

**Updated August 2019**

**Refer to IPAC website, <http://ipac.vch.ca/Pages/Emerging-Issues.aspx> to ensure you are using the most updated protocol.**

**General Guidelines:**

1. Specimen collection must not occur in the laboratory or in an outpatient department. In the event that a potential EVD patient arrives requesting service, or displays a requisition with Ebola/EVD test requests, the patient must be isolated in a single room, given and wear a surgical mask, and a Medical Microbiologist notified immediately. Ask the patient to wait until instructions are received from the Medical Microbiologist.
2. Specimen handling will be limited to the fewest number of personnel. The Specimen Handling Contact List must be signed by all who handle the specimens.
3. All specimens will be handled according to laboratory safe handling procedures for blood and body fluids, and will override any other PPA protocols.
4. **Personal Protective Equipment (PPE) must be worn.** The phlebotomist will have the donning and doffing procedures observed and signed off by a Trained Observer. **All blood collection staff should be fit tested for a N95 respirator in the past year, and have been trained in proper use of high-level PPE.**
5. Phlebotomy should be done by experienced personnel.
6. **Needles must not be removed from disposable syringes. Point-of-use sharps buckets must be used for disposal of all sharps.**
7. Specimens must be **hand-delivered** to the laboratory. **Do not use the pneumatic tube system.**
8. Specimen packaging and documentation must be completed by a TDG-certified lab employee.
9. Only limited laboratory testing will be done until EVD/VHF infection is ruled out.
10. Testing must be done in the centralized laboratory.
11. It may be necessary to call in extra staff, particularly during off-hours, if the on-site staff have not had education on proper use of high-level PPE, and/or respirator fit testing has not been done in the past year, and/or the on-site staff do not have TDG certification.
12. The Medical Microbiologist on-call, when informed of the patient, will notify the VGH microbiology supervisor and core laboratory supervisor (604-871-5006 or local 63902) to prepare for the imminent receipt of specimens and to notify areas as needed.
13. The Blood Collection Team consists of:

**RH EVD VHF Phlebotomy and Specimen Delivery Guideline (LTR43627)**

**Version: 1.11**

- a. Health Care Worker (HCW) (nurse/doctor)
- b. Donning/Doffing Assistant
- c. Trained Observer
- d. Two Medical Lab Assistants (MLAs) – senior MLA (sMLA), MLA 2

Tubes to be drawn are:

### EVD/VHF Phlebotomy Tubes Inventory Checklist



Request a priority test list from the physician if the patient is a difficult draw.

**For difficult collections: the blood tubes for Ebola testing are the most important (5 mL gold x 2, and 6 mL Lavender x 2).**

Collect 1 set of blood culture tubes before other bloodwork, and a second set of blood culture tubes last in the order of draw.

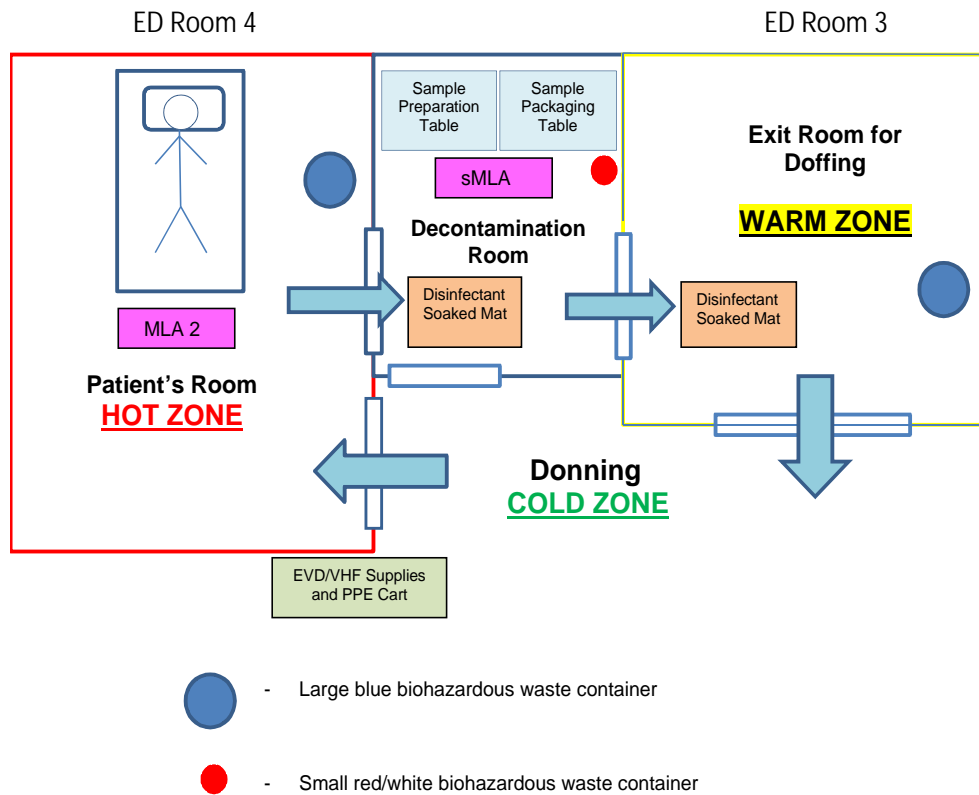
All tubes are pre-labeled with the pink sticker "Suspect Ebola Sample"

