kozol J. *Savage Inequalities: Children in America's Schools*. New York, NY: Crown Publishers; 1991.

Unfortunately, this statement reflects a problem that exists throughout the world. Dental problems cause pain, infection, disease, and disability and can easily be prevented. And, although this paragraph was written over twenty years ago, it is still paramount to the overall goal of the dental hygiene discipline. For over one hundred years, dental hygienists have had the skills necessary to help alleviate this problem. This introductory unit focuses on the definition of public health, its historical development as a true public health profession, and evidence-based preventive health modalities that are practiced in public health. This unit also discusses the current status of dental care delivery in the United States and abroad with an emphasis on government structures, financing, laws and initiatives affecting dental hygiene care.

1

Dental Public Health: An Overview

OBJECTIVES

After studying this chapter, the dental hygiene student should be able to:

- Define public health
- Describe the evolution of public health science and practice
- Define dental public health
- Describe factors affecting dental public health

COMPETENCIES

After studying this chapter and participating in accompanying course activities, the dental hygiene student should be competent to do the following:

- Promote positive values of oral and general health and wellness to the public and organizations within and outside the profession
- Evaluate factors that can be used to promote patient adherence to disease prevention and/or health maintenance strategies
- Evaluate and utilize methods to ensure the health and safety of the patient and the dental hygienists in the delivery of dental hygiene
- Pursue career options within the health care industry, education research and other roles as they evolve for the dental hygienist.
- Access professional and social networks to pursue professional goals

KEY TERMS

- Assessment 4
- Assurance 4
- Community dental health 9
- Dental public health 9
- Malpractice 14
- Policy development 4
- Primary prevention 3
- Public health 3
- Public health goals 5
- Public health services 5
- Secondary prevention 3
- Serving all functions 4
- Socioeconomic status (SES) 13
- Tertiary prevention 3

Public health is concerned with the health care of all people. It focuses on the health of a population as a whole rather than on the treatment of an individual. The goal of public health is to protect and promote the health of the public across three essential domains: health protection, disease prevention, and health promotion.¹ Health protection is protecting society from disease, illness, and accidents, whereas disease prevention is actually preventing disease from occurring. Promoting health is the work that is accomplished when healthy ideas and concepts are encouraged.

Public health has become an essential component of developed societies. Many of the major improvements in the health of populations have resulted from public health measures such as ensuring safe food and water, controlling epidemics, and protecting workers from injury.² Most people, however, do not give much thought to the public health until a crisis occurs or the system fails.² Infectious disease outbreaks, the incidence of cancer, and the increasing number of working people unable to afford health care services draw attention to the infrastructure that protects the health of the public.²

Public health initially involved caring for a population with a disease, but the focus shifted to controlling the disease itself. It has subsequently evolved to emphasize disease prevention (Figure 1-1 ■), which enhances quality of life, helps deter illness or outbreaks, and is cost effective. **Primary prevention** is the employment of strategies and agents to forestall the onset of disease, reverse its progress, or arrest its process before treatment becomes necessary. An example of primary prevention would be the provision of immunizations to children. Dental hygiene is a form of primary dental prevention as is the use of fluoride to prevent tooth demineralization.

Most people recognize the efficacy of primary levels of prevention, but they are less likely to think of secondary prevention as being effective at preventing disease. **Secondary prevention** employs routine treatment methods to terminate the disease process and/or restore tissues to as nearly normal as possible; this can also be called *restorative care*. Setting a broken arm so that the bone heals correctly is an example of secondary prevention. One dental example of secondary prevention is the use of

fluoride to remineralize tooth surfaces that have been demineralized.

Did You Know?

Fluoride can be a primary preventive agent or a secondary preventive agent depending on the use of fluoride.

Another dental example is periodontal debridement to reduce periodontal pocketing. **Tertiary prevention** employs strategies to replace lost tissues through rehabilitation. The use of prosthetics to replace missing limbs is an example. Using dental materials to restore demineralized tooth surfaces to stop an infection and prevent the loss of a tooth due to tooth decay is an example of tertiary dental prevention. See Table 1-1 ■ for more examples of the levels of dental prevention.

