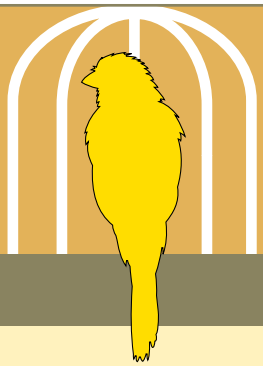
Ebola virus disease



HEALTH AND SAFETY FACT SHEET

CUPE Canadian Union of Public Employees

Ebola virus disease (EVD) is a severe disease that causes haemorrhagic fever in humans and animals. Diseases that cause haemorrhagic fevers affect the body's vascular system (how blood moves through the body). They can lead to significant internal bleeding, organ failure, and are often fatal.

Background

EVD was first identified in 1976 in two simultaneous outbreaks in Africa, including one near the Ebola river, where the disease got its name. There are five known species of Ebola: Zaire, Bundibugyo, Sudan, Taï Forest and Reston. The first three species, Zaire, Bundibugyo, and Sudan, have been associated with large outbreaks in Africa. The Reston species is not associated with disease in humans. The virus causing the 2014 West African outbreak belongs to the Zaire species.

Symptoms

Recent studies have shown that 95 per cent of patients that become infected by an exposure to EVD will show symptoms in two to 21 days. Humans are not infectious until they develop symptoms. The first symptoms are the sudden onset of fever, intense weakness and fatigue, muscle pain, headache and sore throat. The disease progresses to vomiting, diarrhoea, rash, symptoms of impaired kidney and liver function, and in some cases, both internal and external bleeding (e.g. oozing from the gums, blood in stool). Laboratory findings include low white blood cell and platelet counts, and elevated liver enzymes. EVD infections can only be confirmed through laboratory testing.

Transmission

Person-to-person transmission from an infected individual is the most likely form of transmission in North America. EVD can be transmitted via direct contact (through broken skin or mucous membranes of the eyes, nose or mouth) with:

- Blood or body fluids of a person who is sick with Ebola, including but not limited to urine, saliva, sweat, feces, vomit, breast milk, and semen.
- Objects (e.g. needles and syringes) that have been contaminated with the virus.
- Surfaces and materials (e.g. bedding and clothing) contaminated with these fluids.

Transmission is most likely when EVD-infected people are symptomatic but not yet diagnosed. CUPE members who work as health care workers, first responders and in airline transportation are at the highest risk of exposure because they may come in contact with infected blood or body fluids of infected people before effective protocols are put into place.

The Centers for Disease Control and Prevention (CDC) report that Ebola is not spread through the air or by water. However, activities that put an unaffected person close enough (one metre) to come into contact with the airborne contaminates from aerosol-generating events are at high risk of contracting EVD. Aerosol-generating events include coughs, sneezes, profuse diarrhea or vomiting.

People remain infectious as long as their blood and body fluids, including semen and breast milk, contain the virus. According to the CDC men who have recovered from the disease can still transmit the virus through their semen for up to three months after recovery from illness.

There is no evidence that mosquitoes or other insects can transmit Ebola virus. Only mammals (for example, humans, bats, monkeys, and apes) have shown the ability to become infected with and spread the virus. Though transmission from animals is possible, this is not a significant concern in North America.

Treatment

Currently, the prognosis of a person infected by EVD is poor. Estimates of the fatality rate of people affected by EVD range from 50 to 90 per cent. Survival rates are greatly improved with the use of supportive treatments such as rehydration care with oral or intravenous fluids and the treatment of specific symptoms such as pain, nausea, fever, anxiety, and dialysis when there is kidney failure. In extreme cases, blood transfusion and clotting agents have been used to reduce the negative effects of internal and external bleeding. There are currently no 100 per cent-proven treatments available for EVD.

Prevention and control

It is CUPE's position that any worker that is likely to be exposed to the Ebola virus should be protected. Appropriate personal protective equipment as well as training on its use and related procedures must be provided before an incident of potential exposure occurs. All workers also have the right to refuse work they feel is unsafe, or that they are not trained to perform safely.

