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AT A GLANCE

Infection Prevention and Control Guidance for Viral Hemorrhagic Fever Specimen Collection and Handling in Acute Care Settings

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Background

Specimen collection from patients with suspected or confirmed viral hemorrhagic fever (VHF) presents a potential risk of exposure to infectious bodily fluids and testing should be limited to what is necessary for patient management and should be selected based on the clinical presentation, travel history, institutional capability and ability to adhere to infection prevention and control and biosafety measures.

This document provides considerations intended to support the safe collection and handling of specimens from patients with suspected or confirmed VHF within a healthcare setting while minimizing the risk of transmission to healthcare workers and others. Healthcare institutions can use these considerations to develop, adapt, and regularly practice their own site-specific protocols based on their infrastructure, resources and operational capabilities and in accordance with laboratory requirements, and public health guidance.

General Principles

- ☐ **Ensure that the decision to proceed with VHF testing has been confirmed through the Ministry of Health Special Pathogens pathway.**[1]
- ☐ Ensure that appropriate communication of the decision to test for VHF has occurred, as required, via external (e.g. local public health unit) and internal (e.g., microbiologist, on site laboratory) channels.
- ☐ Consult with the laboratory that provides routine diagnostic laboratory services to your institution regarding collection of other blood specimens for non-VHF testing.
- ☐ Treat all blood and bodily fluids as potentially infectious.
- ☐ Use safety-engineered devices.
- ☐ Use experienced staff trained in VHF protocols with a trained observer present.
  - ☐ Limit staff to those only necessary for specimen collection.
  - ☐ Trained observer to monitor personal protective equipment (PPE) donning and doffing and technique, and to identify protocol breaches.
- ☐ Perform a point-of-care risk assessment when collecting, handling and/or transporting specimens within the hospital environment.[2]
- ☐ Discard all unused supplies as Category A waste.[3]

- ☐ Do NOT use glass-type blood collection tubes or supplies to prevent breakage and contamination risk (plastic-type supplies preferred).
- ☐ Handle specimens safely and keep them contained in a designated container to avoid environmental contamination during and after collection.
  - ☐ In patient room, do NOT open, aliquot, centrifuge, or otherwise manipulate specimens after collection to reduce contamination risk.
  - ☐ Do NOT use pneumatic tube systems for specimen transport (breakage and contamination risk during transport).
  - ☐ Keep specimens secured and separate from other specimens during transport and within the lab.
- ☐ Clearly differentiate and define responsibilities, materials and workflow within the contaminated area (patient room), transition area (e.g., anteroom) and clean area (e.g., hallway).

Preparation

- ☐ Ensure access to a puncture-resistant sharps container, a biohazard waste container, alcohol-based hand rub (ABHR) and disinfectant wipes at point-of-care.
- ☐ Refer to PHOs Diagnostic Testing for Viruses That Cause Hemorrhagic Fevers for information on appropriate blood specimens to collect for VHF testing.[4]
- ☐ Order laboratory tests and print all required labels as per facility policy.
  - ☐ Pre-label specimen tubes to avoid extra handling.
- ☐ Gather required supplies:
  - ☐ Venipuncture equipment (butterflies, tourniquet, skin antiseptics, blood collection tubes, holders/adapters)
  - ☐ Dressings (tape, gauze)
  - ☐ Hospital-approved disinfectant wipes
  - ☐ ABHR
  - ☐ Biohazard specimen bags
  - ☐ Absorbent material
  - ☐ Transport specimen containers:
    - ☐ A tube rack/basket/container to transport specimen tubes from bedside to a leak-proof container in the specimen handling area within the patient room.
    - ☐ A leak-proof container to transport disinfected tubes from the contaminated area/patient room to the transition area, after collection at the bedside.
    - ☐ A second leak-proof container to transport specimens from the transition area to the clean area, in disinfected biohazard bags.
    - ☐ A final leak-proof, rigid, unbreakable container with absorbent material to place the specimens in for transport from the transition area to the hospital laboratory.
    - ☐ Final transport container is NOT to enter patient room/environment or transition area at any time.
  - ☐ Set up a specimen collection area by the bedside on a stable surface with all the materials needed to collect specimens and a tube rack/basket/container.

- ☐ Set up a specimen handling area within the patient room, away from the bedside, with ABHR, disinfectant wipes, clean gloves, biohazard specimen bags and a leak-proof container.
- ☐ Set up a specimen handling area within the transition area with ABHR, disinfectant wipes, clean gloves, and a second leak-proof container.
- ☐ Set up leak-proof, rigid, unbreakable transport container with absorbent material in a pre-identified area in the clean zone (e.g., the hallway directly outside the anteroom door) at the time of use.

Specimen Collection - Contaminated Area (i.e., Patient Room)

- ☐ Phlebotomist and trained observer to wear VHF PPE per facility protocol.
- ☐ Set up required supplies for phlebotomy at the bedside and collect specimens as required.
- ☐ Specimen collection:
  - ☐ Avoid unnecessary manipulation of needles and sharps.
  - ☐ Do NOT recap needles.
  - ☐ Immediately dispose of sharps into a puncture-resistant sharps container located at the point-of-use.
  - ☐ Minimize the risk of splashes, sprays and contamination of the surrounding environment.
  - ☐ Ensure specimen tubes are securely closed and inspected for leakage.
  - ☐ Place each specimen into the tube rack/basket/container immediately after collection.
  - ☐ Once all specimens have been collected, inspect and disinfect outer gloves with ABHR or disinfectant wipes depending on level of contamination.
  - ☐ If outer gloves are cut or torn, disinfect outer gloves with ABHR or disinfectant wipes, depending on level of contamination:
    - ☐ Remove the outer gloves, taking care not to contaminate inner gloves during removal process.
    - ☐ Discard outer gloves in leak-proof biohazard waste container.
    - ☐ Inspect and disinfect inner gloves with ABHR.
    - ☐ Don a clean pair of outer gloves.

