



County of Santa Cruz

HEALTH SERVICES AGENCY

PO BOX 962, 1060 EMELINE AVE., SANTA CRUZ, CA 95061-0962

PHONE: (831) 454-4114 AFTER HOURS: (831) 471-1170 FAX: (831) 454-5049 TDD: (831) 454-4123

COMMUNICABLE DISEASE UNIT

PUBLIC HEALTH ALERT

To:	All Healthcare Providers
From:	Arnold S. Leff, MD, REHS, County Public Health Officer
Date:	May 14, 2018
Subject:	Hantavirus found in Santa Cruz County

Hantavirus Pulmonary Syndrome confirmed in a Santa Cruz County resident Request for vigilance in hantavirus pulmonary syndrome (HPS) case recognition and reporting

Current situation:

In April of this year a Santa Cruz County resident was diagnosed with HPS and survived. Surveillance of rodent populations in north Santa Cruz County has identified deer mice that are serologically positive to Sin Nombre virus (SNV), the causative agent of HPS.

Background:

Hantavirus pulmonary syndrome (HPS) is a rare disease. Since HPS was first identified in 1993, there have been more than 70 cases of hantavirus infection in California and over 700 cases reported nationwide. About 30 percent of HPS cases identified in California have been fatal.

Infection is caused by a virus that individuals contract through contact with the urine, droppings or saliva of wild rodents, primarily deer mice. Breathing small particles of mouse urine or droppings stirred up into the air when entering or cleaning buildings or enclosed spaces where mice are present is the most common means of infection. The illness begins with fever, headache, and muscle aches and progresses rapidly to severe difficulty breathing and, in some cases, death. Prompt diagnosis and medical treatment increase an individual's chances of recovery.

Deer mice are present throughout California, but are more common in rural, undeveloped areas. Statewide, approximately 12 percent of deer mice have shown evidence of infection with hantavirus.

<https://cdphdata.maps.arcgis.com/apps/MapSeries/index.html?appid=31fd0ca80e264cbd9bba7d54952194de>.

Clinical Presentation:

The incubation period for HPS is commonly 2-3 weeks, but can occasionally be as long as 8 weeks. HPS typically begins with a non-specific prodrome that lasts 3-5 days. Early symptoms include fever, headache, chills, arthralgias, back pain, and abdominal pain. Non-productive cough, shortness of breath, nausea, vomiting, diarrhea, and lightheadedness are reported by approximately half of all patients. These non-specific symptoms make HPS difficult to differentiate from other more common causes of viral illness during the prodrome. Hematologic abnormalities commonly observed during the HPS prodrome include progressive thrombocytopenia, leukocytosis, and immature leukocytes (myelocytes, metamyelocytes) in the peripheral circulation.

Following the prodrome, the cardinal clinical feature of HPS is a rapid onset of respiratory distress and hemodynamic compromise. Within 24 hours, patients experience hypotension, progressive pulmonary edema, and hypoxia, often requiring intubation and supplemental oxygen. Patients may progress to acute respiratory distress syndrome (ARDS). Chest radiographs show progression from minimal changes of interstitial pulmonary edema to bilateral infiltrates consistent with ARDS. Patients with fatal infections appear to have severe myocardial depression which can progress to sinus bradycardia with subsequent electromechanical dissociation, ventricular tachycardia or fibrillation.

Treatment:

There is no effective treatment for HPS and management consists solely of providing cardiopulmonary support.

Laboratory Diagnosis:

The chief diagnostic test for HPS is serology using an enzyme immunoassay (EIA). As most HPS patients seroconvert at or prior to onset of symptoms, the EIA is highly sensitive in patients displaying clinically compatible symptoms. Serologic testing for HPS is available through some commercial diagnostic laboratories; however, it is critical that the assay employs antigen of Sin Nombre virus, the cause of HPS in the western U.S., as non-specific cross-reactivity is commonly observed for assays that use other hantavirus antigens. The CDPH Viral and Rickettsial Diseases Laboratory provides confirmatory testing for patients with strong clinical or laboratory indications of HPS, and request for such testing can be made through the local public health department.

Infection control:

There is no evidence of person-to-person transmission of Sin Nombre virus in North America. This includes healthcare settings where studies of antibody levels have not documented asymptomatic transmission. Nonetheless, the usual Standard Precautions are recommended when managing a possible case of Hantavirus infection. These include hand

hygiene, masking a coughing patient, and wearing a mask in the presence of a coughing patient. Surfaces should be cleaned with a disinfectant, and gloves and gowns may be worn if a splash or mucus membrane exposure is possible.

Reporting:

Suspected cases of hantavirus should be reported within one working day to Santa Cruz County Communicable Disease Unit by calling (831) 454-4114 and faxing a Confidential Morbidity Report (CMR) to (831) 454-5049. www.santacruzhealth.org/CDUnit

For more information visit the California Department of Public Health's hantavirus page at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/HantavirusPulmonarySyndrome.aspx> and information from the national Centers for Disease Control at <https://www.cdc.gov/hantavirus/>

For questions please call the Public Health Department Communicable Disease Unit at (831) 454-4114.

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.



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Santa Cruz County