1 | Public Health and Law

Learning Objectives

- Identify the core features of the field of public health and explain public heath's population-based perspective.
- Define the terms *public health, law, public health law, health disparities*, and *social determinants of health* and provide examples of how they interrelate.
- Provide examples of different types of public health laws.

Introduction

Public health is "what we as a society, do collectively to assure the conditions to be healthy" (Institute of Medicine, 1988). Accordingly, the study of public health examines what makes populations sick or injured and what can be done to prevent it. As one of the key mechanisms through which we structure society, *law* can be both a cause of illness and a powerful tool to improve the population's health.

In the 20th century, average life expectancy in the United States rose by nearly 30 years. The vast majority of that increase is credited to advances in public health, rather than advances in medical care, and legal interventions played a critical role in these advances. For example, requirements that children be vaccinated before they attend school played a central role in reducing occurrence of vaccine-preventable diseases. Smallpox and polio, which were once feared and deadly diseases, were eradicated from the Western Hemisphere (with smallpox eradicated worldwide), while the number of new measles cases dropped from more than 300,000 in 1950 to fewer than 100 in 2000. Likewise, following the introduction of extensive vehicle and roadway safety laws starting in

the mid-1960s, the number of highway deaths decreased from roughly 51,000 in 1966 to 42,000 in 2000, even as the number of miles driven per year increased nearly 300%.

Though lawyers are trained to write laws, they are not necessarily skilled at identifying health problems, assessing the evidence supporting competing policy options, or evaluating the impact of legal changes. Similarly, though public health professionals are trained to understand, analyze, and quantify community health concerns, they are not always comfortable translating those findings into policy recommendations or advocating for change through legislative or administrative processes. Lawyers and public health experts need one another to affect change. At the intersection of public health and law—the place where lawyers and public health experts come together—is *public health law*. The academic field of public health law can be defined as "the study of the legal powers and duties of the state to identify, prevent, and ameliorate risks to the health of populations, as well as the study of legal structures that have a significant impact on the health of populations" (Berman, 2013). In more practical terms, public health law is what lawyers, public health researchers, policy advocates, community mobilizers, and others do *together* to research, develop, advocate for, and implement evidence-based legal interventions to prevent disease and reduce injuries. This, in short, is the *transdisciplinary* approach to public health law referenced in this book's title.

Before exploring what public health law is in more detail, however, we begin by delving further into what is meant by the terms *public health* and *law*.

What Is Public Health?

As the definition at the outset of this chapter suggests, public health is something that "we, as a society, do collectively." It is a collective ("public") responsibility, geared toward improving the health and well-being of an entire community—or state, or country—as opposed to diagnosing or treating particular individuals. In addition, public health addresses the "conditions to be healthy," meaning that it is focused on "the prevention of disease and the promotion of health" (Institute of Medicine, 1988), as opposed to medical care for those who are already ill. These key features of public health—as well as some additional key concepts—are explained further next.

Populations

Public health studies the causes and distribution of disease and injury in *populations*. This is one of the defining differences between public health and healthcare. What does it mean to focus on populations? First, it means that public health starts with population-level conditions and threats, as captured in statistics (which are the product of, and require the development of, extensive data-collection efforts). It is only with statistics that we can identify public health challenges and determine whether interventions are having their intended effect. Based on one's personal experience, for example, it is impossible to accurately assess whether the number of traffic fatalities in one's city is going up or down, whether the rate of traffic-related deaths is higher or lower than in other cities, or whether a law prohibiting texting while driving is having any effect. These are questions that can only be answered by collecting data and examining statistics. We may have intuitions based on our own experiences about whether certain intersections are particularly dangerous or whether a texting-while-driving ban is having an impact—but these intuitions are, at best, informed guesses that can only be confirmed or rejected by looking at statistical data.

Looking at populations—and population-level data—provides us with insights that we cannot see at the individual level. Consider, for example, the issue of adolescent obesity in the United States. Obesity is often thought of as the result of "bad" decisions by individual actors—the children, their parents, or both—but according to the Centers for Disease Control and Prevention (CDC), the percentage of 12- to 19-year-olds defined as obese more than tripled (from 5% to 18.1%) between 1980 and 2007 (Ogden & Carroll, 2010). It is highly implausible that this pronounced trend—now being replicated in countries around the world—is simply the result of millions of independent, unconnected decisions. Instead, it appears clear that powerful population-wide environmental, economic, and social patterns (in which law plays a significant role) are influencing obesity rates. Individual-level factors may, of course, still play an important role in obesity in any given case, but shifting the lens from the individual to the population, as public health does, clarifies that the "obesity epidemic" has resulted in large part from collective, societal choices and as a result can be addressed only through communal policymaking. This broader lens suggests that policy solutions focused on individual-level behavior—such as encouraging teens to exercise more and eat better—are unlikely to adequately address (or even make a significant dent in) the problem. Instead, communities and countries must identify and reconsider the "government

policies, marketing practices, and social norms [that] have coalesced to create what some have called an obesogenic environment" (Parmet, 2016).

Taking too wide a population-based perspective, however, can be problematic, because public health also seeks to address *health disparities*—differences in health outcomes correlated with socioeconomic status, race, geography, or other characteristics. Overall statistics showing that a community is generally healthy may hide the fact that those disproportionately suffering from poor health are in particular neighborhoods, belong to particular racial/ethnic groups, or share another common feature. For example, Kansas has an infant mortality rate (5.5 deaths per 1,000 live births from 2011–2013) that is not very different from the national average (5.1 deaths per 1,000 live births). However, its infant mortality rate for African Americans is the highest in the nation (14.2 deaths per 1,000 live births) and is nearly three times higher than that of white babies (Thoma, Mathews, & MacDorman, 2015). The causes of this clear and massive disparity are undoubtedly complex, but only by carefully examining population-level data can such disparities be identified—the first step toward considering why they exist and how they can be addressed. Ultimately, minimizing health disparities is necessary to achieve public health's goals of producing not just a *high level* but also a *fair distribution* of health.

Prevention

Public health focuses on *preventing* disease and injury, as opposed to treating it. The emphasis on prevention is another key feature that distinguishes public health from other health-related fields like medicine and nursing. While these other health-related disciplines also care about preventive health, public health is unique in placing prevention at its core.

Health scholars have identified different levels of prevention: primary, secondary, and tertiary. *Primary prevention* refers to efforts to prevent disease or injury from occurring at all, by eliminating risk factors. For example, primary prevention efforts relating to heart disease tend to focus on things like healthy eating, physical activity, avoiding tobacco use (and exposure to secondhand smoke), and managing stress. Primary prevention tends to be the focus of public health efforts.

Secondary prevention, by contrast, seeks to detect a disease at an early stage, often before it has become symptomatic, and prevent it from progressing to a more dangerous state. For example, physicians typically test their patients' blood pressure and provide medication for patients with hypertension (high blood pressure). Such medication, though it does not

prevent the onset of hypertension in the first place, can help to prevent heart attacks from occurring. Thus, secondary prevention is at the intersection between healthcare and public health; it is a form of prevention, but it comes at a later stage and is typically much more individualized (and, as a result, more expensive per person) than primary prevention efforts.

Finally, *tertiary prevention* seeks to prevent the worsening of symptoms in an individual already suffering from disease and to improve his or her quality of life. For example, stroke rehabilitation programs work with people who have already suffered strokes to restore their strength and to compensate for any physical or mental limitations caused by previous strokes. Tertiary prevention is not the main focus of public health, but some tertiary prevention functions (e.g., support groups for those suffering from addiction) are sometimes housed in public health agencies.

