

ISSUE BRIEF

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Ebola: The Basics

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The spread of the Ebola virus raises substantial public health concerns in the United States and abroad. With the proper leadership and use of available resources, the U.S. can address these concerns effectively. Appropriate U.S. government humanitarian assistance to address the Ebola situation in West Africa, and measured and coordinated deployment at home of federal, state, and local capabilities to combat Ebola, can save many lives.

Ebola Virus Disease. According to the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) the symptoms of Ebola include (1) fever greater than 101.5 degrees Fahrenheit, (2) severe headache, (3) muscle pain, (4) weakness, (5) diarrhea, (6) vomiting, (7) abdominal pain, and (8) unexplained bleeding. The CDC reports that those who contract Ebola exhibit symptoms, on average, eight to 10 days after exposure to Ebola, but notes that symptoms may first appear as early as two days or as late as 21 days after exposure.¹

The CDC advises that Ebola transmission to a human occurs through direct contact with (1) blood or body fluids such as saliva, sweat, semen, urine, feces, vomit, and breast milk, (2) virus-contaminated objects such as needles and syringes, or (3) infect-

ed animals. The CDC emphasizes that Ebola does not spread through the air, through water, or, generally, by food.² Also, the CDC notes that those who recover from Ebola can no longer spread the virus (except that Ebola virus has been found in semen for up to three months after recovery) and have antibodies in their immune system that help resist Ebola for at least 10 years thereafter.³

For practical advice on avoiding Ebola, the CDC encourages, among other things, careful hygiene, including handwashing with soap and water or alcohol-based sanitizer, and avoidance of contact with blood or body fluids of an individual with Ebola, which may occur, for example, through contact with clothes, bedding, needles, medical equipment, or the live body or remains of an individual with Ebola.⁴ As part of its campaign to educate the public, the CDC has published a simple two-page document titled “What You Need to Know About Ebola” available for downloading from the Internet.⁵ The document notes that about half of the people who have contracted Ebola in the current outbreak have died.

Humanitarian Aid Abroad Helps Protect the Homeland. The United States has a long history of providing humanitarian assistance to foreign countries or populations in many natural disasters, to help them avoid or mitigate human suffering.⁶ The U.S. sometimes provides such assistance alone, but more often acts in cooperation with other countries, international organizations, and non-governmental organizations. The U.S. often provides humanitarian assistance simply as a matter of moral leadership or good relations with a foreign country. In some situations, however, the U.S. also has a direct national interest at stake, as occurs when U.S. assistance to

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a foreign country fighting a disease outbreak both meets humanitarian needs in that country and constitutes the first line of defense in preventing or reducing the spread of the disease (such as Ebola) to the American people.

As of October 9, 2014, the U.S. government listed three countries, all in West Africa, as having widespread transmission of Ebola: Guinea, Liberia, and Sierra Leone. In addition, the government listed one country, also in West Africa, as having localized transmission of Ebola: Nigeria (in Lagos and Port Harcourt). Finally, the government listed two countries as having travel-associated cases of Ebola: Senegal (in Dakar) and the United States (Dallas).⁷ The CDC also acknowledges a confirmed case of Ebola in Spain.⁸ As of October 8, 2014, the World Health Organization reported 8,399 confirmed, probable, and suspected cases of Ebola virus disease in the seven currently affected countries and 4,033 deaths.⁹

The U.S. government has responded with extensive humanitarian assistance in West Africa in response to the Ebola situation, with aid ranging from treatment units, to mobile testing labs, to personal protective equipment for medical personnel.¹⁰ In addition to the activities of U.S. Agency for International Development personnel and other U.S. agency civilians often involved in providing humanitarian assistance in medical disasters, the President also directed deployment of elements of the U.S. armed forces to assist. Such assistance reportedly will include deployment of an estimated 3,000 members of the U.S. armed forces, to establish in Liberia a regional headquarters for military support to U.S. assistance activities, facilitate transportation of supplies and personnel, construct Ebola treatment units, and train health care personnel.¹¹

