Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg — Caring for Health / À l'écoute de notre santé	**Acute Care Infection Prevention and Control Program**	
Operational Directive	**Infection Prevention & Control Management of Ebola Virus Disease (EVD) in EVD – Designated In-Patient Areas**	**Page** 1 of 70
	Approval Signature:	Supercedes: *Infection Prevention & Control Management of Ebola Virus Disease (EVD) in EVD – Designated In-Patient Areas November 10, 2016*
	Date of Approval: July 7, 2019	
	Review Date: *1 year after approval*	

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I. PREFACE

The information in this document is subject to review and change as new information becomes available. This document is specific to the EVD-designated in-patient areas at the Health Sciences Centre on JK3 and PICU.

The Ebola virus belongs to Filoviridae family. Filoviruses cause hemorrhagic fever. A vector for Ebola has not been confirmed. People with EVD are **not infectious during the incubation period**. Ebola virus can be transmitted through direct contact (e.g., through broken skin or mucous membranes) with blood or other bodily fluids or secretions (e.g., stool, urine, emesis, saliva, semen) and/or indirect contact with environment and fomites/objects (e.g., needles) contaminated with infected body fluids. The Ebola virus can also be transmitted through contact with infected animals. Airborne transmission has not been documented. Risk for person-to-person transmission is highest during latter stages of illness, characterized by vomiting, diarrhea, shock, and hemorrhage. Infectivity persists after death. Ebola virus has been detected in semen for at least 9 months in men who have recovered from EVD. Otherwise, once someone has recovered from EVD, he/she can no longer spread the infection. **Transmission can be prevented.** Filoviruses may survive outside the body for several days in certain situations (e.g., drying blood, vomit, corpses) but it is unknown how long the virus remains infectious. Chlorine disinfection, heat, UVb and UVc light, soaps and detergents all destroy the viral lipid membrane and kill the virus.

While Ebola virus disease (EVD) is not indigenous to Canada, international travel and the presence of the National Microbiology Laboratory (NML) in Winnipeg may provide the opportunity for the transport and introduction of these agents or infected individuals to Manitoba.

Implement this operational directive in **close liaison** with Infection Prevention and Control (IP&C) staff, Infectious Diseases (ID) staff, Occupational and Environmental Safety & Health (OESH) staff, hospital and local Public Health authorities, and Federal Public Health authorities.

II. OPERATIONAL DIRECTIVES

1. All staff must be aware of and comply with the mandatory guidelines described in this operational directive, including those for personal protective equipment (PPE).
2. Isolation of patients under investigation for or with confirmed EVD, or patients in the incubation period, shall take precedence over all other patients where there is limited availability of isolation rooms with characteristics suitable for EVD isolation.
    i. The designated isolation room shall be vacated at once to facilitate the prompt admission of the person under investigation or confirmed EVD case.
3. At least one Ebola Site Manager will be onsite at all times in the location when an EVD patient is being cared for. This person is responsible to oversee safe and effective delivery of EVD patient care, with responsibility for all aspects of EVD management in a facility.
4. Staff shall immediately triage and isolate persons (using **Enhanced Droplet/Contact Precautions plus additional Infection Prevention and Control measures for EVD**) who are symptomatic and had recent travel history to an affected area or have a history of contact with an ill individual who has traveled to an area affected by an outbreak or had occupational or laboratory exposure.
5. Clinical and non-clinical staff shall not care for persons under investigation (PUI) for or confirmed cases of EVD **at the same time** as caring for persons where EVD is not being considered. Movement while caring for these patients is limited (not moving freely between the EVD patient and other patients and clinical areas). Students shall only provide care for these patients when their involvement is essential.

6. All non-essential staff shall be restricted from EVD patient care areas.
7. Staff shall immediately notify the individuals listed in Section IV, Roles and Responsibilities below, as appropriate, if there is suspicion of a patient meeting the criteria of a person under investigation or a confirmed case. See Section V, National EVD Case Definitions.
8. Staff shall actively consult IP&C staff. IP&C staff shall assist in all decisions regarding patient isolation, use of PPE, and patient transport.
9. Staff shall actively consult OESH staff. OESH staff shall assist in all decisions regarding staff exposure, staff self-monitoring, staff post exposure follow-up and staff monitoring.
10. **Consultation of an Attending ID specialist is mandatory**. This specialist must complete a risk assessment of the patient to determine if clinical presentation and epidemiology are consistent with EVD.
    i. If consistent with EVD, the ID specialist will notify/liaise with the
        a. Medical Officer of Health (MOH) at (204) 788-8666
        b. Cadham Provincial Laboratory (CPL) on call physician via HSC paging at (204) 787-2071
        c. Shared Health Administrator On Call (AOC) at 1 (877) 437-4861 to initiate appropriate specimen collection and testing; and
        d. Ebola physician through HSC paging at (204) 787-2071.

III. INFECTION PREVENTION AND CONTROL MEASURES

Staff safety is of utmost importance; strict compliance with IP&C precautions, including appropriate use of PPE, is mandatory to avoid potential exposure to infectious material. Transmission to healthcare workers (HCWs) has been documented when IP&C precautions are not strictly practiced. It is important to exercise extreme caution at all times when caring for PUI or confirmed Ebola cases.

A. Routine Practices
    i. Strengthen knowledge of, and consistently apply Routine Practices when providing care to ALL patients regardless of the signs and symptoms with which they present. This is especially important because initial manifestations of EVD are non-specific.
        a. Routine Practices includes (but is not limited to) the practice of hand hygiene according to the 4 moments for hand hygiene, cleaning and disinfection of all non-critical reusable items/equipment, regular environmental cleaning using a facility-approved disinfectant, meticulous attention to safety around the use of needles and sharps, and a complete risk assessment performed prior to any patient encounter.
    ii. Avoid touching mucous membranes of the eyes, nose and mouth with hands to prevent self-contamination.

B. Exposure Risk Assessment
Within the past 21 days the patient has:
    i. Traveled from an EVD outbreak area **and/or**
    ii. Been in contact with an EVD case, **and/or**
    iii. Been advised to self-monitor for EVD
    Note: Countries with EVD cases may change. Current information is available from the World Health Organization at: http://www.who.int/ebola/situation-reports/drc-2018/en/

C. Signs and Symptoms
Individuals with signs and symptoms consistent with EVD **must** have exposure risk to be considered further for EVD.
    i. Symptoms of infection with EVD are similar to those of other viral hemorrhagic fevers (e.g., Marburg), and of infectious diseases like malaria or typhoid. Symptoms can start off as mild flu-like illness and then progress to fulminant multi-system failure. Diagnosis can be difficult,

especially where only a single case is involved.

ii. EVD is a severe acute viral illness that begins with fever, often with malaise, myalgia, and headache, and is typically followed by progressive gastrointestinal symptoms that include nausea, and abdominal discomfort, followed by vomiting and diarrhea. The diarrhea and vomiting is often profuse in later stages of the illness and, without treatment, leads to severe volume depletion, electrolyte abnormalities, and shock. While hemorrhage may occur, usually from the gastrointestinal tract, it is a late manifestation and occurs in a minority of patients.

iii. Laboratory findings include low white blood cell and platelet counts, and elevated liver enzymes.

D. Implement **Enhanced Droplet/Contact Precautions plus additional Infection Prevention and Control measures for EVD** immediately upon suspicion of a case of EVD

i. Utilize 'no touch' approach for patient movement and management. Maintain spatial separation of 2 metres/6 feet.

ii. Place patient in a single room with dedicated bathroom facilities or a commode; door remains closed.

a. Avoid aerosol-generating medical procedures (AGMPs) unless absolutely necessary. If AGMPs are performed, conduct in an airborne infection isolation room (AIIR) with the minimum number of required people present, and disinfect horizontal surfaces within the room following procedures with Accel Intervention RTU/wipes (accelerated hydrogen peroxide/AHP).

i. An AGMP is any procedure conducted on a patient that can induce production of aerosols of various sizes, including droplet nuclei. Examples include:

- Intubation and related procedures (e.g., manual ventilation, open endotracheal suctioning)
- Cardiopulmonary resuscitation
- Bronchoscopy
- Sputum induction
- Nebulized therapy
- Autopsy
- Non-invasive positive pressure ventilation (CPAP, BiPAP)

b. Although EVD is not transmitted by the airborne route, it may be practical for facilities with AIIRs to isolate patients in an AIIR to allow additional space (anteroom) for removing PPE, and allow AGMPs to be performed if required, without moving the patient. Given the infectivity and high mortality related to EVD it is preferable these patients not be moved unless medically required. In determining placement, consideration should be given to ensuring the patient is placed in a room that can accommodate changes in clinical condition.

iii. Utilize 3-person team approach:

a. ***Primary***: HCW(s) who are entering the patient room to provide patient care.
b. ***Assistant***: HCW who is physically assisting with the donning and doffing of PPE.
c. ***Monitor***: Trained HCW who is guiding donning and doffing processes, as well as observing processes within the patient room to monitor for and prevent possible breaches in IP&C measures.

iv. Personal Protective Equipment (PPE)

Basic principles of safe and effective PPE use: it must be correctly in place before entering the patient care area; it must remain in place and be worn correctly for the duration of exposure to potentially contaminated areas; it should not be adjusted during patient care; and if a breach in PPE occurs, the HCW must immediately leave the patient care area. Ensure sufficient and undisturbed time to don and doff PPE correctly.

a. Use disposable PPE wherever possible.
b. Remove lanyards, jewelry, or other similar items that can hang/dangle and become contaminated during the course of patient care.
   Note: where jewelry that can become contaminated or increase risk to the HCW cannot be removed, it will be cut off and the employer will reimburse the cost of repair.
c. Apply disposable (or non-disposable to be destroyed) scrubs.
   i. Dedicate these to the EVD area/care of patients under investigation for, or confirmed cases of EVD. Do not wear these scrubs outside of these areas.
d. Pull back hair from face and neck and securely tie/pin back if required. For longer hair, pull hair back and up into a bun, as longer hair may touch outside of coveralls during doffing if not put up.
   i. Prepare cooling vest by ensuring ice pack inserts lay flat when placing in freezer.
      – Inserts require at least one hour in the freezer to freeze
   ii. Once ice packs are frozen, insert into both front and back of cooling vest
   iii. Ensure Velcro straps at shoulders and waist are secured in place
   iv. Use extender straps if required
e. Don Vocera®, ensuring the top of the badge is no more than six inches from your chin.
f. Use closed toe and heel footwear that tolerate disinfection and are not easily removed (i.e., not canvas/fabric/clogs) within the isolation room and anteroom.
   i. Shoe and leg coverings are required for HCWs entering the patient room.
   ii. Soles of the footwear used in the anteroom or patient room must be disinfected prior to removal from the area.
      – If contaminated surfaces of the coveralls contact shoes during removal, wipe shoes with Accel Intervention/AHP wipes. Ensure surface remains wet for 1 min for an adequate contact time; allow to air dry.
   iii. Staff entering the anteroom or patient room shall keep their footwear on the unit while involved in the patient's care.
      a. A trained monitor should observe from outside the anteroom to prevent/ note any breaches in PPE and address with remedial actions.
g. Trained Monitor to assess PPE donning, then indicate to Primary he/she is safe to enter the patient room (following donning).
   i. Monitor to indicate when it is clear to enter the anteroom/doffing area prior to exiting patient room.
      a. PPE Items (refer to Section VIII, Putting On and Taking Off PPE, for directions regarding order of PPE application and removal)
   ii. Visually inspect the PPE to be worn to ensure that it is in serviceable condition, that all required PPE and supplies are available, and that the sizes selected are correct for the healthcare worker. Refer to Section XVI, Sizing Recommendations for Coveralls.
   iii. Gloves:
      – Perform hand hygiene prior to applying gloves. Ensure nails are no longer than 1/4" so they do not puncture gloves.
      – Apply extended cuff gloves. Ensure the wrist is not exposed and cuff of the gown is fully covered.
      – Double glove
         • Double gloving provides an extra layer of safety during direct patient care and during the PPE removal process. Beyond this, more layers of PPE may make it more difficult to perform patient care duties and

put HCWs at greater risk for percutaneous injury (e.g., needlesticks), self-contamination during care or doffing, or other exposures to Ebola.

- Wear gloves of differing colours; this allows easier visualization if a tear/breach in the gloves occurs.
    a. The longer-extended cuff, closer-fitting BLUE nitrile gloves shall be worn as the inner glove.
    b. The extended cuff GREEN nitrile gloves shall be worn as the outer glove.

– Change gloves if heavily soiled with blood or any body fluids while providing care to the same patient
    - If soiling of **outer** gloves occurs:
        a. Remove excess soiling using Accel Intervention/AHP wipe(s).
        b. Remove outer gloves with caution; discard in no-touch waste receptacle.
        c. Immerse gloved hands (inner gloves) in Accel Intervention/AHP RTU solution and rub together without splashing.
        d. Pat dry inner gloves with Accel Intervention/AHP wipe(s) to remove excess Accel Intervention/AHP RTU solution.
        e. Apply new outer gloves.
    - If soiling of **inner** gloves occurs:
        a. Immerse gloved hands in basin of Accel Intervention/AHP RTU solution and rub together without splashing.
        b. Pat dry gloves with Accel Intervention/AHP wipe(s) to remove excess Accel Intervention/AHP RTU solution.
        c. Apply new outer gloves.
– Always perform hand hygiene immediately after inner glove removal; do not remove inner gloves within the patient room.

iv. Coveralls:
– Disposable; fluid resistant; head covering attached
– Remove disposable coveralls in a manner minimizing self-contamination prior to leaving EVD anteroom, as per the direction in Section VIII, Putting On and Taking Off PPE

v. Gowns:
– Long sleeved; fluid repellent
NOTE: these are not 'regular' isolation gowns; these are fluid repellent and disposable.

vi. N95 Respirator:
– Apply N95 respirator prior to entering the patient room
– Staff must be fit tested in advance (within the previous two years or sooner with significant facial changes) to determine the appropriate size N95 respirator. Seal check the respirator when applied.

vii. Procedure or Surgical Mask (Assistant PPE):
– Assistant to apply a procedure or surgical mask prior to entering the anteroom

viii. Face protection
– Disposable full face shields

Note: masks with visors are not acceptable protection; face shields should be long enough to prevent splashing underneath; prescription eye glasses are not adequate as eye protection.

ix. Additional PPE such as fluid resistant shoe/leg coverings are routinely recommended for direct patient care until reassessed by IP&C.

x. If there is any evidence of soiling of scrubs or cooling vest, refer to Section IX, Decontamination Process: Soiled Scrubs.

xi. A shower is recommended at the end of each shift for the comfort of the HCW. Use the designated shower, remove scrubs, and wash with soap and water.

v. Doffing PPE presents the point of highest risk of contamination; it requires a structured and monitored process and must be done slowly and deliberately. Therefore manage this as a two-person (i.e., Assistant and Primary) process to improve safety.

vi. Doff and dispose of PPE in the anteroom. Refer to Section VIII, Putting On and Taking Off PPE

a. Visually inspect PPE prior to exiting patient room for obvious signs of contamination. If present, wipe surface of the PPE with Accel Intervention/AHP wipe(s).
b. Doff PPE slowly and deliberately in the correct sequence to reduce the possibility of self-contamination or other exposure to Ebola virus.
c. Ensure sufficient and undisturbed time to doff PPE correctly.
d. A second HCW shall assist in the doffing of PPE to help prevent inadvertent contamination of eyes, mucous membranes, skin or clothing.
e. If an anteroom is not available, doff PPE at the doorway upon exiting the room. Discard PPE in the patient room.

vii. In designated space outside the anteroom, remove cooling vest with or without assistance. Perform the following once removed:

a. Disinfect ice pack inserts with Accel Intervention Wipes.
b. Disinfect inside and outside of cooling vest panels with Accel Intervention wipes with 1 minute wet contact time. Allow to air dry. Use odor eliminating spray as required.

viii. Eating or drinking is not permitted in areas where these patients are cared for, including the nursing station, or in reprocessing or laboratory areas.

ix. Do not bring patient health records or mobile computers into isolation room(s).

x. Prior to shift change:

a. Empty all waste.
b. Mop entire patient space (including patient room and anteroom).
c. Wipe electronic cords with Accel Intervention/AHP wipes.
d. Restock items needed for next shift (e.g., PPE, disinfectant solution/wipes, and care items).

xi. Hold daily team meetings during periods of EVD/Level IV activation to discuss clinical updates and concerns. During these meetings, all working team nurses, physicians and support staff meet to review efficacy of protocols and discuss care issues.

xii. Decontamination of Patients

a. Manage patients placed in an EVD isolation room in a consistent and safe manner.
b. Perform patient decontamination as soon as possible after admitting patient to the unit.
c. Remove contaminated clothing and store in a labeled biohazard bag to prevent further environmental contamination.
    i. Minimal handling of clothing is mandatory to avoid further environmental contamination due to agitation.
d. After removal of contaminated outer clothing, instruct patient (or assist if necessary) to wash skin surfaces with soap and water.

E. Staffing
   i. Use 'closed loop communication' to govern both direct patient care communication and daily team huddles. This enables the team to hold each other accountable for safe and effective practices, as effective and assertive communication is central to safety of the team.
      a. 'Closed loop communication' empowers all members of the team, regardless of role, to develop shared accountability for strict adherence to operational directives and safe work procedures. Closed loop communication involves the 'sender' giving a message which is verbally repeated back by the 'receiver'; the 'sender' then confirms the message. The team commits to:
         i. Follow all operational directives and safe work procedures to the best of their ability.
         ii. Ensure others follow the operational directives and safe work procedures.
         iii. Report all accidents and/or near misses as appropriate.
         iv. Report any symptoms that may indicate EVD to OESH.
         v. Report any new medical conditions that may affect a staff member's ability to work with these patients to OESH.
   ii. Limit staff caring for patients to designated staff.
      a. Students shall only provide care for these patients when their involvement is essential.
      b. Clinical and non-clinical staff shall not care for PUIs or confirmed cases of EVD at the same time as caring for persons where EVD is not considered.
         i. Limit movement while caring for PUIs or confirmed cases of EVD (i.e., do not move freely between the EVD patient and other patients and clinical areas).
      c. Restrict non-essential staff and visitors from entering the anteroom/patient room.
      d. Care is provided by at least two registered nurses at all times. These nurses do not need to be in the room at the same time or all the time; this depends on the care activities. These nurses must have no other duties while caring for suspect or confirmed cases.
      e. In addition to the two registered nurses, a trained monitor with experience in the use of PPE shall be assigned outside the entrance to the isolation room (outside the anteroom) to record, on a log sheet (refer to Section VII for EVD Room Entrance Log Sheet), all people entering the room, as well as to monitor for breaches in the protocol regarding selection and donning/doffing of PPE to minimize risk of self-contamination.
         i. No additional PPE is required for the trained monitor as he/she remains outside the anteroom.
         ii. Have a safe and effective method of communication available for the monitor to communicate with staff inside the isolation room as well as inside the anteroom.
   iii. Staff caring for these patients shall self-monitor for EVD symptoms beginning the first day of assignment and continuing for 21 days after last patient contact, per Section V, Monitoring of Staff.
   iv. Staff shall immediately notify the individuals listed in Section IV below, as appropriate, if there is suspicion of a patient meeting the criteria of a PUI or a confirmed case of EVD. See Section V, National EVD Case Definitions.
   v. Staff shall self-report to OESH the presence of their own significant travel history as outlined above in Section B.
   vi. Staff shall self-report to OESH any medical condition which may affect their ability to safely follow the requirements outlined in this Operational Directive.
   vii. Pregnant HCWs shall not have contact with PUIs or confirmed cases of EVD or their environment.
   viii. HCWs with open skin areas/lesions on hands or forearms, as assessed by OESH, shall not have contact with PUIs or confirmed cases of EVD or their environment.

a. HCWs are responsible to
    i. Self-identify open skin areas/lesions on hands or forearms
    ii. Report the same to the unit/area manager/designate
    iii. Discuss with OESH to determine suitability to provide patient care on designated unit(s).

