

Ebola Virus Disease (EVD)

Interim Risk Assessment and Evaluation of Returning Travellers

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This document has been updated as of August 29, 2014, based on the best available evidence at that time. Version changes are summarized at the end of this document. Please refer to the Public Health Ontario website at www.publichealthontario.ca/ebola for the most recent version.

1. PREAMBLE

This document provides interim guidance to assist public health authorities and other health care professionals in the initial risk assessment and evaluation of returning travellers with respect to Ebola Virus disease (EVD). This document will assist in determining the appropriate public health management for these individuals. However, other more common travel-associated diseases should also be considered in the differential diagnosis of a symptomatic, returning traveller. These recommendations may change as new information becomes available. **As with any guidance document, clinical judgment remains essential and may result in decisions that differ from these general guidelines.**

When conducting a risk assessment, there are three main factors to consider, as summarized in Table 1:

- 1) Travel history
- 2) Activities in affected countries/area that increase risk
- 3) Presence or absence of symptoms and signs compatible with EVD

Potential questions to aid in eliciting information related to these three factors can be found in the Appendix to this document.

Table 1: Overview of factors to consider in risk assessment

Travel history <i>Within the last 21 days</i>	Activities in affected countries/areas that increase risk	Symptoms and signs compatible with EVD
<p>EVD affected countries/areas can be found at the PHO website at: http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/Pages/EVD_Geographic_Areas_Affected.aspx</p>	<ul style="list-style-type: none"> • Direct contact with bodily fluids of person known or highly likely to have EVD, including sexual contact (consider whether personal protective equipment was used and to what extent) • Exposed to objects that have been contaminated with bodily fluids from a person known or highly likely to have EVD (consider whether personal protective equipment was used and to what extent) • Handled a dead body in the geographic area where an outbreak is occurring (consider whether personal protective equipment was used and to what extent) • Worked with Ebola virus in a laboratory (consider whether personal protective equipment and biosafety measures were used and to what extent) • Close contact (i.e., within one metre) of a person known or highly likely to have EVD, such as household or family contacts or those seated next to the person on an airplane; close contact constitutes more than just walking by the person • Handling or ingestion of fruit bats or bush meat (chimpanzees, gorillas, forest antelope or other animals potentially infected with Ebola virus) • Visiting, working or being a patient in a hospital or other health care facility (consider if patients with EVD were known to be treated in that health care facility) 	<p>Early symptoms</p> <p>Sudden onset of:</p> <ul style="list-style-type: none"> • Fever ($\geq 38^{\circ}\text{C}$) • Headache • Malaise • Myalgia <p>Subsequent symptoms</p> <p>Gastrointestinal:</p> <ul style="list-style-type: none"> • Diarrhea • Abdominal pain • Vomiting <p>Other:</p> <ul style="list-style-type: none"> • Sore throat • Chest pain • Cough • Rash • Conjunctivitis <p>Hemorrhagic findings: Occurs in 50 per cent of cases</p> <ul style="list-style-type: none"> • Petechiae • Ecchymosis • Hemorrhage <p>Laboratory abnormalities include:</p> <ul style="list-style-type: none"> • Thrombocytopenia • Leukopenia • Elevated liver enzymes

2. EVD EXPOSURE RISK LEVEL

Determine the returning traveller's EVD exposure risk level using the following classification scheme.

Note: Exposures to persons known or highly likely to have EVD are only considered to increase risk of transmission of infection if the exposure occurred during the period when the person was **symptomatic**. Exposures during the incubation period (when the patient is asymptomatic) should not result in transmission of infection.

