

KEY MESSAGES – EBOLA VIRUS DISEASE, WEST AFRICA

Updated October 8, 2015

\*Newly updated information is indicated in **bold/blue**

The Centers for Disease Control and Prevention (CDC) is working with other U.S. government agencies, the World Health Organization (WHO), and other domestic and international partners in an international response to the current Ebola outbreak in West Africa. This document summarizes key messages about the outbreak and the response. It will be updated as new information becomes available and will be distributed regularly. Please share this document with others as appropriate.

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**OUTBREAK SUMMARY**

- On August 8, 2014, the World Health Organization (WHO) declared the Ebola outbreak a Public Health Emergency of International Concern.
- The 2014 Ebola epidemic is the largest in history, with widespread transmission in multiple countries in West Africa.
  - Most of the cases have been reported in three countries: Guinea, Liberia, and Sierra Leone.

- **Ebola case incidence has remained below 10 cases per week since the end of July 2015. Since then, transmission of the virus has been geographically confined to several small areas in western Guinea and Sierra Leone.**
- On May 9, 2015, WHO declared the end of the Ebola outbreak in Liberia. On June 29, 2015, a confirmed case of Ebola was reported in a person who had died in Liberia. Five people who had contact with the person who died of Ebola were confirmed to have Ebola; one died.
  - On September 3, 2015, WHO declared Liberia free of Ebola virus transmission after 42 days (two incubation periods) had passed since the last Ebola patient tested negative.
- There is currently no Ebola virus transmission in Nigeria, Senegal, Spain, the United States, Mali, the United Kingdom, and Italy, where previous cases were reported.
- CDC's Morbidity and Mortality Weekly Report (MMWR) continues to release reports on the Ebola epidemic. The MMWR Ebola Reports are available at [http://www.cdc.gov/mmwr/ebola\\_reports.html](http://www.cdc.gov/mmwr/ebola_reports.html).
- CDC's response to the Ebola epidemic is the agency's largest outbreak response ever.
  - CDC is partnering with the U.S. Agency for International Development (USAID) in support of the United States' overseas response to the Ebola outbreak. Together with the Department of Defense (DoD), Department of State, and other U.S. departments and agencies, CDC is part of a whole-of-government approach to this national security priority.
  - In the United States, the Department of Health and Human Services (HHS), including CDC, is leading the strategic effort to fortify the U.S. public health and treatment infrastructure. The National Institutes of Health (NIH) and the Food and Drug Administration (FDA) are leading the effort to develop and test vaccines and new treatments.
- On September 16, 2014 President Obama announced additional U.S. government support for the response in West Africa, including significant U.S. military funding and engagement. This is the largest-ever U.S. government response to a global health crisis.
  - On December 16, 2014, President Obama signed into law an appropriations act that allocates \$5.4 billion in emergency funding to support the U.S. government's response to the Ebola outbreak in West Africa. The funding is split between HHS, DoD, Department of State, and USAID.

## EBOLA AND THE UNITED STATES

- Two imported Ebola cases, including one death, and two locally acquired cases in healthcare workers were reported in the United States in 2014.
  - On September 30, 2014, CDC confirmed the first case of Ebola to be diagnosed in the United States in a person who had traveled from Liberia to Dallas, Texas. The patient died on October 8, 2014.
  - On October 10, 2014, a healthcare worker who provided care for the index patient tested positive for Ebola. The patient was discharged from the NIH Clinical Center on October 24, 2014.
  - On October 15, 2014, a second healthcare worker who provided care for the index patient tested positive for Ebola. The patient was discharged from Emory Hospital on October 28, 2014.
  - On October 23, 2014, the New York City Department of Health and Mental Hygiene reported a case of Ebola in a medical aid worker who had returned to New York City from Guinea. The patient was discharged from Bellevue Hospital Center on November 11, 2014.
- Although the risk of rapid spread of Ebola in the United States is very low, CDC and partners are taking precautions to isolate **any persons under investigation (PUIs) for Ebola** and prevent the spread of the disease.
  - CDC has issued a Warning, Level 3 travel notice for Guinea and Sierra Leone. U.S. residents should avoid all nonessential travel to these countries.

- CDC has downgraded Liberia's travel notice to a Watch, Level 1 and no longer recommends U.S. residents practice enhanced precautions when traveling to Liberia.
  - Although there is believed to be no risk of Ebola to travelers, travelers should, as usual, avoid contact with sick people, dead bodies, or blood and body fluids.
- Every day, CDC works closely with partners at U.S. international airports and other ports of entry to look for sick travelers with possible contagious diseases.
- CDC has enhanced its outreach with the Department of Homeland Security (DHS) and other partners at ports of entry (primarily international airports) to use routine procedures for identifying and reporting travelers who show signs of infectious disease.
- CDC and DHS are conducting enhanced entry screening at five U.S. airports (New York's JFK International, Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta) for all U.S.-bound air travelers who have been in Guinea or Sierra Leone.
  - Entry screening helps to prevent further spread of Ebola and protect the health of all Americans by identifying travelers who may be sick with Ebola or may have had an exposure to Ebola and by ensuring that these travelers are directed to appropriate care.
  - On September 21, 2015, enhanced entry screening was discontinued for travelers arriving in the United States from Liberia. These travelers are no longer being funneled through one of the U.S. airports that are conducting enhanced entry screening. Travelers will still undergo exit screening before leaving Liberia.
- CDC provides interim guidance for monitoring people potentially exposed to Ebola and for evaluating their intended travel, including the application of movement restrictions when indicated.
  - The guidance can be found at [www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html](http://www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html).
- CDC encourages all U.S. healthcare providers to:
  - **Assess patients for**
    - **International travel and specifically having been in Guinea or Sierra Leone within the last 21 days; or**
    - **Contact with someone with Ebola within the last 21 days; and**
    - **Fever at home or current temperature of  $\geq 100.4^{\circ}\text{F}$  ( $\geq 38^{\circ}\text{C}$ )**
    - **Severe headache, fatigue, muscle pain, weakness, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising)**
  - **Immediately separate the patient and inform others if there is both exposure and symptoms.**
- Ebola virus is not spread through air or by water, or by any food grown or legally purchased in the United States.
  - There is a small chance that Ebola could be spread by handling or eating bushmeat (wild animals hunted for food) that has been illegally imported from Africa. However, to date, there have been no reports of human illness in the United States from preparing or consuming illegally imported bushmeat.

## EBOLA PATIENTS TRANSPORTED TO THE UNITED STATES

- During this outbreak, six health workers and one journalist have been infected with Ebola in West Africa and transported to hospitals in the United States.
  - One of the health workers passed away on November 17, 2014, after being transported from Sierra Leone to the Nebraska Medical Center.
- CDC has received many calls from health departments and hospitals about PUIs for Ebola. These calls have been triaged appropriately and samples have been sent to CDC for testing.

## EBOLA CASES AND DEATHS

- **As of October 4, 2015, a total of 28,457 (suspected, probable, and confirmed) cases of Ebola (15,239 laboratory-confirmed) and 11,312 deaths have been reported.**
- Case counts are updated in conjunction with WHO and are based on information reported by the ministries of health.
- Cases are reported by country of diagnosis and updated as confirmatory testing is completed.
- For specific areas where cases have been identified, see CDC's [Ebola outbreak webpage](http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html) (<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html>).

### Countries with Widespread Transmission

Country	Total Cases (suspected, probable, and confirmed)	Laboratory-Confirmed Cases	Total Deaths
Guinea	3,804	3,344	2,534
Sierra Leone	13,945	8,704	3,955
Total	17,749	12,048	6,489

### Countries with Former Widespread Transmission and Current, Established Control Measures<sup>1</sup>

Country	Total Cases (suspected, probable, and confirmed)	Laboratory-Confirmed Cases	Total Deaths
Liberia <sup>2</sup> (as of May 9)	10,666	3,151	4,806
Liberia <sup>3</sup> (after June 28)	6	6	2
Total	10,672	3,157	4,808

### Previously Affected Countries<sup>4</sup>

Country	Total Cases (suspected, probable, and confirmed)	Laboratory-Confirmed Cases	Total Deaths
Nigeria	20	19	8
Senegal	1	1	0
Spain	1	1	0
United States	4	4	1
Mali	8	7	6
United Kingdom	1	1	0
Italy	1	1	0
Total	36	34	15

<sup>1</sup> This category also includes countries that have experienced widespread transmission but are transitioning to being declared free of Ebola virus transmission. The World Health Organization (WHO) is responsible for determining when a country will be declared free of Ebola virus transmission. Public health authorities in these countries should maintain active surveillance for new cases of Ebola and identify, locate and monitor any potential contacts.