F. Diagnostic Tests and Examinations
i. Provide advance notice of the patient's impending arrival prior to transporting the patient for diagnostic testing so the receiving unit/area is aware of the patient's impending arrival and are prepared to perform testing immediately.
ii. Provide advance notice of the required Additional Precautions for any department performing tests or procedures. Refer to Section IIIJ, Transport within the Facility, for direction regarding patient transport.
iii. Discuss specimens to be obtained, in advance, with appropriate specialists for each lab area. Prior to patient transport for diagnostic testing, notify the receiving area of the patient's impending arrival. The receiving area must be prepared to perform testing immediately. Immediately following the procedure, trained staff must clean and disinfect with Accel Intervention/AHP.
iv. Make a clear list of specimens to be collected, and to which laboratory these will be submitted.
v. Specimens collected will be of two types:
    a. Specimens to be sent directly to CPL for Ebola virus detection:
        i. Specimens will include blood for molecular detection of Ebola virus and blood for detection of antibodies against an antigen of Ebola virus by ELISA (serology). Rarely, oral swabs for viral detection may be collected from deceased patients. *NOTE: Ebola virus is detected in blood only after onset of symptoms, most notably fever. It may take up to 3 days after onset of symptoms for the virus to reach detectable levels.*
        ii. Specimens requiring testing for EVD will be transported by lab staff.
            – CPL staff will transport CPL specimens to CPL.
        iii. Notification of specimen testing results (positive or negative) will occur via CPL to the Attending and ID physicians and to Infection Prevention and Control.
    b. Specimens to be sent to the HSC Laboratory for Biochemistry, Hematology, and Microbiology:
        i. Testing performed by Shared Health laboratories, before the results of the molecular and serologic testing for Ebola virus are known to be negative, will be restricted. Refer to Section X for the Limited Menu of Laboratory Tests Required to Manage a Patient Presenting with Possible Ebola Virus Disease.
        ii. Cross-matching of blood or blood products for transfusion will not be performed.
        iii. O negative packed red blood cells, low haemolysin group O platelets and/or group AB fresh frozen plasma will be used if required.
        iv. Specimens requiring clinical testing will be transported to the HSC Clinical Microbiology Laboratory by Shared Health staff. The pneumatic transport tube system shall not be used for transporting any EVD samples.
vi. Do not draw specimens without prior consultation with the Attending ID specialist on call (available 24/7) through HSC paging at (204) 787-2071.
vii. Only collect specimens essential for diagnosis and monitoring. Balance the need to perform additional tests against possible danger to laboratory and patient care staff to minimize risk.
    a. Specimen collection is performed by unit/area staff.
viii. Once the Attending ID specialist has confirmed this is a PUI, the Attending ID specialist must

complete the following steps before obtaining any specimen:

a. Notify the MOH on call at (204) 788-8666. The MOH will activate appropriate resources including the Public Health Agency of Canada.
b. Notify the CPL on call physician through HSC paging at (204) 787-2071 of the incoming sample and expected time so NML and Shared Health are made aware.
    i. CPL staff certified in "Transport of Dangerous Goods" shipping will deliver specimen transport materials (e.g., container, absorbent material) and transport collected specimens to the appropriate laboratory.
c. Where a patient presents to a WRHA facility other than HSC and the patient is too unstable to transport, contact the Shared Health AOC immediately at 1 (877) 437-4861.

ix. Adhere to the following principles when obtaining any specimen:
    a. Only experienced and fully trained staff shall collect specimens.
    b. The most experienced HCWs in drawing blood or starting lines should perform these tasks.
    c. Avoid AGMPs.
    d. Place sharps in puncture resistant sharps container at point of care.
    e. Place specimens in non-glass, leak-proof containers.
    f. Ensure adequate staff are available if patient is uncooperative.
x. Instructions for specimen collection and hand off to laboratory staff
    Refer to Section XIII, Ebola Virus Disease (EVD) Specimen Collection Process.
    a. Contact the HSC Laboratory at (204) 787-1534 to advise when the unit is ready to collect the specimen(s).
        i. Advise lab staff of the patient's location and type of testing required.
        ii. Wait to collect the specimen(s) until the requisitions and labels have been completed and the HSC Laboratory Technologist has arrived in the unit/area.
    b. Apply standard labeling for each specimen outside the patient room.
        i. Clearly label each specimen container prior to entry into the patient's room; indicate "Ebola suspected" on specimen container.
    c. Prepare a fully completed laboratory requisition outside the patient room, with all pertinent patient information.
        i. Clearly complete each requisition; indicate "Ebola suspected" on the requisition.
    d. Place a specimen requisition with each specimen in the pouch on the outside of the transport box (NOT inside the sealed compartment).
    e. During collection, avoid external contamination of the specimen tubes and containers.
    f. Fill all collection tubes to capacity if possible. For pediatric patients, the lavender tube for Cadham Lab must be full.
    g. Wipe outside surface of each specimen tube with Accel Intervention/AHP in the patient room.
    h. Place each specimen in a separate, appropriately labeled sealable plastic biohazard bag at bedside; seal bag.
    i. Wipe bag with Accel Intervention/AHP wipes prior to leaving the room.
    j. Wrap the bag in bubble wrap and place into the correct orange canister outside the patient room.
    k. Disinfect secondary canister with Accel Intervention/AHP wipes.
    l. Place secondary canister in correct tertiary cardboard box.
        i. The assigned Technologist closes the lid and transports the specimen directly to the Laboratory.
    m. Clinical tests - collection tubes required:

i. Chemistry:
   - Chemistries/electrolytes and blood gases - glucose, urea, creatinine, lactate, Na, K, Cl, troponin I, pH, pCO_2, pO_2
   - Blood sample collected into a lithium heparin (no gel) vacutainer collection tube (dark green top tube)

ii. Chemistry:
   - Na, K, Cl, Glu, Urea, Crea, TCO_2, Anion Gap, Troponin I, pH, pCO2, pO2, Lactic Acid (currently available)
   - TCO2, Ca, ALT, AST, AMY, ALP, ALB, TP, TBIL
   - Blood sample collected into a lithium heparin (no gel) vacutainer collection tube (dark green top tube)

iii. Hematology:
   - CBC
   - Blood sample collected into an EDTA tube (purple/lavender top container) vacutainer collection tube

iv. Hematology:
   - Malaria antigen
   - Blood sample collected into an EDTA tubes (purple/lavender top tube) vacutainer collection tube
     Note: A second specimen must be collected 8 hours later if the initial one is negative.

v. Microbiology:
   - Blood cultures submitted in a blood culture bottle

n. Ebola virus disease tests – collections tubes required:
   i. PCR & viral culture:
      - 2-4ml in tube containing EDTA (purple/lavender top tube)
      - Serology 2-4ml in serum separator tube (gold/yellow top tube)

o. Do not use any pneumatic tube system for transporting specimens. Deliver all specimens from the patient room directly to the lab's specimen handling area by hand.

Refer to Section XIV, Removal of Diagnostic Imaging Equipment from Room.

G. Equipment and Supplies

i. Adhere rigorously to use of dedicated patient equipment on a single patient only.

ii. Keep dedicated patient equipment within the patient isolation room until the diagnosis of EVD is excluded, the patient is discharged or the precautions are discontinued. When this occurs:
   a. Thoroughly clean and disinfect reusable non-critical patient care equipment with Accel Intervention/AHP RTU/wipes. This shall occur according to established schedules and as needed between patients or when soiled. Non critical items are those that touch only intact skin but not mucous membranes.
   b. Ensure surface remains wet for 1 minute for an adequate contact time. Allow to air dry completely prior to removal from room.
   c. Once removed from the isolation room (and anteroom if present), wipe equipment with disinfectant wipes again. Ensure surface remains wet for 1 minute for an adequate contact time; and allow to air dry before use with/on another patient.
   d. Refer to Section XI, Removal of Hand-Held Devices from Isolation Room.

iii. When it is not possible to dedicate patient equipment to a single patient, equipment must be cleaned and disinfected, and allowed to air dry completely prior to removal from room. Once removed from the isolation room (and anteroom if present), wipe equipment with disinfectant wipes again. Ensure surface remains wet for 1 minute for an adequate contact time; and

allow to air dry before use with/on another patient.

iv. Where use of the medical vacuum system for suctioning is required, implement a two in-series canister system.
    a. Confirm presence and functioning of the canister overflow prevention mechanism.
    b. Should fluid be observed in the second canister, immediately stop use and notify Facility Management.
v. Utilize single-patient-use elimination systems.
vi. Disinfect commodes during routine cleaning, and as required (i.e., after each use if gross soiling).
vii. Dispose of equipment as biomedical waste if it cannot be effectively cleaned and disinfected.
viii. Upon discharge, dispose of commodes as biomedical waste.

H. Environment
    i. Assign experienced Housekeeping staff trained in IP&C measures and the use of PPE to perform environmental cleaning.
    ii. Housekeeping shall implement twice daily cleaning and disinfection of all horizontal and frequently touched surfaces with Accel Intervention/AHP RTU.
        a. Additional cleaning and disinfection is required on surfaces likely to be touched in the patient care environment.
        b. Additional cleaning measures or frequency may be warranted in situations where environmental soiling has occurred.
        c. Perform cleaning/disinfection from 'cleaner' areas to 'dirtier' areas to avoid contaminant transfer.
        d. Include basins of Accel Intervention/AHP RTU solution x 3 (2 in anteroom, 1 in patient room) as well as walk-off mat in the twice daily, and as needed, cleaning and disinfection (e.g., visible contamination). Discard disposable basins with each emptying of solution, after solution is disposed without splashing.
    iii. Housekeeping equipment shall be disposable or remain in the room for the duration of the patient admission.
        a. Use heavy duty/rubber gloves for environmental cleaning in addition to extended cuff gloves. Discard heavy duty gloves after every use.
        b. Do not bring Housekeeping Carts into the isolation room or anteroom.
        c. Use several disposable cloths to clean and disinfect a room. Use a new disposable cloth for different surfaces or zones within the room. Do not reuse cloths.
        d. Clean and disinfect all Housekeeping equipment before returning into general use.
            i. Discard textiles (e.g., cleaning cloths, mop heads, wipes, linens, and privacy curtains) used in the patient room as biomedical waste.
    iv. Manage the patients' personal property as biomedical waste (due to the risk of transmission). Upon confirmation of EVD status, dispose of as biomedical waste; do not return to the patient.
    v. Upon patient discharge, discharge/terminal cleaning of the room should follow the recommended practice for discharge/terminal cleaning of a room on Enhanced Droplet/Contact Precautions plus additional IP&C measures for EVD. In addition to routine cleaning:
        a. Remove and discard, as biomedical waste, all dirty/used items (e.g., suction container, disposable items).
        b. Remove and discard, as biomedical waste, curtains (e.g., privacy, window, shower) before starting to clean the room.
        c. Discard everything in the room that cannot be cleaned, as biomedical waste.
        d. Use fresh cloths, mop, supplies and solutions to clean the room.
        e. Use several cloths to clean a room. Use each cloth one time only; do not dip a cloth

back into disinfectant solution after use. Do not re-use cloths.

f. Clean and disinfect all surfaces; allow for appropriate disinfectant contact time.
g. Clean and disinfect all Housekeeping equipment before putting back into general use.

vi. Upon room vacancy, Housekeeping shall work with unit staff to ensure the room is cleaned and disinfected in a process consistent with discharge cleaning protocols.
   a. Patient room(s) shall first be cleaned/disinfected as outlined above (H, iv).
   b. Remove waste from the room as outlined in section O.
   c. Remove PPE and discard as biomedical waste in waste drum.
   d. Seal the room and leave undisturbed for 1 hour to allow for air clearance in the space.
   e. After 1 hour, decontaminate the room through manual cleaning and disinfection and ultraviolet germicidal irradiation (UVGI).
      i. An Infection Control Professional, who is a Trained Monitor, shall observe and provide quality assurance throughout the discharge (a.k.a. terminal) cleaning.
      ii. Apply PPE.
      iii. Clean by removing all visible soiling first.
      iv. Manually disinfect medical equipment (that hasn't been disposed of) according to manufacturer recommendations (e.g., hand held devices, etc.).
      v. Manually disinfect the room and surfaces using Accel Intervention/AHP RTU.
      vi. Mop floors twice with Accel Intervention/AHP RTU, starting from the cleanest areas and ending with areas likely to be most contaminated in the patient room.
      vii. Use the UVGI generators after all surfaces have been disinfected
         – Expose all surfaces in the unit, including the equipment in the unit, to a minimum of 100 mJ/cm^2
         – This is accomplished by using multiple UVGI units simultaneously surrounding equipment or within rooms and by strategically placing the UVGI monitor in areas to ensure readings are lower than actual exposure of many surfaces
         – Large medical equipment can be exposed by arranging 4 UVGI units around each individual machine, with a UVGI monitor under the equipment
         – Treat areas with a higher likelihood of contamination, such as the patient room and bathroom, for longer exposures, with the patient room receiving an exposure >800 mJ/cm^2 and the bathroom receiving an exposure >1,000 mJ/cm^2.
   f. Disinfect external surfaces of the waste drum, including lid. Ensure 1 minute wet contact time. Allow to air dry.
   g. Remove all PPE EXCEPT blue gloves; discard PPE as biomedical waste in the waste drum.
   h. Remove final waste drum from anteroom according to section O, Waste Management.
   i. In the hall outside the anteroom
      i. Assistant to
         – Don gloves
         – Prepare red waste drum with 2 red biomedical waste bags, fold bags over the edge of the drum with a large fold-over
         – Open the anteroom door to the "Open Hold" position
         – Hold the bottom of the red waste drum
   j. In the anteroom
      i. Primary to
         – Stand in open doorway

- Remove blue gloves and drop into the centre of the red waste drum held by the Assistant in the hall outside of anteroom
- Perform hand hygiene
- Exit anteroom

k. In the hall outside the anteroom
   i. Assistant to:
      - Place red waste drum on hallway floor (outside anteroom)
      - Balloon tie, or tape, or zip tie (required by the DOT Special Permit) the red biomedical waste bags (each separately) to prevent the release of any material from the bag if inverted (goose-necking with tape or zip ties is permitted). The closure method must not tear, puncture or otherwise damage the bags
      - Seal/close the red waste drum as outlined in section O.

l. Seal the room for 1 hour again after UVGI treatment

m. Use the vapourized hydrogen peroxide (VHP) disinfection system. To achieve the sporicidal effect, follow the operation instructions in the user manual and use a setting equal to seven times the room volume
   i. Set the appropriate room volume on the machine
   ii. Push start
   iii. Exit room (remain outside of room when machine is in operation)
   iv. Allow 60 minute contact time

n. After this series of cleaning and disinfection, and the third 1-hour period, the room is deemed safe for entry without PPE.

o. Housekeeping staff perform an aesthetic cleaning to remove any chemical residues throughout the room; standard cleaning PPE is worn during this process.

I. Reprocessing (Cleaning, Disinfection, and Sterilization) of Medical Equipment
   i. Do not send items involved in the care of EVD patients to Medical Device Reprocessing; discard items as biomedical waste.
      a. Consult IP&C PRIOR to discarding the item if discarding will result in significant operational impact.

J. Transport within the Facility
   i. **Avoid non-essential transport of the patient.** If an internal transfer cannot be avoided, ensure the new room is ready before transfer to minimize time outside of the patient room.
   ii. Instruct Patient Transport and receiving staff on the required precautions prior to moving the patient or transporting other items.
   iii. Contact Security Services to provide security during transport and on the unit, if necessary (e.g., to clear the elevators and transit corridors of all persons non-essential to the transport of the patient in advance of patient transport).
      a. For transport, Security Services staff shall apply double gloves (inner: blue nitrile gloves; outer: green nitrile gloves), impermeable gown, N95 respirator, and face shield. Shoe and leg covers for Security Services staff are required when there is (or there is anticipated) uncontrolled blood or body fluid drainage.
   iv. Staff providing transport must discard/doff PPE as they leave the room, and apply/don new PPE prior to transporting patient. Refer to Section IX, Putting On and Taking Off PPE, for directions regarding order of PPE donning and doffing.
      a. For transport, the trained monitor shall apply double gloves, impermeable gown, N95 respirator, and face shield. Shoe and leg covers for the trained monitor are required when there is (or there is anticipated) uncontrolled blood or body fluid drainage.

v. Transport the patient or other items in a manner minimizing patient contact with others who are non-essential to the transport of the patient. Use the most direct route to the destination.
vi. Provide patient with a procedure or surgical mask during essential transport. Provide patient with a clean gown and bedding. Cover all wounds; take measures to contain body fluids (e.g., vomit, urine, feces, blood). Assist patient to perform hand hygiene before leaving room.

K. Dietary
   i. Use disposable dishes/cutlery and dispose as biomedical waste at the point-of-use.

L. Linen
   i. Ensure safe handling of linen.
   ii. Contain linen at point of use.
   iii. Double bag soiled linen.
   iv. Dispose of linen/textiles used within the patient room as biomedical waste. Place in a no-touch, leak-proof receptacle/container.
      a. Use only a mattress and pillow with plastic/other covering that fluids cannot penetrate.
   v. Staff handling contaminated linen shall wear appropriate PPE.
   vi. Handle linen with a minimum of agitation to avoid contamination of air, surfaces, and persons. Slowly remove linen from patient and bed to minimize agitation and air currents.
   vii. Roll or fold heavily soiled linen to contain the heaviest soil in the bundle's centre.
   viii. Change patient bed linen regularly, when soiled, upon discontinuation of precautions, and following patient discharge.
   ix. Disinfect external container with Accel Intervention/AHP RTU/wipes; ensure surface remains wet for 1 min for an adequate contact time. Allow to air dry.
      a. Clearly label the external container as biomedical waste.
   x. Never carry soiled linen or soiled linen bags against the body.
   xi. Transfer on carts with guard rails or raised edges and load in a manner to prevent large or heavy items from tipping.
   xii. For PUIs (i.e., awaiting test results), Facilities Management shall store in a designated area until test results available.
      a. If test results for Ebola are negative, disposal of linen is not necessary. Regular laundering is adequate for stored linen.
      b. If test results for Ebola are positive, linen must be transported off-site in accordance with Transport Canada's, Transportation of Dangerous Goods Regulations, and disposed of in accordance with local or regional requirements and regulations and/or bylaws for regulated biosafety (infectious) waste.