Specimen Handling - Patient Room

- ☐ Take the specimens to the specimen handling area within the patient room in the tube rack/basket/container.
- ☐ Remove tubes from tube rack/basket/container and thoroughly disinfect all tube exteriors (top-to-bottom) using a new disinfectant wipe for each tube.
- ☐ Once disinfected, each tube is to be placed into an individual biohazard specimen bag and sealed, which is then immediately placed into the pre-placed leak-proof container.
  - ☐ Take care to avoid contaminating outer surfaces of bags.
- ☐ Disinfect the outside of the leak-proof container with disinfectant wipes.
- ☐ Inspect and disinfect outer gloves using ABHR or disinfectant wipes, and transfer specimens in the leak-proof container to the transition area. (Do not directly hand-off specimens).

Specimen Packaging - Transition Area

- ☐ Place the container with the specimens in the specimen handling area in the transition zone
- ☐ Consider another individual to take over specimen handling in the transition zone wearing VHF PPE as per facility protocol. Disinfect the exterior of each bag with a new disinfectant wipe.
- ☐ Place the sealed/wiped biohazard specimen bags into the second, clean leak-proof container.
- ☐ Disinfect the outside of the leak-proof container with disinfectant wipes
- ☐ Inspect and disinfect outer gloves using ABHR or disinfectant wipes and transfer the specimens in the second clean leak-proof container to a pre-identified area within the clean zone (e.g., hallway).

Specimen Packaging – Clean Area

- ☐ The staff member responsible for transporting the specimens to the laboratory will place the final leak-proof, rigid, unbreakable transport container with absorbent material in a pre-identified area in the clean zone (e.g., the hallway directly outside the anteroom door) at the time of use, and retreat from the area keeping the container visualized at all times.
- ☐ The staff member in the transition area will then approach the clean area (e.g., open anteroom doorway) and place either the container with the specimen biohazard bags or each specimen biohazard bag, one at a time, ensuring not to touch the outside of the specimen transport container, into the final leak-proof, rigid, unbreakable transport container.
- ☐ Staff who transport specimens from the clean area are to don clean gloves at a minimum and additional PPE as per facility protocols and based on their risk assessment.

Internal Transport

- ☐ Ensure receiving areas (e.g., local laboratory) are notified in advance of specimen collection and transport to allow for preparation and timely receipt.
- ☐ Verify documentation and maintain chain of custody if required.
- ☐ Do NOT use the pneumatic tube system.
- ☐ Do NOT reopen packaged specimens once sealed for transport.
- ☐ Use only pre-planned, direct, controlled routes that avoid public and high-traffic areas.
- ☐ Specimens are NOT to be left unattended.
- ☐ Maintain access to a biological spill kit during transport.[5]
- ☐ Once specimens have been transferred from the clinical team to the laboratory, the laboratory is then responsible for ensuring that specimens requiring transportation outside of the facility (e.g., for VHF testing) are packaged and shipped to external sites (e.g., PHO) in compliance with the federal Transportation of Dangerous Goods Act/Regulations, including the activation of an ERAP.[3]

References

1. Ontario. Ministry of Health. Ministry of Health Emergency Management plans and strategies [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [updated 2026 Mar 3; cited 2026 Jun 8]. Section 4, Special pathogens. Available from: https://www.ontario.ca/page/ministry-health-emergency-management-plans-and-strategies#section-4
2. Ontario Agency for Health Promotion and Protection (Public Health Ontario). Assess your risk of exposure to infections [Internet]. Toronto, ON: King's Printer for Ontario; 2026 [cited 2026 Jun 8]. Available from: https://www.publichealthontario.ca/-/media/Documents/I/26/ipac-point-care-risk-assessment.pdf
3. Transport Canada. Shipping infectious substances [Internet]. Ottawa, ON: Government of Canada; 2024 [cited 2026 Jun 8]. Available from: https://tc.canada.ca/en/dangerous-goods/safety-awareness-materials-faq/industry/shipping-infectious-substances
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Diagnostic testing for viruses that cause hemorrhagic fevers [Internet]. Toronto, ON: King's Printer for Ontario; 2026 [cited 2026 Jun 8]. Available from: https://www.publichealthontario.ca/-/media/Documents/Lab/vhf-diagnostic-testing.pdf
5. Public Health Agency of Canada. Ebola disease: For health professionals, humanitarian aid workers [Internet]. Appendix 1 - Ebola virus disease: management of waste and environmental cleaning for prehospital care and ground transport. Ottawa, ON: Government of Canada; [modified 2023 May 3; cited 2026 Jun 8]. Recommended measures for on-site spills and environmental cleaning related to EVD-associated blood and other body fluids. Available from: https://www.canada.ca/en/public-health/services/diseases/ebola/health-professionals-ebola/ebola-guidance-patient-transport-app.html#s4
6. Centers for Disease Control & Prevention (CDC). VHF specimen collection [Internet]. Atlanta, GA: CDC; 2026 [cited 2026 Jun 5]. Available from: https://www.cdc.gov/viral-hemorrhagic-fevers/php/laboratories/specimen-collection.html

Citation

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