



OCTOBER 2014

Use of Personal Protective Equipment (PPE):

Use of standard, contact, and droplet precautions is sufficient for most situations when treating a patient with a suspected case of Ebola as defined above. EMS personnel should wear:

- **Gloves**
- **Gown**
(fluid resistant or impermeable)
- **Eye protection**
(goggles or face shield that fully covers the front and sides of the face)
- **Facemask**

Additional PPE might be required in certain situations (e.g., large amounts of blood and body fluids present in the environment), including but not limited to double gloving, disposable shoe covers, and leg coverings. These procedures include pre-hospital resuscitations such as: Endotracheal intubation, Open suctioning of airways, and Cardiopulmonary resuscitation which frequently results in a large amount of body fluids, such as saliva and vomit.

Performing these procedures in a less controlled environment (e.g., moving vehicle) increases risk of exposure for EMS personnel. If conducted, perform these procedures under safer circumstances (e.g., stopped vehicle, hospital destination).

In addition to recommended PPE, respiratory protection that is at least as protective as a NIOSH-certified fit-tested N95 filtering face-piece respirator or higher should be worn (Instead of a facemask).

Ebola: A Brief Summary

The current Ebola outbreak in West Africa has increased the possibility of patients with Ebola traveling from the affected countries to the United States. The first Ebola case diagnosed in the United States was confirmed in Dallas on Tuesday. State and local officials are working with the Centers for Disease Control and Prevention (CDC) to track down people the patient may have come into contact with since becoming symptomatic. The EMS crew that transported him is currently being monitored. In light of this case and the probability more people with Ebola will no doubt travel to the United States in the future, this document was prepared to provide a general understanding and provide additional current resource links.

Ebola is an often-fatal disease and care is needed when coming in direct contact with a recent traveler from a country with an Ebola outbreak who has symptoms of Ebola. The initial signs and symptoms of Ebola are similar to many other more common diseases found in West Africa (such as malaria and typhoid). The likelihood of contracting Ebola is extremely low, unless a person has direct unprotected contact with the body fluids of a person (like urine, saliva, feces, vomit, sweat, and semen) who is sick with Ebola or from direct handling of bats or nonhuman primates from areas with Ebola outbreaks.

Ebola should be considered in anyone with fever who has traveled to, or lived in, an area where Ebola is present. Initial signs and symptoms of Ebola include sudden fever, chills, and muscle aches, with diarrhea, nausea, vomiting, and abdominal pain occurring after about 5 days. Other symptoms such as chest pain, shortness of breath, headache, or confusion, may also develop. Symptoms may become increasingly severe and may include jaundice (yellow skin), severe weight loss, mental confusion, bleeding inside and outside the body, shock, and multi-organ failure.

The incubation period for Ebola, from exposure to when signs or symptoms appear, ranges from 2 to 21 days (most commonly 8-10 days). Any Ebola patient with signs or symptoms should be considered infectious. Ebola patients without symptoms are not contagious. The prevention of Ebola includes actions to avoid exposure to blood or body fluids of infected patients through contact with skin, mucous membranes of the eyes, nose, or mouth, or injuries with contaminated needles or other sharp objects.

Patient assessment CDC Interim Recommendations:

Address scene safety:

- If Dispatch or other EMS Personnel advise that the patient is suspected of having Ebola, EMS Personnel should put on the PPE appropriate for suspected cases of Ebola (described below) before entering the scene.
- Keep the patient separated from other persons as much as possible.
- Use caution when approaching a patient with Ebola. Illness can cause delirium, with erratic behavior that can place EMS personnel at risk of infection, e.g., flailing or staggering.
- During patient assessment and management, EMS personnel should consider the symptoms and risk factors of Ebola:

All patients should be assessed for symptoms of Ebola (fever of greater than 38.6 degrees Celsius or 101.5 degrees Fahrenheit, and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage). If the patient has symptoms of Ebola, then ask the patient about risk factors within the past 3 weeks before the onset of symptoms, including:

- Contact with blood or body fluids of a patient known to have or suspected to have Ebola;
- Residence in—or travel to—a country where an Ebola outbreak is occurring (a list of impacted countries can be accessed at the following link:

<http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>

- Or Direct handling of bats or nonhuman primates from disease-endemic areas.

