

# Appendix B: Provincial Case Definitions for Diseases of Public Health Significance

**Disease: Hantavirus pulmonary syndrome**

Effective: February 2019

# Hantavirus pulmonary syndrome

## 1.0 Provincial Reporting

Confirmed cases of disease

## 2.0 Type of Surveillance

Case-by-case

## 3.0 Case Classification

### 3.1 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

## 4.0 Laboratory Evidence

### 4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of Hantavirus pulmonary syndrome (HPS):

- Positive for hantavirus IgM antibodies
- Significant (i.e., fourfold or greater) rise in hantavirus IgG antibody titres
- Positive for hantavirus nucleic acid
- Positive for hantavirus antigen

### 4.2 Approved/Validated Tests

- Test for hantavirus IgM and IgG antibodies
- Nucleic acid amplification test (NAAT) for hantavirus
- Test for hantavirus antigen

### 4.3 Indications and Limitations

Not applicable

## 5.0 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

## 6.0 ICD 10 Code(s)

B33.4 Hantavirus pulmonary syndrome [HPS]

## 7.0 Comments

Because of the difficulty in diagnosing hantavirus pulmonary syndrome (HPS), a section on appropriate specimen collection and submission is included below.

For acute cases:

- 10 ml (minimum 1 ml) of clotted blood for serology and possible NAAT

If available or when required:

- Formalin fixed tissues at ambient temperature for immunohistochemistry
- Frozen tissues (lung biopsy) for NAAT

For autopsy specimen:

- All blood and sera samples collected
- Paraffin embedded blocks and formalin fixed tissues for immunohistochemistry
- Frozen tissues for PCR

## 8.0 Sources

Acha P, Szyfres B. Zoonoses and Communicable Diseases Common to Man and Animals. Vol. 2. 3 ed. Washington, DC: Pan American Health Organization; 2003.

Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System: Hantavirus Pulmonary Syndrome (HPS) - 2015 Case Definition [Internet]. Atlanta, GA: U.S. Department of Health & Human Services; 2015 [cited June 14, 2018].

Available from: <https://wwwn.cdc.gov/nndss/conditions/hantavirus-pulmonary-syndrome/case-definition/2015/>

Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.

Public Health Agency of Canada. Hantavirus Pulmonary Syndrome. In: Case Definitions for Communicable Diseases under National Surveillance. Canada Communicable Disease Report. 2009;35S2.

## 9.0 Document History

**Table 1: History of Revisions**

Revision Date	Document Section	Description of Revisions
December 2014	General	New template. Title of Section 8.0 changed from “References” to “Sources”. Section 9.0 Document History added.
December 2014	3.1 Confirmed Case	“Ribonucleic acid (RNA)” replaced with “nucleic acid amplification test (NAAT)” in second bullet point.
December 2014	4.1 Laboratory Confirmation	Third bullet point changed from “Positive for Hantavirus RNA” to “Positive for hantavirus nucleic acid”.
December 2014	4.2 Approved/ Validated Tests	“Sin nombre virus” replaced with “hantavirus” in all three bullets. “NAT” changed to “NAAT”.
December 2014	7.0 Comments	First bullet point changed from “10 ml of clotted blood for serology” to “10 ml ( <b>minimum 1 ml</b> ) of clotted blood for serology <b>and possible NAAT</b> ”. Third bullet point changed from “Frozen tissues (lung biopsy) for polymerase chain reaction (PCR)” to “Frozen tissues (lung biopsy) for NAAT”.
December 2014	8.0 Sources	Updated.
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance

