Office of the Provincial Health Officer

Recommendations for Isolation Precaution Step Down and Discharge of Persons Under Investigation or Confirmed Ebola Virus Disease Patients

UPDATED: January 22, 2020

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A. Preamble

After someone who has been under investigation for Ebola Virus Disease (EVD) is determined not to be infectious, or after someone recovering from confirmed EVD is determined to no longer pose a risk to others, significant anxiety (both patient and societal) may occur regarding the patient's ability to infect others in the community. Therefore, the "standing down" of isolation precautions, as well as preparation for discharge, requires an organized, systematic and evidence-based approach to ensure the patient, family and health care workers are protected at all times.

The purpose of this document is to provide recommendations for two situations:

a) In the case of a person under investigation – procedure for ruling out EVD and discharging the patient to the community; and

b) In the case of a confirmed EVD patient who is recovering in hospital and determined to no longer pose a risk to others – procedures for standing down the strict isolation precautions, transferring the patient to another part of the hospital, or discharging the patient to the community.

B. Background and Clinical Course of EVD

It is believed that with access to medical support, including intensive care, the fatality rate associated with Ebola can be substantially reduced. This is reflected by the significantly lower mortality rate experienced by those patients undergoing treatment outside of affected areas.

Clinical improvement tends to occur by the second week of illness in those patients who survive infection, and is associated with the development of virus-specific antibodies. There is evidence these antibodies provide a degree of immunity to Ebola virus for an extended period of time following convalescence. While most recovering patients are able to resume normal daily activities over the course of four to six weeks, some patients may experience arthralgia, myalgia, abdominal pain, fatigue and decreased appetite for more than a year following infection, and may require significant support during the convalescence period.

C. Persons Under Investigation: Rule-out of EVD, Discontinuation of Strict Isolation Precautions and Process for Patient Discharge

Contact and droplet precautions and strategies to reduce aerosol generation should remain in effect until EVD is ruled out.

Less than 72 hours since symptom onset:

- Due to low-level viremia (and consequently relatively low infectivity) during the early phases of EVD, reverse transcriptase polymerase chain reaction (RT PCR) testing for the Ebola virus in blood may be negative during the first 72 hours after symptom onset.
- Therefore, a second test after 72 hours may be required to exclude EVD infection.

More than 72 hours since symptom onset:

- 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.[1]

It should be noted that negative testing for EVD does not rule out infection with one of the other viral hemorrhagic fevers. Should a patient present with epidemiological history and symptoms compatible with other viral hemorrhagic fevers, appropriate isolation precautions should be maintained until the diagnosis can be excluded.

Once a patient's EVD RT PCR is negative after 72 hours and the patient is ready for discharge:

- Call the medical health officer to arrange for monitoring and follow up for when the patient leaves the facility and returns to the community.
- If their health was previously being monitored because of a potential exposure history and they are still in the 21 day window, this monitoring must continue.

Facilities should develop a communication protocol for notification once EVD has been definitively ruled out, so EVD precautions can be discontinued and those who have been alerted can stand down. Systematic and complete communication is required for all parties, including the personnel involved in the care of the patient.

[1] Towner, J.S. et al. (2004) Rapid Diagnosis of Ebola Hemorrhagic Fever by Reverse Transcription-PCR in an Outbreak Setting and Assessment of Patient Viral Load as a Predictor of Outcome. Journal of Virology, Vol. 78, No. 8: 4330–4341.

Medical Health Officer Contact Information

When you call, be explicit that you are a calling about an urgent matter related to Ebola.

The medical health officer for your region can be reached at the following numbers:

- Fraser Health: 604 587-3828 (M-F, 8:30-4:30) OR 604-527-4806 (after hours)
- Interior Health: 1 866 457-5648 (24/7)
- Island Health: 250 519-3406 (M-F, 8:30-5:00) OR 1 800 204-6166 (after hours)
- Northern Health: 250 565-2000 (24/7)
- Vancouver Coastal Health: 604 675-3900 (M-F, 8:30-5:00) OR 604-527-4893 (after hours)

D. Confirmed EVD Patients: Criteria for Discontinuation of Strict Isolation Precautions and Process for Patient Discharge

The decision to discontinue strict isolation precautions and/or discharge the patient from hospital is made based upon both clinical and laboratory data. The absence of fever is an unreliable indicator of infectivity in the later stages of disease and cannot be used as the sole criterion for de-escalation of isolation precautions. The process should involve a collaborative discussion between the treating physician, infection prevention and control, infectious disease specialists, local and provincial medical microbiologists, and the medical health officer, in addition to other expertise that is deemed necessary by this team.

The following sections have been adapted from Kreuels, B, et al, 2014 for standing down precautions for those recovering from confirmed EVD.[2]

Criteria for Discontinuation of Strict Isolation Precautions

Strict isolation precautions for EVD may be stepped down to routine practices with additional precautions (e.g., contact/droplet as indicated by the patient's condition) if the following criteria are met:

- ☐ two negative plasma Ebola RT PCR tests at least 24 hours apart
- ☐ consultation between experts in IPC, Infectious Diseases, provincial lab, and Public Health
- ☐ patient's ability to comply with instructions
- ☐ continence of stool and urine
- ☐ absence of vomiting.

