



# Ebola Virus Disease (EVD) Fact Sheet for Health Professionals

## What is Ebola Virus Disease?

Ebola virus disease (EVD) is a severe acute viral disease that causes hemorrhagic fever in humans and animals. Viral diseases that cause haemorrhagic fevers, such as Ebola, are often fatal as they affect the body's vascular system and can lead to significant internal bleeding, dehydration, and organ failure.

**Transmission can be prevented.**

## What are the signs and symptoms associated with Ebola virus disease?

EVD is a severe acute viral illness often characterized by fever, malaise, myalgia (muscle pain), severe headache, conjunctival injection, pharyngitis (sore throat), abdominal pain, vomiting, diarrhea that can be bloody, bleeding not related to injury, unexplained bleeding, and/or erythematous maculopapular rash on the trunk. Hemorrhagic symptoms occur in about 50-60% of cases, often in the later stages of disease.

Symptoms of Ebola are similar to those of other viral hemorrhagic fevers, such as Marburg, and of infectious diseases like malaria or typhoid. Diagnosis can be difficult if only a single case is involved. Identification of suspected cases is dependent on exposure history.

## What are the *initial* signs of EVD?

The initial signs of Ebola are nonspecific, and usually consist of fever, headache, fatigue, sore throat, and malaise. As a result, it is essential to obtain a travel history of each patient to evaluate the risk of EVD.

Patients do not always develop all signs and symptoms. Case finding of suspected imported cases is absolutely dependent on investigation of the patient's travel history and association of this information with the symptoms presented by the patient as initial signs/symptoms are nonspecific.

## Does EVD present differently in children?

There are differences both in clinical signs and in clinical outcome. Regarding clinical signs, the most common symptoms are fever (100%), weakness (75%), loss of appetite (70%), nausea/vomiting (70%), cough (65%), diarrhea (60%), and headache (50%). Hemorrhagic manifestations are less common than in adults (16% of cases). Gastrointestinal and respiratory symptoms are frequent, while signs of effects on the central nervous system (disorientation, convulsions, etc.) are infrequent.

## How is Ebola virus transmitted?

The Ebola virus can be transmitted through:

- Contact with blood, body fluids or tissues of infected persons
- Contact with objects contaminated with infected body fluids
- Contact with infected animals

A person with Ebola can spread the disease to others when they have symptoms. After 21 days following the last exposure, if a person does not develop symptoms, Ebola can be ruled out.

Ebola is introduced into the human population through close contact with blood, secretions, organs or other bodily fluids of infected animals. Transmission has been documented through handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.

Ebola then spreads in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environments contaminated with such fluids. Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in Ebola transmission as infectivity persists after death. Men who have recovered from the disease can still transmit virus through semen for up to 7 weeks after recovery from illness. Ebola has also been detected in the breast milk of women who have recovered from the virus.

Health care workers have frequently been infected while treating patients under investigation for, or confirmed cases of EVD. *This has occurred through close contact with patients when Infection Prevention and Control precautions are not strictly practiced.*

## What is the period of communicability?

Cases are not considered to be communicable before the onset of symptoms but communicability increases with each subsequent state of illness and the case remains communicable as long as blood and secretions contain the virus. Patients with EVD are most infectious in later stages of their illness when viral load rises and they experience copious fluid loss due to diarrhea, vomiting or hemorrhage. This includes the post-mortem period.

## What is the incubation period?

The incubation period varies from 2 to 21 days; 8 to 10 days is most common. There is no transmission during the incubation period. People are only contagious once they develop symptoms.

## How is Ebola virus disease diagnosed?

Other diseases should be ruled out before a diagnosis of EVD can be made. These include: malaria, typhoid fever, shigellosis, cholera, leptospirosis, plague, rickettsiosis, relapsing fever, meningitis, hepatitis and other viral haemorrhagic fevers.

The decision for specimen collection and testing should be based on the clinical status of the patient and on an on-going risk assessment.

EVD testing must occur at the National Microbiology Laboratory under maximum biological containment conditions as samples are a biohazard risk. Prior to obtaining a specimen, Infectious Diseases must be consulted so additional diagnostic considerations can be determined (malaria, typhoid fever, and so on).

Testing for Ebola virus in blood may be negative within the first 72 hours of symptom onset; as such a second test may be required before an EVD diagnosis can be excluded. A single negative RT-PCR test result from a blood specimen collected more than 72 hours after symptom onset, rules out EVD.

### **What is the average period of sickness?**

Studies conducted in other outbreaks have shown the average time from symptom onset to death is 9 days (DRC, 1995) or 8 days (Uganda, 2000). In survivors, the average time from onset of symptoms until the patient is no longer infectious is 10 days (DRC, 1995; Uganda, 2000). These numbers are averages. Information will be updated as more information on the current outbreak becomes available.

### **How is Ebola virus disease treated?**

No licensed vaccine or disease specific treatment for EVD is available. New drug therapies are being evaluated.

Severely ill patients require intensive supportive care. Treatment typically includes oral rehydration with solutions containing electrolytes or intravenous fluids; maintaining oxygen status and blood pressure; treating other infections if they occur; and supporting the patient's immune response.

### **Do survivors have life-long immunity to Ebola?**

Studies of survivors have shown presence of antibodies for up to 10 years. However, it is not known whether these people remain immune for life, or if they can be re-infected with a different strain of the Ebola virus. Survivors report a high prevalence of eye, musculoskeletal & neurological complications.

### **Are there special considerations for pregnant women with EVD? What about infants of mothers with EVD?**

According to published case series, pregnant women infected with the Ebola virus are at greater risk of miscarriage and serious bleeding, which means their EVD-related mortality is slightly higher than in the general population.

If a nursing mother develops EVD, the most important recommendation is to immediately stop breastfeeding and to try to keep the infant safe from infection by separating it from the mother, under the care of other people. The people who take care of the infant must be trained and prepared for the management of suspected cases, since the infant is regarded as a contact. If the infant develops symptoms, caregivers should proceed immediately as in any other suspected case.