Public health focuses on primary prevention in part because of its potential to powerfully impact health by reducing disease or injury levels across an entire population. In this way, primary prevention saves "statistical lives," rather than identifiable individuals. That is, primary prevention reduces the number of people who become sick or get injured, but it is typically impossible to identify *which* people have been aided by a primary prevention initiative. For example, modestly reducing the amount of sodium in processed foods would likely prevent far more stroke deaths than providing medication to every person with hypertension (and at a much lower cost). This is because reducing sodium levels across a wide swath of the population would significantly reduce the number of people who develop hypertension. However, it would likely be impossible to identify the particular individuals who were prevented from developing hypertension as a result of such a policy.

The fact that public health saves "statistical lives," rather than the lives of identifiable people with names and faces, poses a political challenge for public health. The effects of medical treatment are more easily recognizable than those of primary prevention efforts, even if the population-level impact of the latter is greater. As David Hemenway (2006) explains:

> A woman with appendicitis knows she is sick and is grateful to the medical providers who treat her. . . . But the consumer who does not get poisoned because unsafe products are kept off the market does not even know that her life has been saved, partly as a result of the efforts of the public health community.

Social Determinants of Health

Because of their focus on uncovering and addressing the underlying causes of disease, public health experts have, in recent decades, recognized that the *social determinants of health* must be a core focus of public health efforts. The social determinants of health are the resources and conditions in our social and physical environments that influence exposure, vulnerability, and immunity to causes of disease and injury. These include factors such as economic opportunity, educational attainment, residential segregation, and concentrated poverty—all of which are strongly associated with health outcomes.

Indeed, one of the most consistent and robust findings of social science has been that the greater the family income, the longer one's life expectancy. This is sometimes referred to as "the income gradient of health," or, more simply, "the gradient," and is depicted in Figure 1.1. A similar

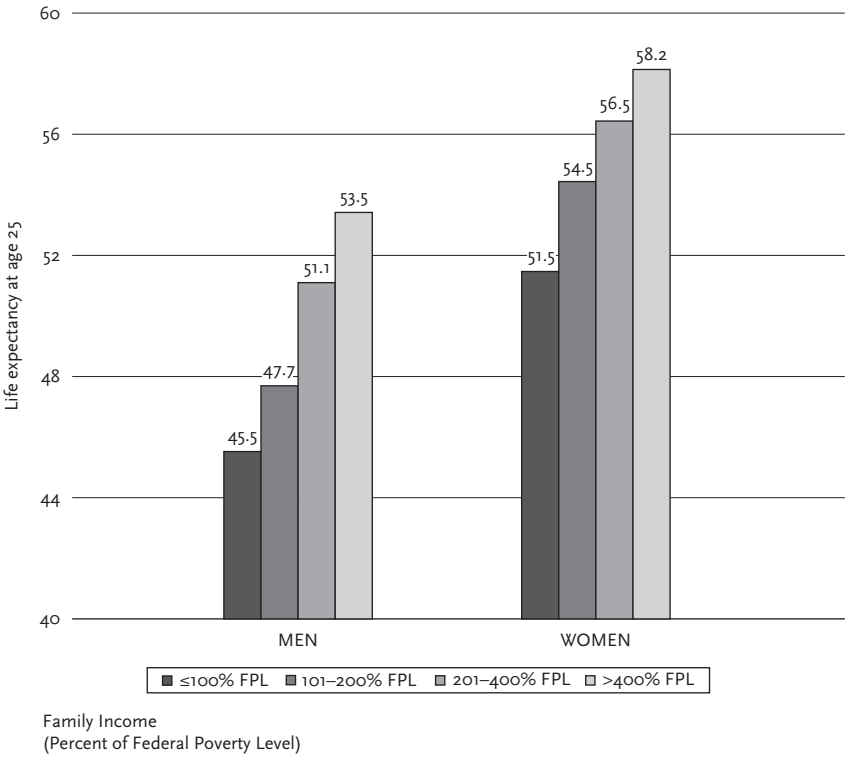

FIGURE 1.1. The income gradient of health.

Center on Social Disparities in Health at the University of California San Francisco. (2008). Higher Income, Longer Life: Robert Wood Johnson Foundation. Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco; and Norman Johnson, U.S. Bureau of the Census. SOURCE: National Longitudinal Mortality Study, 1988–1998. Copyright 2008 Robert Wood Johnson Foundation/Overcoming Obstacles to Health

gradient also appears in population-level analyses of the relationship between social inequality and a wide range of health and social outcomes. The exact causal relationships between income, social inequality, and health are complex and disputed, but Bruce Link and Jo Phelan (1995) suggest that those with more income tend to have "access to resources that can be used to avoid risks or to minimize the consequences of disease once it occurs," while others do not. In their view, the lack of these resources, including "money, power, prestige, and/or social connectedness," contributes powerfully to the higher disease burden in certain populations. Importantly, access to these resources is often strongly correlated with social factors such as race, ethnicity, and gender, in addition to income and educational attainment.

Building on this insight, former CDC Director Thomas Frieden has developed a five-tier "health impact pyramid" that puts social determinants of health at its base (see Figure 1.2). As Frieden (2010) writes:

> The health impact pyramid . . . postulates that addressing socioeconomic factors (tier 1, or the base of the pyramid) has the greatest potential to improve health. . . . Although the effectiveness of interventions tends to decrease at higher levels of the pyramid, those at the top often require the least political commitment. Achieving social and economic change might require fundamental societal transformation.

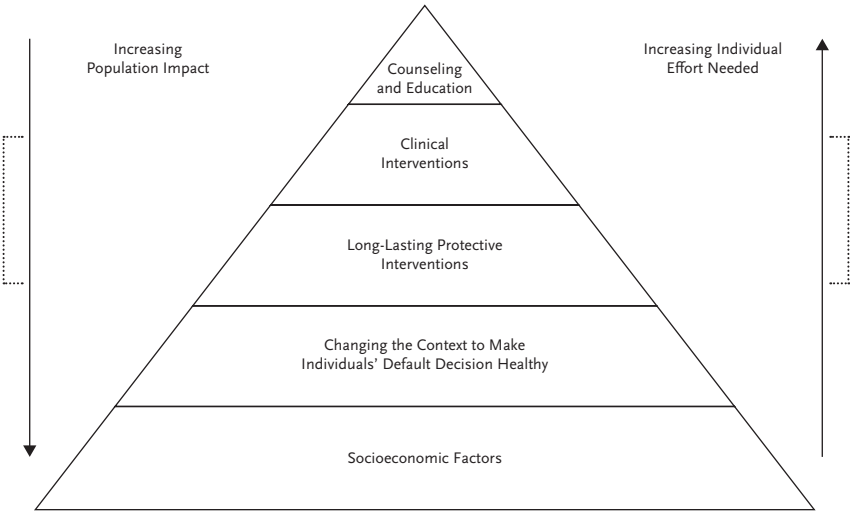

FIGURE 1.2. The health impact pyramid.

Frieden, T. R. (2010). "A framework for public health action: the health impact pyramid." American Journal of Public Health 100(4): 590-595.

Frieden's pyramid suggests that in order to meaningfully improve health, public health professionals must work in partnership with a wide range of other stakeholders—including community organizations, attorneys, and policymakers—to grapple with difficult and politically charged questions of inequality and social policy.

