

Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Emergency Medical Services (EMS) and Transportation Infection Prevention and Control Interim Guidelines

These guidelines may change as more information becomes available. For updates and other guidelines on EVD, please refer to the Ebola Virus site on the Manitoba Health, Healthy Living, and Seniors Public Health website:

(available at <http://www.gov.mb.ca/health/publichealth/diseases/ebola.html>)

Please refer to *Manitoba Health, Healthy Living and Seniors Ebola Virus (EVD) Interim Protocol* on the Ebola Virus site for information on the case definitions, reporting requirements, clinical presentation, etiology and epidemiology, specimen collection and handling and case and contact management.

Please refer to the *Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Infection Prevention and Control Interim Guidelines* on the Ebola Virus Site for detailed infection prevention and control information.

Please refer to the *Manitoba Health, Health Living and Seniors Ebola Virus Disease (EVD) Infection Prevention and Control Interim Guidelines* for infection prevention and control guidance for management of EVD patients in healthcare.

The transportation of a patient must be done by trained health care professionals in an appropriate vehicle/carrier. The vehicle/carrier must only transport essential personnel and equipment for care of the EVD patient.

The decision to transport between facilities must be made by the health care provider responsible for the patient's care after consultation and agreement with the Infectious Disease (ID) physician.

Communication

- The EMS crew/ staff must be made aware of the patient's diagnosis and clinical condition prior to transport of the possibility of deterioration on the journey and the routes of transmission of EVD.
 - There must be sufficient notice to prepare for the transport.
 - This might not be possible if there is an emergency transport required but should try to be met if at all possible.
- During all transports, maintain close communication to:
 - Receiving facility, with an estimated time of arrival and clinical condition of the patient.
 - Others involved in the transfer, if applicable.

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Infection Prevention and Control (IP&C) Precautions

- **In addition to routine practices, droplet/contact precautions plus airborne precautions for aerosols during Aerosol Generating Medical Procedures (AGMPs) must be applied.**
 - Please refer to Manitoba Health *Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care* (available at <http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf>).
 - Airborne precautions are needed only when performing AGMPs. Only perform AGMPs that are medically essential.
 - Procedures must be performed when medically necessary, (e.g. establishing IV, intubation).
 - Use Personal Protective Equipment (PPE) as outlined in the *Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Infection Prevention and Control Interim Guidelines*. (available at <http://www.gov.mb.ca/health/publichealth/diseases/ebola.html>)
 - Remove PPE according to the *Putting On and Removing PPE Procedure* at the end of this document.
 - PPE should not be worn in the cab of the ambulance. If the driver has had contact with the patient and wears their used PPE in the cab, they could contaminate surfaces which may be difficult to clean. If assisting with transferring the patient to the ER on arrival at the hospital, the driver should put on appropriate PPE.
 - Consideration should be given to the need for additional PPE including shoe and leg covering that might be required in certain situations, (e.g. copious amounts of blood, other body fluids, vomit or feces).
- Patient transfers, (e.g. bed to stretcher, movement in and out of the vehicle/carrier), can be particularly high-risk exposure periods due to the close contact and physical manipulations of the patient that is often required.
 - These should be kept to a minimum
- Use disposable equipment whenever possible.
- Regional/organization approved cleaner/disinfectant should be available during transport to manage contamination events or cleaning of the environment if required.
- Eating or drinking must not occur when transporting these patients.
- Staff must not have personal items with them during the transport, (e.g. cooler bag)
- Confirm with regional IP&C the procedures for putting on and removing PPE including the correct order in which this should be done.
- Assign designated staff to transport patient. Any other staff should not be allowed to participate in the transfer.
- A log must be kept of the staff involved with the transport
- A monitor should be assigned to assist/monitor appropriate application/removal of PPE to minimize risk of self-contamination

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Emergency Vehicle/ Carrier

- Retain on board only the minimum equipment and supplies necessary for the transfer on board.
- Remove everything else to reduce the risk of cross contamination.
- The location of equipment on board should also be reviewed to minimize the potential for contamination.
- Drape non-essential equipment and supplies with water repellent covers, e.g. plastic sheets.
 - Use regional/organization procedures for draping of ambulance.
 - Staff must be trained on the draping of ambulances on an ongoing basis.

