

KEY MESSAGES – EBOLA VIRUS DISEASE, WEST AFRICA

Updated December 3, 2014

\*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, the World Health Organization (WHO) declared the current 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.
  - WHO officially declared Senegal and Nigeria free of Ebola virus transmission on October 17 and 20, respectively.
  - **Mali has reported 8 cases of Ebola and 6 deaths.**
- **On December 2, WHO officially declared the end of Ebola transmission in Spain.**
- Two imported cases, including one death, and two locally acquired cases in healthcare workers have been reported in the United States.
- On November 17, WHO declared the end of the Ebola outbreak in the Democratic Republic of the Congo. This outbreak was unrelated to the ongoing Ebola outbreak in West Africa.
- 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 international 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, 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, including CDC, is in charge of 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, President Obama announced additional U.S. government support for the response in West Africa, including significant U.S. military funding and engagement. The United States is actively engaged in fighting the Ebola outbreak, deploying approximately 2,800 U.S. government personnel to West Africa, making this the largest-ever U.S. government response to a global health crisis.

## EBOLA AND THE UNITED STATES

- On September 30, 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.
  - All contacts of the patient have completed the 21-day monitoring period.
- On October 10, a healthcare worker who provided care for the index patient at Texas Health Presbyterian Hospital tested positive for Ebola.
  - The healthcare worker was isolated after initial reports of fever and subsequently moved to the NIH Clinical Center in Bethesda, Maryland.
  - The patient has recovered and was discharged from the NIH Clinical Center on October 24.
- On October 15, a second healthcare worker who provided care for the index patient at Texas Health Presbyterian Hospital tested positive for Ebola.
- On October 23, 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 after serving with Doctors Without Borders. The diagnosis was confirmed by laboratory testing at CDC on October 24.
  - The patient has recovered and was discharged from Bellevue Hospital Center on November 11.
- Teams from CDC were deployed to Dallas, Ohio, and New York to assist with the 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.
- Although the risk of rapid spread of Ebola in the United States is very low, CDC and partners are taking precautions to isolate any cases of Ebola and prevent the spread of the disease.
  - CDC has issued a Warning, Level 3 (the highest level) travel notice for three countries where there is widespread Ebola transmission. U.S. citizens should avoid all nonessential travel to Guinea, Liberia, and Sierra Leone.
  - CDC has issued an Alert, Level 2 travel notice for travelers to Mali. U.S. citizens should practice enhanced precautions and be alert for reports of possible further spread of Ebola within the country.
    - See CDC's Travel Health Notice website for up-to-date information: <http://wwwnc.cdc.gov/travel/notices>.
  - CDC has been working with airlines, airports, ministries of health, and other partners to provide technical assistance for **conducting** exit screening in countries with widespread Ebola

- transmission. Exit screening efforts in West Africa help identify travelers who are sick with Ebola or who have been exposed to Ebola, in order 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.
- 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, Liberia, Sierra Leone, or Mali.
    - 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 include 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, Liberia, Sierra Leone, and Mali 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 the four 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 is closely followed by public health authorities so that, if symptoms develop, action can be taken immediately to separate 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 distributed across the country.
    - CDC believes that screening outbound passengers in West Africa is the most effective currently available measure in preventing the spread of Ebola.
  - 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 has tightened previous infection control guidance for healthcare workers caring for patients with Ebola. The revised guidance, issued October 20, focuses on specific personal protective equipment (PPE) that healthcare workers should use and offers detailed step-by-step instructions for how to put the equipment on and take it off safely.
    - The guidance can be found at <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>.
  - 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.

- CDC encourages all U.S. healthcare providers to do the following when patients present with Ebola-like symptoms:
  - Assess patients for
    - Elevated body temperature or subjective fever; or
    - Severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising).
  - Ask patients with Ebola-like symptoms about their travel histories to determine if they have lived in or traveled from West Africa, or had contact with an individual with confirmed Ebola, within the previous 21 days.
  - Contact the state or local health department if Ebola is suspected.

**EBOLA PATIENTS TRANSPORTED TO THE UNITED STATES**

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

**EBOLA CASES AND DEATHS**

- **As of November 30, 2014, a total of 17,145 cases of Ebola (10,740 laboratory-confirmed) and 6,070 deaths have been reported.**
- For specific areas where cases have been identified, see CDC's [Ebola outbreak webpage](http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html) (<http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>).

