

CHAPTER 1

Introduction to Public Health Preparedness

LEARNING OBJECTIVES

By the end of this chapter, the reader will be able to:

- Define public health preparedness and understand the scope of events that can lead to a public health emergency
- Identify the difference between homeland security and national security
- Define and understand the evolution of public health emergency management
- Understand the role of the public health professional in emergency preparedness and response activities
- Be familiar with the types of careers available to public health professionals in preparedness
- Define core competencies for public health preparedness and emergency management

► Introduction

This chapter is all about definitions—understanding what public health preparedness means, what emergency management means, and how we think about national security, homeland security, and defense in the context of public health. We also begin to explore the role of public health professionals in emergency preparedness and response activities, articulate core competencies for public health professionals working in this space, and introduce readers to the types of careers available to public health professionals interested in preparedness and emergency management.

► Definitions

Promote General Welfare and Provide for the Common Defense

The Preamble to the Constitution of the United States lays the groundwork for creation of the nation and for basic responsibilities of the federal government (**BOX 1-1**). Among these responsibilities are to “promote the general welfare” and “provide for the common defense.” Public health preparedness, as a subdiscipline of public health, strives to address these two fundamental components of a government’s responsibility to its population.

BOX 1-1 Preamble to the Constitution of the United States of America

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

The Constitution of the United States.

The notions of both homeland security and national security are paramount to public health preparedness. Before we define public health preparedness, let us start with what exactly “provide for the common defense” means.

National Security

Political scientists have long debated what exactly defines national security. The concept means different things to different people. Some see it as policies—including diplomatic, economic, and military power—enacted by governments in order to ensure the survival and safety of the state. Others define it as safeguarding territorial integrity and national independence—basically, the existence of the state.¹ George Kennan wrote that national security is “the continued ability of this country to pursue its internal life without serious interference.”^{1(pp52–53)} The reoccurring theme within all discussions of national security, however, is the extent to which an individual is willing to sacrifice freedom in exchange for security—the balance between security and liberty.

The most extreme position regarding national security is that it does not matter if the threat to security comes from within or from outside the nation. Citizens will look to the state for protection against all types of threats. In exchange, the state can ask anything of that citizen, short of his life (BOX 1-2). For most people, and particularly for those in the United States, there is a more balanced perspective of security and personal liberty. While U.S. citizens want to be protected from threats and support the government in doing so, they want it to be done in such a way that they are able to retain personal freedoms and liberties.

Homeland Security

The founding fathers penned the argument that the Constitution would protect U.S. citizens against conflict at home and that geography would protect the nation from conflict abroad.² The basic belief

BOX 1-2 Excerpt from Leviathan (1651) by Thomas Hobbes

Without security provided for by the state, there is a state of anarchy. Hobbes describes such a state as follows:

In such condition there is no place for industry, because the fruit thereof is uncertain: and consequently no culture of the earth; no navigation, nor use of the commodities that may be imported by sea; no commodious building; no instruments of moving and removing such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society; and which is worst of all, continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short.

Hobbes, T. *Leviathan*. Edited by Richard Tuck. Cambridge University Press; 1991.

was that no threat would reach our borders, and the oceans would protect us from conflict on our shores. As history has proven, however, geography cannot protect us from all external threats, particularly from terrorist actors.

After the terrorist attacks on September 11, 2001, the nation, for the first time, began to speak collectively about “homeland security.” The Department of Defense defined homeland security as “the prevention, preemption, deterrence of, and defense against aggression targeted at U.S. territory, sovereignty, domestic population, and infrastructure, as well as the management of the consequences of such aggression and other domestic emergencies.”^{3(p24)} Others definitions vary slightly, but, at the core, homeland security is about preventing attacks on the United States and minimizing damage through appropriate preparations and rapid recovery.^{4(p2),5(p11)}

Homeland Defense

Homeland defense is a component of homeland security. “Defense” is “the protection of U.S. sovereignty, territory, domestic population, and critical defense infrastructure against external threats or aggression.”⁶ Broadly, this means everything from national missile defense to critical infrastructure protection. The concepts of preparedness and response, however, are typically included in “security” and not in “defense.”