M. Handling of Sharps
   i. Limit use of needles and other sharps as much as possible.
   ii. Use safety-engineered devices wherever available.
   iii. Do not recap used needles.
   iv. Discard used needles and other used single-use sharp items immediately into designated puncture-resistant containers at the point-of-care.
   v. Handle used needles and other sharp instruments with care to avoid injuries during disposal.
   vi. Clean and disinfect used sharps containers once sealed; ensure 1 minute wet contact time. Allow to air dry prior to removal from patient room.
   vii. Use dedicated single-use sharps containers that are leak-proof/impervious, puncture resistant, and fitted with securely closed lids in rooms where these patients are being cared for.
   viii. Fill sharps containers to a maximum of 2/3 full.

N. Spill Management

i. Create 'spill kits' available for use in designated assessment/care areas.
ii. Alert Assistant and trained Monitor.
iii. Wear EVD PPE.
iv. Clean all spilled blood and other body fluids immediately once aerosols have been allowed to settle.
v. When cleaning spills, bring an extra pair of gloves into room in a sealed bag (see viii, h below).
vi. Use appropriate tools (e.g., tongs or forceps) for spills involving sharps or broken glass.
vii. Establish a spill parameter (contain the spill and section off area immediately, as appropriate).
viii. Clean spill area removing the organic material, cleaning the area, and disinfecting the area
    a. Gently cover the spill with dry absorbent pad(s); **remove** organic material. Discard.
    b. Cover spills of potentially contaminated material with an incontinence/absorbent pad saturated with Accel Intervention/AHP RTU. Do not splash or spray disinfectant.
    c. Cover the spill from the outside-in. Allow pad(s) to soak for a minimum of 10 minutes.
    d. Immerse gloved hands (outer gloves) in Accel Intervention/AHP RTU solution; rub together without splashing.
    e. Remove outer gloves with caution; discard.
    f. Immerse gloved hands (inner gloves) in Accel Intervention/AHP RTU solution; rub together without splashing.
    g. Pat dry inner gloves with Accel Intervention/AHP wipe(s).
    h. Apply new outer gloves.
    i. Wipe up with absorbent material soaked in Accel Intervention/AHP RTU.
    j. **Clean** spill from outside-in. Start at one end of the affected area and move in one direction until all surfaces have been cleaned. Do not use a circular motion.
ix. Dispose as biomedical waste.
x. Immerse gloved hands (outer gloves) in Accel Intervention/AHP RTU solution and rub together without splashing.
xi. Remove outer gloves with caution; discard.
xii. Immerse gloved hands (inner gloves) in Accel Intervention/AHP RTU solution and rub together without splashing.
xiii. Pat dry inner gloves with Accel Intervention/AHP wipe(s).
xiv. Apply new outer gloves.

NOTE: if shoe/leg covers are grossly soiled, remove and don a new clean pair (see directions below).

To remove:

a. In patient room:
    i. Remove gross soiling from shoe/leg covers with an Accel Intervention/AHP wipe.
    ii. Immerse gloved hands into basin and rub together without splashing; wipe door handle and plate with Accel Intervention/AHP wipe; allow 1 minute drying time before exiting patient room.
b. Enter anteroom staying in the half closest to the patient room (delineated by tape); ensure contact with walk-off mat
    i. Immerse gloved hands into basin and rub together in Accel Intervention/AHP RTU solution without splashing
c. After door closes, Assistant to
    i. Enter staying on the half closest to hall.

ii. Remove Primary's contaminated shoe/leg coverings.
iii. Immerse gloved hands and rub together in Accel Intervention/AHP RTU solution without splashing.
iv. Remove outer gloves and discard.
v. Immerse gloved hands (inner gloves) in Accel Intervention/AHP RTU solution; rub together without splashing.
vi. Pat dry inner gloves with Accel Intervention/AHP wipe(s).
vii. Apply new outer gloves.
viii. Apply clean shoe/leg covers for Primary.

d. Primary may then re-enter patient room.

xv. **Disinfect** after cleaning by pouring Accel Intervention/AHP RTU directly onto the spill area. Allow required contact time.
a. Cover and saturate the spill area.
b. Wipe the area with disposable absorbent material and dispose of as biomedical waste.
c. Remove outer gloves with caution; discard.
d. Immerse gloved hands (inner gloves) in Accel Intervention/AHP RTU solution and rub together without splashing.
e. Pat dry inner gloves with Accel Intervention/AHP wipe(s).
f. Apply new outer gloves.

xvi. Mop area with Accel Intervention/AHP RTU.
xvii. Allow the surface to air dry completely.
xviii. The trained monitor records the incident in the EVD Incident log, Section XV.

O. Waste Management

The Ebola virus is categorized as a Risk Group 4, under PHAC's Biosafety Programs and Resources, and requires special handling. PPE is required for managing waste (handling, containing and on-site transport).

i. Waste management shall comply with municipal regulations and site policy/procedure.
ii. If there has been a breach in safe handling and containment with subsequent potential exposure during the management of Ebola-associated waste, staff will safely and immediately leave the patient room, remove PPE, thoroughly rinse exposed body area, and report potential exposure immediately to OESH at (204) 232-9075.
iii. **Management of Liquid Waste in the Patient Room**
a. Dilute liquid waste with Accel Intervention solution to achieve an approximate final 5% dilution (5% of Accel Intervention in the total amount)
b. Allow a minimum of 10 minute contact time prior to adding solidifier.
c. Following the 10 minute contact time, add solidifier to liquid prior to disposal.
d. Dispose of as biomedical waste.
iv. Contain waste within the patient's room at point of generation.
v. Use no-touch waste receptacles. A supply of designated biomedical waste containers and other supplies required for management of biomedical waste shall be available at all times.
vi. Place waste immediately into the blue drum in the patient room, lined with red biomedical waste bag (see iv. above).
a. Do not over-fill red biomedical waste bags; only fill until 2/3 full.
vii. **Waste Removal from Patient Room**
a. Prior to the Primary entering the patient room"
i. The Assistant will enter and step onto second disinfectant mat, adjacent to Assistant mat on the Assistant side.

ii. The Waste Collector will place a saturated disinfectant mat in the hallway at door entrance

b. Primary to enter the anteroom, then enter the patient room:
   i. Enter patient room with new blue drum including securement ring and lid.
   ii. Place new securement ring and lid in designated area in patient room.
   iii. Remove securement ring holding inner red biomedical waste bag and place in designated location to remain in patient room.
   iv. Tie the lining red biomedical waste bag shut, enclosing multiple waste bags within.
   v. Slowly pour Accel Intervention liquid around bag (enough to touch all surfaces of the bag).
   vi. Allow 1 minute wet contact time to elapse.
   vii. Pour entire contents of absorbent powder into waste drum.
   viii. Seal waste drum.
   ix. Wipe top surfaces of the drum dolly, allowing appropriate contact time.
   x. Place dolly under waste drum.
   xi. Disinfect remainder of drum dolly and all external surfaces of the waste drum, including cover, allowing 1 minute wet contact time.
   xii. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   xiii. Wipe door handle and plate with Accel Intervention/AHP wipe(s).
   xiv. Allow 1 minute drying time.
   xv. Open anteroom door to the "Open Hold" position.
   xvi. Wheel drum dolly into anteroom and gently place onto the Assistant mat (Assistant will be on the second Assistant mat).
   xvii. Return drum dolly to patient room.
   xviii. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   xix. Assistant to disinfect the waste drum, including the cover. Allow 1 minute wet contact time.
   xx. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   xxi. Primary to re-enter anteroom. Close patient room door using wall button. Wipe areas of waste drum which Assistant was not able to reach.
   xxii. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   xxiii. Primary to re-enter patient room.
   xxiv. Monitor opens anteroom/hall door.
   xxv. While remaining in the hall, waste removal staff rolls a wheeled dolly from the hall and places it under the disinfected waste drum.
   xxvi. Waste removal staff rolls the wheeled dolly over disinfectant floor mat and into the hall.

viii. **After Removal of Waste Drum from Anteroom – Direction for Assistant Inside Anteroom**

a. Don heavy duty/rubber gloves in addition to 'Assistant PPE' for waste removal.
b. Re-locate the waste drum from the the hall side of the anteroom to the patient side of the anteroom.
c. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing; wipe door handle and plate with Accel Intervention/AHP wipe(s); allow

1 minute drying time.

d. Monitor to open anteroom/hall door.
e. Place a disinfectant mat on the floor and saturate with Accel Intervention liquid. Locate this disinfectant mat beside the first waste drum at the periphery of PPE doffing area, closest to the hall. This receptacle is for waste generated in the anteroom.
f. Receive a new blue waste drum from staff in the hall door.
g. Place the waste drum on the saturated mat.
h. Line the waste drum with a red biohazard waste bag.
i. Place a disinfectant mat at bottom of the inside of the waste drum and saturate with Accel Intervention liquid.
j. Place an "incinerate only" sticker on the waste drum.

ix. **After Removal of Waste Drum from Anteroom – Direction for Outside Anteroom**

a. Staff removing waste from the area should only handle outer container and wheeled dolly.
b. Transfer waste drum to storage area in ambulance garage on wheeled dolly with guard rails or raised edges and load in a manner to prevent large or heavy items from tipping.
c. Unload waste drum in waste storage area in a manner to prevent tipping.
d. Disinfect wheeled dolly after each use with Accel Intervention/AHP RTU/wipes and allow to air dry before reuse.
    i. For PUIs (i.e., those awaiting test results), move the container to a designated, locked holding area with restricted access until test results are available.
        – Identify the quarantine area for storage of EVD waste prior to the identification of a PUI or confirmed case of EVD
        – Clearly mark waste storage areas with a biohazard symbol, and keep separate from other storage areas
    ii. Security Services shall close public areas during cart movement until movement is complete and floors are disinfected.
        – Housekeeping staff transport the EVD waste in the designated transport equipment directly from the patient care area via the shortest, most appropriate route to the storage area and unload. Housekeeping will follow transport route, mopping the pathway
        – Once unloaded, move the designated transport equipment to the designated disinfection area and disinfect
            • A waste drum is required for final PPE removal
        – Doff PPE (refer to Section VIII, Putting On and Taking Off PPE, for directions regarding order and process of PPE removal)
            • A trained monitor must be present for PPE removal
            • Dispose PPE in the waste drum; ensure the waste drum is placed in an appropriate location prior to arrival of Housekeeping staff

x. **Blue Waste Drum Set Up in Patient Room**

a. Place a disinfectant mat on the floor and saturate with Accel Intervention liquid. Place a waste drum (blue) on the saturated mat.
b. Place a disinfectant mat at bottom of the inside of the blue waste drum and saturate with Accel Intervention liquid.
c. Line the waste drum with a red biomedical waste bag.
d. Place an "incinerate only" sticker on the outside of the waste drum in the anteroom.
e. Place securement ring on blue drum to prevent biomedical waste bag from sliding.

xi. Storage of biomedical waste other than sharps shall be at 4 °C or lower if stored for more

than 4 days.

xii. **Sharps Disposal**
   a. Dispose of sharps in a single-use, leak-proof and puncture proof sharps container approved for EVD sharps disposal.
   b. Securely close sharps container.
   c. Wipe the container using Accel Intervention/AHP RTU/wipes.
   d. Place container in a red biomedical waste bag; securely close bag.
   e. Place in blue drum
   f. Slowly pour Accel Intervention liquid around bag (enough to touch all surfaces of the bag).
      Note: The drum must contain sufficient absorbent material to absorb any free liquid visible in the plastic bags.
      i. Locate the container at the periphery/outside of the area for doffing PPE to avoid risk of recontamination of the container during PPE removal.
      ii. Securely seal and clearly label the container indicating there is EVD-associated biomedical waste.
      iii. Disinfect the outside of the container by wiping with Accel Intervention/AHP RTU/wipes immediately before removing waste containers from the anteroom.
   g. Transport as outlined above.

P. Special Considerations
   i. **Care of a Neonate Born to a Mother Exposed to Ebola Virus, PUIs, or with Confirmed Ebola**
      Please refer to Section XVII for further information.
   ii. **Breastfeeding**: women under investigation for, or confirmed cases of EVD shall not breast feed as EVD is transmitted in breast milk. Please refer to Section XVII for further information.
   iii. **Pregnant women**:
      a. Spontaneous abortion and intrapartum hemorrhage appear to be common.
         High perinatal mortality rates among infants of women infected with the Ebola virus have been reported.
         There have been no known neonatal survivals.
         No data exist to suggest one method of delivery is preferred over others for pregnant women with EVD. Whether perinatal deaths are consequences of transplacental viral passage or viral transmission through direct contact, or from other causes, is not known.
         No data on obstetric outcomes are available from settings with highly developed healthcare systems.
         As a result, *the healthcare team caring for a pregnant patient with EVD will need to consider the likelihood of healthcare worker exposure to large amounts of blood and body fluids during labor and delivery regardless of vaginal or cesarean delivery; the overall physical condition of the patient, particularly the presence of coagulopathy; and the likelihood of neonatal survival, especially at early gestational ages. The effectiveness of interventions that result in delivery for the purpose of improving maternal outcomes in patients with EVD is unknown*.

   iv. **Renal replacement therapy (i.e., dialysis)**:
      a. Treatment decisions should be made by the clinical team caring for the patient with IP&C considerations included in decision-making.
      b. Inpatient care of patients with Ebola includes the capacity to perform continuous renal replacement therapy (CRRT). Efforts to **minimize direct blood exposure to HCWs and**

blood contamination of the environment are of principal importance.

c. Only perform CRRT in the patient's isolation room.
d. Dedicate a CRRT machine for each patient's use. Keep in the isolation room until terminal disinfection procedures are undertaken.
    i. Dispose of all other dialysis-related supplies after use (including dialyzer) in accordance with local, provincial, and federal regulations.
    ii. Do not reprocess or reuse a used dialyzer.
    iii. Standard heat or chemical disinfection procedures recommended by machine manufacturers and used routinely by dialysis providers are sufficient to inactivate Ebola virus. Perform internal machine disinfection between treatments, and carry out in the isolation room.
    iv. Pay close attention to pressure alarms and failures of pressure monitors. Look for and document any failure of tubing or spillage of fluid outside of the tubing, as these may have implications for more extensive machine disinfection procedures.
    v. If clinically appropriate, consider regional citrate anticoagulation during CRRT to reduce episodes of filter clotting that requires manipulation of the dialyzer and/or circuit. Regional citrate anticoagulation for CRRT should be used only if there is a protocol in place and staff are trained in the protocol.
e. Only a designated, highly competent individual with training in appropriate use of PPE shall perform catheter insertion.
    i. Perform catheter insertion in the isolation room.
    ii. Minimize blood exposure during dialysis catheter placement.
    iii. Avoid the subclavian site for catheter insertion due to challenges with direct site compression if bleeding occurs. Selection of the internal jugular vs. femoral vein for catheter insertion may depend on patient characteristics and operator proficiency.
    iv. Use of a chest X-ray to confirm line placement requires availability of portable X-ray equipment within the isolation room.
    v. Ultrasound guidance should be used by a fully trained individual to reduce cannulation attempts and mechanical complications, including arterial puncture. If used, dedicate the ultrasound machine to the isolation room until it can be terminally cleaned and disinfected.
    vi. Attach closed needleless connector devices to the catheter hubs to reduce blood exposure during catheter connections and disconnections.
f. Always handle dialysis effluent with care to avoid contact and splashes. Ebola virus should not be able to cross an intact dialyzer membrane; however a small dialyzer leak might not be apparent.
g. Machine Decontamination/Terminal Disinfection
    i. External surfaces
        - Clean and disinfect external surfaces in accordance with manufacturer's instructions. General principles include:
            - Perform a *cleaning* step using Accel Intervention/AHP RTU solution
            - Then perform *disinfection* also using Accel Intervention/AHP RTU solution
            - Ensure all surfaces are cleaned and disinfected (including accessory equipment such as IV poles), paying particular attention to high-touch surfaces, such as control panels. Assure sufficient wet contact time of disinfectant (i.e., one minute wet contact time)

- Ultraviolet (UV) light applications might serve to disinfect external surfaces of dialysis machines. If UV light is used, the importance of a direct line of sight for efficient disinfection must be considered

ii. Internal Machine Components
  - If there is concern about possible fluid contamination of internal machine components such as pressure monitors, contact the manufacturer for guidance. Notify the Manager, Renal Technology, and Manitoba Health Office of Disaster Management on-call Duty Officer at (204) 793-1632.