<sup>2</sup> WHO declared the end of the Ebola outbreak in Liberia on May 9, 2015, after 42 days (two incubation periods) had passed since the last Ebola patient was buried.

<sup>3</sup> On June 29, 2015, a confirmed case of Ebola was reported in a person who had died in Liberia. Five people who had contact with the person who died of Ebola were confirmed to have Ebola; one died. On September 3, 2015, WHO declared Liberia free of Ebola virus transmission after 42 days (two incubation periods) had passed since the last Ebola patient tested negative.

<sup>4</sup>There are currently no cases of Ebola in Senegal, Nigeria, Spain, the United States, Mali, the United Kingdom, and Italy. A country is considered to be free of Ebola virus transmission when 42 days (double the 21-day incubation period of Ebola virus) has elapsed since the last confirmed patient tested laboratory negative for Ebola.

## BACKGROUND ON EBOLA

- Ebola virus disease, previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus species.
- There are five identified Ebola virus species, four of which are known to cause disease in humans: Ebola virus (*Zaire ebolavirus*); Sudan virus (*Sudan ebolavirus*), Taï Forest virus (*Taï Forest ebolavirus*, formerly *Côte d'Ivoire ebolavirus*); and Bundibugyo virus (*Bundibugyo ebolavirus*). The fifth, Reston virus (*Reston ebolavirus*), has caused disease in nonhuman primates, but not in humans.
- Ebola viruses are found in several African countries. The first Ebola virus was discovered in 1976 near the Ebola River in what is now the Democratic Republic of the Congo. Since then, outbreaks have appeared sporadically in Africa.
- Based on evidence and the nature of other similar viruses, researchers believe that Ebola is animal-borne (zoonotic) and that bats are the most likely reservoir.
- CDC and partners have 38 years of experience in stopping Ebola outbreaks.
- In 2007, CDC applied for a patent based on the identification of a new Ebola virus isolated from a patient in Bundibugyo, Uganda. The virus is now called Bundibugyo virus (species *Bundibugyo ebolavirus*), but in some literature is also called EboBun. That patent application is still in process. One major reason that the government may patent a biological substance such as EboBun is so that it can grant rights to use the virus strain for the commercialization of diagnostics, vaccines, and antibody/antigen testing, and make them more quickly and readily available to patients, doctors and research scientists. Another reason for patenting is to ensure that another entity does not acquire a patent in a similar space and restrict the beneficial uses of the invention.

## TRANSMISSION

- Ebola virus is spread through direct contact with
  - The body fluids of a person who is sick with or has died from Ebola
  - Objects (like needles and syringes) that have been contaminated with body fluids (like blood, feces, vomit) from a person sick with Ebola or the body of a person who died from Ebola
  - Infected fruit bats or nonhuman primates (apes and monkeys)
  - And, possibly from contact with semen from a man who has recovered from Ebola (for example, by having oral, vaginal, or anal sex)
- The virus in blood and body fluids can enter another person's body through broken skin or unprotected mucous membranes in, for example, the eyes, nose, or mouth.
- There is no evidence that Ebola can spread
  - From person to person *before* symptoms start
  - Through the air
  - Through coughing or sneezing; but as a precaution, people should avoid contact with respiratory droplets (splashes or sprays) of people with Ebola
- Ebola virus has been found in the semen of some men who have recovered from Ebola. It is possible that Ebola could be transmitted through sex or other contact with semen.
  - It is not known how long Ebola might be found in the semen of male Ebola survivors.
  - The time it takes for Ebola to leave the semen is different for each man. For some men who survived Ebola, the virus left their semen in three months. For other men, the virus did not leave

- their semen for more than nine months. Based on the results from limited studies conducted to date, it appears that the amount of virus decreases over time and eventually leaves the semen.
- Until more information is known, avoid contact with semen from a man who has had Ebola.
    - Avoiding sex (abstinence) can reduce your exposure to semen.
    - Using male or female condoms, from start to finish, during any type of sexual activity (vaginal, anal, oral, or manual), can reduce your exposure to semen and help protect against sexually transmitted infections.
    - It is not known if Ebola can be spread through sex or other contact with vaginal fluids from a woman who has had Ebola.
    - CDC and other public health partners are continuing to study Ebola transmission and will share what is known as it becomes available.
  - **Scientists do not know if Ebola can be spread through sex or other contact with vaginal fluids from women who had Ebola, including women who were pregnant when they had Ebola.**
    - **When a pregnant woman gets sick with Ebola, her baby gets sick with Ebola too. Ebola has been found in newborn babies, amniotic fluids, and placentas from mothers infected with Ebola during their pregnancy.**
    - **Healthcare providers and birth attendants can get Ebola during prenatal, labor, or delivery care of a pregnant woman who is sick with Ebola**
      - **It is possible that healthcare providers and birth attendants can get Ebola during prenatal, labor, or delivery care of a woman who survived Ebola during pregnancy and recovered from Ebola before her child was born.**
    - **There is no evidence that women who become pregnant after recovering from Ebola can spread Ebola to others.**
  - Scientists know the Ebola virus can stay in breast milk even after recovery from Ebola. Scientists continue to study whether and for how long Ebola can be transmitted through breastfeeding. Until more is known, a mother who survives Ebola should not breastfeed her baby if safe alternatives exist. However, in resource-limited settings where safe alternatives do not exist, breastfeeding may be the only option for providing the nutrition the baby needs.
  - Ebola is **not** spread through the air or by water or, in general, by food. However, in Africa, Ebola may be spread as a result of handling bushmeat (wild animals hunted for food) and contact with infected bats.
  - There is no evidence that mosquitoes or other insects can transmit Ebola virus. Only mammals (for example, humans, monkeys, and apes) have shown the ability to become infected with and spread Ebola virus.
  - People with Ebola symptoms become more infectious as their symptoms worsen. This is partly because exposure to the virus is more likely when someone is bleeding or vomiting, but also because the amount of virus present in the body increases dramatically as a person with Ebola becomes more seriously ill.
  - Ebola virus particles on dry surfaces, such as doorknobs and countertops, can survive for several hours. However, Ebola virus on a surface wet with blood or body fluids (such as vomit) may survive longer – up to several days at room temperature, according to one laboratory study. Ebola virus can be killed with disinfectants, and the Environmental Protection Agency (EPA) has a list of such products that can be used in healthcare settings, institutional settings (schools, office buildings), and residential settings (<http://www.epa.gov/oppad001/list-l-ebola-virus.html>).
  - While available information suggests the virus may be found in several kinds of animals, it is not believed that pets (like dogs and cats) are at significant risk for Ebola.
  - The incubation period, from exposure to when signs or symptoms appear, is 2 to 21 days, but the average is 8 to 10 days.
  - Genetic analysis of the virus in the current outbreak indicates it is closely related to variants of Ebola virus (species *Zaire ebolavirus*) identified earlier in the Democratic Republic of the Congo and Gabon.

## SIGNS AND SYMPTOMS

- Signs of Ebola include fever and symptoms such as severe headache, fatigue (feeling very tired), muscle pain, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising).

## DIAGNOSIS

- Early symptoms of Ebola, such as fever, are often seen in more common infectious diseases, such as malaria and typhoid fever.
- Ebola virus is detected in blood only after symptoms begin, most notably fever.
- It may require up to 72 hours after symptoms start for the virus to reach detectable levels.

## RISK

- Health workers caring for Ebola patients and family and friends in close contact with Ebola patients are at the highest risk of getting sick because they may come in contact with blood or body fluids; for example, by changing sheets after an ill person has vomited. Human-to-human transmission is the way that most people are now getting Ebola in West Africa.
- People also can become sick with Ebola after coming in contact with infected wildlife. For example, in Africa, Ebola may be spread as a result of handling bushmeat (wild animals hunted for food) and contact with infected bats.
- It is also possible that Ebola could be spread through sex or other contact with semen from men who have survived Ebola. It is not known if Ebola can be spread through sex or other contact with vaginal fluids from a woman who has had Ebola.
- **There is no evidence that pregnant women are more likely to get Ebola than the general population. Pregnant women with no exposure to or history of Ebola are not considered at risk for Ebola.**
  - **Women infected with Ebola during pregnancy are at risk for severe illness, pregnancy loss, pregnancy-related bleeding, having a stillborn infant, and death.**
    - **Babies born to mothers who had Ebola during pregnancy have not lived longer than 19 days.**
- Ebola poses little risk to travelers or the general public who have not cared for or been in close contact (within 3 feet or 1 meter) with someone sick with Ebola for a prolonged period.