Public Health Preparedness

Public health preparedness, like homeland security, is a term that represents concerns and actions that have occurred throughout history. The term itself, however,

and the field devoted to thinking about, preparing for, and mobilizing resources to respond to public health emergencies is relatively new.

The Association of Schools and Programs of Public Health (ASPPH) defined public health preparedness as “a combination of comprehensive planning, infrastructure building, capacity building, communication, training, and evaluation that increase public health response effectiveness and efficiency in response to infectious disease outbreaks, bioterrorism, and emerging health threats.”^{7(p5)} A group at the RAND Corporation, however, proposed a definition in 2007 that is a broader and better characterization of the field:

“[P]ublic health emergency preparedness ... is the capability of the public health and health care systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities. Preparedness involves a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action.”^{8(s9)}

This definition raises the question: What exactly is a public health emergency? According to the RAND definition, it is an event “whose scale, timing, or unpredictability threatens to overwhelm routine capabilities.” These types of events fit into the following four basic categories:

1. The intentional or accidental release of a chemical, biological, radiological, or nuclear (CBRN) agent
2. Natural epidemics or pandemics, which may involve a novel, emerging infectious disease, a reemerging agent, a previously controlled disease, or occur in areas with limited infrastructure or resources
3. Natural disasters such as hurricanes, earthquakes, floods, or fires
4. Man-made environmental disasters such as oil spills

For any of these categories of events to be classified as a public health emergency, it is not just enough for the event to occur, but it also must pose a high probability of large-scale morbidity, mortality, or a risk of future harm.

A Trust for America’s Health (TFAH) report refers to public health preparedness as requiring the basic functions of a public health system, such as epidemiology, laboratory capacity, and event-based surveillance

capacity.^{9,10} These core functions need to be supplemented by specialized training, procedures, laws, regulations, and planning, so that all relevant sectors can operate effectively and in a coordinated fashion during a crisis. Doing this well also requires the development of systems for surge capacity, distribution of medical countermeasures, and detecting and managing a response to rapidly mitigate the consequences of the event and move toward recovery.

At the global level, the World Health Organization’s Revised International Health Regulations, adopted in 2005, define a public health emergency of international concern (PHEIC) as “[A]n extraordinary event which is determined . . . to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response.”¹¹ Such an emergency can involve any of the above four types of public health events, as long as it is unusual, unexpected, and has the potential to cross international borders.

Some public health concerns that have been called “emergencies” do not meet the criteria of any of the previous definitions. Public health preparedness refers to planning for and responding to acute events, as opposed to chronic conditions that evolve over time. The prevalence of breast cancer, for example, may be a “public health crisis,” but it is not considered an emergency within the purview of public health preparedness.^{12(pp2282–2283)}

Effective public health preparedness spans a wide range of activities. This text focuses primarily on the policy and legal actions to support preparedness and application of the principals of emergency management to public health operations, but a “prepared community” also entails the ability to do the following:

- Perform health risk assessments
- Establish an incident command system or related structure
- Actively engage and communicate effectively with the public
- Have functional epidemiologic and laboratory capacity to perform surveillance, detect emerging events, and appropriately diagnose patients
- Be able to deploy rapid response teams to investigate outbreaks
- Develop, stockpile, and distribute medical countermeasures (drugs and vaccines)
- Have “surge capacity” within the medical system to provide care for large populations during an emergency
- Maintain an appropriate workforce, financial resources, communication systems, and logistics to detect, respond to, and recover from events⁸

The responsibility of the public health community to prepare for and address acute health emergencies is thus extensive and can be a challenge, particularly in environments where the public health system is under-resourced.

