



**GUAM PUBLIC HEALTH LABORATORY GUIDELINES  
EBOLA VIRUS DISEASE (EVD)**

<b>Case Definition</b>	<p>A patient under investigation (PUI) for EVD (Ebola Virus Disease) is a person with the following characteristics:</p> <p>Clinical Criteria: Fever of greater than 38.6°C or 101.5°F and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;</p> <p style="text-align: center;"><b>AND</b></p> <p>Epidemiologic risk factors within the past 21 days before the onset of symptoms, such as contact with blood or other body fluids or human remains of a patient known to have or suspected to have EVD; residence in- or travel to – an area where EVD transmission is active*; or direct handling of bats, rodents, or primates from disease endemic areas.</p> <p>NOTE: Contacts of an EVD case have different levels of exposure risk, as follows:</p> <ol style="list-style-type: none"><li>1. High Risk Exposure – includes the following:<ul style="list-style-type: none"><li>• Percutaneous, e.g. the needle stick, or mucous membrane exposure to body fluids of EVD patient</li><li>• Direct care or exposure to body fluids of an EVD patient without appropriate personal protective equipment (PPE)</li><li>• Laboratory worker processing body fluids of confirmed EVD patients without appropriate PPE or standard biosafety precautions.</li><li>• Participation in funeral rites which includes direct exposure to human remains in the geographic area where outbreak is occurring without appropriate PPE.</li></ul></li><li>2. Low Risk Exposures – includes the following:<ul style="list-style-type: none"><li>• Household member or other casual contact<sup>1</sup> without high risk exposure with EVD patients in health care facilities in EVD outbreak countries. Casual contact is defined as 1) being within approximately 3 feet or within the room or care area for a prolonged period of time (e.g. healthcare personnel, household members) while not wearing recommended personal protective equipment; OR b) having direct brief contact (e.g. shaking hands) with an EVD case while not wearing recommended PPE.</li></ul></li></ol> <p><i>*Outbreak affected countries include Guinea, Liberia, Sierra Leone, and Lagos, Nigeria.</i></p>
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<p><b>Specimen Submission Guidelines</b></p>	<ul style="list-style-type: none"> <li>• Call the DPHSS at 671-689-3942 for pre-approval, before collecting and sending specimens for suspected Ebola Virus Disease. <b>NO SPECIMEN WILL BE ACCEPTED WITHOUT PRIOR CONSULTATION.</b></li> <li>• Call the GPLL (671) 300-9082 or (671) 300-9085 to inform staff of the specimen delivery.</li> <li>• Label all samples with patient’s name or Identification (ID) number, specimen ID number and date of collection.</li> <li>• Specimens collected should be packaged and transported within the facility without attempting to open collection tubes or aliquot specimens. Wrap the specimen with absorbent material and place in a sealable specimen bag and into a secondary watertight, leak-proof secondary receptacle.</li> <li>• Fill out <b>COMPLETELY</b> page two (2) of the Centers for Disease Control and Prevention (CDC) Viral Special Pathogens Branch Diagnostic Specimen Submission form.</li> <li>• Specimens will be sent to a CDC reference laboratory for testing.</li> <li>• Physicians/providers will be notified of the result by the GPLL Technologist once the final result is received from the reference lab.</li> </ul>
<p><b>Specimen Requirements</b></p>	<p>PREFERRED SPECIMENS FOR EBOLA TESTING:</p> <ul style="list-style-type: none"> <li>• 4 mL whole blood (minimum volume) preserved with Ethylenediaminetetraacetic acid (EDTA), clot activator, sodium polyanethol sulfonate (SPS), or citrate in <b>PLASTIC</b> collection tubes.</li> <li>• <b><u>DO NOT</u></b> SUBMIT SPECIMENS IN GLASS CONTAINERS.</li> <li>• <b><u>DO NOT</u></b> SUBMIT SPECIMENS PRESERVED IN HEPARIN TUBES.</li> <li>• Specimens should be stored at 4°C or frozen (if more than 72 hours).</li> </ul> <p>Note: Serum samples can also be submitted for serologic testing for Immunoglobulin M (IgM) and Immunoglobulin G (IgG) antibodies for confirmed EVD patients.</p>
<p><b>Specimen Collection Guidelines</b></p>	<p>When to collect specimens for Ebola Virus:          Ebola virus is detected in blood <b>ONLY AFTER ONSET OF SYMPTOMS</b>, notably fever. Virus is detectable by Real Time Polymerase Chain Reaction (RT-PCR) from three to ten (3-10) days post-onset of symptoms, but has been detected for several months in certain secretions.</p>
<p><b>Safety Precautions Infection Control for Collecting and Handling</b></p>	<ul style="list-style-type: none"> <li>• <b>Follow established standards compliant with Occupational Safety and Health Administration (OSHA) Bloodborne Pathogen Standard. This includes wearing personal protective equipment (PPE) and adhering to engineered safeguards, for all specimens regardless of whether they are identified as infectious.</b></li> </ul>

