



## **Southern Nevada Public Health Laboratory**

**CLIA 29D1027844 Nevada State License 3828LIC-0**

*Mailing Address: P O Box 3902, Las Vegas, NV 89127 ~ Shipping Address: 700 S Martin Luther King Blvd, Las Vegas, NV 89106*

*Phone: (702) 759 - 1020 ~ Fax: (702) 759 - 1444*

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### **Guidelines for Specimen Collection, Transport, Submission and Testing For Persons Under Investigation of Viral Hemorrhagic Fever or Other Pathogens of High Consequence Ebola, Marburg, Lassa, CCHF and South American Hemorrhagic Fevers (Machupo, Chapare, Sabia Viruses)**

#### **Notification and Authorization process for submitting specimens for VHF testing**

Diagnostic testing for VHF is only performed at CDC or a laboratory approved by CDC. Southern Nevada Public Health Laboratory (SNPHL) is an approved testing laboratory. Before VHF testing can be performed, the Southern Nevada Health District (SNHD) Office of Disease Surveillance(ODS) must determine whether the person meets the CDC testing criteria.

**SNPHL will NOT perform testing without prior epidemiological consultation.**

1. Pre-authorization and epidemiology consultation from SNHD ODS **MUST** be obtained before specimens will be tested. Unauthorized specimens will not be tested.  
SNHD ODS 24/7 contact number 702 759 1300 Option 2.
2. A healthcare provider who has access to the following patient information should be the person contacting ODS to obtain pre-authorization:
  - Name and Date of Birth
  - Gender
  - Travel History (including dates, locations and mode of travel)
  - Known VHF exposure status
  - Signs and symptoms
  - Laboratory test orders/results
  - Current patient status
3. If authorized for testing, SNHD ODS will notify SNPHL staff. SNPHL will contact the hospital clinical laboratory to arrange for specimen transportation by SNPHL courier.
4. Upon authorization to perform testing, SNPHL courier will deliver materials and instructions for the hospital staff to package the samples according to 29 CFR 1910.1030 for transport back to SNPHL by SNPHL courier.

**WAIT UNTIL THE SNPHL COURIER HAS ARRIVED AT THE HOSPITAL TO COLLECT THE SAMPLES.**



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### Biosafety Guidelines

It is essential that laboratorians, supervisors and other workers review the CDC guidance and documents and follow the biosafety recommendations provided.

Risk assessments should be conducted by each laboratory director, biosafety officer, or other responsible personnel to determine the potential for sprays, splashes or aerosols generated from laboratory procedures. Adjustments to PPE requirements, practices and safety equipment should be considered to protect laboratorian's skin, eyes and mucous membranes.

- Recommendations for specimen collection:
  - Gloves
  - Full front water resistant gowns
  - Full face shields or goggles
  - Masks to cover nose and mouth
  - Additional PPE as required in certain conditions
- Recommendations for laboratory testing:
  - Gloves
  - Full Front water resistant gowns
  - Air Purifying Respirator System (PAPR/CAPR)
  - Class II Biosafety Cabinet
  - All manufacturer installed safety features for laboratory instruments should be used

### Sample Submission for Testing

#### Sample collection:

- Specimens should be taken from a symptomatic patient 3-10 days after symptoms appear.
- minimum volume of 4 ml of whole blood in *plastic* collection tubes can be submitted for EVD testing.
- Two tubes of whole blood preserved with EDTA are recommended. Do not separate and remove serum or plasma from the primary collection container.
- Label the tubes following submitting lab practices.

#### Disinfection:

Every effort must be taken to avoid external contamination of the specimen tubes and bags. Some viruses are more difficult to kill than others, and a disinfectant's effectiveness can change based on how you use it.

Follow these steps to ensure you choose an appropriate product and use it effectively.

First, determine which disinfectants are expected to be effective against the virus you intend to inactivate.



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The EVP guidance divides viruses into three categories:

- Tier 1: Enveloped viruses are the easiest to inactivate. When disinfectants damage their lipid envelope, the virus is no longer infectious.
- Tier 2: Large, nonenveloped viruses are encased in protein capsids that make them more difficult to inactivate compared to enveloped viruses.
- Tier 3: Small, nonenveloped viruses are the hardest to inactivate. Both their protein capsids and their small size make them less vulnerable to disinfectants compared to other viruses.