Protecting the American People at Home. The United States has dealt with significant threats to public health many times, from the yellow fever epidemic in Philadelphia in the autumn of 1793, to the national influenza pandemic in 1918, to the human immunodeficiency virus epidemic that began in the 1980s.¹² Federal, state, local, territorial and tribal governments and the private sector have planned together and work together to address threats of communicable disease.¹³

State, local, territorial, tribal and private sector medical personnel constitute the first responders to a serious communicable disease outbreak when it occurs in the United States.¹⁴ Health care providers

must report occurrences of certain serious diseases to state, local, territorial, or tribal public health officials, who in turn report occurrences of specified diseases, including viral hemorrhagic fevers such as Ebola, through the National Notifiable Diseases Surveillance System (NNDSS) to the CDC. The NNDSS allows the CDC to develop and share information concerning disease outbreaks and to advise officials responsible for making decisions about responses to outbreaks.¹⁵

If situations arise with respect to outbreaks that state, local, territorial, and tribal health authorities cannot satisfactorily address, the federal government can exercise broad legal authorities to address the situations. The authority of the Surgeon General of the United States, who heads the U.S. Public Health Service, includes the power to issue, with the approval of the Secretary of HHS, “such regulations as in his judgment are necessary to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession,” regulations which may go so far in certain circumstances as to involve apprehension and detention of individuals.¹⁶ The Surgeon General also has authority to issue regulations, with the President’s approval, to exclude introduction into the U.S. of persons or property from a foreign country when the Surgeon General determines that “by reason of the existence of any communicable disease in a foreign country there is serious danger of the introduction of such disease into the United States, and that this danger is so increased by the introduction of persons or property from such country that a suspension of the right to introduce such persons and property is required in the interest of the public health....”¹⁷ The law imposes criminal penalties for violating the Surgeon General’s regulations.¹⁸ The Surgeon General has issued regulations implementing the statutory authority.¹⁹

Other federal agencies may exercise statutory authority available to them in emergencies to assist in combatting the spread of disease. For example, the Food and Drug Administration of HHS issued an emergency use authorization for an *in vitro* diagnostic device for the detection of the Ebola Zaire virus detected in the West Africa outbreak in 2014 under the Federal Food, Drug, and Cosmetic Act.²⁰ Similarly, the Biomedical Advanced Research and Development Authority of HHS exercised its statutory

authority to provide funding to Mapp Pharmaceuticals, Inc., of San Diego, California, to accelerate work on a potential treatment for Ebola.²¹ The Bureau of Customs and Border Protection of the Department of Homeland Security, working with the CDC, has implemented screening for possible Ebola exposure of travelers from Guinea, Liberia, and Sierra Leone arriving at any of the five airports that serve as the entry points for 94 percent of the travelers entering the U.S. from West Africa.²²

Conclusion: Timely Collection of Information, Professionalism in Response, and Public Dissemination of Information Will Help Protect the American People. As federal, state, local, territorial, and tribal health authorities continue to work together to assess and respond to Ebola risks in the U.S., and U.S. civilian agencies and the U.S. armed forces work with foreign governments and non-governmental organizations to alleviate suffer-

ing and prevent the spread of Ebola in West Africa, senior government officials in the U.S. have important roles. Those at the highest levels of responsibility in the U.S. Congress and executive branch should keep themselves fully informed on the health and economic consequences of the Ebola outbreak so they can help ensure (1) effective and efficient use of the substantial U.S. taxpayer funds involved, (2) that the professionals with the requisite training at all levels of government work together effectively, and (3) that the public is kept accurately informed in a timely manner. Both at home and abroad, and at all levels of government, the dissemination of accurate, understandable information about the Ebola situation, and about government and private responses to it, is crucial.