Emergency Management

The Federal Emergency Management Agency defines emergency management as the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters. The mission of emergency management is to protect communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters.¹³

► Public Health Preparedness and Federalism

Public health preparedness requires cooperation among a variety of sectors at multiple levels of government. At the federal level, multiple agencies such as the Departments of Health and Human Services (including Centers for Disease Control and Prevention [CDC], National Institutes of Health, the Food and Drug Administration, and the other agencies within the department), Homeland Security, State, Defense, Justice, Transportation, Commerce, Energy and Treasury; the Environmental Protection Agency; and the Intelligence Community are all involved and are coordinated in the end by the National Security Council staff of the White House.

While a strong federal policy and infrastructure is essential, public health professionals recognize that most public health activities occur at the local and state levels. Clinical care is an essential component of public health, yet that care is not coordinated or delivered in Washington, DC. It is in every doctor's office, hospital, and clinic around the country. Disease surveillance is essential, but it starts with detection of an unusual event—for example, by an astute clinician or a capable laboratory, wherever the event emerges. Not only is this a reality in practice, it is codified by the 10th Amendment of the Constitution: “The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.”¹⁴ This means that police powers, including the powers to regulate

health and safety, are the responsibility of the states. The federal government supports public health preparedness domestically, as it must build relations globally to ensure an effective worldwide system for preparedness, information sharing, and collaboration in preventing, detecting, reporting, and responding to public health threats. It is the state and local entities, however, that are relied upon to implement policies, build infrastructure, and interface with local populations to promote health security. This is the case in the United States, as it is throughout the world.

States have the responsibility for developing their own emergency preparedness plans, and all have some level of planning and preparedness training in place. Preparedness efforts at the state level have strived to meet national preparedness objectives, yet at the same time focus on the unique threats, challenges, assets, and populations specific to particular jurisdictions. States that are subject to relatively more frequent hurricanes may have well-developed plans to address that particular hazard, while landlocked states far from oceans may have better-developed plans for disasters such as tornadoes. States will also take into account the particular demographics of their region when planning how to address vulnerable populations, nursing homes, and schools in emergencies.

In carrying out their responsibilities, state and local public health professionals are supported by several professional associations, including the American Public Health Association (APHA), the Council of State and Territorial Epidemiologists (CSTE), the Association of Public Health Laboratories (APHL), the Association of State and Territorial Health Officers (ASTHO), and the National Association of County and City Health Officials (NACCHO). These associations play an active role in providing guidance, securing funding, and assisting the public health workforce in meeting the preparedness challenge.

► Developing the Public Health Preparedness Workforce: Charge and Careers

In December 2006, Congress passed the Pandemic and All-Hazards Preparedness Act (known as PAHPA, pronounced “papa”), which reauthorized and built upon the Public Health Security and Bioterrorism Preparedness and Response Act (also known as the Bioterrorism Act of 2002). Among other things,

BOX 1-3 Pandemic and All-Hazards Preparedness Act of 2006. Section 304: Core Education and Training**TITLE III—ALL-HAZARDS MEDICAL SURGE CAPACITY***SEC. 304. CORE EDUCATION AND TRAINING*

(d) Centers for Public Health Preparedness; Core Curricula and Training—

1. IN GENERAL—The Secretary may establish at accredited schools of public health, Centers for Public Health Preparedness (hereafter referred to in this section as the “Centers”).
2. ELIGIBILITY—To be eligible to receive an award under this subsection to establish a Center, an accredited school of public health shall agree to conduct activities consistent with the requirements of this subsection.
3. CORE CURRICULA—The Secretary, in collaboration with the Centers and other public or private entities shall establish core curricula based on established competencies leading to a 4-year bachelor’s degree, a graduate degree, a combined bachelor and master’s degree, or a certificate program, for use by each Center. The Secretary shall disseminate such curricula to other accredited schools of public health and other health professions schools determined appropriate by the Secretary, for voluntary use by such schools.
4. CORE COMPETENCY-BASED TRAINING PROGRAM—The Secretary, in collaboration with the Centers and other public or private entities shall facilitate the development of a competency-based training program to train public health practitioners. The Centers shall use such training program to train public health practitioners. The Secretary shall disseminate such training program to other accredited schools of public health, health professions schools, and other public or private entities as determined by the Secretary, for voluntary use by such entities.
5. CONTENT OF CORE CURRICULA AND TRAINING PROGRAM—The Secretary shall ensure that the core curricula and training program established pursuant to this subsection respond to the needs of State, local, and tribal public health authorities and integrate and emphasize essential public health security capabilities consistent with section 2802(b)(2).

