Hantavirus Pulmonary Syndrome (HPS)
Specimen Submittal Instructions

Guidelines for Submission

- Fill out as completely as possible:
  - VRDL GENERAL PURPOSE SPECIMEN SUBMITTAL form
  - HPS CASE HISTORY FORM
  - 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)
  - One 5 ml tube in EDTA (purple top)
  - 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.
  - Paraffin embedded lung and kidney tissues- Ship and store at ambient temperature
  - 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.
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 Submittal 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, First Name</th>
<th>Middle Name:</th>
<th>Patient’s Mailing Address</th>
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<thead>
<tr>
<th>Date of Birth:</th>
<th>Age:</th>
<th>Sex:</th>
<th>Occupation:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>F</td>
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<thead>
<tr>
<th>County Health Jurisdiction:</th>
<th>Race/Ethnicity:</th>
<th>[ ] White</th>
<th>[ ] Black</th>
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<tbody>
<tr>
<td></td>
<td>[ ] Asian/Pacific Islander</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[ ] American Indian/Alaska Native</td>
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<tr>
<td></td>
<td>[ ] Hispanic</td>
<td>[ ] Non-Hispanic</td>
<td>[ ] Unknown</td>
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### Date of Onset and Hospitalization History

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<tr>
<th>Onset Date:</th>
<th>Was patient hospitalized for this illness?</th>
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<td>[ ] Yes [ ] No [ ] Unk</td>
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<tr>
<th>Name of Hospital:</th>
<th>Location of Hospital:</th>
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<tr>
<th>Dates in Hospital:</th>
<th>MR#</th>
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### Clinical Signs, Symptoms and Laboratory Values

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

- **Fever** > 101F or > 38.3 C: Yes No Unk **Highest fever:**
- **Thrombocytopenia (platelets < 150,000 mm):** Yes No Unk **Lowest platelet count:**
- **Elevated hematocrit (Hct):** Yes No Unk **Highest Hct:**
- **Elevated creatinine:** Yes No Unk **Highest creatinine:**
- **CXR with unexplained bilateral interstitial infiltrates or Suggestive of ARDS?** Yes No Unk **Date Performed:**
- **Oxygen saturation < 90% at any time?** Yes No Unk
- **Was patient intubated?** Yes No Unk **Date Performed:**

<table>
<thead>
<tr>
<th>WBC: %</th>
<th>Total Neutrophils: %</th>
<th>Banded neutrophils: %</th>
<th>Lymphocytes: %</th>
<th>Atypical Lymphocytes: %</th>
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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?

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<th>[ ] Yes</th>
<th>[ ] No</th>
<th>[ ] Unk</th>
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Date of Exposure to known direct or indirect contact with rodents or their excreta: _____/_____/______

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<th>Type of Rodent:</th>
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Place of Exposure:

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<tr>
<th>Outcome of Illness?</th>
<th>[ ] Alive</th>
<th>[ ] Dead (if deceased, date of death) <em><strong><strong>/</strong></strong></em>/______</th>
<th>[ ] Unk</th>
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<td>If deceased, was an autopsy performed? [ ] Yes [ ] No</td>
<td>[ ] Unk</td>
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<td>Evidence of non-cardiogenic pulmonary edema? [ ] Yes [ ] No</td>
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<tr>
<th>Available Samples:</th>
<th>Serum/blood [ ] Yes (date collected <em><strong><strong>/</strong></strong></em>/______)</th>
<th>[ ] No</th>
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<td>Fresh frozen or paraffin tissue blocks [ ] Yes [ ] No</td>
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<td>Has a specimen been tested for hantavirus infection at another lab? [ ] Yes [ ] No</td>
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If yes then Name of lab and append a copy of the results:

Comments:

Updated 06/05/2017