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Endnotes:

1. Centers for Disease Control and Prevention, "Ebola (Ebola Virus Disease): Signs and Symptoms," available at <http://www.cdc.gov/vhf/ebola/symptoms/index.html> (visited Oct. 9, 2014). See also World Health Organization, Fact Sheet No. 103, "Ebola Virus Disease," available at <http://www.who.int/mediacentre/factsheets/fs103/en/> (visited Oct. 10, 2014).
2. Centers for Disease Control and Prevention, "Ebola (Ebola Virus Disease): Transmission," available at <http://www.cdc.gov/vhf/ebola/transmission/index.html> (visited Oct. 9, 2014).
3. Centers for Disease Control and Prevention, "Ebola (Ebola Virus Disease): Transmission," available at <http://www.cdc.gov/vhf/ebola/transmission/index.html> (visited Oct. 9, 2014) ("Once someone recovers from Ebola, they can no longer spread the virus. However, Ebola virus has been found in semen for up to 3 months. People who recover from Ebola are advised to abstain from sex or use condoms for 3 months."); Centers for Disease Control and Prevention, "Ebola (Ebola Virus Disease): Signs and Symptoms," available at <http://www.cdc.gov/vhf/ebola/symptoms/index.html> (visited Oct. 9, 2014) ("Recovery from Ebola depends on good supportive clinical care and the patient's immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years.").
4. Centers for Disease Control and Prevention, "Prevention," available at <http://www.cdc.gov/vhf/ebola/prevention/index.html> (visited Oct. 9, 2014).
5. Centers for Disease Control and Prevention, "What You Need to Know About Ebola," available at <http://www.cdc.gov/vhf/ebola/pdf/what-need-to-know-ebola.pdf> (visited Oct. 9, 2014).
6. The U.S. Agency for International Development's (USAID) Office of Foreign Disaster Assistance (OFDA) has principal responsibility within the U.S. government for leading and coordinating U.S. assistance in response to disasters abroad. USAID, OFDA, "Who We Are," available at <http://www.usaid.gov/who-we-are/organization/bureaus/bureau-democracy-conflict-and-humanitarian-assistance/office-us> (visited Oct. 10, 2014).
7. Centers for Disease Control and Prevention, "2014 Ebola Outbreak in West Africa," available at <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html#areas> (visited Oct. 9, 2014).
8. Centers for Disease Control and Prevention, "Outbreak Update: October 8, 2014," available at <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html> (visited Oct. 10, 2014).
9. World Health Organization, "WHO: Ebola Response Roadmap Update" (Oct. 10, 2014), available at http://apps.who.int/iris/bitstream/10665/136161/1/roadmapupdate10Oct14_eng.pdf?ua=1 (visited Oct. 10, 2014).
10. The White House, Office of the Press Secretary, "FACT SHEET: The U.S. Response to the Ebola Epidemic in West Africa" (Oct. 6, 2014), available at <http://www.whitehouse.gov/the-press-office/2014/10/06/fact-sheet-us-response-ebola-epidemic-west-africa> (visited Oct. 10, 2014).
11. The White House, Office of the Press Secretary, "FACT SHEET: U.S. Response to the Ebola Epidemic in West Africa" (Sept. 16, 2014), available at <http://www.whitehouse.gov/the-press-office/2014/09/16/fact-sheet-us-response-ebola-epidemic-west-africa> (visited Oct. 10, 2014). A Defense News Activity report of October 8, 2014, stated that "[a]s many 4,000 U.S. military personnel are expected to be deployed in Liberia as part of Operation United Assistance, the military mission supporting U.S. and international efforts to stop the spread of a virus that has already killed more than 3,300 people across the region," which may indicate that the number of military personnel the U.S. plans to deploy to West Africa to help fight Ebola has increased since the White House Press Office announced on September 16, 2014, that the number of military personnel deployed would be 3,000. Nick Simeone, Defense Media Activity, Department of Defense, "Obama Meets at Pentagon With Hagel, Military Commanders," available at <http://www.defense.gov/news/newsarticle.aspx?id=123372> (visited October 10, 2014).
12. Richard Norton Smith, *Patriarch: George Washington and the New American Nation*, Boston: Houghton Mifflin Co., 1993, pp. 178-186 (yellow fever claimed the lives of 10% of the Philadelphia population, p. 186); John M. Barry, *The Great Influenza*, New York: Penguin Books, 2004 (estimated 675,000 died of the 1918 H1N1 influenza virus, pp. 115 and 450); Healthline.com, "10 Worst Outbreaks in History," medically reviewed by George T. Krucik, MD (January 20, 2013)(visited Oct. 10, 2014). See Harvard University, "Contagion: Historical Views of Diseases and Epidemics," available at <http://ocp.hul.harvard.edu/contagion/index.html> (visited Oct. 10, 2014).
13. Centers for Disease Control and Prevention, Office of Public Health Preparedness and Response, Division of State and Local Readiness, Fact Sheet CS 213705, available at http://www.cdc.gov/phpr/documents/DSLR_fact_sheet.pdf (May 2014) (visited Oct. 10, 2014). The Secretary of HHS has broad statutory authority to assist state and local authorities, and to obtain assistance from state and local authorities, in performing the Secretary's public health functions under section 311 of the Public Health Service Act (42 U.S.C. 243).
14. Centers for Disease Control and Prevention, "A National Strategic Plan for Public Health Preparedness and Response" (September 2011), p. 1, available at http://www.cdc.gov/phpr/publications/A_Natl_Strategic_Plan_for_Preparedness.htm (visited Oct. 10, 2014).

