Situation Summary

The 2014 Ebola epidemic is the largest in history, affecting multiple countries in West Africa (Appendix A). There were a small number of cases reported in Nigeria and a single case reported in Senegal; however, these cases are considered to be contained, with no further spread in these countries.

Two imported cases, including one death, and two locally acquired cases in healthcare workers have been reported in the United States. CDC and partners are taking precautions to prevent the further spread of Ebola within the United States. CDC is working with other U.S. government agencies, the World Health Organization (WHO), and other domestic and international partners and has activated its Emergency Operations Center to help coordinate technical assistance and control activities with partners. CDC has also deployed teams of public health experts to West Africa and will continue to send experts to the affected countries.

The CDC is working with the World Health Organization (WHO), the ministries of health of Guinea, Liberia, and Sierra Leone, and other international organizations in response to this outbreak. This is the largest outbreak of Ebola Virus Disease (EVD) ever documented and the first recorded in West Africa.¹

The Outbreak was first reported in December 2013, and as of 4 November 2014, the outbreak consists of a total of 13,567 confirmed, probable, and suspected cases of Ebola virus disease (EVD) up to the end of 29 October. There have been 4,951 reported deaths.

Background

What is Ebola?

Ebola is one of numerous Viral Hemorrhagic Fevers. It is a severe, often fatal disease in humans and nonhuman primates (such as monkeys, gorillas, and chimpanzees). EVD is characterized by sudden onset of fever and malaise, accompanied by other nonspecific signs and symptoms, such as myalgia, headache, vomiting, and diarrhea. Patients with severe forms of the disease may develop multi-organ dysfunction, including hepatic damage, renal failure, and central nervous system involvement, leading to shock and death. The incubation period, the time interval from infection with the virus to onset of symptoms, is 2 to 21 days.

How is Ebola transmitted?

Ebola can be spread to others in two primary ways: (1) Direct contact (through broken skin or mucous membranes) with a sick person's body fluids (blood, urine, saliva, feces, vomit, and semen) or (2) objects (such as needles) that have been contaminated with infected body fluids. Healthcare workers and the family and friends in close contact with Ebola patients are at the highest risk of getting sick because they may come in contact with infected blood or body fluids. Exposure to Ebola viruses can occur in healthcare settings where hospital staffs are not wearing appropriate protective equipment, such as masks, face shields, gowns, and gloves.

Proper cleaning and disposal of instruments, such as needles and syringes, is important. If instruments are not disposable, they must be sterilized before being used again. Without adequate sterilization of the instruments, virus transmission can continue and amplify an outbreak.

How is Ebola treated?
Currently, no licensed vaccine or specific drug treatments exist to treat Ebola. Standard treatment for Ebola is still limited to intensive supportive therapy:

- Balancing the patient’s fluids and electrolytes
- Maintaining their oxygen status and blood pressure
- Treating them for any complicating infections

Timely treatment of Ebola is important, but challenging since the disease is difficult to diagnose clinically in the early stages of infection. Because early symptoms such as headache and fever are nonspecific to Ebola, cases of Ebola may be initially misdiagnosed. However, if a person has the early symptoms of Ebola and there is reason to believe that Ebola should be considered (such as recent travel to an outbreak area), the patient should be isolated and public health professionals notified. Supportive therapy should continue under appropriate infection control precautions, until samples from the patient are tested to confirm infection. With the right treatment, a patient with a confirmed infection of Ebola may recover; however, it remains unknown precisely why a patient recovers.²

According to the WHO, in the particular circumstances of this outbreak, and provided certain conditions are met, a consultation panel reached consensus that it is ethical to offer unproven interventions with as yet unknown efficacy and adverse effects, as potential treatment or prevention.³

Hazard Assessment

Risk to the US
The risk of wide spread Ebola transmission in the U.S. remains low⁴ even though two (2) imported cases, including one (1) death, and two (2) locally acquired cases in healthcare workers have been reported in the United States. The CDC has protocols in place to protect against further spread of disease including notification to CDC of ill passengers on a plane before arrival, investigation of ill travelers, and, if necessary, isolation. CDC has also provided guidance to airlines for managing ill passengers and crew and for disinfecting aircraft. CDC has issued a Health Alert Notice reminding U.S. healthcare workers of the importance of taking steps to prevent the spread of this virus, how to test and isolate suspected patients and how they can protect themselves from infection.

In addition to standard infection control guidance from the CDC, airlines have received guidance regarding Ebola for airline crews, cleaning personnel, and cargo personnel. The guidance includes the following⁵:

- Stopping ill travelers from boarding aircraft
- Management of ill people on aircraft if Ebola is suspected
- Reporting ill travelers

⁴ Based upon the assessment of CDC and WHO.
Risk to San Francisco Bay Area

It is unlikely that a case of Ebola virus will appear in the San Francisco Bay Area; however, if a suspect case should occur, there are systems in place to ensure a quick response from local public health departments and the medical community to maintain public safety. The San Francisco Department of Emergency Management (SF DEM) has produced a Concept of Operations document to inform and delineate the responsibilities of City Departments, hospitals, and response agencies to address a suspected or confirmed case of Ebola.

