



Health Alert Network

Tri-County Health Department

Serving Adams, Arapahoe and Douglas Counties

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John M. Douglas, Jr., M.D. Executive Director

The pages that follow contain information critical to protecting the health of your patients and the citizens of Colorado.

HAN ADVISORY

Number of pages including cover: 4

Subject: **Advisory - Hantavirus in Colorado**

Message ID: 3/21/2017 8:30:00 AM

Recipients: HAN Community Members.

From: TRI-COUNTY HEALTH DEPARTMENT

Adams, Arapahoe and Douglas County, Colorado

Recipient Instructions: **Tri-County Health Department is forwarding you the attached HAN. You may have already received this broadcast if you are on the CDPHE distribution list, however, we wanted to ensure you did not miss this important information. No response is required.**

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You have received this message based upon the information contained within our Health Alert Network Notification System. If you have a different or additional e-mail or fax address that you would like us to use, or if you have additional questions, call 720-200-1477.

Categories of Health Alert Network Messages:

Health Alert: Conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: Provides important information for a specific incident or situation; may not require immediate action.

Health Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.

Info Service/Public Health Brief: Provides general information that is not necessarily considered to be of an emergent nature.

You may download a copy of this HAN from the TCHD website at
<http://www.tchd.org/259/Health-Alert-Network>



HEALTH ALERT NETWORK BROADCAST

MESSAGE ID: 03202017 14:20

FROM: CO-CDPHE

SUBJECT: HAN Advisory - Hantavirus in Colorado

RECIPIENTS: Local Public Health Agencies / IPs / Clinical Labs / EDs / ID Physicians / Coroners

RECIPIENT INSTRUCTIONS: Local Public Health Agencies - please forward to healthcare providers.

HEALTH ADVISORY | Hantavirus in Colorado | March 20, 2017

Health care providers: Please distribute widely in your office

Key points

- Colorado confirmed 11 hantavirus cases in 2016, including three fatalities.
- Early spring and summer are when most human cases occur but some cases have been found at other times of the year.
- Although human cases occur infrequently, the illness is severe and potentially life-threatening if not detected quickly.
- Since 1993 Colorado has identified over 100 cases of hantavirus, 38 percent of which were fatal.
- The majority of people with hantavirus in Colorado have had exposure to rodents and or rodent droppings within two weeks of symptom onset (range of one to six weeks).
- **Report any suspected case of hantavirus to CDPHE at 303-692-2700.**

Background information

Hantavirus infection is a serious and potentially fatal respiratory disease carried by deer mice statewide. These mice can live in a wide variety of habitats and can be abundant in rural areas. When cleaning out rodent-infested structures (including primary residences), people can breathe in dirt and dust contaminated with deer mouse urine and feces and become infected. Early spring and summer are when most human cases occur, but some cases have been found at other times of the year. Exposures can occur in any area where deer mice are present, including in and around patient's primary residences. Patients can also be exposed by direct contact with fluids from infected mice.

Patients with hantavirus infection typically present in a nonspecific way with a relatively short febrile prodrome lasting 3-5 days. Progression to cardiopulmonary symptoms occurs in most patients, consistent with hantavirus pulmonary syndrome (HPS).

Given the rapid onset of shock and respiratory failure, early recognition of HPS is critical in reducing mortality. Below is some information on the early signs and symptoms of HPS and resources available for diagnosis and treatment of the disease.

Clinical recognition of the hantavirus infection prodrome

Hantavirus infection begins one to six weeks (average two weeks) after exposure to infected rodents or their excreta (urine, droppings and/or saliva). Although not all patients give a history of rodent exposure, reports of increases in mouse populations around their residence or exposure to mice infested buildings are common among patients with HPS. Patients experience a prodromal phase with fever, chills and myalgias, persisting 3-5 days before progression to the cardiopulmonary phase. In addition to fever and myalgias, early symptoms include headache, chills, dizziness, non-productive cough, nausea, vomiting and other gastrointestinal symptoms. Malaise, diarrhea and lightheadedness are reported by approximately half of all patients, with less frequent reports of arthralgias, back pain, leg pain and abdominal pain. The presence of a productive cough or other upper respiratory symptoms (rhinorrhea, sinusitis, sneezing) at the onset of illness is NOT consistent with a hantavirus infection diagnosis.

Presumptive laboratory recognition of the hantavirus prodrome

Because there is no way to clinically distinguish between the prodrome of HPS and that of many other viral and bacterial infections, the **liberal use of the complete blood count (CBC)** with differential and platelet count is recommended. A low platelet count (<150,000 in about 80 percent of cases) is the only CBC abnormality consistently seen during the prodromal phase. Other nonspecific lab results suggestive of prodromal HPS include elevated LDH, elevated AST, and reduced serum bicarbonate. Patients with symptoms consistent with early HPS but with platelet counts of >150,000 should be advised to return to your clinic in 24 hours for re-evaluation.

Presumptive clinical and laboratory recognition of the hantavirus cardiopulmonary syndrome

The transition from hantavirus infection prodrome to HPS/respiratory failure progresses rapidly; 4 to 12 hours after the onset of dry cough and shortness of breath. The combination of atypical lymphocytes, a significant bandemia, and thrombocytopenia in the setting of pulmonary edema is strongly suggestive of a hantavirus infection. Acidosis (lactic), mild coagulopathy, elevated LDH and hepatic enzymes, and reduced serum albumin are usually seen. Serum creatinine is usually not elevated unless dehydration due to vomiting and diarrhea is severe. Hypotension in HPS is due to cardiogenic shock with low cardiac output and normal or elevated peripheral vascular resistance. Patients presenting with bilateral alveolar-interstitial infiltrates and hypotension and plasma lactate greater than 4 meq/L (note: your laboratory may use different units) have a high risk of mortality.

Management and referral

Patients with suspected HPS should be transported to a critical-care unit as early as possible, because the fluid management should be guided by Swan-Ganz catheter data, hypotension must be treated with inotropes (initiate treatment with dobutamine), and oxygenation may be difficult even with mechanical ventilation. All patients with suspected HPS should be under respiratory isolation until the diagnosis of HPS is confirmed by serology. No approved antiviral treatment is available for HPS.

Diagnostic testing

The IgM antibody ELISA test specific for Sin Nombre virus is the preferred diagnostic test and is available at the state health department laboratory. Blood for serologic testing should be drawn into a red top tube, serum separated and held at refrigerator temperature. Specimens should be sent on cold pack via same-day or next-day delivery. **Time delays due to specimen transport and testing mean emergent critical care decisions must be made prior to the availability of serological confirmation of Sin Nombre IgM test results.** A completed submission form, available from the state lab, or paperwork documenting the patient's name, requested test, and

name, address, and telephone/fax number of the submitting physician or hospital (where the results should be sent) must accompany the sample.

For more information

- For consultation on suspected cases of HPS, contact the Colorado Department of Public Health and Environment (CDPHE) at **303-692-2700** during regular business hours or **303-370-9395** after hours and on weekends and holidays. The Virology Laboratory can be reached at **303-692-3485**.
- Colorado surveillance data is available at <https://www.colorado.gov/cdphe/hantavirus>.
- The Centers for Disease Control and Prevention (CDC) also maintains a comprehensive educational website at <http://www.cdc.gov/hantavirus>
- Safe rodent clean-up advice is available at <https://www.cdc.gov/rodents/cleaning/>

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John W. Hickenlooper, Governor | Larry Wolk, MD, MSPH, Executive Director and Chief Medical Officer