## PREVENTION

- There is no FDA-approved vaccine available for Ebola.
  - Experimental vaccines for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.
  - Several investigational vaccines for prevention of Ebola virus infection are in development and are currently being evaluated in Phase I and II trials.
  - On February 2, 2015, NIH began a large clinical trial in Liberia to assess the safety and efficacy of two investigational vaccines to prevent Ebola.
  - The College of Medicine and Allied Health Sciences, University of Sierra Leone (COMAHS), the Sierra Leone Ministry of Health and Sanitation (MOHS), and CDC are working together on a candidate Ebola vaccine trial in Sierra Leone, which launched in April 2015.
    - This study, called the Sierra Leone Trial to Introduce a Vaccine against Ebola (STRIVE), is designed to assess the safety and efficacy of a candidate Ebola vaccine (rVSV-ZEBOV) among health and other frontline workers.
- If you must travel to or are in an area affected by the Ebola outbreak, make sure to do the following:



- Practice careful hygiene. For example, wash your hands with soap and water or an alcohol-based hand sanitizer
- Avoid contact with blood and body fluids (such as urine, feces, saliva, sweat, urine, vomit, breast milk, semen, and vaginal fluids).
- Do not handle items that may have come in contact with an infected person's blood or body fluids. Such items include clothes, bedding, needles, and medical equipment.
- Avoid contact with dead bodies, including participating in funeral and burial rituals that require handling the body of someone who has died from Ebola.
- Avoid contact with bats and nonhuman primates (apes and monkeys) or blood, fluids, and raw meat prepared from these animals.
- Do not eat or handle bushmeat (wild animals hunted for food).
- Avoid contact with semen from a man who has had Ebola until you know Ebola is gone from his semen.
  - The only way to know if Ebola is gone from the semen is through semen testing. There are efforts to make semen testing available to male Ebola survivors.
  - Avoiding sex (abstinence) can reduce your exposure to semen.
  - Using male or female condoms, from start to finish, during any type of sexual activity (vaginal, anal, oral, or manual), can reduce your exposure to semen and help protect against sexually transmitted infections.
  - Until Ebola is gone from the semen, the Ebola survivor should be the only one to remove the condom and throw it away. After touching used condoms, wash your hands with soap and water for 40–60 seconds, or use an alcohol-based hand rub for 20–30 seconds. If hands are visibly soiled, use soap and water.
- Avoid facilities in West Africa where Ebola patients are being treated. The U.S. Embassy or consulate is often able to provide advice on healthcare facilities that are suitable for your medical needs.
- Report any potential unprotected Ebola exposure or illness promptly.
- Seek medical care immediately if you develop fever (100.4°F / 38°C or above), fatigue, severe headache, muscle pain, diarrhea, vomiting, stomach pain, or unexplained bruising or bleeding.
  - Limit your contact with other people when you travel to the doctor. Do not travel anywhere else.

## TREATMENT

- No FDA-approved, specific treatment (e.g., antiviral drug) is available for Ebola.
- Symptoms of Ebola and complications are treated as they appear. The following basic interventions, when used early, can significantly improve the chances of survival:
  - Providing intravenous fluids and balancing electrolytes (body salts)
  - Maintaining oxygen status and blood pressure
  - Treating other infections if they occur
- Experimental treatments for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.
  - Several investigational drugs as well as plasma from recovered Ebola patients have been used to treat patients with Ebola during the current outbreak, but no controlled clinical trials have been completed to date.
- Two companies, Tekmira and BioCryst Pharmaceuticals, have received funding from the DoD to develop potential drugs to treat Ebola. BioCryst, with NIH support, is working to develop an antiviral drug to treat Ebola; the first phase of (human) safety testing began in December 2014.

## RECOVERY

- Recovery from Ebola depends on good supportive clinical care and the patient's immune response.
- Available evidence shows that people who recover from Ebola develop antibodies that last for at least 10 years, and possibly longer. It isn't known if people who recover are immune for life or if they can become infected with a different species of Ebola.
- Some people who have recovered from Ebola have developed long-term complications, such as joint and muscle pain and vision problems.
- Even after recovery, Ebola might be found in some body fluids, including semen.
  - The time it takes for Ebola to leave the semen is different for each man. For some men who survived Ebola, the virus left their semen in three months. For other men, the virus did not leave their semen for more than nine months. Based on the results from limited studies conducted to date, it appears that the amount of virus decreases over time and eventually leaves the semen.
- **Scientists do not know if surviving Ebola can affect a woman's ability to get pregnant or have children in the future.**

## CDC RECOMMENDATIONS AND GUIDANCE

- CDC has developed guidance and recommendations for hospitals, laboratories, healthcare workers, travelers, and other groups to prevent the spread of Ebola. As new guidance and recommendations are developed, they are posted on CDC's Ebola website ([www.cdc.gov/ebola](http://www.cdc.gov/ebola)).
- When the science provides us with new information, CDC develops and shares better ways of doing things that can help protect more people and save more lives. Until the Ebola outbreak began in West Africa, there had been fewer than 3,000 cases of Ebola in the world over almost four decades. Since March 2014, there have been more than 10 times that many cases in West Africa, and we have experienced the first cases of Ebola ever diagnosed in the United States. As we continue to learn new information about Ebola, CDC scientists may continue to revise guidance to protect people and save lives.

## HEALTHCARE WORKERS IN WEST AFRICA

- Healthcare workers who may be exposed to people with Ebola should follow these steps:
  - Put on, wear, and remove appropriate personal protective equipment (PPE) in accordance with established procedures.
  - Practice proper infection control and sterilization measures. For more information, see CDC's webpage about Non-U.S. Healthcare Settings (<http://www.cdc.gov/vhf/ebola/hcp/non-us-healthcare-settings.html>).
  - Develop a triage system so Ebola patients can be identified and cared for properly.
  - Isolate patients with Ebola from other patients.
  - Avoid direct, unprotected contact with the bodies of people who have died from Ebola.
  - Notify health officials if you have had direct contact with the blood or body fluids, such as but not limited to, feces, saliva, urine, vomit, sweat, semen, and vaginal fluids, of a person who is sick with Ebola. The virus can enter the body through broken skin or unprotected mucous membranes in, for example, the eyes, nose, or mouth.
  - If visiting West Africa to work in a healthcare setting, consider bringing appropriate PPE since in-country supplies might be limited.
- CDC provides healthcare workers with answers to questions about infection prevention and control in general healthcare settings in countries with widespread Ebola transmission. See the full Q&A at <http://www.cdc.gov/vhf/ebola/hcp/qa-infection-control-general-healthcare-widespread-ebola-transmission.html>.

- As part of a comprehensive and coordinated response to the 2014 Ebola epidemic in West Africa, CDC provided a 3-day experiential training course for more than 600 healthcare workers (nurses, physicians and other healthcare providers) intending to work in an Ebola treatment unit (ETU) in Africa. The Preparing Healthcare Workers to Work in Ebola Treatment Units (ETUs) In Africa course was held at the U.S. Federal Emergency Management Agency Center for Domestic Preparedness in Anniston, Alabama.
  - The course is now complete, but organizations that would like to replicate the training can access the full training toolkit here: <http://www.cdc.gov/vhf/ebola/hcp/safety-training-course/training-toolkit.html>

## HEALTHCARE PROVIDERS IN THE UNITED STATES

- CDC is working to ensure that every healthcare worker, regardless of the setting in which they practice, is receiving information about Ebola in a manner that raises their level of awareness. Information for healthcare providers in the United States can be found here: <http://www.cdc.gov/vhf/ebola/healthcare-us/index.html>.
- CDC encourages all U.S. healthcare providers to
  - **Assess patients for**
    - **International travel and specifically having been in Guinea or Sierra Leone within the last 21 days; or**
    - **Contact with someone with Ebola within the last 21 days; and**
    - **Fever at home or current temperature of  $\geq 100.4^{\circ}\text{F}$  ( $\geq 38^{\circ}\text{C}$ )**
    - **Severe headache, fatigue, muscle pain, weakness, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising)**
  - Know what to do if they have a patient who is confirmed to have Ebola or is a person under investigation (PUI) for Ebola:
    - Properly isolate the patient.
    - Follow infection control precautions to prevent the spread of Ebola. Avoid contact with blood and body fluids of infected people.
    - If the patient is a PUI or confirmed to have Ebola and is clinically unstable or has bleeding, vomiting, or diarrhea, healthcare workers should follow the PPE guidance found here: <http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html>.
    - If the patient is a PUI who is clinically stable and does not have vomiting, bleeding, or diarrhea, healthcare workers should follow the PPE guidance found here: <http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html>.
- PPE Training Videos
  - CDC and partners released an interactive web-based training for putting on and removing PPE to be used during the management of patients with Ebola in U.S. hospitals. In the training, healthcare workers can choose which combination of PPE they would like to see demonstrated in the video. The training is posted at <http://www.cdc.gov/vhf/ebola/hcp/ppe-training/index.html>.
  - Additionally, in partnership with Medscape, CDC released a concise training video that offers a step-by-step demonstration on how to put on and take off PPE properly. View the demonstration at <http://www.medscape.com/viewarticle/833907>.
- CDC posted a Medscape Expert Commentary for healthcare providers whose patients are travelers with concerns about Ebola and will be posting additional commentaries on CDC's guidance.
  - The video is available on the CDC website at <http://wwwnc.cdc.gov/travel/page/clinician-updates>
- CDC has released nine Health Alert Network (HAN) notices providing guidance to U.S. healthcare workers and hospitals regarding Ebola since July 28, 2014. HANs can be found at <http://emergency.cdc.gov/han/dir.asp>.

