



Merlin disease code: 07800 Hantavirus Infection

[Paper case report form](#) required



Specimens must be sent to the Bureau of Public Health Laboratories (BPHL); CDC testing must be cleared through the Bureau of Epidemiology, assigned a tracking number, and routed through BPHL

No Merlin extended data

**This condition has been identified as a potential bioterrorism agent by the CDC.**

## Background

Hantavirus pulmonary syndrome is a febrile illness with temperature >101.0°F (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 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

### Hantavirus pulmonary syndrome:

Both of the following:

- Acute onset of fever
- **And** one or more of the following:
  - Bilateral diffuse interstitial edema,
  - **Or** clinical diagnosis of acute respiratory distress syndrome (ARDS),
  - **Or** radiographic evidence of noncardiogenic pulmonary edema,
  - **Or** an unexplained respiratory illness resulting in death,
  - **Or** health care record contains a diagnosis of hantavirus pulmonary syndrome,
  - **Or** death certificate lists hantavirus pulmonary syndrome as a cause of death or a significant condition contributing to death.

### Non-pulmonary syndrome:

Both of the following:

- Acute onset of fever
- **And** absence of all the following:
  - Bilateral diffuse interstitial edema,
  - **And** clinical diagnosis of ARDS,
  - **And** radiographic evidence of noncardiogenic pulmonary edema,
  - **And** an unexplained respiratory illness resulting in death.

## Laboratory criteria for case classification

One or more of the following:

- Detection of hantavirus-specific (Sin Nombre virus [SNV]) IgM,
- **Or** fourfold rise in hantavirus-specific IgG in paired sera,
- **Or** detection of hantavirus-specific nucleic acid by polymerase chain reaction (PCR),
- **Or** detection of hantavirus antigen by immunohistochemistry (IHC) in lung biopsy or autopsy tissues.

## Epidemiological criteria for case classification

Not applicable.

## Case classification

### Confirmed:

A clinically compatible illness in a person with laboratory criteria.

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