Order of Draw	Test	Type of Tubes	Number of Tubes
1	<b>Microbiology: BCA</b> Blood Culture x 1 set (plastic bottles, not glass)	One Grey top aerobic bottle	One bottle
2		One Lavender top anaerobic bottle	One bottle
3	<b>Ebola Serology: EBOLAB</b> (EBOLAB also includes PCR)	Gold top tubes (serum separator) <b>5 mL</b>	Two tubes
4	<b>Chemistry: VHFRMP</b> Albumin, ALP, ALT, AST, Calcium, Creatinine, Glucose, Electrolytes (Sodium, Potassium, Chloride, Total CO <sub>2</sub> ), Total Bilirubin, Total Protein, Urea	Light Green (Lithium Heparin) 3 mL <b>Do not centrifuge</b>	One tube
5	<b>Ebola PCR: EBOLAB</b> (EBOLAB also includes serology)	Lavender top (EDTA) <b>6 mL</b>	Two tubes
6	<b>Hematology:</b> Malaria – rapid & thin smear, <b>MALS</b> , Hemoglobin, <b>HBB</b> , Estimated WBC, <b>WBCB</b> , Estimated platelet count, <b>PLATB</b>	Lavender top (EDTA) <b>3 or 4 mL</b>	One tube

7		<b>Microbiology: BCA</b> Blood Culture x 1 set (plastic bottles, not glass)	One Grey top aerobic bottle	One bottle
8			One Lavender top anaerobic bottle	One bottle

Note: Test code **EBOLAB** will generate labels for all 4 tubes (i.e. Gold x 2 for Ebola Serology, and Lavender x 2 for Ebola PCR). Only need to order EBOLAB once.

**Richmond Hospital ED Biocontainment Room Setup**



**Phlebotomy Team Procedure**

**sMLA:**


- Don PPE in Donning Area
- Set up supplies and tables in Decontamination Room
- Assist with specimen preparation and packaging
- Doff PPE in Doffing Room (ED Room 3)
- Transport specimens from ED to sendout bench in laboratory


**MLA 2:**

- Place bloodwork order in Sunquest and print labels
- Don PPE in Donning Area
- Collect blood from patient (ED Room 4)
- Doff PPE in Doffing Room (ED Room 3)


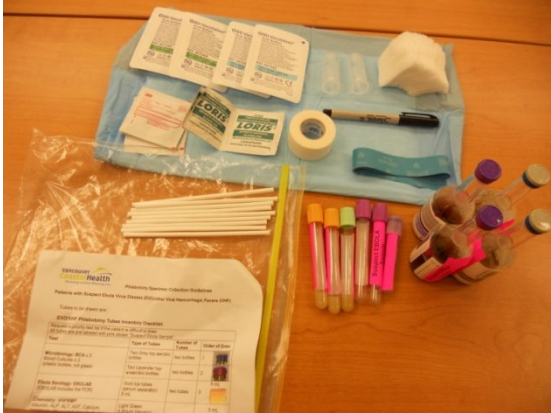

**Checklist for EVD-VHF Collection:**

**\*\* Accel INTERvention disinfectant wipes ('wipe(s)') and disinfectant solution ('disinfectant') are referred to in this checklist. ONE MINUTE contact drying time is required for the disinfectant wipes and solution.**