## INFECTION CONTROL

- CDC provides guidance on infection control in U.S. hospitals, “Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in U.S. Hospitals” ([www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html](http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html)).
- CDC recently clarified the October 2014 PPE guidance for healthcare workers caring for patients with Ebola to be less permissive and more prescriptive by emphasizing (1) a singular, standardized PPE approach for Ebola patient care, training, and competency in PPE use, and (2) the presence of a trained observer to alert healthcare providers to possible contamination during care, including ensuring safe PPE removal. Clarified guidance can be found at the following:
  - Guidance on PPE for Confirmed Ebola Patients or Clinically Unstable PUIs (<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>)
  - Guidance on PPE for Clinically Stable PUIs (<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html>)
  - Both guidance documents outline specific PPE healthcare workers should use and offers detailed, step-by-step instructions for how to put the equipment on and take it off safely.
  - Frequently Asked Questions were also added when the PPE guidance was clarified in August 2015 (<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/faq.html>).
- Early recognition
  - Early recognition is critical for infection control.
  - Any patient who is suspected of having Ebola needs to be isolated until the diagnosis is confirmed or Ebola is ruled out.
  - Healthcare workers should consider travel history, symptoms, and risks of exposure before recommending testing for Ebola. CDC has provided guidance for specimen collection, transport, testing, and submission for persons under investigation for Ebola in the United States (<http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html>).
- Environmental infection control
  - Information on cleaning and decontamination of Ebola in different settings can be found at <http://www.cdc.gov/vhf/ebola/prevention/cleaning-and-decontamination.html>.
  - Daily cleaning and disinfection of hard, non-porous surfaces should be done using a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus. Check EPA’s Disinfectants for Use Against the Ebola Virus (<http://www.epa.gov/oppad001/list-l-ebola-virus.html>).
  - Healthcare providers performing environmental cleaning and disinfection should wear recommended PPE (described above).
  - For detailed information on environmental infection control, see CDC’s “Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus” ([www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html](http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html)).
  - Ebola virus is a Category A infectious substance regulated by the U.S. Department of Transportation’s (DOT) Hazardous materials Regulations (HMR, 49 C.F.R., Parts 171-180). Any item transported for disposal that is contaminated or suspected of being contaminated with a Category A infectious substance must be packaged and transported in accordance with the HMR. This includes medical equipment, sharps, linens, and used health care products (such as soiled absorbent pads or dressings, kidney-shaped emesis pans, portable toilets, used PPE [e.g., gowns, masks, gloves, goggles, face shields, respirators, booties] or byproducts of cleaning) contaminated or suspected of being contaminated with a Category A infectious substance.
    - For more details, see Department of Transportation Guidance for Transporting Ebola Contaminated Items, a Category A Infectious Substance

## EMERGENCY DEPARTMENTS

- To improve the margin of safety of all healthcare workers in a hospital setting, CDC developed emergency department guidance for first-contact care of a potential patient with Ebola. The guidance can be found at <http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html>.
  - The guidance in this document reflects lessons learned from the recent experiences of U.S. hospitals caring for Ebola patients.
  - CDC and the [Johns Hopkins Armstrong Institute for Patient Safety and Quality](#) collaborated with numerous professional organizations to develop an Ebola Preparedness Training for emergency department personnel. The training package consists of four video modules that supplement CDC's recommended three-step strategy — [identify, isolate and inform](#) — for managing possible Ebola patients (<http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/emergency-department-training.html>).
- CDC reminds all healthcare workers that everyone coming into an emergency department can carry bloodborne pathogens, so it is always important to adhere to standard infection control precautions for all patient care.
- Healthcare workers providing first-contact care for all patients (e.g., screening and triage in ambulatory and emergency department settings) should:
  - “Think Ebola” – always consider the possibility of an early infectious patient
  - Evaluate the patient – focusing on travel and exposure history
  - Consult with public health – for awareness of any related activity in the region
  - “Care Carefully” – avoiding unnecessary procedures and adhering to infection control and hygiene practices at all times
  - Please refer to CDC “Guidance on Personal Protective Equipment to Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing)” for further instructions on correct donning and doffing of PPE selected by the facility (<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>).

## LABOR AND DELIVERY CARE

- **There is no evidence that pregnant women are more likely to get Ebola than the general population. Pregnant women with no exposure to or history of Ebola are not considered at risk for Ebola.**
- **Women infected with Ebola during pregnancy are at risk for severe illness, pregnancy loss, pregnancy-related bleeding, having a stillborn infant, and death.**
  - **Babies born to mothers who had Ebola during pregnancy have not lived longer than 19 days.**
- **Healthcare providers and birth attendants can get Ebola during prenatal, labor, or delivery care of a pregnant woman who is sick with Ebola. A pregnant woman who is sick with Ebola should deliver her baby in an ETU or a hospital with a dedicated Ebola treatment center. (U.S. guidance: <http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/pregnant-women.html>)**
- **It is possible that healthcare providers and birth attendants can get Ebola during prenatal, labor, or delivery care of a woman who survived Ebola during pregnancy and recovered from Ebola before her child was born. A woman who survived Ebola while pregnant should be encouraged to deliver her baby in an ETU or a hospital with a dedicated Ebola treatment center.**
- **Follow recommended infection prevention and control procedures when providing prenatal, labor, or delivery care for a pregnant woman who is sick with Ebola or a woman who survived Ebola**

while pregnant. (U.S. guidance: <http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/pregnant-women.html>)

- **Scientists do not know if surviving Ebola can affect a woman's ability to get pregnant or have children in the future.**
- **There is no evidence that women who become pregnant after recovering from Ebola can spread Ebola to others.**

#### AMBULATORY CARE PROVIDERS

- CDC released an algorithm for providers in ambulatory care settings (such as solo or group medical practices, outpatient clinics, ambulatory centers) to use when evaluating patients with possible Ebola. The algorithm aims to standardize triage and evaluation processes as follows:
  - Identify patients with possible Ebola
  - Isolate the patients immediately, and
  - Inform the relevant health department.
- See the Ambulatory Care Algorithm at <http://www.cdc.gov/vhf/ebola/pdf/ambulatory-care-evaluation-of-patients-with-possible-ebola.pdf>.

#### DECONTAMINATING U.S. RESIDENCES AND REMOVING CONTAMINATED WASTE

- CDC released interim guidance for public health, state/local authorities, and contract companies on the decontamination of Ebola virus in U.S. residences and removal of Ebola-contaminated waste (<http://www.cdc.gov/vhf/ebola/hcp/residential-decontamination.html>).
  - Public health, state, and/or local authorities should contact a professional waste management company to clean and disinfect a residence if someone living there was confirmed to have Ebola AND experienced diarrhea, vomiting, and/or unexplained bleeding.
  - Members of the residence should not touch or handle contaminated materials and surfaces, and avoid contaminated rooms and areas until after the completion of the assessment and decontamination.
  - The waste management contract company is responsible for selecting and providing PPE to protect their workers from exposure to Ebola and to chemical hazards from the cleaning and disinfectant agents, and training employees on how to safely put on and take off PPE.
  - Waste management contractors hired to clean and disinfect Ebola-contaminated residences should follow all state and federal regulations related to decontaminating non-healthcare settings, blood borne pathogens, hazard communication, transporting hazardous waste, occupational safety, and others.