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<p><b>Specimens (Cont.) Safety Precautions Infection Control for Collecting and Handling Specimens</b></p>	<p><b>For specimen collection:</b></p> <ul style="list-style-type: none"> <li>• Use full face shield or goggles, mask to cover all of nose and mouth, gloves, fluid resistant or impermeable gowns. Additional PPE may be required in certain situations.</li> </ul> <p><b>For Laboratory:</b></p> <ul style="list-style-type: none"> <li>• Specimens for transport to the GPHL must be placed in a sealed bag and placed in a sealed, decontaminated primary container.</li> <li>• All disposable wastes (PPE) used for collection and processing should be autoclaved.</li> </ul>
<p><b>Specimen Transport Guidelines</b></p>	<p>Transport specimens with cold packs (2-8 C), with dry ice if exceeding 72 hrs. Deliver specimens to the GPHL <b>no later than 4 PM, Mondays-Fridays.</b></p>
<p><b>Rejection Criteria</b></p>	<ul style="list-style-type: none"> <li>• Specimens sent to the GPHL without prior consultation and notice.</li> <li>• Specimen quantity is insufficient to perform the test;</li> <li>• Specimen collected in glass tubes.</li> <li>• Specimen collected with heparin.</li> <li>• Specimen not packed as described in Specimen Submission guidelines</li> <li>• Specimen is not received at 2-8°C/ packed on cold packs;</li> <li>• Unlabeled specimens, incomplete label on specimen (Refer to Specimen Submission Guidelines).</li> <li>• Illegible/ incomplete Submission form (e.g., no date of onset, clinical description, etc.)</li> <li>• Specimen label does not match the Submission form.</li> </ul>
<p><b>Result Notification</b></p>	<ul style="list-style-type: none"> <li>• Laboratory reports will be forwarded to the submitting facility and the BCDC Administrator via FAX.</li> <li>• Any other request for copies of laboratory reports, apart from that stipulated above will not be accepted.</li> </ul>
<p><b>Contact Information</b></p>	<p>Alan Mallari, Microbiologist III, GPHL  (671) 300-9080 or (671) 300-9081  <a href="mailto:alanjohn.mallari@dphss.guam.gov">alanjohn.mallari@dphss.guam.gov</a></p> <p>Lea Nisay, Microbiologist II, GPHL(Alternate)  (671) 300-9083  (671) 300-9098 FAX  <a href="mailto:joy.villanueva@dphss.guam.gov">joy.villanueva@dphss.guam.gov</a></p> <p>Anne Marie Santos, Central Laboratory Administrator, GPHL  (671) 300-9082 or (671) 300-9085  <a href="mailto:annemarie.santos@dphss.guam.gov">annemarie.santos@dphss.guam.gov</a></p>

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Attachment: CDC Viral Special Pathogens Branch Diagnostic Specimen Submission form

References:

1. CDC Interim Guidance on Specimen Collection, Processing and Testing for with Suspected Infection with Ebola Virus Disease, August 8, 2014
2. CDC Specimen Submission Information, August 7, 2014
3. CDC Case Definition for Ebola Virus Disease, August 7, 2014