Dental public health is only one component of public health. An understanding of the foundation of *public health* is important when discussing the topic of dental public health.

Public Health Defined

The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.³

Table 1-1 Levels of Dental Preventive Care

Levels of Prevention	Therapies and Services
Primary prevention	Oral evaluation Dental prophylaxis Fluoride as a preventive agent Dental sealants Health education Health promotion
Secondary prevention	Dental restorations Periodontal debridement Fluoride use on incipient caries Dental sealants on incipient caries ART, alternative restorative treatment Endodontics
Tertiary prevention	Prosthetics Implants Oromaxillofacial surgery

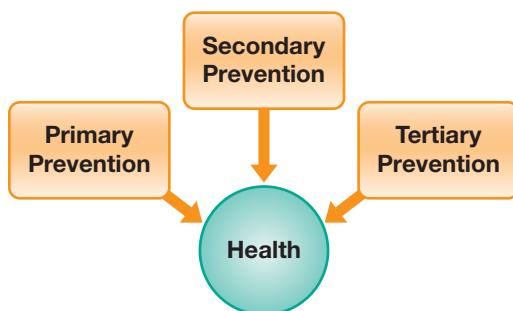


FIGURE 1-1 Disease Prevention Levels
Source: © Pearson Education, Inc.

Source: Based on Harris, NO, Garcia-Godoy, F and Nathe, CN. Primary Preventive Dentistry, 8th edition. Upper Saddle River, NJ: Pearson, 2013, page 6.

Further, the WHO and others have defined *public health* as the effort to promote physical and mental health and prevent disease, injury, and disability at the population level. This involves a wide range of products, activities, and services aimed at the entire population although it is sometimes delivered to the individual.^{3,4} Many postulate that public health is the approach to health care that concerns the health of the community as a whole. The first dentist to be president of the American Public Health Association, John W. Knutson, originally defined public health as:

Public health is people's health. It is concerned with the aggregate health of a group, a community, a state, or a nation. Public health in accordance with this broad definition is not limited to the health of the poor, or to rendering health services or to the nature of the health problems. Nor is it defined by the method of payment for health services or by the type of agency responsible for supplying those services. It is simply a concern for and activity directed toward the improvement and protection of the health of a population group and the aggregate.⁵

This definition appropriately places value on the description of public health to address the public's health, regardless of financial resources, the provision of clinical, educational or social services nor the particular health issue. Public health in totality addresses all aspects of the public's health. Examples of public health could be clinical care provided in a government-funding or private clinic, research conducted to treat disease, data collected to monitor health or social services provided to access care.

In the report *The Future of the Public's Health in the 21st Century*, the Institute of Medicine (IOM) defined public health as “what we, as a society, do collectively to assure the conditions in which people can be healthy.” The IOM identified core functions that were to be conducted by government public health agencies: assessment, policy development, assurance, and serving all functions.⁶

- **Assessment** involves monitoring the health of communities and populations to identify health problems and priorities. It includes activities such as performing public health surveillance, collecting and interpreting data, finding case applications, and evaluating outcomes of programs and policies.
- **Policy development** is the process by which society makes decisions about problems, chooses goals and strategies to address the problems, and allocates resources to reach them. Formulation of public policies usually occurs through collaboration among community, private sector, and government leaders.
- **Assurance** involves making certain that all populations have access to appropriate and cost-effective services to reach agreed-on public health goals. In addition to treatment services for individuals, assurance activities include health promotion and disease-prevention services.

- **Serving all functions** is the research for new insights and innovative solutions to health problems.⁶

These functions can facilitate public health policy and decision making and further enhance planning public health programs (Figure 1-2 ■). As stated, these functions ensure that the public's health should be assessed, so that policies can be developed to address needs and mechanisms can be enacted to ensure that these policies are meeting the needs. Researching new innovations, titled serving all functions, ensures that this cycle of needs assessments, policy development, and assurance is constantly and consistently occurring.

The IOM subsequently published *For the Public's Health: Investing in a Healthier Future*, which addressed three topics related to population health in the United States: measurement, law and policy, and funding in the context of health care changes.⁷

Did You Know?