Pandemic and All-Hazards Preparedness Act., P.L. 109–417 (2006).

PAHPA called for the development of a public health workforce versed in preparedness and public health security capabilities (**BOX 1-3**). It required curricula to be developed and called for the facilitation of competency-based training in public health preparedness within schools of public health and other institutions. It should be noted that the reauthorization of PAHPA in 2013 did not explicitly discuss training in schools of public health.

The ASPPH—with support from U.S. CDC—developed model core competencies in public health preparedness and response (PHPR). ASPPH efforts were targeted at public health workers who have 10 years of experience or 5 years with a master’s in public health (MPH) or higher degree, and focused on four core areas (see **FIGURE 1-1**).¹⁵

In today’s climate, it is important for many different types of public health professionals, at every level of government and the private sector with diverse knowledge and expertise, to be versed in public health preparedness. When a public health emergency occurs, it affects the entire public health and medical system. Everyone from laboratory technicians to clinicians to program managers may be affected. We hope this text provides important context for the next generation of leaders in public health preparedness and emergency management.

► Jobs in Public Health Preparedness

Trained professionals in public health preparedness and emergency management are now sought after by a multitude of organizations and agencies. This ranges from public health and healthcare organizations looking to be better positioned for public health emergencies to security communities broadening their scope to include public health. Below are some examples of areas in which public health preparedness and emergency management personnel are sought after:

- *Private sector:* Think tanks, consulting firms, private industry, and government contractors hire public health professionals who specialize in preparedness. These jobs include operational planning for private companies, strategic planning for the pharmaceutical industry, and policy analysis and training to support both government entities and clinical operations.
- *State and local government:* Just about every state and local health department now has dedicated staff for preparedness, and most jurisdictions have emergency management teams focused on public health. In addition, state and local departments of emergency management, agriculture, commerce, and transportation may also employ public health