15. Centers for Disease Control and Prevention, "National Notifiable Diseases Surveillance System," http://www.cdc.gov/nndss/document/NNDSS_Fact_Sheet_FINAL_3_13_2014.pdf (March 13, 2014) (visited Oct. 10, 2014). The federal government also has assisted in establishing four medical facilities specially designed to deal with serious infectious diseases. For information on the biocontainment patient care unit at the University of Nebraska Medical Center in Omaha, Nebraska, see <http://www.nebraskamed.com/biocontainment-unit>; on the specially built isolation unit at Emory University Hospital, in Atlanta, Georgia, see <http://www.medicine.emory.edu/news/2014/08/emory-ebola-patients-frequently-asked-questions-news.html>; on the care and isolation unit at St. Patrick's Hospital in Missoula, Montana, see <http://montana.providence.org/news/press-releases/2014/09/providence-st-patrick-hospital-provides-specially-equipped-care-and-isolation-unit-news/> and George F. Risi et al., "Preparing a Community Hospital to Manage Work-related Exposures to Infectious Agents in BioSafety Level 3 and 4 Laboratories," *Emerging Infectious Diseases*, Vol. 16, No. 3 (March 2010), available at <http://wwwnc.cdc.gov/eid/article/16/3/pdfs/09-1485.pdf>; and on the Special Clinical Studies Unit at the National Institutes for Health in Bethesda, Maryland, see http://clinicalcenter.nih.gov/translational-research-resources/resources/special_clinical_studies.html (all visited Oct. 15, 2014).
16. Section 361(a) of the Public Health Service Act (42 U.S.C. 264).
17. Section 362 of the Public Health Service Act (42 U.S.C. 265).
18. Section 368 of the Public Health Service Act (42 U.S.C. 271).
19. Subchapter F of Chapter 1 of title 42 of the Code of Federal Regulations. Among other things, the regulations address the detention, isolation, and quarantine of individuals to prevent the spread of diseases (42 CFR 70.6) and the isolation, quarantine, or surveillance of persons arriving in the U.S. infected with or exposed to a disease designated by the President by Executive Order (42 CFR 71.32). The President has satisfied the elements of the Surgeon General's statutory authority dependent upon presidential designation of diseases with Executive Order 13295 of April 4, 2003, as amended, which designates Ebola.
20. Food and Drug Administration, "Authorization for Emergency Use of an In Vitro Diagnostic Device for Detection of Ebola Zaire Virus," 79 *Fed. Reg.* 55804 (September 17, 2014).
21. Department of Health and Human Services, Press Release, "HHS contracts with Mapp Biopharmaceutical to Develop Ebola Drug" (September 2, 2014), available at <http://www.hhs.gov/news/press/2014pres/09/20140902b.html> (visited Oct. 10, 2014).
22. Centers for Disease Control and Prevention, Press Release, "Enhanced Ebola Screening to Start at Five U.S. Airports and New Tracking Program for all People Entering U.S. from Ebola-affected Countries" available at <http://www.cdc.gov/media/releases/2014/p1008-ebola-screening.html> (visited Oct. 10, 2014). The five airports involved are in New York-Kennedy, Washington-Dulles, Newark-Liberty, Chicago-O'Hare, and Atlanta-Hartsfield.