For example, think about how the health impact pyramid could be applied to the issue of obesity. At the top of the pyramid, public health education efforts about eating healthy food and exercising more are politically noncontroversial, but they are unlikely to be effective on their own. Clinical interventions—whether short term (e.g., appetite-suppressant medication) or longer term (e.g., bariatric surgery)—occupy the next two levels on the pyramid. These interventions are focused on individual patients and tend to be much more expensive. The next level of the pyramid, "changing the context to make individuals' decisions healthy," includes what is often thought of as traditional public health regulation. This might include things like improving the nutritional content of foods sold in schools or increasing taxes on sugary beverages. Finally, we come to the base of the pyramid—the social determinants of health. This level of the pyramid recognizes that decisions about food and physical activity are deeply influenced by one's social and physical environment. Even if one wishes to eat healthier food and exercise more, it may be extremely difficult to do so if (a) one cannot afford to purchase healthier food or join a gym; (b) there are no gyms or healthy food retailers nearby; (c) one is working multiple low-wage jobs, spending hours each day travelling to and from work, with no time to exercise or cook healthier food; (d) there are no safe spaces nearby to play or exercise outdoors; or (e) the pervasive stresses of living in poverty are contributing to one's obesity, as well as other health effects such as depression and hypertension. These are challenges brought on by socioeconomic conditions: poverty, economic inequality, limited transportation options, neighborhood violence, and more. Needless to say, these are difficult problems to take on, but they cannot be left out of the conversation about obesity. Indeed, their placement at the bottom of the health impact pyramid suggests that they are fundamental building blocks for any comprehensive approach to improving the public's health.

Government

Governmental action is the primary means by which the public acts collectively to address threats to health (and makes decisions about how best to do so). Although nongovernmental organizations and other private-sector

partners are also engaged in efforts to improve population health, government action is at public health's core. Indeed, the term *public* can refer to either the general population or to the government.

Accordingly, the study of the public health system tends to explore what government can do to improve the health of populations. As discussed further in Chapter 2, there are different governmental public health entities at the local, state, and national level engaged in public health practice. Local public health departments, though a lesser-known (and often underfunded) component of local government, are in many ways the backbone of our nation's public health system. These entities monitor threats to health locally and engage in a variety of programmatic and enforcement activities related to environmental health (e.g., food safety and housing inspections), communicable disease control, chronic disease prevention, maternal and child health, and more. Beyond health departments, many other federal, state, and local government entities—including law enforcement, housing authorities, and sanitation departments—play essential roles in protecting and improving public health.

Science/Empirical Evidence

Finally, public health is a scientific discipline that seeks to promote health through the rigorous examination and use of empirical evidence. The core science of public health is *epidemiology*, which quantitatively examines the causes, patterns, and prevalence of diseases or other health hazards in populations. Epidemiologists are sometimes referred to as "disease detectives," a nod to the field's origins in the effort to identify the major causes of disease. An early pioneer of epidemiology, John Snow, tracked the distribution of cases during the 1854 London cholera outbreak. By carefully documenting both the location of new cases and the behavior patterns of those who did (and did not) develop the disease, he was able to correctly deduce that cholera was a waterborne disease, and he was able to trace the outbreak back to its source, the Broad Street Pump. In the mid-20th century, American and British epidemiologists used both longitudinal studies (following the same group of people over time) and cross-sectional studies (comparing different groups of people at the same point in time) to definitively identify smoking as the major cause of lung cancer.

Today, governmental entities and academic researchers engage in a significant amount of epidemiological surveillance, conducting large-scale surveys and tracking various types of health data. This data is used to help identify the causes and patterns of disease, disparities in public health

outcomes, and the effectiveness of interventions intended to improve public health.

What Is Law?

Laws are rules issued and enforced by government entities with the authority to do so. Law is the means through which populations organize their governments, regulate social and economic interactions, and guide behavior. The influence of law is so pervasive in our society, it is rarely noticed or remarked upon. But interaction with law is an unavoidable feature of daily life. The water you drink, the food you eat, the pharmaceuticals you consume, the roads on which you drive, the computers you use, the websites you visit, and much, much more—all of these things are governed by an overlapping web of local, state, and federal (and sometimes international) laws. As will be discussed throughout this book, laws come in myriad forms. Laws may be federal, state, tribal, local, or territorial; civil or criminal; procedural or substantive; constitutional, statutory, administrative, or judge-made.

And those are just the "laws on the books." How the law is understood and applied by the public and by those tasked with enforcing it—sometimes referred to as the "law on the streets"—can be as important as what the law says. For instance, a local law may require bicyclists to wear helmets while riding, but if the law is widely ignored by the public and is not enforced, then looking only at the law's text will provide a misleading impression of what occurs in practice. Similarly, laws may be enforced differently against different populations. For example, between 2004 and 2011, 84% of those stopped by the New York Police Department's "stop and frisk" program were black or Latino, even though those groups accounted for only 52% of the New York City's population (and were *less* likely than white residents to be found carrying a weapon or contraband when stopped; *Floyd v. City of New York*, 2013). Nothing in any criminal law dictated that the stop and frisk program be carried out in this manner, and indeed, a federal judge later ruled that the police department's implementation of the stop and frisk program was unconstitutional. As this example suggests, law cannot be understood without examining how it is implemented in the real world and considering the sociopolitical context in which it operates.

Two important features of law deserve further mention. First, law is far less definitive than most people assume it to be. Non-lawyers often

think of the law as a set of clear, black-and-white rules, but this is far from the case. Take the Fourth Amendment to the Constitution, which states in part that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated." This basic constitutional protection leaves the key term "unreasonable" undefined. What does it mean for a search or seizure to be "unreasonable"? The Constitution simply does not say, leaving it to subsequent Supreme Court and lower court cases to iron out what is and is not "reasonable" in particular situations. Likewise, the text of the Fourth Amendment does not tell us what a house is (is a backyard part of a house?), what should happen when an unreasonable search occurs (can the evidence be used in court?), or whether "papers" includes electronic files stored on a Google server. That is not to say that there are no answers to these questions. But those answers are typically nuanced and subject to numerous exceptions and qualifications. A close examination of legal texts, therefore, often raises more questions than it answers. Legal reasoning is the process of identifying, thinking through, and arguing about those questions.

Second, in addition to being nuanced and indeterminate in particular circumstances, law is always subject to change. Court decisions, such as the Supreme Court's 2015 decision recognizing a constitutional right to same-sex marriage, can upend settled legal practice and expand our understanding of what constitutional protections like "Equal Protection Under the Law" mean (*Obergefell v. Hodges*, 2015). In addition, legislatures at the federal, state, tribal, local, and territorial levels can pass new laws to amend existing laws, overturn court decisions (in some cases), or initiate new programs. Any critical analysis of law must recognize that "the law" is not fixed and that it is important to thoughtfully—and, where appropriate, empirically—examine whether existing laws are working, for whom they are effective, and how they could be redesigned.

Law as a Tool to Promote Health

Recognizing that the development of law is a dynamic and ongoing process is the starting place for this book. Most of this book examines how lawyers, public health experts, and others can come together to use law as tool to improve population health. Thus it is important to think about the various ways that law shapes society—and how laws can be changed in ways that improve population health.

At the most basic level, laws can *encourage healthy and safe behaviors* and discourage unhealthy and dangerous ones by shaping incentives (rewards) and deterrents (punishments). There are myriad legal levers that can be used to influence individual or corporate behavior, and each legal option can and should be studied for its effectiveness, both in absolute terms and relative to potential alternatives. Among the legal tools commonly used to promote healthy behaviors are taxation and subsidies, changes in the information environment (e.g., warning labels), changes in the built environment (e.g., sidewalks and bicycle lanes), and punishing misconduct through private lawsuits (tort litigation). As suggested earlier, however, it is important to remember that having a new "law on the books" is only the first step; careful attention must be paid to how these legal tools are implemented and enforced.

Beyond the level of individual or corporate behavior, laws can also influence health by *changing the physical environments* in which people live, work, and play. For example, zoning rules, clean indoor air laws, and laws regulating the condition of rental properties can directly shape residents' exposures to noise, environmental toxins, and stress. Occupational health and safety laws affect workers' exposure to hazardous conditions on the job. And product regulations protect consumers from a range of hazards arising from the use of consumer goods, from pharmaceuticals to power tools.

