

Ebola FAQs

APIC has compiled frequently asked clinical questions about Ebola. The answers have been sourced from the Centers for Disease Control and Prevention (CDC), Doctors without Borders, the Environmental Protection Agency (EPA), and others. Additionally, we encourage you to see the CDC's compilation of its [Ebola questions and answers](#) for additional information.

What should U.S. hospitals do if they have a patient with suspect EVD?

Early recognition is critical for infection control. Healthcare providers should be alert for and evaluate any patients suspected of having EVD who have:

1. An elevated body temperature or subjective fever, and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;
AND
2. Risk factors within the past 3 weeks before the onset of symptoms, such as contact with blood or other body fluids of a patient known to have or suspected to have EVD; residence in—or travel to—an [area where EVD transmission is active](#); or direct handling of bats or nonhuman primates from disease-endemic areas. Malaria diagnostics should also be a part of initial testing because it is the most common cause of febrile illness in persons with a travel history to the affected countries.

See the CDC [EVD case definition](#).

Source: CDC

When should patients with suspected EVD in U.S. hospitals be tested?

CDC recommends testing for all persons with onset of elevated body temperature or subjective fever within 21 days of having a high-risk exposure such as:

- percutaneous or mucous membrane exposure or direct skin contact with body fluids of a person with a confirmed or suspected case of EVD without appropriate personal protective equipment (PPE),
- laboratory processing of body fluids of suspected or confirmed EVD cases without appropriate PPE or standard biosafety precautions, or
- participation in funeral rites or other direct exposure to human remains in the geographic area where the outbreak is occurring without appropriate PPE.

For persons with a high-risk exposure but without a fever, testing is recommended only if there are other compatible clinical symptoms present and blood work findings are abnormal (i.e., thrombocytopenia $<150,000$ cells/ μL and/or elevated transaminases). See [CDC's laboratory testing guidance](#).

Source: CDC

How can testing be obtained?

If you have a patient who has a positive travel history to an area experiencing an EVD outbreak and also has symptoms consistent with EVD, isolate the patient, ideally in a room with a private bathroom and a door that closes to the hallway. Implement standard contact and droplet precautions. Notify the facility's infection prevention personnel and contact the local health department. The health department can arrange for testing.

If a patient in a U.S. hospital is identified to have suspected or confirmed EVD, what infection control precautions should be put into place?

If a patient in a U.S. hospital is suspected or known to have Ebola virus disease, healthcare teams should follow standard, contact, and droplet precautions, including the following recommendations:

- **Isolate the patient:** Patients should be isolated in a single patient room (containing a private bathroom) with the door closed.

- **Wear appropriate PPE:** See [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 \(Doffing\)](#).
- **Restrict visitors:** Avoid entry of visitors into the patient's room. Exceptions may be considered on a case by case basis for those who are essential for the patient's wellbeing. A logbook should be kept to document all persons entering the patient's room. See CDC's [infection control guidance](#) on procedures for monitoring, managing, and training of visitors.
- **Avoid aerosol-generating procedures:** Avoid aerosol-generating procedures. If performing these procedures, PPE should include respiratory protection (N95 or higher filtering facepiece respirator) and the procedure should be performed in an airborne infection isolation room.
- **Implement environmental infection control measures:** Diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials is of paramount importance, as blood, sweat, vomit, feces, urine and other body secretions represent potentially infectious materials should be done following hospital protocols.

Source: CDC

How should non-hospital facilities screen and monitor patients with suspected EVD?

The Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) has created a guide, "Ebola preparedness considerations for outpatient/ambulatory care settings," which can be accessed at

<http://www.phe.gov/Preparedness/responders/ebola/Documents/ebola-preparedness-considerations.pdf> This document contains valuable information for these facilities.

Source: DHHS/ASPR

Can pregnant HCP care for patients with EVD?

According to the CDC's [Guidance for Screening and Caring for Pregnant Women with Ebola Virus Disease for Healthcare Providers in U.S. Hospitals](#):

- Healthcare providers caring for pregnant women in U.S. hospitals need to be prepared to screen patients for Ebola and have a plan in place to triage these patients

- Obstetric management of pregnant women with Ebola, particularly decisions about mode of delivery for women in labor, needs to consider risks to the woman, risks of exposure for healthcare providers, and potential benefits to the neonate.
- Healthcare workers who are pregnant should not care for patients with Ebola.
- Pregnant women with known or suspected Ebola should be hospitalized, and CDC guidance for hospitalized patients with known or suspected Ebola should be followed.