**Countries with Widespread Transmission**

Country	Total Cases	Laboratory-Confirmed Cases	Total Deaths
<b>Guinea</b>	<b>2164</b>	<b>1929</b>	<b>1327</b>
<b>Liberia</b>	<b>7635</b>	<b>2801</b>	<b>3145</b>
<b>Sierra Leone</b>	<b>7312</b>	<b>5978</b>	<b>1583</b>
<b>Total</b>	<b>17111</b>	<b>10708</b>	<b>6055</b>

**Countries with an Initial Case or Cases and/or Localized Transmission**

Country	Total Cases	Laboratory-Confirmed Cases	Total Deaths
<b>United States</b>	<b>4</b>	<b>4</b>	<b>1</b>
<b>Mali</b>	<b>8</b>	<b>7</b>	<b>6</b>
<b>Total</b>	<b>12</b>	<b>11</b>	<b>7</b>

**Previously Affected Countries**

Country	Total Cases	Laboratory-Confirmed	Total Deaths
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		Cases	
Nigeria**	20	19	8
Senegal	1	1	0
Spain	1	1	0
Total	22	21	8

\*\*The outbreaks of Ebola Virus Disease (EVD) in Senegal and Nigeria were declared over on 17 October and 19 October 2014, respectively. A national EVD outbreak is considered to be over when 42 days (double the 21-day incubation period of Ebola virus) has elapsed since the last patient in isolation became laboratory negative for EVD.

## 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 virus disease 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 blood or body fluids (including but not limited to feces, saliva, sweat, urine, vomit, and semen) of a person who is sick with Ebola. 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.
  - The virus also can be spread through contact with objects (like needles and syringes) that have been contaminated with the virus, or with infected fruit bats or primates (monkeys and apes).
  - 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 mosquitos or other insects can transmit Ebola virus. Only mammals (for example, humans, bats, monkeys and apes) have shown the ability to become infected with and spread Ebola virus.

- Although Ebola virus has been detected in breast milk, it is not known if the virus can be transmitted from mothers to their infants through breastfeeding. When safe alternatives to breastfeeding and infant care exist, mothers with probable or confirmed Ebola should not have close contact with their infants (including breastfeeding).
- Ebola is not easy to spread because people are only contagious when they have symptoms, and people with symptoms are likely to be too sick to travel or hide their symptoms.
- Once people recover from Ebola, they can no longer spread the virus to people in the community. Although Ebola virus has been detected in semen after patients have recovered, it is not known if the virus can be spread through sex (including oral sex). As a precaution, men who have recovered from Ebola are advised to abstain from sex (including oral sex) for three months. If abstinence is not possible, condoms may help prevent the spread of disease.
- 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. Only a few species of mammals (for example, humans, monkeys, and apes) have shown the ability to become infected with and spread Ebola virus.
- 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, muscle pain, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising).

## 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.
- 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.
- 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 and avoid contact with blood and body fluids (including but not limited to feces, saliva, sweat, urine, vomit, and semen).
  - Avoid handling 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 funeral or burial rituals that require handling the body of someone who has died from Ebola.
  - Avoid contact with bats and nonhuman primates or blood, fluids, and raw meat prepared from these animals.
  - 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.
  - 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 go to the doctor. Do not travel anywhere else.

## TREATMENT

- No FDA-approved vaccine or 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 vaccines and treatments 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 trials. In addition, Phase II trials are currently being planned in West Africa.
  - 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 conducted 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 is expected to begin later this year.

## 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 infection 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.

## 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 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 this 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 of 2014, there have been more than four 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 in order 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 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, and semen, 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 (Guinea, Liberia, and Sierra Leone). See the full Q&A at <http://www.cdc.gov/vhf/ebola/hcp/qa-infection-control-general-healthcare-widespread-ebola-transmission.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.
- CDC encourages all U.S. healthcare providers to
  - Assess patients for
    - Elevated body temperature or subjective fever; or
    - Severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal (stomach) pain, or unexplained hemorrhage (bleeding or bruising).

- Ask patients with Ebola-like symptoms about their travel histories to determine if they have lived in or traveled from West Africa, or had contact with an individual with confirmed Ebola, within the previous 21 days.
- Know what to do if they have a patient with Ebola symptoms:
  - First, properly isolate the patient.
  - Then, follow infection control precautions to prevent the spread of Ebola. Avoid contact with blood and body fluids of infected people.
- U.S. healthcare workers should follow CDC's "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)" at <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>.
- New PPE Training Videos
  - CDC and partners have released an interactive web-based training for putting on and removing personal protective equipment (PPE) to be used during the management of patients with Ebola virus disease 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 has posted a Medscape Expert Commentary for healthcare providers whose patients are travelers with concerns about Ebola and will be posting additional commentaries on the tightened CDC guidance.
  - The commentary includes information about the Ebola outbreak in West Africa, the transmission of Ebola virus, and how to talk to travelers about their risk.
  - The video is available on the CDC website at <http://wwwnc.cdc.gov/travel/page/clinician-updates>
- **CDC has released eight Health Alert Network (HAN) notices providing guidance to U.S. healthcare workers and hospitals regarding Ebola since August 1, 2014. The most recent HAN notice about Ebola was distributed on November 24 (<http://emergency.cdc.gov/han/han00372.asp>).**
- On October 31, CDC released an Ebola clinical slide set for clinicians to use for Grand Rounds and other clinical presentations. View "Ebola 101 – CDC Slides for U.S. Healthcare Workers" at <http://www.cdc.gov/vhf/ebola/ppt/ebola-101-cdc-slides-for-us-healthcare-workers.pptx>.