Hospitals have been instructed to isolate any individual with suspected Ebola virus to prevent the spread of the virus to health care workers, patients and the public. Hospital staffs throughout San Francisco are required to be trained on infection control protocols related to patients with suspected communicable diseases. For Ebola, these include gloves, impermeable gowns, face masks and eye protection. These protective measures are very effective in preventing the spread of infection.

Emergency Medical Services (EMS) and first responders such as fire and police department personnel should be aware of the signs and symptoms of Ebola especially when recent travel to the West African countries of Guinea, Sierra Leone, and Liberia is reported. All providers should utilize personal protective equipment and follow the local disease reporting guidelines.

Response

International

On 8 August 2014, WHO declared the Ebola virus disease outbreak in West Africa a Public Health Emergency of International Concern (PHEIC) in accordance with the International Health Regulations (2005). In order to support the global efforts to contain the spread of the disease and provide a coordinated international response for the travel and tourism sector, the heads of WHO, the International Civil Aviation Organization (ICAO), the World Tourism Organization (UNWTO), Airports Council International (ACI), International Air Transport Association (IATA) and the World Travel and Tourism Council (WTTC) decided to activate a Travel and Transport Task Force which will monitor the situation and provide timely information to the travel and tourism sector as well as to travelers.

WHO is undertaking extensive investigations to determine the cause of infection in each case. Early indications are that a substantial proportion of infections occurred outside the context of Ebola treatment and care. Infection prevention and control quality assurance checks are now underway at every Ebola treatment unit in the three intense-transmission countries. At the same time, exhaustive efforts are ongoing to ensure an ample supply of optimal personal protective equipment to all Ebola treatment facilities, along with the provision of training and relevant guidelines to ensure that all HCWs are exposed to the minimum possible level of risk.

Federal

The Centers for Disease Control and Prevention (CDC), along with other U.S. government agencies, the World Health Organization (WHO), and international partners, is taking active steps to respond to the rapidly changing situation in West Africa. Two imported cases, including one death, and two locally acquired cases in healthcare workers have been reported in the United States. CDC and partners are taking precautions to prevent the spread of Ebola within the United States in addition to its activities abroad.

- CDC activated its Emergency Operations Center (EOC) to help coordinate technical assistance and disease control activities with partners.
• Hundreds of CDC staff members have provided logistics, staffing, communication, analytics, management, and other support functions for the response. CDC staff are deployed to the region to assist with response efforts, including surveillance, contact tracing, data management, laboratory testing, and health education.

• CDC experts have been deployed to non-affected border countries, including Cote d'Ivoire, to conduct assessments of Ebola preparedness in those countries.

• CDC issued a Warning, Level 3 notice for U.S. citizens to avoid nonessential travel to the West African nations of Guinea, Liberia, and Sierra Leone.

• CDC has developed a Travel Health Alert Notice (T-HAN) that is handed out by Customs and Border Protection to people arriving in the United States from a country with Ebola.

• The T-HAN reminds travelers to monitor for symptoms for 21 days after arriving in the United States. It also advises people to call their doctor if they were exposed during their time in a country with an Ebola outbreak.

• The T-HAN provides advice to the travelers' doctor about information and guidance related to Ebola infection control, prevention, and diagnosis.

• CDC and Customs and Border Protection (CBP) are conducting enhanced entry screening at five U.S. airports (New York's JFK International, Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta airport) for all U.S.-bound air travelers who have been in Liberia, Sierra Leone, or Guinea.

• A post-arrival active monitoring program began on October 27 in the six states (New York, Pennsylvania, Maryland, Virginia, New Jersey, and Georgia) where approximately 70% of incoming travelers are located. Active post-arrival monitoring included the rest of the states in the days following.

• CDC is working with airlines to address crew and airline staff concerns while ensuring the ability of humanitarian and public health organizations to transport assistance into the affected countries.

• CDC is also working with airlines, airports, and ministries of health to provide technical assistance for developing exit screening and travel restrictions in the affected areas.

• CDC is working closely with Customs and Border Protection (CBP) and other partners at ports of entry (primarily international airports) to use routine processes to identify travelers who show signs of infectious disease. If a sick traveler is identified during or after a flight, CDC will conduct an investigation of exposed travelers and work with the airline, federal partners, and state and local health departments to notify them and take any necessary public health action.

• CDC is working to prepare U.S. healthcare facilities about how to safely manage a patient with suspected Ebola virus disease. U.S. healthcare workers can find updated infection control guidance on the Information for Health Care Workers page. CDC communicates with healthcare workers on an ongoing basis through Health Alert Network (HAN), Clinician Outreach and Communication Activity (COCA), and a variety of existing tools and mechanisms.

