

# MSA Ebola Virus Disease (EDV) Brief

October 7, 2014



Guidance on the Ebola virus is available from international and national organizations, such as the World Health Organization (WHO), the United States Centers for Disease Control and Prevention (USCDC), the European Centre for Disease Prevention and Control (ECDC), and/or your local health authority.

The purpose of this bulletin is to provide a summary of key information from these authorities on Ebola disease, as well as some recommendations on potential MSA personal protective equipment (PPE) that may be suitable for use when working in an environment where Ebola virus or people infected with the virus may be present. **This bulletin is NOT a substitute for the detail information provided about the disease or any related topics by these organizations.**

For the most up-to-date information, as well as actions needed to prevent, control and manage contact with Ebola virus, you should regularly consult one of these authorities:

USCDC	<a href="http://www.cdc.gov/vhf/ebola/index.html">http://www.cdc.gov/vhf/ebola/index.html</a>
ECDC	<a href="http://www.ecdc.europa.eu/en/healthtopics/ebola_marburg_fevs/Pages/ebola-outbreak-west-africa.aspx">http://www.ecdc.europa.eu/en/healthtopics/ebola_marburg_fevs/Pages/ebola-outbreak-west-africa.aspx</a>
WHO	<a href="http://who.int/mediacentre/factsheets/fs103/en/">http://who.int/mediacentre/factsheets/fs103/en/</a>

## What is Ebola virus disease (EVD)?

Ebola is a severe, often fatal, disease caused by infection with a virus of the family Filoviridae, genus Ebolavirus. The first case of Ebola was diagnosed in the United States on September 30, 2014; in 2014, more than 7400 cases have been reported across the globe<sup>1</sup>, with nearly half ending in death<sup>2</sup>.

## Where is the Ebola virus found?

Ebola is found naturally in several African countries.

## How is EVD transmitted?

The host of Ebola remains unknown, but researchers believe the virus is animalborne, with bats being the most likely vector.

If an infection occurs in humans, there are several ways the virus can be spread to others. These include:

- direct contact with the blood or body fluids (including but not limited to feces, saliva, urine, vomit and semen) of a person who is already infected; and/or
- contact with objects (like needles and syringes) that have been contaminated with the blood or body fluids of an infected person or animal.

The virus enters another person's body through broken skin or unprotected mucous membranes, such as eyes, nose, or mouth.

Ebola can spread quickly during outbreaks, especially in settings where those exposed are not wearing appropriate PPE, including masks, gowns, gloves, and eye protection.

The USCDC indicates that Ebola is NOT spread through the air, water, or food.

## Who is at risk?

During an outbreak, those at higher risk of infection are:

- healthcare workers;
- family members or others in close contact with infected people, whether alive or deceased.

## How can I protect myself from EVD?

There is no FDA-approved vaccine for Ebola. However, exposure to the virus can be controlled through the use of protective measures where contact with the virus could occur.

Dedicated medical or personal protective equipment (preferably disposable) should be used by anyone exposed to Ebola. If the equipment is not disposable, it must be sterilized properly before being used again.

## What PPE should I use?

Authorities on Ebola recommend PPE for activities where exposure to Ebola is possible. Specifically, the CDC's most recent recommendation includes (at a minimum):

- fluid resistant, impermeable disposable gloves
- fluid resistant, impermeable gown
- eye protection (goggles/face shield)
- facemask to protect against direct skin and mucous membrane exposure of cleaning chemicals, contamination, and splashes or spatters during environmental cleaning and disinfection activities
- Additional barriers (e.g., leg covers, shoe covers) as needed

MSA offers both eye/face and respiratory protection that may be suitable for use when working in environments where potential exposure is an issue. Be sure to follow the CDC or other authority's proper PPE donning and doffing instructions, as the sequence followed can help prevent the spread of infection. Additionally, ensure proper disposal of any PPE after each use – **MSA PPE is not designed to be sterilized in a manner prescribed by health authorities to effectively eliminate Ebola virus.**

<sup>1</sup> <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html>

<sup>2</sup> Death rates as high as 90% have been reported, according to WHO and USCDC

Keep in mind, as well, that PPE can prevent infected material from coming in contact with mucous membranes and exposed, open skin, but it is essential that all relevant infection prevention and control (IPC) protocols, and our manufacturer's user instructions are followed when using any of our PPE.

