

Viral Hemorrhagic Fever (VHF)

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

Transmission

The method by which VHF may be transmitted will vary depending on the virus. In general, the disease is spread via

- **Animal to person** when a person encounters an infected animal or insect host.
- **Person-to-person** after the initial spread into the human population, some VHF viruses can continue to spread from person to person through direct contact with infected blood and body secretions.

For Filoviridae, if the virus is present in blood and other body secretions, the disease is able to be spread. For Paramyxoviruses, this is unknown. 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.

Symptoms

General symptoms common to all five families include:

- **Fever**
- **Malaise**
- **Myalgia**
- **Headache**
- **Skin rash**

Death rates can range from 0.6% to 90% depending on the type of illness. The incubation periods for all the VHF viruses differ depending on the virus. In general, a person can become ill anywhere between two and 21 days from the time of infection.

Diagnosis

Several tests are available to detect the presence of viral hemorrhagic fevers. These tests are typically done on blood samples.

Treatment

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

Prevention

Prevention depends on the type of VHF. Prevention is more difficult when the animal host is unknown or challenging to control (such as rodents or ticks). Strong risk communication and health education efforts are required, focusing on exposure prevention for communities and infection control for healthcare providers.

In general:

- **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.

For more information about the treatment of VHF contact your health care provider or visit www.cdc.gov/vhf/index.html. **If you have symptoms of VHF, it's important to get medical care as quickly as possible to have the best chances of recovery.**

Exclusion Guidance

This will depend on the illness. Some VHF illnesses will require exclusion. In some cases, children and adults may continue to attend work and school, unless they are too ill to participate in normal group activities.

Contact the North Dakota Department of Health and Human Services Public Health Division, at 800.427.2180. for specific recommendations on exclusion and when to return to work, childcare, and school.

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 and Human Services.

Resources:

1. Kimberlin, D. W., Barnett, E. D., Lynfield, R., Sawyer, M. H. (2021) Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. American Academy of Pediatrics. [Management and Prevention of Infectious Diseases] [pages 362-373].
2. Centers for Disease Control and Prevention. (2021)2021, 2 September 22). *CDC —vhf*. Centers for Disease Control and Prevention. Retrieved May 15, 2023, from <https://www.cdc.gov/vhf/index.html>
<https://www.cdc.gov/vhf/index.html>
3. World Health Organization. (2021). *WHO-VHF*. World Health Organization. Retrieved May 15, 2023, from <https://www.afro.who.int/health-topics/viral-haemorrhagic-fever>
<https://www.afro.who.int/health-topics/viral-haemorrhagic-fever>



Report Immediately: 800.472.2180 or 701.328.2378



Possible Bioterrorism Agents (CDC classified A, B or C Agent)

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Public Health Division

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