• CDC is working with partners to display Ebola-specific travel messages for electronic monitors and posters at ports of entry to reach travelers from West Africa.6

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State of California

While there continue to be no reported or confirmed cases of Ebola in California, the State Health Officer and California Department of Public Health (CDPH) took action to help prevent any potential spread of the disease in the state by issuing a quarantine order and associated guidelines that require counties to individually assess persons at risk for Ebola and tailor an appropriate level of quarantine as needed. This flexible, case-by-case approach will ensure that local health officers throughout the state prevent spread of the disease, while ensuring that individuals at risk for Ebola are treated fairly and consistently7.

San Francisco

San Francisco Department of Public Health (SFDPH) is carefully monitoring developments with the current outbreak of Ebola virus in West Africa. Ebola poses little risk to the San Francisco general population at this time.

SFDPH has been in frequent, regular communication with local hospitals to share information and guidance concerning Ebola. Communications have gone out to promote awareness around the current situation in affected countries, to provide guidance from the Centers for Disease Control and Prevention and the California Department of Health and to share local guidance and recommendations. SFDPH has protocols in place for any type of outbreak that raises public health concerns. This includes working in close coordination with local health care providers and the California Department of Public Health.

The health care community regularly communicates with SFDPH on reportable diseases. If Ebola were suspected here, it would be reported to the state immediately. Disease reporting to SFDPH includes 24 hour coverage by a Medical Doctor8.

A Concept of Operations has been developed to outline initial actions and response to a suspected or confirmed case of Ebola in San Francisco. The goal of this document is to provide a foundation and guidance for a coordinated response among all City and County of San Francisco agencies as one unified strategy when a there is a report of a low risk, potential risk, or a suspected/confirmed (Appendix C) case of Ebola present in the city. Individual departments will follow their tactical plans and protocols.

If a public health event arises from an Ebola transmission in San Francisco, SFDPH will be the lead response agency. SFDEM will activate the EOC to assist with the coordination among response agencies and the State of California.

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7 Text of the Quarantine Order can be found at http://www.cdph.ca.gov/Pages/NR14-089.aspx
8 SFDPH has updated a local EVD information page at http://www.sfcdcp.org/ebola.html
Outlook

Controlling the Ebola outbreak in West Africa will take time. The WHO and CDC are coordinating efforts to maximize resources and expedite response to the outbreak. No timetable has been set for a resolution. Though a spread of the disease is likely, preparedness efforts should continue to help prevent it.

While the risk to the Bay Area is limited, the City of San Francisco is prepared to respond to a public health event. If a public health event arises from an Ebola transmission in San Francisco, SFDPH will be the lead response agency. If necessary, SFDEM will activate the EOC to assist with the coordination among response agencies and the State of California.

A response to a public health event may be guided by the following City of San Francisco plans:

- [Ebola Virus Concept of Operations](#)
- [San Francisco Emergency Response Plan](#)
- [SFDPH Emergency Operations Plan](#)
- [Care and Shelter Plan](#)
- [Continuity of Operations Plan (COOP)](#)
Appendix A

2014 Ebola Outbreak in West Africa - Outbreak Distribution Map*9

*November 4, 2014

Appendix B

Disease Update*

*As of 4 November 2014

- There have been 13,567 reported Ebola cases in eight affected countries since the outbreak began, with 4,951 reported deaths.
- Intense transmission continues in Guinea, Liberia and Sierra Leone.
- All 83 contacts of the health-care worker infected in Spain have completed the 21-day follow-up period.

The total number of cases is subject to change due to ongoing reclassification, retrospective investigation, and availability of laboratory results. Data reported in the Disease Outbreak News are based on official information reported by Ministries of Health.¹⁰

¹⁰ The WHO provides an update as needed. (World Health Organization 2014)  
http://apps.who.int/iris/bitstream/10665/137424/1/roadmapsitrep_31Oct2014_eng.pdf?ua=1
**Appendix C**

**Case Definition for Ebola Virus Disease (EVD)**

**Person Under Investigation (PUI):**

A person who has both consistent signs or symptoms and risk factors as follows:

1. Elevated body temperature or subjective fever or symptoms, including severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage; **AND**
2. An epidemiologic risk factor within the 21 days before the onset of symptoms.

**Confirmed Case:**

“Laboratory-confirmed diagnostic evidence of Ebola virus infection.”

Early recognition is critical to controlling the spread of Ebola virus. Healthcare providers should evaluate the patient’s epidemiologic risk, including a history of travel to a country with widespread Ebola virus transmission or contact within the preceding 21 days with a person with Ebola while the person was symptomatic.

If a diagnosis of Ebola is being considered, the patient should be isolated in a single room (with a private bathroom), and healthcare personnel should follow standard, contact, and droplet precautions, including the use of appropriate personal protective equipment (PPE). Infection control personnel should be contacted immediately.

If Ebola is suspected, the local or state health department should be immediately contacted for consultation and to assess whether or not testing is indicated and the need for initiating identification of contacts.

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11 Taken from CDC Ebola Virus Case definitions at http://www.cdc.gov/vhf/ebola/hcp/case-definition.html
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http://apps.who.int/iris/bitstream/10665/137424/1/roadmapsitrep_31Oct2014_eng.pdf?ua=1  
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