## INFECTION CONTROL

- CDC has tightened previous infection control guidance for healthcare workers caring for patients with Ebola to ensure there is no ambiguity.
  - "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)" (<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>)
  - The guidance outlines 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.
  - The enhanced guidance is centered on three principles:
    - No skin exposure when PPE is worn.
    - All healthcare workers undergo rigorous training and are practiced and competent with PPE, including putting it on and taking it off in a systematic manner.

- All workers are supervised by a trained monitor who watches each worker putting PPE on and taking it off.
  - If a patient is under investigation for Ebola, healthcare workers should activate the hospital preparedness plan for Ebola, isolate the patient in a separate room with a private bathroom or covered bedside commode, and ensure standardized protocols are in place for PPE use and disposal. Healthcare workers should not have any physical contact with the patient without first putting on appropriate PPE.
  - Recent experience from safely treating patients with Ebola at Emory University Hospital, Nebraska Medical Center and NIH Clinical Center is reflected in the enhanced guidance.
- 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>).
- Patient placement
  - Patients should be placed in a single patient room (containing a private bathroom or covered bedside commode) with the door closed.
  - Facilities should maintain a log of all people entering the patient's room.
  - Use only a mattress and pillow with waterproof plastic or other waterproof covering for patients with Ebola. Do not place patients with suspected or confirmed Ebola virus infection in carpeted rooms. Remove all upholstered furniture and decorative curtains from patient rooms before use.
- Protecting healthcare workers
  - Given the intensive and invasive care that U.S. hospitals provide for Ebola patients, the tightened guidelines are more directive in recommending no skin exposure when PPE is worn.
  - CDC is recommending all of the same PPE included in the August 1, 2014, guidance, with the addition of coveralls and single-use, disposable hoods. Goggles are no longer recommended as they may not provide complete skin coverage in comparison to a single-use, disposable full-face shield. Additionally, goggles are not disposable, may fog after extended use, and healthcare workers may be tempted to manipulate them with contaminated gloved hands. PPE recommended for U.S. healthcare workers caring for patients with Ebola includes:
    - Double gloves
    - Boot covers that are waterproof and go to at least mid-calf or leg covers
    - Single-use fluid resistant or impermeable gown that extends to at least mid-calf, or coverall without integrated hood
    - Respirators, including either N95 respirators or powered air purifying respirator (PAPR)
    - Single-use, full-face shield that is disposable
    - Surgical hoods to ensure complete coverage of the head and neck
    - Apron that is waterproof and covers the torso to the level of the mid-calf (and that covers the top of the boots or boot covers) should be used if Ebola patients have vomiting or diarrhea
  - The guidance describes different options for combining PPE to allow a facility to select PPE for their protocols based on availability, healthcare personnel familiarity, comfort and preference

while continuing to provide a standardized, high level of protection for healthcare personnel.

The guidance includes having:

- Two specific, recommended PPE options for facilities to choose from. Both options provide equivalent protection if worn, put on and removed correctly
  - Designated areas for putting on and taking off PPE. Facilities should ensure that space and layout allows for clear separation between clean and potentially contaminated areas
  - Trained observer to monitor PPE use and safe removal
  - Step-by-step PPE removal instructions that include:
    - Disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment
  - Disinfection of gloved hands using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE
- Five Pillars of Safety
  - CDC reminds all employers and healthcare workers that PPE is only one aspect of infection control and providing safe care to patients with Ebola. Other aspects include five pillars of safety:
    - Facility leadership has responsibility to provide resources and support for implementation of effective prevention precautions. Management should maintain a culture of worker safety in which appropriate PPE is available and correctly maintained, and workers are provided with appropriate training.
    - Designated onsite Ebola site manager responsible for oversight of implementing precautions for healthcare personnel and patient safety in the healthcare facility.
    - Clear, standardized procedures where facilities choose one of two options and have a back-up plan in case supplies are not available.
    - Trained healthcare personnel: facilities need to ensure all healthcare providers practice numerous times to make sure they understand how to appropriately use the equipment.
    - Oversight of practices are critical to ensuring that implementation protocols are done accurately, and any error in putting on or taking off PPE is identified in real-time, corrected and addressed, in case potential exposure occurred.
- Patient care equipment
  - Dedicated medical equipment (preferably disposable) should be used to provide patient care.
  - All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to the manufacturer's instructions and hospital policies.
- Considerations for care of confirmed Ebola patients
  - Limit the use of needles and other sharps as much as possible.
  - Phlebotomy, procedures, and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and medical care.
  - All needles and sharps should be handled with extreme care and disposed of in puncture-proof, sealed containers.
  - Avoid aerosol-generating procedures. If performing aerosol-generating procedures, use a combination of measures to reduce exposures from patients with Ebola virus disease. (See CDC's guidance for more details on how to perform aerosol generating procedures safely: [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).)
- 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](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)).
- Duration of precautions
  - The duration of precautions should be determined on a case-by-case basis, in conjunction with local, state, and federal health authorities.
    - Factors that should be considered include, but are not limited to: presence of symptoms related to Ebola, date symptoms resolved, other conditions that would require specific precautions (e.g., tuberculosis, *Clostridium difficile*) and available laboratory information.
- For more details on infection control in U.S. hospitals, see [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) and <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 (<http://www.phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=4d1800e36b978410VgnVCM100000d2c97898RCRD&vgnnextchannel=d248724dd7d6c010VgnVCM10000080e8a8c0RCRD&vgnnextfmt=print>)

## 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 released an algorithm for evaluating and managing patients with possible Ebola virus disease in emergency departments. The algorithm can be found at <http://www.cdc.gov/vhf/ebola/pdf/ed-algorithm-management-patients-possible-ebola.pdf>.
- CDC reminds all healthcare workers that everyone coming into an emergency department can carry blood borne 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
- Even if the patient will be transferred to a facility that is designated to provide ongoing care for patients with Ebola, all U.S. healthcare facilities must be prepared to perform initial evaluations correctly and safely to prevent transmission to healthcare providers and other patients.
- The greatest risk is during the care of hospitalized patients with highly symptomatic (e.g., with extensive, uncontrolled diarrhea or vomiting) Ebola virus disease and is the lowest in outpatient evaluation of minimally symptomatic (e.g., febrile) patients in settings such as doctors’ offices.
  - Healthcare facilities must provide and implement administrative and environmental controls (e.g. rules for who will assess such patients and how they will be followed up afterwards; and dedicated rooms or spaces that prevent the possibility of cross contamination of other patients or staff). These measures are important to prevent exposures and include on-site management and oversight on the safe use of PPE to ensure that personnel do not inadvertently self-contaminate during PPE removal.
- Currently, the vast majority of patients coming to emergency departments with complaints consistent with Ebola are likely to be early in the course of infection and not as highly infectious as someone with vomiting or uncontrolled diarrhea, e.g., like patients requiring intensive care support. If a patient with possible Ebola requires stabilization in the ED, healthcare personnel should exercise caution and adhere to infection control practices recommended for Ebola hospital patient care, especially since emesis and diarrhea are likely.
  - In such cases, the hospital’s Ebola plan should be activated and CDC guidance on infection control and PPE for hospitalized patients should be implemented.
  - While all EDs should be considering how best to implement these recommendations, those in cities with airports receiving travelers from affected regions (JFK (NY), Dulles (DC), Newark (NJ), O’Hare (IL), and Atlanta (GA)) should be particularly alert.
  - In the event a traveler begins to show symptoms, public health officials will implement an isolation and evaluation plan following appropriate protocols to limit exposure, and direct the individual to a local hospital that has been trained to receive potential Ebola patients.
- Standard Precautions
  - A primary purpose of the ED is to triage and evaluate patients with a wide variety of conditions and intensity of illness; if Ebola is considered as a possible diagnosis early during the initial assessment, the overall risk of transmission in the ED setting can be reduced by adhering to the numbered steps below.
  - All patients should be evaluated and managed in a manner that prevents blood and body fluid exposure and hazards associated with them.
  - If a patient’s exposure history is unavailable, then patients with signs and symptoms consistent with Ebola virus disease should be presumed to be infectious.
  - For patients in whom Ebola virus disease is being considered, the following measures should be implemented IMMEDIATELY:
    1. Isolate the patient in a private room or separate enclosed area with private bathroom or covered, bedside commode and adhere to procedures and precautions designed to reduce the risk of transmission by direct or indirect contact (e.g. dedicated equipment, hand hygiene, and restricted patient movement).
    2. Notify the Hospital Infection Control Program and other appropriate staff and report to the health department immediately.