EVD presents significant challenges related to the high rates of both case mortality and horizontal transmission of infection to those in contact with infected individuals. Patients are desperately in need of care, yet those who care for them – whether family or health care providers – are themselves at great risk. (ACOG) According to Médecins Sans Frontières (MSF) guidance, “The mortality for the foetus and newborn is also (extremely close to) 100%.” Given the above additional risks to the fetus as well as to the mother, pregnant HCW should be discouraged from caring for patients with EVD.

Sources: CDC and Médecins Sans Frontières/Doctors without Borders

How can U.S. Clinical Laboratories Can Safely Manage Specimens from Persons Under Investigation for Ebola Virus Disease?

- U.S. clinical laboratories can safely handle specimens from PUI for EVD by following all required laboratory precautions and practices as specified in [29 CFR 1910.1030](#) for bloodborne pathogens.
- Any person collecting specimens from a PUI for EVD should wear recommended [personal protective equipment \(PPE\)](#).
- Personnel who process and perform laboratory testing on specimens from a PUI for EVD should wear gloves, fluid-resistant or impermeable gowns, full face shield or goggles, and masks to cover all of nose and mouth AND use a certified Class II biosafety cabinet or Plexiglass splash guard. If a certified Class II biosafety cabinet or Plexiglass splash guard is not available, a full face shield should be worn instead of goggles.
- Anyone collecting specimens from a patient should follow the procedures included in this document for transporting specimens through the healthcare facility and clean-up of spills.
- Guidance can be found in [Interim Guidance for Specimen Collection, Transport, Testing, and Submission for Persons Under Investigation for Ebola Virus Disease in the United States.](#)

Source: CDC

Where can I find information about the safe handling of human remains of an Ebola patient?

CDC recommendations provide guidance on the safe handling of human remains that may contain Ebola virus. Ebola virus can be transmitted in postmortem care settings by laceration and puncture with contaminated instruments used during postmortem care, through direct handling of human remains without appropriate personal protective equipment, and through splashes of blood or other body fluids (e.g., urine, saliva, feces) to unprotected mucosa (e.g., eyes, nose, or mouth) which occur during postmortem care. Further information can be found on the CDC webpage [Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries](#).

Source: CDC

When will a vaccine become available?

There are no FDA-approved vaccines or therapeutics available for prevention, post-exposure, or treatment for Ebola virus infection, although there are vaccines in trial. Clinical management of EVD should focus on supportive care of complications, such as hypovolemia, electrolyte abnormalities, hematologic abnormalities, refractory shock, hypoxia, hemorrhage, septic shock, multi-organ failure, and DIC.

Source: CDC

What disinfectant products are effective against Ebola?

Use an Environmental Protection Agency (EPA)-registered hospital disinfectant according to manufacturer's instructions with a label claim against a non-enveloped virus, such as norovirus, rotavirus, adenovirus, or poliovirus. Currently, no EPA-registered hospital disinfectant products will have a statement on the label that specifically says it can kill Ebola virus. However, any EPA-registered hospital disinfectant that is effective against a non-enveloped virus will also be effective against Ebola virus.

One simple way to identify an appropriate product effective against Ebola virus is to use a product included in EPA's List L: [Disinfectants for Use Against the Ebola Virus](#).

Source: EPA

How should a residence be cleaned if a patient with Ebola was living there?

Once a person has been confirmed to have Ebola, the way to decontaminate the residence depends on the person's symptoms at the time they were in the residence:

Cleaning by residents - If the person with Ebola **only had a fever** with no gastrointestinal (e.g., diarrhea, vomiting) or hemorrhagic (bleeding) symptoms while he or she was in the residence, the person should not be contaminating their environment. The remaining members of the residence can clean and launder as normal using detergent and/or disinfectant.

Remaining members of residences where a person with Ebola **only had a fever** with no gastrointestinal (e.g., diarrhea, vomiting) or hemorrhagic (bleeding) symptoms, can clean and launder as normal because the individual should not be contaminating their environment.

Cleaning by contract company - If the person with Ebola had a fever AND diarrhea, vomiting, and/or unexplained bleeding, public health and/or assigned authorities may need to contact a contract company who will assess the residence to determine the proper decontamination and disposal procedures. Remaining members of the residence should avoid contaminated rooms and areas until after the completion of the assessment and decontamination.

Remaining members of residences where a person with Ebola **had a fever AND diarrhea, vomiting, and/or unexplained bleeding** should have local public health and/or assigned authorities for Ebola emergency response managing the decontamination and waste disposal through a contract company. **Members of the residence (or property owners, if the residence is rented) should not handle contaminated materials; do not touch any body fluids or soiled surfaces and materials.**

Only areas/rooms with contamination from diarrhea, vomiting, unexplained bleeding, and/or other body fluids, will need to be cleaned and disinfected.

