

RECOMMENDATIONS FOR SAFELY COLLECTION AND PROPERLY MANAGEMENT OF POTENTIALLY INFECTED SAMPLES WITH HIGHLY PATHOGENIC AGENTS¹

(Adapted from *How to safely collect blood samples from persons suspected to be infected with highly infectious blood-borne pathogens*, OMS, 2014)

Step 1A: Before entering patient room, **be sure you have all the material ready and available:**

- Collecting sterile tubes for blood samples (plastic is preferred): Do not forget to properly label the tube with patient's information **before** entering the room:

Tubes with EDTA (recommended) for whole blood or dry tube for sera samples



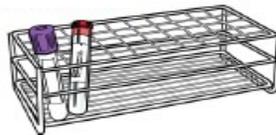
- Needle and syringe system, vacuum extraction system with holder (recommended) for blood sampling



- Tourniquet (disposable)
- Antiseptic solution (70% alcohol)
- Gauze (or cotton) and adhesive bandages



- Tray to transport the material
- Rack for holding the tubes
- Durable marker

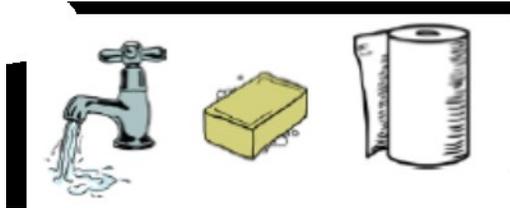


Important: Remember that samples should only be taken in symptomatic patients with suspected infection with highly pathogenic agents such as Ebola. Viral detection is only possible from the first day of onset of symptoms.

¹ The recommendations made in this document can be subject to later modifications in accordance to the advances in the knowledge of the disease and the etiologic agent.

Step 1B: Before entering the patient's room, enlist all elements of personal protective equipment (PPE); be sure you have everything you need:

For hand hygiene and protection: Alcohol-based solution, or clean water, soap and disposable paper towels



At least 2 pairs of disposable gloves (non-sterile, ambidextrous)

- One pair of gloves for blood collection.

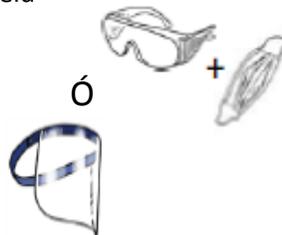
- One additional pair as a replacement if they become damaged or contaminate



For body protection: Long-sleeved, cuffed gowns (disposable is preferred); it is also recommended to wear a waterproof apron over gown. Wear shoes with puncture-resistant soles (or rubber boots) and fluid resistant overshoes.



For head/face protection: Face shield or goggles, medical mask and head cover



For waste management materials:

- Leak-proof and puncture resistant sharps container

- One leak-proof infectious waste bag for disposable material (destruction)

- One leak-proof infectious waste bag for reusable material (disinfection)



Important: Please find additional biosafety recommendations in the document: *Interim IPC Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever in Health-Care Settings, with focus on Ebola* http://apps.who.int/iris/bitstream/10665/130596/1/WHO_HIS_SDS_2014.4_eng.pdf?ua=1&ua=1

Step 1C: Before entering the patient's room, ensure all the necessary documents and materials for shipment to the laboratory of the health facility and later to the National Laboratory (or Central Reference Laboratory) are ready; **be sure you have everything you need:**

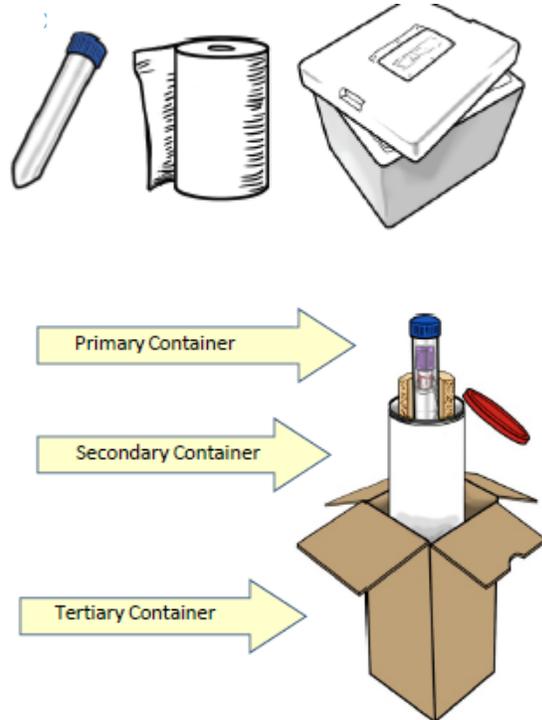
- Enough absorbent material (paper towels) to put in each container and absorb any spillage.