Population health means the health of the population, or the public's health and focuses on public health efforts. Many times, public health is thought of as health care for those without financial means, but public health is much broader, essentially encompassing the public's health in totality.

Data collection, reporting, and action—including public policy and laws informed by data and quality metrics—were felt needed to support activities that will alter the physical and social environment for better health.⁷ The report cited failure of the health system, including both

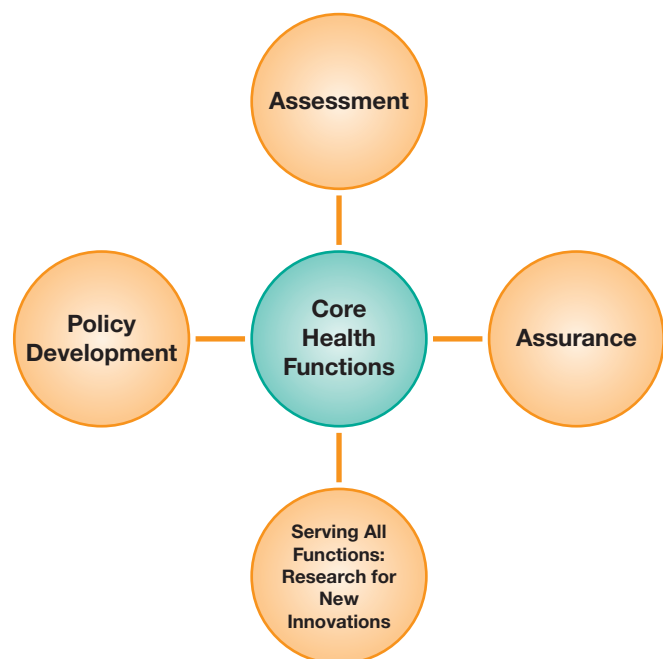


FIGURE 1-2 Core Functions of Public Health

medical care and governmental public health, as evidenced in the poor performance of the United States in life expectancy and other major health outcomes and the increasing financial issues associated with medical care. Solutions proposed included controlling administrative waste; remedying sources of excess cost and other inefficiencies in the clinical care, while improving quality; achieving universal coverage; and implementing population-based health improvement strategies.⁷ This report focused on the areas that could be improved in health care delivery.

Goals and Challenges

The American Public Health Association states that the practice of public health should reduce human suffering, help children thrive, improve the quality of life, and save money.⁸ They emphasize that public health is prevention, policy development, and population health surveillance. Policy development should continually be developing and amending infrastructure so that prevention is practiced and public health is easily accessed. Surveillance is continually needed to adequately assess the public's health and needs, which interventions are deemed successful or not successful, and cost effectiveness of prevention and/or interventions.

Did You Know?

Former US Surgeon General C. Everett Koop once stated that health care matters to all of us some of the time; however, public health matters to all of us all of the time.

Public health goals are goals that guide all public health activities. They dictate the services needed to ensure the promotion of health and prevention of disease and injury (see Boxes 1-1 ■ and 1-2 ■). An example of a public health goal that promotes healthy behaviors is the distribution of mouth guards to student athletes. Screening for dental decay illustrates the monitoring of health status to identify community health problems.

Public health services are those interventions that help attain public health goals. Preventing illness and promoting health through the delivery of efficient and effective public health services lie at the core of society's ability to create an exemplary circle of better health, more productive citizens, and affordable health care.¹ At a time of renewed concern about communicable diseases, such as Ebola virus disease, tuberculosis, and HIV, as well as new anxieties about events such as bioterrorism, people in many countries also face the challenges of lifestyle-related diseases, such as obesity, diabetes, cancer, and cardiovascular disease, which are significantly influenced by diet, physical activity, tobacco use, and alcohol abuse.¹ Public health services aid in educating the public about preventive measures to decrease the risk of some diseases.

