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


### 9.0 Document History

**Table 1: History of Revisions**

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