

## ***Health Advisory***

# **Cover Sheet**

**DATE:** October 3, 2014

**SUBJECT:** Evaluating Patients for Possible Ebola Virus Disease with Recommendations for Healthcare Personnel and Health Officials

**For LOCAL HEALTH DEPARTMENT reference only**

DPHHS Subject Matter Resource for more information regarding this HAN, contact:

**DPHHS CDCP  
Epidemiology Section  
1-406-444-0273**

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### **Categories of Health Alert Messages:**

**Health Alert:** conveys the highest level of importance; warrants immediate action or attention.

**Health Advisory:** provides important information for a specific incident or situation; may not require immediate action.

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**Information Service:** passes along low level priority messages that do not fit other HAN categories and are for informational purposes only.

**Please call DPHHS to update contact information at 444-0919**

# Information Sheet

**Date:** October 3, 2014

**Subject:** Evaluating Patients for Possible Ebola Virus Disease with Recommendations for Healthcare Personnel and Health Officials

**Background:** The first case of Ebola Virus Disease (Ebola) diagnosed in the United States was reported to CDC by Dallas County Health and Human Services on September 28, 2014, and laboratory-confirmed by CDC and the Texas Laboratory Response Network (LRN) laboratory on September 30. The patient departed Monrovia, Liberia, on September 19, and arrived in Dallas, Texas, on September 20. The patient was asymptomatic during travel and upon his arrival in the United States; he fell ill on September 24 and sought medical care at Texas Health Presbyterian Hospital of Dallas on September 26. He was treated and released. On September 28, he returned to the same hospital, and was admitted for treatment.

**Information:** Early recognition of Ebola disease is of critical importance in containing a disease with the clinical characteristics and outcomes of Ebola. Healthcare personnel should recognize symptoms of Ebola and elicit the patient's travel history, and immediately report/consult with the local health jurisdiction.

## **Recommendations:**

### Local Health Jurisdictions

- Test your local 24/7 public health emergency notification system to ensure it is functioning properly.
- Ensure your 24/7 contact information has been provided to key surveillance partners (i.e., local providers, EDs, etc.).

### Providers

- Increase the index of suspicion for Ebola Virus Disease, and collect travel history on patients with symptoms.
- Refer to the attached CDC guidance documents for information on Ebola Virus Disease and in support of consultation with your local health jurisdiction.
- Immediately contact your local health jurisdiction to report and consult about patients who present with symptoms and travel history of concern. If you cannot reach your local health jurisdiction, call DPHHS at 406-444-0273.

Additional information on Ebola Virus Disease visit the CDC website at <http://www.cdc.gov/vhf/ebola/>

**This is an official**  
**CDC HEALTH ADVISORY**

Distributed via the CDC Health Alert Network  
October 2, 2014, 20:00 ET (8:00 PM ET)  
CDCHAN-00371

**Evaluating Patients for Possible Ebola Virus Disease:  
Recommendations for Healthcare Personnel and Health Officials**

**Summary:** *The first case of Ebola Virus Disease (Ebola) diagnosed in the United States was reported to CDC by Dallas County Health and Human Services on September 28, 2014, and laboratory-confirmed by CDC and the Texas Laboratory Response Network (LRN) laboratory on September 30. The patient departed Monrovia, Liberia, on September 19, and arrived in Dallas, Texas, on September 20. The patient was asymptomatic during travel and upon his arrival in the United States; he fell ill on September 24 and sought medical care at Texas Health Presbyterian Hospital of Dallas on September 26. He was treated and released. On September 28, he returned to the same hospital, and was admitted for treatment.*

**The purpose of this HAN Advisory is to remind healthcare personnel and health officials to:**

**(1) increase their vigilance in inquiring about a history of travel to West Africa in the 21 days before illness onset for any patient presenting with fever or other symptoms consistent with Ebola;**

**(2) isolate patients who report a travel history to an Ebola-affected country (currently Liberia, Sierra Leone, and Guinea) and who are exhibiting Ebola symptoms in a private room with a private bathroom and implement standard, contact, and droplet precautions (gowns, facemask, eye protection, and gloves); and**

**(3) immediately notify the local/state health department.**

**Please disseminate this information to infectious disease specialists, intensive care physicians, primary care physicians, and infection control specialists, as well as to emergency departments, urgent care centers, and microbiology laboratories.**