With health care services placing more and more pressures on budgets as well as a financial burden for

Box 1–1 Public Health Goals

- Prevent epidemics and the spread of disease
- Protect against environmental hazards
- Prevent injuries
- Promote and encourage healthy behaviors
- Respond to disasters and assist communities in recovery
- Ensure the quality and accessibility of health services

Source: Based on Public Health Functions Steering Committee, Members (July 1995): American Public Health Association; Association of Schools of Public Health; Association of State and Territorial Health Officials; Environmental Council of the States; National Association of County and City Health Officials; National Association of State Alcohol and Drug Abuse Directors; National Association of State Mental Health Program Directors; Public Health Foundation; US Public Health Service—*Agency for Health Care Policy and Research; Centers for Disease Control and Prevention; Food and Drug Administration; Health Resources and Services Administration; Indian Health Service; National Institutes of Health; Office of the Assistant Secretary for Health; Substance Abuse and Mental Health Services Administration*, <http://www.health.gov/phfunctions/public.htm>

Box 1–2 Public Health Services

- Monitor health status to identify community health problems
- Diagnose and investigate health problems and health hazards in the community
- Inform, educate, and empower people about health issues
- Mobilize community partnerships to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Link people to needed personal health services and ensure the provision of health care when otherwise unavailable
- Ensure a competent public health and personal health care workforce
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services
- Research for new insights and innovative solutions to health problems

Source: Based on Fall 1994. Public Health Functions Steering Committee. Public Health Functions Steering Committee, Members (July 1995): American Public Health Association; Association of Schools of Public Health; Association of State and Territorial Health Officials; Environmental Council of the States; National Association of County and City Health Officials; National Association of State Alcohol and Drug Abuse Directors; National Association of State Mental Health Program Directors; Public Health Foundation; US Public Health Service—*Agency for Health Care Policy and Research; Centers for Disease Control and Prevention; Food and Drug Administration; Health Resources and Services Administration; Indian Health Service; National Institutes of Health; Office of the Assistant Secretary for Health; Substance Abuse and Mental Health Services Administration*. <http://www.health.gov/phfunctions/public.htm>

individuals and families, the practice of public health has become a cause of great concern for governments and health systems. The World Health Organization (WHO) operates in an increasingly complex and rapidly changing landscape, and the boundaries of public health action extend into other sectors that influence health opportunities and outcomes.¹ WHO responds to these challenges using a six-point agenda to help navigate the health of the public (see Box 1-3 ■).

Historical Perspective of Public Health

Learning from history cannot be underestimated when developing effective solutions to current public health issues. Widespread outbreaks of communicable disease can be traced back to the plague, including the infamous Black Death, which had devastating effects on populations in many nations and continents for decades (Figure 1-3 ■). Public health activities such as quarantines, mass burials, and ship inspections were subsequently developed to prevent such horrendous epidemics.

Public health preventive measures have been seen in tribal customs of primitive societies.⁹ These measures were probably developed to serve as a survival mechanism. These measures included hygiene and cleanliness customs. This is, of course, interesting since dental hygienists hope that the current population feels the same way about hygiene and cleanliness of the oral cavity.

The first significant recording of public health measures in the United States occurred in South Carolina in 1671 when a water protection measure was enacted to prevent diseases caused by water supplies.¹⁰ Specifically, it stated:

Should any person cause to flow into or be cast into any of the creeks, streams or inland waters of this State any impurities that are poisonous to fish or destructive to their spawn, such person shall, upon conviction, be punished.¹⁰



FIGURE 1-3 Triumph of Death: Black Death

Source: Scala/Art Resource, NY

In England in 1777, a Gloucestershire milkmaid told her physician, Dr. Edward Jenner, that she was fortunate to have contracted cowpox because it conferred protection against smallpox. Dr. Jenner, in turn, collaborated with other providers to study the relationship and establish the scientific principle of immunization that eventually resulted in eliminating smallpox.¹¹

In 1798, the United States passed an act that provided for the relief of sick and disabled seamen, which established a federal network of hospitals for the care of merchant seaman, the precursor of the US Public Health Service, which was initiated in 1902.¹² Recall that many times communicable diseases were spread country to country by seamen. In today's world intercontinental travel is common, and many people travel to many countries, as opposed to a century earlier when seamen were often the only international travelers. Interestingly, the first supervising surgeon of this network was the predecessor to today's US Surgeon General.

