



Ebola Virus Disease
Public Health Management

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1.0 BACKGROUND INFORMATION

The Nova Scotia Department of Health and Wellness (DHW) has developed this document to provide guidance to public health (PH) staff and other health care professionals in the event that a human case of Ebola Virus Disease (EVD) or a close contact of an EVD case is identified in Nova Scotia.

The strategy outlined in this guidance is rapid control and containment (i.e. to reduce opportunities for transmission to contacts and ensure timely assessment of contacts). The objective of this guidance is to contain disease spread at its source.

This guidance is based on currently available scientific evidence and expert opinion and is subject to change as any new information becomes available.

In light of ongoing outbreaks of EVD in several countries in West Africa, the Public Health Agency of Canada (PHAC) has recently reviewed and updated its case definition for human illness caused by Ebola viruses.

This document provides guidance on the public health management of confirmed cases and their contacts, and persons under investigation (PUI) for EVD.

Nova Scotia has strong infection prevention and control (IPC) systems in place and therefore the risk of acquiring EVD in Nova Scotia is extremely low. Published data on the disease are relatively limited and experience treating and managing cases in developed countries is rare. PHAC is working closely with its national and international partners to track and monitor EVD activity around the world and is assessing the risks of EVD in Canada on an ongoing basis. Up-to-date case counts and further information on the ongoing outbreaks in Africa can be found on the World Health Organization (WHO) website:

<http://www.who.int/csr/disease/ebola/en/>

EVD is a severe acute viral illness characterized by sudden onset of fever, malaise, myalgia, and severe headache, followed by pharyngitis, vomiting, diarrhea and, in some cases, maculopapular rash. Hemorrhagic symptoms occur in about 50-60% of cases, often in the later stages of disease. The incubation period of EVD varies from 2 to 21 days. There is no risk of transmission during the incubation period. Ebola virus is transmitted by direct contact (e.g. through broken skin or mucous membranes) with the blood or other body fluids (e.g. stool, urine, saliva, semen) of an infected individual, and/or indirectly through contact with environmental surfaces and fomites (e.g. needles) soiled with contaminated body fluids. Airborne transmission has not been documented as a mechanism of person-to-person spread.

Cases are not considered to be communicable before the onset of symptoms but communicability increases with each stage of illness and the case remains communicable as long as blood and body fluids contain the virus. This includes the post-mortem period. Non-fatal cases have fever for several days and typically improve around day 6-11. Convalescence, however, is extended and often associated with sequelae such as myelitis, recurrent hepatitis, psychosis, or uveitis.

A study on transmission of Ebola virus from fomites in an isolation ward and from convalescent patients concludes that the risk of transmission is low when recommended infection control guidelines for viral hemorrhagic fevers are followed.

Based on available evidence, the Ebola virus can be found in body fluids including saliva and semen during the acute and convalescent phases of the illness. No data exist on the effectiveness of condoms to reduce the risk of transmission of Ebola virus. The Expert Working Group for the Canadian Guidelines on Sexually Transmitted Infections recommends that, while the risk of sexual transmission of Ebola virus during convalescence appears to be low, individuals recovering from EVD either abstain from sexual intercourse or consistently use latex condoms for 15 weeks after the date of symptom onset.

2.0 OBJECTIVES

In the current context, Canada could see the introduction of a small number of cases connected to the outbreaks in affected African countries. The majority of febrile patients from affected areas will likely have an alternate diagnosis such as malaria or influenza. It is expected that these cases would be rapidly identified through surveillance activities and that the case(s) would be immediately isolated to prevent spread to close contacts. EVD is a severe illness with no licensed antiviral treatment; cases will likely require hospitalization for supportive care and strict IPC management (for more information on IPC measures see: [EVD: Infection Prevention and Control Guidelines for Healthcare Settings in Nova Scotia](#))

The role of public health for case management is to support early identification of confirmed cases and persons under investigation (PUI) through surveillance, contact tracing, public and health care professional education and communication activities. Public health authorities may also be involved in providing information regarding the routing of PUIs and confirmed cases to specific health care facilities where optimal IPC measures and laboratory services can be implemented and supporting hospital preparedness in this regard as needed.

