

Ebola Virus Disease FAQs

What is Ebola virus disease?

Ebola virus disease (formerly known as Ebola haemorrhagic fever) is a severe, often fatal illness, with a death rate of up to 90%. The illness affects humans and nonhuman primates (e.g. monkeys, gorillas, and chimpanzees).

Ebola first appeared in 1976 in two simultaneous outbreaks, one in a village near the Ebola River in the Democratic Republic of Congo, and the other in a remote area of Sudan.

The origin of the virus is unknown but fruit bats are considered the likely host of the Ebola virus, based on available evidence.

How do people become infected with the virus?

In the current outbreak in west Africa, the majority of cases have occurred as a result of person-to-person transmission.

Infection occurs from direct contact through broken skin or mucous membranes with the blood, or other bodily fluids or secretions (stool, urine, saliva, semen) of infected people. Infection can also occur if broken skin or mucous membranes of a healthy person come into contact with environments that have become contaminated with an Ebola patient's infectious fluids such as soiled clothing, bed linen, or used needles.

Transmission has commonly occurred in communities during funerals and burial rituals. Burial ceremonies in which mourners have direct contact with the body of the deceased person have played a major role in the spread of Ebola.

People are infectious as long as their blood and secretions contain the virus. Men who have recovered from the illness can still spread the virus through their semen for up to three months after recovery. For this reason, it is important to avoid unprotected sexual intercourse for at least three months after.

What are typical signs and symptoms of infection?

Sudden onset of fever, intense weakness, muscle pain, headache and sore throat are typical signs and symptoms. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding.

The incubation period, or the time interval from infection to onset of symptoms, up to 21 days. The patients become contagious once they begin to show symptoms. They are not contagious during the incubation period.

Ebola virus disease (EVD) infections can only be confirmed through laboratory testing.

What is the treatment?

Severely ill patients require intensive supportive care. They are frequently dehydrated and need intravenous fluids or oral rehydration with solutions that contain electrolytes. There is currently no specific treatment to cure the disease.

Some patients will recover with the appropriate medical care.

To help control further spread of the virus, people that are suspected or confirmed to have the disease should be isolated from other patients and treated by health workers using strict infection control precautions.

What about health workers? How should they protect themselves while caring for patients?

Health workers treating patients with suspected or confirmed illness are at higher risk of infection than other groups. During an outbreak a number of important actions will reduce or stop the spread of the virus and protect health workers and others in the health-care setting. These actions are called “standard and other additional precautions” and are evidence-based recommendations known to prevent the spread of infections.

All visitors and health-care workers should rigorously use what is known as personal protective equipment (PPE). The principle of personal protective equipment (PPE) is to ensure no skin is exposed, in order to prevent transmission of disease. PPE should include at least: two layers of gloves, an impermeable gown, apron, impervious disposable overboot, a P2 mask, eye and face protection with a face shield, head protection with an impervious surgical hood. Details about recommended PPE are available in the [VHF Contingency Plan](#) and the Clinical Excellence Commission (CEC) website <http://www.cec.health.nsw.gov.au/programs/hai>

Why are respirators – P2 face masks or powered air-purifying respirators (PAPR) hoods required if EVD is not airborne?

Although hypothetical concerns about airborne transmission of EVD have been raised, airborne transmission of EVD has never been demonstrated in studies of human-to-human transmission. However, there is a theoretical risk that virus particles may become airborne in certain situations, such as when clinicians are performing intubation or other aerosol-generating procedures. Our recommendations, in line with that of the Centers for Disease Control and Prevention (CDC) in the United States (US) and the World Health Organization tend towards the cautious due to the severity of the infection.

In addition because members of the care team may be in the patient room for 3-4 hours at a time, it is simply more comfortable for them to wear powered air purifying respirators. The Ebola virus is not airborne and it is not necessary for them to wear these respirators, but they are doing so for their own comfort.

Who needs to wear PPE?

PPE is recommended for people coming into direct contact (within 1 metre) with the patients under investigation for EVD, and patients with suspected or confirmed EVD. Only people who have been adequately trained should be donning PPE.

What training is required to safely use personal protective equipment?

The safe use of personal protective equipment requires training and practice. Each hospital is responsible for ensuring the preparedness of staff to respond to a person under investigation or suspected EVD case. The Clinical Excellence Commission has provided resources, including a PPE checklist, training competency, posters and videos, to assist hospitals with this process:

<http://www.cec.health.nsw.gov.au/programs/hai>

The training competency has been based on Westmead Hospital's PPE training program and the minimum number of pass requirements in the training competency has been developed based on the number of times it takes to reinforce correct technique so staff are safe and protected when donning and removing PPE then maintaining the skill.

Should patients with suspected or confirmed EVD be separated from other patients?

Isolating patients with suspected or confirmed Ebola virus disease in single isolation rooms is recommended. Where isolation rooms are not available, it is important to assign designated areas, separate from other patients, for suspected and confirmed cases. In these designated areas, suspect and confirmed cases should also be separate. Access to these areas should be restricted, needed equipment should be dedicated strictly to suspected and confirmed EVD treatment areas, and clinical and non-clinical personnel should be exclusively assigned to isolation rooms and dedicated areas.

Is it okay to use central air-conditioning in the room of an EVD patient?

Although hypothetical concerns about airborne transmission of EVD have been raised, airborne transmission of EVD has never been demonstrated in studies of human-to-human transmission. Where possible a patient should be cared for in a negative pressure room however not all hospitals will have that facility. In that situation we recommend turning off the air-conditioning if performing aerosol-generating procedures is essential.

