

# Interim Guidance for Emergency Medical Services (EMS) Systems and 9-1-1 Public Safety Answering Points (PSAPs) for Management of Patients with Known or Suspected Ebola Virus Disease in the United States

October 1, 2014

**Who this is for:** Managers of 9-1-1 Public Safety Answering Points (PSAPs), EMS Agencies, EMS systems, law enforcement agencies and fire service agencies as well as individual emergency medical services providers (including emergency medical technicians (EMTs), paramedics, and medical first responders, such as law enforcement and fire service personnel).

**What this is for:** Guidance for handling inquiries and responding to patients with suspected Ebola symptoms, and for keeping workers safe.

**How to use:** Managers should use this information to understand and explain to staff how to respond and stay safe. Individual providers can use this information to respond to suspected Ebola patients and to stay safe.

## Key Points:

- The likelihood of contracting Ebola is extremely low unless a person has direct unprotected contact with the blood or body fluids (like urine, saliva, feces, vomit, sweat, and semen) of a person who is sick with Ebola or direct handling of bats or nonhuman primates from areas with Ebola outbreaks.
- When risk of Ebola is elevated in their community, it is important for PSAPs to question callers about:
  - Residence in, or travel to, a country where an Ebola outbreak is occurring;
  - Signs and symptoms of Ebola (such as fever, vomiting, diarrhea); and
  - Other risk factors, like having touched someone who is sick with Ebola.
- PSAPS should tell EMS personnel this information before they get to the location so they can put on the correct personal protective equipment (PPE) ([described below](#)).
- EMS staff should check for symptoms and risk factors for Ebola. Staff should notify the receiving healthcare facility in advance when they are bringing a patient with suspected Ebola, so that proper infection control precautions can be taken.

The guidance provided in this document is based on current knowledge of Ebola. Updates will be posted as needed on the [CDC Ebola webpage](http://www.cdc.gov/vhf/ebola/index.html)(<http://www.cdc.gov/vhf/ebola/index.html>). The information contained in this document is intended to complement existing guidance for healthcare personnel, [Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Hemorrhagic](#)

[Fever in U.S. Hospitals\(<http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html>\)](http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html)

## **Background**

The current Ebola outbreak in West Africa has increased the possibility of patients with Ebola traveling from the affected countries to the United States.<sup>1</sup> 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) of a person who is sick with Ebola or direct handling of bats or nonhuman primates from areas with Ebola outbreaks.<sup>2</sup> 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.<sup>3</sup>

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). Ebola should be considered in anyone with fever who has traveled to, or lived in, an area where Ebola is present.<sup>2</sup> 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.

Emergency medical services (EMS) personnel, along with other emergency services staff, have a vital role in responding to requests for help, triaging patients, and providing emergency treatment to patients. Unlike patient care in the controlled environment of a hospital or other fixed medical facility, EMS patient care before getting to a hospital is provided in an uncontrolled environment. This setting is often confined to a very small space and frequently requires rapid medical decision-making and interventions with limited information. EMS personnel are frequently unable to determine the patient history before having to administer emergency care.

Coordination among 9-1-1 Public Safety Answering Points (PSAPs), the EMS system, healthcare facilities, and the public health system is important when responding to patients with suspected Ebola. Each 9-1-1 and EMS system should include an EMS medical director to provide appropriate medical supervision.

## Case Definition for Ebola Virus Disease (EVD)

The CDC's most current case definition for EVD may be accessed here:<http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>(<http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>).

## Recommendations for 9-1-1 Public Safety Answering Points (PSAPs)

State and local EMS authorities may authorize PSAPs and other emergency call centers to use modified caller queries about Ebola when they consider the risk of Ebola to be elevated in their community (e.g., in the event that patients with confirmed Ebola are identified in the area). This will be decided from information provided by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.

### For modified caller queries:

It will be important for PSAPs to question callers and determine if anyone at the incident possibly has Ebola. This should be communicated immediately to EMS personnel before arrival and to assign the appropriate EMS resources. PSAPs should review existing medical dispatch procedures and coordinate any changes with their EMS medical director and with their local public health department.

- PSAP call takers should consider screening callers for symptoms and risk factors of Ebola. Callers should be asked if they, or someone at the incident, have fever of greater than 38.6 degrees Celsius or 101.5 degrees Fahrenheit, and if they have additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained bleeding.
  - If PSAP call takers suspect a caller is reporting symptoms of Ebola, they should screen callers for risk factors within the past 3 weeks before onset of symptoms. Risk factors include:
    - 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.
  - If PSAP call takers have information alerting them to a person with possible Ebola, they should make sure any first responders and EMS personnel are made confidentially aware of the potential for Ebola before the responders arrive on scene.
  - If responding at an airport or other port of entry to the United States, the PSAP should notify the CDC Quarantine Station for the port of entry. Contact information for CDC Quarantine Stations can be accessed at the following link:

<http://www.cdc.gov/quarantine/quarantinationcontactlistfull.html>(<http://www.cdc.gov/quarantine/quarantinationcontactlistfull.html>)

## **Recommendations for EMS and Medical First Responders, Including Firefighters and Law Enforcement**

### **Personnel**

For the purposes of this section, “EMS personnel” means pre-hospital EMS, law enforcement and fire service first responders. These EMS personnel practices should be based on the most up-to-date Ebola clinical recommendations and information from appropriate public health authorities and EMS medical direction.