Q. Visitors
  i. Stop visitor access to the patient.
    a. JK3: visitor access is restricted. Visitors are allowed on the unit, but not in the isolation environment.
    b. PICU: limit the number of visitors to include only those necessary for the patient's well-being and care (e.g., parent, guardian or primary caregiver).
      i. Instruct visitors to speak with a nurse before entering the patient room in order to evaluate the risk to the health of the visitor, and ability of the visitor to comply with precautions. Public Health will assess the visitors for symptoms and notify the unit prior to visiting in the hospital.
  ii. Screen visitors of EVD patients for signs and symptoms of EVD before allowing their entrance to the facility.
    a. Where possible, screen by telephone prior to visitor traveling to the facility.
    b. For visitors not screened by telephone, screen at first point of identification as an EVD visitor.
  iii. Restrict visitors to visiting only one patient.
  iv. Unit staff to instruct designated visitors on the Additional Precautions required.
  v. Do not allow other visitors to enter the EVD patient care area.
  vi. Educate patients, their visitors, families and their decision makers about the precautions being used and the appropriate use of PPE, the duration of precautions, as well as the prevention of transmission of disease to others, with a particular focus on hand hygiene and respiratory hygiene. Also educate visitors on self-screening for fever.
  vii. Monitor visitor activities and compliance with use and removal of PPE in the same manner as HCWs.
  viii. Include visitors on EVD Room Entrance Log; ensure current contact information is provided.
  ix. Visitor/accompanying individual management:
    a. Asymptomatic accompanying individual
      i. Once the Attending ID specialist has conducted the patient assessment and identified the need to isolate and investigate for possibility of EVD infection
        - ID notifies the MOH per the above direction
        - Site staff to ask the accompanying individual to go home (exception: person needed for patient's well-being, e.g., parent, guardian, care-giver). WRHA Population and Public Health will follow-up contacts
        - PPE not required for transport for the accompanying person who stays; is necessary if resuscitation required for the initial transport from Children's Emergency to PICU
    b. Symptomatic accompanying individual
      i. Attending ID specialist assessment is required
        - Location of interview will depend on where patient is admitted to (i.e.,

directly to JK3/PICU, or through ER), but should happen in the same room as the patient

- PPE would be required for transport – same as required for the symptomatic patient (i.e., procedure or surgical mask). PPE is also required if resuscitation required

R. Duration of Precautions

i. For **PUIs**, precautions remain in effect until EVD is excluded. As real-time reverse transcriptase polymerase chain reaction (RT-PCR) testing for Ebola virus in blood may be negative within the first 72 hours of symptom onset, *a second test may be required (depending on clinical situation) before an EVD diagnosis can be excluded*.
   a. A single negative RT-PCR test result for Ebola virus from a blood specimen collected more than 72 hours after symptom onset, rules out EVD.

ii. Continue Additional Precautions for **patients confirmed to have EVD** until the patient is clinically improved and determined to no longer have virus circulating in the blood. This determination is based on having two negative plasma Ebola RNA RT-PCR tests at least 24 hours apart.
   a. Following confirmation by this method that virus is no longer present in blood AND consultation between the site Medical Director and IP&C, Additional Precautions for EVD can be discontinued. Approval to discontinue precautions is required from the site Medical Director, IP&C.

iii. Negative testing for EVD does not rule out infection with another Viral Hemorrhagic Fever (VHF) or other illness. Patients with appropriate epidemiological history and symptoms compatible with other VHF or other illness should remain under appropriate isolation precautions.

iv. The decision to resume routine testing practices will only be done in consultation with the Shared Health AOC, public health representatives and the patient's primary care provider.

v. The decision to modify or discontinue Additional Precautions shall rest with the Medical Director, IP&C/designate (except Child Health) or Site Director, Child Health Infection Prevention and Control/designate, in consultation with the IP&C staff and a MOH/delegate.
   a. In every case where there is modification of precautions, written documentation in the patient health record shall justify the action.
   b. Unit/area staff are to notify affected departments of any modifications to isolation precautions.

vi. Upon discontinuing precautions, advise patient some body fluids remain positive after the virus is no longer detectable in the blood, and advise on the appropriate personal precautions to take with close contacts.
   a. Ebola can remain in semen for up to at least 9 months
   b. Breast milk may be positive for Ebola after infection.

S. Patient Discharge Following Successful EVD Treatment - Ambulatory Patients

i. Manage patients' personal property as biomedical waste (due to the risk of transmission). Upon confirmation of EVD status, dispose of as biomedical waste; do not return to the patient.

ii. Prior to Discharge – Ambulatory Patients:
   a. Housekeeping shall disinfect all surfaces within the patient room and anteroom with Accel Intervention/AHP RTU/wipes while the patient is still in the room. Mop floors with Accel Intervention/AHP RTU, from the patient room to anteroom door.
   b. Have patient shower from head to toe for 10 minutes with chlorhexidine gluconate

(CHG).

c. While the patient is showering, Housekeeping shall mop floors in patient's room and anteroom. Housekeeping shall also wipe the anteroom door plate with Accel Intervention/AHP wipes and allow required contact time.
d. The nurse in the room is to create a clean pathway from the shower to the anteroom door using disposable pads. The nurse in the anteroom is to create a clean path from the door of the patient's room to the corridor/hall.
e. Have patient dry off and dress in clean, disposable gown, hair cap, and overshoes. Do not contact patient.
f. Have patient walk on clean path from shower area to clean room, leaving everything behind. Personal property must be decontaminated using vaporized hydrogen peroxide (VHP). If using a walker to walk to room, obtain a new walker and have it sitting outside of anteroom. Do not use walker from room.
g. Unit staff shall clear the unit corridor.
    i. Once cleared, Housekeeping shall mop corridor floors with Accel Intervention/AHP RTU.
    ii. Place clean disinfectant mat at unit exit.
h. Once the patient has donned the clean, disposable gown, cap, and overshoes:
    i. Relocate patient to a clean, adjacent patient room to shower for 10 minutes with CHG.
    ii. Patient to remove his/her gown, cap, and overshoes in the shower space.
    iii. Staff to dispose of the above removed items as biomedical waste.
i. While the patient is showering:
    i. Use Accel Intervention/AHP RTU to mop the path the patient walked to enter the shower.
    ii. Remove PPE and dispose in no-touch waste receptacle as biomedical waste.
    iii. Housekeeping shall clean and disinfect the anteroom; then remove biomedical waste from this space.
j. After the patient has taken a CHG shower:
    i. Patient dons clean, personal clothing and overshoes.
    ii. Place disinfectant mat in hall just outside anteroom door.
    iii. Direct patient (verbally) out of the patient room, into the hall.
        - Patient will be met by another HCW waiting in hall just outside the anteroom door .
            - This HCW shall be wearing Assistant PPE with shoe covers and overshoes.
        - Ensure patient maintains contact with the disinfectant map (in overshoes).
        - Provide a clean, wipeable chair for patient.
            - Do not contact overshoes with bare skin (either patient or staff)
            - The patient shall sit on the chair to remove overshoes and apply personal footwear
            - Once the patient's personal footwear is put on, have patient step on disinfectant mat with both shoes, then step off
                a. Dispose overshoes and disinfectant mat as biomedical waste
        - Escort patient to the unit's exit corridor. Upon exiting the unit, ensure
            - Patient contacts the disinfectant mat with personal footwear
            - Patient performs hand hygiene
        - Collect the overshoes, disinfectant mats, and chair and return to the

shower isolation room.
    - Dispose of the overshoes and disinfectant mats in the anteroom as biomedical waste, in a no-touch waste receptacle
    - Keep chair in the anteroom to ensure its included in the discharge cleaning
    - Remove PPE; dispose as biomedical waste in a no-touch waste receptacle
  - Housekeeping to perform discharge cleaning per Section H, Environment, (including the chair)

iii. Patient Discharge Following Successful EVD Treatment – Non-Ambulatory Patients:
  a. Housekeeping shall disinfect all surfaces within the patient room and anteroom with Accel Intervention/AHP RTU/wipes while the patient is still in the room; this includes the bed. Mop floors with Accel Intervention/AHP RTU, from the patient room to anteroom door.
  b. Bathe patient from head to toe for 10 minutes with CHG (two nurses in the room to assist). Change the sheets. Cover patient in clean sheets.
  c. While the patient is being bathed, Housekeeping shall mop floors in patient's room and anteroom. Housekeeping shall also wipe the anteroom door plate with Accel Intervention/AHP wipes and allow required contact time.
  d. Clean the stretcher chair and cover with disposable disinfectant pads to be sure the bed and the stretcher chair do not touch during transfer.
  e. Create a clean path from the patient's room door to the corridor/hall with disinfectant mats.
  f. The nurses in the patient room shall create a clean path to roll the stretcher chair in and out of the room from the patient's bed to the anteroom door using disinfectant mats.
  g. The nurse in the anteroom will roll the stretcher chair into the room and the two nurses at bedside will transfer the patient on to the stretcher chair, cover patient with sheet, and roll over the mats to the corridor/hall to the new room.
  h. Unit staff shall clear the unit corridor.
    i. Once cleared, Housekeeping shall mop corridor floors with Accel Intervention/AHP RTU.
    ii. Place clean disinfectant mat at unit exit.
  i. Wipe the stretcher chair with disinfectant wipes before entering the new room and transferring patient to new bed.
  j. Remove sheets; dispose as biomedical waste.
  k. Bathe patient for 10 minutes with CHG.
  l. Transfer patient to clean bed. Don patient in clean, personal clothing.
  m. Clean and disinfect stretcher chair.
  n. Use Accel Intervention/AHP RTU to mop the floors
  o. Remove PPE and dispose in no-touch waste receptacle as biomedical waste.
  p. Housekeeping shall clean and disinfect the anteroom; then remove biomedical waste from this space.
  q. Place disinfectant mat in hall just outside anteroom door.
  r. Roll the patient out of the patient room, into the hall.
    i. Patient will be met by another HCW waiting in hall just outside the anteroom door.
      - This HCW shall be wearing Assistant PPE with shoe covers and overshoes
    ii. Ensure wheels of the stretcher chair maintain contact with the disinfectant mat.

s. Roll patient to the unit's exit corridor. Upon exiting the unit
    i. Dispose of disinfectant mats in the anteroom as biomedical waste, in a no-touch waste receptacle
    ii. Keep chair in the anteroom to ensure inclusion in the discharge cleaning
    iii. Remove PPE; dispose as biomedical waste in a no-touch waste receptacle
t. Housekeeping to perform discharge cleaning per Section H, Environment, (including the chair).

T. Handling Deceased Bodies

i. Prior to handling the remains, contact the Office of the Chief Medical Examiner (OCME) at (204) 945-2088. Refer to Section XII, Process Flow for PUI or Confirmed Deceased EVD Body.
    a. If after hours, listen to the message to obtain the on-call Medical Examiner Investigator's (MEI) contact information and contact the MEI directly. Where EVD has not already been confirmed, the OCME will consult with an Attending ID Specialist to determine if cadaveric sampling for EVD is recommended (i.e., person meets the PUI case definition).
ii. Comply with the Public Health Act Dead Bodies Regulation (available at: https://www.canlii.org/en/mb/laws/regu/man-reg-27-2009/latest/part-1/man-reg-27-2009-part-1.pdf)
    a. Bodies must be wrapped and securely sealed in at least two leak-proof body bags. *The outer bag has handles to facilitate safe handling.*
    b. Ensure Death Package is completed.
        i. Prepare red-coloured toe tag and Public Health Notice label.
        ii. Complete all required documentation per the instructions for completion.
        iii. Have clear packing slip window ready.
iii. Keep the handling of human remains to a minimum.
iv. Keep transportation of human remains to a minimum.
v. Contact Security Services to accompany funeral home staff to their vehicle.
vi. Notify mortician
    a. The body has EVD.
    b. Transport the remains of confirmed cases directly to the mortuary facility.
    c. Use Routine Practices and Contact Precautions during transport.
    d. Viewing of the body is not permitted.
    e. The body bag is not to be opened.
    f. Embalming must not occur. Cremation or immediate burial in a hermetically sealed casket constructed of, or lined with, metal or other impervious material is required.
    g. Autopsies will not be performed on cases under investigation for, or those with confirmed EVD. Presence of EVD will be confirmed before autopsy on PUIs.
    h. Cadaveric sampling is required in rare circumstances where EVD is suspected after consultation with ID, but no prior testing for EVD has been performed. Contact the Shared Health AOC at 1 (877) 437-4861 to advise cadaveric sampling is required. Where cadaveric sampling is required, Shared Health will instruct the mortuary service where to pick up the body after sampling has occurred.
    i. The body must be buried or cremated as soon as possible after death (within 48 hours), unless written permission to postpone burial or cremation has been obtained from a Medical Officer of Health. The body must not be accompanied by any contaminated articles (excluding medical devices that have been left in place). If the body is cremated, ashes are not an infectious risk and can be released to the family.

i. Bodies not destined for cremation must be enclosed in a coffin at the earliest time possible after death
   - Constructed of or lined with, metal or other impervious material and hermetically sealed OR
   - Placed in a tightly constructed outer container that is constructed of, or lined with, metal or other impervious material and is hermetically sealed.

ii. Attach a second label to the head of the coffin or to the outer container (whichever is hermetically sealed) as soon as practically possible that states
   - PUBLIC HEALTH NOTICE
     This body is or is suspected to be infected with a designated disease specified in the Dead Bodies Regulation under *The Public Health Act* and must be handled in accordance with that regulation.
     Do not open the hermetically sealed container.
     Do not remove this label.

vii. Follow Routine Practices and Contact Precautions for handling deceased bodies or for transfer to mortuary services. Routine Practices includes PPE to protect against splashing and sprays of blood and body fluids; mask and facial protection are recommended for handling deceased bodies.
   a. Droplet or Airborne Precautions are not required.

viii. Minimally, 3 HCWs are required in the patient room. Minimally, 2 additional HCWs are also required in the anteroom.

ix. In the patient room:
   a. Do not wash or clean body.
   b. Leave medical devices (e.g., intravenous or urinary catheters, endotracheal tubes) in place.
   c. Remove footboard from bed; lower all side rails.
   d. Apply occlusive dressings over areas of remains that may be at risk for leaking.
   e. Wrap head with Hygie pad, then blue pad, covering face first and then back of head; secure in place with Kerlix and waterproof tape.
   f. Perform glove hygiene with Accel Intervention/AHP RTU
      i. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   g. Consider placing Hygie products where body fluid leakage may occur prior to wrapping body of linen. Wrap the body in the bed sheets and flannel blanket to absorb fluid leaks. Take care to prevent the contamination of the exterior surface of the cover.
   h. Perform surface decontamination of the top surface of the mattress. Ensure surface remains wet for 1 min for an adequate contact time.
   i. Perform glove hygiene with Accel Intervention/AHP RTU.
      i. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
   j. Wrap the covered body in a clear, leak-proof bag (internal clear bag) at the site of the death, starting from the head, and working the bag down the body. Take care to prevent contamination of the exterior surface of the bag. Tightly twist bag several times; secure with zip tie. Twist bag distal to zip tie and fold back; secure with a second zip tie. Check first zip tie to ensure it is tight. Wrap waterproof tape several times around where the bag was folded back on itself and secured with second zip tie.
   k. Perform surface decontamination of the external surfaces of the clear bag.
      i. Turn body and disinfect underside of bag and mattress surface; allow 1 minute wet contact time. Place slider board on bed.

ii. Return body to supine position. Disinfect top side of bag and exposed bed surfaces. Allow 1 minute contact time with all surfaces.
iii. Perform glove hygiene with Accel Intervention/AHP RTU
- Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.

l. Wrap the covered body in a second clear, leak-proof bag (external clear bag), starting from the feet, and working the bag up the body. Take care to prevent contamination of the exterior surface of the bag. Tightly twist bag several times; secure with zip tie. Twist bag distal to zip tie and fold back; secure with a second zip tie.
m. Perform surface decontamination of the external surfaces of the clear bag.
i. Turn body and disinfect underside of bag and mattress surface; allow 1 minute wet contact time. Place slider board on bed.
ii. Return body to supine position. Disinfect top side of bag and exposed bed surfaces. Allow 1 minute contact time with all surfaces.
n. Perform glove hygiene with Accel Intervention/AHP RTU
i. Immerse gloved hands into basin; rub together in Accel Intervention/AHP RTU solution without splashing.
o. Unlock the brakes on the bed and raise it to appropriate pushing height for shortest HCW (elbows at approximately 90 degrees). Push from the head of the bed together to move the bed as close to the door as possible, without entering the anteroom. The foot end of bed should be facing the door.
p. Unplug bed and wrap cord on bed frame to prevent creating a tripping hazard.
q. Move/place bed, such that the foot of the bed is turned to the door between the patient room and the anteroom.
r. Disinfect anteroom door handle and plate with Accel Intervention/AHP wipe(s); wait one minute after disinfection, then open door.

x. In the anteroom:
a. 2 HCWs, minimally, shall be prepared to receive the wrapped body.
i. Bring in hard slider board with stretcher.
b. Bring the stretcher into the anteroom space.
i. Place third (outer) black, leak proof bag onto the stretcher and place an absorbent pad in the leak proof bag. Ensure bag is unzipped and open to receive body.
c. Bridge the gap between patient bed and stretcher with the hard slider (under the black bag). Ensure patient bed does not enter anteroom. Place an Accel Intervention/AHP soaked disinfectant mat liner between the patient bed and the stretcher. Ensure the Accel Intervention/AHP soaked disinfectant mat liner is on the second white hard slider board (tuck end of mat liner between the slider board and the patient bed to hold it in place).
d. Fold and roll the clear body bag to help create grip on bag.
e. Once the body crosses the threshold between the two rooms, place into a third (outer) black, leak proof bag with an absorbent pad. Zip bag closed. Once closed, do not re-open the body bag.
f. Attach red coloured ‘toe tag’ to the outer body bag in a clear packing slip window, indicating the person was under investigation for, or considered a confirmed case of EVD.
g. Attach a label to the outer bag that states
- PUBLIC HEALTH NOTICE
This body is or is suspected to be infected with a designated disease

specified in the Dead Bodies Regulation under The Public Health Act and must be handled in accordance with that regulation.
Do not open the hermetically sealed container.
Do not remove this label.

h. Perform surface decontamination of stretcher and body bag; allow 1 minute wet contact time.
i. HCWs in the patient room to move patient bed away from anteroom door, close door and remain in room until body removal process complete.

xi. Outside of the anteroom:
a. Ensure funeral home stretcher is outside the anteroom with the cardboard box and additional plastic slider.
b. Align the stretcher within the anteroom with the hall door.
c. Open hall anteroom door.
d. Place second hard plastic slider board under the body, with end of the slider overhanging the stretcher, enough to bridge the gap between stretcher and funeral home stretcher.
e. Ensure funeral home stretcher is adjusted to a height slightly lower than the patient stretcher.
f. In unison with the HCWs in the anteroom, slide the body onto the funeral home stretcher by sliding the body bag over the bridge.
g. Place anteroom stretcher and second slider in patient room for inclusion in terminal cleaning.
h. Staff to exit patient room and enter anteroom to doff PPE one at a time, per normal processes outlined in Appendix VIII.

xii. Clean and disinfect all equipment used in the transport of the body with Accel Intervention/AHP RTU/wipes immediately after use and allow to air dry.
a. Security Services shall close public areas during movement of the body until movement is complete and floors are disinfected.
i. Transport of the body shall occur directly from the patient care area via the shortest, most appropriate route. Housekeeping will follow transport route, mopping the pathway
ii. A waste drum is required for final PPE removal
iii. Doff PPE (refer to Section VIII, Putting On and Taking Off PPE, for directions regarding order and process of PPE removal)
- A trained monitor must be present for PPE removal
- Dispose PPE in the waste drum; ensure the waste drum is placed in an appropriate location prior to arrival of Housekeeping staff

U. Blood and Body Fluid Exposures
i. Immediately apply first aid and seek medical attention if there has been a percutaneous or muco-cutaneous (i.e., mucous membranes of the eyes, nose, or mouth) exposure to blood, body fluids, secretions, or excretions from a patient. Staff shall *immediately and safely stop any current tasks, leave the patient care area, and remove PPE.*
a. Remove PPE slowly because exposure during PPE removal can be just as dangerous for transmission of EVD.
b. Assistant: apply 1 cup of Accel Intervention/AHP RTU to the sink drain in the decontamination space.
c. Express wound. Thoroughly rinse the site of a percutaneous injury with running water for at least 5 minutes; gently cleanse any wound with soap and water immediately after

leaving the patient care area (in the decontamination space).

d. Flush mucous membranes of the eyes, nose, or mouth with copious amounts of water or an eyewash solution, as outlined in the Blood and Body Fluid Exposure Safe Work Procedure.
e. Assistant: apply 1 cup of Accel Intervention/AHP RTU to the sink drain in the decontamination space.

ii. Immediately report to manager/supervisor, who will ensure the Source Risk Assessment and Source Testing are completed as per the Blood and Body Fluid Post Exposure Protocol.
iii. Immediately report the incident to OESH by calling (204) 232-9075. This is a time-sensitive task and must be performed as soon as the HCW leaves the patient care unit.
Note: The window period between exposure and development of symptoms is a minimum of 48hrs. The incubation period is usually from 5 to 10 days, with a range of 2 to 21 days.
a. Exposed persons will be *medically evaluated* including for other potential exposures (e.g., HIV, HCV) and *receive follow-up care*, including fever monitoring, twice daily for 21 days after the incident.
b. OESH will consult with an Attending ID specialist. Dependent upon the severity of the exposure, the ID Specialist will recommend one or a combination of the following: self-monitoring, direct active monitoring, or restriction of activities/self-isolation under the direction of OESH.
iv. Notify Housekeeping and Facilities Management regarding use of the sanitary sewer.