No Risk	<ul style="list-style-type: none"> Was NOT in an affected country/area <p>AND</p> <ul style="list-style-type: none"> No known exposures to anyone known or likely to have EVD
Very Low Risk	<ul style="list-style-type: none"> Was in an affected country/area <p>AND</p> <ul style="list-style-type: none"> No known potential exposures (e.g., no contact with an ill or dead person or their bodily fluids, or a health care setting, or bush meat or bats)
Low Risk	<p>While in an affected country/area:</p> <ul style="list-style-type: none"> Was a patient, visitor or worker in a health care facility without known contact with a person known or highly likely to have EVD (Note: Risk may be higher if patients with EVD were known to be treated in the same health care facility) <p>OR</p> <ul style="list-style-type: none"> Interacted with a person known or highly likely to have EVD but without direct or close contact (e.g., did not touch the person or their bodily fluids and did not come within one metre of the person, except for just walking by them)
Intermediate Risk	<p>While in an affected country/area, USED full, appropriate personal protective equipment at all times (as per PHO IPAC guidance)</p> <p>AND</p> <ul style="list-style-type: none"> Had direct or close contact with a person known or highly likely to have EVD (e.g., touched the person or any of their bodily fluids or was within one metre of them, not including just walking by the person) <p>OR</p> <ul style="list-style-type: none"> Provided health care to a person known or highly likely to have EVD <p>OR</p> <ul style="list-style-type: none"> Was a laboratory worker handling specimens of a person known or highly likely to have EVD, using appropriate biosafety measures at all times <p>OR</p> <ul style="list-style-type: none"> Had contact with a dead body <p>Note: The above classification scheme does not apply to exposures that occur in Ontario. If these types of exposures occur in Ontario, the degree of exposure and use of precautions will be reviewed by Infection Prevention and Control in the institution and a decision about EVD exposure risk level and appropriate follow-up will be determined.</p>

High Risk

While in an affected country/area, DID NOT USE full, appropriate personal protective equipment at all times (as per [PHO IPAC guidance](#))

AND

- Had percutaneous (e.g., needle stick) or mucous membrane exposure to body fluids of person known or highly likely to have EVD, or had sexual contact with a person known or highly likely to have EVD (regardless of condom use).

OR

- Had direct or close contact with a person known or highly likely to have EVD (e.g., touched the person or their bodily fluids or was within one metre of them, not including just walking by the person). This would be the likely EVD exposure risk level for household and family contacts and those seated next to the person on an airplane

OR

- Provided health care to a person known or highly likely to have EVD

OR

- Was a laboratory worker handling specimens of a person known or highly likely to have EVD, WITHOUT appropriate biosafety measures at all times

OR

- Had contact with a dead body

OR

- Handled or consumed a bat or bush meat

3. MANAGEMENT BASED ON EVD EXPOSURE RISK LEVEL AND SYMPTOMS

Table 2 outlines the recommended management of the returning traveller. It takes into account the EVD exposure risk level outlined above and the presence or absence of symptoms compatible with EVD.

Table 2: Management based on EVD exposure risk level and symptoms

EVD Exposure Risk Level	Symptoms compatible with EVD such as fever or other symptoms outlined in Table 1	No symptoms
No Risk	<ul style="list-style-type: none"> • Use clinical judgment in the appropriate management and investigations of a returning traveler 	<ul style="list-style-type: none"> • No need to contact public health as no public health follow-up indicated
Very Low Risk	<ul style="list-style-type: none"> • Use appropriate infection control precautions during medical evaluation for suspected EVD as per PHO IPAC guidance, until EVD ruled out • If a case of EVD is suspected after clinical assessment, perform appropriate laboratory testing as per PHO Ebola Virus Disease (EVD), Interim Sample Collection and Submission Guide • Contact public health to determine ongoing monitoring 	<ul style="list-style-type: none"> • No need to contact public health as no public health follow-up indicated • Twice daily self-monitoring of temperature and ongoing monitoring for symptoms for 21 days after leaving the affected country / area • Movement not restricted
Low Risk	<ul style="list-style-type: none"> • Use appropriate infection control precautions during medical evaluation for suspected EVD as per PHO IPAC guidance, until EVD ruled out • If a case of EVD is suspected after clinical assessment, perform appropriate laboratory testing as per PHO Ebola Virus Disease (EVD), Interim Sample Collection and Submission Guide • Contact public health to arrange ongoing monitoring 	<ul style="list-style-type: none"> • Public health counselling regarding symptoms compatible with EVD and checking temperature • Twice daily self-monitoring of temperature and ongoing monitoring for symptoms for 21 days after leaving the affected country / area • Intermittent follow-up by public health to check for fever and symptoms, with frequency determined by public health • Movement not restricted