3. If patient is arriving by EMS transport, the ED should be prepared to receive the patient in a designated area (away from other patients) and have a process in place for safely transporting the patient on the stretcher to the isolation area limiting contact with other patients or healthcare workers.
  4. For limited evaluation of a minimally symptomatic (e.g., fever and malaise) patient being evaluated for Ebola virus disease, healthcare personnel should use PPE including: face shield, face mask, impermeable gown, and 2 pairs of gloves. If the patient is exhibiting vomiting and/or diarrhea, or if it is anticipated that the care of the patient will require potential invasive procedures, healthcare personnel should use PPE designated for hospitalized patients as outlined in CDC guidance (<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>) should be considered.
  5. Equipment used in the care of these patients should not be used for the care of any other patients until appropriate decontamination has been performed.
  6. If the patient requires active resuscitation (e.g., aggressive hydration, possible intubation), this should be done in a pre-designated area using pre-designated equipment.
  7. Once appropriate PPE has been donned, continue additional history and physical examination and routine diagnostics and interventions which may include placement of peripheral IV and phlebotomy. Patient evaluation should be conducted with dedicated equipment. To minimize transmission risk, only essential personnel with designated roles should provide patient care.
- 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>).

#### AMBULATORY CARE PROVIDERS

- CDC released a new 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 virus disease. The algorithm aims to standardize triage and evaluation processes as follows:
  - Identify patients with possible Ebola virus disease
  - Isolate the patients immediately, and
  - Inform the relevant health department.
- View 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 has released new 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. Read the full guidance at <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 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 has issued a Warning, Level 3 travel notice for three countries. U.S. citizens should avoid all nonessential travel to Guinea, Liberia, and Sierra Leone.
- CDC has issued an Alert, Level 2 travel notice for Mali. U.S. citizens should practice enhanced precautions and be alert for reports of possible further spread of Ebola within the country
  - See CDC's Travel Health Notice website for up-to-date information:  
<http://wwwnc.cdc.gov/travel/notices>.
- On October 20, when WHO declared Nigeria free from Ebola virus transmission, CDC removed the travel notice for Ebola in Nigeria.
- If you travel to Guinea, Liberia, Sierra Leone, or Mali make sure to do the following:
  - 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.
  - Practice careful hygiene. For example, wash your hands with soap and water or an alcohol-based hand sanitizer and avoid contact with blood and body fluids (including but not limited to feces, saliva, sweat, urine, vomit, and semen).
  - Avoid contact with blood and body fluids (such as urine, saliva, sweat, feces, vomit, breast milk, and semen).
  - Do not handle items that may have come in contact with an infected person's blood or body fluids.
  - Avoid contact with dead bodies, including participating in funeral or burial rituals.
  - Avoid contact with animals (such as bats or monkeys) or raw or undercooked meat.
  - Do not eat or handle bushmeat (wild animals hunted for food).
  - Avoid facilities in West Africa where patients with Ebola are being treated. The U.S. Embassy or consulate is often able to provide advice on healthcare facilities.
  - Seek medical care immediately if you develop fever (100.4°F / 38°C or higher), severe headache, fatigue (feeling very tired), muscle pain, vomiting, diarrhea, stomach pain, or unexplained bleeding or bruising.
    - Limit your contact with other people when you go to the doctor. Do not travel anywhere else.
- 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, Liberia, Sierra Leone, or Mali are being routed through five U.S. airports (New York's JFK International, Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta) for enhanced 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, Liberia, Sierra Leone, and Mali 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 the four 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>).**
  - A factsheet (<http://www.cdc.gov/vhf/ebola/exposure/monitoring-symptoms-controlling-movement.html>) and a Q&A page (<http://www.cdc.gov/vhf/ebola/exposure/qas-monitoring-and-movement-guidance.html>) about the guidance are available on CDC's website.

## COLLEGES, UNIVERSITIES, AND STUDENTS

- CDC has issued advice for colleges, universities, and students about study abroad, foreign exchange, and other education-related travel, as well as advice for students who have recently traveled from a country with an Ebola outbreak.
  - CDC advises that all non-essential travel, including education-related travel, to Guinea, Liberia, and Sierra Leone be postponed until further notice.
  - Students, faculty, and staff who have recently traveled to countries where Ebola outbreaks are occurring should consult with school authorities on what instructions to follow, and monitor their health for 21 days after returning.
  - CDC advises colleges and universities to identify students, faculty, and staff who, within the past 21 days, have been in countries where Ebola outbreaks are occurring, and to then follow the appropriate public health response and medical care based on CDC's "Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure" ([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)).
- The full text of the guidance is available at <http://wwwnc.cdc.gov/travel/page/advice-for-colleges-universities-and-students-about-ebola-in-west-africa>.