V. Monitoring of Staff
i. Staff identified below shall receive direction and review the process for monitoring. This includes:
a. Recording of baseline temperature.
b. Correct usage of the supplied thermometer.
c. When to begin temperature self-monitoring, and how to record and/or report temperatures.
d. When, and to whom, temperature readings should be reported, including the necessary contact information.
e. A reminder that any change in health status should be immediately reported to OESH for further evaluation.
ii. OESH will interview any HCW who has self-reported a positive travel history and determine if further action is required in addition to the monitoring of travelers from these areas conducted by Public Health.
iii. OESH will direct any HCW who has cared for patients under investigation, as well as confirmed cases of EVD, to
a. Self-monitor for early signs and symptoms of EVD including fever, severe headache, muscle pain, malaise, chest pain, sore throat, vomiting, diarrhea and rash beginning the first day of contact and continuing for 21 days after last patient contact. Self-monitoring includes:
i. Record temperature twice daily on the provided Temperature Monitoring Form
ii. Report any fever to OESH immediately by calling (204) 232-9075.
iii. Refrain from taking any antipyretic medication during the monitoring period if possible.
iv. If any signs/symptoms listed above arise self-isolate as quickly as possible and immediately notify OESH at (204) 232-9075.
v. OESH will immediately consult an Attending ID Specialist for any exposed

person who develops fever or other symptoms within 21 days of exposure.

iv. OESH will interview any HCW who has had exposure to a PUI or confirmed case of EVD without appropriate PPE, **OR** had a percutaneous or muco-cutaneous injury, and will immediately consult an Attending ID specialist to discuss the setting and information gathered regarding the HCW exposure. Dependent upon the severity of the exposure as determined by this information, the Attending ID specialist will recommend one or a combination of the following:
    a. Self-monitor as outlined above
    b. Direct active monitor for early signs and symptoms of EVD including fever, severe headache, muscle pain, malaise, chest pain, sore throat, vomiting, diarrhea and rash beginning the first day of contact and continuing for 21 days after last patient contact. Direct active monitoring includes:
        i. Direct observation by the Occupational Health Nurse (OHN) of the staff member at least once a day to review possible early signs and symptoms and temperature check
        ii. Second follow up per day done by telephone.
        iii. Recording of temperatures twice daily on the Temperature Monitoring Form, which is kept on the Occupational Health file
        iv. Reporting of any fever to OESH immediately by calling (204) 232-9075
        v. Refraining from taking any antipyretic medication during the monitoring period if possible
        vi. If any signs/symptoms listed above arise self-isolate as quickly as possible and immediately notify OESH at (204) 232-9075.
        vii. OESH will immediately consult an Attending ID specialist for any exposed person who develops fever or other symptoms within 21 days of exposure.
    c. Restrict activities and self-isolate as determined by the Attending ID specialist and Public Health.

v. OESH will manage HCWs while asymptomatic during the self-monitoring period following the recommendations outlined in this document.
    a. If a HCW becomes symptomatic, OESH will immediately consult an ID specialist.
    b. If the Attending ID specialist, after assessment, indicates treatment or admission is required, the processes outlined in this document will be followed.

vi. Contact tracing and follow-up of family, friends, and other patients, who may have been exposed to a confirmed case of Ebola virus will be managed through Public Health.

vii. Contact tracing and follow-up of co-workers who may have been exposed to a confirmed case of Ebola virus will be managed through OESH.

W. Facilities Management (Maintenance & Housekeeping) & Supply and Distribution Services (Traffic)
    i. Conduct an initial assessment of the AIIRs to ensure appropriate room functioning/airflow.
    ii. Monitor AIIR *daily and document status of unidirectional airflow functioning (Maintenance).*
    iii. Provide ventilation-monitoring report to IP&C on a daily basis, or as required *(Maintenance)*.
    iv. If test results indicate segregated waste is from a *confirmed case* (*Housekeeping and/or Traffic)*:
        a. Transport the plastic or metal single-use drum in a closed means of transport.
        b. Personnel handling or offering the dangerous goods for transport are trained in the conditions of the Equivalency Certificate SH 11519.
        c. Requirements of Transportation of Dangerous Goods Regulations are complied with.
        d. A paper or electronic copy of the Equivalency Certificate SH 11519 accompanies the

dangerous goods.

e. The shipping manifest includes (legibly and indelibly printed): “Equivalency Certificate No. SH 11519”.

IV. ROLES and RESPONSIBILITIES

A. Unit/Area nurse shall IMMEDIATELY, upon consideration of a person under investigation for EVD

i. Implement **Enhanced Droplet/Contact Precautions plus additional Infection Prevention and Control measures for EVD**

a. Apply the following PPE (refer to Section VIII, Putting On and Taking Off PPE, for directions regarding order of PPE application and removal)

i. Disposable (or non-disposable to be destroyed) scrubs - dedicate these to the EVD area/care of patients under investigation for, or confirmed cases of EVD.

ii. Visually inspect the PPE to be worn to ensure it is in serviceable condition, all required PPE and supplies are available, and sizes selected are correct for the healthcare worker.

iii. Apply disposable coveralls over scrubs.
Remove disposable coveralls in a manner minimizing self-contamination prior to leaving EVD anteroom.

iv. Gloves (long gloves that fit securely over gown cuff without rolling over; different colours; pulled over the cuff of the gown so there is not exposed skin or clothing). Double glove. Ensure nails are no longer than 1/4” so they do not puncture gloves.

- The longer-extended cuff, closer-fitting BLUE nitrile gloves shall be worn as the inner glove.
- The extended cuff GREEN nitrile gloves shall be worn as the outer glove.

v. Gown (fluid repellent) – it is recommended personal clothing not be worn under the gowns. Use disposable scrubs.

vi. N95 Respirator:

- Apply N95 respirator prior to entering the patient room
- Staff must be fit tested to determine the appropriate size N95 respirator. Seal check these respirators when applied.

vii. Procedure or Surgical Mask (Assistant PPE):
Assistant to apply a procedure or surgical mask prior to entering the anteroom

viii. Face protection (disposable face shields)
Note: masks with visors are not suitable; face shields should be long enough to prevent splashing underneath; eye glasses are not suitable eye protection.

b. Additional PPE such as fluid resistant shoe/leg coverings are routinely recommended for direct patient care until reassessed by IP&C.

c. Report any breaches to the Monitor (both Primary and Assistant).

d. Avoid AGMPs unless absolutely necessary. If AGMPs are to be performed a N95 respirator is required for all persons in attendance. Staff must be fit tested to determine the appropriate size of respirator. These respirators must be seal checked when applied.

ii. Consult the Emergency Department/Attending Physician.

iii. Notify Unit/Area Manager.

B. Emergency Department/Attending Physician shall

i. Assess patient to determine if he/she fits the criteria for a person under investigation.

ii. Consult the Attending ID Specialist on call; *consultation is mandatory for all cases*. When calling paging, indicate call is Ebola-related.
    a. Children's Hospital: call Pediatric ID through HSC paging at (204) 787-2071
    b. All others: call HSC Attending ID through HSC paging at (204) 787-2071
iii. Coordinate care of patient in consultation with Attending ID specialist on call

C. Unit/Area Manager/designate shall
    i. Confirm notification/consultation of the appropriate Attending ID Specialist on call service.
    ii. Notify Medical Director(s) of the Adult and/or Children's Emergency Department(s).
    iii. Notify Medical Director, IP&C/designate or Site Director, Child Health IP&C/designate.
    iv. Notify OESH by calling (204) 232-9075.
    v. Notify Administrator On Call/designate.
    vi. Notify Infection Control Professionals (ICPs) with responsibility for the unit to which the patient(s) will be admitted.
    vii. Ensure the Source Risk Assessment and Source Testing is completed post-blood/body fluid exposure, as per the Blood and Body Fluid Post Exposure Protocol.

D. Medical Director, IP&C/designate or Site Director, Child Health IP&C/designate shall
    i. Notify site Chief Medical Officer if there is a potential for patient under investigation, or confirmed case(s). Decisions to implement the Hospital Incident Command System (HICS) will be communicated by site Executive.
    ii. Coordinate and direct site IP&C measures in coordination with WRHA IP&C, ensuring liaison with the hospital departments and personnel for whom the events have impact (e.g., laboratories, Diagnostic Imaging).
    iii. Discontinue Enhanced Droplet/Contact Precautions and additional IP&C practices following resolution of symptoms and case-by-case patient assessment, in consultation with the Chief Medical Officer of Health/delegate.
        a. Precautions shall remain in place until symptoms resolve.
        b. In every case where there is modification of precautions, written documentation in the patient health record shall justify the action.

E. Attending Infectious Diseases Specialist shall
    i. Respond to '25*' followed by the call back number in a timely manner. This code reflects EVD-related calls.
    ii. Complete a risk assessment of the patient to determine if the clinical presentation and epidemiology are consistent with EVD. If consistent, the Attending ID Specialist shall
        a. Notify the MOH at (204) 788-8666.
        b. Notify CPL to initiate appropriate specimen collection and testing through HSC paging at (204) 787-2071.
        c. Notify the Shared Health AOC at 1 (877) 437-4861 to initiate appropriate specimen collection and testing.
            i. Where a patient presents to a WRHA facility other than HSC and the patient is too unstable to transport, contact the Shared Health AOC immediately at 1 (877) 437-4861.
        d. Notify/liaise with the Ebola physician through HSC paging at (204) 787-2071.
        e. Liaise with appropriate Medical/Site Infection Prevention and Control Director and ICPs.
        f. Liaise with appropriate Manager of Occupational Health and Occupational Health Nurses if patient is also a staff member.

F. Security Services Staff shall
   i. Provide security during patient transport, transport of confirmed EVD waste, surveillance of storage sites, as well as on the unit if required, i.e., clear the elevator and transit corridors of all persons non-essential to the transfer of the patient prior to patient transport.

G. Infection Prevention and Control Staff shall
   i. Communicate with appropriate authorities, administrative personnel, department heads, and other affected personnel on an ongoing basis.
   ii. Collaborate with appropriate Public Health departments where patient, significant others, or other contact follow-up or investigation may be required due to exposure.
   iii. Notify any appropriate receiving facility, physician, other involved health care agencies, or health care departments of an inter-hospital patient transfer/discharge, where indicated.
   iv. Introduce further recommendations if required on an ongoing basis in consultation with appropriate individuals.
   v. Provide training with respect to IP&C precautions for designated individuals.
   vi. Act as trained monitors at the designated area for the first 48 hours.

H. Occupational and Environmental Safety and Health (OESH) shall
   i. Assist staff with the self, or direct active monitoring process beginning the date of first exposure and continuing for 21 days after the last patient exposure.
   ii. Contact an Attending ID Specialist immediately if any staff being monitored report any signs/symptoms.
   iii. Promptly evaluate and care for healthcare workers exposed to blood or body fluids.
   iv. Provide fit testing of N95 respirators.
   v. Provide training related to self-monitoring and OESH safe work procedures for designated individuals.

I. Ebola Site Manager shall
   i. Oversee the overall safe and effective delivery of EVD patient care at all times.
   ii. Maintain responsibility for all aspects of EVD management in a facility.
   iii. Oversee implementation of administrative and engineering controls.
   iv. Evaluate care before, during and after staff enter an isolation or treatment area.
   v. Know the hazards for any potential exposure to blood, body fluids or surfaces contaminated with Ebola virus.
   vi. Be responsible to ensure HCWs use the PPE required by the employer.
   vii. Provide immediate corrective real-time instruction if staff aren't following recommended steps
   viii. Know and apply the EVD decontamination plan in event of breach in procedure.
   ix. Monitor and evaluate supplies.
   x. Coordinate and support the plan to limit entry to room/space to only essential staff.

J. Trained Monitor shall
   i. Act as the dedicated individual with the sole responsibilities of guiding staff through the entire donning and doffing process; observing healthcare worker interactions in the patient environment; and logging all individuals who enter the anteroom/patient room.
   ii. Be knowledgeable about all PPE recommended in the facility's protocol and the correct donning and doffing procedures, including disposal of used PPE.
   iii. Provide guidance and technique recommendations to the healthcare worker(s).
   iv. Use closed-loop communication for clarity (i.e., when giving a command, have the healthcare worker repeat the command back so there are no misunderstandings).
   v. Guide staff through donning and doffing procedures, providing directions and immediate

corrective instruction if the healthcare worker is not following the recommended steps.

a. Guide/read aloud to HCW, each step in putting on and taking off PPE (use checklist). Keep staff calm and proceeding at a slow and deliberate pace.
b. Visually confirm and document that each step was completed correctly for PPE use and removal.
c. Ensure PPE fits correctly and all skin is covered before the HCW enters patient room.
d. During PPE removal, observe and verbally assist (not physically) with removal of specific components of PPE as indicated in the PPE checklist.

vi. Monitor healthcare worker interactions and technique in the care environment constantly for safe practice and worker fatigue.
vii. Know and direct the decontamination process in the event of a break in procedure.
viii. Complete EVD Incident Log as required.
ix. Work with healthcare workers to establish 'red flag' words so any situations can be handled by all parties involved.
x. Provide cueing when glove changes or immersion is required while in the isolation room.
xi. Utilize communication devices as needed (e.g., intercom system, Vocera).
xii. Not enter the patient room or anteroom.

V. National EVD Case Definitions

A person with EVD-compatible symptoms is defined as an individual presenting with fever (temperature ≥ 38.0° C) **OR** <u>at least one</u> of the following symptoms/signs:

- subjective fever
- malaise
- myalgia
- headache
- arthralgia
- fatigue
- loss of appetite
- conjunctival redness
- sore throat
- chest pain
- abdominal pain
- nausea
- vomiting
- diarrhea that can be bloody
- hemorrhage
- erythematous maculopapular rash on the trunk

Epidemiological Risk Factors:

- Individual who cared for a case of Ebola Virus Disease (EVD)
- Laboratory worker handling Ebola virus or processing body fluids from a case of EVD
- Individual who spent time in a healthcare facility where cases of EVD are being treated in a country/region with widespread and intense Ebola virus transmission
- Sexual contact with an EVD case
- Close contact in households, healthcare facilities, or community settings with a person with Ebola while the person was symptomatic - close contact is defined as being for a prolonged period of time within approximately 2 meters (6 feet) of a person with Ebola
- Contact with any human remains of a case of EVD or contact with human remains in a country/region with widespread and intense Ebola virus transmission
- Contact with bats, primates or wild animal bush meat from affected countries/regions
- Travel history to a country/region with widespread and intense Ebola virus transmission within 21 days constitutes a low risk factor

A. Person Under Investigation (PUI):

A person with EVD-compatible symptoms (as defined above) **AND** EVD has not been ruled out.