The identification of a polluted public water well as the source of an 1854 cholera outbreak in London resulted in a major advancement in public health.¹³ Dr. John Snow used a logical, epidemiological approach to study the outbreak. At the time, many suspected pollution as the cause of the cholera, but by studying the geographical relation of the sick to a water pump, he was able to help control the outbreak.

Box 1-3 World Health Organization's Six-Point Agenda

1. **Promoting development** The ethical principle of equity directs health development: Access to life-saving or health-promoting interventions should not be denied for unfair reasons, including those with economic or social roots.
2. **Fostering health security** One of the greatest threats to international health security is from outbreaks of emerging and epidemic-prone diseases.
3. **Strengthening health systems** For health improvement to operate as a poverty-reduction strategy, health services must reach poor and underserved populations.
4. **Harnessing research, information, and evidence** Evidence provides the foundation for setting priorities, defining strategies, and measuring results.
5. **Enhancing partnerships** WHO carries out its work with the support and collaboration of many partners, including UN agencies and other international organizations, donors, civil society, and the private sector.
6. **Improving performance** WHO participates in ongoing reforms to improve its efficiency and effectiveness at both the international level and within countries.

Retrieved September 23, 2014 from <http://www.who.int>.

Did You Know?

Epidemiology is the study of the amount, distribution, determinant, and control of disease and health conditions among a given population.

The first one-room laboratory for public health was opened in 1887 on Staten Island, New York, and was the forerunner to the National Institutes of Health, which still is the main health care research institution in the United States.¹²

During the first years of the 1900s, Dr. Sara Baker, a physician, led teams of nurses into the crowded neighborhoods of Hell's Kitchen in New York City and taught mothers how to dress, feed, and bathe their babies. Baker established many programs to help the poor in that city keep their infants healthy. After World War I, many states and countries followed her example to lower infant mortality rates.¹⁴

Did You Know?

Archeologists reported that two molar teeth about 63,400 years old show that the presence of grooves on the teeth formed by the passage of a pointed object, thought to be a small stick, indicates that Neanderthals may have cleaned their teeth.¹⁵

Pickett and Hanlon described the historical evolution of public health as a science and practice and the role of the medical profession in public health from past to present. History recorded the gross inadequacies of medical care in the early 1800s. Physicians were not educated in academic institutions as they are today. In fact, back then, the prestige of the medical profession was at its lowest and medical practice lacked uniform educational and practice standards. Medical education was largely proprietary in nature or based on apprenticeships, resulting in physicians who were poorly prepared, and the services they provided were frequently of poor quality, not uniform, and cheap.⁹

Although there were public health laws enacted to ensure basic sanitation and prevention of communicable diseases, there were no mechanisms to recognize noncompliance with requirements. Further, because of the greatly expanded population and subsequent issues this created, public health measures were not a priority, so that other seemingly more pressing problems could be addressed. Adding to this mix was the low public expectation of medical care and the lack of a unified voice for physicians to advocate for solutions aimed at essential public health issues.⁹

Did You Know?

In 1914, New York City Health Commissioner Herman M. Bigges remarked that "public health is purchasable," adding that "within natural limitations, a community can determine its own death rate."¹⁶

With the advent of accredited medical academic institutions, advanced education, and documented clinical standards, the country now places a socially accepted respect and prestige for physicians and a much higher expectation for medical care than in the past. Additionally, when public health issues arise, there now are professional physician associations that are the voice for the science and practice of medicine. Physicians' opinions and recommendations have significant credibility and are a powerful influence in dealing with public health issues in today's America.

The dramatic increase in the average life span during the 1900s is widely credited to public health achievements, such as vaccination programs and control of infectious diseases; effective policies such as motor vehicle and occupational safety; improved family planning; antismoking measures; and programs designed to decrease chronic disease. The US Department of Health and Human Services (HHS) has incorporated dental public health into many of the more than 300 programs it offers (see Box 1-4 ■). Actually, a dental public health preventive effort, community water fluoridation, is one of the ten great public health measures adopted during the past century (see Box 1-5 ■).