In addition to changing the physical environment, law can also be used *to shape the social environment*. Law may shape people's health knowledge and attitudes, the way they perceive the risks and benefits of different choices, and the social norms against which their health decisions are set. For example, research on the effects of indoor smoking prohibitions suggests that such laws, in addition to protecting people from secondhand smoke, change social expectations about smoking behavior and influence social norms about smoking more generally (Burris et al., 2010).

At the same time it plays all of these other roles, law can also *influence the social determinants of health*. Through legal levers including tax laws, welfare regulations, housing codes, healthcare policy, and more, law influences the distribution of wealth, employment opportunities, and living conditions. For example, though limited research has been done on the subject to date, increasing the minimum wage could potentially help citizens improve their (and their children's) health by facilitating better nutrition, promoting housing stability, and reducing psychological distress, among other possible effects.

Finally, law *structures the public health system* by creating public health entities and endowing them with certain powers and responsibilities. These laws are sometimes referred to as "infrastructural" public health laws. In 1988, an influential report by the Institute of Medicine suggested that the nation's public health infrastructure was in "disarray," in part because infrastructural public health laws were "in many cases seriously outdated" and "inadequate to deal with contemporary problems" (Institute of Medicine, 1988). Since that time, there have been some efforts to both evaluate and update the laws organizing the public health system, but ensuring sufficient legal authority—and capacity—to respond appropriately to both ongoing and emergency threats to public health remains a challenge.

Conclusion

In this chapter, we have introduced and defined basic concepts we will use throughout the book. Public health is what we as a society do collectively to promote health and prevent disease, taking into account health disparities and the social determinants of health. Laws are rules issued and enforced by government entities with the authority to do so. And public health law stands at the intersection of these two dynamic fields and provides a range of powerful tools for improving health. In the next chapter, we go into greater depth on the nation's public health system and law's place within it.

Further Reading

Centers for Disease Control and Prevention. (1999). Ten Great Public Health Achievements—United States, 1900–1999. *MMWR: Morbidity and Mortality Weekly Report*, *48*(12), 241–243.

Parmet, W. E. (2009). *Populations, Public Health, and the Law*. Washington, DC: Georgetown University Press.

Parmet, W. E., Smith, L. A., & Benedict, M. A. (2011). Social Determinants, Health Disparities, and the Role of Law. In E. Tobin Tyler, E. Lawton, K. Conroy, M. Sandel, & B. Zuckerman (Eds.), *Poverty, Health and Law: Readings and Cases for Medical-Legal Partnerships* (pp. 3–36). Durham, NC: Carolina Academic Press.

2 | The Public Health System

Learning Objectives

- Define the public health system and understand its structure and the basic services it provides.
- Describe the differing roles of federal, state, and local public health agencies in the public health system.
- Explain how funding influences the public health and healthcare systems.
- Name three drivers of public health system performance improvement.

Introduction

Chapter 1 laid the groundwork for the study of public health law by defining *public health, law*, and the *social determinants of health*. This chapter will explore the public health system as a whole, including the organizations, activities, and people who promote public health in the United States. We describe the agencies at the federal, state, local, tribal, and territorial levels that have been granted legal authority to act on behalf of public health. We close with a short discussion of the evolving effort to improve the public health system through accreditation.

The Public Health System and Its Functions

Although much of their work happens out of public view, people in every community around the country are actively protecting and promoting the public's health. The *public health system* is the interconnected set of public, private, and voluntary entities that contribute to the protection of

public health in communities, states, and the nation. Among other duties, the public health system is responsible for

- ensuring that we have drinkable water and safe food;
- reducing exposure to environmental toxins such as lead;
- protecting against infectious diseases;
- preparing for and responding to public health emergencies;
- preventing injuries;
- encouraging healthy behaviors and discouraging unhealthy behaviors;
- collecting public health data; and
- conducting research.

Federal, state, tribal, local, and territorial public health agencies are at the core of the public health system, but environmental protection agencies, healthcare providers, philanthropies, schools, and organizations working in public safety, housing, human services, recreation, and transportation can all be considered a part of the broader public health system. For example, a community where it is as convenient and safe to walk, bike, or take the bus as it is to drive will help to reduce obesity among its members by encouraging physical activity, but developing these features—like sidewalks with accessible ramps, public transit lines, and bike lanes—requires the active cooperation of transportation, zoning, and urban planning agencies.

Over time, the role and the scope of the public health system has changed as the threats we face and the tools we use have changed. Historically, public health agencies focused on preventing and controlling communicable diseases and maintaining health-related records (e.g., birth and death certificates). In part because of the success of public health measures like vaccination and sanitation, communicable diseases stopped being the leading causes of preventable death; they were replaced by heart disease, stroke, cancers, other noncommunicable diseases, chronic conditions, and injuries. In response, public health entities shifted their focus. While still concerned about preventing infectious diseases, they began to place more of an emphasis on discouraging unhealthy behaviors (like smoking and drunk driving) and promoting healthy ones (like physical activity and healthy eating). In recent decades there has been increasing recognition that educating people about health-related behaviors is not enough to change deeply engrained behavioral patterns. Health-related decision-making is deeply influenced by the social, cultural, environmental, and economic contexts in which it occurs. Accordingly, the public health system has, to varying degrees depending on the issue, turned its focus toward

addressing the social determinants of health, inequality, and the broader policy environment in which health-related behaviors occur. This new orientation, of course, requires links with a wide range of entities and organizations that may not see public health as central to their missions. Of course, it also requires the use of law to help create the conditions in which people can be healthy and interagency collaboration can occur.

In 1994, the U.S. Department of Health and Human Services, with guidance from a wide variety of stakeholders, defined *Ten Essential Public Health Services,* the set of community-wide prevention and protection programs that are needed to assure the conditions people need to live healthy lives (Turnock & Handler, 1997). These 10 services are shown in Figure 2.1. These services do not focus on preventing any specific disease or addressing particular public health challenges; instead, they reflect a larger mission to maintain a dynamic public health system that can respond to a community's needs.

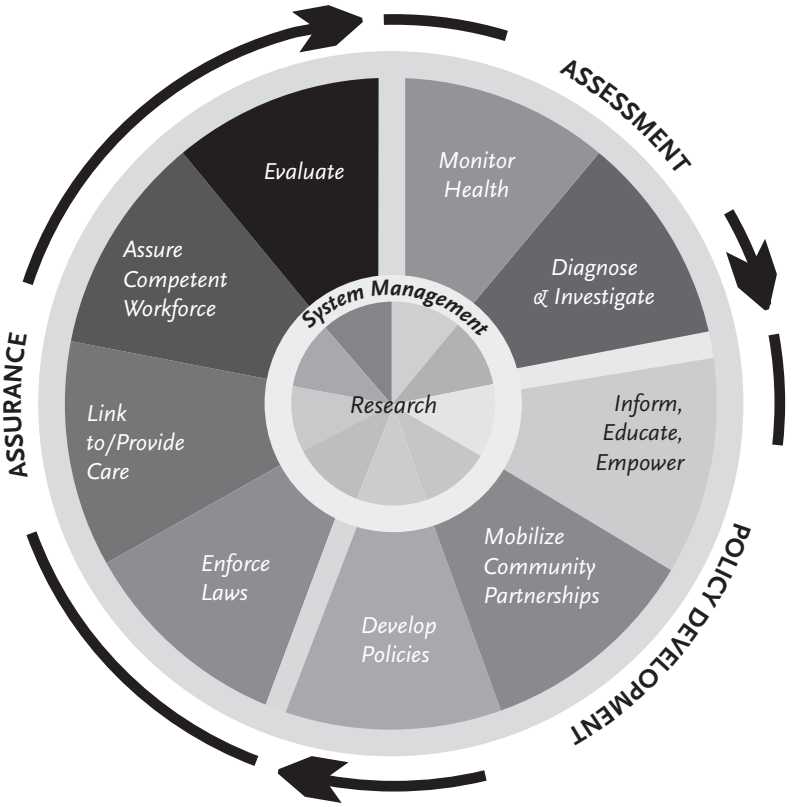

FIGURE 2.1. The Ten Essential Public Health Services.
CDC, https://www.cdc.gov/nphpsp/images/phs-figure2.gif

The Ten Essential Public Health Services can be grouped into three categories:

- *Assessment*. Public health agencies must monitor the health status of the community and promptly diagnose and investigate health problems and hazards.
- *Policy Development.* Public health agencies must inform and empower people about health issues, build community partnerships, and develop policies and plans that address public health issues.
- *Assurance:* Public health agencies must assure a competent public health workforce, evaluate the effectiveness of their services, enforce public health laws and regulations, and, when needed, link people to needed healthcare services.