To find disinfectants for use against the emerging virus you intend to kill, you need to know which category that virus falls into. The EVP guidance currently applies to the following viruses.

| Pathogen  | Difficulty to Inactivate           | Description   |
|---|------------------------------------|---|
| Marburg Virus   | Tier 1 (enveloped virus)           | Marburg virus disease is a rare disease that is caused by an infection from the Marburg virus. <a href="#">Learn more</a> . See also: <a href="#">List Q</a> .  |
| Viruses causing Ebola disease (including Sudan virus) | Tier 1 (enveloped virus)           | Ebola disease is a rare disease that is caused by an infection from Orthoebolaviruses (including Sudan virus). <a href="#">Learn more about Ebola disease</a> . See also: <a href="#">List Q</a> and <a href="#">List L</a> . |
| Mpox virus  | Tier 1 (enveloped virus)           | Mpox (formerly monkeypox) is a rare disease that is caused by infection with mpox virus. <a href="#">Learn more</a> . See also: <a href="#">List Q</a> .  |
| SARS-CoV-2 and variants                               | Tier 1 (enveloped virus)           | SARS-CoV-2 is the virus that causes COVID-19. See also: <a href="#">List N</a> .  |
| Rabbit Hemorrhagic Disease Virus (RHDV2)              | Tier 3 (small, nonenveloped virus) | RHDV2 is a highly contagious fatal disease in rabbits. It does not impact human health. See also: <a href="#">List O</a> and <a href="#">List Q</a> .   |

Source: EPA.GOV Disinfectants for Emerging Viral Pathogens (EVP): List Q

See pages 5 and 6 for disinfection and packaging instructions for removal of the samples from the patient room.

**Test Requisition and Chain of Custody Forms:**

1. The submitting laboratory will utilize the SNPHL test requisition which can be downloaded through the [SNPHL website](#). Specify the test required under the “Other” section.
2. The SNPHL courier will provide a Chain of Custody form for the submitting lab to complete. A copy of the form will be left with the laboratory.
3. The original chain of custody and test requisition forms will be handed to the SNPHL courier.
4. SNPHL courier will transport the samples to SNPHL for testing and/or shipment to CDC.



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### **Diagnostic testing at CDC or CDC approved laboratory**

Diagnostic testing performed at SNPHL is presumptive and requires confirmation by the CDC. Negative PCR results performed on samples collected prior to the 3 day test recommendation will require follow up testing. Additional testing that may be performed at CDC discretion includes: virus isolation; serologic testing or IgM/IgG antibodies; Lassa fever in EVD-negative patients. SNPHL will provide the test results to the submitting laboratory and to SNHD ODS.

### **Compliance with Select Agent Regulations**

Ebola, Marburg, Lassa, Machupo, Chapare, Sabia Viruses are regulated as a “select agent” in accordance with the HHS Select Agent regulations (42 CFR Part 73). Specimens collected from patients suspected to have Ebola or other emerging viral pathogen infection are not subject to Federal Select Agent regulation until identified as containing the virus by viral isolation. Once confirmed, then any diagnostic specimens that are kept would be covered by the regulations and would have to be destroyed, decontaminated or transferred to a registered Select Agent facility within 7 days of notification. Specimens that were collected but not kept and then decontaminated or destroyed after testing are not subject to regulations. SNPHL staff can provide guidance to the submitting laboratory for maintaining compliance with the Select Agent regulations.




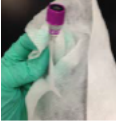



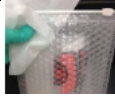
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**Specimen Processing Dirty to Clean Area for Ebola Virus Disease (EVD) and other VHF Testing**