Who will be doing the environmental cleaning?

LHDs are responsible for ensuring the appropriate staff are trained and are skilled in the use of PPE for cleaning of isolation rooms. All staff entering an EVD isolation room must have the appropriate training and adhere to the infection control principles as outlined in the VHF contingency plan.

What about areas that the EVD patient has walked through?

EVD is transmitted through the bodily fluids of a person symptomatic with EVD. Routine cleaning of areas that an EVD patient has passed through, with no visible contamination, is safe and recommended. Routine PPE is all that is required.

How long does EVD persist in the environment?

Laboratory studies have found that in ideal conditions, Ebola virus can remain active for up to 6 days however it is quite sensitive to inactivation by UV light and drying. In a study during an EVD outbreak in Uganda, Ebola virus was identified in only 2 of 33 environmental samples collected from a patient's room, and these two were "grossly contaminated with blood". In [one study by the Centers for Disease Control and Prevention](#), the Ebola virus lived on a surface in a perfectly controlled environment for up to six days. But the environment at an airport, for example, or a school is not perfectly suited to support viruses. Studies done in Ebola Treatment Units in Africa, show the virus can live on surfaces for a few hours at most.

While it's theoretically possible for someone to catch EVD by touching a surface that an infected patient sneezed on, for example, past outbreaks have shown that direct contact with a patient's bodily fluids is the way the virus is spread.

Ebola virus is also readily inactivated by low-level disinfectants. Based on this data, with consistent daily cleaning with hospital grade disinfectants, the persistence of Ebola virus in the patient care environment is likely to be short, with a cautious upper limit of 24 hours.

What kills the virus?

In NSW we have recommended a 1000ppm household bleach solution for routine environmental cleaning and a 5000ppm household bleach solution for cleaning any surface that has visible body fluids or any body fluid spills. Any TGA approved hospital grade disinfectant will work on a nonporous surface. A dishwasher or washing machine will also kill it.

Are visitors allowed in areas where patients with suspected or confirmed Ebola virus disease are admitted?

Restriction of visitor access to patients with EVD is recommended. If this is not possible, access should be given only to those individuals who are necessary for the patient's well-being and care, such as a child's parent. Appropriate personal protective equipment should be provided.

Why has alcohol based hand rub been allowed for use on gloves?

A decision in NSW was made to follow the US CDC and use alcohol based hand rub (ABHS) on gloves during the PPE removal stage. The use of ABHR is only permissible during the removal stage and is used as an extra measure of precaution to minimise any active EVD on the gloves of HCWs while they are removing their PPE.

It is important to note that neglecting to perform hand hygiene after removing PPE will reduce or negate any benefits of the PPE.

What other precautions are necessary in the health-care setting?

Other key precautions are safe injection and phlebotomy procedures, including safe management of sharps, regular and rigorous environmental cleaning, decontamination of surfaces and equipment, and management of soiled linen and of waste.

In addition, it is important to ensure safe processing of laboratory samples from suspected or confirmed patients with EVD and safe handling of dead bodies. Any health-care workers and other professionals undertaking these tasks in connection with suspected or confirmed patients with Ebola virus disease should wear appropriate PPE and follow precautions.

Can Ebola be transmitted through the air?

No. Ebola is not a respiratory disease like the flu, so it is not transmitted through the air.

Can I get Ebola from contaminated food or water?

No. In Australia Ebola is not a food-borne illness. It is not a water-borne illness.

Would any bodily fluids this patient flushed contaminate the water system?

The virus wouldn't survive long in water, the virus depends heavily on its host -- either a human or animal -- to stay active. The sewers and our waste water treatment system will kill the virus.

How should waste (including linen, clothing) be handled?

All waste coming from the patient including clothing, linen etc is discarded as special waste UN 2814. It is recommended to use disposable linen. Details about waste disposal and toilet waste disposal are available in the VHF Contingency Plan. Training videos on waste management and cleaning are available on the Clinical Excellence Commission (CEC) website

<http://www.cec.health.nsw.gov.au/programs/hai>

Could the virus become airborne?

Extensive studies of Ebola virus over several decades indicate that Ebola virus disease is not an airborne infection. Information from the World Health Organisation (WHO) website states that: "Common sense and observation tell us that spread of the virus via coughing or sneezing is rare, if it happens at all. Speculation that Ebola virus disease might mutate into a form that could easily spread among humans through the air is just that: speculation, unsubstantiated by any evidence."

More information on EVD transmission is available at:

<http://www.who.int/mediacentre/news/ebola/06-october-2014/en/>

Can I be a carrier for Ebola?

If you do not have symptoms of the Ebola virus, you are not contagious. You may develop symptoms up to 21 days following exposure to Ebola virus. During this time we would recommend regular temperature and symptom monitoring under the guidance of your local public health unit. This will enable early recognition of disease, appropriate referral to healthcare for testing and treatment, and prevention of further transmission. If you may have been exposed to Ebola please contact your local public health unit for further information on 1300 066 055.

What are the long term effects of Ebola?

As with any ICU patient, long-term complications can arise secondary to systemic infection such as renal failure. It is not known whether there are any other longterm effects in recovered patients. Available evidence shows that people who recover from Ebola infection develop antibodies for at least 10 years and may be protected from re-infection.

When is an Ebola outbreak officially over?

An Ebola outbreak is officially considered at an end once 42 days have elapsed without any new confirmed cases.