More recent public health efforts include the response to crises such as the September 11, 2001, terrorist attacks and the aftermath of recent hurricanes, tsunamis, tornadoes, mudslides, and wildfires. The emergence of diseases of the past, in part as a result of the public's resistance to prevention through vaccinations, is being witnessed throughout the world. Public health is now being focused on violence witnessed in all areas of society, which seems to be increasingly common, as is the intentional acts of terror witnessed throughout the world.

Campaigns to promote healthy habits, such as exercising, and decrease unhealthy habits such as chewing smokeless tobacco are routinely used to improve the public's health. Specific to oral health are innovative public health preventive efforts including the increased utilization of dental hygienists in school settings to reduce dental decay. See Box 1-6 ■ for historic events involving the US Public Health Service.

Dental Public Health Defined

Dental health is a wide-reaching field of study, but it is grounded in distinct concepts within public health. The American Board of Dental Public Health (ABDPH) defines dental public health as:

the science and art of preventing and controlling dental diseases and promoting dental health through organized

Box 1–4 Historical Highlights

The roots of the US Department of Health and Human Services go back to the early days of the nation:

1798: An act for the relief of sick and disabled seamen was passed, establishing a federal network of hospitals for the care of merchant seamen; forerunner of today's US Public Health Service.

1871: The first supervising surgeon (later called Surgeon General) was appointed for the Marine Hospital Service, which had been organized the prior year.

1887: The federal government opened a one-room laboratory on Staten Island for research on disease, thereby planting the seed that was to grow into the National Institutes of Health.

1906: Congress passed the Pure Food and Drugs Act, authorizing the government to monitor the purity of foods and the safety of medicines, now the responsibility of the Food and Drug Administration.

1921: The Bureau of Indian Affairs Health Division, the forerunner to the Indian Health Service, was created.

1946: The Communicable Disease Center, forerunner of the Centers for Disease Control and Prevention, was established.

1955: The Salk polio vaccine was licensed.

1961: The First White House Conference on Aging was held.

1964: The first Surgeon General's Report on Smoking and Health was released.

1965: The Medicare and Medicaid programs were created, making comprehensive health care available to millions of Americans. In addition, the Older Americans Act created the nutritional and social programs administered by HHS Administration on Aging, and the Head Start program was created.

1966: The International Smallpox Eradication program led by the US Public Health Service was established; the worldwide eradication of smallpox was accomplished in 1977.

1970: The National Health Service Corps was established.

1990: The Human Genome Project was established, and the Nutrition Labeling and Education Act was passed to authorize nutritional labeling of food.

1993: The Vaccines for Children Program was established, providing free immunizations to all children in low-income families.

1995: The Social Security Administration became an independent agency.

1996: The Health Insurance Portability and Accountability Act (HIPAA) was enacted.

1997: The State Children's Health Insurance Program (SCHIP) was created, which enables states to extend health coverage to more uninsured children.

1999: The initiative on combating bioterrorism was launched.

2002: The Office of Public Health Emergency Preparedness was created to coordinate efforts against bioterrorism and other emergency health threats.

2003: The Medicare Prescription Drug Improvement and Modernization Act of 2003 was enacted—the most significant expansion of Medicare since its enactment, including a prescription drug benefit.

2010: The Affordable Care Act was signed into law, putting in place comprehensive US health insurance reforms.

Source: Historical Highlights: US Department of Health and Human Services. <http://www.hhs.gov/about/hhshist.html>. Accessed September 16, 2014.

community efforts. It is that form of dental practice that serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs, as well as the prevention and control of dental

diseases on a community basis. Implicit in this definition is the requirement that the specialist have broad knowledge and skills in public health administration, research methodology, the prevention and control of oral diseases, and the delivery and financing of oral health care.¹⁷

Box 1–5 Great Public Health Achievements of the Twentieth Century

- Vaccination
- Motor vehicle safety
- Workplace safety
- Control of infectious diseases
- Decline in deaths from coronary heart disease and stroke

- Safer and healthier food
- Healthier mothers and babies
- Family planning
- Community water fluoridation
- Recognition of tobacco as a hazard

Source: Ten Great Public Health Achievements—United States, 1900–1999. *MMWR Morb Mortal Wkly Rpt.* 1999;8(12):241–243.