The circular design of Figure 2.1 is meant to illustrate that the provision of public health services is iterative and ongoing. New public health concerns require new policies and programs, which must then be implemented and evaluated. Those evaluation activities in turn lead to reassessment and improvement of existing practices. Reflecting on this process should show you that *public health law*—the laws and policies that contribute to and result from this iterative policymaking cycle—plays a central role in the provision of public health services.

Public health services differ from the clinical preventive services offered by healthcare providers, such as cancer screenings, immunizations, and prenatal care. While some public health agencies, particularly at the local level, provide preventive services, most governmental public health work focuses on population-level prevention, not clinical care. To be sure, the line between public health services and preventive services can be fuzzy, but this does not imply a lack of cooperation and coordination: even public health agencies that do not directly provide vaccinations, for example, may promote the use of vaccines and carefully track their uptake in the population.

Organization of the Public Health System

The core of the public health system's infrastructure is governmental. Legislatures set priorities for public health action by passing laws and allocating funds, and administrative agencies are responsible for the day-to-day promotion of public health. Federal, state, and local health

agencies, as well as tribal and territorial governments, implement public health programs within their purview and coordinate with each other to share information on best practices. This section outlines the functions of these agencies in promoting public health in the United States.

Federal Public Health Agencies

The U.S. Department of Health and Human Services (HHS) is the primary federal agency responsible for health promotion. Led by the Secretary of Health and Human Services, it employs nearly 80,000 people around the country and administers federal laws that incentivize and assure national and regional public health programs. The Public Health Service Act (PHSA), initially passed in 1944 to fund programs to contain the spread of infectious disease, currently authorizes HHS to support research, conduct surveillance, collect and protect patient data, ensure safe food and drinking water, prepare for and respond to emergencies, and provide a host of other services (PHSA, 1944). HHS oversees numerous subagencies to undertake these responsibilities.

Some subagencies, like the U.S. Food and Drug Administration (FDA), are primarily regulatory in nature. The FDA regulates pharmaceuticals, medical devices, (some) food, veterinary products, tobacco products, and more. Indeed, "FDA-regulated products account for about 25 cents of every dollar spent by American consumers each year." (FDA, 2016). Other parts of HHS focus on clinical and laboratory research (e.g., the National Institutes of Health), fund issue-specific research and services (e.g., the Substance Abuse and Mental Health Services Administration), and reimburse for medical care (e.g., the Centers of Medicare and Medicaid Services).

The Centers for Disease Control and Prevention (CDC) is not primarily a regulatory agency, although it does have limited regulatory authority over interstate and foreign quarantine, health hazards and biological toxins, and clinical laboratory standards. Its main duties include (a) conducting disease and injury-related surveillance and research; (b) preparing for and responding to public health emergencies; and (c) providing funding, training, and other assistance to state, local, and tribal public health entities. Laws at other levels of government occasionally incorporate CDC guidelines by reference, elevating their weight to that of law.

HHS guidelines can also carry the weight of scientific evidence, particularly recommendations issued by the U.S. Preventive Services Task Force. Convened by the Agency for Healthcare Quality Research, the Task Force

is an independent panel of nationally recognized experts in prevention and evidence-based medicine that convenes to recommend clinical preventive services such as screenings, counseling, and preventive medications to the public and reports critical gaps in evidence and research to Congress annually. Similarly, the Federal Interagency Workgroup leads the Healthy People initiative to provide science-based, national objectives for health improvement. Healthy People 2020 establishes benchmarks and monitors progress across 42 health objectives, many using law and policy, based on public comment and input across agencies and from a federal advisory committee convened by HHS.

The HHS unit with the longest history is the U.S. Public Health Service Commissioned Corps, which traces its roots back to a 1798 law signed by President John Adams. The 6,000 members of the Corps serve in positions throughout HHS and other federal agencies and respond to public health emergencies. The Corps is organized along military lines, with uniforms and strict requirements for service, and is headed by the U.S. Surgeon General, who provides leadership on public health issues and is sometimes referred to as the "Nation's Doctor."

The federal public health system extends well beyond HHS. For example, the Stafford Act authorizes the president to declare a major disaster or emergency and direct the Federal Emergency Management Agency (FEMA) to coordinate disaster relief to states (Robert T. Stafford Disaster Relief and Emergency Assistance Act, 1988). However public health administration is organized, Congress ultimately sets the jurisdiction and authority for federal health initiatives, and those authorities change over time. For example, the 2009 Family Smoking Prevention and Tobacco Control Act authorized the FDA to restrict underage sales and certain advertising and marketing of tobacco products to the public but not to ban or eliminate nicotine in tobacco products entirely. Table 2.1 describes other key federal agencies that play important roles in promoting and protecting public health.

State Public Health Departments

Health departments are the primary entities responsible for public health at the state level, administering public health programs and engaging in regulatory activities. State public health departments primarily support a host of public health programs. They collect information through reporting requirements, routine surveys, and testing for various conditions or environmental substances. Using that data, they then conduct disease

TABLE 2.1. Key Agencies in the Federal Health System

NAME OF FEDERAL AGENCY	AREAS OF PUBLIC HEALTH-RELATED AUTHORITY	EXAMPLES OF PUBLIC HEALTH ACTIVITY OR REGULATION
Environmental Protection Agency (EPA)	The EPA supports environmental health and safety and administers regulations related to air and water quality, pesticides in foods, hazardous materials, and the safety of drinking water. It also supports programs that research climate change, environmentally sound infrastructure and transportation, and land use and clean-up.	Safe Water Drinking Act; Endangered Species Act; Clean Air Act
U.S. Department of Agriculture (USDA)	The USDA sets dietary standards through the Center for Nutrition Policy and Promotion; regulates the safety and labeling of meats, poultry, and eggs through the Food Safety and Inspection Service; regulates veterinary vaccines and biologics through the Animal and Plant Inspection Service; and funds school breakfast and lunch programs nationally.	Animal Welfare Act; Federal Regulations Regarding Nutrition Labeling; Federal Insecticide, Fungicide, and Rodenticide Act
Department of Veterans Affairs (VA)	The VA runs the Veterans Health Administration, the single largest healthcare administration in the United States, serving 8.76 million veterans in over 1,700 facilities.	Veterans Benefits Act of 2010; The National Defense Authorization Act of Fiscal Year 2013
U.S. Department of Housing and Urban Development (HUD)	HUD administers healthy and affordable housing programs, provides financing and insurance to homeowners through the Federal Housing Administration, and supports homelessness prevention and the redevelopment of abandoned and neglected property.	The HUD Act; Housing and Community Development Act; Civil Rights Act of 1964; Lead-Based Paint Poisoning Prevention Act and Residential Lead-Based Paint Hazard Reduction Act; Americans with Disabilities Act
Federal Trade Commission (FTC)	The FTC regulates unfair, deceptive, or fraudulent practices in advertising, which can affect public information about foods, drugs, devices, and tobacco and alcohol products.	Comprehensive Smokeless Tobacco Health Education Act of 1986; Children's Online Privacy Protection Act; Do-Not-Call Registry Legislation