When state and local EMS authorities consider the threat to be elevated (based on information provided by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and the CDC), they may direct EMS personnel to modify their practices as described below.

### **Patient assessment**

#### **Interim recommendations:**

1. Address scene safety:
  - If PSAP call takers 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.
2. 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>(<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/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.

### **EMS Transfer of Patient Care to a Healthcare Facility**

EMS personnel should notify the receiving healthcare facility when transporting a suspected Ebola patient, so that appropriate infection control precautions may be prepared prior to patient arrival. Any U.S. hospital that is following [CDC's infection control recommendations\(<http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html>\)](http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html) and can isolate a patient in a private room is capable of safely managing a patient with Ebola.

### **Interfacility Transport**

EMS personnel involved in the air or ground interfacility transfer of patients with suspected or confirmed Ebola should wear recommended PPE ([described below](#)).

### **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.

### **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.

Pre-hospital resuscitation procedures such as endotracheal intubation, open suctioning of airways, and cardiopulmonary resuscitation frequently result 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).

During pre-hospital resuscitation procedures (intubation, open suctioning of airways, cardiopulmonary resuscitation):

- In addition to recommended PPE, respiratory protection that is at least as protective as a NIOSH-certified fit-tested N95 filtering facepiece respirator or higher should be worn (instead of a facemask).
- Additional PPE must be considered for these situations due to the potential increased risk for contact with blood and body fluids including, but not limited to, double gloving, disposable shoe covers, and leg coverings.

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 EMS agency policies.
- Instructions for putting on and removing PPE have been published online at <http://www.cdc.gov/HAI/prevent/ppe.html> and <http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf> [PDF - 2 pages] (<http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf>).

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

### **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 should always practice standard environmental infection control procedures, including vehicle/equipment decontamination, hand hygiene, cough and respiratory hygiene, and proper use of U.S. Food and Drug Administration (FDA) cleared or authorized medical PPE. For additional information, see CDC's [Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus](http://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>).

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.

### **Cleaning EMS Transport Vehicles after Transporting a Patient with Suspected or Confirmed Ebola**

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a patient with suspected or confirmed Ebola:

- EMS personnel performing cleaning and disinfection should wear recommended PPE (described above) and consider use of additional barriers (e.g., rubber boots or shoe and leg coverings) if needed. Face protection (facemask with goggles or face shield) should be worn since tasks such as liquid waste disposal can generate splashes.
- Patient-care surfaces (including stretchers, railings, medical equipment control panels, and adjacent flooring, walls and work surfaces) are likely to become contaminated and should be cleaned and disinfected after transport.
- A blood spill or spill of other body fluid or substance (e.g., feces or vomit) should be managed through removal of bulk spill matter, cleaning the site, and then disinfecting the site. For large spills, a chemical

disinfectant with sufficient potency is needed to overcome the tendency of proteins in blood and other body substances to neutralize the disinfectant's active ingredient.

- An EPA-registered hospital disinfectant with label claims for viruses that share some technical similarities to Ebola (such as, norovirus, rotavirus, adenovirus, poliovirus) and instructions for cleaning and decontaminating surfaces or objects soiled with blood or body fluids should be used according to those instructions. After the bulk waste is wiped up, the surface should be disinfected as described in the bullet above.
- Contaminated reusable patient care equipment should be placed in biohazard bags and labeled for cleaning and disinfection according to agency policies. Reusable equipment should be cleaned and disinfected according to manufacturer's instructions by trained personnel wearing correct PPE. Avoid contamination of reusable porous surfaces that cannot be made single use.
- Use only a mattress and pillow with plastic or other covering that fluids cannot get through. To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering, discard all linens, non-fluid-impermeable pillows or mattresses as appropriate.

The 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 Personal Protection Equipment [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. <sup>4</sup>

#### **Follow-up and/or reporting measures by EMS personnel after caring for a suspected or confirmed Ebola patient**

- EMS personnel should be aware of the follow-up and/or reporting measures they should take after caring for a suspected or confirmed Ebola patient.
- EMS agencies should develop policies for monitoring and management of EMS personnel potentially exposed to Ebola.
- EMS agencies should develop sick leave policies for EMS personnel that are non-punitive, flexible and consistent with public health guidance
- Ensure that all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick leave policies.
- EMS personnel with exposure to blood, bodily fluids, secretions, or excretions from a patient with suspected or confirmed Ebola should immediately:

- Stop working and wash the affected skin surfaces with soap and water. Mucous membranes (e.g., conjunctiva) should be irrigated with a large amount of water or eyewash solution;
- Contact occupational health/supervisor for assessment and access to post-exposure management services; and
- Receive medical evaluation and follow-up care, including fever monitoring twice daily for 21 days, after the last known exposure. They may continue to work while receiving twice daily fever checks, based upon EMS agency policy and discussion with local, state, and federal public health authorities.
- EMS personnel who develop sudden onset of fever, intense weakness or muscle pains, vomiting, diarrhea, or any signs of hemorrhage after an unprotected exposure (i.e., not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with suspected or confirmed Ebola should:
  - Not report to work or immediately stop working and isolate themselves;
  - Notify their supervisor, who should notify local and state health departments;
  - Contact occupational health/supervisor for assessment and access to post-exposure management services; and
  - Comply with work exclusions until they are deemed no longer infectious to others.