Based on the presence of symptoms and risk factors, put on or continue to wear appropriate PPE and follow the scene safety guidelines for suspected case of Ebola.

If there are no risk factors, proceed with normal EMS care.

Use of Personal Protective Equipment (PPE):
Continued

If blood, body fluids, secretions, or excretions from a patient with suspected Ebola come into direct contact with the EMS provider's skin or mucous membranes, then the EMS provider should immediately stop working. They should wash the affected skin surfaces with soap and water and report exposure to an occupational health provider or supervisor for follow-up.

Recommended PPE should be used by EMS personnel as follows:

- PPE should be worn upon entry into the scene and continued to be worn until personnel are no longer in contact with the patient.
- PPE should be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials.
- PPE should be placed into a medical waste container at the hospital or double bagged and held in a secure location.
- Re-useable PPE should be cleaned and disinfected according to the manufacturer's reprocessing instructions and the EMS agency's policies.
- Instructions for putting on and removing PPE have been published online at:

<http://www.cdc.gov/HAI/prevent/ppe.html>

- **Hand hygiene should be performed immediately after removal of PPE.**



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Ebola: A Brief Summary—Continued

Infection Control

EMS personnel can safely manage a patient with suspected or confirmed Ebola by following recommended isolation and infection control procedures, including standard, contact, and droplet precautions. Particular attention should be paid to protecting mucous membranes of the eyes, nose, and mouth from splashes of infectious material, or self-inoculation from soiled gloves. Early recognition and identification of patients with potential Ebola is critical. An EMS agency managing a suspected Ebola patient should follow these CDC recommendations:

- Limit activities, especially during transport, that can increase the risk of exposure to infectious material (e.g., airway management, cardiopulmonary resuscitation, use of needles).
- Limit the use of needles and other sharps as much as possible. All needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers.
- Phlebotomy, procedures, and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and medical care.

Environmental infection control

Environmental cleaning and disinfection, and safe handling of potentially contaminated materials is essential to reduce the risk of contact with blood, saliva, feces, and other body fluids that can soil the patient care environment. EMS personnel performing environmental cleaning and disinfection should:

- Wear recommended PPE (described above) and consider use of additional barriers (e.g., shoe and leg coverings) if needed.
- Wear face protection (facemask with goggles or face shield) when performing tasks such as liquid waste disposal that can generate splashes.
- Use an EPA-registered hospital disinfectant with a label claim for one of the non-enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces. Disinfectant should be available in spray bottles or as commercially prepared wipes for use during transport.
- Spray and wipe clean any surface that becomes potentially contaminated during transport. These surfaces should be immediately sprayed and wiped clean (if using a commercially prepared disinfectant wipe) and the process repeated to limit environmental contamination.

Excerpted from: "CDC's updated Interim Guidance for EMS and 9-1-1 Agencies"; Citation web-source below, as well as additional web-links.

For Further Information:

CDC's review of Ebola Symptoms prepared for EMS, Hospital, and Public Health Workers:
<http://www.cdc.gov/vhf/ebola/symptoms/index.html>

CDC's updated Interim Guidance for EMS and 9-1-1 Agencies:
<http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public-safety-answering-points-management-patients-known-suspected-united-states.html>

The CDC & HHS provide a detailed Hospital Checklist for Ebola Preparedness Webinar and Guide:
<http://www.phe.gov/Preparedness/responders/Pages/ebola-healthcare-webinar.aspx>

The CDC also has a Detailed Emergency Medical Services (EMS) Checklist for Ebola Patients:
<http://www.cdc.gov/vhf/ebola/pdf/ems-checklist-ebola-preparedness.pdf>

The Public Health Emergencies Website contains an extensive collection of Ebola preparedness resources:
<http://www.phe.gov/preparedness/Pages/default.aspx>