

Screening and Management of Patients with Suspected or Confirmed Ebola Virus Disease

The current outbreak of Ebola Virus Disease (EVD) is in West Africa. There have never been any cases of Ebola in Canada. The World Health Organization (WHO) continues to monitor the evolution of the EVD outbreak in Sierra Leone, Liberia, Guinea, Democratic Republic of the Congo and Nigeria.

What do health care workers need to know about Ebola?

Health care workers in Canada are advised to be vigilant for the recognition, reporting and prompt investigation of patients with symptoms of Ebola and other similar diseases that can cause viral hemorrhagic fevers.

Person-to-person transmission of Ebola virus is primarily associated with direct contact with blood and body fluids of infected persons. It can also be transmitted through contact with medical equipment contaminated with infected body fluids. Health care workers caring for patients with suspected or confirmed Ebola virus disease must carefully and consistently apply the recommended infection prevention and control precautions.

Reporting

Canadian health care workers are advised to be on the lookout for illnesses compatible with EVD in recent travellers (within past 21 days), including health care workers, to affected areas. All suspected and confirmed cases of EVD must be immediately reported to:

- The Medical Officer of Health (MOH) at 902-481-5800 (or after hours through locating at 902-473-2220, asking for the MOH on call).
- The infectious disease physician on call at 902-473-5553 (or after hours through locating at 902-473-2220).
- The Infection Prevention and Control Department by calling 902-473-2659.
- The microbiologist on call through locating (902-473-2220) for instructions on specimen collection, handling, and transport.

Clinical symptoms

Clinical symptoms of Ebola typically appear **within three weeks (the incubation period) of exposure to the virus.** In most situations in Canada, this exposure would have been through travel in a country where Ebola is occurring. Symptoms include:

- sudden onset of fever
- malaise
- myalgia
- headache
- conjunctival injection
- pharyngitis
- impaired kidney and liver function
- vomiting, diarrhea that can be bloody

It is often accompanied by a maculopapular or petechial rash that may progress to purpura. Bleeding from gums, nose, injection sites and gastrointestinal tract occurs in about 50% of

patients. Dehydration and significant wasting occur as the disease progresses. In severe cases, the haemorrhagic phase may be accompanied by leucopenia; thrombocytopenia; hepatic, renal and central nervous system involvement; or shock with multi-organ dysfunction.

People are contagious once they begin to show symptoms.

Infection Control Precautions in Hospital

The recommended infection prevention and control practices (see below) should be implemented immediately for any suspected or confirmed case of EVD.

- Patients with suspected or confirmed Ebola must be **placed in a private room with its own washroom** (or dedicated commode with use of Hygie waste management bags). **There must be restricted access.** (Door to room to remain closed.) A room with an ante room or dedicated change room is required.
- In addition to Routine Practices, **initiate Contact and Droplet Precautions**
- In addition to wearing hospital scrubs; **all persons entering the patient room must wear** at least:
 - Gloves
 - Gown (disposable fluid resistant or impermeable)
 - Eye protection (goggles or face shield)
 - Facemask

Note: Masks with visors are not suitable; face shields should be long enough to prevent splashing underneath; eyeglasses are not suitable eye protection
- **Additional PPE** is required for exposure to blood, other body fluids, vomit, or feces, including but not limited to:
 - Impervious gloves (double gloving if required)
 - Disposable shoe covers or closed puncture and fluid resistant shoes/boots
 - Leg coverings
- **Environmental Services personnel** performing environmental cleaning and disinfection must wear recommended PPE (described above) including the use of additional barriers (shoe and leg coverings, etc.)
- **Standard hospital disinfectants** may be used to clean the environment of suspect or confirmed EVD patients. Diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials is paramount, as blood, sweat, emesis, feces and other body secretions represent potentially infectious materials.
- **When removing protective equipment, avoid any contact between the soiled items (e.g. gloves, gowns) and any area of the face (i.e. eyes, nose or**

mouth). Always wash hands with soap and water immediately after the removal of protective equipment.

