

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

This information is intended 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).

Purpose: Guidance and model protocol for handling inquiries and responding to patients with suspected Ebola symptoms, and for safety of first responders and EMS providers.

Intended use and California modifications: The CDC issued guidance for EMS that provides information to understand infectious transmission of Ebola and appropriate safety measures for public safety and EMS personnel ([Click here to view](#)). This document incorporates specific modifications to the CDC guidance recommended by California public health communicable disease and EMS experts to improve application in the prehospital environment.

Application to EMS protocol: The elements of this guidance may be applied to modifications in local dispatch and EMS provider protocols.

Key Points:

- 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 that has symptoms that may be caused by Ebola.
- The prevention of Ebola includes actions to avoid exposure of public safety or EMS personnel to blood or body fluids (like urine, saliva, feces, vomit, sweat) of infected patients through contact with the skin, mucous membranes of the eyes, nose, or mouth, or injuries with contaminated needles or other sharp objects. The likelihood of contracting Ebola is extremely low unless a person has direct unprotected contact with the blood or body fluids of a person who is sick with Ebola.
- PSAP and EMS personnel should assess the risk of exposure of patients who complain of fever plus other symptoms such as vomiting or diarrhea by asking about residence in or travel to a country where an Ebola outbreak is occurring (currently limited to a few areas of West Africa).
- 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](#)).
- If a symptomatic patient has a risk of exposure, EMS staff should use appropriate infectious precautions and notify the receiving healthcare facility in advance.
- 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.

Updates on Ebola will be posted as needed on the [CDC Ebola webpage](#). This information complements existing guidance for healthcare personnel, Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Hemorrhagic Fever in U.S. Hospitals ([Click here to view](#)).

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

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.¹ The likelihood of contracting Ebola is extremely low unless a person has direct unprotected contact with the body fluids (like urine, saliva, feces, vomit, sweat, and semen) of an infected person or direct handling of bats, rodents, or nonhuman primates from areas with Ebola outbreaks.² 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, severe weight loss, mental confusion, bleeding inside and outside the body, shock, and multi-organ failure.³

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 that has possible symptoms of Ebola. The initial signs and symptoms of Ebola are similar to many other more common diseases. Ebola should be considered in anyone with fever who has traveled to, or lived in, an area where Ebola is present.² The incubation period for Ebola, from exposure to when signs or symptoms appear, ranges from 2 to 21 days (most commonly 8-10 days). Patients without symptoms who have been exposed to Ebola 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.

The CDC's most current case definition for EVD may be accessed [here](#).

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. The EMS setting is often confined to a very small space and frequently requires rapid medical decision-making and interventions with limited information. EMS personnel may be 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.

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

Local EMS authorities may authorize PSAPs and other emergency call centers to use modified caller queries about Ebola. Local EMS medical directors should coordinate with their local public health department to review existing medical dispatch procedures. Given time constraints, and low risk of Ebola in the U.S. (no cases at this time), it may be impractical to further question callers with common nonspecific symptoms.

- PSAP call takers should consider screening callers for risk factors of Ebola by questioning callers who report *fever* (with or without additional symptoms of severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained bleeding) regarding history of travel during the 21 days prior to onset of fever to a region where an Ebola outbreak is occurring. As of

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

August, 2014, Ebola outbreaks are occurring in the countries of Guinea, Liberia, and Sierra Leone; there are also cases of Ebola in the city of Lagos, Nigeria; for updated information about regions where Ebola outbreaks are occurring, [click here](#).

- 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. CDC quarantine stations are located at California airports in San Francisco, Los Angeles, and San Diego ([link](#)).

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.

Patient assessment

1. EMS personnel should not rely on PSAP to screen patients for Ebola due to dispatch time constraints and incomplete patient history. The patient or family may not complain of fever and usually have not taken a temperature. There may be language and cultural issues that determine the chief complaint. Therefore, during patient assessment and management, EMS personnel should assess for risk factors of Ebola.
 - Symptoms of Ebola are nonspecific. If the patient has *fever* (with or without additional symptoms of severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained bleeding) ask the patient about risk factors:
 - Was there any travel outside the country within the past 3 weeks before the onset of symptoms to an area infected with Ebola? As of August 2014, these include the West African countries of Guinea, Liberia, and Sierra Leone, and the city of Lagos, Nigeria (a list of impacted countries can be accessed [here](#)).
 - Based on the presence of symptoms and geographic exposure, 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.
 - Further risk assessment can be done at the hospital. High risk of infection also requires a history of:
 - Contact with blood or body fluids of a patient known to have or suspected to have Ebola;

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

- Direct handling of bats, rodents, or non-human primates from disease-endemic areas. (Animal exposures are not likely to be present in travelers to the U.S.)
2. Address scene safety:
- If PSAP call takers advise EMS that the patient has a risk of 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.

Patient treatment

Ebola infection may cause dehydration and shock due to fluid loss, bleeding, and organ failure. Hypoxia may result from altered mental status, vomit or blood in the airway, or pulmonary compromise. Pre-hospital treatment is supportive. Any interventions such as airway management or fluid resuscitation must be done cautiously to avoid exposure to blood or body fluids (see 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.

- 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 in puncture-proof, sealed containers. Limit the use of needles and other sharps as much as possible.
- During transport, in the confined space of an ambulance, avoid procedures that can increase the risk of exposure to infectious material (e.g., airway management, cardiopulmonary resuscitation, use of needles), if possible, stop briefly to perform procedures.

Use of Personal protective equipment (PPE)

1. Use of standard, contact, and droplet precautions is sufficient for most situations when treating or transporting a patient, including interfacility transport, 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

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

- EMS personnel may wear a N95 respirator (or equivalent) if the patient is vomiting or having copious diarrhea or bleeding, particularly if occurring in an enclosed and less controlled environment (e.g. moving vehicle).
 - 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.
2. 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.
3. 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 [here](#) and [here](#).
- Hand hygiene should be performed immediately after removal of PPE.

EMS Transfer of Patient Care to a Healthcare Facility

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

EMS provider agencies should consider removing a vehicle from service that has been used to transport a patient considered high risk for Ebola infection until adequate disinfection can be accomplished.

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](#) and can isolate a patient in a private room is capable of safely managing a patient with Ebola.

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 ([link](#)).

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. Alternatively, use a freshly prepared (i.e., within 12 hours) 1:50 dilution of household bleach (final working concentration of 100 parts per million or 0.1% hypochlorite solution) that is prepared fresh daily. 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.

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

- 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. Alternatively, a 1:10 dilution of household bleach (final working concentration of 500 parts per million or 0.5% hypochlorite solution) that is prepared fresh daily (i.e., within 12 hours) can be used to treat the spill before covering with absorbent material and wiping up. 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 a regulated medical waste.

Occupational 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:

Guidance for California EMS/Public Safety Personnel:
Management of patients with possible Ebola infection (Rev 9/4/2014)

- 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.

¹ <http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html>

² <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>

³ <http://www.cdc.gov/vhf/ebola/hcp/clinician-information-us-healthcare-settings.html>