Hantavirus Pulmonary Syndrome (HPS)  
Specimen Submittal Instructions

Guidelines for Submission

• Fill out as completely as possible:
  o VRDL GENERAL PURPOSE SPECIMEN SUBMITTAL form
  o HPS CASE HISTORY FORM
  o Fax both forms to the Medical Epidemiology Liaison Section (MELS) at (510) 307-8599 AND send a copy with the specimen(s) to avoid delays in testing.

• Collect two tubes and send on cold packs **(It is very important to use an overnight delivery service because the EDTA samples will begin to degrade within three days)**
  o One 5 ml tube in EDTA (purple top)
  o One 10 ml whole clotted blood (red top).

• Since the incidence of HPS is rare in California, we recommend that you also submit a respiratory specimen (nasopharyngeal swabs or washes, tracheal aspirates, bronchoalveolar lavage, and/or pleural fluid) for viral isolation and/or respiratory PCR assays to test for other agents that may be causing your patient’s illness.

• Save all specimens (including hematology differential slides) from the patient until HPS serology has been completed. Additional samples may be tested if the patient is deceased.
  o Paraffin embedded lung and kidney tissues- Ship and store at ambient temperature
  o Fresh or frozen lung and kidney- Ship and store at -70°C

HPS Consultation

• If you would like to consult about a possible HPS patient, call the Infectious Disease Branch at (916) 552-9730 or call the Medical and Epidemiology Liaison Section (MELS) for the VRDL at (510) 307-8585. If neither is available, local health departments may contact the Duty Officer at (510) 620-3434.

• Clinical consultations for patient management are available from the staff at the University of New Mexico Medical School. Call 1-888-866-7257 and request a HPS consultation.

• In cases where clinical presentation is not consistent with VRDL HPS test results, or VRDL HPS results are equivocal, specimens may be forwarded to a reference laboratory for further testing.
Screening Criteria for Hantavirus Pulmonary Syndrome in Persons with Unexplained Respiratory Illness *

* MMWR October 28, 1993 pp 816-820

Potential case-patients must have one of the following:

- A febrile illness (temperature > 101 F or > 38.3 C) occurring in a previously healthy person characterized by unexplained adult respiratory distress syndrome (ARDS)
- Bilateral interstitial pulmonary infiltrates developing within one (1) week of hospitalization with respiratory compromise requiring supplemental oxygen
- Unexplained respiratory illness resulting in death in conjunction with an autopsy examination demonstrating non-cardiogenic pulmonary edema without an identifiable specific cause of death
- Thrombocytopenia along with elevated hematocrit and high WBC with immunoblasts in the smear is characteristic of patients suspected to be infected with hantavirus.

Potential case-patients are to be excluded if they have any of the following:

- An acute illness that provides a likely explanation for the respiratory illness (unless there is history of recent potential rodent exposure) such as:
  - Recent major trauma, burn, surgery, recent seizures or history of aspiration
  - Bacterial sepsis
  - Another respiratory disorder such as respiratory syncytial virus in young children, influenza, or legionella pneumonia

Confirmed case-patients must have the following:

- Compatible clinical history of illness
  AND
- Detection of Immunoglobulin M (IgM) antibodies or a significant (i.e., fourfold or greater) rise in hantavirus-specific Immunoglobulin G (IgG) antibody titers
  OR
- Detection of hantavirus-specific nucleic acid amplification testing (NAAT) in an appropriate clinical specimen
  OR
- Detection of hantavirus antigen by immunohistochemistry (IHC)
Hantavirus Pulmonary Syndrome Case History Form

Please return with Specimen Submit Form to:

Viral and Rickettsial Disease Laboratory

ATTN: Specimen Receiving 850 Marina Bay Parkway

Richmond, CA 94804 Phone (510) 307-8585 Fax (510) 307-8599

<table>
<thead>
<tr>
<th>Patient’s Last Name</th>
<th>First Name</th>
<th>Middle Name</th>
<th>Patient’s Mailing Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of Birth:</th>
<th>Age:</th>
<th>Sex:</th>
<th>Occupation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County Health Jurisdiction:</th>
<th>Race/Ethnicity:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>Asian/Pacific Islander</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American Indian/Alaska Native</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>Non-Hispanic</td>
</tr>
</tbody>
</table>

Date of Onset and Hospitalization History

Onset Date: Was patient hospitalized for this illness? [ ] Yes [ ] No [ ] Unk

<table>
<thead>
<tr>
<th>Name of Hospital:</th>
<th>Location of Hospital:</th>
<th>Dates in Hospital:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>/ / to / / / to / /</td>
</tr>
</tbody>
</table>

MR#

Clinical Signs, Symptoms and Laboratory Values

Did the patient have any of the following? (Circle) Additional Information:

<table>
<thead>
<tr>
<th>Fever</th>
<th>Thrombocytopenia (platelets &lt; 150,000 mm):</th>
<th>Elevated hematocrit (Hct):</th>
<th>Elevated creatinine:</th>
<th>CXR with unexplained bilateral interstitial infiltrates or suggestive of ARDS?</th>
<th>Oxygen saturation &lt; 90% at any time?</th>
<th>Was patient intubated?</th>
<th>Has patient received ribavirin?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Highest fever:

Lowest platelet count:

Highest Hct:

Highest creatinine:

Date Performed:

WBC: Total Neutrophils: Banded neutrophils: Lymphocytes: Atypical Lymphocytes:

% % % %

History of any relevant underlying medical conditions (i.e. COPD, malignancy, immunosuppression, diabetes)?

Other possible explanations for acute illness (i.e. sepsis, burns, trauma)?

History of rodent exposure in 6 weeks prior to illness? [ ] Yes [ ] No [ ] Unk

Date of Exposure to known direct or indirect contact with rodents or their excreta: / / / 

Type of Rodent: ____________________________________________________

Place of Exposure:

Outcome of Illness? [ ] Alive [ ] Dead (if deceased, date of death) / / / [ ] Unk

If deceased, was an autopsy performed? [ ] Yes [ ] No

Evidence of non-cardiogenic pulmonary edema? [ ] Yes [ ] No

Available Samples: Serum/blood [ ] Yes (date collected: / / / ) [ ] No

Fresh frozen or paraffin tissue blocks [ ] Yes [ ] No

Has specimen been tested for hantavirus infection at another lab? [ ] Yes [ ] No

If yes then Name of lab and append copy of the results:

Comments:

Updated 09/06/2017