(*continued*)

TABLE 2.1. Continued

NAME OF FEDERAL AGENCY	AREAS OF PUBLIC HEALTH-RELATED AUTHORITY	EXAMPLES OF PUBLIC HEALTH ACTIVITY OR REGULATION
Consumer Product Safety Commission (CPSC)	The CPSC is an independent regulatory agency that oversees the safety of hazardous substances, injury prevention through products such as child safety seats and lead-based paint, and information dissemination through labeling and packaging.	Flammable Fabrics Act; Federal Hazardous Substances Act; Child Safety Protection Act
National Highway Traffic Safety Administration (NHTSA)	NHTSA is an agency of the U.S. Department of Transportation, with the mission to save lives, prevent injuries, and reduce traffic-related healthcare and economic costs.	Federal Motor Vehicle Safety Standards
Federal Aviation Administration (FAA)	The FAA is an operating mode of the U.S. Department of Transportation that runs aerospace safety and procedures.	Federal Aviation Regulations

investigations, respond to public health emergencies, inform the public about emerging issues, develop public health interventions, and train healthcare and public health workers. Nearly all states also engage in some activities focused on addressing minority health and health equity concerns. In some states, the state health department may also be designated as a service provider under federal law, requiring it to provide certain health or mental health services at the local level and "pass through" funding from federal programs to local or even private entities that support these services.

On the regulatory side, state public health departments may license, set rules for, and inspect laboratories, restaurants, healthcare facilities, nursing homes, childcare facilities, tattoo parlors, and more (although some of this licensing and inspection may instead be conducted at the local level). They may also be responsible for licensing and regulating healthcare professionals such as physicians, pharmacists, and emergency medical technicians. Where health departments are authorized to enforce regulatory provisions, they may assess fines, revoke licensure, or take noncompliant parties to court.

State public health agencies can differ widely in structure, functions, staffing, expenditures, political engagement, and regional relationships. State public health departments can be led by a single appointed official (often a member of the Governor's cabinet), overseen by a state board of health, or incorporated into a larger agency that also oversees Medicaid, social services, and mental and behavioral health programs. For example, Montana, like many lower-population states, has an umbrella agency, the Montana Department of Health and Human Services, that, in addition to addressing public health, includes divisions responsible for child protective services/foster care, senior and long-term care, and disability services. As of 2012, 28 state governments had independent public health departments, while 20 included public health functions under a larger umbrella agency with other responsibilities (Association of State and Territorial Health Officials, 2014). Figure 2.2 shows variations of responsibilities across umbrella health agencies.

Local Public Health Agencies

Local public health agencies operate at the front lines of public health and meet many of the most fundamental needs in public health administration. Local public health agencies take their authorities directly from the state. States have widely varying systems of public health governance, spanning the range from "decentralized," with largely independent local public health agencies, to "centralized" authority, where the state appoints local health officials, sets local agency budgets, and shares local public health decision-making. State statutes typically dictate whether local governments have broad authorities to act, as in Oregon, or whether state employees run localities centrally, as in South Carolina. In either case, or even where there is a mixed or shared system of governance, local public health agencies are responsible for administering a range of public health activities.

Local public health agencies of every type monitor population health and investigate disease outbreaks; conduct inspections; provide education, counseling, and connections to healthcare; and—more often than state public health departments—provide testing and other preventive services directly to individuals. Some agencies also provide particular treatment services, especially for sexually transmitted diseases and other communicable diseases like tuberculosis. These services are funded from a wide variety of sources, including health insurance, local taxes, fees and fines, state government transfers, and federal government programs. In many

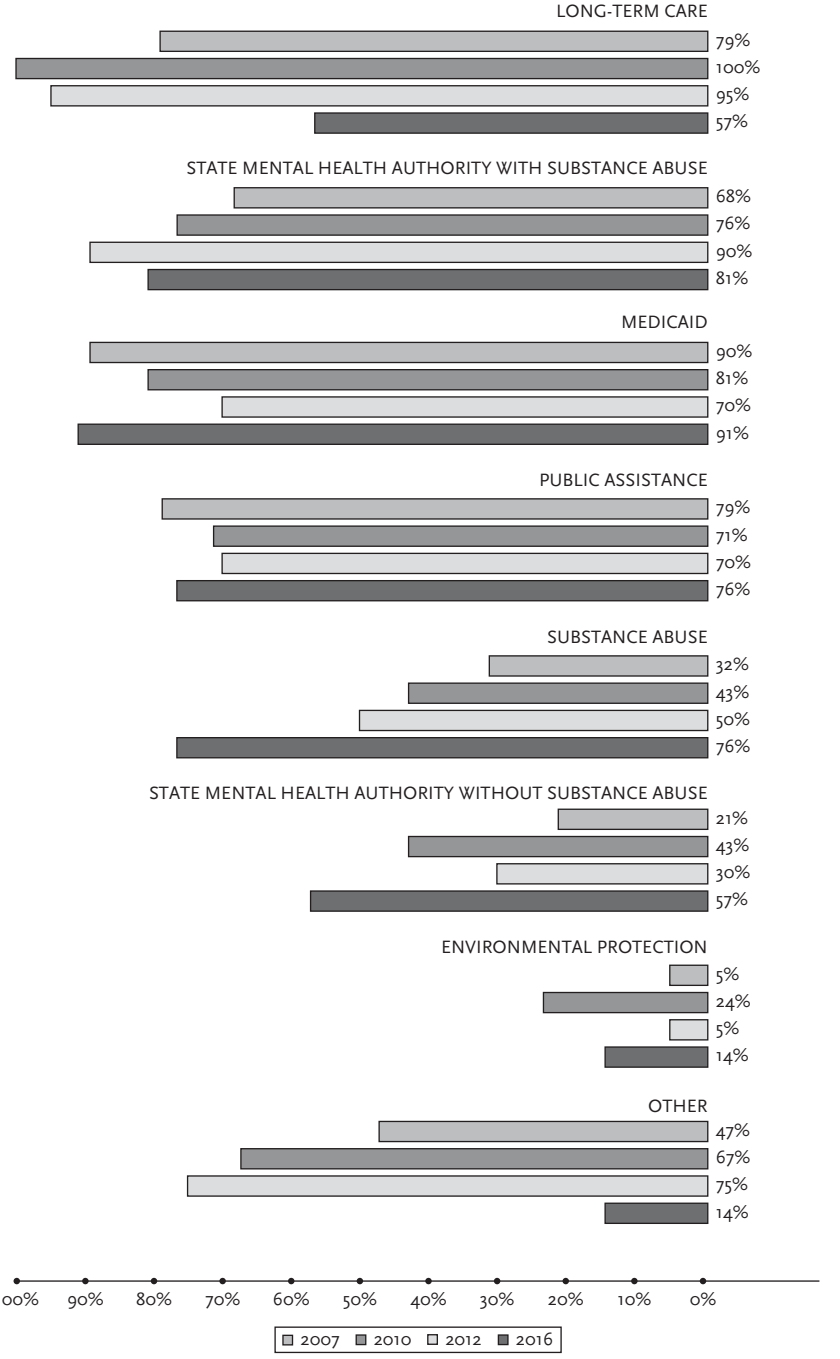

FIGURE 2.2. Responsibilities of Umbrella Agencies Including Public Health, 2007–2016 ($N = 19–21$).

Association of State and Territorial Health Officials. ASTHO Profile of State and Territorial Public Health, Volume Four. Arlington, VA: Association of State and Territorial Health Officials. 2017. http://www.astho.org/Profile/Volume-Four/2016-ASTHO-Profile-of-State-and-Territorial-Public-Health/ (page 19).

cases, funding is inadequate, and local public health agencies are sometimes limited in their capacity and unable to fully support the Ten Essential Public Health Services.

