

# Hemorrhagic Fevers

## Reporting Obligations

Hemorrhagic fevers are designated as a disease of public health significance and is reportable under the *Ontario Health Protection and Promotion Act*. Report all suspect and confirmed cases **immediately by phone** to the health unit.

## Epidemiology

### Aetiologic Agent:

Viruses from several families can cause viral hemorrhagic fever (VHF). Members of the **Filoviridae** family, the **Ebola and Marburg viruses**, are antigenically distinct, and cause VHF. In Africa, 3 different subtypes of the Ebola virus have been associated with human illness. Members of other viral families causing VHF include **bunyaviruses** (i.e., hantaviruses), **arenaviruses** (i.e., Lassa virus) and **flaviviruses** (i.e., Yellow Fever virus, Dengue virus).

### Clinical Presentation:

Viral hemorrhagic fevers are associated with an acute onset of fever, severe illness and hemorrhagic symptoms including hemorrhagic or purpuric rash, epistaxis, hematemesis, hemoptysis, blood in stool and other hemorrhagic symptoms.

In the case of dengue fever, clinical presentation is mild in comparison to dengue haemorrhagic fever including fever, headache, myalgia, nausea, and vomiting. Whereas cases of dengue haemorrhagic fever are reportable, cases of dengue fever without identified hemorrhagic manifestations are not reportable.

### Modes of transmission:

For Ebola and Marburg, person to person transmission occurs by direct contact with infected blood, secretions organs or semen. Risk is highest during the late stages of illness when the infected person is vomiting, having diarrhea, or hemorrhaging and postmortem contact with bodily fluids. Risk during the incubation period is low.

Nosocomial infections have been frequent; virtually all Ebola (Zaire, now Democratic Republic of Congo) patients who acquired infection from contaminated syringes and needles have died.

For dengue hemorrhagic fever, no direct person to person spread; persons are infective for mosquitoes from shortly before the febrile period to the end thereof, usually 3-5 days.

### Incubation Period:

Ebola and Marburg virus diseases: Usually 2 to 21 days.  
Dengue: from 3-14 days, commonly 4-7 days.

### Period of Communicability:

Ebola and Marburg are communicable as long as blood and secretions contain virus. For dengue hemorrhagic fever, the mosquito becomes infective 8-12 days after the viraemic blood-meal and remains so for life. There is no person-person transmission of dengue.

## Risk Factors/Susceptibility

All ages are susceptible. Recovery from infection with one dengue virus serotype provides lifelong homologous immunity but only short-term protection against other serotypes and may exacerbate disease upon subsequent infections potentially leading to Dengue Hemorrhagic Fever (as opposed to Dengue Fever).

## Diagnosis & Laboratory Testing

Before collecting samples, you must contact both your local Medical Officer of Health and the PHOL Customer Service Centre at 416-235-6556 or toll free at 1-877-604-4567 to speak to a microbiologist.

TESTING INFORMATION & REQUISITION

SPECIAL PATHOGENS REQUISITION

## Treatment & Case Management

Clinical management of VHF and Dengue Hemorrhagic Fever (DHF), in the latter especially if complicated by dengue shock syndrome, would be the responsibility of medical specialists such as an infectious disease specialist.

Contacts of DHF are not at risk, given the absence of person-to-person transmission. Given the severity and rarity of hemorrhagic fevers, a single confirmed case constitutes an outbreak. Public Health staff will be involved with case and contact management.

[Infection Prevention and Control Guidance for Patients with Suspected or Confirmed Ebola Virus Disease \(EVD\) in Ontario Health Care Settings](#)

## Patient Information

PATIENT FACT SHEET

## References

1. [Ministry of Health. Infectious Diseases Protocol - Ontario Public Health Standards, 2022.](#)

## Additional Resources

1. [BCCDC. "Ebola virus disease \(EVD\), 2014."](#)
2. [PHO. "Laboratory Guidance: Viral Haemorrhagic Fever."](#)
3. [Public Health Agency of Canada. "Fever in the Returning International Traveller Initial Assessment Guidelines, CCDR, 2011". \(This resource is archived but still current and can be accessed from this link\)](#)
4. [WHO. "Ebola virus disease: background and summary, 2014."](#)
5. Heymann, D.L. Control of Communicable Disease Manual (21st Ed.). Washington, American Public Health Association, 2022.
6. [Public Health Agency of Canada. "Lassa Fever-Pathogen Safety Data Sheet."](#)
7. [Public Health Agency of Canada. "Travel Health Notices."](#)
8. [PHO. "Viral Haemorrhagic Fevers", Dec 2022.](#)