## HUMANITARIAN AID WORKERS

- CDC has developed recommendations for humanitarian aid workers traveling to Guinea, Liberia, and Sierra Leone during the Ebola outbreaks in these countries.

- The full text of the guidance can be found on CDC's website at <http://wwwnc.cdc.gov/travel/page/humanitarian-workers-ebola>.
- The recommendations include steps to take before departure, during travel, and upon return to the United States.
  - Before traveling, CDC advises that humanitarian aid workers visit with a travel medicine provider, pack needed medical supplies and first aid items, verify whether their health insurance plan will provide appropriate coverage, identify travel restrictions that may affect their travel, register with the U.S. embassy, and locate places where they can get health care in their destination country.
  - During travel, CDC recommends that aid workers practice careful hygiene such as the following: wash your hands with soap and water or an alcohol-based hand sanitizer; avoid contact with blood or body fluids of people sick with Ebola; avoid touching bodies of people who have died from Ebola; avoid contact with animals, raw or undercooked meat, and bushmeat; and avoid facilities in West Africa where Ebola patients are being treated.
    - Aid workers who may have been exposed to Ebola during travel should notify their organization and the U.S. embassy or consulate at their destination.
- The guidance also notes special precautions for humanitarian aid workers working in health care settings.
  - Aid workers working in health care settings should follow additional precautions, including but not limited to wearing the right personal protective equipment, using proper prevention and control measures, learning the signs and symptoms of Ebola to properly identify and triage patients, and avoiding direct, unprotected contact with bodies of people who have died from Ebola.
  - **CDC recommends that travelers, including aid workers, entering the United States from Guinea, Liberia, Sierra Leone, and Mali be actively monitored by state or local health departments. Additional public health actions may be recommended depending on the aid worker's 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>).**
    - A factsheet (<http://www.cdc.gov/vhf/ebola/exposure/monitoring-symptoms-controlling-movement.html>) and a Q&A page (<http://www.cdc.gov/vhf/ebola/exposure/qas-monitoring-and-movement-guidance.html>) about the guidance are available on CDC's website.

## HUMANITARIAN AID ORGANIZATIONS

- Humanitarian aid workers play a vital role in the Ebola outbreak response, and CDC encourages them to continue the important work being done to stop the disease's spread at its source.
- CDC developed guidance for humanitarian aid organizations whose employees or volunteers are working in West African countries where an Ebola outbreak is occurring. CDC's goal is to help organizations develop plans and make preparations for safe deployments of their employees or volunteers.
  - The full text of this guidance can be found on CDC's website at <http://wwwnc.cdc.gov/travel/page/advice-humanitarian-aid-organizations-ebola>.
- CDC recommends that organizations provide personal protective equipment (PPE) to anyone who will be working in a healthcare setting or in a setting where they will have close contact with people who are sick with Ebola.
- CDC recommends that anyone traveling to countries where outbreaks of Ebola have full health insurance. Because health care resources in affected countries may be limited or not available, organizations should identify in advance places where employees and volunteers can get health care during their trip.

- It is also important to make arrangements for medical evacuation in the event that an employee or volunteer becomes ill. Plans should be made for both US citizens and non-US citizens.
- Before employees or volunteers return home, organizations should make sure they are aware of CDC's guidance regarding travelers returning to the United States from countries with Ebola outbreaks.
  - Anyone who is ill or has been exposed to Ebola will not be allowed to travel on commercial flights. Organizations should develop a plan for bringing employees and volunteers back to the United States or their home country if they are exposed to Ebola but do not have symptoms, such as on charter flights.
  - Before employees and volunteers return home, organizations should consider evaluating the risk of exposure for each individual.
  - CDC encourages organizations to have employees or volunteers notify the organization if they suspect exposure to Ebola.

#### AIRLINE FLIGHT CREWS, CLEANING PERSONNEL, AND CARGO PERSONNEL

- 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'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 on CDC's website 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).

#### MONITORING AND MOVEMENT OF PEOPLE WITH EBOLA

- CDC updated its 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 factsheet (<http://www.cdc.gov/vhf/ebola/exposure/monitoring-symptoms-controlling-movement.html>) and a Q&A page (<http://www.cdc.gov/vhf/ebola/exposure/qas-monitoring-and-movement-guidance.html>) about the guidance are available on CDC's website.