Local public health agencies may serve cities, counties, combined cities and counties, or larger regional areas. There are an estimated 2,800 city and county public health agencies across the country. The number of local public health jurisdictions varies from zero in Hawaii and Rhode Island to 352 in Massachusetts. Some agencies function with as few as four employees and serve fewer than 10,000 people, while others have as many as 450 employees and serve more than 1 million people (National Association of County and City Health Officials, 2017). Regardless of the structure or size of local public health agencies, their functions may necessitate cross-agency collaborations with housing authorities, emergency responders, and public works departments, as well as sharing resources with neighboring localities to maximize their efficiency.

An Ebola example illustrates how agencies typically collaborate to manage a public health threat. Consider a case first identified at a city hospital. That hospital is also in a state, and within national borders, so that three levels of government would have to work together to treat the affected individual and prevent an outbreak. The local public health agency would be first to arrive. Local health department and law enforcement agencies, as well as emergency response and fire departments, can stabilize and isolate new patients (and seek quarantine orders for others exposed), monitor individuals for symptoms and trace contacts, and issue warnings or health communications to surrounding communities. Local public health agencies will contact the state health department to support the response to a potential outbreak.

The state public health department may often have a greater capacity to manage public communications and notify healthcare facilities, coordinate logistics among facilities and government agencies, and secure funding and services from neighboring jurisdictions or the federal government when needed. State or regional public health laboratories will be involved in testing and reporting potential cases of disease and training healthcare workers to prepare for new cases. If the state with an outbreak declares a health emergency, federal emergency funds can be used to equip and guide healthcare entities and state and local health department workers to use best practices in treatment and prevention.

The federal government can support state and local public health activities through funding, logistical support, and disseminating information quickly. For Ebola in 2014–2015, U.S. Customs and Border Patrol and the

CDC exercised federal authority to secure the borders from international threats by implementing screening of travelers from affected areas for Ebola symptoms and quarantining exposed individuals. The Department of Defense has equipped public health laboratories for testing with FDA-approved assays and can help to transport American patients in affected areas overseas back to the United States for treatment. Going forward, the National Institutes of Health works to develop vaccines and support research on Ebola in preparation for future outbreaks.

Tribal and Territorial Public Health Activities

Given the historical and socioeconomic toll of colonization, subjugation, and discrimination on Native Americans over the last five centuries, it is not surprising that their life expectancy and disease burden in this country are worse than those of other Americans. The federal government has granted some tribal governments land and US citizenship, but only 567 tribes are federally-recognized and receive healthcare from the Indian Health Service (IHS). Many more are state-recognized or organized as non-profit or corporate organizations not served by IHS and so obtain health services through contractual or other relationships with state or local public health and healthcare entities. The long-standing health disparities of Native American populations are still fed by infrastructural public health law problems and lack of resources.

The public health system is a patchwork for many tribal populations, whose public health services come from a variety of tribal, state, and US public health agencies. For instance, CDC funding supports tribal epidemiology centers to conduct disease surveillance and outbreak investigations, whereas the IHS provides preventive health services to federally recognized American Indian and Alaska Native citizens. Because the Constitution recognizes tribes as sovereign entities, relationships between federal, state, local, and tribal governments fall under federal Indian law, which rests on a large body of case law recognizing tribes as "domestic dependent nations" with similar powers as state governments.

Tribes also have separate tribal law that their governments use to codify, implement, and enforce public health laws and support internal infrastructure. Where tribal governments can independently conduct broad public health activities, they may undertake prevention and control of communicable diseases, support for environmental health, motor vehicle safety, and health education for tribal populations. Even so, public health challenges often cross tribal boundaries, just as individuals can leave villages and

reservations, so that many tribal public health issues may involve states, localities, other tribes, and the federal government (National Congress of American Indians, 2017).

Territorial public health departments also face unique challenges in the public health system. While territories exist completely outside US borders and have distinct governmental systems, they can still receive direct funding from states and the federal government for public health issues. The Commonwealth of Puerto Rico, Guam, the Northern Mariana Islands, the U.S. Virgin Islands, and American Samoa have public health agencies that are independent or fall under umbrella health agencies. Territorial public health priorities mirror those on the mainland as related to noncommunicable disease prevention and infrastructural or technological improvements, but they sometimes face differing health issues. For example, American Samoa has been working over the past few decades to eliminate Lymphatic filariasis, a tropical disease caused by parasitic worms that has been absent from mainland United States since the early 20th century. Because of their proximity to and relationships with the US public health system, territorial and tribal public health entities fulfill critical roles in prevention and health promotion even though their populations may not fall under any single state or federal jurisdiction.

The Private and Voluntary Sectors

The government is not the only element of public health infrastructure. From the 19th-century work of Nobel Peace Prize Laureate Jane Addams, whose public education campaigns challenged housing and sanitation issues in industrializing Chicago, to the 21st century organizing and advocacy by Gay Men's Health Crisis in response to the HIV epidemic, nongovernmental actors have identified, addressed, and supported public health needs in every jurisdiction. To this day, volunteers and private foundations share a history of developing, funding, and implementing the most critical public health programs.

Private entities can often be more responsive, efficient, and effective in communities than governmental agencies. For example, non-profit organizations may support health department activities and are often funded by governmental public health agencies to provide timely services and education to specific communities or individuals. Private contracting companies (both for- and non-profit) also receive funding from governmental agencies to conduct research and evaluation activities, develop educational materials, and, in some cases, perform inspections.

In some jurisdictions, public health services can be provided entirely by nongovernmental entities. Federal reimbursement programs have pushed public health initiatives to the private sector, including some healthcare providers and insurance companies. Although privatization of public health can pose conflicts when the private interest does not conform to the public needs, such as for environmental or occupational health issues, many community-based organizations can understand and adapt to local needs faster and more efficiently with private funding. Businesses also contribute to public health through their charitable donations. For instance, Wal-Mart, Office Depot, General Electric, and other companies made sizable in-kind and monetary contributions to support recovery efforts after Hurricane Katrina. More recently, the Million Hearts Initiative, led by HHS, has garnered financial and organizational support from professional organizations, healthcare facilities and providers, pharmaceutical companies, insurers, and faith-based organizations in a broad-based effort to prevent heart attacks and strokes.

National professional organizations also receive funding to support the training and development of the public health workforce and lead key initiatives in public health promotion that government cannot perform as well or at all. Public health practitioners receive continuing education and opportunities for professional development and collaboration through the American Public Health Association and the Council for State and Territorial Epidemiologists. Similarly, the Association of State and Territorial Health Officials and the National Association of City and County Health Officials support, train, and connect health officials and their staff on issues of public health importance. Each of these organizations receives federal funding to perform research and evaluation and provide timely recommendations on cutting-edge public health issues. Separately, each also advocates for the role and functions of public health professionals and resources to fund the public health system overall. For attorneys, the Network for Public Health Law, the American Bar Association's Health Law Section, and the American Health Lawyers Association provide opportunities to maintain up-to-date public health knowledge and build capacity as an integral part of the public health workforce.

The Healthcare System

No discussion of the public health system would be complete without reference to the US healthcare system. The healthcare system and public health system overlap in the populations they serve, but have different

orientations. Health care focuses on treating individual patients, while public health focuses on preventing disease and improving health at the population level. The public health system allows everyone to benefit from population-level prevention programs, but not everyone can readily access all healthcare services without a way to pay for them.

This is because the US healthcare system is based on a mixed public-private financing model where individuals or the companies that insure them pay for discrete healthcare services, rather than a single-payer model where taxes to a central government support all healthcare entities and services. US spending for this healthcare delivery system reached $3.0 trillion in 2014, more than 17% of the gross domestic product—the highest expenditures of any country in the world (The Commonwealth Fund, 2017). Some of this increase is attributable to the rising cost of services, including everything from standard daily medications to complex surgical procedures, which has often become the target of legal or policy action and attention nationwide.

