

Hantavirus Pulmonary Syndrome

Reporting Obligations

Hantavirus Pulmonary Syndrome is 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:

Hantavirus is a virus in the family *Bunyaviridae*. More than 25 antigenically distinguishable viral species exist, each associated primarily with a single rodent species.

Clinical Presentation:

Hantavirus pulmonary syndrome infection often presents as a “flu-like” illness, with fever, intense headache, myalgia, nausea, and other gastrointestinal symptoms; this is followed by cough, shortness of breath, dizziness, sweats, and arthralgia (usually within 5 days) pulmonary edema and deterioration of cardiopulmonary function may rapidly occur. The case fatality rate is 35-50%.

Modes of transmission:

Infected rodents shed live virus in their saliva, feces, and urine; transmission primarily occurs through inhalation of aerosolized rodent saliva, urine, or feces; through the bites of infected rodents; and through direct contact of broken skin or mucous membrane with rodent excreta.

Incubation Period:

Not completely defined, however most often it has been found to be approximately 2 weeks after exposure, with a range from a few days to 6 weeks.

Period of Communicability:

No person to person spread documented in North America, however, there have been reports of person to person spread of the Andes virus strain in an outbreak in Argentina.

Risk Factors/Susceptibility

All persons without prior infection are presumed to be susceptible, however protection and duration of immunity from previous infection is unknown. Rural dwellers, cottagers and campers are most at risk in endemic areas. Also, any indoor exposure in closed, poorly ventilated areas with viable rodent infestation increases susceptibility to infection.

- Storing food sources in a manner that would make it available to rodents
- Having open holes or other possible rodent entrances to human dwellings
- Contact with wild rodents and direct contact with areas where there is evidence of rodents

Diagnosis & Laboratory Testing

Confirmed case: Laboratory confirmation of infection with clinically compatible signs and symptoms:

- Detection of Immunoglobulin M (IgM) antibodies or a significant (i.e., fourfold, or greater) rise in hantavirus-specific Immunoglobulin G (IgG) antibody titres **OR**
- Detection of hantavirus-specific nucleic acid amplification test (NAAT) in an appropriate clinical specimen **OR**
- Detection of hantavirus antigen by immunohistochemistry

Clinical Evidence:

- A febrile illness (Temperature > 38.3° C [101° F] oral) requiring supplemental oxygen **AND**
- Bilateral diffuse infiltrates (may resemble acute respiratory distress syndrome [ARDS]) **AND**
- Develops within 72 hours of hospitalization in a previously healthy person **OR**
- Unexplained illness resulting in death plus an autopsy examination demonstrating non-cardiogenic pulmonary edema without an identifiable specific cause of death

TESTING INFORMATION & REQUISITION

Treatment & Case Management

Treatment for respiratory symptoms is under the direction of the attending health care provider. No specific treatment or cure. Provide education about the illness and how to prevent exposure.

Public Health will follow up as needed.

Patient Information

PATIENT FACT SHEET

References

1. [Ontario. Ministry of Health. Infectious Diseases Protocol. Appendix 1: Hantavirus pulmonary syndrome.](#) Toronto: Queen’s Printer for Ontario; 2022 [effective 2024 Jan] [cited 2024 Mar 12].
2. Heymann, D.L. Control of Communicable Disease Manual (21st Ed.). Washington, American Public Health Association, 2022.

Additional Resources

1. [The Canadian Lung Association. Hantavirus](#)
2. [PHAC. Hantaviruses. 2015 Jun 26.](#)
3. [PHO. Hantavirus Pulmonary Syndrome. 2022 Dec.](#)
4. [Hantavirus Pulmonary Syndrome. Toronto: PHO; 2023 Dec 15.](#)