## **Background**

The first known case of Ebola with illness onset and laboratory confirmation in the United States occurred in Dallas, Texas, on September 2014, in a traveler from Liberia. The West African countries of Liberia, Sierra Leone, and Guinea are experiencing the largest Ebola epidemic in history. From March 24, 2014, through September 23, 2014, there have been 6,574 total cases (3,626 were laboratory-confirmed) and 3,091 total deaths reported in Africa. Ebola is a rare and deadly disease caused by infection with one of four viruses (Ebolavirus genus) that cause disease in humans. Ebola infection is associated with fever of greater than 38.6°C or 101.5°F, and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage. Ebola is spread through direct contact (through broken skin or mucous membranes) with blood or body fluids (including but not limited to urine, saliva, feces, vomit, sweat, breast milk, and semen) of a person who is sick with Ebola or contact with objects (such as needles and syringes) that have been contaminated with these fluids. Ebola is not spread through the air or water. The main source for spread is human-to-human transmission. Avoiding contact with infected persons (as well as potentially infected corpses) and their blood and body fluids is of paramount importance. Persons are not contagious before they are symptomatic. The incubation period

(the time from exposure until onset of symptoms) is typically 8-10 days, but can range from 2-21 days. Additional information is available at <http://www.cdc.gov/vhf/ebola/index.html>.

## Recommendations

Early recognition is critical to controlling the spread of Ebola virus. Consequently, healthcare personnel should elicit the patient's travel history and consider the possibility of Ebola in patients who present with fever, myalgia, severe headache, abdominal pain, vomiting, diarrhea, or unexplained bleeding or bruising. Should the patient report a history of recent travel to one of the affected West African countries (Liberia, Sierra Leone, and Guinea) *and* exhibit such symptoms, immediate action should be taken. The Ebola algorithm for the evaluation of a returned traveler and the checklist for evaluation of a patient being evaluated for Ebola are available at <http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf> and <http://www.cdc.gov/vhf/ebola/pdf/checklist-patients-evaluated-us-evd.pdf>.

Patients in whom a diagnosis of Ebola is being considered should be isolated in a single room (with a private bathroom), and healthcare personnel should follow standard, contact, and droplet precautions, including the use of appropriate personal protective equipment (PPE). Infection control personnel and the local health department should be immediately contacted for consultation.

The following guidance documents provide additional information about clinical presentation and clinical course of Ebola virus disease, infection control, and patient management:

- Guidelines for clinicians in U.S. healthcare settings are available at <http://www.cdc.gov/vhf/ebola/hcp/clinician-information-us-healthcare-settings.html>.
- Guidelines for infection prevention control for hospitalized patients with known or suspected Ebola in U.S. hospitals are available at <http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html>
- Guidelines for safe management of patients with Ebola in U.S. hospitals are at <http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html>.

The case definitions for persons under investigation (PUI) for Ebola, probable cases, and confirmed cases as well as classification of exposure risk levels are at <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>.

Persons at highest risk of developing infection are:

- those who have had direct contact with the blood and body fluids of an individual diagnosed with Ebola – this includes any person who provided care for an Ebola patient, such as a healthcare provider or family member not adhering to recommended infection control precautions (i.e., not wearing recommended PPE)
- those who have had close physical contact with an individual diagnosed with Ebola
- those who lived with or visited the Ebola-diagnosed patient while he or she was ill.

Persons who have been exposed, but who are asymptomatic, should be instructed to monitor their health for the development of fever or symptoms for 21 days after the last exposure. Guidelines for monitoring and movement of persons who have been exposed to Ebola are available at <http://www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html>.

Diagnostic tests are available for detection of Ebola at LRN laboratories as well as CDC. Consultation with CDC is required before shipping specimens to CDC. Information about diagnostic testing for Ebola can be found at <http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html>.

Healthcare personnel in the United States should immediately contact their state or local health department regarding any person being evaluated for Ebola if the medical evaluation suggests that diagnostic testing may be indicated. If there is a high index of suspicion, U.S. health departments should immediately report any probable cases or persons under investigation (PUI)

(<http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>) to CDC's Emergency Operations Center at 770-488-7100.