3.0 CASE DEFINITION

The case definitions for confirmed cases and persons under investigation (PUI) Ebola Virus Disease can be found at [Nova Scotia Surveillance Guidelines for Notifiable Diseases and Conditions for Ebola](#).

4.0 REPORTING BY HEALTH CARE PROFESSIONALS

Health care professionals should report any PUI or confirmed cases to the Medical Officer of Health. A deceased individual who meets the case definition should also be reported. For reporting requirements to public health see [Nova Scotia Surveillance Guidelines for Notifiable Diseases and Conditions for Ebola](#).

5.0 CASE REPORT FORM

All confirmed cases and PUI must be reported by Public Health to PHAC using the [Ebola Virus Disease Case Report Form](#). Please complete as much detail as possible on this form at the time of the initial report. It is not expected that all fields will be completed during the initial report, but that updates will be made when information becomes available.

6.0 PUBLIC HEALTH MANAGEMENT OF EVD CASES AND CONTACTS

6.1 Case Management

For confirmed EVD cases and PUI:

- MOH to review the clinical status and travel/exposure history as per EVD Protocol.
- In collaboration with other clinical specialists as per EVD protocol, provide information regarding when, where and how (e.g. mode of transport) to go for medical assessment, and instruct individuals to report travel history or contact history immediately upon presenting to a health care setting. The health care facility should be notified prior to arrival of the individual so that the facility can ensure appropriate IPC measures are in place to safely assess symptomatic individuals.
- For information on laboratory testing, please see: Nova Scotia Laboratory Guidelines
- Complete a case investigation using [PHAC's EVD Case Report Form](#).
- Conduct active daily monitoring of cases (e.g. by liaising with hospital staff) for the duration of illness, or until laboratory investigation has ruled out EVD infection.
- The case investigation should include identification of close contacts (see definition and management below).
- The MOH will decide, on a case-by-case basis, what further Public Health follow-up may be required.

6.2 Case Management of a convalescent confirmed case who has returned home

- Provide counseling on the risk of transmission of EVD through blood and body fluids. Refer to: <http://novascotia.ca/dhw/cdpc/ebola.asp>
- Discharge planning (including but not limited to continuation of infection control precautions in the home setting) should be managed on a case-by-case basis in consultation with infectious disease specialists, IPC and MOH.
- Strongly advise abstinence from sexual activity (or consistent use of latex condoms) for 15 weeks following onset of illness.
- Establish process for ongoing monitoring (for the purpose of monitoring for sequelae and re-enforcing recommendations and IPC measures during communicable period).
- Facilitate laboratory testing, in consultation with Infectious Diseases and/or MOH, of these individuals to determine when the individual's body fluids are free of the Ebola virus. Only at that time, should the individual be considered non-communicable and therefore no longer needing to be monitored by public health.

6.3 Contact Tracing

Considering the severity of EVD, the lack of treatment options and the objective for this guidance, it is expected that a robust public health response to identify close contacts of confirmed cases will occur in Nova Scotia.

The purposes of contact tracing for close contacts of confirmed cases are:

- to identify any symptomatic contacts as early as possible to facilitate treatment; and
- to facilitate prompt laboratory diagnostic testing; and
- to reduce the amount of time between the onset of illness and isolation in order to reduce the opportunity for transmission to others.

A close contact is defined as an individual:

- including, but not limited to, a health care worker, family member, funeral worker, or volunteer, who has provided care to a confirmed case or who has had other close physical contact with the case or deceased body that may have resulted in unprotected exposure to blood or other body fluids from the case. Unprotected exposure must have occurred during the period of communicability (i.e. after onset of symptoms in the confirmed case and before laboratory testing has confirmed absence of the virus in their body fluids).

OR

- who has had contact with surfaces or equipment contaminated with blood or body fluids of a confirmed case;

OR

- who has worked in a laboratory handling specimens from confirmed cases and may have had unprotected exposure to these specimens through the course of their work.