Step	✓	HCW	Check each step as it is completed below.
1.		<b>MLA 2 sMLA</b>	Report to Emergency Charge RN and inform them that you are the MLAs for specimen collection and handling.
2.		<b>MLA 2</b>	Place the bloodwork order in Sunquest.  If tests other than those listed on the EVD/VHF Phlebotomy list (page 2) are requested, inform the ordering physician that (s)he must discuss the order with the Medical Microbiologist on-call prior to blood collection.  Ensure <a href="#">PHSA requisition</a> has been completed by ordering physician for Ebola serology and PCR testing.
3.		<b>MLA 2</b>	Print barcode label orders for blood collection. Reprint orders x 2 so there are <b>3 sets</b> of barcode labels.
4.		<b>sMLA</b>	Retrieve the collection kit from the <i>EVD/VHF Supplies and PPE cart</i> , and ensure it has all the necessary specimen tubes and they have not expired.  

5.	<b>MLA 2</b>	Confirm the patient identification between the Sunquest labels and the patient label on page 1 of <i>Health Care Worker - Checklist for Donning/Doffing Personal Protective Equipment (PPE) for Viral Hemorrhagic Fever</i> .
6.	<b>MLA 2</b>	Don PPE in Donning Zone outside patient room, following the instructions in document <b>Health Care Worker - Checklist for Donning/Doffing Personal Protective Equipment (PPE) for Viral Hemorrhagic Fever</b> .  Complete the donning procedure with a Trained Observer.
7.	<b>sMLA</b>	Don PPE in Donning Zone outside patient room, following the instructions in document <b>Doffing Assistant - Checklist for Donning/Doffing Personal Protective Equipment (PPE) for Viral Hemorrhagic Fever (VHF)</b> .  Complete the donning procedure with a Trained Observer.
8.	<b>sMLA</b>	Pick up Sunquest labels and the EVD/Ebola prepared supplies bag from the <i>EVD/VHF Supplies and PPE cart</i> outside the patient room.
9.	<b>sMLA</b>	Enter Decontamination Room.
10.	<b>sMLA</b>	Empty the EVD/Ebola prepared supplies bag and set up supplies.
11.	<b>sMLA</b>	Ensure wipes are open and ready to use.
12.	<b>sMLA</b>	Prepare <b>Sample Preparation Table</b> : <ol style="list-style-type: none"> <li>1. Minimum 10 absorbent wicks</li> <li>2. Disinfectant wipes</li> <li>3. One Vernacare bowl</li> </ol> 



13.	<b>sMLA</b>	<p>Prepare <b>Sample Packaging Table</b>:</p> <ol style="list-style-type: none"> <li>1. Cover workstation with blue absorbent pads</li> <li>2. Open 3 TDG plastic containers and line with bubble wrap</li> <li>3. Place 4 biohazard bags per TDG container. Each biohazard bag must contain absorbent material</li> <li>4. One TDG container should be labeled for <b>BCCDC</b> (serology and PCR testing). The other two TDG containers labeled for <b>Vancouver General Hospital (Microbiology Department)</b></li> <li>5. 3 TDG Category A boxes</li> <li>6. Large plastic bag, top edges folded over and down, labeled with pink "Suspect Ebola VD/VHF Specimens" label, to carry the 3 TDG boxes</li> <li>7. Sunquest specimen labels</li> <li>8. Pen</li> <li>9. Small red/white biohazardous waste container</li> </ol> 
14.	<b>MLA 2</b>	<p>Collect patient's small Sunquest label and EVD/Ebola labeled white bag containing phlebotomy supplies from the <i>EVD/VHF Supplies and PPE cart</i> outside the patient room.</p>   <p><i>Phlebotomy supplies for MLA 2, kept in a labeled white bag hanging from the supplies cart.</i></p>
15.	<b>MLA 2</b>	<p>Enter patient room with supplies.</p>