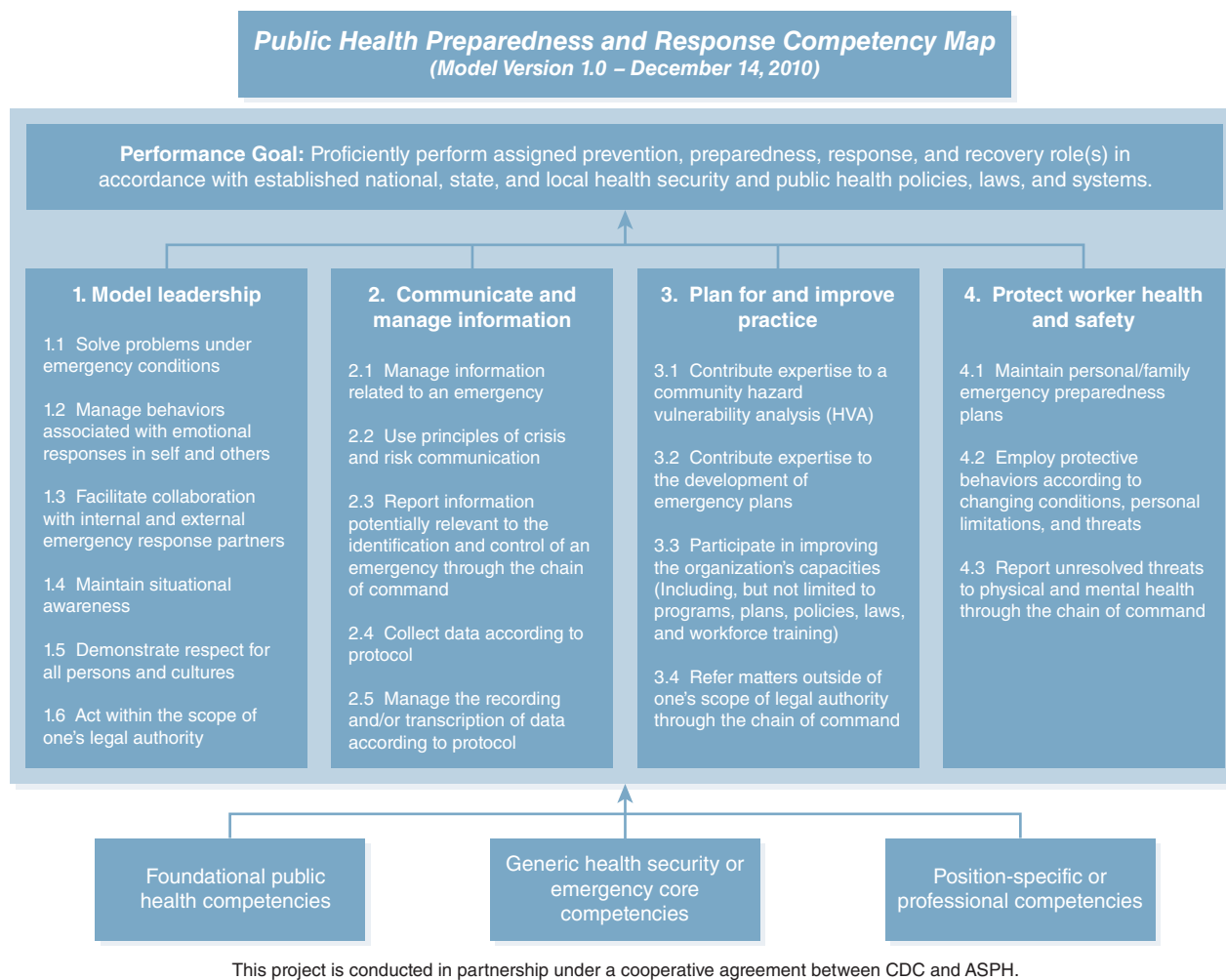


FIGURE 1-1 Public health preparedness and response competency map

Reproduced from CDC, ASPH. *Public Health Preparedness & Response Core Competency Model*. December 17, 2010. Available at: https://www.cdc.gov/phprr/documents/pericpdfs/preparednesscompetencymodelworkforce-version1_0.pdf. Accessed June 2017.

preparedness experts, which again demonstrate the necessity of diverse expertise.

- *Academia:* Researchers are needed to further the field of preparedness, and informed professors are required for curriculum development and training of students and mid-career professionals.
- *Federal government:* As we will learn throughout this text, the federal government is heavily involved in public health preparedness, requiring skilled professionals to work not just at the Department of Health and Human Services, but also at the Departments of State, Agriculture, Defense, Treasury, Justice, Homeland Security,

and within the Intelligence Community and the U.S. Agency for International Development.

- *International organizations:* Nongovernmental organizations (NGO) and international organizations (IOs), such as those that are part of the United Nations, are engaged in public health preparedness activities. These include everything from disaster management to refugee health to law enforcement.

In all, there is a great deal of work to be accomplished and a need for smart, energetic, and enthusiastic people. The world can always use more strong public health professionals, and specifically public health professionals who can contribute to emergency preparedness and response.

Key Words

Community preparedness

Core competencies

Emergency management

Homeland defense

Homeland security

National security

Pandemic and All-Hazards Preparedness Act

Public health preparedness

Workforce

Discussion Questions

1. Is public health preparedness the same as national preparedness? Is public health preparedness well defined and can it be operationalized?
2. What types of emergency events require a public health role?
3. What types of public health emergencies require planning for underserved populations and how such planning might be incorporated into preparedness activities?
4. What is the difference between national and homeland security?
5. From the list of eleven components of public health preparedness, which three do you think are most important and should be prioritized? Why?
6. What is the role of public health officials in emergency management?

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