- **Additional personnel must be posted at the patient's door** to ensure appropriate and consistent use of PPE by all persons entering the patient room. This person may assist with the removal of PPE and monitor that self-contamination has not occurred.
- **Avoid aerosol generating medical procedures** (e.g.: bronchoscopy, sputum induction, intubation, and open suctioning of airways). If necessary, they must be performed in an **airborne infection isolation room (i.e. negative air)**. **Limit the number of healthcare workers present during these procedures** and a respirator (N95), gloves, a fluid resistant or impermeable gown, disposable shoe covers, and either a face shield that fully covers the front and sides of the face or goggles must be worn during aerosol generating procedures.
- **Use disposable medical equipment and supplies** when possible. **Dedicate any reusable medical equipment** for the provision of patient care. Single use disposable devices should be used and discarded in no-touch waste receptacles immediately after use.
- **Reusable items** and equipment are to be cleaned and disinfected according to manufacturer's recommendations **following a risk assessment by Infection Prevention and Control**
- **Limit use of needles.** Phlebotomy, procedures, and laboratory testing must be limited to the minimum necessary for essential diagnostic evaluation and medical care. They should only be done by trained staff who are proficient in blood collection. All needles and sharps must be handled with extreme care and disposed in puncture-proof, sealed containers.
- **Blood specimens** must be collected using plastic (not glass) tubes. (**Note:** Exception is blood culture tubes, which are only glass.)
- **Notify microbiology prior to taking blood.** Clinical laboratory specimen tubes should **each** be wiped with a disinfectant wipe and placed into a separate **sealable plastic biohazard bag, and** then sealed. The outer surface each bag must be wiped with a disinfectant wipe. Specimens should then be placed in a durable, leak-proof secondary container for transporting to the lab. The outer surface of the container must be wiped with a disinfectant wipe, prior to leaving the patient's room. (Avoid external contamination of the specimen tubes, bags, and rigid container. **Do not use the pneumatic system.** A fully completed laboratory requisition form for each sample should be placed in a separate pocket of the biohazard bag, **not** inside the transport container. Transport the container directly to the Microbiology Processing area on the 3rd Floor of the Mackenzie Building. After 2300h, take the specimen to Central Accessioning, located on the 1st Floor of the Mackenzie Building. **See Standard Operating Procedures for Specimen Collection and Transport Procedure for Patients with known or Suspect VHF from the lab.**
- Patient **movement/ transport** must be restricted to essential diagnostic and therapeutic tests only.

- **Only essential hospital personnel should enter the patient's room.**
- **Maintain a log of persons entering the patient's room. See Appendix 1.**
- **Visitors** shall be restricted. Exceptions will be considered on a case by case basis, in consultation with Infection Control. Any visitors must follow the recommended infection prevention and control recommendations and must not visit any other areas of the hospital.
- Dispose of soiled linen, cleaning/disinfection cloths, disposable gloves and any other item in contact with body fluids (eating utensils) in a **biohazard waste disposal bag**. Biomedical waste should be contained in impervious waste-holding bags or double bags according to hospital policy.
- **Perform hand hygiene** and change gloves before and after patient care or contact with patient environment, after any contact with potentially contaminated surfaces, before performing aseptic procedures, and before and after removal of PPE. Hand hygiene can be performed by washing with soap and water or using alcohol-based hand rubs. If hands are visibly soiled and after removal of PPE, use soap and water, not alcohol-based hand rubs.
- **Clinical and non-clinical personnel must be assigned exclusively to the patient care area** and members of this staff cohort must not move freely between isolation area and other clinical areas. Staffing must take into consideration coverage for rest breaks and staff absences.
- **All horizontal and frequently touched surfaces should be cleaned at least twice daily and when soiled.** Surfaces that are likely to be touched and/or used frequently should be cleaned and disinfected on a more frequent schedule. This includes surfaces that are in close proximity to the patient (e.g., bedrails, bedside/over-bed tables, call bells) and frequently touched surfaces in the patient care environment, such as door knobs, surfaces in the patient's bathroom. See Housekeeping Instructions for Suspect or Confirmed EVD cases.
- **Routine Practices in addition to Contact Precautions** should be utilized **when handling deceased bodies**. (This includes appropriate PPE to protect against splashing and sprays of blood and body fluids).
- **Any staff member who is symptomatic or has had an unprotected exposure to blood, body fluids, secretions, or excretions of a patient with suspected or confirmed EVD must immediately stop work and report to their manager and Exposure Line at 473-4666. He/she must remain out of the workplace until cleared for work by Employee Health.** The Occupational Health Nurse will follow up with staff member and advise ill and exposed staff as per Public Health guidelines.

