



EVD Factsheet 1

Essential Facts about Ebola Virus Disease (EVD)



Introduction

HPAE is developing and will be updating a series of factsheets on EVD due to the serious and urgent risk it poses to health worldwide and the urgent need for US healthcare facilities to be prepared to protect patients and staff.

CDC confirmed on September 30, 2014, through laboratory tests, the first case of Ebola to be diagnosed in the United States in a person who had traveled to Dallas, Texas from West Africa.¹ Subsequently, two nurses who care for that patient have become infected with Ebola.

This factsheet is focused on essential facts about EVD. A companion factsheet addresses healthcare worker protection and infection control measures.

What is Ebola Virus Disease (EVD)?

Ebola virus disease (EVD) also known as viral hemorrhagic fever (VHF)² is a severe illness caused by Ebola Filovirus.³ It is highly infectious, rapidly fatal, with a death rate of up to 90%, but it can be prevented. It is spread through direct contact with body fluids (blood, saliva, urine, sperm, etc.) of an infected person and by contact with contaminated surfaces or equipment, including linen soiled by body fluids from an infected person. The Ebola virus can be eliminated relatively easily with heat, alcohol-based products, and sodium hypochlorite (bleach) or calcium hypochlorite (bleaching powder) at appropriate concentrations.

Signs and Symptoms of EVD

<ul style="list-style-type: none">• Fever• Headache, sore throat and muscle pain• Intense weakness• Nausea and vomiting• Diarrhea (may be bloody)	<ul style="list-style-type: none">• Chest pain and cough• Rash• Impaired kidney and liver function• In some cases internal and external bleeding
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How EVD spread?

The natural reservoir host of Ebola viruses has not yet been identified, the manner in which the virus first appears in a human at the start of an outbreak is unknown.⁴ The EVD is spread through direct contact with an infected person's blood or body fluids or objects that have been contaminated with the virus. The body fluids include but are not limited to urine, saliva, sweat, feces, vomit, breast milk, and semen of a person who is sick with Ebola.⁴ Percutaneous exposure to contaminated blood carries a particularly high risk for transmission and increased mortality. The finding of large numbers of Ebola viral particles in the skin and the lumina of sweat glands has raised concern that transmission could occur from direct contact with intact skin though epidemiologic evidence to support this is lacking.³

Postmortem handling of infected bodies is an important risk for transmission. In rare situations, cases in which the mode of transmission was unexplained among individuals with no known direct contact, have led to speculation that airborne transmission could have occurred.²

Workers can be exposed in two different ways:

1. Contact transmission occurs when a worker has direct contact with the virus and then touches their own nose, mouth, or eyes. The contact can be with an infected person or contaminated surface or object.
2. Droplet transmission occurs when a person's nose, mouth, or eyes come in contact with large droplets containing the virus that have been suspended in the air when an infected person coughs or sneezes.

Is EVD aerosol transmissible?

Airborne or aerosol transmission occurs when small particles containing virus are suspended in the air when an infected person coughs or sneezes, and then inhaled by a person into their respiratory system and lungs. Although this route of exposure has not been proven for EVD, the potential for inhalation of aerosols cannot be ruled out by the observed risk factors or our knowledge of the infection process.⁵ Many body fluids, such as vomit, diarrhea, blood, and saliva, are capable of creating inhalable aerosol particles in the immediate vicinity of an infected person. Until proven otherwise, the use of respiratory protection is warranted. **NOTE:** The American Public Health Association's 2015 Control of Communicable Diseases Manual recommends that an N95 or N99 respirator should be worn for protection against respiratory droplets.

Treatment

Currently there is no vaccine to prevent the disease. There is no known medication or treatment to cure Ebola infection. Severely ill patients require intensive care, including hydration, electrolytes, and monitoring of blood pressure. People that are suspected or confirmed to have the disease should be isolated from other patients and treated by health care workers using strict infection control measures.

Confirmed Case

A confirmed case is a suspected case with laboratory-confirmed diagnostic evidence of Ebola virus infection.

Worker Protection and Infection Control

A companion Fact Sheet 2 is available entitled, "Protecting Healthcare Workers from Ebola Virus Disease (EVD)".

¹ <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html>

² Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings <http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf>

³ WHO: Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever in Health-Care Settings, with Focus on Ebola September 2014

⁴ <http://www.cdc.gov/vhf/ebola/transmission/>

⁵ COMMENTARY: Health workers need optimal respiratory protection for Ebola
Lisa M Brosseau, ScD, and Rachael Jones, PhD <http://www.cidrap.umn.edu/news-perspective/2014/09/commentary-health-workers-need-optimal-respiratory-protection-ebola>

Other References:

- NYCOSH Factsheet: EBOLA VIRUS DISEASE Essential Information for Workers (current as of October 1, 2014)
- NYSNA Practice Alert: EBOLA VIRUS WHAT NURSES NEED TO KNOW
- David L. Heymann, Ed, Control of Communicable Diseases Manual, 20th Edition, APHA, 2015