-Primary container: plastic, leak-proof, transparent packaging container

-Secondary container (rigid), leak-proof (screw cap)

-Tertiary container (outer); cooler or cold rigid box.

- Do not forget to fill all lab forms and epidemiological questionnaires with the required information



Important: An assistant should be designated to be available to help during the process; designee, must use at least gloves and gown, and must remain outside the patient's room to assist in the preparation of the material (before sampling), to provide any additional element required, and to prepare sample for shipping (see below).

Step 2: Wear all items of personal protective equipment (PPE)
DO NOT ENTER THE PATIENT AREA IF YOU DO NOT HAVE ALL PROTECTIVE GEAR ON

1 Perform proper hand washing (about 1 minute) with soap and water:



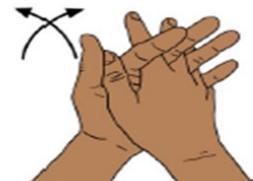
Wet hands with water and enough soap to cover all hand surfaces.



Rub hands, palm to palm



Right palm over left dorsum with interlaced fingers and vice versa



Palm to palm with fingers interlaced



Back of fingers to opposing palms with fingers interlocked



Rotational rubbing of left thumb clasped in right palm and vice versa

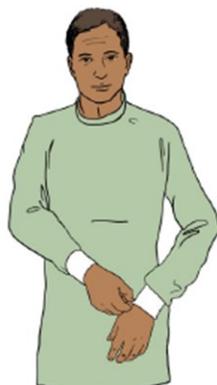


Rinse hands with water

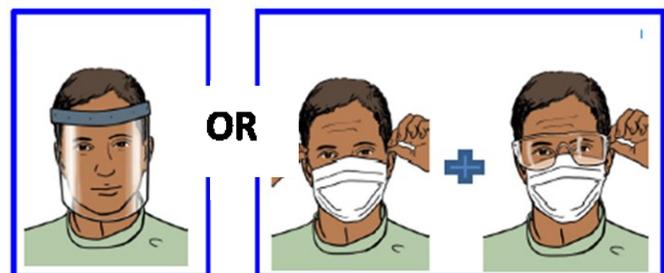


Dry hands thoroughly with single use towel

2 Put on the gown, ensuring that the sleeve cuffs are well adjusted

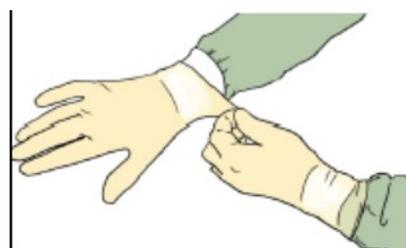


3 Wear all elements for head/face protection:



It is highly recommended using medical mask even under the face shield, especially if the patient has respiratory symptoms.

4 Put on gloves (over gown cuffs)



Step 3: Collection of the blood sample from the patient. Be sure to enter the patient's room wearing all the necessary PPE and all collection material.

- 1** Prepare the room. Put the infectious waste bags, the container and all material in one place for easy access.



- 2** Identify and prepare the patient. Introduce yourself to the patient and make him feel comfortable explaining the procedure.



- 3** Select the site, preferably at the bend of the elbow. Palpate the area; locate a vein of good size that is visible, straight and clear



- 4** Apply a tourniquet around the arm. Tie approximately 4–5 finger widths above the selected site.



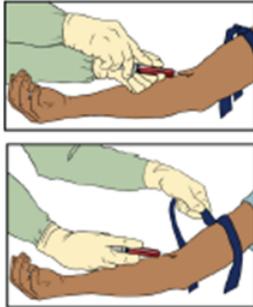
- 5** Ask the patient to form a fist so that the veins are more prominent.



- 6** Disinfect the area where you will put the needle. Use 70% alcohol and wait for it to dry. DO NOT touch the site once disinfected. Enter the vein swiftly at a 30° angle.



