

HANTAVIRUS INFECTION

Last revised August 5, 2011

I. IDENTIFICATION

A. CLINICAL DESCRIPTION:

Multiple strains of hantavirus are pathogenic for humans. There are two general types of clinical syndromes caused by hantavirus infection depending on the infecting strain – hantavirus pulmonary syndrome (HPS) and hemorrhagic fever with renal syndrome (HFRS). Virtually all hantavirus-related illness acquired indigenously in the USA involve HPS.

- **Hantavirus pulmonary syndrome (HPS)** is a febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and clinically resembling acute respiratory disease syndrome (ARDS). The typical prodrome consists of 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.
- **Hemorrhagic fever with renal syndrome (HFRS)** is characterized by acute onset of fever, malaise, back and abdominal pain, often with accompanying nausea, vomiting, and petechiae. Deverfescence may be accompanied by severe hypotension, oliguria, and renal failure.

B. REPORTING CRITERIA:

1. **HPS:** A febrile illness (i.e., temperature greater than 101.0° F [greater than 38.3° C]) corroborated by bilateral diffuse interstitial edema or a clinical diagnosis of acute respiratory distress syndrome (ARDS) or radiographic evidence of noncardiogenic pulmonary edema, or unexplained respiratory illness resulting in death, and occurring in a previously healthy person **OR**
An unexplained respiratory illness resulting in death, with an autopsy examination demonstrating noncardiogenic pulmonary edema without an identifiable cause
2. **HFRS:** An acute febrile illness with sudden onset of abdominal or lower back pain and hypotension with proteinuria, thrombocytopenia, leukocytosis, hemoconcentration, oliguria, and elevated BUN in the absence of an alternate diagnosis. The presence of petechiae and a history of travel to Europe or Asia within six weeks of onset should heighten the index of suspicion for HFRS.

C. LABORATORY CRITERIA FOR CONFIRMATION:

- Detection of hantavirus-specific immunoglobulin M or rising titers of hantavirus-specific immunoglobulin G, or
- Detection of hantavirus-specific ribonucleic acid sequence by polymerase chain reaction in clinical specimens, or
- Detection of hantavirus antigen by immunohistochemistry

D. WISCONSIN CASE DEFINITION: A clinically compatible case that is laboratory confirmed

II. ACTIONS REQUIRED / PREVENTION MEASURES

- A. WISCONSIN DISEASE SURVEILLANCE CATEGORY I: Report **IMMEDIATELY BY TELEPHONE** to the patient's local health department upon identification of a confirmed or suspected case. The local health department shall then notify the state epidemiologist **immediately** of any confirmed or suspected cases. Within 24, hours submit a case report

Wisconsin Division of Public Health Communicable Disease Surveillance Guideline

electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), by mail or fax using an Acute and Communicable Disease Case Report ([F-44151](#)), or by other means.

B. EPIDEMIOLOGY REPORTS REQUIRED:

- *Electronically* – Report through WEDSS, including appropriate disease-specific tabs
OR
- *Paper Copy* – Acute and Communicable Diseases Case Report ([F-44151](#)) **AND** Hantavirus Pulmonary Syndrome Case Report Form

C. PUBLIC HEALTH INTERVENTIONS:

In accordance with Wisconsin Administrative rule DHS 145.05, local public health should follow the methods of control recommended in the current edition of *Control of Communicable Diseases Manual*, edited by David L. Heymann, published by the American Public Health Association.

In brief, contact and work with DPH staff. Ascertain all contact with rodents or rodent-contaminated areas during the six weeks preceding onset. Obtain detailed travel history. Environmental assessment may be indicated.

III. CONTACTS FOR CONSULTATION

A. LOCAL HEALTH DEPARTMENT – REGIONAL OFFICES – TRIBAL AGENCIES:

<http://www.dhs.wisconsin.gov/localhealth/index.htm>

B. BCDER / COMMUNICABLE DISEASE EPIDEMIOLOGY SECTION: (608) 267-9003

C. WISCONSIN STATE LABORATORY OF HYGIENE / VIROLOGY (608) 262-3185

IV. RELATED REFERENCES

- Heymann DL, ed. Hantaviral Diseases. In: *Control of Communicable Diseases Manual*. 19th ed. Washington, DC: American Public Health Association, 2008: 269-274
- Pickering LK, ed. Hantavirus Pulmonary Syndrome. In: *Red Book: 2009 Report of the Committee on Infectious Diseases*. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2009:321-323