Emergency Land Transports

- If an emergency land transport is needed, screening for patient risk must be done through the Manitoba Transportation Coordination Center (MTCC).
 - Screening for patient risk should include travel history, activities in countries affected/area that would increase risk, presence or absence of signs and symptoms according to *Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Interim Protocol* (available at <http://www.gov.mb.ca/health/publichealth/diseases/ebola.html>)
- If through screening, the patient is identified be a person under investigation or a probable or confirmed case of EVD, implement infection prevention and control measures as outlined in the section above.
- Isolate the patient from any further direct contact with persons not wearing all of their required PPE. Transfer the patient to the ambulance as soon as possible. Wrap patient in linen as much as possible to avoid environmental contamination.
- If the patient is coughing, provide them with a mask to wear if tolerated. If the patient requires oxygen, a nasal cannula under the mask can be used or an oxygen mask with a filter system should be used (e.g. high concentration/low flow oxygen mask) as appropriate.
- When the patient is ready to transport, the driver should remove to drive the vehicle/carrier.
 - Discard PPE in an impervious waste bag to be discarded when the vehicle/carrier is cleaned.
 - If PPE has been removed and the driver is going to assist with transferring the patient on arrival to their destination, the driver must put on appropriate PPE.
 - The driver must put on and remove their PPE according to *Putting On and Taking Off PPE Procedures* at the end of this document.

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Air Transports

- If an air transport is needed, screening for patient risk must be done to determine the patient risk.
 - Screening for patient risk should include travel history, activities in affected countries/areas that would increase risk and presence or absence of signs and symptoms according to *Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Interim Protocol* (available at <http://www.gov.mb.ca/health/publichealth/diseases/ebola.html>)
- Flight planning should identify emergency or unexpected diversion airfields and coordinate with authorities in advance.
- If the patient is identified to be a person under investigation, or a probable or confirmed case of EVD, implement infection prevention and control measures outlined in the section above.
- When there is more than one confirmed EVD patient, they can be cohorted during transportation.
 - Public Health approval is required prior to transport.
- Patients with EVD should be transported on a dedicated carrier with minimum of crew members.
 - Only those directly involved in carrier operations or patient care should not be present on board.
- A primary caregiver should be assigned to the patient.
 - The primary caregiver is designated based upon the patient's need for care. The caregiver must be qualified to meet those needs. This should be determined prior to transport and to allow for any deterioration of clinical status during transport.
 - The number of caregivers should be limited to those required to provide essential care during the trip.
- Whenever possible, carriers used to transport patients should have separate air-handling systems for the cockpit and cabin, with cockpit at positive pressure relative to the cabin.
 - The greatest separation possible between the aircrew and patient is desirable particularly for longer duration flights.
- Use of a portable isolation unit is recommended to minimize potential contamination of the aircraft with the patient's blood or other body fluids.
 - The unit should be completely enclosed, large enough to provide sufficient space for medical care and patient needs as well as fluid repellent/impermeable.
 - Ideally, the unit should be disposable or if not should have validated reprocessing instructions.
- When a portable isolation unit is not available, a specific area for the patient should be designated on the carrier.
- An isolation unit/area should be established

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- There should be sufficient space for the portable isolation unit.
- There should be the ability to secure the isolation unit/area within the carrier and the patient within the isolation unit/area during takeoff, landing and turbulence.
- Ability for the staff to view and monitor the patient from outside the unit/area to minimize their exposure.
- Ability for the patient to communicate with the staff from inside the unit/area and vice versa.
- Sufficient space for staff to provide medical care, including procedures if necessary, storage of essential medical supplies, equipment and monitors properly secured.
 - Most medical supplies and all PPE should be stored outside of the isolation unit/area. This area can also be reserved for the crew/staff if they wish to rest.
- A perimeter should be established for designating “clean” and “dirty” areas for the purpose of defining where PPE is put on and removed. A minimum of 2 metres (6 feet) is recommended.
 - There should be a shelf or table upon which to place supplies while putting on PPE before entering the isolation unit/area
- Receptacle for soiled linen, waste and reusable equipment should be placed inside the isolation unit/area.
- Supplies for cleaning spills should be kept in the area, including regional/organization approved cleaner/disinfectant.
- A portable chemical toilet approved for use during flight that is dedicated for patient use should be placed within the isolation unit/area.
 - This can also be used to dispose of the patient’s blood, body fluid, excretions and secretions.
- Sufficient supplies should be available onboard to support the expected duration of the flight plus additional time in the event the carrier experiences maintenance delays or weather diversions.
 - There should also be sufficient supplies to appropriately manage potential exposures to the patient’s blood or body fluids during travel.
- Mechanical ventilators should provide HEPA or equivalent filtration of airflow exhaust.
 - Appropriate filtration capability and the effect of filtration on positive-pressure ventilation should be confirmed with the ventilator manufacturer.
- If AGMPs are anticipated, they should be performed in a portable isolation unit with HEPA filtration (or equivalent)
 - Suction device exhaust should not be vented into the cabin without HEPA or equivalent filtration.
 - Portable suction devices should be fitted with in-line HEPA or equivalent filters.
- Consideration must be given to the need for crew/staff breaks during long trips.