#### TRAVELERS

- CDC provides Ebola information and advice for travelers at <http://www.cdc.gov/vhf/ebola/travelers/index.html>.
- CDC provides up-to-date country-specific travel information on CDC's Travel Notices page: <http://wwwnc.cdc.gov/travel/notices>.
  - CDC has issued a Warning, Level 3 travel notice for two countries. U.S. citizens should avoid all nonessential travel to Guinea and Sierra Leone.
  - CDC has downgraded Liberia's travel notice to a Watch, Level 1. CDC no longer recommends U.S. residents practice enhanced precautions when traveling to Liberia.
    - Although there is believed to be no risk of Ebola to travelers, travelers should, as usual, avoid contact with sick people, dead bodies, or blood and body fluids.

- If traveling to any of these countries, make sure to:
  - Visit CDC's Travelers' Health website ([wwwnc.cdc.gov/travel](http://wwwnc.cdc.gov/travel)) for more information about the outbreak and for other health recommendations specific to these countries.
  - Follow recommendations for preventing Ebola.
- Travelers leaving Guinea, Liberia, or Sierra Leone are being screened at airports before departure. Based on the screening, authorities will decide if and when travelers can continue their trip.
  - If travelers have symptoms of Ebola or have had a high risk of exposure, they will not be allowed to travel on commercial flights to the United States and potentially to other countries.
  - If travelers have symptoms of Ebola, they will not be able to travel until their symptoms go away, unless they are being medically evacuated to receive needed care.
  - If they have had a high risk of exposure to Ebola but are not sick, they will either have to arrange a charter flight home or stay in the country until 21 days after their last exposure and authorities ensure it is safe for them to travel.
- All air travelers entering the United States who have been in Guinea or Sierra Leone are being routed through five U.S. airports (New York's JFK International, Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta) for entry screening.
  - Entry screening helps to prevent further spread of Ebola and protect the health of all Americans by identifying travelers who may be sick with Ebola or may have had an exposure to Ebola and by ensuring that these travelers are directed to appropriate care.
  - These inbound travelers receive Check and Report Ebola (CARE) Kits that contain further information about Ebola. This kit includes information about Ebola, tools to help travelers check their temperature and symptoms each day for 21 days, and information about who to call if they have symptoms. See <http://www.cdc.gov/vhf/ebola/travelers/care-kit.html>.
  - CDC recommends that travelers entering the United States from Guinea and Sierra Leone be actively monitored by state or local health departments. Additional public health actions may be recommended depending on travelers' possible exposures to Ebola while in one of these countries, based on CDC's "Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure" (<http://www.cdc.gov/vhf/ebola/exposure/monitoring-and-movement-of-persons-with-exposure.html>).
    - The purpose of active monitoring is to ensure that a person's health is closely followed by public health authorities so that, if symptoms develop, action can be taken immediately to isolate the person from others and arrange for medical evaluation.
    - CDC is providing assistance, support, and tools to state and local health departments for post-arrival monitoring as needed. Since both state and local health departments will conduct the monitoring, the responsibility will be shared.
  - On September 21, 2015, enhanced entry screening was discontinued for travelers coming to the United States from Liberia. These travelers are no longer being routed through one of the U.S. airports that are conducting enhanced entry screening. CDC recommends that these travelers watch their health for fever or other symptoms of Ebola for 21 days after they leave Liberia. They should contact their health department or seek health care if symptoms develop during this time.
  - CDC believes that screening outbound passengers in West Africa is one of the most highly effective measures for preventing the spread of Ebola.

## MONITORING AND MOVEMENT OF PEOPLE WITH EBOLA

- CDC issued interim guidance to provide public health authorities and other partners with a framework for evaluating people's level of exposure to Ebola and initiating appropriate public health actions on the basis of exposure level and clinical assessment.

- The full text of CDC's updated Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure is available at [www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html](http://www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html).
- These recommendations were issued to reduce the risk of Ebola spreading to others and to ensure that people infected with Ebola are able to quickly access appropriate medical care.
- This interim guidance has been updated by establishing a "low (but not zero) risk" category; adding a "no identifiable risk" category; modifying the recommended public health actions in the high, some, and low (but not zero) risk categories; and adding recommendations for specific groups and settings.
- A Q&A (<http://www.cdc.gov/vhf/ebola/exposure/qas-monitoring-and-movement-guidance.html>) about the guidance is available on CDC's website.

## SCHOOLS AND INTERNATIONAL TRAVEL FOR EDUCATION PURPOSES

- CDC issued recommendations for students, faculty, and staff participating in study abroad programs, research, foreign exchange, or other international travel for education purposes. These recommendations provide information on how this type of travel might be affected by the Ebola outbreak in West Africa and how these groups can protect themselves from Ebola.
  - The full text of the guidance is available at [wwwnc.cdc.gov/travel/page/recommendations-international-travel-for-education-purposes-ebola-outbreak-west-africa](http://wwwnc.cdc.gov/travel/page/recommendations-international-travel-for-education-purposes-ebola-outbreak-west-africa).
  - CDC advises that people avoid nonessential travel, including for education purposes, to Guinea and Sierra Leone. If anyone travels to Guinea, Sierra Leone, or Liberia, they should:
    - Visit CDC's travel health notices ([wwwnc.cdc.gov/travel/notices](http://wwwnc.cdc.gov/travel/notices)) page and destination-specific pages ([wwwnc.cdc.gov/travel/destinations/list](http://wwwnc.cdc.gov/travel/destinations/list)) for up-to-date health information about their destination.
    - Be aware of public health actions such as exit screening, entry screening, and symptom monitoring that may apply if they visit one of these countries.
- There is currently no increased risk of Ebola exposure in other countries in the West African region where Ebola cases have not been reported.
- CDC advises that students, faculty, and staff care for their emotional wellbeing before, during, and after working or studying in countries that have an Ebola outbreak.
  - Learn about Ebola and prepare for differences in culture and environment.
  - Find out about psychological support polices and services.
  - Pay attention to stress levels and practice techniques to reduce or manage stress.
  - Take time to rest and relax.
  - Seek counseling when needed.
- CDC, UNICEF, and WHO have developed key messages to help West African ministries of health and education reopen schools closed because of the Ebola outbreak (<http://www.cdc.gov/vhf/ebola/pdf/ebola-safe-school-messages2015.pdf>).
- CDC and the U.S. Department of Education developed guidance, "Addressing Ebola Virus Infection Concerns in K-12 Schools: Interim Guidance for District and School Administrators" (<http://www.cdc.gov/vhf/ebola/children/k-12-school-guidance.html>). This guidance is intended to help address concerns about the risk of Ebola in K-12 schools, and to recommend actions that schools can take if needed to prevent transmission of Ebola in K-12 schools. This guidance encourages educators to prevent discrimination, and counter stigma, harassment, and bullying related to perception of Ebola risk.
  - See Resources for Parents, Schools, and Pediatric Healthcare Professionals at <http://www.cdc.gov/vhf/ebola/children/index.html> for more information.

## HUMANITARIAN AID WORKERS



- Humanitarian aid workers play a very important role in the Ebola outbreak response to control the spread of Ebola at its source.
- CDC developed recommendations to prepare humanitarian aid workers to safely work in countries with Ebola outbreaks.
  - The full guidance can be found at <http://wwwnc.cdc.gov/travel/page/humanitarian-workers-ebola>.
- The recommendations include steps to take before traveling, during travel, when leaving West Africa, and upon return to the United States.

## HUMANITARIAN AID ORGANIZATIONS

- Healthcare workers and organizations are encouraged to give consideration to the emotional wellbeing of employees and volunteers before, during, and after travel to countries with Ebola outbreaks.
  - Staff should be prepared to manage stress during crisis situations and to face potential challenges upon their return.
  - Policies and services for psychological support should be in place at home and overseas.
  - Staff should have reasonable accommodations, work conditions, transportation, means of communication, and time for rest.
  - Staff should be given time off to recuperate and reconnect with family and friends upon their return.
  - Staff should be recognized for their achievements.
- CDC developed guidance for humanitarian aid organizations to protect the health and safety of employees or volunteers working in West African countries with Ebola outbreaks.
  - The full guidance can be found at <http://wwwnc.cdc.gov/travel/page/advice-humanitarian-aid-organizations-ebola>.

## VISITING FRIENDS AND RELATIVES

- CDC developed recommendations for people with friends and relatives in countries with cases of Ebola. The full guidance can be found at <http://wwwnc.cdc.gov/travel/page/advice-vfr-ebola>.
- CDC recommends joining a humanitarian aid organization if people want to help overseas. Humanitarian organizations can provide training and proper equipment to help volunteers stay safe during the response.
- If friends and relatives travel to Guinea, Liberia, or Sierra Leone, they should check CDC's website for the most current [travel notices and recommendations](#), and be prepared for [special screening requirements](#).
- Traveling to West Africa is not the only way to make a difference. Friends and relatives can also help loved ones in West Africa in many meaningful ways from the United States. One of the most important ways is sharing accurate information with families and loved ones about how to avoid getting sick and what to do if they do become sick.