16.	<b>MLA 2</b>	Follow correct phlebotomy procedure including patient identification. Do not take extra blood to store and use later. Place the collected specimens in the top Vernacare bowl (i.e. the top bowl of the 3 stacked Vernacare bowls).
17.	<b>MLA 2</b>	Discard needles in the sharps container. Discard used phlebotomy supplies in the blue biohazardous waste container in the patient room.
18.	<b>MLA 2</b>	Lift top Vernacare bowl with specimens inside. Place beside second Vernacare bowl. Keep second Vernacare bowl stacked inside the third Vernacare bowl.
19.	<b>MLA 2</b>	Disinfect gloves with wipe. Wait 1 minute.
20.	<b>MLA 2</b>	Clean the first specimen tube with wipes, and use an absorbent wick wrapped with wipe to force the wipe into the well on the top of the tube, holding each tube with a wipe while cleaning. The tube must be completely cleaned before transferring to the clean second Vernacare bowl sitting inside the third bowl. Allow 1 minute to dry.
21.	<b>MLA 2</b>	Wipe gloves with wipe. Wait 1 minute and then proceed to clean the next specimen tube by repeating step 15 until all collected specimen tubes have been cleaned.
22.	<b>MLA 2</b>	Inspect gloves and PPE looking for visual contamination or a breach (e.g. rips, tears, punctures). Report any breach to the Trained Observer.
23.	<b>MLA 2</b>	Disinfect PPE as needed, as well as gloves with wipes. Wait 1 minute.
24.	<b>MLA 2</b>	Indicate to sMLA (in Decontamination Room) and Trained Observer (in hallway outside patient room) when ready to leave the patient room.
25.	Trained Observer	Notify Doffing Assistant that MLA 2 is ready to leave patient room.
26.	Doffing Assistant	Don PPE and prepare doffing supplies in Doffing Zone (ED Room 3).
27.	Trained Observer	Saturate an absorbent mat with disinfectant solution in Decontamination Room.
28.	<b>MLA 2</b>	Disinfect door opening mechanism in the patient room using a new wipe. Wait 1 minute.
29.	<b>MLA 2</b>	Indicate to sMLA that (s)he is ready to hand over the specimen.
30.	<b>MLA 2</b>	Open door using wipe and pass the clean, second Vernacare bowl at doorway to sMLA.
31.	<b>sMLA</b>	Place the second Vernacare bowl containing the specimens on the Sample Preparation Table in the Decontamination Room.
32.	<b>MLA 2</b>	Discard third Vernacare bowl into blue biohazardous waste container in the patient room.
33.	<b>MLA 2</b>	Step through Room 4 doorway onto the disinfectant-saturated absorbent mat in Decontamination Room. Remain on mat for 1 minute.

34.	<b>MLA 2</b>	Walk towards Doffing Room (ED Room 3). Wipe door opening mechanism with a wipe. Use wipe to open door. Step directly onto another disinfectant-soaked absorbent mat.  With assistance of Doffing Assistant and Trained Observed (in hallway), doff by following the instructions in document <i>Health Care Worker - Checklist for Donning/Doffing Personal Protective Equipment (PPE) for Viral Hemorrhagic Fever</i> .
35.	<b>sMLA</b>	Use wipes to clean each specimen container again: use absorbent wick wrapped with wipe to force the wipe into the well on the top of the tube. Hold each tube with a wipe while cleaning. Place the tubes into a new (4 <sup>th</sup> ) Vernacare bowl. Allow 1 minute to dry.
36.	<b>sMLA</b>	Wipe gloves between each cleaned specimen tube. Wait 1 minute, then proceed to clean the next tube by repeating step 30 until each tube has been cleaned.
37.	<b>sMLA</b>	Discard the dirty Vernacare bowl into the blue biohazardous waste bin.
38.	<b>sMLA</b>	Wipe gloves, allowing 1 minute to dry.
39.	<b>sMLA</b>	Take the clean Vernacare bowl containing the specimens to the Specimen Packaging Table.
40.	<b>sMLA</b>	Wipe surface of Sample Preparation Table with wipe.
41.	<b>sMLA</b>	Write collection time and collector ID (i.e. MLA 2's ID) as well as sMLA's initials on 1 set of Sunquest labels.
42.	<b>sMLA</b>	Place a Sunquest label on each specimen, following normal labeling placement procedure. Place the tube in one of the biohazard bags inside the appropriate TDG container. <b><i>Make sure that only the specimens for BCCDC (i.e. Ebola VD/VHF serology and PCR) are in the TDG container labeled for BCCDC.</i></b>
43.	<b>sMLA</b>	Repeat steps 41 and 42 until all collected specimens are in the biohazard bags. Do not remove absorbent material from inside the biohazard bags. Discard the Vernacare bowl in the small red biohazardous waste container in the Decontamination Room.
44.	<b>sMLA</b>	Seal the biohazard bags.
45.	<b>sMLA</b>	Wipe gloves, allowing 1 minute to dry.
46.	<b>sMLA</b>	Carefully and securely screw/close lids on the plastic TDG containers.
47.	<b>sMLA</b>	Wipe gloves, allowing 1 minute to dry.
48.	<b>sMLA</b>	Wipe the outside of each TDG container, allowing 1 minute to dry.
49.	<b>sMLA</b>	Wipe gloves, allowing 1 minute to dry.
50.	<b>sMLA</b>	Place TDG plastic containers into the TDG Category A boxes, ensuring that the sending site labels match. Ensure a second set of Sunquest labels are inside each of the TDG boxes.