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- This may require additional crew/staff but must be balanced against the need to minimize the number of crew/staff exposed.
- Pilots should not have contact with the patient during the flight.
 - At the end of the flight when they leave the plane, pilots should wear gown and gloves if they assess they will have contact with contaminated surfaces.
- They should remove their PPE once they are out of the area according to *Putting On and Removing PPE Procedure* at the end of this document.
- International transport of patients with EVD should be coordinated with Public Health authorities and facilities at origin and destination.

Cleaning and Disinfection of Vehicle/Carrier and Equipment

- Take the vehicle/carrier to a separate segregated area to clean and decontaminate.
 - Put on and remove PPE prior to cleaning and disinfection of the vehicle/carrier and equipment according to *Putting On and Taking Off PPE Procedures* at the end of this document.
 - Consideration should be given to additional protection, (e.g. shoe and leg covers, for cleaning heavily contaminated environments).
- Use regional/organization approved cleaner/disinfectant to clean and disinfect environmental surfaces and reusable equipment.
 - Spray applications of cleaner/disinfectants must not be used.
 - Compressed air should not be used for cleaning
 - Follow manufacturer's recommendations for application and contact time of the regional approved cleaner/disinfectant.
- Non-patient-care areas should be cleaned and managed according to regional/organization cleaning and disinfection processes.
- Follow regional/organization processes for reusable equipment/medical devices.
- Use disposable cloths.
- Special cleaning of upholstery, carpets, or storage compartments is not indicated unless they are soiled with blood or body fluids. Special vacuuming equipment or procedures are not necessary.
- Do not remove large amounts of solid soil, (e.g. feces or blood clots, from linen by spraying water or hand sprayers).
 - Use a double gloved hand and toilet tissue to place the solid soil into a bedpan or toilet for flushing.
- Handle all disposable equipment including blankets, linen, cloths, etc plus materials used in the cleaning and disinfection procedure according to *Manitoba Health Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care* <http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf>.
- Patient care areas (including stretchers, railings, medical equipment control panels and adjacent flooring, walls and work surfaces likely to be directly contaminated during care)

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should be cleaned and disinfected using regional/organization approved cleaner/disinfectant.

- Additional cleaning measures or frequency may be warranted in situations where environmental soiling has occurred.
- Waste must be placed in a leak proof waste bag
 - Contain waste at point of use.
 - Routine management for regular waste disposal is sufficient.
 - Suctioned fluids and secretions from suction devices should be stored in sealed containers and disposed of according to regional municipal/regional regulations.
 - Other blood, body fluids, excretions and secretions should be disposed of in a sanitary sewer or septic system according to municipal/regional regulations.

Emergency Medical Services Staff

- All staff involved with the patient must be aware of and comply with the guidelines for EVD.
 - Staff should be educated regarding routine practices and additional precautions including hand hygiene, PCRA and cleaning and disinfection of non-critical equipment.
 - Staff should be educated about signs and symptoms of EVD, appropriate control measures; and the need to self-monitor while caring for cases of EVD for 21 days following the last contact with the patient.
- All staff must remove their PPE and clothing in a separate segregated area.
- Perform hand hygiene with alcohol-based hand rub (ABHR) or with soap and water.
- All PPE and disposable items must be handled according to *Manitoba Health Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care* <http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf>.
- Place all reusable items in a clear plastic bag and transport to a Medical Device Reprocessing Department for reprocessing according to regional/organization processes.
- Follow organization/facility processes for reusable equipment/medical devices.
- Staff who were in contact with the patient should self monitor themselves for symptoms for 21 days after last exposure to patient.
 - Staff should ensure they are following Routine Practices at all times.
 - If any symptoms occur, it is important they immediately notify their regional Occupational Health Program/designate.
 - If staff are exposed, follow the staff exposure section of the *Manitoba Health, Healthy Living and Seniors Ebola Virus Disease (EVD) Infection Prevention and Control Interim Guidelines*.
(available at <http://www.gov.mb.ca/health/publichealth/diseases/ebola.html>)