The federal government influences many aspects of the healthcare system, including healthcare facilities, healthcare providers, and insurers. Large government-sponsored Medicare insurance healthcare plans can negotiate lower premiums for beneficiaries than most employer-based health insurance or private insurance coverage programs that are left to market forces. Federal law is currently instrumental to shaping the future of the healthcare system through increasing access to care, allocating targeted funding for efficiency and innovation, and supporting consumer protections. Most significantly, the Centers for Medicaid and Medicaid Services (CMS) regulates national healthcare practices through reimbursement mechanisms for treatment and incentive programs for using healthcare technology, improving efficiency, and supporting multisector collaborations. The federal Department of Labor also prescribes the information and protections that employer-based health insurance companies must provide to the government and public through the 1974 Employee Retirement Income Security Act. HHS regulations require providers and insurers to comply with the 1996 Health Insurance Portability and Accountability Act to protect patient privacy, as well as the 2009 Health Information Technology for Economic and Clinical Health Act to expand the use of electronic health records and health information exchange.

State laws also shape the practice and delivery of healthcare through licensure of all types of facilities and providers that seek to accept patients and practice in the jurisdiction—or that provide telehealth services to expand access to treatment and preventive services. States also regulate and

monitor insurance companies to ensure fairness and reporting of healthcare usage and access. Finally, state courts accept cases of malpractice and fraud to compensate victims and deter future abuses in the healthcare system. Together, federal and state laws support the functioning of healthcare in the United States today.

In recent years, some legal structures have been put in place to encourage more collaboration between the healthcare and public health sectors. At this writing, the 2010 Patient Protection and Affordable Care Act (ACA) continues to incentivize this collaboration (Longthorne, Subramanian, & Chen, 2010). The ACA required non-profit hospitals to conduct a community health needs assessment (CHNA) and develop an associated implementation strategy to support their federal tax-exempt status every three years. In preparing CHNAs, hospitals must consult with governmental public health entities in their communities, as well as with members of underserved, low-income, and minority populations in the community. This mandated planning process facilitated cross-sector collaborations between healthcare and public health, and it has led some healthcare entities to consider how they can play a role in addressing the social determinants of health in their communities. For example, a CHNA conducted by healthcare systems in Sonoma County, California, led to a community-wide action plan that focuses not only on health but also on educational attainment and economic security (Sonoma County Department of Health Services, 2012).

Funding and Public Health Programs

Public health has always been a good social investment: health outcomes often improve when public health spending increases. Cuts in the workforce and resources for health agencies cannot be called good planning or efficiency. Indeed, investments in public health are often remarkably cost-efficient. The Trust for America's Health (2016) has estimated that "an investment of $10 per person per year in proven evidence-based community prevention programs that increase physical activity, improve nutrition and prevent smoking and other tobacco use could save the country more than $16 billion annually within five years—a return of $5.60 for every dollar invested."

Despite such a clear connection between spending and benefit, public health activities account for less than 3% of the US spending on health, and that spending has declined in recent years as state and local governments have faced budget cuts (Himmelstein & Woolhandler, 2016). Although

jurisdictions vary in the amount they budget for public health administration, the National Center for Health Statistics (2015) estimated that per capital public health spending (federal, state, and local) averaged $248 per person in 2014. By contrast, per capital healthcare expenditures the same year averaged more than $9,000 per person (National Center for Health Statistics, 2015). The gap is growing, and the overall health status of Americans is not rising.

Some novel funding methods for public health show promise in supporting public health functions. CMS regulations are gradually incentivizing prevention in healthcare services, such as through "value-based purchasing" that only reimburses providers who do not make medical errors. CMS also certifies accountable care organizations that bring healthcare providers together with mental health, social work, and other prevention-based disciplines, although the reimbursement is based on dollars saved, rather than improved health status. Seventeen states support social impact bonds, financing mechanisms that pay organizations for successful public health outcomes, such as chronic disease management (The Rockefeller Foundation, 2017). States and localities are implementing wellness trusts, using pooled public and private funding to provide prevention and wellness interventions to a community. As shared, pooled, or aligned models for financing public health initiatives increase, so will the evidence for sustained funding and development of public health initiatives.

Improving the Public Health System

Over the last two decades, various national and state organizations have focused on developing and implementing performance standards for public health agencies to assure the delivery of the Ten Essential Public Health Services. Broadly speaking, these efforts have focused on accreditation, governance, and evaluation.

Accreditation is a process through which state, local, tribal, and territorial health departments demonstrate—and are recognized for—compliance with "a set of nationally recognized, practice-focused and evidenced-based standards" (Public Health Accreditation Board, 2013). Nearly 180 public health agencies that meet established standards for performance and fulfill related documentation requirements are accredited by the Public Health Accreditation Board (PHAB), a non-profit organization that was formed in 2007. PHAB's standards are built around the Ten Essential

Public Health Services. One of these services is to "enforce public health laws that protect health and ensure safety," with respect to which PHAB's standards require health departments to (a) carefully evaluate how well current laws and regulations are aligned with evidence-based public health recommendations and (b) proactively consider how existing laws could be modified and strengthened. Although public health agencies may lack the legal authority to directly change their laws or regulations, they are required to play a role in educating policymakers about needed updates and changes to current governance or practices. Accreditation shows promise in improving capacity in and coordination between health department functions, including policy development, and improved communication with governing entities like boards of health (Kronstadt et al., 2016).

Governance impacts the way public health agencies are administered. Public health laws structure public health agencies in a variety of ways across the country. Depending on a state's law, for instance, local health agencies may be overseen by a director (or commissioner), a board of health, or both, and the qualifications to be a director or board member vary considerably between jurisdictions. These governance structures can make a difference. For example, in one study, local boards of health made up of both public officials and health professionals (where neither had a majority) were associated with better public health outcomes than boards comprised of health professionals alone (Hays et al., 2012). While public health agencies have little power to change their governance structure, the PHAB standards require public health agencies to document close collaboration between agency staff and governing boards/commissioners, so that policymakers are well informed and able to ensure accountability.

Finally, *evaluation* is needed to demonstrate whether existing programs, implementation strategies, and policies are having the expected results. Evaluation is particularly critical for informed decision-making in the context of competing priorities and limited budgets. PHAB requires that public health agencies either have the ability to conduct rigorous evaluations or have links to academic institutions or other entities with the capacity to do so. As discussed further in Chapter 21, research on the impact and effectiveness of public health laws and policies is a relatively new field, but it is essential to better understanding how the public health system operates and how it can be improved.

Conclusion

This chapter has described the public health system in the United States. In our federal system, important health services are delivered by agencies at all levels of government. Coordination between agencies and between governmental and nongovernmental parts of the public health system is crucial to success, especially in an era when funding has been steadily declining. We now turn to the idea of "transdisciplinary public health law," a concept meant to capture the importance of collaboration across the disciplines of public health and law.

Further Reading

Centers for Disease Control and Prevention. (n.d.) Ten Essential Public Health Services and How They Can Include Addressing Social Determinants of Health Inequities. Available from https://www.cdc.gov/stltpublichealth/publichealthservices/pdf/Ten_Essential_Services_and_SDOH.pdf

Kaiser Family Foundation. (2017). Health Reform. Available from https://www.kff.org/health-reform/

Levi, J., Segal, L. M., Gougelet, R., & St. Laurent, R. (2013). Investing in America's Health: A State-by-State Look at Public Health Funding and Key Health Facts. Trust for America's Health. Available from http://healthyamericans.org/assets/files/TFAH2013InvstgAmrcsHlth05%20FINAL.pdf