**Goggles** – Close-fitting, anti-fog (AF) coated goggles can be worn to help prevent exposure to infection. This type of goggle is designed for complete coverage and sealing, while the AF will help eliminate the need to remove goggles during potential exposure work. Be sure the goggles are tightly sealed to the face. Goggles exposed to EVD should be disposed of properly once removed.

**Faceshields** – While goggles help prevent splashes to the eyes, they do not protect other mucous membranes (nose, mouth) that could be exposed; nor do they protect skin. To help prevent splash on these areas, use a faceshield designed for splash protection, such as a polycarbonate visor.

DO NOT use a mesh visor as these do not provide splash protection. Faceshields do not take the place of respirators and goggles. Be sure to wear an appropriate respirator and goggles under any faceshield. Faceshields exposed to EVD should be disposed of properly once removed.

**Respirators** – Government approved particulate respirators will help reduce exposure to the Ebola Virus; recommendations include US NIOSH approved N95, European CE

certified filtering facepieces EN149 FFP2 or EN149 FFP3, particulate filter EN143 P2 or P3, in combination with full- or half-mask, or any higher-level respiratory protection, such as power-assisted devices.

When making a personal decision to use a government approved respirator to help reduce exposure to particulates containing the Ebola virus, the user needs to understand that:

1. Reducing exposure to Ebola Virus particles does not mean that the risk of exposure, infections and illness has been eliminated. Respirators will not prevent you from becoming infected by the virus in other ways such as by touching your mouth, nose or eyes with contaminated hands or objects, or by other means mentioned above.
2. In order for a respirator to be most effective you must properly wear the respirator during the entire time you're exposed. Removing the respirator to eat, drink, talk or smoke while you are in a contaminated area will increase the likelihood that you may be exposed to virus particles. You should also contact the respirator manufacturer to understand how to properly fit the respirator to your face.
3. Fit of the respirator to your face is very important to minimize the risk of virus particles from getting inside your lungs.
4. Respirators are not intended for use by children or by individuals with a medical condition that might prevent the use of a respirator, such as asthma, emphysema or a history of heart disease. If you have such a condition, consult your health care provider before use.
5. Properly dispose of respirators and filters/cartridges after they are used. Once used, they should not be shared with others.
6. Be sure to read and follow all instructions on the fit, use and warnings provided by the manufacturer before using any respirator.
7. Please be cautious of claims being made by websites and other sources regarding the use of respirators for protection against Ebola Virus. We recommend that you reference your government or appropriate health agencies.

For additional information or help selecting MSA products, please contact your local MSA affiliate.

#### Resources Used in the Development of this Brief

World Health Organization (WHO). Ebola virus disease. Fact sheet number 103, April 2014 – <http://www.who.int/mediacentre/factsheets/fs103/en/>

CDC Guideline: Case Definition for Ebola Virus Disease (EVD) – <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>

First Imported Case of Ebola Diagnosed in the United States, CDC website –

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

Ebola (Ebola Virus Disease) Prevention – <http://www.cdc.gov/vhf/ebola/prevention/index.html>

Ebola (Ebola Virus Disease) Transmission – <http://www.cdc.gov/vhf/ebola/transmission/index.html>

Sequence for Putting On and Removing Personal Protective Equipment (CS250672-A), Centers for Disease Control and Prevention, US Department of Health & Human Services – [www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf](http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf)

Ebola Fact Sheet – [www.cdc.gov/vhf/ebola/pdf/ebola-factsheet.pdf](http://www.cdc.gov/vhf/ebola/pdf/ebola-factsheet.pdf)

WHO – <http://www.who.int/en/>

Centers for Disease Control and Prevention and World Health Organization. Infection Control for Viral Haemorrhagic Fevers in the African Health Care Setting. Atlanta, Centers for Disease Control and Prevention, 1998: 1–198

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