51.	<u>sMLA</u>	Place TDG boxes and the third set of Sunquest labels into the plastic bag provided (outside of bag should say "Suspect Ebola VD/VHF Sample"). Close the top of the bag.
52.	<u>sMLA</u>	Discard blue absorbent pads in the red biohazardous waste container. Disinfect Sample Packaging Table with wipes, allowing 1 minute to dry.
53.	<u>sMLA</u>	Inspect PPE for contamination or breaches, and disinfect using wipes, as needed. Report any breaches to the Trained Observer.
54.	<u>sMLA</u>	Disinfect gloves using wipes, allowing 1 minute to dry.
55.	<u>sMLA</u>	Wipe door opening mechanism to Doffing Room (ED Room 3). Bring the plastic bag labelled "Suspect Ebola VD/VHF Sample" containing the TDG boxes, use wipe to open door, and enter the Doffing Room. Stand on disinfectant-soaked mat for doffing, and follow the checklist in document <i>Doffing Assistant - Checklist for Donning/Doffing Personal Protective Equipment (PPE) for Viral Hemorrhagic Fever (VHF)</i> .  The Trained Observer will assist with and observe doffing.
56.	<u>sMLA</u>	Following doffing, perform hand hygiene with soap and water at sink inside the Doffing Room.
57.	<u>sMLA</u>	Pick up the labeled "Suspect Ebola VD/VHF Sample" plastic bag containing the TDG boxes, and exit out of Doffing Room.
58.	<u>sMLA</u>	Proceed directly to the laboratory sendout area. Place the plastic bag on the sendout bench. <b>The specimens must not be left unattended.</b>
59.	<u>sMLA</u>	Sign the Specimen Handling Contact List.
60.	<u>sMLA</u>	Receive the samples in Sunquest according to the collection time written on the third set of labels. <b>Do not remove the samples or open the plastic TDG containers.</b>  Create a batch list for each TDG box. Place a copy of each batch list on the outside of each TDG box. Keep a copy of the batch lists in RH Lab.
61.	<u>sMLA</u>	Ensure the <a href="#">PHSA requisition</a> has been completed by the HCW, and will accompany the samples to BCCDC for EbolaVD/VHF serology and PCR testing.
62.	<u>sMLA</u>	Place PHSA requisition inside the cardboard box going to BCCDC.
63.	<u>sMLA</u>	Follow category A packing instructions P620 in LMLabs TDG Ground Transport Manual. Make sure containers are taped and sealed.
64.	<u>sMLA</u>	Call the World Courier number on the Way Bill to advise them that you need their assistance for transportation of samples that require ERAP TDG transport. Quote the ERAP and account numbers on the Way Bill. Let them know you have packages for two destinations: (1) two boxes for VGH, and (2) one box for BCCDC.

65.		<b>sMLA</b>	Complete a Way Bill and Shipping Document for World Courier. Follow instructions under the section of "Transport" in the binder labeled "EVD/VHF Suspect Ebola". This binder can be found in the cupboard at the send out bench.
66.		<b>sMLA</b>	Re-stock EVD/VHD supply kits for sMLA and MLA 2.

**References:**

1. BC Ministry of Health EVD Recommendations and Guidelines:  
<http://www.health.gov.bc.ca/pho/physician-resources-ebola.html>

**REVISION LOG**

Version Number	Description of Change	Date of Revision	Reviewed By
1.0	New Document (Prepared in collaboration with Infection Control and Laboratory Leads)	April 2015	Dianne Reimer Jay Estoque Irene Hempstock
1.1	Updated	April 2019	Tracey Woznow Gail Busto Ken Liao Teresa Sharp
1.11	Revised	August 2019	Ken Liao Dr. Sophia Wong

The revision log must be the last page of each standard operating procedure and must be carried forward to any subsequent revisions. Briefly summarize any revisions and indicate the date of implementation. All copies must include this document. A copy must be kept in the Master Standard Operating Procedure File.

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**RH EVD VHF Phlebotomy and Specimen Delivery Guideline (LTR43627)**

**Version: 1.11**

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