*The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.*

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**Categories of Health Alert Network messages:**

**Health Alert** Requires immediate action or attention; highest level of importance  
**Health Advisory** May not require immediate action; provides important information for a specific incident or situation  
**Health Update** Unlikely to require immediate action; provides updated information regarding an incident or situation  
**HAN Info Service** Does not require immediate action; provides general public health information

##This message was distributed to state and local health officers, state and local epidemiologists, state and local laboratory directors, public information officers, HAN coordinators, and clinician organizations##

# Case Definition for Ebola Virus Disease (EVD)

Updated: September 4, 2014

Early recognition is critical for infection control. Health care providers should be alert for and evaluate any patients suspected of having Ebola Virus Disease (EVD).

## Person Under Investigation (PUI)

A person who has both consistent symptoms and risk factors as follows:

1. Clinical criteria, which includes 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; AND
2. epidemiologic risk factors within the past 21 days before the onset of symptoms, such as contact with blood or other body fluids or human remains 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 non-human primates from disease-endemic areas.

## Probable Case

A PUI whose epidemiologic risk factors include high or low risk exposure(s) (see below)

## Confirmed Case

A case with laboratory-confirmed diagnostic evidence of Ebola virus infection

## Exposure Risk Levels

Levels of exposure risk are defined as follows:

### High risk exposures

A high risk exposure includes any of the following:

- Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids of EVD patient
- Direct skin contact with, or exposure to blood or body fluids of, an EVD patient without appropriate personal protective equipment (PPE)

- Processing blood or body fluids of a confirmed EVD patient without appropriate PPE or standard biosafety precautions
- Direct contact with a dead body without appropriate PPE in a country where an EVD outbreak is occurring\*

## Low<sup>1</sup> risk exposures

A low risk exposure includes any of the following

- Household contact with an EVD patient
- Other close contact with EVD patients in health care facilities or community settings. Close contact is defined as
  - a. being within approximately 3 feet (1 meter) of an EVD patient or within the patient's room or care area for a prolonged period of time (e.g., health care personnel, household members) while not wearing recommended personal protective equipment (i.e., standard, droplet, and contact precautions; see [Infection Prevention and Control Recommendations](http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html)(<http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html>))
  - b. having direct brief contact (e.g., shaking hands) with an EVD patient while not wearing recommended personal protective equipment.
- Brief interactions, such as walking by a person or moving through a hospital, do not constitute close contact

## No known exposure

Having been in a country in which an EVD outbreak occurred within the past 21 days and having had no high or low risk exposures

\* As of 30 August 2014, EVD outbreaks are affecting multiple countries in West Africa (see [Affected Areas](http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html#areas)(<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html#areas>))

<sup>1</sup> For purposes of monitoring and movement restrictions of persons with Ebola virus exposure, low risk is interpreted as some risk. See [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)(<http://www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html>)





# Checklist for Patients Being Evaluated for Ebola Virus Disease (EVD) in the United States

## Upon arrival to clinical setting/triage

- Assess the patient for a fever (subjective or  $\geq 100.4^{\circ}\text{F}$  /  $38.0^{\circ}\text{C}$ )
- Determine if the patient has symptoms compatible EVD such as headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain or hemorrhage
- Assess if the patient has a potential exposure from traveling to a country with widespread Ebola transmission\* or having contact with an Ebola patient in the 21 days before illness onset

### **Suspect Ebola if fever or compatible Ebola symptoms and an exposure are present**

See next steps in this checklist and the Algorithm for Evaluation of the Returned Traveler for Ebola at <http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf>

## Upon initial assessment

- Isolate patient in single room with a private bathroom and with the door to hallway closed
- Implement standard, contact, & droplet precautions
- Notify the hospital Infection Control Program at \_\_\_\_\_
- Report to the health department at \_\_\_\_\_

## Conduct a risk assessment for: High-risk exposures

- Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids from an EVD patient
- Direct skin contact with skin, blood or body fluids from an EVD patient
- Processing blood or body fluids from an EVD patient without appropriate PPE
- Direct contact with a dead body in an Ebola-affected area without appropriate PPE

## Low-risk exposures

- Household members of an EVD patient or others who had brief direct contact (e.g., shaking hands) with an EVD patient without appropriate PPE
- Healthcare personnel in facilities with EVD patients who have been in care areas of EVD patients without recommended PPE

## Use of personal protective equipment (PPE)

- Use a buddy system to ensure that PPE is put on and removed safely

### Before entering patient room, wear:

- Gown (fluid resistant or impermeable)
- Facemask
- Eye protection (goggles or face shield)
- Gloves