## BUSINESSES, EMPLOYERS, AND BUSINESS TRAVELERS

- CDC offers information to help businesses protect their employees from potential Ebola exposure when they travel to or work in countries with Ebola outbreaks, and after they return to the United States.
  - The full guidance is available at [www.cdc.gov/vhf/ebola/business/index.html](http://www.cdc.gov/vhf/ebola/business/index.html).

## AIRLINE FLIGHT CREWS, CLEANING PERSONNEL, CARGO PERSONNEL, AND CRUISE SHIP MEDICAL STAFF

- CDC and WHO do not recommend stopping travel from countries with Ebola outbreaks. The key to controlling this epidemic is to focus on stopping the spread at its source, and international humanitarian assistance must continue.
- CDC encourages airlines to continue flights to and from the region to facilitate transport of teams and supplies essential to control the outbreak.
  - CDC provides informational materials for airports in the United States and in countries with Ebola outbreaks at <http://www.cdc.gov/vhf/ebola/airports/index.html>.
  - CDC's Interim Guidance about Ebola Virus Infection for Airline Flight Crews, Cleaning Personnel, and Cargo Personnel, including a webcast called "Ebola: What Airline Crew and Staff Need to Know," is posted at [www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html](http://www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html).
- CDC's Interim Guidance for Cargo Ships provides guidance for monitoring potentially exposed crew and suspected cases of Ebola. This guidance is available at <http://www.cdc.gov/vhf/ebola/maritime/cargo.html>.
- CDC's Interim Guidance for Cruise Ships provides guidance to help cruise ship medical staff prevent, evaluate, and manage suspected shipboard Ebola cases: [www.cdc.gov/vhf/ebola/maritime/cruise-ships.html](http://www.cdc.gov/vhf/ebola/maritime/cruise-ships.html).

## LABORATORIES

- CDC recommends that U.S. healthcare workers contact their state and/or local health department and CDC to determine the proper category for shipment of clinical specimens based on clinical history and risk assessment by CDC. No specimens should be shipped to CDC without consultation with CDC and local/state health departments.
  - State guidelines may differ and state or local health departments should be consulted before shipping clinical specimens. Ebola virus is classified as a Category A infectious substance and regulated by the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR, 49 C.F.R., Parts 171-180). Specimens from people diagnosed with Ebola or those with a presumptive diagnosis of Ebola should be shipped Category A and the paperwork should designate "suspect Category A infectious substance." All other specimens should be shipped Category B.
- Ebola virus is detected in blood only after onset of symptoms, most notably fever, which accompany the rise in circulating virus within the patient's body.
  - It may take up to 72 hours after symptoms start for the virus to reach detectable levels by real-time RT-PCR.
  - Circulating virus levels are highest between 3 and 10 days after symptoms start, but virus has been detected for several months after patients' recovery in certain secretions (e.g., semen).
  - Specimens ideally should be taken when a symptomatic patient seeks care and is suspected of having been exposed to Ebola; however, if symptom onset occurred less than 3 days before the patient seeks care, a subsequent specimen will be required to completely rule out Ebola.
- CDC has released guidance for clinical laboratories on the management and evaluation of routine clinical specimens for differential testing and diagnoses other than Ebola. This guidance is available at <http://www.cdc.gov/vhf/ebola/healthcare-us/laboratories/safe-specimen-management.html>.
- CDC has guidance for U.S. laboratory workers on the steps for collecting, transporting, and submitting specimens from patients under investigation for Ebola. This guidance is available at [www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html](http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html).
  - In addition to the guidance, CDC supports labs in the United States by conducting site visits to evaluate laboratory capacity, leveraging existing lab capacity through the Laboratory Response

Network, and providing technical and logistical support and 24/7 hotline for clinical laboratory consultation.

## SEX PARTNERS

- Even after recovery, Ebola might be found in some body fluids, including semen.
- It is not known how long Ebola might be found in the semen of male Ebola survivors.
  - The time it takes for Ebola to leave the semen is different for each man. For some men who survived Ebola, the virus left their semen in three months. For other men, the virus did not leave their semen for more than nine months. Based on the results from limited studies conducted to date, it appears that virus decreases over time and eventually leaves the semen.
- It is possible that Ebola could be spread through sex or other contact with semen from men who have had Ebola.
  - Sexual activity includes vaginal (penis in vagina), oral (penis in mouth), anal (penis in anus/butt), or manual (hand on penis) sex.
- Avoid contact with the semen from a man who has had Ebola until you know Ebola is gone from his semen.
  - The only way to know if Ebola is gone from the semen is through semen testing. There are efforts to make semen testing available to male Ebola survivors.
  - Avoiding sex (abstinence) can reduce your exposure to semen.
  - Using male or female condoms, from start to finish, during any type of sexual activity (vaginal, anal, oral, or manual), can reduce your exposure to semen and help protect against sexually transmitted infections.
  - Until Ebola is gone from the semen, the Ebola survivor should be the only one to remove the condom and throw it away. After touching used condoms, wash your hands with soap and water for 40–60 seconds, or use an alcohol-based hand rub for 20–30 seconds. If hands are visibly soiled, use soap and water.
  - If you develop any symptoms of Ebola within 21 days after having contact with semen from a man who has had Ebola, seek clinical help immediately.
- It is not known if Ebola can be spread through sex or other contact with vaginal fluids from a woman who has had Ebola.
  - Using male or female condoms, from start to finish, during any type of sexual activity (vaginal, anal, oral, or manual), can help protect against sexually transmitted infections.
  - If you develop any symptoms of Ebola within 21 days after having contact with vaginal fluids from a woman who has had Ebola, seek clinical help.

## WHAT CDC IS DOING

- CDC activated its Emergency Operations Center (EOC) on July 9, 2014, to help coordinate technical assistance and control activities with partners.
  - On August 5, 2014, CDC elevated the EOC to a Level 1 activation, its highest level, because of the significance of the outbreak.

## INTERNATIONAL ACTIVITIES

- CDC supported countries with widespread Ebola transmission in establishing their own national and sub-national EOCs. All three West African countries at the center of the epidemic now have an Incident Manager, reporting to the President of the country, to lead response efforts.

- Thousands of CDC staff members have provided logistics, staffing, communication, analytics, management, and other support functions for the response. **As of October 8, 2015, there have been 1,898 deployments to Guinea, Liberia, and Sierra Leone, and 3,047 deployments overall (domestic and international) to support the response.**
  - CDC staff are deployed to Guinea, Liberia, and Sierra Leone to assist with response efforts, including surveillance, contact tracing, data management, laboratory testing, and health education.
  - CDC experts have also been deployed to non-affected border countries in West Africa to conduct assessments of Ebola preparedness in those countries.
    - These countries include Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Gambia, Ghana, Mali, Mauritania, Nigeria, Senegal, and Togo.
  - CDC staff are assisting with setting up an emergency response structure, contact tracing, providing advice on exit screening and infection control at major airports, and providing training and education in countries with widespread Ebola virus transmission.
- **CDC deploys health promotion teams to Guinea, Liberia, and Sierra Leone to advance science-based message development, public health campaign design and implementation, and social mobilization to increase knowledge and encourage behavior change. They work in partnership with U.S. embassies, ministries of health, international partners such as UNICEF and WHO, as well as international and national nongovernment organizations to support health communication capacity building and delivery of public health messages and behavior change interventions.**

**Health promotion teams:**

  - **Develop and support implementation of multi-channel health communication and education, such as Liberia's "Ebola Must GO" and Sierra Leone's "Ebola Big Idea of the Week" campaigns, aimed at unifying public messaging to improve decision making about behaviors that will forestall Ebola transmission in West Africa.**
  - **Create and distribute communication materials to support social mobilization and community awareness throughout West Africa. Materials are culturally appropriate—for example, using illustrations to tell a story—and audience-specific, such as health education and training materials for community health educators, healthcare workers, and community radio announcers.**
  - **Meet with leaders and decision-makers at all levels of national and traditional governments to provide expert counsel on effective risk communication and public health communication methods that support consistent information aimed at stopping the spread of Ebola.**
  - **Partner with telecommunications companies in countries with outbreaks to distribute Ebola-related health information via radio and TV programs, public service announcements, and text (SMS) and interactive voice response (IVR) messages.**
  - **Assist in training and preparing responses for national emergency call centers.**
  - **Conduct or support Knowledge, Attitudes, and Practices (KAP) surveys, behavioral case investigations, and rapid ethnographic assessments to obtain current understanding of community beliefs and behaviors.**
  - **Apply formative research to tailor message and other communication or behavioral intervention strategies.**
  - **Support assessments, trainings, partnerships and strategic planning to build health and risk communication, behavior change, and social mobilization capacity in-country.**
- CDC is working closely with USAID, Office of Foreign Disaster Assistance (OFDA), to support the deployment to Liberia of a Disaster Assistance Response Team (DART), which is coordinating the U.S. government's Ebola response in West Africa.