Box 1–6 US Public Health Service Commissioned Corps Timeline

1798: President John Adams signed into law the Act for the Relief of Sick and Disabled Seamen. A year later, Congress extended the act to cover every officer and sailor in the US Navy.

1871: John Maynard Woodworth, the first supervising surgeon, adopted a military model for his medical staff as part of a system reform. He instituted examinations for applicants, put physicians in uniforms, and created a cadre of mobile, career-service physicians who could be assigned to various marine hospitals.

1878: The prevalence of major epidemic diseases such as smallpox, yellow fever, and cholera spurred Congress to enact the National Quarantine Act to prevent the introduction of contagious and infectious diseases into the United States.

1912: Name of the Public Health and Marine Hospital Service was shortened to the Public Health Service. Legislation enacted by Congress broadened its powers by authorizing investigations into human diseases (such as tuberculosis, hookworm, malaria, and leprosy) related to sanitation, water supplies, and sewage disposal.

1930 and 1944: US Public Health Service Corps officers expanded to include engineers, dentists, research scientists, nurses, and other health care specialists (e.g., dental hygienists), as well as physicians.

2006: The Commissioned Corps fulfills its mission to protect and promote the nation's public health. With more than 6,000 active-duty officers, it works both nationally and internationally to create a world free of preventable disease, sickness, and suffering.

Source: US Public Health Service. About the US Public Health Service: History. <http://www.usphs.gov/aboutus/history.aspx>. Accessed September 16, 2014.

Dental public health focuses on oral health care and education of a population with an emphasis on the utilization of dental hygiene sciences. Many agencies of the federal and state governments fund dental care delivery and the dental workforce needed to provide this care (see Chapter 3).

Did You Know?

Dental hygiene was initiated as a public health profession.

Many times dental public health is called **community dental health**. Both terms are correct and share similar meanings. Some consider community health to be a component of public health; others use the terms interchangeably. The major difference between the terms is that *community* focuses on a specific group of people whereas the connotation of *public* is thought to be wider reaching.

The delivery of dental services for individuals and the general population at national and local levels involves a variety of institutions, infrastructures, and activities. Dental public health functions need to be secured and implemented across all areas to ensure the same level of coverage, quality, and performance of services.

Dental public health practice follows steps similar to those taken by a dental hygienist in the private sector, but the focus is primarily on a population, including those who do not seek care, rather than just one patient who presents at the scheduled time. Table 1-2 compares the two types of delivery. Assessment is the core public health function,

and the dental public health practitioner collects the necessary information to identify community problems, similar to an individual dental hygienist diagnosing a patient's condition. Just as a clinical dental hygienist develops a treatment plan after the diagnosis, the dental public health practitioner uses the information from the community assessment to develop policies and programs to address the problem(s). Ensuring dental public health is inherent to a dental hygienist's providing care: It involves the delivery of the services to the community.

Many dental hygienists choose to work in dental public health settings. All educational dental hygiene programs present dental public health education to dental hygiene students. The roles of the dental hygienist as related to dental public health are depicted in Table 1-3 and Figure 1-4. Because dental hygiene students are familiar with the role of the traditional clinical dental hygienists, it is an easy way to explain the similarities to dental public health to the existing knowledge of typical dental hygiene functions.

Public health, although an ADHA specified role, is embedded in the clinician, educator, researcher, administrator, corporate and entrepreneur roles of a dental hygienist, since public health is encompassing in health care. An educator may teach in a public health program or educate parents during an Early Head Start home visit. A researcher may study the relationship between diabetes and periodontal disease, whereas an administrator may decide to work in a managerial position in a governmental agency. Many dental hygienists work in the corporate roles in the private dental supply and insurance industry, selling and educating dental providers on products, insurance systems and modalities. An entrepreneur initiates new dental enterprises and practices.