#### 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 virus disease 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.
- CDC has developed interim guidance for laboratory workers and other healthcare personnel who collect or handle specimens in the United States on the appropriate steps for collecting, transporting, and testing specimens from patients who are suspected to be infected with Ebola virus. The guidance is available on CDC's website [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).
- 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 3 days after symptoms start for the virus to reach detectable levels by real-time RT-PCR.
  - Circulating virus levels are highest between 3 to 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.

## WHAT CDC IS DOING

- CDC has activated its Emergency Operations Center (EOC) to help coordinate technical assistance and control activities with partners.
  - On August 6, CDC elevated the EOC to a Level 1 activation, its highest level, because of the significance of the outbreak.

## INTERNATIONAL ACTIVITIES

- CDC supports 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.
- Hundreds of CDC staff members have provided logistics, staffing, communication, analytics, management, and other support functions for the response. CDC has deployed more than 900 public health experts to the West Africa region.
  - CDC staff are deployed to Guinea, Liberia, Nigeria, Senegal, Sierra Leone, and Mali 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, including Cote d'Ivoire, to conduct assessments of Ebola preparedness in those countries.
  - 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's health promotion teams, consisting of health communicators and public health advisors deployed to Guinea, Liberia, and Sierra Leone, are working closely with country embassies, UNICEF, WHO, ministries of health, and nongovernment organizations to develop public health messages and implement social mobilization activities.
  - In all three countries, CDC health communicators are meeting with local community leaders beyond capital cities.
  - CDC is partnering with major telecommunications companies in the affected countries (ORANGE and Cellcom in Guinea; Africell in Sierra Leone; and Cellcom and Lonestar in Liberia).
    - These providers disseminate radio and TV program information, public service announcements, and text (SMS) and interactive voice response (IVR) messages on Ebola with support from CDC.
    - CDC is assisting in training and preparing responses for national emergency call centers responding to Ebola.
  - CDC engaged with UNICEF and Focus 1000 in the development of a Knowledge, Attitudes, and Practices (KAP) study in Sierra Leone and is using the results to inform future message strategies.
  - In Liberia, CDC supports the Carter Center's trainings for chiefs in 15 counties to improve Ebola response activities.
  - CDC is working with UNICEF and WHO in Sierra Leone and Liberia to develop national key messages.
  - An Ebola Field Communications Site provides resources and information to support CDC staff working in West Africa. It serves as a knowledge management platform to inform and coordinate the development of communications content and strategies with CDC staff working in the Emergency Operations Center in Atlanta.
- CDC is working closely with U.S. Agency for International Development (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, in partnership with WHO's Global Outbreak Alert and Response Network and the U.S. National Institutes of Health (NIH), has provided a field laboratory to Liberia to increase the number of specimens being tested for Ebola.
  - The DART continues to support the Government of Liberia (GoL) and U.N. agencies to plan, construct, and run Ebola Treatment Units throughout Liberia.
  - The DART and CDC have deployed personnel to Bamako, Mali to support response activities, including the expansion of rapid response and safe burial teams, social mobilization efforts, and the establishment of ETUs.
- 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 in West Africa to provide technical assistance for developing exit screening and travel restriction in countries with Ebola outbreaks. This 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
  - CDC has issued a Warning, Level 3 notice for U.S. citizens to avoid nonessential travel to the West African nations of Guinea (<http://wwwnc.cdc.gov/travel/notices/warning/ebola-guinea>),

Liberia (<http://wwwnc.cdc.gov/travel/notices/warning/ebola-liberia>), and Sierra Leone (<http://wwwnc.cdc.gov/travel/notices/warning/ebola-sierra-leone>).