[2] Adapted from Kreuels, B, et al. (2014) A Case of Severe Ebola Virus Infection Complicated by Gram-Negative Septicemia. *New England Journal of Medicine*, 371: 2394-401.

Criteria for Discharge from Hospital

Patients may be considered for discharge if they meet the following criteria:

Clinical criteria:

- ☐ three days without fever or significant symptoms, **AND**
- ☐ a significant improvement in clinical condition, **AND**
- ☐ able to feed, wash and walk independently.

Supporting laboratory results:

- ☐ plasma Ebola RNA PCR is negative on day four or later after the onset of the symptoms, **OR**
- ☐ two negative plasma Ebola RT PCR results at least 48 hours apart after results were previously positive, **OR**
- ☐ patient symptoms are not thought to be due to EVD, plus two negative plasma Ebola RT PCR results 48 hrs apart.

Alternatively, due to ongoing care requirements resulting from or unrelated to EVD, the patient might be referred for transfer to another ward for convalescence when the discharge criteria have been met.

Discharge Medications, Supplies and Counselling on Personal Precautions

Patients recovering from EVD may be weak for some weeks or months and additional help may facilitate recovery. Nutritional support including micro- and macro-nutrient supplementation, physiotherapy/ occupational therapy/rehabilitation facility referral, and/or psychosocial assessment and support may be necessary during this convalescent phase.

Routine practices are adequate to prevent nosocomial transmission of virus once discontinuation criteria are met. However, studies have demonstrated detectable virus in certain bodily fluids after virus clearance from the blood. This includes: breast milk (two weeks), urine (four weeks), sweat (six weeks) and semen (three months). During this time, transmission of virus remains a theoretical possibility. Patients should be advised on the appropriate personal precautions to take with close contacts, including avoidance of breast feeding and abstinence from sexual relations or use of condoms for at least three months after onset of disease. Refer to the Public Health Agency of Canada's *Public Health Management of Cases and Contacts of Human Illness Associated with Ebola Virus Disease* for specific recommendations on management of convalescent confirmed cases after discharge from hospital.[3]

[3] Public Health Agency of Canada (2014) Public Health Management of Cases and Contacts of Human Illness Associated with Ebola Virus Disease (EVD). Available from: www.phac-aspc.gc.ca/id-mi/vhf-fvh/cases-contacts-cas-eng.php.

Infection Control Procedures for Stepping Down Precautions or Discharge

Patient release procedures are in place to protect healthcare workers and to ensure that the patient being discharged or moved to another unit for convalescent care does not transfer environmental contamination outside of the isolation unit. Healthcare workers are to remain in Lower Transmission Risk PPE throughout the discharge or transfer process.

1. Patient preparation for stepping down precautions or discharge:
   - Patient will be provided with a clean disposable gown.
   - Patient will shower, using the shower in the treatment room, with chlorhexidine gluconate (CHG) for 10 minutes.
   - Following the shower, the patient will don the clean gown and, just prior to exiting the room, will don booties.
   - Patient will be relocated to an adjacent treatment room, avoiding any contact with surfaces and objects along the way.
   - Once in the adjacent treatment room, the patient will shower again for 10 minutes with CHG.
   - While showering, the paths the patient walked to enter the adjacent treatment room and the first shower are mopped with disinfectant suitable for non-enveloped viruses.
   - The gown and booties should be disposed of in designated biohazardous waste container for EVD waste.
   - Following the second shower:
     - If the patient is being discharged, s/he dons clean street clothing and exits the unit;
     - If the patient is moving to another part of the hospital for convalescent care, s/he dons a regular hospital gown and exits the unit.

2. Patient Clothing and Personal Belongings:
   - Any soiled or contaminated clothing the patient was wearing at the time of admission should be disposed of in a designated biohazardous waste container for EVD waste.
   - Any other personal items belonging to the patient that entered the treatment unit must be autoclaved or disinfected with a disinfectant suitable for non-enveloped viruses. If this is not possible, they must be disposed of in a designated biohazardous waste container for EVD waste (consult Infection Prevention and Control).

3. Hospital Equipment and Supplies:
   - For terminal cleaning of patient room, refer to Section F. *in Recommendations for Environmental Cleaning* in the *Recommendations for Environmental Services, Biohazardous Waste Management, and Food and Linen Management for Ebola Virus Disease (EVD)*[4]
   - For cleaning of medical equipment used in the care of confirmed EVD patients, see *Recommendations for Cleaning and Decontaminating Medical Equipment from an Ebola Virus Disease Isolation Room*[5]

E. Post-Discharge Supports

Based on the experience during outbreaks in Western Africa, rejection of patients by their communities is common after recovery from EVD. While the experience in North America may be different, survival from EVD may result in significant social stigmatization. Education regarding EVD and psychosocial support should be made available to patients and their family members through health authority and community programming, with ample opportunity for questions to be answered. Public Health should be in regular contact during re-integration into community life.

[4] http://www2.gov.bc.ca/gov/DownloadAsset?assetId=B488FCB4D75B490AB6B421C06B4E8FB9&filename=standard-operating-procedures.pdf

[5] http://www2.gov.bc.ca/gov/topic.page?id=CA65B72A0D5C4B40A8CD90E346D447A7