|                          |   |  |
|--------------------------|---|--|
| <input type="checkbox"/> | <p>A minimum volume of 4 mL of whole blood in plastic collection tubes is required for EVD testing.<br/>Two tubes of whole blood preserved with EDTA is preferred</p>   |  <p><b>COLLECT 2 EDTA TUBES-MINIMUM 2 mL each</b><br/><b>NOTE: DO NOT</b> collect specimens until SNPHL staff is onsite; Specimens must be maintained at 2-8°C after collection</p> |
| <input type="checkbox"/> | <p>Disinfect outside of labeled specimen tube using EPA-registered hospital disinfectant with label claim against virus.<br/>Follow manufacturer’s contact time.</p>  |  <p><b>DISINFECT TUBE BASED ON EPA REGISTERED HOSPITAL DISINFECTANT CONTACT TIME</b></p>  |
| <input type="checkbox"/> | <p>Place the labeled specimen tube into a biohazard bag with absorbent material.<br/>One specimen per biohazard bag.<br/>Seal biohazard bag once specimen is inside the bag.<br/><b>Follow same instructions for second specimen.</b></p>   |  <p><b>PLACE TUBE IN BIOHAZARD BAG AND SEAL. USE SEPARATE BAGS FOR EACH SPECIMEN.</b></p>  |
| <input type="checkbox"/> | <p>The external surface of each biohazard bag must be wiped with an EPA registered hospital disinfectant.<br/>Ensure appropriate contact time before moving on to the next step.<br/>Do not set down in a dirty(contaminated) area.<br/>Pass the disinfected bags to the helper in the designated clean area outside patient’s room i.e. anteroom</p> |  <p><b>DISINFECT BAGS BASED ON EPA REGISTERED HOSPITAL DISINFECTANT CONTACT TIME</b></p>  |
| <input type="checkbox"/> | <p>In the designated clean area, place each biohazard bag inside separate bubble wrap zip lock bag or another biohazard bag and seal.<br/>Repeat with second specimen.</p>  |  <p><b>PLACE IN BUBBLE BAG AND SEAL.</b></p>  |
| <input type="checkbox"/> | <p>The external surface of each bubble wrap biohazard bag must be decontaminated by wiping with an EPA registered disinfectant.<br/>Ensure appropriate contact time. Do not set down in contaminated area.<br/><br/>Repeat with second specimen.</p>  |  <p><b>DISINFECT BUBBLE BAG BASED ON EPA REGISTERED HOSPITAL DISINFECTANT CONTACT TIME. REPEAT WITH SECOND SPECIMEN.</b></p>  |
| <p><b>THIS</b></p>       | <p><b>SAMPLE IS NOW PACKAGED AND DISINFECTED FOR HAND OFF</b></p>   | <p><b>TO SNPHL OR LAB STAFF.</b></p>   |
|                          | <p><b>SEE NEXT PAGE FOR INSTRUCTIONS FOR PACKAGE HAND OFF</b></p>   |  |



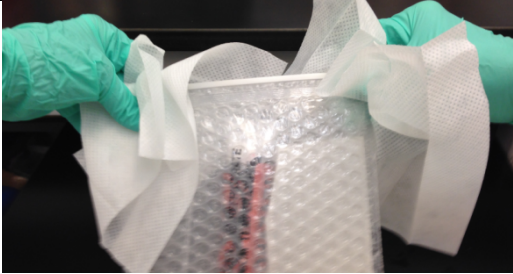
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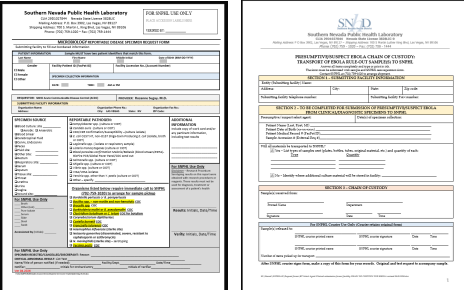
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**DISINFECTED SAMPLE PACKAGE HAND OFF**

|                          |  |  |  |
|--------------------------|--|--|--|
| <input type="checkbox"/> | <p><b>Option 1 (SNPHL)</b></p> <p>Hand bubble wrap zip lock bag off to SNPHL staff using EPA-registered hospital disinfectant towel. SNPHL staff will decontaminate bubble wrap bags and place into a durable, leak-proof secondary container. Container will be placed into Infectious Substance Category A Shipping box for transport.</p> | <p><b>Option 2 (Hospital lab staff)</b></p> <p>Hand biohazard bag off to hospital laboratory staff using EPA-registered hospital disinfectant towel. Decontaminate bag following EPA contact time and then place biohazard bags into a designated durable, leak-proof secondary container that snaps closed. Immediately, transfer to the hospital laboratory for testing.</p> |  <p><b>HAND OFF WITH DISINFECTANT TOWEL ON BOTH SIDES</b></p> |
|--------------------------|--|--|--|

To reduce the risk of breakage or leaks, **do not use any pneumatic tube system** for transporting suspected EVD specimens.

**Test Requisition and Chain of Custody Forms – complete forms outside patient room**

|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <p>The submitting facility will utilize the SNPHL test requisition to request testing by manually entering “Ebola testing” in the “Other test” line on the test requisition. Please include one of the tube labels with the test requisition. This will ensure that SNPHL has a copy of the tube label information in case the label was damaged during disinfection process.</p> |          |
| <input type="checkbox"/> | <p>SNPHL will provide a chain of custody form for the submitting facility to complete. A copy of the form will be left with the facility.</p>   | <p><b>COMPLETE SNPHL TEST REQUISITION AND CHAIN OF CUSTODY FORMS OUTSIDE PATIENT ROOM</b></p> |
| <input type="checkbox"/> | <p>Provide the chain of custody and test requisition forms to SNPHL staff. SNPHL staff will transport the specimens to SNPHL for testing.</p>   |   |