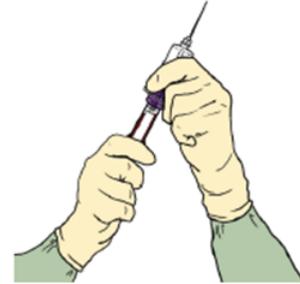
- 7** Once sufficient blood has been collected (approx. 5 mL) release the tourniquet **BEFORE** withdrawing the needle



- 8** Withdraw the needle gently. Put a clean gauze or cotton ball over the puncture site and ask the patient to press. Ask the patient **NOT** to bend the arm



- 9** Remove blood collector tube from holder and put into rack. **This is one of the most careful steps to avoid accidental puncture**



- 10** Put needle into leak-proof and puncture resistant sharps container.

If the sharps container **DOES NOT HAVE** a needle remover, then **put the needle and holder into a sharps container**
DO NOT REMOVE THE NEEDLE FROM THE HOLDER
WITH YOUR HANDS
DO NOT REUSE THE NEEDLE.

If the sharps container **HAS** a needle remover, remove the needle following instructions (on the sharps container).
Put the holder into the infectious waste bag for disinfection.



- 11** Be sure the patient has stopped bleeding and clean the skin. **NEVER** leave the patient if the puncture site is still bleeding. Place an adhesive bandage over the puncture site.

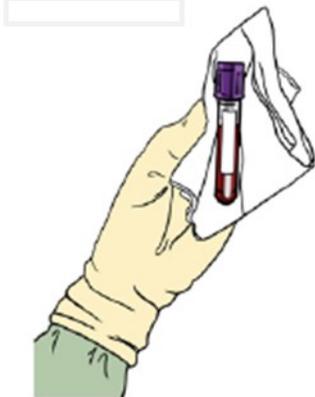


- 12** Put gauze or cotton used, and any other material having any blood or body fluid into the infectious waste bag for destruction (**incineration**).



Step 4: Prepare blood sample for transport

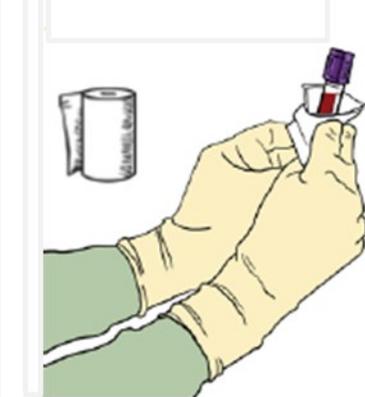
1 Take the blood tube from the tray and wipe the blood tube with a disposable paper towel and 70% alcohol



2 Place all items that came into contact with blood into the infectious waste bag for destruction.



3 Protect the sample from breaking during transport by wrapping the tube of blood in a paper towel.



4 Ask the designated assistant to approach the patient room, **WITHOUT ENTERING**. Wearing gloves, this person will approach you holding the open plastic (rigid) primary container



5 The person who has collected the blood sample should put the wrapped tube of blood into the plastic packaging container. **BE CAREFUL NOT TO TOUCH OUTSIDE OF PLASTIC CONTAINER WITH GLOVES.**



6 Wearing gloves, the assistant should tightly close the primary container



The sample is now ready to be packed (in a triple packaging) and shipped to the National Laboratory (Central or Reference Lab). (See documents *RECOMMENDATIONS FOR PROPER PACKAGING AND SHIPPING BY LAND, OF SAMPLES POTENTIALLY INFECTIOUS WITH HIGHLY PATHOGENIC AGENTS*, and the *GUIDANCE ON REGULATIONS FOR THE TRANSPORT OF INFECTIOUS SUBSTANCES, WHO 2013–2014*)

The sample can be kept refrigerated (4°C) for up to one week. However, it is recommended to send as soon as possible under refrigeration.

Step 5: Remove all personal protective equipment (PPE). **Be careful not to come into contact with any surface contaminated with traces of blood.**

1 Remove the gloves.



A. Grasp the outer edge of the 1st glove and peel it off

B. Hold the 1st glove in the gloved hand and drag a bare finger under the 2nd glove.



C. Remove 2nd glove from the inside, creating a "bag" for both gloves and throw it in waste bag for destruction.



2 Remove the gown.



A. Untie the gown

B. Remove the gown from behind starting at the neck and shoulders. Dispose the gown in the infectious waste bag for destruction.



3 Wash your hands properly



4 Take off face protection



If wearing a face shield: Remove face shield from behind and place it in an infectious waste bag for disinfection (if reusable), or in the infectious waste bag for destruction (if disposable)



If wearing goggles and medical mask: Remove goggles from and place it in an infectious waste bag for disinfection (if reusable), or in the infectious waste bag for destruction (if disposable). Remove the medical mask from behind, starting with the bottom strap, and place it in an infectious waste bag for destruction.

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