### If likely to be exposed to blood or body fluids, additional PPE may include but isn't limited to:

- Double gloving
- Disposable shoe covers
- Leg coverings

### Upon exiting patient room

- PPE should be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials
- Discard disposable PPE
- Re-useable PPE should be cleaned and disinfected per the manufacturer's reprocessing instructions
- Hand hygiene should be performed immediately after removal of PPE

## During aerosol-generating procedures

- Limit number of personnel present
- Conduct in an airborne infection isolation room
- Don PPE as described above except use a NIOSH certified fit-tested N95 filtering facepiece respirator for respiratory protection or alternative (e.g., PAPR) instead of a facemask

## Patient placement and care considerations

- Maintain log of all persons entering patient's room
- Use dedicated disposable medical equipment (if possible)
- Limit the use of needles and other sharps
- Limit phlebotomy and laboratory testing to those procedures essential for diagnostics and medical care
- Carefully dispose of all needles and sharps in puncture-proof sealed containers
- Avoid aerosol-generating procedures if possible
- Wear PPE (detailed in center box) during environmental cleaning and use an EPA-registered hospital disinfectant with a label claim for non-enveloped viruses\*\*

## Initial patient management

- Consult with health department about diagnostic EVD RT-PCR testing\*\*\*
- Consider, test for, and treat (when appropriate) other possible infectious causes of symptoms (e.g., malaria, bacterial infections)
- Provide aggressive supportive care including aggressive IV fluid resuscitation if warranted
- Assess for electrolyte abnormalities and replete
- Evaluate for evidence of bleeding and assess hematologic and coagulation parameters
- Symptomatic management of fever, nausea, vomiting, diarrhea, and abdominal pain
- Consult health department regarding other treatment options

**This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.**

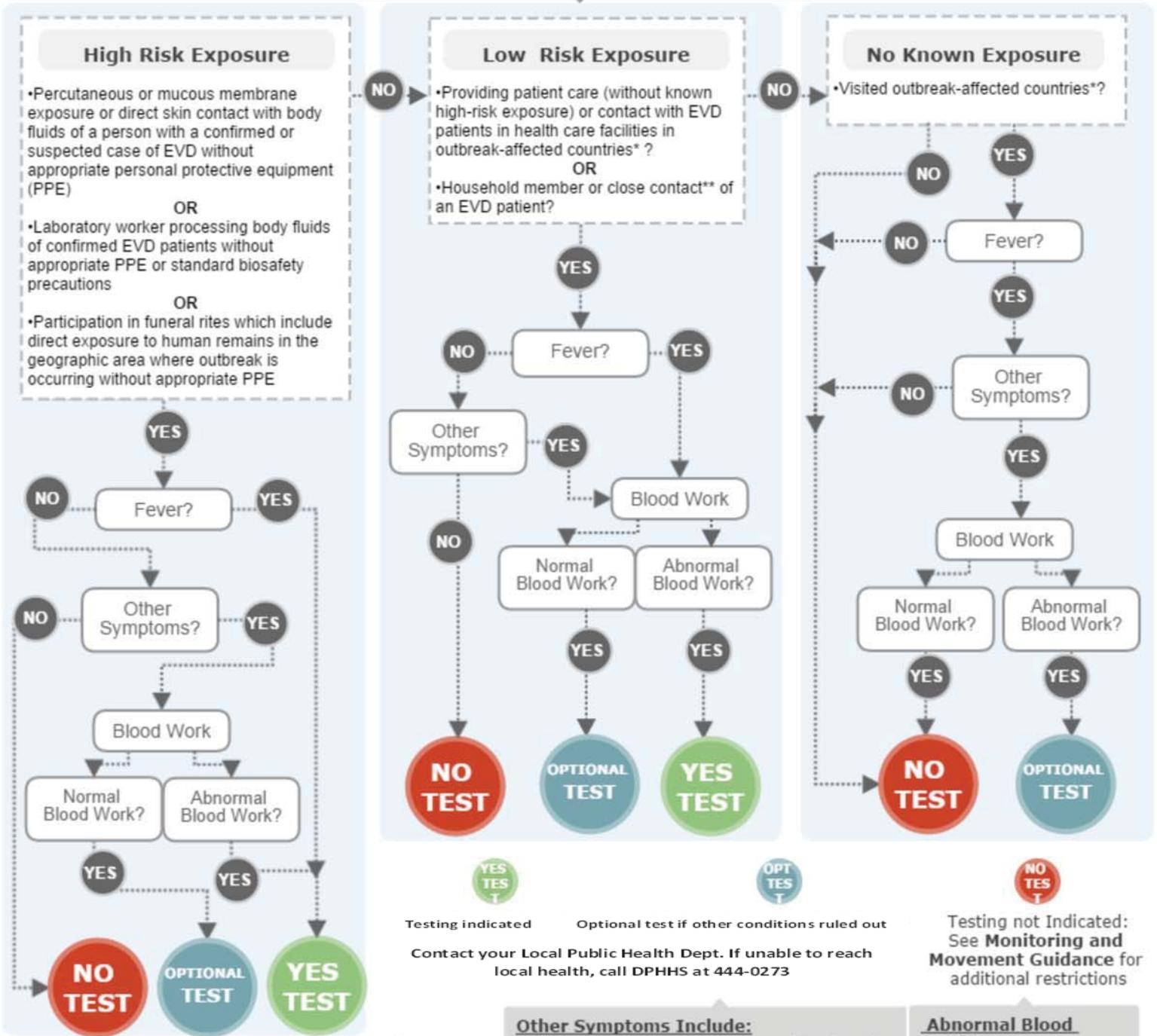
\* See 2014 Ebola Outbreak in West Africa—Case Counts or <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html> to determine if a country has widespread Ebola transmission

