



The current case definition for Ebola Virus Disease has changed. Go to MDH's Evaluation Criteria and Guidelines: Ebola Information for Health Professionals (<http://www.health.state.mn.us/divs/idepc/diseases/vhf/hcp/evaluation.html>) for the latest definition.

Health Advisory: Evaluation Guidelines of Minnesota Patients Suspected of Having Ebola

Minnesota Department of Health Mon Aug 04 13:00 CDT 2014

Modified from the CDC August 1st Health Advisory: Guidelines for Evaluation of US Patients Suspected of Having Ebola Virus Disease <http://emergency.cdc.gov/han/han00364.asp>

Action Steps:

Local and tribal health departments: Please forward to hospitals, clinics, emergency departments, urgent care centers, and convenience clinics in your jurisdiction.

Hospitals and clinics: Please forward to healthcare professionals, including primary care physicians, infectious disease doctors, infection preventionists, intensive care specialists, hospital epidemiologist and hospital administration, as well as to emergency departments and microbiology laboratories.

Healthcare professionals:

Evaluate suspected patients for Ebola virus disease (EVD) if they have:

1. 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;
AND
2. have had 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, rodents, or primates from disease-endemic areas within 21 days before symptom onset.
3. Continue to evaluate patients for other diseases endemic to the region as clinically indicated (e.g., malaria, typhoid, etc.) following standard laboratory procedures. If patient meets high-risk criteria (see below) contact MDH prior to laboratory procedures.

If patient meets above criteria ask about contact with ill individuals or cases of EVD, and types of activities during their travel (e.g., exposure to healthcare facilities, caring for ill individuals, wildlife exposure) to determine their risk for EVD (see risk categories below).

EVD Testing Criteria

Testing patients with suspected EVD will be guided by their exposure risk level below (e.g., high-risk, low-risk, and no known exposure). If evaluating a patient suspected to have EVD, call the Minnesota Department of Health at 1-877-676-5414 (toll-free) or 651-201-5414.

High-Risk: High-risk exposure for EVD includes any of the following 21 days before fever onset:

1. 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),
2. laboratory processing of body fluids of suspected or confirmed EVD cases without appropriate PPE or standard biosafety precautions,
3. participation in funeral rites or other direct exposure to human remains in the geographic area where the outbreak is occurring without appropriate PPE.

Testing for EVD is recommended if the patient had has high-risk exposure.

For patients with a high-risk exposure but without a fever or fever is less than 38.6° C or 101.5° F, 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) or unknown.

Asymptomatic persons with high-risk exposures should be monitored daily for fever and symptoms for 21 days from the last known exposure and evaluated medically at the first indication of illness.

Low-Risk: Low-risk exposure for EVD includes any of the following 21 days before fever onset:



1. spending time in a healthcare facility where EVD patients are being treated (including healthcare workers who used appropriate PPE, employees not involved in direct patient care, or patients who did not have EVD and their family caretakers),
2. household members of an EVD patient without high-risk exposures as defined above
3. patients with direct unprotected contact with bats or primates from EVD-affected countries

Testing for EVD in a patient with low-risk exposure is only recommended if blood work findings are abnormal (i.e., thrombocytopenia $<150,000$ cells/ μ L and/or elevated transaminases) or unknown. Testing for EVD in a patient with low-risk exposure is also recommended if blood work findings are abnormal and patient has fever only (other symptoms absent).

Asymptomatic persons with low-risk exposures should be monitored daily for fever and symptoms for 21 days from the last known exposure and evaluated medically at the first indication of illness.

No Known Exposures: No known exposure for EVD includes a patient who has no known exposure as listed above but has visited an EVD-affected country 21 days before fever onset.

Testing may be indicated for patients with no known exposures who have:

1. fever ($\geq 38.6^{\circ}$ C or 101.5° F) with other symptoms AND
2. no other diagnosis AND
3. abnormal or unknown bloodwork (i.e., thrombocytopenia $<150,000$ cells/ μ L and/or elevated transaminases).

If evaluating a patient suspected to have EVD, call the Minnesota Department of Health at 1-877-676-5414 (toll-free) or 651-201-5414. If EVD testing is indicated after consultation with MDH, collect serum, plasma, or whole blood. A minimum sample volume of 4 mL should be shipped refrigerated or frozen on ice pack or dry ice (no glass tubes), in accordance with IATA guidelines. MDH will provide assistance for specimen submission to CDC.

If evaluating a patient for a pre-travel visit to an affected region, see CDC travel advisories (Guinea: <http://wwwnc.cdc.gov/travel/notices/alert/ebola-guinea> ; Liberia: <http://wwwnc.cdc.gov/travel/notices/alert/ebola-liberia> ; Sierra Leone: <http://wwwnc.cdc.gov/travel/notices/alert/ebola-sierra-leone>)

Recommended infection control measures

U.S. hospitals can safely manage a patient with EVD by following Standard, Contact, and Droplet precautions. Additional precautions may be instituted on a case-by-case basis in consultation with MDH (1-877-676-5414 (toll-free) or 651-201-5414).

Please refer to CDC's 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>) document for details.

A summary of these recommendations includes:

- **Patient placement:** Patients should be placed in a single patient room (containing a private bathroom) with the door closed.
- **Healthcare worker protection:** Healthcare workers should wear: gloves, gown (fluid resistant or impermeable), shoe covers, eye protection (goggles or face shield), and a facemask. Additional PPE might be required in certain situations (e.g., copious amounts of blood, other body fluids, vomit, or feces present in the environment), including but not limited to double gloving, disposable shoe covers, and leg coverings.
- **Aerosol-generating procedures:** Avoid aerosol-generating procedures. If clinically essential PPE for these procedures should include respiratory protection (N95 respirator or PAPR); perform in an Airborne Infection Isolation Room.
- **Environmental infection control:** Diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials is paramount, as blood, sweat, emesis, feces and other body secretions represent potentially infectious materials. Disinfectants for Ebola virus include 10% sodium hypochlorite (bleach) solution, or hospital-grade quaternary ammonium or phenolic products. Cleaning must precede disinfection. Healthcare workers 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. Face protection (face shield or facemask with goggles) should be worn when performing tasks such as liquid waste disposal that can generate splashes. Follow standard procedures,



per hospital policy and manufacturers' instructions, for cleaning and/or disinfection of environmental surfaces, equipment, textiles, laundry, food utensils and dishware.

- **Hand hygiene:** Perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.

Background

CDC is working with the WHO, the ministries of health of Guinea, Liberia, and Sierra Leone, and other international organizations in response to an outbreak of EVD in West Africa. This is the first and largest outbreak of EVD ever documented in West Africa.

EVD is characterized by sudden onset of fever and malaise, accompanied by other nonspecific signs and symptoms, such as myalgia, headache, vomiting, and diarrhea. Patients with severe forms of the disease may develop hemorrhagic symptoms and multi-organ dysfunction, including hepatic damage, renal failure, and central nervous system involvement, leading to shock and death. The fatality rate can vary from 40-90%.

In outbreak settings, Ebola virus is typically first spread to humans after contact with infected wildlife and is then spread person-to-person through direct contact with bodily fluids such as, but not limited to, blood, urine, sweat, semen, and breast milk. The incubation period is usually 8–10 days (ranges from 2–21 days). Asymptomatic individuals do not transmit EVD. EVD patients can transmit the virus while febrile and through later stages of disease, as well as postmortem, when persons touch the body during funeral preparations.