



# Viral Hemorrhagic Fever

## Information for Healthcare Facilities

Adapted with permission from the Kansas Poison Control.

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### Causative Agent

RNA viruses from four viral families:

- Bunyaviridae (Hantavirus genus that cause hemorrhagic fever with renal syndrome, Congo-Crimean hemorrhagic fever, Rift Valley fever)
- Arenaviridae (Lassa fever and Argentine, Bolivian, Venezuelan hemorrhagic fevers)
- Filoviridae (Ebola and Marburg)
- Flaviviridae (dengue, yellow fever) causing a variety of viral hemorrhagic febrile illnesses.

### Hospital Precautions

Strict contact, droplet, and airborne precautions (such as PAPR or N95 Respirator) are mandatory.

### Transmission

Highly infectious via aerosol route (except dengue). Also spread through blood and body fluid exposure and some transmitted from animal to humans.

### Decontamination

Remove all patient clothing and belongings and double bag and discard appropriately. Environmental decontamination can be performed using hypochlorite or phenolic disinfectants.

### Mechanism

Not all patients develop viral hemorrhagic fever after exposure. Although direct cytopathic effects can contribute to disease severity, most features of illness are caused by innate immune responses, as the systemic spread of virus leads to the release of mediators that modify vascular function.

### Routes

Transmission varies by virus. The viruses can be spread by direct contact with infected mammals/rodents, mosquitoes, person-person contact, inhalation, or ingestion of infected meat.

### Symptoms/ Onset

- Viral hemorrhagic fevers are febrile illnesses characterized by a bleeding diathesis and symptoms including facial flushing, chest pain, petechiae, frank bleeding, edema, hypotension, shock. Malaise, myalgia, headache, vomiting and diarrhea are frequently seen. Clinical presentations may vary depending on the virus.
- Onset of symptoms vary. Most symptoms occur within 3-8 days with a range of 1-21 days for majority of viruses. Hantaviruses may incubate for weeks.

### Treatment

- Symptomatic and supportive care is the mainstay of treatment. Aggressive resuscitation may be required, as well as blood products, vasopressors, analgesics and anti-seizure medications.
- Ebanga and Inmazeb are FDA approved for the treatment of *Zaire ebolavirus* in adults and children. Avoid concurrent administration of a live vaccine against Ebolavirus if receiving this treatment.
- Antiviral therapy (IV Ribavirin) may be used off-label in Bunyaviridae and Arenaviridae infections (Lassa fever, Crimean-Congo hemorrhagic fever, and hemorrhagic fever with renal syndrome due to Old World hantavirus infections) via an Investigational New Drug protocol.
- The YF-VAX (17D) vaccine is approved for prevention of yellow fever in patient's 9 months or older. Ervebo is approved for the prevention of Ebola disease (species *Orthoebolavirus zairense* only) in patients 12 months or older.

Medical Management of Biological Casualties Handbook. 9th ed. U.S. Army Medical Research Institute of Infectious Diseases. Fort Detrick Frederick, Maryland. September 2020.  
Advanced Hazmat Life Support-Provider Manual. 4th ed. Arizona Board of Regents. Advanced Hazmat Life Support International Headquarters-Tuscan, Arizona. 2014.

### REFERENCES

Viral Hemorrhagic Fevers. Centers for Disease Control and Prevention. April 15, 2024. Available from: <https://www.cdc.gov/vhf/index.html>  
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