

## Hantavirus Infection

Merlin reporting code = 07869 Hantavirus Pulmonary Syndrome  
= 07870 Hantavirus Infection, Non-Pulmonary Syndrome

Case report form (CRF): [Hantavirus Pulmonary Syndrome CRF](#)

**PAPER CRF REQUIRED**

### Clinical description

Hantavirus pulmonary syndrome (HPS) is a febrile illness (i.e., temperature >101.0°F or >38.3°C) with a prodrome consisting of fever, chills, myalgia, headache, and gastrointestinal symptoms, followed by the abrupt onset of respiratory distress and hypotension.

Non-pulmonary syndrome (NPS) hantavirus infection is a febrile illness with non-specific viral symptoms including fever, chills, myalgia, headache, and gastrointestinal symptoms. Typical clinical laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, thrombocytopenia, and circulating immunoblasts.

### Clinical criteria for case classification:

#### HPS:

- Illness characterized by acute onset of fever >101.0°F or >38.3°C) **and**
- At least one of the following clinical features:
  - Bilateral diffuse interstitial edema
  - Clinical diagnosis of acute respiratory distress syndrome (ARDS)
  - Radiographic evidence of noncardiogenic pulmonary edema
  - An unexplained respiratory illness resulting in death
  - Health care record contains a diagnosis of hantavirus pulmonary syndrome
  - Death certificate lists hantavirus pulmonary syndrome as a cause of death or a significant condition contributing to death

#### NPS hantavirus infection:

- Illness characterized by acute onset of fever >101.0°F or >38.3°C) **and**
- The **absence** of all the following clinical features:
  - Bilateral diffuse interstitial edema
  - Clinical diagnosis of acute respiratory distress syndrome (ARDS)
  - Radiographic evidence of noncardiogenic pulmonary edema
  - An unexplained respiratory illness resulting in death

### Laboratory criteria for case classification

- Detection of hantavirus-specific (Sin Nombre virus [SNV]) IgM or rising titers of hantavirus-specific IgG,
- OR
- Detection of hantavirus-specific (SNV) ribonucleic acid (RNA) in clinical specimens (i.e., polymerase chain reaction [PCR]),
- OR
- Detection of hantavirus antigen by immunohistochemistry (IHC) in lung biopsy or autopsy tissues.

### Case classification

#### Confirmed:

#### HPS

Illness clinically compatible with HPS in a person with laboratory evidence.

*NPS hantavirus infection*

Illness clinically compatible with NPS hantavirus infection in a person with laboratory evidence.

**Criteria to distinguish a new case from previous reports**

Not applicable.

**Comments**

Because the clinical illness is nonspecific and ARDS is common, a screening case definition can be used to determine which patients to test. In general, a predisposing medical condition (e.g., chronic pulmonary disease, malignancy, trauma, burn, and surgery) is a more likely cause of ARDS than HPS, and patients who have these underlying conditions and ARDS need not be tested for hantavirus.

Commercial laboratories typically run a hantavirus enzyme-linked immunoassay (EIA/ELISA) screening test which lacks specificity and generates false positive results. Therefore, it is important to request results for the SNV-specific EIA/ELISA which commercial labs routinely run on any sample that first tests positive for hantavirus on the screening test. The SNV-specific EIA/ELISA test is more specific and if positive, supports pursuing confirmatory testing at the Bureau of Public Health Laboratories (BPHL).

- ✉ **Any available specimens must be sent to BPHL for confirmatory testing. Requests for clinical specimens to be sent to the CDC for diagnostic testing must be cleared through the Bureau of Epidemiology and assigned a tracking number; specimens must be routed through BPHL. This condition has been identified as a potential bioterrorism agent by the CDC.**

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