- Travel history to a country/region with widespread and intense EVD transmission within 21 days of symptom onset **OR** exposure to one of the epidemiological risk factors within 21 days of

symptom onset
- With or without pending laboratory results for EVD

B. **Confirmed Case:**

A person with laboratory confirmation of EVD infection using at least one of the methods below:

- Isolation and identification of virus from an appropriate clinical specimen (e.g., blood, serum, tissue, urine specimens or throat secretions) (performed at the NML) **OR**
- Detection of virus-specific RNA by reverse-transcriptase PCR from an appropriate clinical specimen (e.g., blood, serum, tissue) using two independent targets or two independent samples **AND** confirmed by the NML by nucleic acid testing or serology **OR**
- Demonstration of virus antigen in tissue (e.g., skin, liver or spleen) by immunohistochemical or immunofluorescent techniques **AND** another test (e.g., PCR) **OR**
- Demonstration of specific IgM AND IgG antibody by EIA, immunofluorescent assay or Western Blot by the NML or an approved WHO collaboration centre **OR**
- Demonstration of a fourfold rise in IgG titre by EIA, immunofluorescent assay from an acute versus a convalescent serum sample (performed at the NML)

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VII. EVD ROOM ENTRANCE LOG

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / *À l'écoute de notre santé*

EBOLA VIRUS DISEASE ROOM ENTRANCE LOG

Room Number: _____

Date D D M M M Y Y Y Y	First Name	Last Name	Department	Contact Number	Entrance Time 24 HOUR	Exit Time 24 HOUR

FORM #XXXXX 12/14

VIII. PUTTING ON AND TAKING OFF PPE

Equipment Required

- Disposable (or non-disposable to be destroyed) scrubs (dedicated to the EVD area/care of patients under investigation for, or confirmed cases of EVD)
- Vocera device
- Fluid-resistant coveralls with attached hood
- Impermeable gown
- Long gloves (differing colours) with secure cuff x2
- Fluid-resistant shoe/leg coverings
- N95 respirator
- Procedure/Surgical mask for Assistant
- Full face shield
- Cooling vest and inserts
- Vocera
- *Hood with bib attachment (ONLY if neck area unprotected by coverall and full face shield)*
- Overshoes (single use) *if slipping hazard anticipated*
- Dedicated closed toe and heel shoes that tolerate disinfection within the isolation room and anteroom (i.e., not canvas/fabric)
- Basin for Accel Intervention/AHP RTU solution x 3 (2 in anteroom, 1 in patient room)
    - Basins should be filled to where gloved hands can be safely immersed and rubbed together without overflow or splashing
- Accel Intervention/AHP RTU solution
- Accel Intervention/AHP wipes
- Mayo stands, table or counter to support basins with solution
- Tape for marking anteroom floor (identify space for contaminated staff and assist staff)
- Walk-off mats for disinfectant

PRE-DONNING CONSIDERATIONS

- Introduce self/assigned staff and clarify roles
- Wearing makeup is not recommended as it impairs user comfort due to facial sweat.
- Consider using the toilet before putting on the PPE.
- Drink 1–2 litres of water before putting on the PPE to prevent dehydration. Profuse sweating is unavoidable while working with PPE so this won't cause the HCW to need to use the toilet.
- Fasting is not recommended before working with PPE.
- Ensure Vocera is fully charged
- Check PPE items before starting the donning process; look for damage and irregularities like holes and cracks, and correct sizing
- Prepare cooling vest by ensuring ice pack inserts lay flat when placing in freezer. Ice packs require at least one hour in the freezer to freeze
- Once ice packs are frozen, insert into both front and back of cooling vest
- Has EVD PPE training/N95 fit test/vocera training been completed? Have any exclusion criteria been met (pregnant, open skin/lesions to forearms, medical conditions as determined by Occupational and Environmental Safety and Health)?
- Is it necessary to enter the room?
- Establish closed loop communication: e.g., establish eye contact and verbal prompt prior to activity; hand signals; code or red flag words
- Ensure self-awareness of habitual behaviours and the importance of minimizing them. Habitual behaviours include actions people do on a daily basis and without conscious thought, such as nose rubbing or beard stroking. People also carry out automatic actions in response to a stimulus, such as wiping sweat away from the forehead

Donning PPE – Outside Anteroom

Healthcare Worker Name _____ Date _____
Monitor Name _____ Time _____

PRIMARY PPE – DONNING OUTSIDE ANTEROOM	Key Points/ Considerations	✓	Comments
Don disposable scrubs and dedicated shoes	• On arrival to unit • In change room		
Remove lanyards, watches, rings, pocket contents, and other unnecessary items/items that can dangle	• Staff to place with their clothing in designated area		
Pull back hair from face and neck and securely tie/pin back as required. For longer hair, pull hair back and up into a bun	• Hair to be away from face and neck and securely tied back as required • Longer hair may touch outside of coveralls during doffing if not put up		
Don cooling vest	• Separate vest into front and rear panel • Monitor to place rear panel onto back of Primary • Primary holds panel in place • Monitor brings front panel in and securely connects shoulder Velcro straps • Connect waist straps; use waist extender straps if required		
Don Vocera	• Ensure top of badge is no more than six inches from chin		
Perform HH	• ABHR unless visibly soiled, wash if soiled		
Visually inspect PPE	• Ensure is in serviceable condition • Ensure all required PPE/supplies are available • Ensure sizes selected are correct for PPE user		
Perform HH	• ABHR unless visibly soiled, wash if soiled		
Don inner set of BLUE longer-extended cuff, closer-fitting gloves	• Good fit, no tears, pulled up completely		
Don coveralls	• Pull hood over head • Hood up, zipped up, adhesive over zipper • Ensure cuffs of BLUE gloves are under the coveralls • Ensure hair tucked under hood		
Don shoe/leg covers	• Pull to knees • Pull cover securely over feet to avoid risk of tripping		
Don overshoes if slipping	• *Ensure secure fit to avoid risk of*		

hazard anticipated	*tripping*		
Don impermeable gown	• Ensure gown edges overlap to completely cover clothing, front and back • If not covered completely, first don a gown as a housecoat (untied); then don second gown as usual (tie both ties with assistance) • Ensure cuffs of BLUE gloves are under the gown		
Don N95 respirator over hood	• Seal check successful while monitor observes - Respirator will bulge slightly if there is a good seal - If air escapes there is ***not*** a good seal - Adjust respirator until good seal achieved		
Don hood if deemed necessary	• *Ensure hood completely covers ears and neck* • *Ensure hood is in place; all parts of skin are covered; hair is not exposed; and hood extends to the shoulders*		
Don full face shield over hood	• Ensure full coverage of face • Remove protective plastic coating if present		
Don face shield with bib if deemed necessary	• *Place thumbs inside elastic straps and place foam strip on forehead* • *Stretch elastic band; place behind head* • *Find Velcro piece on underside of bib; press against gown*		
Don outer set of GREEN extended cuff gloves	• Good fit, no tears, pulled up completely • Place over cuff of gown		
Check PPE placement/integrity and log room entry on EVD Room Entrance Log	• Monitor to check • Adjust facial protection before entering • Advise PPE user not to touch his/her face once in room		

To ensure PPE stays in place, before entering the room, the HCW should lean forward and gently shake head; perform a squat; and fully extend arms

Healthcare Worker Name _____ Date _____
Monitor Name _____ Time _____

ASSISTANT PPE – DONNING OUTSIDE ANTEROOM	Key Points/ Considerations	✓	Comments
Don disposable scrubs and dedicated shoes	• On arrival to unit • In change room		
Remove lanyards, watches, rings, pocket contents, other unnecessary items/items that dangle	• Staff to place with their clothing in designated area		
Pull back hair from face & neck; securely tie/pin back as needed. For longer hair, pull back & up into a bun	• Hair to be away from face and neck and securely tied back as required • Longer hair may touch outside of coveralls during doffing if not put up		
Don Vocera	• Ensure top of badge is no more than six inches from chin		
Perform HH	• ABHR unless visibly soiled, wash if soiled		
Visually inspect PPE	• Ensure is in serviceable condition • Ensure all required PPE/supplies are available • Ensure sizes selected are correct for PPE user		
Perform HH	• ABHR unless visibly soiled, wash if soiled		
Don inner set of BLUE longer-extended cuff, closer-fitting gloves	• Good fit, no tears, pulled up completely		
Don impermeable gown	• Secure ties • *If not covered completely, first don a gown as a housecoat (untied); then don second gown as usual* • Ensure cuffs of BLUE gloves are under the gown		
Don shoe/leg covers	• Pull to knees • Pull cover securely over feet to avoid risk of tripping		
Don procedure or surgical mask	• Shape metal piece to nose bridge • Ensure mask is secured		
Don full face shield	• Ensure full coverage of face • Remove protective plastic coating if present		
Don face shield with bib if deemed necessary	• *Place thumbs inside elastic straps and place foam strip on forehead* • *Stretch elastic band; place behind head* • *Find Velcro piece on underside of bib; press against gown*		
Don outer set of GREEN extended cuff gloves	• Good fit, no tears, pulled up completely • Place over cuff of gown		
Check PPE placement/integrity and log room entry on EVD Room Entrance Log	• Monitor to check • Adjust facial protection before entering • Advise PPE user not to touch his/her face once correctly placed		

FINAL CHECK PRIOR TO ENTRY OF BOTH CAREGIVERS · REINFORCE DO NOT TOUCH FACE OR ADJUST PPE AFTER ENTRY · REINFORCE CLOSED LOOP COMMUNICATION · PPE WEARER HAS HEAT STRAIN?

DOFFING PPE

PRIMARY INDICATES HE/SHE IS READY TO EXIT, OR MONITOR NOTES FATIGUE IN ACTIONS OF THE PRIMARY

Monitor Pre-Doffing Considerations:

- Prompt staff prior to doffing
- Remind staff not to touch their face during PPE removal
- Remind staff to stay calm; use slow, careful movements when removing PPE; and to listen to Monitor's direction
- Ensure communication is closed loop and staff are connected
- If there are multiple Primary staff, one at a time exits
- Monitor to signal to Primary he/she is clear to enter anteroom/doffing area prior to exiting patient room

Primary Pre-Doffing Considerations:

- Only 1 person shall exit patient room at a time
- PPE must be removed completely and the anteroom exited before the next person enters anteroom
- Monitor to signal to Primary he/she is clear to enter anteroom/doffing area prior to exiting patient room

Assistant Pre-Doffing Considerations:

- Assistant can remove PPE alone; assistance from Primary with untying gown may be needed
- If Assistant to aide multiple individuals (i.e., one after another), new PPE required between each person being assisted
- If Assistant to provide break relief and therefore become the Primary, Primary PPE may be worn to assist with current Primary's doffing. This allows the Assistant to directly enter the patient room after assisting with doffing of the current Primary (rather than doffing Assistant PPE, exiting anteroom, and applying Primary PPE). Evaluate PPE for soiling prior to entry to patient room

Immerse gloves in Accel Intervention/AHP solution/perform HH whenever possible hand contamination has occurred, at any point during PPE removal

Healthcare Worker Name _____ Date _____

Monitor Name _____ Time _____

PRIMARY PPE DOFFING – ONE PERSON AT A TIME	Key Points/ Considerations	✓	Comments
Visually inspect PPE prior to exiting patient room for obvious signs of contamination	• Look for obvious signs of contamination. If evident, wipe PPE surface(s) with Accel Intervention/AHP wipe(s)		
Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloved hands into basin and rub together in Accel Intervention/AHP RTU solution without splashing • Pat gloves dry with Accel Intervention/AHP wipe		
Disinfect door handle and plate with Accel Intervention/AHP wipe(s)	• Wait one minute after disinfection, then exit		
Enter anteroom space staying in the half of the room closest to the patient room (delineated by tape)	**Primary:** • Step on walk off mat on exiting patient room • Stand facing anteroom exit • Stays in half of room closest to patient room (delineated by tape) • Remain on mat until doffing is completed and ready to exit the anteroom **Monitor:** • Reassure Primary to use slow pace and remain focused • Reinforce Primary you are there to assist		
Assistant enters anteroom staying in the half of the room closest to hall (anteroom exit)	• After door to patient room closes (following Primary's entrance) • Step onto disinfectant mat		
Perform glove hygiene with Accel Intervention/AHP RTU	**Primary** • Immerse gloved hands into basin and rub together in Accel Intervention/AHP RTU solution without splashing • Stand facing anteroom exit • Reassure Primary to use slow pace and remain focused • Reinforce to Primary you are there to assist		
If worn, remove overshoes	***Primary:*** • *Remain on disinfectant mat when removing overshoes* • *Use toe to heel technique to remove overshoes* ***Assistant:*** • *Place in no-touch waste receptacle*		
If overshoes worn, perform glove hygiene with Accel Intervention/AHP RTU	***Primary and Assistant*** • *Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing*		
Doff outer GREEN gloves	Glove to glove, skin to skin technique • Grasp first glove at palm and remove glove • Scoop fingers under cuff of remaining GREEN glove and remove, pulling it inside-out on removal • Place in no-touch waste receptacle		

Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloves in Accel Intervention/AHP solution and rub together without splashing		
Doff gown with assistance	**Primary:** • Turn and face away from the Assistant **Assistant:** • Undo neck (top) and then waist (middle) ties • Grasp gown at the shoulders • Ease gown midway down upper arm • Step to the side **Primary:** • Turn and face Assistant • Hook fingers under opposite cuff • Pull gown over hand • Use gown covered hand to pull gown over other hand • Pull gown off without touching outside of gown • Roll up inside out, rolling away from the body • Place in no-touch waste receptacle		
If double gown worn	***To Remove Outer Gown:*** ***Primary:*** • *Turn and face way from the Assistant* ***Assistant:*** • *Undo neck (top) and then waist (middle) ties* • *Grasp gown at the shoulders* • *Ease gown midway down upper arm* • *Step to the side* ***Primary:*** • *Turn and face Assistant* • *Hook fingers under opposite cuff* • *Pull gown over hand* • *Use gown covered hand to pull gown over other hand* • *Pull gown off without touching outside of gown* • *Roll up inside out, rolling away from the body* • *Place in no-touch waste receptacle* ***To Remove Inner Gown:*** ***Primary:*** • *Turn and face away from Assistant* ***Assistant:*** • *Grasp second (inner) gown by the shoulders and peel it partway down upper arm* • *One sleeve at a time grasp at the cuff and remove gown rolling outside to inside* • *Place in no-touch waste receptacle*		
Perform glove hygiene with Accel Intervention/AHP RTU	**Primary and Assistant** • Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		
Doff shoe/leg covers with assistance	**Primary** • Follow direction of the Assistant • Hold on to grab bar as required for stability **Assistant** • Peel leg covers down slowly by handling the outside		

	• Direct Primary to lift heel with toes planted on mat; Assistant to remove shoe cover • Do not touch coverall • Place in no-touch waste receptacle • Repeat with other shoe/leg cover		
Perform glove hygiene with Accel Intervention/AHP RTU	**Assistant** • Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		
Doff full face shield	• Face the anteroom exit • Primary to lean forward and grasp strap at the back of the head • Close eyes • Slowly remove in forward and down motion • Place in no-touch waste receptacle		
If worn, remove face shield with bib attachment	• *Lean head slightly forward* • *Close eyes and grasp strap at back of the head* • *Slowly pull away and dispose in no-touch receptacle*		
Perform glove hygiene with Accel Intervention/AHP RTU	**Primary** • Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		
If worn, remove hood	***Primary*** • *Tilt head slightly forward* • *Grasp at crown of head; use one hand to pull hood forward, away from the body and off head* • *Place in no-touch waste receptacle* • *Perform glove hygiene*		
Doff N95 respirator	• Face the anteroom exit • Primary to grasp elastics at the back of the head • Close eyes • Slowly remove in a forward and down motion • Place in no-touch waste receptacle		
Perform glove hygiene with Accel Intervention/AHP RTU	**Primary** • Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		
Doff coveralls with assistance	**Primary** • Maintain contact with walk-off mat • Face the Assistant • Tilt head/chin upward; keep eyes closed **Assistant** • Keep hands away from Primary's face • Undo adhesive • Slowly unzip to lower abdomen by pulling front of coveralls down while Primary tilts head/chin upwards • Continue to unzip **Primary** • Turn away from Assistant **Assistant** • Use outside of hood (at the top) to uncover hood from head - Peel hood cover off by grasping on both sides of the head. Keep hands away from the		

	Primary's unprotected face • Grasp suit by the shoulders • Peel suit downwards to expose • shoulders, partway down the upper arm • Use outside of sleeves to remove one sleeve at a time; only contact outside of coveralls • Roll sleeves inwards and roll downward and remove leg portion, similar to removal of shoe/ leg covers above; avoid contamination of disposable scrubs • Remove coveralls • If contaminated surfaces of coveralls contact shoes during removal, wipe shoes with Accel Intervention wipes. Ensure 1 minute wet contact time; allow to air dry • Place in no-touch waste receptacle		
Perform glove hygiene with Accel Intervention/AHP RTU	**Primary and Assistant** • Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		
Doff inner BLUE gloves	• Maintain contact with walk-off • mat • Glove to glove; skin to skin technique • Grasp first glove at palm and remove glove • Scoop fingers under cuff of remaining BLUE glove and remove it, pulling it inside-out on removal • Place in no-touch waste receptacle • Perform HH with ABHR		
Exit Anteroom	**Assistant** • Turn and face the wall **Primary** • Step to Assistant side of anteroom and untie neck then waist ties of Assistant • Monitor opens door and Primary exits anteroom • Perform hand hygiene with ABHR outside of anteroom • Log room exit on EVD Room Entrance Log		

A shower is recommended at the end of each shift for the comfort of the healthcare worker. Use the designated shower, remove cooling vest, vocera, scrubs, and bathe with soap and water.

Immerse gloves in Accel Intervention/AHP solution/perform HH whenever possible hand contamination has occurred, at any point during PPE removal

Healthcare Worker Name _____ Date _____

Monitor Name _____ Time _____

ASSISTANT PPE DOFFING – ONE PERSON AT A TIME	Key Points/ Considerations	✓	Comments
Perform glove hygiene	• After each contact with the Primary • Immerse gloves and rub together in Accel Intervention/AHP RTU solution without splashing		
Doff outer GREEN gloves	• Glove to glove, skin to skin technique • Grasp first glove at palm and remove glove • Scoop fingers under cuff of remaining GREEN glove and remove it, pulling it inside-out on removal • Place in no-touch waste receptacle		
Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing • Pat dry with Accel Intervention/AHP wipe		
Doff gown	• Face the anteroom exit • Undo neck (top) and then waist (middle) ties if not undone by Primary • Hook fingers under opposite cuff • Pull gown over hand • Use gown covered hand to pull gown over other hand • Pull gown off without touching outside of gown • Roll up inside out • Place in no-touch waste receptacle IF DOUBLE GOWN WORN: • Grab outside of the outer gown at the forearm and pull down off arm • Grab inside of outer gown with hand of uncovered arm and pull gown off • Place in no-touch waste receptacle • Perform glove hygiene with Accel Intervention/AHP RTU; pat dry with Accel Intervention/AHP wipe • Grab cuff of inner gown and manoeuver sleeve over hand; be careful not to soil scrubs or flap gown around • Use sleeve covered hand to grab gown at waist and slowly remove arm from sleeve • Grab outside of opposite cuff with gloved hand; remove remainder of gown • Roll up inside out • Place in no-touch waste receptacle		
Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing • Pat dry with Accel Intervention/AHP wipe		
Doff shoe/leg covers	• Hold on to grab bar as required for stability • Peel leg covers down by handling the outside • Lift heel, remove shoe cover • Place in no-touch waste receptacle • Repeat with other shoe/leg cover		
Perform glove hygiene with Accel Intervention/AHP	• Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing		

RTU	• No splashing • Pat dry with Accel Intervention/AHP wipe		
Doff full face shield	• Face the anteroom exit • Lean forward and grasp strap at the back of the head • Close eyes • Slowly remove in forward and down motion • Place in no-touch waste receptacle		
If worn, remove face shield with bib attachment	• *Lean head slightly forward* • *Close eyes and grasp strap at back of the head* • *Slowly pull away and dispose in no-touch receptacle*		
Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing • Pat dry with Accel Intervention/AHP wipe		
Doff procedure or surgical mask	• Face the Monitor • Close eyes • Procedure masks: - Remove using loops or ties - Do not touch front of mask • Slowly remove in a forward and down motion • Place in no-touch waste receptacle		
Perform glove hygiene with Accel Intervention/AHP RTU	• Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing • Pat dry with Accel Intervention/AHP wipe		
Doff inner BLUE gloves	• Maintain contact with walk-off mat • Glove to glove; skin to skin technique • Grasp first glove at palm and remove glove • Scoop fingers under cuff of remaining BLUE glove and remove it, pulling it inside-out on removal • Place in no-touch waste receptacle		
Perform HH	• Perform HH with ABHR and exit room • Perform HH after exiting room • Log room exit on EVD Room Entrance Log		

A shower is recommended at the end of each shift for the comfort of the healthcare worker. Use the designated shower, remove scrubs, and bathe with soap and water