\*\* See Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus or <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>

\*\*\* See Interim Guidance for Specimen Collection, Transport, Testing, and Submission for Persons Under Investigation for Ebola Virus Disease in the United States or <http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html>

# Decision Guide for CDC Consultation and Ebola Virus Disease (EVD) Testing

Does patient meet **ANY** of the following within 21 days before symptom onset?



## DEFINITIONS

**Fever:**  
•Defined as  $\geq 101.5^{\circ}\text{F}$  ( $38.6^{\circ}\text{C}$ )

### Other Symptoms Include:

- Intense weakness
- Headache and sore throat
- Internal or external bleeding
- Impaired kidney and liver function
- Muscle pain
- Vomiting
- Diarrhea

### Abnormal Blood Work:

- Platelet count  $<150\text{K}$
- Prolonged PT/PTT
- AST/ALT elevation

Testing indicated      Optional test if other conditions ruled out  
Contact your Local Public Health Dept. If unable to reach local health, call DPHHS at 444-0273

Testing not Indicated:  
See **Monitoring and Movement Guidance** for additional restrictions

Specimens received at CDC without prior consultation will not be tested.  
Testing may be delayed if tracking information is not provided.

Note: Malaria diagnostics should 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.

\* Outbreak updates and affected countries found at: <http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>

\*\* Case definitions can be found here: <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>



+Special thanks to the Michigan Department of Community Health for their work on the decision guide



## **Ebola Q&As on Transmission**

### **What are body fluids?**

Ebola has been detected in blood and many body fluids. Body fluids include saliva, mucus, vomit, feces, sweat, tears, breast milk, urine, and semen.

### **Can Ebola spread by coughing? By sneezing?**

Unlike respiratory illnesses like measles or chickenpox, which can be transmitted by virus particles that remain suspended in the air after an infected person coughs or sneezes, Ebola is transmitted by direct contact with body fluids of a person who has symptoms of Ebola disease. Although coughing and sneezing are not common symptoms of Ebola, if a symptomatic patient with Ebola coughs or sneezes on someone, and saliva or mucus come into contact with that person's eyes, nose or mouth, these fluids may transmit the disease.

### **What does “direct contact” mean?**

Direct contact means that body fluids (blood, saliva, mucus, vomit, urine, or feces) from an infected person (alive or dead) have touched someone's eyes, nose, or mouth or an open cut, wound, or abrasion.

### **How long does Ebola live outside the body?**

Ebola is killed with hospital-grade disinfectants (such as household bleach). Ebola on dried on surfaces such as doorknobs and countertops can survive for several hours; however, virus in body fluids (such as blood) can survive up to several days at room temperature.

### **Are patients who recover from Ebola immune for life? Can they get it again - the same or a different strain?**

Recovery from Ebola depends on good supportive clinical care and a patient's immune response. Available evidence shows that people who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer.

