Ebola Virus Disease Fact Sheet

Background

Ebola virus disease (EVD) is a rare but often fatal infectious disease with occasional outbreaks that have occurred mostly in Africa. EVD affects humans and non-human primates (i.e., chimpanzees, gorillas, and monkeys). Ebola virus is transmitted to people from bats or non-human primates and spreads within human populations by person-to-person transmission. Ebola virus was first discovered in 1976 in the Democratic Republic of Congo (DRC), near the Ebola River, during the first documented EVD outbreak; there have since been several outbreaks in Africa.

There are six species of Ebola virus:

- *Zaire ebolavirus, Sudan ebolavirus, Taï Forest ebolavirus,* and *Bundibugyo ebolavirus* all cause disease in humans.
- *Reston ebolavirus* causes disease in non-human primates and pigs but not humans.
- *Bombali ebolavirus* is an Ebola virus for which it is not clear if it causes disease in animals or humans.

Zaire ebolavirus is the species associated with a large EVD outbreak in the DRC that began in August 2018 and continued into 2019. It was also associated with the 2014–2016 West African EVD pandemic during which there were more than 28,000 cases and 11,000 deaths. *Sudan ebolavirus* has caused several outbreaks in Sudan and Uganda, including the EVD outbreak in Uganda confirmed in September 2022.

Transmission

Ebola virus can be transmitted from animal to animal, animal to human, and human to human. There is some evidence that some bats may be the reservoir hosts for Ebola virus. Bats may transmit the virus to other animals and humans. Humans may become infected with Ebola virus while hunting or preparing meat from infected animals.

In human populations, Ebola virus can be transmitted to other people either through contact with blood or body fluids from a patient who has symptoms of EVD or the body of a person who died from EVD. This occurs because Ebola virus is present in high quantity in the blood, body fluids, urine, and feces of symptomatic EVD patients and in deceased individuals. Specific routes for person-to-person transmission include direct contact through broken skin or mucous membranes with:

- Blood or body fluids (urine, saliva, sweat, feces, vomit, breast milk, and semen) from a person who is sick with or has died from EVD
- Objects (such as needles and syringes) contaminated with body fluids or blood from a person sick with or has died from EVD
- Semen from a man who recently recovered from EVD (through oral, vaginal, or anal sex)

    - There is no evidence that Ebola can spread through sex or other contact with vaginal fluids from a woman who has had EVD.
- Infected fruit bats or non-human primates (e.g., apes, monkeys, gorillas)

Ebola virus cannot spread from people who are not showing any signs or symptoms. People who are in direct contact with a person who is ill with or died from EVD are at particular risk for infection; this may include healthcare workers caring for an EVD patient and family and friends of EVD patients.

Very rarely, EVD may be spread through sex with an asymptomatic man who recently recovered from EVD.

Clinical Signs and Symptoms

People infected with Ebola virus may show signs of illness between 2 and 21 days after exposure, and usually after 8 to 10 days. The symptoms of EVD include some or several of the following:

- Fever
- Headache
- Muscle Pain
- Fatigue
- Weakness
- Vomiting
- Diarrhea
- Abdominal pain
- Bleeding or bruising that is unexplained (i.e., hemorrhage, usually from gums or other mucous membranes)

The symptoms of EVD are like those of other infectious diseases including malaria, dengue fever, and influenza. Patients with EVD may progress to more severe disease, including shock and death.

Diagnosis

Diagnosis of EVD is difficult early in the course of illness, especially because symptoms may mimic other infectious diseases like influenza or malaria. Thus, it is essential to get a detailed history of international travel and exposures to help assess if illness could be due to EVD or other travel-related infectious diseases. Diagnosis of EVD takes into account several factors including confirmation of a person's travel history to an area with known EVD, possible or confirmed exposure to EVD in the 21 days before symptom onset, and laboratory testing results of blood for Ebola virus genetic material Testing for EVD is available only through specialized laboratories including the California Department of Public Health (CDPH) and U.S. Centers for Disease Control and Prevention (CDC). Test results may take several days to be finalized and repeat testing may be needed in some cases.

Treatment

There are currently two U.S. Food and Drug Administration (FDA)-approved antibody treatments for EVD caused by *Zaire ebolavirus*, but none for EVD caused by *Sudan ebolavirus*. It is essential to provide medical care early in the course of EVD as early supportive therapy improves chances of survival. The supportive therapies include:

- Ensuring proper hydration and electrolyte management
- Managing fever, vomiting, and diarrhea
- Offering oxygen support if needed
- Treating any other infections that may arise

For more information about EVD treatment, visit the CDC Ebola Treatment webpage (https://www.cdc.gov/vhf/ebola/treatment/index.html).

Prevention for Travelers

EVD is a very rare disease and naturally occurs only in certain parts of Africa. Travelers to African regions where Ebola virus is known to occur should know that there are ways to protect oneself from becoming sick with EVD.

If you are in an area where there is ongoing transmission of Ebola virus:

- Practice good hand hygiene with soap and water or an alcohol-based sanitizer.
- Avoid direct contact with persons who may have EVD (including contact with blood and body fluids such as urine, saliva, sweat, feces, vomit, breast milk, and semen).
- Avoid contact with items an EVD patient might have used (e.g., clothes, bedding, medical equipment).
- Avoid funeral or burial rituals of EVD patients that involve handling the body.
- Avoid contact with bats and non-human primates or blood and fluids or raw meat from these animals; avoid meat from an unknown source.
- Avoid contact with semen from a man who has recovered from EVD until he has been cleared of the virus, which may be up to a year or longer.
- After returning from an area where Ebola virus is known to occur, self-monitor for signs and symptoms of EVD for 21 days and seek prompt medical attention should any signs or symptoms develop.

An Ebola vaccine licensed in the United States (ERVEBO®) is indicated for the prevention of EVD due to *Zaire ebolavirus* and is not expected to protect against *Sudan ebolavirus* or other species of Ebola virus. The vaccine is recommended in the U.S. only for adults with potential occupational risk of exposure to *Zaire ebolavirus*.

For more information about preventing EVD, visit the CDC Ebola Prevention webpage (https://www.cdc.gov/vhf/ebola/prevention/index.html) and CDC Ebola Outbreaks webpage (https://www.cdc.gov/vhf/ebola/outbreaks/index-2018.html).

Resources

- CDPH Ebola Virus Disease webpage: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx
- CDC Ebola (Ebola Virus Disease) website: https://www.cdc.gov/vhf/ebola/
- WHO Ebola Virus Disease website: http://www.who.int/ebola/en/

Updated October 2022