IX. DECONTAMINATION PROCESS: SOILED SCRUBS

If there is any evidence of soiling of scrubs:

i. **First Assistant** shall
   a. Immediately assist Primary with PPE removal. Use caution to remove PPE as exposure during PPE removal may result in transmission of EVD.
   b. Remove own PPE.
   c. Apply clean PPE. Double gloves may be required if gross soiling is present.
   d. If Primary's shoes/socks are soiled, remove in the anteroom; discard and apply OR shoe covers.
   e. Escort Primary to staff designated shower area
   f. Use scissors to cut soiled scrubs off Primary
      i. Instruct Primary to turn away from Assistant (back will face Assistant)
      ii. Cut Vocera lanyard at back of neck and allow to fall into a plastic bag that is held under the Vocera device (so not to fall to floor and break into pieces)
      iii. Starting at bottom of scrubs top, cut straight up until top is split in half
         - Peel scrub top downwards off arms and allow it to fall to floor (an option is for Assistant to roll the top into a ball)
      iv. Starting at top of scrubs bottom, cut straight down to the groin area
         - Peel scrub bottom downwards and allow to fall to floor
         - Step out of scrub bottoms (Assistant to help)
      v. Apply 1 cup of Accel Intervention/AHP RTU to drain (prior to shower)
      vi. Apply 1 cup of Accel Intervention/AHP RTU to drain (after shower)
      vii. Discard scissors and scrubs
      viii. Remove Primary's PPE in shower area prior to leaving room
   g. Doff PPE as outlined above (in anteroom of designated shower area)
   h. Report use of the sanitary sewer to Housekeeping and Facilities Management

ii. **Second Assistant** shall
   a. Clear the unit corridor prior to Primary exiting patient's anteroom
   b. Create a clean pathway from the shower to the anteroom door using disposable pads
   c. Create a clean path from the patient room to the corridor/hall
   d. Place disinfectant mat in the hall just outside anteroom door while Primary is showering
   e. Provide a clean, wipeable chair for Primary in the corridor

iii. **Monitor** shall
   a. Designate second Assistant to prepare shower area with red biomedical waste bag
   b. Monitor PPE donning and doffing
   c. After the Primary has taken the CHG shower/decontaminated self, verbally direct Primary out of the designated staff shower area, into the hall

iv. **Primary** shall
   a. Thoroughly rinse the site of soiling with running water; cleanse with soap and water immediately
   b. If required, shower for 10 minutes with chlorhexidine gluconate (CHG) soap
   c. Dry off and dress in new clean scrubs and overshoes
   d. Walk on clean path from shower area, outside room
   e. Maintain contact with the disinfectant map outside designated staff shower area (in overshoes)
   f. Sit on the chair in the corridor to remove overshoes and apply new clean footwear

g. Step on disinfectant mat with new clean footwear (both shoes), then step off
h. Perform hand hygiene before leaving the unit
i. Immediately report the incident to OESH by calling (204) 232-9075

If evidence of soiling of hair is observed:

a. Follow steps outlined above
b. Consider goggles to protect eyes
c. Wash hair with head tilted back
d. Keep mouth and eyes closed

v. **Housekeeping** shall

a. While the Primary is showering
    i. Mop corridor floors (the path taken by the Primary and Assistant) with Accel Intervention/AHP RTU.
    ii. Mop path the Primary walked to enter the shower within the designated staff shower area with Accel Intervention/AHP RTU
    iii. Wipe the door plates/handles of all touched doors (along the path) with Accel Intervention/AHP wipes and allow required contact time
    iv. Remove PPE and dispose in no-touch waste receptacle as biomedical waste
    v. Housekeeping shall clean and disinfect the anteroom; then remove biomedical waste from this space
b. After the Primary has exited the unit:
    i. Collect the overshoes, disinfectant mats, and chair and return to the shower isolation room
    ii. Dispose of the overshoes and disinfectant mats in the anteroom as biomedical waste, in a no-touch waste receptacle
    iii. Keep chair in the anteroom to ensure its included in the discharge cleaning
    iv. Remove PPE; dispose as biomedical waste in a no-touch waste receptacle
c. Perform discharge cleaning per Section H, Environment, (including the chair)

vi. **OESH** shall

a. Facilitate medical evaluation of the Primary including for other potential exposures (e.g., HIV, HCV) and provide follow-up care as required, including fever monitoring, twice daily for 21 days after the incident
b. Immediately consult an Attending ID Specialist for any exposed person who develops fever within 21 days of exposure

X. LIMITED MENU OF LABORATORY TESTS REQUIRED TO MANAGE A PATIENT PRESENTING WITH POSSIBLE EBOLA VIRUS DISEASE

Hematology Tests

CBC – WBC count, differential, hemoglobin, platelet count – tested on pocHi-100 analyzer

Malaria – tested using Binax NOW Malaria kit (CLIA waived)

Biochemistry Tests

Na, K, Cl, Glu, Urea, Crea, TCO_2, Anion Gap, Troponin I, pH, pCO_2, pO_2, Lactic Acid: iStat Point of Care Device

TCO_2, Ca, ALT, AST, AMY, ALP, ALB, TP, TBIL: PICCOLO Point of Care Device

Microbiology Tests

Blood Cultures – collected from 2 sites to rule out bacteremia/typhoid fever

Referred Out Tests

Specific Testing for Ebola virus – blood for molecular detection and blood for serology, as recommended by Cadham Provincial Laboratory (CPL)

Testing for Other Infections – would depend on the specific presentation of the patient. Dengue serology and *Rickettsia* serology may be considered empirically as well. Specimens will be sent to CPL as soon as possible.

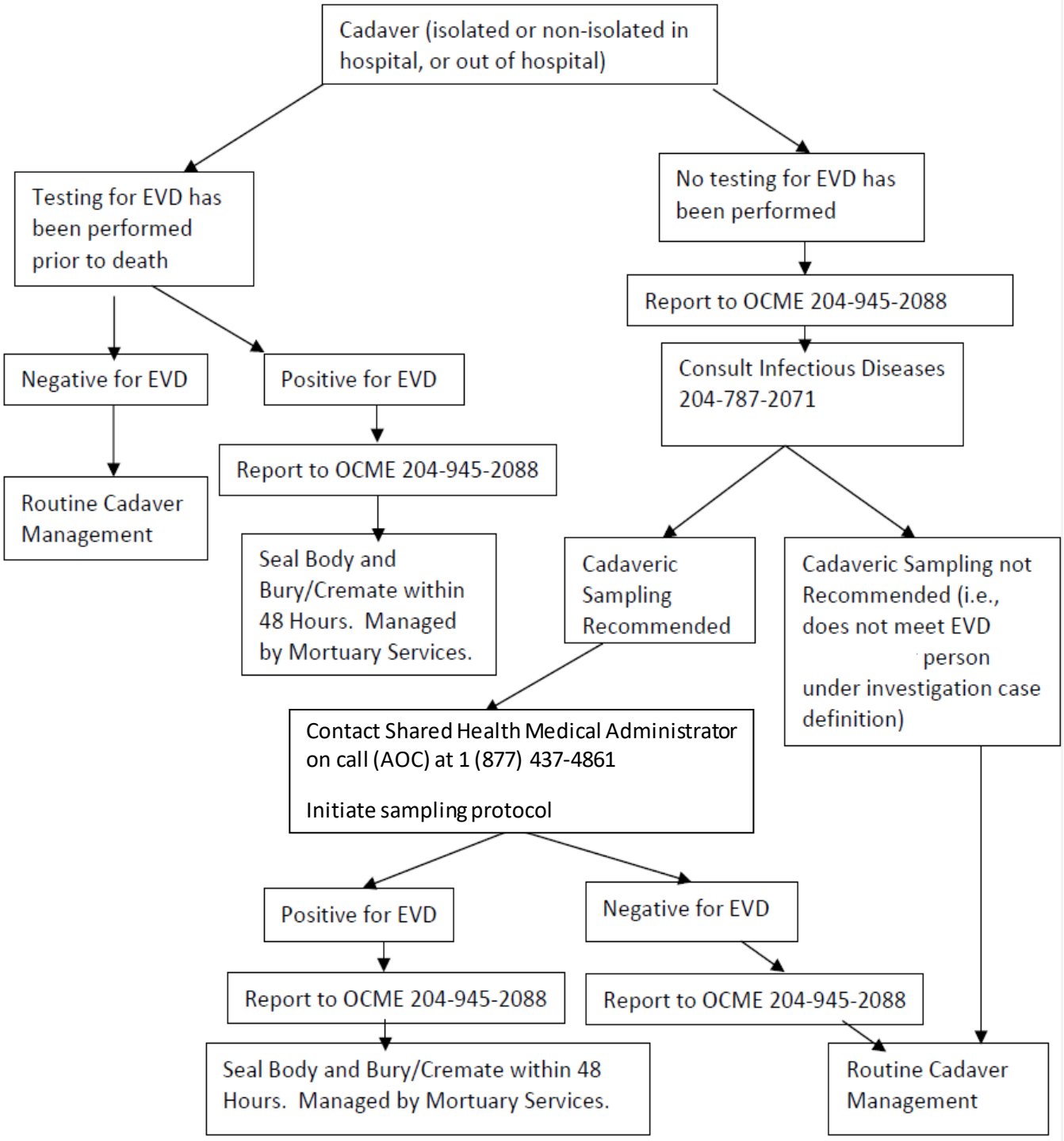
XI. REMOVAL OF HAND-HELD DEVICES FROM ISOLATION ROOM

1. Keep in room until patient discharged. Dedicate to the patient and the room for the length of stay of the patient.
2. In patient room: immerse gloved hands into basin and rub together without splashing.
3. Wipe door handle and plate with Accel Intervention/AHP wipe; allow 1 minute dry time before exiting patient room.
4. Wipe horizontal surface (e.g., table) with Accel Intervention/AHP wipe; allow 1 minute dry time before placing item(s) on the surface.
5. Thoroughly clean/disinfect all surfaces of medical device with Accel Intervention/AHP wipe(s).
6. Keep device in the room to receive UVGI and VHP disinfection as part of the discharge cleaning process.
7. Return item to appropriate department/storage location for use

For devices that cannot be dedicated to the patient for his/her entire stay:

1. In patient room: immerse gloved hands into basin and rub together without splashing.
2. Wipe door handle and plate with Accel Intervention/AHP wipe; allow 1 minute dry time before exiting patient room.
3. Wipe horizontal surface (e.g., table) with Accel Intervention/AHP wipe; allow 1 minute dry time before placing item(s) on the surface.
4. Thoroughly clean/disinfect all surfaces of medical device with Accel Intervention/AHP wipe(s).
5. Place medical device on disinfected horizontal surface.
6. Immerse gloved hands into basin and rub together without splashing.
7. Open door.
8. Pass disinfected device to Assistant in anteroom (Assistant is wearing appropriate PPE).
    - Primary nurse to either remain in patient room or start removing PPE in anteroom
9. Assistant to pass the device to another person outside the anteroom.
    - This person to clean/disinfect the surfaces of the device with Accel Intervention/AHP wipes
    - Once the device is removed, the Primary nurse may proceed to remove PPE according to the PPE removal procedure
10. Return item to appropriate department/storage location for use

XII. PROCESS FLOW FOR PUI OR CONFIRMED DECEASED EVD BODY



XIII. Ebola Virus Disease (EVD) Specimen Collection Process

Assumptions

- No specimens are to be drawn without prior consultation with Infectious Disease Specialist
- Restricted laboratory services for biochemistry, hematology, and microbiology are available for people under investigation for EVD up until confirmation of not having the disease
- All specimens must be clearly labeled "Ebola Suspect" on the sample and requisition
- To minimize frequency of accessing the isolation room, plan any other nursing care required while in the room while acquiring specimens
- Must discuss and coordinate specimen collection with all labs prior to obtaining any specimen(s). The NA or Clerk will prepare lab requisitions including placing an "Ebola Suspect" label on requisition(s)
- Labels available from HSC print shop – "Ebola Suspect" label

Specimen Collection Supplies Checklist

The following supplies are required for sample collection in the patient room:

- Two basins
- Biohazard bags (labeled HSC and/or Cadham depending on sample to be collected)
- Two specimen collection kits, in the event one kit is compromised. The kit consists of a small clear lab bag containing appropriately labeled collection tubes and all required supplies for blood collection:
    - Yellow/gold top and short purple/lavender top tube (to be sent to Cadham)
    - Dark green top tube and short purple/lavender top tube (to be sent to HSC lab/Diagnostic Services of Manitoba [Shared Health])
    - Labeled blood culture tube(s) (as per standard nursing blood culture collection process) to be sent to HSC Lab/Shared Health
    - Any other tubes as required per physician orders (follow standard nursing specimen collection procedures)
    - For pediatric patients – extra micro collection tube(s) in case of insufficient blood collection using adult collection tube(s)
- All other routine supplies required for drawing blood depending on patient's vascular access

Pre-Collection Tasks

1. Contact the appropriate lab(s): HSC Lab (204) 787-1534 and the Cadham Provincial Laboratory (CPL) on call physician through HSC paging at (204) 787-2071.
   Speak directly to Lab staff in each lab.
   Advise Lab staff collection will be occurring, including the type of testing and patient location.
   Coordinate with all labs when to draw specimens from patient.
2. Gather collection equipment. Ensure all collection tubes, biohazard bags and lab requisitions are available and correctly labeled.
   Place an "Ebola Suspect" label and patient identification on each specimen tube; follow standard labeling process. Place piece of clear tape on tube labels.
   Stamp requisition(s) with patient's addressograph and leave requisition(s) at nursing station. Lab staff will pick up requisition(s) at the nursing station prior to obtaining specimen(s).
   Label biohazard bag(s) with Sharpie marker – label one bag "Cadham" and one bag "HSC Lab". Label additional bags appropriately as needed; confirm label on specimen tube(s) and requisition(s) are correct.
3. Review which specimens will be sent to Cadham and which will be sent to HSC Lab.
4. Ensure Lab staff are present on unit prior to entering patient's room.
5. Don EVD PPE prior to entering patient room

Collecting Specimens in Patient Room

1. Enter patient room with supplies inside basins. **DO NOT** place basins down at this time.
   Wipe bedside table surface with Accel Intervention/AHP wipe(s) ensuring surface remains wet for 1 min. Allow surface to air dry.
   Place basin containing specimen collection kits on bedside table closest to the patient.
   Place empty basin on bedside table, furthest from patient.
   Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
   Place specimen bags between the basins on bedside table.
   Remove collection tubes from a specimen collection kit and blood collection supplies and place directly into basin closest to the patient. Do not place collection tubes on bed.
2. Collect specimens as per standard nursing process.
   - Adult collection tubes: fill all tubes to capacity, minimum 2-4ml
   - Pediatric collection tubes: fill all tubes to capacity, if blood collection is an issue, lavender top tube for Cadham **must be** full; other specimens must be at least half full
3. Place filled specimen tubes directly back in basin closest to patient; do not place on bed.
   Dispose of sharps in supplied sharps containers in patient room.
   Dispose of remaining collection supplies in waste receptacle in patient room.
4. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
5. Use one Accel Intervention/AHP wipe to wipe entire surface of wash basin furthest from the patient.
6. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
7. Use an Accel Intervention/AHP wipe (one wipe for each bag) and wipe biohazard bags.
   Touching the outside of the bag only, confirm labeling on bag.
   Pull bag open; stand bag in wash basin ensuring bag is opened and upright for easy placement of tubes.
   REPEAT STEPS 6 and 7 until all bags are ready to receive specimens.
8. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
9. Use an Accel Intervention/AHP wipe (one wipe for each tube) and pick up a specimen tube.
   Wipe entire surface of specimen collection tube.
   With AHP wipe, place collected specimen tube in appropriate, labeled, specimen bag
   - Place purple/lavender and a yellow/gold tube into the “Cadham” labeled bio specimen hazard bag
   - Place dark green and purple/lavender tube in “HSC Lab” labeled specimen bag
   - If applicable, place blood culture collection bottle(s) into another specimen bag labeled “HSC Lab”

   REPEAT STEPS 8 and 9 until all collected specimens are in appropriate specimen bags.
10. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
11. Take one specimen bag and arrange tubes flat at the bottom of the bag. Push tubes to one side of the bag.
    Fold bag lengthwise (vertically) in half, ensuring label is to the outside.
    Roll the bag bottom up and release excess air.
    Seal the bag by pulling off and securing adhesive strip. Be careful not to touch gown when rolling up biohazard bag.
    Place the sealed, rolled biohazard bag back into the wash basin.
    REPEAT STEPS 10 and 11 until all specimen bags sealed and back in the basin.

12. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
13. Wipe door handle and door plate with Accel Intervention/AHP wipe. Wait one minute.
14. Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
15. Collect all specimen bags from basin into one hand, open patient room door with the other hand and step onto disinfectant mat in closest side of anteroom (standing on). Allow door to close behind you.
16. **Stop and wait for Monitor direction; do not proceed with activities.**

Placing Collected Specimens in Lab Canisters and Hand Off to Lab Staff

1. **Assistant Nurse**: enter anteroom.
   Use one Accel Intervention/AHP wipe and disinfect Assistant Mayo stand. Allow 1 minute wet contact time.
   Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
2. **Monitor**: ensure Lab staff is ready to begin. Open anteroom door for canister handoff.
3. **Lab**: While standing in hall, reach into anteroom with open transport box.
4. **Assistant Nurse**: remove canister from transport box, held by Lab staff. Do not touch outside of transport box. Place canister on disinfected area of counter.
   REPEAT STEP 3 until all required canisters are on Mayo stand.
5. **Monitor**: close anteroom door.
6. **Primary Nurse**: determine which specimen bag (Cadham or HSC) will be handed off first. Confirm with Assistant Nurse.
7. **Assistant Nurse**: ONLY take the lid off the canister that corresponds to the specimen bag being handed off.
   Place lid on the Mayo stand.
   Remove bubble wrap from canister, unravel and hold bubble wrap open with hands under the centre to receive specimen bag from Primary Nurse. Do not touch specimen bag.
8. **Primary Nurse**: ensure specimen bag is rolled up (compact).
   Place specimen bag into middle of bubble wrap held by Assistant Nurse.
   Immerse gloved hands in Accel Intervention/AHP solution; rub hands together without splashing.
   Confirm which specimen(s) are being placed in wrap using closed loop communication.
9. **Assistant Nurse**: wrap specimen bag with the bubble wrap without touching specimen bag.
   Place bubble wrapped bag in canister; replace canister lid.
   Immerse gloved hands in Accel Intervention/AHP solution; rub together without splashing.
   REPEAT STEPS 6 to 9 until all specimen bags are in correct canisters.
10. Take one Accel Intervention/AHP wipe, pick up one canister and wipe down entire surface of canister**.** Wait 1 minute.
11. **Monitor**: open anteroom door for Assistant Nurse and lab staff.
12. **Assistant Nurse**: confirm with lab staff the correct specimen is going to the correct lab; confirm patient and lab requisition.
13. **Lab**: While standing in hall, reach into anteroom with open transport box.
14. **Assistant Nurse**: Place canister in transport box without touching outside of transport box.
    Immerse gloved hands in Accel Intervention/AHP solution; rub together without splashing.
15. **Monitor**: close anteroom door.
    REPEAT STEPS 9 to 14 until all canisters out of anteroom.