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Putting On and Removing PPE

Equipment Required

- Disposable scrubs
- Fluid-resistant coveralls with attached hood
 - These coveralls do not have shoe and leg covers
- Fluid-resistant/impermeable gown
- Long gloves with secure cuff
 - 2 pairs needed when undertaking any strenuous activity, (e.g. carrying a patient) or tasks which contact with blood and body fluids is anticipated (e.g. patient has symptoms of diarrhea, bleeding, vomiting, and/or the environment could be contaminated with blood and body fluids)
- Fluid-resistant shoe/leg coverings
 - These are needed when undertaking any strenuous activity, (e.g. carrying a patient) or tasks which contact with blood and body fluids is anticipated (e.g. patient has symptoms of diarrhea, bleeding, vomiting, and/or the environment could be contaminated with blood and body fluids)
- N95 respirator
 - Needed when performing AGMPs
- Procedure or surgical mask
- Full face shield

Steps to Put On PPE:

This must be done outside of the patient room or in a setting with no patient room (e.g. Emergency Services); it must be done before contact with the patient.

1. Perform hand hygiene. Alcohol-based hand rub (ABHR) is acceptable unless visible soiling is present. Soap and water required if visible soiling is present.
2. Put on 1st pair of gloves if 2 pairs are needed.
3. Put on coveralls; zip closed, pull hood securely onto head.
 - a. If using 2 pairs of gloves, ensure 1st set of gloves are under sleeves of coveralls.
4. Put on shoe/leg covers if needed.
5. Put on fluid-repellent/impermeable gown
 - a. Ensure gown covers back side. If not covered completely, first don a gown as a housecoat, then don the second gown as usual.
6. Put on N95 respirator/mask over hood.
7. Put on full face shield over hood.
8. Put on gloves (2nd set if have put on gloves previously) over fluid-repellent/impermeable gown
 - a. Ensure cuffs of gloves are secure over cuff of gown.
9. Trained monitor to confirm appropriate PPE application/fitting before entering patient's room or having contact with the patient.

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Steps to Remove PPE:

The following steps are to be used for the health care worker who has been caring for the patient in their room or who has had contact with the patient.

These steps must be done when leaving the patient room or after contact with the patient depending on the setting.

A specific area outside the room/area should be designated to remove the PPE.

Only 1 person must exit the room/area at a time. The PPE must be removed completely and the area where it is being removed must be exited before the next person enters.

Perform hand hygiene whenever possible hand contamination has taken place, at any point during PPE removal.

1. If wearing 2 pairs of gloves, remove outer set of gloves using glove-to-glove, skin-to-skin technique.
2. Remove gown (with assistance if needed).
3. Remove shoe/leg coverings (with assistance if needed).
4. Remove gloves using glove-to-glove, skin-to-skin technique. Perform hand hygiene. Alcohol-based hand rub (ABHR) is acceptable unless visible soiling is present. Soap and water required if visible soiling is present.
5. Remove face shield (by strap behind head).
6. Remove N95 respirator/mask by straps behind head and with eyes closed.
7. Remove coveralls with assistance
 - a. Assistant to carefully unzip coveralls to lower abdomen by pulling front area of coveralls downwards, tilting head upwards, and continuing to unzip.
 - b. Using outside of hood, assistant to carefully uncover hood from head.
 - c. Assistant to peel suit downwards to expose shoulders, allowing hood to be further away from neck.
 - d. Using outside of sleeves, assistant to remove 1 sleeve at a time. Carefully roll coveralls downward in a manner avoiding contamination of disposable scrubs. Remove coveralls.
 - e. If assistant unavailable, remove coveralls in a manner preventing self-contamination.
8. Perform hand hygiene. Alcohol-based hand rub (ABHR) is acceptable unless visible soiling is present. Soap and water required if visible soiling is present.

The following steps are to be used by the assistant when putting on and removing their PPE.

1. Refer to Techniques for Putting On and Taking Off PPE in the *Manitoba Health Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care* (available at <http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf>).

Perform hand hygiene whenever possible hand contamination has taken place, at any point during PPE removal.

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