You can find the most up-to-date information on Ebola, including travel advisories, at the following websites:

- **Public Health Agency of Canada (PHAC):**
 - [Information for Health Care Workers](#)
 - [Up-to-date Travel Advisories](#)

- [Molecular Detection of Ebola Virus](#)
- [Environmental Sanitation Passenger conveyances and Terminals](#)
- [Centre for Disease Control](#)
- [World Health Organization](#)
 - [Information for health care workers](#)

Reference

CDC Guidelines: *Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Hemorrhagic Fever in U.S. Hospitals* (2014)
<http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html>

PHAC Website: *Ebola Virus Disease-Information for Health Professionals* (2014)
<http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/ebola-professionals-professionnels-eng.php>

Public Health Agency of Canada (2014). Interim Guidance- Ebola Virus Disease: Infection Prevention and Control Measures for Borders, Healthcare Settings and Self-Monitoring at Home. <http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/ebola-ipc-pci-eng.php>

WHO Guidelines: *Interim Infection Control Recommendations for Care of Patients with Suspected or Confirmed Filovirus (Ebola, Marburg) Haemorrhagic Fever* (March 2008)
http://www.who.int/csr/bioriskreduction/interim_recommendations_filovirus.pdf?ua=1

Health Canada Supplement - *Canadian Contingency Plan for Viral hemorrhagic Fevers and other Related Diseases in Canada Communicable Disease Report* (January 1997)

Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever WHO Guidelines: in Health-Care Settings, with Focus on Ebola (August 2014)
<http://www.who.int/csr/resources/who-ipc-guidance-ebolafinal-09082014.pdf>

Infection Prevention and Control Guidance for Patients with Suspected or Confirmed Ebola Virus Disease (EVD) in Ontario Health Care Settings. In PIDAC, August 14, 2014.
http://www.publichealthontario.ca/en/eRepository/EVD_IPAC_Guidance.pdf

Health Care Provider and Visitor Log

Appendix 1

Isolation Room Number & Site _____

DATE	TIME IN	TIME OUT	NAME	DEPARTMENT	REASON FOR ENTERING

- It is important to be proactive with getting employees fitted before a high risk situation arises where a high volume of employees need to be fitted immediately (high risk patient, harmful substances in air, etc.)
- In general, Capital Health requires all employees exposed to aerosolized environments, tuberculosis patients, or negative air environments to wear an N95 respirator

FAQ

- How long does it take?
 - o Process takes less than half an hour
- Is the test invasive or uncomfortable?
 - o Test is not invasive, requires wearing the respirator required for job task, and completing simple movements and tasks
- Where do I go?
 - o Clinics will be offered on a regular basis throughout the district and will be promoted through the following means: Intranet, on the Safety & Injury Prevention website, Capital News and Joint Occupational Health and Safety Committee Boards
- When might I need a respirator?
 - o If the employee is exposed to substances that may cause discomfort, disease, irritation or other negative effects to the individual upon entry into the respiratory system, Capital Health requires the employee to use a respirator.

Contact

- Please contact Sherida Flemming or Ben Beaton with Safety & Injury Prevention at:
 - o Sherida – 473-2313 or sherida.flemming@cdha.nshealth.ca
 - o Ben – 473-4033 or ben.beaton@cdha.nshealth.ca

Additional Information

- Capital Health Respirator Protection Program

- http://policy.nshealth.ca/Site_Published/dha9/document_render.aspx?documentRender.IdType=6&documentRender.GenericField=&documentRender.Id=49934
- Safety & Injury Prevention main site:
 - <http://www.cdha.nshealth.ca/safety-injury-prevention>
 - Follow the link for promotion of the clinics
- Canadian Centre for Occupational Health and Safety (CCOHS) information on respirator use
 - <http://www.ccohs.ca/oshanswers/prevention/ppe/respslct.html>