- 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 countries with widespread Ebola transmission.
- CDC is also working with airlines, airports, ministries of health, and other partners in West Africa to provide technical assistance for conducting exit screening and travel restriction in countries with Ebola. Exit screening efforts in West Africa help identify travelers who may have symptoms consistent with Ebola or who have been exposed to Ebola, to prevent them from leaving a country until it is confirmed that they are not sick with Ebola and are therefore not at risk of spreading Ebola. CDC's technical assistance in this area includes:
  - Assessing the capacity of countries and airports to conduct exit screening
  - Assisting with development of exit screening protocols
  - Training staff on exit screening protocols and appropriate PPE use
  - For more information on exit and entry screening of travelers, see the infographic "Preventing Ebola by Screening Travelers," <http://www.cdc.gov/vhf/ebola/pdf/screening-travelers.pdf>.
- CDC supports laboratories in countries affected by Ebola by providing training, testing equipment, and supplies; overseeing transition of laboratories to ministries of health; and supporting under-resourced areas.

## DOMESTIC ACTIVITIES

- In response to the four cases of Ebola in the United States, teams from CDC were deployed to Dallas, Ohio, and New York to assist with investigations, supported 24/7 by CDC's Emergency Operations Center and Ebola experts at CDC's Atlanta headquarters.
  - The teams worked closely with state and local health departments in finding, assessing, and assisting everyone who came into contact with the Ebola patients.
- Every day, CDC works closely with partners at U.S. international airports and other ports of entry to look for sick travelers with possible contagious diseases.
- CDC has developed and posted Ebola-specific travel messages for electronic monitors to reach travelers from West Africa and posters for TSA screening areas of airports to reach outbound travelers. Visit [wwwnc.cdc.gov/travel/page/infographics-travelers](http://wwwnc.cdc.gov/travel/page/infographics-travelers) to see the messages.
- CDC assists officials in Guinea, Liberia, and Sierra Leone with exit screening before travelers leave those countries to help prevent the spread of Ebola. Entry screening is also in place in the United States in the unlikely event that a traveler develops symptoms in route. CDC assists the Department of Homeland Security (DHS) in screening these same travelers as they arrive in the United States.
- CDC and DHS are conducting enhanced entry screening at five U.S. airports (New York's JFK International, Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta) for all U.S.-bound air travelers who have been in Guinea or Sierra Leone. Entry screening helps prevent further spread of Ebola and protect the health of all Americans by identifying travelers who may be sick with Ebola or may have had an exposure to Ebola, and helps to ensure that these travelers are directed to appropriate care, if needed.
  - Travelers arriving from Guinea or Sierra Leone receive a Check and Report Ebola (CARE) Kit that contains tools to help these travelers do daily health checks for the next 21 days and report their health checks to their state or local health department. This includes travelers from Liberia who have also traveled to either Guinea or Sierra Leone within the previous 21 days.
  - CDC and WHO do not recommend stopping travel from countries with Ebola outbreaks. The key to controlling this outbreak is to focus on stopping the spread at its source, and international humanitarian assistance must continue.
  - On September 21, 2015, enhanced entry screening was discontinued for travelers coming to the United States from Liberia. These travelers are no longer being funneled through one of the U.S. airports that are conducting enhanced entry screening.

- Travelers departing Liberia will remain subject to outbound screening measures, and the United States will continue to support Liberia's Ebola prevention and detection measures, including at its primary international airport.
- CDC continues to update its communication products, and webpages with new information on the Ebola outbreak for the general public and specific audiences.
- CDC is using social media as a way to share credible, factual information and to dispel misconceptions about Ebola.

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## HEALTHCARE PREPAREDNESS

- CDC is actively working to educate U.S. healthcare workers on how to isolate patients and how to protect themselves from infection.
  - Resources for U.S. healthcare workers are available at <http://www.cdc.gov/vhf/ebola/hcp/index.html>.
- State and local public health officials, in collaboration with hospital officials and with technical assistance from CDC and the Office of the Assistant Secretary for Preparedness and Response (ASPR) at HHS, have worked to substantially increase capacity to treat Ebola patients. In the United States, acute care hospitals and other healthcare facilities can serve one of three roles: Frontline Healthcare Facility, which will identify patients with relevant exposure history and Ebola symptoms, isolate them, and inform the health department; Ebola Assessment Hospital, which will evaluate and care for a patient for up to 96 hours, initiate Ebola testing, and arrange for transport of the patient if Ebola is confirmed; and/or Ebola Treatment Center (ETC), which will care for and manage a patient throughout the disease process.
  - Ebola Treatment Centers
    - The United States has expanded its network of hospitals prepared to treat Ebola patients, increasing capacity from three facilities with just eight available beds to 55 ETCs in 17 states and Washington, D.C.
      - Because of this approach, more than 80% of travelers returning from West Africa are now within 200 miles of an ETC and could be transported via ambulance.
      - ETCs are staffed, equipped, and have current capability, training, and resources to provide the complex treatment necessary to care for a person with Ebola, while minimizing risk to healthcare workers and to the community.
      - CDC formed Rapid Ebola Preparedness (REP) teams that deployed to pre-identified facilities to work with local health officials and hospitals in assessing their readiness for caring for patients with Ebola.
        - REP teams were comprised of 4 to 10 CDC experts in infection control, occupational health, and laboratory issues, as well as external local experts.
        - State health officials and candidate hospitals determined the hospitals in their state or region where patients suspected of having Ebola will be transported.
        - During their visits, the REP teams identified areas that pose challenges and provided technical assistance and support to gain readiness in the areas identified.
        - 81 facilities in 22 jurisdictions have been visited by a CDC REP team.
      - CDC has helped hospitals get ready and will be on site, if needed, to further assist states and facilities if a patient with Ebola is confirmed.
  - Assessment Hospitals

- Assessment Hospitals have been and continue to be identified by state health officials as points of referral for individuals who have a travel history, potential exposure, and symptoms suggestive of Ebola.
  - These hospitals have the capability to evaluate and care for those individuals for up to 96 hours, initiate or coordinate Ebola testing and testing for alternative diagnoses, and either rule out Ebola or transfer the individual to an Ebola Treatment Center, as needed.
  - Staff at Assessment Hospitals should be trained on specimen collection and transport, waste management, Standard Precautions, and using PPE appropriately.
- Frontline Healthcare Facilities
  - Frontline Healthcare Facilities (e.g., acute care hospitals and other emergency care settings, including urgent care clinics and critical access hospitals) should be prepared to evaluate a person who has a travel history, potential exposure, and symptoms suggestive of Ebola.
  - All healthcare workers at Frontline Healthcare Facilities should be trained and able to recognize symptoms, safely isolate a potential Ebola patient, and contact public health authorities for guidance on next steps for safely managing the patient and protecting themselves.
  - Staff at Frontline Healthcare Facilities should be trained on specimen transport, waste management, Standard Precautions, and using PPE appropriately.
- CDC's Laboratory Response Network (LRN) has more than quadrupled its capacity to test for Ebola. In August 2014, 13 LRN labs were qualified to test for Ebola. **There are now 57 labs approved to test for Ebola in 44 states.**
- CDC has worked closely with state and local health authorities, as well as with domestic and global manufacturers, to ensure enough PPE is available for the Ebola response.

## TRAINING

- CDC is working with airlines, airports, and ministries of health in West Africa to train staff on exit screening protocols and appropriate PPE use.
- CDC is providing a just-in-time training for Customs and Border Protection (CBP), called a "muster," about Ebola. The muster describes the Ebola signs and symptoms, and how to notify CDC about travelers coming from Guinea, Liberia, and Sierra Leone who exhibit these symptoms.
- CDC has held numerous trainings in West Africa and plans to conduct more to help prepare health workers, volunteers, and others to control and prevent Ebola in countries with widespread Ebola transmission.
  - CDC is working with UNICEF and WHO on training programs for general community health worker volunteers throughout the region.
- CDC has developed an introductory training course for licensed clinicians intending to work in Ebola treatment units in West Africa, as well as for clinicians preparing for potential Ebola patients in U.S. healthcare settings. For more information on this training, go to <http://www.cdc.gov/vhf/ebola/hcp/safety-training-course/index.html>.
- CDC and the [Johns Hopkins Armstrong Institute for Patient Safety and Quality](#) collaborated with numerous professional organizations to develop an Ebola Preparedness Training for emergency department personnel. The training package consists of four video modules that supplement CDC's recommended three-step strategy — [identify, isolate and inform](#) — for managing possible Ebola patients (<http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/emergency-department-training.html>).