We don't know if people who recover are immune for life or if they can become infected with a different species of Ebola.

## **If someone survives Ebola, can he or she still spread the virus?**

Once someone recovers from Ebola, they can no longer spread the virus. However, Ebola virus has been found in semen for up to 3 months. People who recover from Ebola are advised to abstain from sex or use condoms for 3 months.

## **Can Ebola be spread through mosquitos?**

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 spread and become infected with Ebola virus.

### **Information For:**

- [Working and Living Abroad](http://www.cdc.gov/vhf/abroad/working-living-abroad.html)(<http://www.cdc.gov/vhf/abroad/working-living-abroad.html>)
- [Travelers](#)
- [Healthcare Workers](http://www.cdc.gov/vhf/ebola/hcp/index.html)(<http://www.cdc.gov/vhf/ebola/hcp/index.html>)

[More](http://www.cdc.gov/vhf/abroad/working-living-abroad.html)(<http://www.cdc.gov/vhf/abroad/working-living-abroad.html>)

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  - [Centers for Disease Control and Prevention](#)  
[National Center for Emerging and Zoonotic Infectious Diseases \(NCEZID\)](#)  
[Division of High-Consequence Pathogens and Pathology \(DHCPP\)](#)  
[Viral Special Pathogens Branch \(VSPB\)](#)

# Ebola Virus Disease (Ebola)

## Algorithm for Evaluation of the Returned Traveler



**FEVER** (subjective or  $\geq 100.4^{\circ}\text{F}$  or  $38.0^{\circ}\text{C}$ ) or compatible Ebola symptoms\* in a patient who has resided in or traveled to a country with wide-spread Ebola transmission\*\* in the 21 days before illness onset

\* headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or hemorrhage

**NO**

**Report** asymptomatic patients with high- or low-risk exposures (see below) in the past 21 days to the health department

**YES**

1. Isolate patient in single room with a private bathroom and with the door to hallway closed
2. Implement standard, contact, and droplet precautions (gown, facemask, eye protection, and gloves)
3. Notify the hospital Infection Control Program and other appropriate staff
4. Evaluate for any risk exposures for Ebola
5. **IMMEDIATELY** report to the health department

### HIGH-RISK EXPOSURE

Percutaneous (e.g., needle stick) or mucous membrane contact with blood or body fluids from an Ebola patient

**OR**

Direct skin contact with, or exposure to blood or body fluids of, an Ebola patient

**OR**

Processing blood or body fluids from an Ebola patient without appropriate personal protective equipment (PPE) or biosafety precautions

**OR**

Direct contact with a dead body (including during funeral rites) in a country with wide-spread Ebola transmission\*\* without appropriate PPE

### LOW-RISK EXPOSURE

Household members of an Ebola patient and others who had brief direct contact (e.g., shaking hands) with an Ebola patient without appropriate PPE

**OR**

Healthcare personnel in facilities with confirmed or probable Ebola patients who have been in the care area for a prolonged period of time while not wearing recommended PPE

### NO KNOWN EXPOSURE

Residence in or travel to a country with wide-spread Ebola transmission\*\* without HIGH- or LOW-risk exposure

### Review Case with Health Department Including:

- Severity of illness
- Laboratory findings (e.g., platelet counts)
- Alternative diagnoses

**Ebola suspected**

**Ebola not suspected**

### TESTING IS INDICATED

The health department will arrange specimen transport and testing at a Public Health Laboratory and CDC

The health department, in consultation with CDC, will provide guidance to the hospital on all aspects of patient care and management

### TESTING IS NOT INDICATED

#### If patient requires in-hospital management:

- Decisions regarding infection control precautions should be based on the patient's clinical situation and in consultation with hospital infection control and the health department
- If patient's symptoms progress or change, re-assess need for testing with the health department

#### If patient does not require in-hospital management:

- Alert the health department before discharge to arrange appropriate discharge instructions and to determine if the patient should self-monitor for illness
- Self-monitoring includes taking their temperature twice a day for 21 days after their last exposure to an Ebola patient



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

\*\* CDC Website to check current countries with wide-spread transmission:  
<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>

This algorithm is a tool to assist healthcare providers identify and triage patients who may have Ebola. The clinical criteria used in this algorithm (a single symptom consistent with Ebola) differ from the CDC case definition of a Person Under Investigation (PUI) for Ebola, which is more specific. Public health consultation alone does not imply that Ebola testing is necessary. More information on the PUI case definition: <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>

# Specimen Collection, Transport, Testing, and Submission for Patients with Suspected Infection with Ebola Virus Disease

## NOTIFICATION & CONSULTATION

Hospitals should follow their state and/or local health department procedures for notification and consultation for Ebola testing requests before contacting CDC.