Source: [Interim Guidance for the U.S. Residence Decontamination for Ebola Virus Disease \(Ebola\) and Removal of Contaminated Waste](#)

The public health authorities can assist in finding a qualified contract company.

Recommendations for the contract company to follow are described in the CDC "[Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus](#)" and OSHA Fact Sheet 3756 on "[Cleaning and Decontamination of Ebola on Surfaces – Guidance for Workers and Employers in Non-Healthcare/ Non-Laboratory Settings](#)".

Source: CDC

Which contract companies can conduct the cleaning?

Companies with experience in cleaning biohazard and crimes scenes. [OSHA provides guidance for cleaning and decontaminating in non-healthcare settings](#). Any contract company conducting such work must comply with the its state's Ebola policies and with [OSHA standards](#) for, among others that may apply, [bloodborne pathogens](#) (29 CFR 1910.1030), [personal protective equipment \(PPE\)](#) (29 CFR 1910.132), respiratory protection (29 CFR 1910.134), and [hazard communication](#) (29 CFR 1910.1200) (e.g., for chemical hazards). In states that operate their own occupational safety and health programs, different or additional requirements may exist.

Source: OSHA

What should be done with the Ebola-contaminated waste?

Transportation of Ebola-contaminated waste (i.e., materials that cannot be decontaminated and were in contact with the person with Ebola having fever AND diarrhea, vomiting, and/or unexplained bleeding) must be packaged and transported in accordance with regulations on the transportation of Ebola contaminated items provided by the U.S. Department of Transportation (DOT): [U.S. DOT Hazardous Materials Regulation for Category A Infectious Substance](#). If a contract company is handling the waste, requirements in OSHA standards, including Bloodborne Pathogens (29 CFR 1910.1030) may also apply.

- The inactivation or incineration of Ebola-associated waste within a hospital system may be subject to state, local and OSHA regulations.
 - Onsite inactivation
 - Ebola-associated waste may be inactivated through the use of [appropriate autoclaves](#). Other methods of inactivation (e.g., chemical inactivation) have not been standardized and would need to consider worker safety issues, as well as the potential for triggering other Federal safety regulations.
 - Onsite incineration
 - Ebola-associated waste may be incinerated. The products of incineration (i.e., the ash) can be transported and disposed of in accordance with state and local regulations and standard protocols for hospital waste disposal.
- Ebola-associated waste **disposal** is subject to state and local regulations. See <http://www.epa.gov/waste/nonhaz/industrial/medical/programs.htm>. Ebola-associated waste that has been appropriately inactivated or incinerated is **not infectious and is not considered to be regulated medical waste or a hazardous material under Federal law**.

Source: CDC/EPA/DOT

Interim guidance summary for decontamination and waste disposal in a U.S. residence where a person has Ebola.

Category	Definition	Decontamination and Disposal	Training and PPE
Cleaning by residents	Residence where a person with Ebola only had a fever and no gastrointestinal (e.g., diarrhea, vomiting) and/or no hemorrhagic (bleeding) symptoms	Residents can clean and launder as normal using detergent and/or disinfectant Residents can discard of waste as normal	No training required Follow detergent and disinfectant product manufacturer's instructions
Cleaning by contract company	Residence where a person with Ebola had a fever AND diarrhea, vomiting, and/or	Members of the residence or property owners should NOT handle contaminated	Contract company should follow local state policies, comply with OSHA standards,

Category	Definition	Decontamination and Disposal	Training and PPE
	unexplained bleeding	materials Contact local public health or assigned authorities Contract company should conduct decontamination and disposal procedures	and federal guidelines as appropriate

Source: CDC

Additional Resources

[CDC Ebola Medical Waste Management](#)

[CDC Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus](#)

[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 \(Doffing\)\(http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html\)](#)

[OSHA Fact Sheet 3756, 'Cleaning and Decontamination of Ebola on Surfaces'](#)

[OSHA Bloodborne Pathogens Standard \(29 CFR 1910.1030\)](#)

[OSHA Hazard Communication Standards \(29 CFR 1910.1200\)](#)

[OSHA Personal Protective Equipment \(29 CFR 1910.132\)](#)

[OSHA/ NIOSH Infosheet: Protecting Workers Who Use Cleaning Chemicals](#)

[OSHA Ebola Web page](#)

[U.S. EPA Office of Pesticide Programs, List L: Disinfectants for Use Against the Ebola Virus](#)

[U.S. EPA Where You Live – State Medical Waste Programs and Regulations](#)

[U.S. DOT Hazardous Materials Regulations](#)

[Electronic Code for Federal Regulations](#)

Donning and doffing checklist from Nebraska

http://www.nebraskamed.com/app_files/pdf/biocontainment/ebolappechecklist.pdf