

### What is Viral Hemorrhagic Fever?

Viral Hemorrhagic Fever (VHF) disease is caused by viruses of five distinct families: Arenaviridae, Bunyaviridae, Filoviridae, Flaviviridae, and Paramyxoviridae. Each of these families shares a number of features:

- Their survival is dependent on an animal or insect host and the viruses are geographically restricted to the areas where their host species live.
- Humans are not the natural reservoir for any of these viruses. Humans are infected when they come into contact with infected hosts. However, with some viruses, after the accidental transmission from the host, humans can transmit the virus to one another.
- Human cases or outbreaks of hemorrhagic fevers caused by these viruses occur sporadically and irregularly.

*See individual fact sheets on the different families of viruses, Arenaviridae, Bunyaviridae, Filoviridae, Flaviviridae and Paramyxoviridae, for more specific information.*

### Who is at risk for Viral Hemorrhagic Fever?

The five different families of viruses behave a little differently, such as some are spread by insects others are spread by rodents. However, in general anyone who comes into contact with infected blood or body secretions of people infected with these viruses can become infected.

### What are the symptoms of Viral Hemorrhagic Fever?

General symptoms common to all five families include fever, malaise, myalgia, headache, and skin rash. Fatality rates can range from 0.6% to 90% depending on the type of illness.

### How soon do symptoms appear?

The incubation periods for all the VHF viruses differ depending on the virus. In general, a person can become ill anywhere between two and twenty-one days from the time of infection.

### How is Viral Hemorrhagic Fever spread?

It will vary depending on the virus. In general, person to person spread is through direct contact with infected blood and body secretions.

### When and for how long is a person able to spread the disease?

For some viruses, such as the Filoviridae, as long as the virus is present in blood and other body secretions, the disease is able to be spread. For other families of viruses, such as the Paramyxoviruses, this is unknown.

### How is a person diagnosed?

Several tests including IFA, ELISA, or western blot can be used to detect antibodies of the viral hemorrhagic fevers. These tests are typically done on blood samples.

## What is the treatment?

There is no specific treatment for most of these illnesses. Supportive therapy including managing secondary bacterial infections may occur.

## Does past infection make a person immune?

Some of the illnesses offer immunity, however it may not be known how long this immunity lasts. Additionally, there is no data available to determine if immunity occurs with other VHF illnesses,

## Should children or others be excluded from child care, school, work or other activities if they have Viral Hemorrhagic Fever?

This will depend on the illness. In most cases, children and adults may continue to attend work and school, unless they are too ill to participate in normal group activities. However, *see individual fact sheets on the different families of viruses, Arenaviridae, Bunyaviridae, Filoviridae, Flaviviridae and Paramyxoviridae, for more specific recommendations.*

## What can be done to prevent the spread of Viral Hemorrhagic Fever?

Depending on the illness, Most of these diseases are not transmitted from person to person except through, direct contact with blood and body secretions from persons who are known to be infected with the virus.

General rules of thumb:

- Avoid contact with blood and body fluids, regardless of infection status
- Try to avoid mosquito and tick bites. A person can do this by using insect repellent containing DEET.
- Remove mosquito and tick breeding habitats from around your home.
- Prevent rodents from nesting in or near your home.
- Keep pet food covered and stored in rodent-proof containers. Do not leave excess pet food or water out overnight.
- Store garbage in containers with tight-fitting lids. Dispose of garbage on a frequent basis and pick up or eliminate clutter.

## Additional Information:

Additional information is available by calling the North Dakota Department of Health at 800.472.2180.

**This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.**

Resources:

1. Centers for Disease Control and Prevention, 2013: [www.cdc.gov/vhf/virus-families/index.html](http://www.cdc.gov/vhf/virus-families/index.html)
2. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30<sup>th</sup> ed. [Children in Out-Of-Home Care]. Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2015: 132-151.
3. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30<sup>th</sup> ed. [Hemorrhagic fevers caused by...]. Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2015: 381-390.
4. Heymann, D. L. (2015). *Control of Communicable Diseases Manual, 20<sup>th</sup> Edition*. Ebola-Marburg Viral Diseases. American Public Health Association. 2015: 173-178.