- CDC has posted web-based training for U.S. healthcare workers on new guidance for putting on and taking off PPE during management of patients with Ebola in U.S. hospitals (<http://www.cdc.gov/vhf/ebola/hcp/ppe-training/index.html>).
- In addition to in-person visits, CDC efforts to reach healthcare workers in the United States include:
  - Educating and answering questions from clinical partners. **CDC has conducted more than 160 webinars and conference calls with professional organization members, which reached more than 159,000 individuals since the start of the outbreak.**
  - Hosting live events to educate healthcare workers and others about infection control principles and demonstrate appropriate use of PPE.
    - Live, on-site trainings have reached more than 6,500 people at live events, and over 20,000 people from different countries attended via live webcast.
  - Collaborating with online clinical communities (e.g., Medscape) to provide education and tools directly to healthcare workers. Medscape has also streamed CDC live events. Through Medscape training alone, CDC's online healthcare training resource pages have been viewed by healthcare professionals 373,000 times.
  - Disseminating guidance through CDC's website and promoting it through CDC email distribution lists, plus additional partner outreach.
  - **Hosting PPE videos, which have been viewed a total of 509,407 times. Viewers have logged a total of 436,010 minutes (or 7,267 hours) watching the videos.**
  - Working with state and local health departments, public health partners, and professional organizations to improve and accelerate implementation of effective infection control measures for emergency departments and outpatient settings.

## CDC FOUNDATION

- Since August 2014, the CDC Foundation has assisted CDC in the response to the Ebola outbreak in West Africa by providing critical assistance and supplies through donations to the Foundation's Global Disaster Response Fund, which enables CDC staff to respond quickly to changing circumstances and needs.
- Over that time, CDC has identified a number of significant needs, such as equipment for airport screeners, development of emergency operations centers in the three most-affected countries, vehicles, medical supplies, technology for speeding the response, and more.
- To date, the CDC Foundation has received commitments and donations of more than **\$55 million** toward the Ebola response. Donations have been provided by individuals and organizations, such as Mark Zuckerberg and Dr. Priscilla Chan, The Paul G. Allen Family Foundation, the Robert Wood Johnson Foundation, the Bill & Melinda Gates Foundation, HCA, Taiwan, and others. In kind contributions of supplies or services have been provided by organizations such as Henry Schein and BD (Becton, Dickinson and Company).
  - Please refer all questions about donations to CDC Foundation media relations staff.
- During the response, the CDC Foundation and its donors have provided both materials and services to meet on-the-ground needs.
  - As examples, these range from computers, tablets, printers and Internet connectivity for use in the field by CDC and in-country staff, to PPE and no-touch, thermal scanning thermometers for use by airport screeners in West Africa. Funding has been provided for training in-country public health workers, trucks and motorcycles, and public health communications in the region.
- The CDC Foundation's board of directors acknowledged the tremendous needs presented by the Ebola epidemic and committed to absorbing 100 percent of the Foundation's administrative costs associated with the Global Disaster Response Fund so that every penny donated by others is used to support CDC's emergency mandate in West Africa.



- More information on CDC Foundation's Global Disaster Response Fund is available at <http://www.cdcfoundation.org/ebola-outbreak>.

## IN-COUNTRY MESSAGES

- The following messages are the basis of the Ebola Must Go campaign used in Liberia, and are suitable for use in West Africa.
  - Bury all dead bodies safely
    - Allow only trained people to handle a dead body.
    - Do not touch, bathe, or bury a dead person. Do not hide dead people.
    - Families can still pray and make decisions about the funeral – the only rule is never touch a dead body.
  - Keep sick people away from others
    - Do not touch sick people or things they have used.
    - Keep them in their own area and stay 4 steps away.
    - Get the person treatment quick – call [4455 Liberia; 117 Sierra Leone; 115 Guinea] and tell your community leader.
  - Speak out if you know of a sick person
    - Always call [4455 Liberia; 117 Sierra Leone; 115 Guinea] and tell your community leader.
    - Do not hide sick people.
    - Do not let others hide sick people.
  - Help find everyone who touches a sick person
    - Anyone who touched a sick person is a contact who could have Ebola.
    - Help health workers find these contacts.
    - If you touch a sick person, stay home and tell your community leader.
  - Contacts must stay to one area with food and water.
    - Anyone who touched a sick person must stay to their area for 21 days.
    - Make sure these contacts do not run away.
    - Give them food and water and encourage them – talk to your community leader.
- **When a pregnant woman gets sick with Ebola, her baby gets sick with Ebola too.**
- **If you are sick with Ebola and you are pregnant, protect your family and community by going to an Ebola treatment unit to have your baby.**
- Ebola Survivors
  - You cannot get the same type of Ebola for at least 10 years after you recover.
  - Ebola can stay in breast milk even after you feel better. If you have survived Ebola, it is best not to breastfeed IF you have other safe ways to feed your baby. But if there is no other way to feed your baby safely, breastfeeding will still provide the nutrition your baby needs.
  - Even after recovery, Ebola might be found in some body fluids, including semen. It is possible that Ebola could be spread through sex or other contact with semen from men who have had Ebola.
    - Avoid contact with the semen from a man who has had Ebola until you know Ebola is gone from his semen.
    - The only way to know if Ebola is gone from the semen is through semen testing. There are efforts to make semen testing available to male Ebola survivors.
    - Avoiding sex (abstinence) can reduce your exposure to semen.
    - Using male or female condoms, from start to finish, during any type of sexual activity (vaginal, anal, oral, or manual), can reduce your exposure to semen and help protect against sexually transmitted infections.
    - Never reuse condoms. Never use two condoms at the same time.

- **Even if you survived Ebola while you were pregnant, your baby could still have Ebola. Protect your family and community by going to an Ebola treatment unit to have your baby.**
- **Scientists do not know if women who survived Ebola might have trouble getting pregnant or having children in the future.**
- **If you get pregnant after you survive Ebola, you do not need to have your baby in an ETU.**

## STIGMA

West Africans, people who have traveled to West Africa, and healthcare workers may face stigma during the current Ebola outbreak.

- Stigma involves stereotyping and discriminating against an identifiable group of people, a place, or a nation.
  - Stigma can occur when people associate an infectious disease, such as Ebola, with a population, even though not everyone in that population or from that region is specifically at risk for the disease (for example, West Africans living in the United States).
- Communicators and public health officials can help counter stigma during the Ebola response.
  - Maintain privacy and confidentiality of those seeking healthcare and those who may be part of any contact investigation.
  - Communicate early the risk or lack of risk from associations with products, people, and places.
  - Raise awareness of the potential problem.
  - Share accurate information about how the virus spreads.
  - Explain that Ebola is caused by a virus, not a person.
  - Speak out against negative behaviors, including negative social media statements about groups of people, or exclusion of people who pose no risk from regular activities.
  - Be cautious about the images that are shared. Make sure they do not reinforce stereotypes.
  - Engage with stigmatized groups in person and through media channels, including news media and social media.
  - Share the need for social support for people who have returned from the region or are worried about friends or relatives in the affected region.
- People born in West Africa are not more at risk for Ebola than anyone else. Viruses cannot target a particular population.
- If someone recently traveled to West Africa, they do not put others at risk if they don't have symptoms of Ebola.
- Active monitoring does not mean a person is contagious. It means they are being watched for symptoms because they may have had some risk of exposure.
- Someone living with an individual who is being actively monitored is not at high risk of getting or spreading Ebola.
- It is safe to go to school or work with a family or household member of someone being actively monitored.

## FOR MORE INFORMATION ABOUT EBOLA

- CDC will continue to post new information about the Ebola outbreak on the following websites as it becomes available:
  - CDC Ebola site: [www.cdc.gov/ebola](http://www.cdc.gov/ebola)
  - CDC Travelers' Health site: <http://wwwnc.cdc.gov/travel/notices>

- World Health Organization (WHO) Ebola virus disease (EVD) site: [www.who.int/csr/disease/ebola/en/](http://www.who.int/csr/disease/ebola/en/)