General members of the public are at low risk, but because of the severity of the disease, everyone has a role to play to prevent it from spreading. The World Health Organization notes that "Community engagement is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission."

The first way to control an outbreak of Ebola is for the public to remain calm but vigilant. While most people are unlikely to be in a situation that exposes them to the Ebola virus, it is important to recognize symptoms, and contact or report to an appropriate medical facility for screening. Many of the early symptoms mimic the early stages of a common cold or flu. But anyone having symptoms, including a fever, who may have been in a place where they could have been infected, should first contact their local public health services. If they cannot be reached, all provinces have telehealth systems (numbers listed below) that can be contacted. They will advise whether it is appropriate to go to the emergency room, or what other steps you should take to receive treatment.

A person with a suspected or confirmed case of EVD will be placed in quarantine and a specialist team will work to identify people who may have been in contact with the infected person, particularly in the period after they developed symptoms. Those who were in contact are unlikely to spread the disease unless they start to show symptoms, so monitoring the health of identified groups for 21 days and separating the healthy from the sick can prevent further spread of the disease.

CUPE members who do not work in a medical setting but do routinely deal with the public and have concerns about being exposed may also take preventive measures. Employers should be encouraged to provide N95 masks for workers, as well as free disposable face masks and approved disinfecting hand rubs for clients. Workers dealing with the public should frequently sanitize their hands and disinfect surfaces around their work areas. Keep a safe distance from anyone exhibiting symptoms and avoid touching your face and neck.

Gloves can create a false sense of security. Unless you're handling items that are likely to be contaminated, or you have an open wound on your hand, gloves provide little additional protection. Avoid touching your face or neck with or without gloves.

The care of infected individuals must be administered by health care workers carefully observing a high level of barrier separation from the infected person, along with certain cleaning and disinfecting techniques.

CUPE has prepared several position papers with recommendations for occupational protection from EVD for the following groups:

- Health care providers
- Health care support staff
- Paramedics
- Flight attendants

This information can be obtained by contacting the health and safety branch.

Residual transmission prevention

Though scientific studies have been conducted, it is not currently known exactly how long the Ebola virus can last outside the human body on contaminated surfaces. Estimates of several days are not unreasonable. As such, contaminated surfaces, clothing, materials etc. can still spread the disease for a significant amount of time. Until every surface or material has been effectively decontaminated, protective measures must remain in place.

The Ebola virus can be eliminated with heat, alcohol-based products, or bleach. According to the Public Health Agency of Canada, the virus is susceptible to 3 per cent acetic acid, 1 per cent glutaraldehyde, alcohol-based products, and a 10-minute exposure to dilutions of 1:10 of 5.25 per cent household bleach (sodium hypochlorite), or bleach powder (calcium hypochlorite). For surfaces that may corrode or discolour, they recommend careful cleaning to remove visible stains followed by contact with a 1:100 dilution of 5.25 per cent household bleach for more than 10 minutes. For other surfaces Ebola will be deactivated by heating to 60°C for at least 60 minutes, or boiling for at least five minutes. Gamma irradiation (1.2 x106 rads to 1.27 x106 rads) combined with 1 per cent glutaraldehyde is also effective at rendering the virus inert.

Provincial telehealth/telemedicine phone numbers

British Columbia New Brunswick Nova Scotia Quebec Prince Edward Island	Dial 811
Alberta	1-866-408-5465
Saskatchewan	1-877-800-0002
Manitoba	1-888-315-9257
Ontario	1-866-797-0000
Newfoundland	1-888-709-2929

Much of the information for this fact sheet was retrieved from sources at the following:

- *Public Health Agency of Canada (http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/ebola-eng.php) accessed October 17, 2014*
- *World Health Organization (http://www.who.int/mediacentre/factsheets/fs103/en/) accessed October 15, 2014*
- *Centers for Disease Control and Prevention http://www.cdc.gov/vhf/ebola/transmission/index.html) accessed October 15, 2014*

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