***If any items during specimen collection were to fall on floor, DO NOT pick up, wait for instructions from Monitor**

XIV. REMOVAL OF DIAGNOSTIC IMAGING (DI) EQUIPMENT FROM ROOM

Items to Cover Machine (kit will be provided):

- Detector (plate) – 2 covers
  - Ziploc® bag (inside cover)
  - Plastic cover (bag) from pediatric morgue (outside cover)
- Body of machine – 52"x52" plastic bag (with hole)
- Tube and extension arm – OR image intensifier (C-arm) cover (sterile)
- Boom – 2 plastic sheets (one to be named "#1 cover" for the top of the boom, other to be named "#2 cover" for the bottom of the boom)
- ALL AREAS TO BE SECURED WITH PINK 2" WATERPROOF TAPE ONLY

To Cover Machine:

- Cover detector with Ziploc® bag and seal. Cover with plastic cover and fold edge to underside. Secure and tape in place ensuring there are no openings
- Put detector aside (not in holder on machine)
- Rotate boom so tube is 180° to machine and tube extension arm is fully extended
- Cover body of the machine with 52"x52" plastic bag, starting from tube end. Pull over tube, allowing tube and extension arm to go through hole provided and continue towards body until body is covered. Allow the portion with the hole to remain covering the boom and over first part of the extension arm
- Cover tube head and extension with OR C-arm cover; cover the tube first and work towards the boom. Allow this cover to overlap cover coming up the boom from the body. Secure in place with tape to completely seal the overlap
- Test rotation movement of the boom 180° in drive position and look for areas of restriction where plastic is secured with tape
- Secure plastic sheet covering the body of the machine to the bottom with tape to cover the rest of the machine. Be sure bumper is covered. Allow for wheels to rotate without catching the plastic
- Test movement of boom and tube with room monitor to ensure proper taping and coverage

Preparation Prior to Entering the Room:

- Two technologists (Primary and Secondary) and Primary nurse will be required for the procedure. Primary tech will be designated "contaminated" and have majority of contact with patient. The Secondary tech will be designated "clean" and will operate the machine. Please note, though designated "clean", anyone entering the patient room and/or anteroom is considered contaminated
- Prepping anteroom before DI entry
  - Unit staff to remove the disinfectant mats from the anteroom
  - Fold a flannel sheet, soaked with Accel Intervention/AHP, in half and place to cover anteroom floor from door to door
  - Ensure separation line is indicated on the wall for visibility
  - Any cleaning of the anteroom before and after the DI visit to be coordinated, in advance, by unit staff
- Prepping patient room before DI entry
  - Primary Nurse to position bed as far from door as possible to allow unit into room
- Primary and Secondary technologists to don 2 piece lead aprons with separate, unattached thyroid shield over disposable scrubs
  - Don PPE as per protocol; wear lead under the coveralls

Procedure to Enter Room and Take Exposure:

- When entering room, Primary tech to hold detector and follow Secondary tech pushing the machine
- **Secondary Tech**: come in at a 45° angle and position machine near foot of the bed. Stay as far away as possible, while still allowing for the tube, when extended, to reach the patient
- **Primary Tech**: once machine is positioned, place detector behind patient with assistance from Nurse
- **Nurse**: pass by the machine, with back facing machine, and move to foot end of the bed
- **Primary Tech**: at the end of bed, prepare to accept tube from Secondary tech
- **Secondary Tech**: swing tube and extension towards patient, then go back to the control panel behind machine
- **Primary Tech**: grab tube, moving to opposite side of the bed while extending the arm and position tube over patient
- **Secondary Tech**:
    - Adjust machine position if necessary
    - Prepare to take the exposure
- **Nurse**: stand behind primary tech (back to back) while exposure being taken

Process to Exit Room after Exposure:

Once the X-ray is confirmed:

- **Primary Tech**:
    - Move tube (with arm still extended) 90° away from patient (90° angle with machine at foot end)
    - Move around bed to opposite side; pass the machine with the back to the machine
    - Remove detector from under patient with assistance of Nurse. Move to opposite side of the bed
- **Secondary Tech**:
    - Use Accel Intervention/AHP wipes to disinfect table by the door
    - Wipe plastic covering over detector while being held by Primary tech
- **Primary Tech**: lay detector on top of table. Ensure detector remains covered until all equipment is cleaned
- Both **Primary and Secondary tech** immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing
- **Secondary Tech**: begin removal process of plastic covering, starting with cleanest part (body) at the bottom of the machine and rolling the cover into itself, unravel, working towards the boom. Continue to roll the plastic up the boom until just over the top of extension arm
- **Primary Tech**: remove remainder of plastic covering from extension arm and tube. Discard in designated area in room
- **Secondary Tech**: wipe down machine with Accel Intervention/AHP wipes; allow to air dry. Park tube
- Doffing the detector:
    - **Primary Tech**: remove outside cover from detector
    - **Secondary Tech**: collect detector
    - **Primary Tech**: immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing. Collect detector from Secondary tech
    - **Secondary Tech**: immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing
    - **Primary Tech**: open Ziploc® bag inside cover
    - **Secondary Tech**: collect detector
    - **Primary Tech**: immerse gloved hands in Accel Intervention/AHP RTU solution and

rub together without splashing. Use Accel Intervention wipes to disinfect bedside table. Allow one minute wet contact time
    - **Secondary Tech**: place detector on table
    - **Primary Tech**: wipe top of detector with Accel Intervention/AHP wipes (wring out excess fluid from Accel Intervention/AHP wipes first). Ensure handle is cleaned and disinfected
    - Both **Primary** and **Secondary Tech** immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing
    - **Secondary Tech**: pick up detector by the handle
    - **Primary Tech**: Use Accel Intervention/AHP wipes to disinfect bedside table. Allow one minute wet contact time wipe. Immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing
    - **Secondary Tech**: place "clean" side of detector down on table without touching opposite side
    - **Primary Tech**: Use Accel Intervention/AHP wipes to disinfect the detector side facing up (wring out excess fluid from Accel Intervention/AHP wipes first)
    - Both **Primary** and **Secondary Tech** immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing
    - **Secondary Tech**: place detector in holder on machine
- **Primary Tech**: immerse gloved hands in Accel Intervention/AHP RTU solution and rub together without splashing. Use Accel Intervention/AHP wipes to disinfect door handle; allow 1 minute wet contact time before exiting into anteroom. Exit patient room; doff PPE with the Assistant's help. Exit anteroom, re-apply Assistant PPE and prepare to receive machine from anteroom
- **Secondary Tech and Primary Nurse**: Immerse gloved hands into basin of Accel Intervention/AHP RTU solution and rub together without splashing; wipe door handle with Accel Intervention/AHP wipes and allow 1 minute wet contact time
- **Primary Nurse**: open door to allow machine to exit patient room
- **Secondary Tech**: steer machine into anteroom as close as possible to the exit door to the anteroom; allow the door to the patient room to close
- **Primary Tech** (outside the anteroom): open door to hall
- **Secondary Tech**: drive machine past separation line in anteroom to ensure a full rotation of wheels onto flannel sheet soaked in Accel Intervention/AHP RTU solution. Allow 1 minute wet contact time before exiting anteroom
- **Assistant Nurse**:
    - Enter anteroom; push machine out far enough for Primary Tech to receive in the hall
    - Remain in the anteroom and assist the Secondary Tech with doffing of PPE
- **Secondary Tech**: exit anteroom
- **Assistant Nurse**:
    - Doff PPE per outlined procedure. Exit anteroom
- While **Secondary Tech** is doffing: **Primary Tech** to take equipment to decontamination room where VHP is located. Once further disinfection has occurred, connect to hospital network to transmit the image(s) to PACS

XV. EVD INCIDENT LOG

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / *À l'écoute de notre santé*

EBOLA VIRUS DISEASE INCIDENT LOG

Room Number: _____

Date (D D M M M Y Y Y Y)	First Name	Last Name	Department	Contact Number
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				
Incident Type and Description				
Corrective Action(s)				

FORM #XXXXX 01/15

XVI. SIZING RECOMMENDATIONS FOR COVERALLS

- Coveralls that are easily removed reduce the risk of contamination. Therefore, coveralls should be appropriately sized so that excessive tugging or pulling does not occur during their removal
- When height/weight are borderline or lie within two size ranges, choose the larger size
- After choosing the estimated coverall size on the sizing chart, take the time to try this size on in the demonstration coveralls to ensure an appropriate fit
- The sizing charts are meant to give you a starting point when choosing a size. You may decide to go up or down a size depending on your body type/size. The most reliable way to determine the correct size is to test for an appropriate fit

To Test for an Appropriate Fit:

- Request the help of an Assistant
- Don coveralls with the hood up and the zipper pulled all the way to the top
- Tilt head back and have Assistant unzip zipper. There should be no tightness through length of coverall
- Turn your back to Assistant. Tilt head back and drop arms to sides. Have Assistant remove hood. There should be no excess of tugging to remove hood.
- Maintaining same position, have Assistant lower coveralls off of your shoulders. Assistant should be able to gently lower coveralls with no excess of tugging or pulling.
- Progress with doffing process for removing coveralls. Booties should not be overly tight or require an excess of tugging or pulling to remove.

Dupont Tychem QC Footed Coveralls

Height*	Weight*	Estimated Coverall Size
5'– 5'7"	125-160 lbs	Large
5'5"-5'10"	140-200 lbs	XL
5'9"-6'	180-230 lbs	3XL
6'2" – 6'5"	230-260 lbs	4XL

**If height/weight is borderline or falls between two sizes, choose the larger size.*
Note that with Dupont Coveralls shoe size should not be an issue.

Lakeland Saranex Coated Chemmax 2 Footed Coveralls

Height*	Weight*	Shoe Size	Estimated Coverall Size
5' – 5'7"	125-160 lbs		XL
5'5"-5'10"	140-200 lbs	Fits male shoe size <8	2XL
5'7"-6'2"	150-220 lbs	Fits male shoe size ≤ 10	3XL

**If height/weight is borderline or falls between two sizes, choose the larger size*

Kimberly Clark KleenGuard A60 Non-Footed Coveralls

Height*	Weight*	Estimated Coverall Size
<5'	<110 lbs	M
<5'-5'2"	100-120 lbs	L
5' – 5'4"	115-140 lbs	XL
5'2" – 5'7"	125-160 lbs	2XL
5'3"- 5'8"	150-175 lbs	3XL
5'3"-5'8"	175-220 lbs	4XL
5'3- 6'0	200-250 lbs	5XL

**If height/weight is borderline or falls between two sizes, choose the larger size*

XVII. Care of a Neonate Born to a Mother Exposed to Ebola Virus, PUIs, or with Confirmed Ebola

Spontaneous fetal loss is high among pregnant women with Ebola. Neonates born to women with Ebola are often premature, and typically do not survive for more than a few weeks.

Recent data have suggested there is in utero transmission of Ebola virus to the fetus. There are limited data on clinical signs at presentation of Ebola in neonates; there is no experience with neonates born to women with Ebola in settings with a highly developed healthcare system.

Care is provided in consultation with Pediatric ID and Pediatric Infection Prevention and Control.

i. **Care of neonates born to ASYMPTOMATIC MOTHERS WITH POTENTIAL EXPOSURE TO EBOLA VIRUS**
   a. Place neonates born to asymptomatic mothers who had potential exposure to Ebola virus in the same risk category as their mothers.
   b. Maintain neonates in the same room with their mothers, unless the mother or neonate becomes symptomatic, at which time they should be separated.
   c. Monitor neonates twice daily, taking rectal temperatures and assessing for signs of infection and other changes in behavior (e.g., not feeding well, excessive sleepiness, uncontrollable crying) as signs of many neonatal infections are often vague. Depending on the risk category, this monitoring may begin in the hospital and continue at home after discharge. Monitoring should continue until 21 days have elapsed since the mother's last known exposure to Ebola virus.
   d. The decision to modify or discontinue Additional Precautions shall rest with the Site Director, Child Health Infection Prevention and Control, in consultation with the Infection Prevention and Control staff and a MOH/delegate.
      i. In every case where there is modification of precautions, written documentation in the patient health record shall justify the action.
      ii. Unit/area staff are to notify affected departments of any modifications to Additional Precautions.
   e. Decisions to discharge the neonate are made in conjunction with local Public Health authorities.
   f. **Routine care:**
      i. For neonates who appear healthy and stable after delivery:
         – Provide routine newborn care
         – Conduct non-invasive screening tests, including but not limited to critical congenital heart disease screening and hearing screening.
            • Conduct invasive screening tests (including but not limited to newborn heel stick screening) and immunizations as long as the mother and neonate remain asymptomatic.
            • Delay circumcision until the 21 days of monitoring have ended.
   g. **Breastfeeding:**
      i. Neonates may breastfeed as long as the mother remains asymptomatic.
         – Discontinue breastfeeding if the mother becomes symptomatic during her 21 days of monitoring until her Ebola virus infection status can be determined. Follow guidance (below) for a mother under investigation for, or with confirmed Ebola.

ii. **Care of neonates born to PUIs**
   a. Manage neonates born to mothers under investigation for Ebola <u>as a PUI</u> until the Ebola virus status of the mother is determined.
   b. Immediately separate these neonates from their mothers
      i. Isolate for 21 days

- Care for these neonates in same manner as neonates born to mothers with confirmed Ebola (below), until the Ebola virus status of the mother is determined.

ii. Monitor for Ebola virus infection

c. If the mother is confirmed to have Ebola, follow the guidance below (care of neonates born to mothers with confirmed Ebola).

d. If it is determined the mother does not have Ebola, discontinue Additional Precautions for the neonate and care for using standard facility protocols.

i. If the mother later develops signs and symptoms consistent with Ebola during her 21 days of monitoring

- Immediately separate the neonate from the mother
- Isolate for 21 days
- Assess for Ebola virus infection
- If the mother tests positive for Ebola virus
  - Reset the 21-day monitoring period for the neonate (to the date of last contact with the mother)
- The decision to modify or discontinue Additional Precautions shall rest with the Site Director, Child Health Infection Prevention and Control, in consultation with the Infection Prevention and Control staff and a MOH/delegate.
  - In every case where there is modification of precautions, written documentation in the patient health record shall justify the action.
  - Unit/area staff are to notify affected departments of any modifications to Additional Precautions.
  - Decisions to discharge the neonate after 21 days of monitoring with no signs of infection and a negative result of Ebola virus testing by RT-PCR on a blood specimen should be made in conjunction with local public health authorities.

e. **Breastfeeding:**

i. Do not permit breastfeeding until the Ebola virus infection status of the mother under investigation is confirmed as negative

- To establish and maintain breast milk production, the mother may express her breast milk
  - If pumping, a dedicated breast pump must be used, and kept in the patient's room.

ii. Upon determination the mother does not have Ebola, breastfeeding may begin.

iii. Upon confirmation of Ebola, follow guidance for a mother with confirmed Ebola (below).

f. **Handling of Breast Milk**:

i. The expressed milk of a mother classified as PUI is considered Category A infectious waste.

ii. Management of liquid waste requires addition of a solidifier prior to disposal. Treat as biomedical waste.

iii. **Care of neonates born to MOTHERS WITH CONFIRMED EBOLA**

a. Consider a neonate born to a mother with confirmed Ebola as a PUI.

b. Immediately separate neonates from their mothers.

i. Isolate for 21 days

ii. The decision to modify or discontinue Additional Precautions shall rest with the Site Director, Child Health Infection Prevention and Control, in consultation with the Infection Prevention and Control staff and a MOH/delegate.

- In every case where there is modification of precautions, written

documentation in the patient health record shall justify the action.
  - Unit/area staff are to notify affected departments of any modifications to Additional Precautions.
  - Decisions to discharge the neonate after 21 days of monitoring with no signs of infection and a negative result of Ebola virus testing by RT-PCR on a blood specimen should be made in conjunction with local public health authorities.

c. Where a neonate is born to a mother with confirmed Ebola, and the neonate is healthy and stable after delivery
   i. Provide routine newborn care, including but not limited to clinical examination, assessment of gestational age, measurement of weight, length, and head circumference, skin care, bathing, eye prophylaxis and parenteral vitamin K.
   ii. Perform non-invasive screening, including but not limited to critical congenital heart disease screening and hearing screening.
   iii. Consult an attending ID specialist for decisions on when invasive newborn screening and immunization can safely be performed.
      - Consider the diagnosis of Ebola in the neonate, maternal conditions (such as Hepatitis B), and family history in decisions to delay invasive screening tests and immunizations.
   iv. Delay circumcision until the 21 day isolation period has concluded and/or a negative result of Ebola virus testing by RT-PCR on a blood specimen has been documented to prevent the exposure of healthcare workers to Ebola virus.
      - Newborn heel stick screening may need to be deferred until the 21 day isolation period has concluded and/or a negative result of Ebola virus testing by RT-PCR on a blood specimen has been documented to prevent the exposure of healthcare workers to Ebola virus and avoid contamination of lab equipment.
   v. Collect a careful history to ensure the mother was screened for other causes of tropical febrile illnesses that could contribute to increased morbidity in the neonate, especially malaria.
      - If the neonate becomes febrile during hospitalization, local causes of fever, including hospital-acquired bacterial infections and viral illnesses other than Ebola, should also be sought.

d. Where a neonate is born to a mother with confirmed Ebola, and the neonate is unwell after delivery
   i. Isolate the infant per Ebola isolation procedures.
   ii. Consult an attending ID specialist prior to blood collection/screening test.
   iii. Decisions regarding resuscitative care, and so on, are made by the Neonatologist in consultation with the attending ID specialist.

e. **Breastfeeding:**
   i. Do not breastfeed neonates born to mothers with confirmed Ebola.
   ii. Even after the mother recovers from Ebola and has a negative result of Ebola virus testing by RT-PCR on a blood specimen, there is not enough evidence to provide guidance on when it is safe to resume breastfeeding. In the one case in which breast milk was tested in a convalescent lactating woman (negative blood test for Ebola virus), Ebola virus was detected by culture and RT-PCR in the breast milk 15 days after disease onset. Donor breast milk, if available, may be an acceptable substitute. Not breastfeeding may be painful for some mothers. A comfortable, tight-fitting bra, cold compresses, and pain relievers may help ease pain from engorgement and help to prevent mastitis.

f. **Handling of Breast Milk:**

i. The expressed milk of a mother classified as PUI is considered Category A infectious waste.

ii. Management of liquid waste requires addition of a solidifier prior to disposal. Treat as biomedical waste.