## 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 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, Liberia, Sierra Leone, or Mali. 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 to ensure that these travelers are directed to appropriate care, if needed.
  - Enhanced entry screening is part of a layered process that includes processes already in place to detect ill travelers arriving in the United States. Every day, CDC works closely with partners such as Customs and Border Protection (CBP), airlines, and emergency medical services to look for sick travelers with possible contagious diseases. These processes have been strengthened during the Ebola response through guidance and training to partners.
  - CDC developed a Check and Report Ebola (CARE) Kit for travelers arriving in the United States who had been in Guinea, Liberia, Sierra Leone, and Mali. Passengers going through enhanced entry screening are provided with a CARE Kit. 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 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.
- CDC is actively working to educate U.S. healthcare workers on how to isolate patients and how to protect themselves from infection.
  - **Health and Human Services (HHS) and CDC have educated more than 150,000 healthcare workers via webinars and over 525,000 healthcare workers via online clinical training resources about infection control principles and appropriate use of PPE.**
  - 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, 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 eight hospital beds at three facilities to 53 beds at 35 Ebola Treatment Centers. Additional facilities are expected to be added in the next several weeks to broaden the geographic reach.**
    - **Because of this approach, more than 80% of travelers returning from West Africa are now within 200 miles of an Ebola Treatment Center and could be transported via ambulance.**
    - **Ebola Treatment Centers 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 has formed Rapid Ebola Preparedness (REP) teams that deploy to pre-identified facilities to work with local health officials and hospitals in assessing their readiness for caring for patients with Ebola.**
      - **REP teams are 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 determine the hospitals in their state or region where patients suspected of having Ebola will be transported.**
      - **During the visit, the REP team identifies areas that pose challenges and provide technical assistance and support to gain readiness in the areas identified.**
      - **To date, more than 50 hospitals in 15 states and Washington, D.C. 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 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.**
- CDC is actively working to educate U.S. state and local health departments on CDC guidelines for Ebola applicable to public health preparedness national standards for state and local planning.
- 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.
  - CDC hosted an Ebola Twitter chat on October 2 that had the largest reach of any CDC chat to date. The chat had a potential reach of 161 million, with an adjusted reach of 25.8 million, and included 7,484 participants. During the one-hour chat, CDC answered 155 questions.
  - A second Ebola Twitter chat on October 8 had a potential reach of 100 million, with an adjusted reach of 12.1 million, and included 2,944 participants. During the one-hour chat, CDC answered 160 questions.

## TRAINING

- CDC is working with airlines, airports, and ministries of health in West Africa to train staff on exit screening protocols and appropriate personal protective equipment (PPE) use.
- CDC has developed 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 trainings 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 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 reached over 326,700 individuals through conference calls to provide training and updates on CDC guidance.
  - Hosting live events to educate healthcare workers and others about infection control principles and demonstrate appropriate use of PPE.
    - A New York City event on October 21 reached over 5,400 people in-person, 53 media outlets, and at least 20,000 people on livestream in 10 countries. The event was co-



hosted by the Partnership for Quality Care (PQC) and the 1199SEIU/Greater New York Hospital Association Healthcare Education Project.

- A Los Angeles event on November 7 reached over 1,000 people in-person, 12 media outlets, and thousands of people on live stream in hundreds of healthcare facilities across the country. The event was co-hosted by Kaiser Permanente, the Coalition of Kaiser Permanente Unions, the Partnership for Quality Care, and United Nurses Associations of California/Union of Health Care Professionals, Service Employees International Union (SEIU) – United Healthcare Workers West, SEIU Local 721 and the Los Angeles County Department of Health.
- An American Medical Association meeting on November 9 was live streamed to thousands of individuals.
- 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.**
- **Working with Johns Hopkins University to create additional training videos for putting on and taking off PPE, including videos tailored to emergency department staff. An emergency department training video is anticipated to be completed by early February 2015.**
- 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 320,220 times. Viewers have logged a total of 232,429 minutes (or 3,874 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

- The CDC Foundation is assisting 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.
- CDC has identified a number of significant needs including developing in-country emergency operations centers that will provide a platform for incident response to effectively manage current and future outbreaks. A donor has provided funding to support this effort. In addition, to strengthen the response going forward, the CDC Foundation is continuing to work with donors to provide funding for much-needed supplies and equipment for use on the ground in Guinea, Sierra Leone, and Liberia.
- The CDC Foundation has received commitments and donations of more than \$43 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, etc. 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 donation amounts to CDC Foundation media relations staff.
- To date, the CDC Foundation and its donors have provided both materials and services to meet on the ground needs.
  - As examples, these include computers equipped with software and printers for use in the field by CDC and in-country staff, as well as tablets for use by burial teams in Liberia. In addition, the

Foundation has provided thermal scanning thermometers for use by some airport screeners in West Africa. And funding is beginning to be deployed to provide logistics support through vehicles and motorcycles, health worker training, medical supplies, laboratory diagnostic equipment, personal protective equipment, generators and public health communication in the region. Importantly, funding also has been provided and is being deployed to establish sustainable emergency operations centers in the most impacted countries of Guinea, Liberia and Sierra Leone.

- There will also be unanticipated needs in response to this epidemic. The CDC Foundation is working closely with CDC to determine needs in affected countries and how funds and resources provided through the Foundation can be deployed to help meet some of these needs.
- 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 [www.cdcfoundation.org/globaldisaster](http://www.cdcfoundation.org/globaldisaster).

## 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 higher 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/)