CDC cannot accept any specimens without prior consultation.

FOR CONSULTATION, PLEASE CONTACT THE MONTANA PUBLIC HEALTH LABORATORY AT:

800-821-7284



## WHEN SPECIMENS SHOULD BE COLLECTED FOR EBOLA TESTING



**Ebola virus is detected in blood** only after the onset of symptoms, usually fever. It may take up to 3 days after symptoms appear for the virus to reach detectable levels. Virus is generally detectable by real-time RT-PCR from 3-10 days after symptoms appear.



**Ideally, specimens should be taken** when a symptomatic patient reports to a healthcare facility and is suspected of having an Ebola exposure. However, if the onset of symptoms is <3 days, a later specimen may be needed to completely rule-out Ebola virus, if the first specimen tests negative.

## PREFERRED SPECIMENS FOR EBOLA TESTING

A minimum volume of 4 milliliters of whole blood preserved with EDTA is preferred but whole blood preserved with sodium polyanethol sulfonate (SPS), citrate, or with clot activator can be submitted for Ebola testing.

Specimens should be shipped at 2-8°C or frozen on cold-packs to CDC. Do not submit specimens to CDC in glass containers. Do not submit specimens preserved in heparin tubes.



2-8°C

Specimens other than blood may be submitted upon consult with CDC.

Standard labeling should be applied for each specimen. The requested test needs to be identified only on the requisition and CDC specimen submission forms.



## DIAGNOSTIC TESTING FOR EBOLA PERFORMED AT CDC

Several diagnostic tests are available for detection of Ebola virus disease. Acute infections will be confirmed using a real-time RT-PCR assay (CDC test directory code CDC -10309 Ebola Identification) in a CLIA-accredited laboratory. Virus isolation may also be attempted. Serologic testing for IgM and IgG antibodies will be completed for certain specimens and to monitor the immune response in confirmed Ebola virus disease patients (#CDC-10310 Ebola Serology).

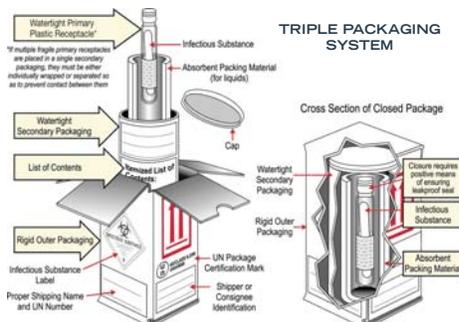
Lassa fever is also endemic in certain areas of West Africa and may show symptoms similar to early Ebola virus disease. Diagnostic tests available at CDC include but are not limited to RT-PCR, antigen detection, and IgM serology, all of which may be utilized to rule out Lassa fever in patients who test negative for Ebola virus disease.

## TRANSPORTING SPECIMENS WITHIN THE HOSPITAL / INSTITUTION



In compliance with 29 CFR 1910.1030, specimens should be placed in a durable, leak-proof secondary container for transport within a facility. To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected Ebola virus disease specimens.

## PACKAGING & SHIPPING CLINICAL SPECIMENS TO CDC



Specimens collected for Ebola virus disease testing should be packaged and shipped without attempting to open collection tubes or aliquot specimens.

Specimens for shipment should be packaged following the basic triple packaging system which consists of a primary container (a sealable specimen bag) wrapped with absorbent material, secondary container (watertight, leak-proof), and an outer shipping package.

## THE SUBMISSION PROCESS

Contact your state and/or local health department and CDC (770-488-7100) to determine the proper category for shipment based on clinical history and risk assessment by CDC and to obtain detailed shipping guidance and required CDC submission documents. State guidelines may differ and state or local health departments should be consulted before shipping.

INFORMATION ON SHIPPING & TRACKING IS AVAILABLE AT

[www.cdc.gov/ebola](http://www.cdc.gov/ebola)