Note: If the individual, when first identified, is found to have clinical evidence of EVD illness that developed within 21 days following the last close contact with the confirmed case, the individual should be managed as a PUI.

Public health management of close contacts of confirmed cases includes:

- Quarantine is not recommended for close contacts of a confirmed case.
- Active daily monitoring of close contacts for fever and other symptoms should be conducted by public health staff for the duration of the monitoring period (i.e. 21 days from the last possible exposure). Refer to Interim Guidance: Ebola Virus Disease (EVD); Infection Prevention and Control (IPC) Measures for Borders, Healthcare Settings, and Self-Monitoring at Home. <http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/ebola-ipc-pci-eng.php>
- If symptoms consistent with EVD (including an oral temperature reading $\geq 38.0^{\circ}\text{C}$ (100.4°F) develop in the close contact, public health should manage the individual as a PUI.
- Provide education - refer contacts to: <http://novascotia.ca/dhw/cdpc/ebola.asp>
- Please use [EVD Contact Line List](#) and [EVD Contact Monitoring Form](#)
- For the 21 days following the last possible exposure, advise the close contact to:
 - Take (orally) and record their temperature twice daily and report any reading $\geq 38.0^{\circ}\text{C}$ (100.4°F) to public health immediately (as opposed to waiting for public health to contact them as part of active daily monitoring).
 - If necessary, teach the individual how to take their temperature accurately and provide a thermometer if they do not have access to one.
 - Refrain from taking any antipyretic medication during the monitoring period if possible.
 - Self-monitor for the appearance of any other early symptoms of EVD including severe headache, muscle pain, malaise, sore throat, vomiting, diarrhea and rash.
 - Self-isolate as quickly as possible should symptoms develop and contact the local public health authority immediately for further direction.
- Instruct close contacts of confirmed cases to not travel outside of their city of residence during the monitoring period in order to facilitate daily contact with public health

authorities conducting active daily monitoring as well as access to health care in an appropriate setting should it be required.

Public health management of contacts who are not considered to be close contacts:

Contacts of confirmed cases who are **not** considered to be close contacts (e.g. health care workers who have cared for a case while strictly adhering to recommended IPC measures, household contacts without known exposure to blood or body fluids) should undertake daily self-monitoring for EVD symptoms during contact and for 21 days following last contact. This includes monitoring for fever of $\geq 38.0^{\circ}\text{C}$ (oral). Should fever or EVD symptoms develop, these individuals should self-isolate as quickly as possible and contact the local public health authority or call 811 immediately for further direction. For information, refer contacts to:

<http://novascotia.ca/dhw/cdpc/ebola.asp>

7.0 INFORMATION FOR RETURNING TRAVELLERS FROM AFFECTED AREAS

With the change in the EVD risk, PHAC is implementing a revised approach to meeting the Order in Council obligations. As of January 23, 2016:

1. Travellers will be required to self-declare travel from affected areas within the past 21 days.
2. Travellers will be considered to have fulfilled the requirement to report to a Public Health Authority upon assessment by a Public Health Agency of Canada Quarantine Officer (PHAC QO) at the Point of Entry. The subsequent requirement for travellers to report to a Local Public Health Authority (LPHA) will cease.
3. Travellers will be directed by the PHAC QO to self-monitor for symptoms consistent with EVD for the established 21-day monitoring period. Travellers will be instructed to call their LPHA to report if they develop symptoms. Case management ([Section 6.0](#)) will then be initiated.
4. Travellers will be asked to report travel intentions during the 21-day monitoring period to PHAC. For travel within Canada, the traveler will be given the appropriate LPHA contact information to call should they develop symptoms while in another jurisdiction. For travel outside of Canada, notifications under the International Health Regulations (IHR) will cease. This is consistent with the US, which has also ceased issuing IHR notifications with respect to EVD travel.

PHAC is confident that these changes enable us to continue to fulfil obligations under the OIC, while at the same time alleviating any undue burdens on the provinces resulting from the change in EVD risk. We will continue to reassess our border measures in keeping with public health risk.