<p>Intermediate Risk</p> <p>Use of full, appropriate PPE at all times</p>	<ul style="list-style-type: none"> • Use appropriate infection control precautions during medical evaluation for suspected EVD as per PHO IPAC guidance, until EVD ruled out • If a case of EVD is suspected after clinical assessment, perform appropriate laboratory testing as per PHO Ebola Virus Disease (EVD), Interim Sample Collection and Submission Guide • Contact public health to arrange ongoing monitoring 	<ul style="list-style-type: none"> • Public health counseling regarding symptoms compatible with EVD and checking temperature • Twice daily self-monitoring of temperature and ongoing monitoring for symptoms for 21 days after leaving the affected country / area • Daily follow-up by public health to check for fever and symptoms for 21 days after leaving the affected country / area • Movement not restricted
<p>High Risk</p> <p>Without use of full, appropriate PPE at all times</p>	<ul style="list-style-type: none"> • Use appropriate infection control precautions during medical evaluation for suspected EVD as per PHO IPAC guidance, until EVD ruled out • If a case of EVD is suspected after clinical assessment, perform appropriate laboratory testing as per PHO Ebola Virus Disease (EVD), Interim Sample Collection and Submission Guide • Contact public health to arrange ongoing monitoring 	<ul style="list-style-type: none"> • Public health counseling regarding symptoms compatible with EVD and checking temperature • Twice daily self-monitoring of temperature and ongoing monitoring for symptoms for 21 days after leaving the affected country / area • Daily follow-up by public health to check for fever and symptoms for 21 days after leaving the affected country / area • Consult with public health regarding proposed daily activities, including methods of transportation • Persons should not travel outside of their city of residence during the monitoring period to facilitate daily public health contact and access to prompt medical care, if needed

PPE = Personal protective equipment

Additional EVD-related guidance regarding management of the returning traveller

- (1) All follow-up and self-monitoring takes place for 21 days after leaving the affected country / area.
- (2) People who are self-monitoring their temperature should record their oral temperature readings twice daily and refrain from taking antipyretics during the monitoring period if possible. Oral thermometers should not be shared.
- (3) If the person who is self-monitoring develops a fever $\geq 38^{\circ}\text{C}$ or any other symptoms compatible with EVD, they should contact a health care provider for further direction and self-isolate immediately. As well, if the person is being monitored by public health, they should notify public health immediately. If assessment in a hospital is felt to be indicated, public health should contact the hospital to advise that the person will be coming and will require appropriate precautions, as per [PHO IPAC guidance](#), on arrival.
- (4) When conducting a clinical assessment of a symptomatic patient, consider both their presenting signs and symptoms and their EVD exposure risk level in determining their likelihood of having EVD.
- (5) If EVD testing is being ordered, consult the Public Health Ontario Laboratory Customer Service Centre at 416-235-6556 or 1-877-604-4567 as per the [PHO guidance document](#). The local public health unit should also be notified.
- (6) People who are in the EVD Intermediate or High Risk Exposure Levels and are health care providers, should notify their organization prior to returning to work. Public health should discuss return to work policies with this organization.

ADDITIONAL PHO GUIDANCE

PHO website: [Ebola virus disease](#)

[Infection Prevention and Control Guidance for Patients with Suspected or Confirmed Ebola Virus Disease \(EVD\) in Ontario Health Care Settings](#)

[Ebola Virus Disease \(EVD\), Interim Sample Collection and Submission Guide](#)

APPENDIX:

Risk Assessment Questions and Considerations

When evaluating a returning traveller, the following questions and considerations will help assess their EVD exposure risk level.

1. Travel history

Is there a history of recent travel to any of the following African countries/areas currently experiencing an EVD outbreak? (Countries/areas are as of August 29, 2014)

For updated information:

www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/Pages/EVD_Geographic_Areas_Affected.aspx

Guinea If “Yes” → What were the arrival and departure dates?

Liberia If “Yes” → What were the arrival and departure dates?

Sierra Leone If “Yes” → What were the arrival and departure dates?

Nigeria (Lagos and Port Harcourt only) If “Yes” → What were the arrival and departure dates?

Democratic Republic of Congo (Equateur Province) If “Yes” → What were the arrival and departure dates?

2. Activities during travel in affected countries/areas that increase risk

What was the purpose of this travel (e.g., health care worker, humanitarian volunteer, business, tourism, visiting friends and relatives)?

Was there any contact with local populations? What was the nature of the contact?

Is the person a household contact of someone known or likely to have EVD?

Was the person a patient, visitor or worker in a health care facility in any of the affected countries/areas? Was there known to be any person known or highly likely to have EVD being treated in that health care facility?

Was there any contact with a person known or highly likely to have EVD?

If “Yes” → What was the nature of the exposure?

- Percutaneous (e.g., needle stick) or mucous membrane exposure to body fluids
- Sexual contact
- Touched the person (e.g., handshake)
- Touched any bodily fluids

- Provided direct care
- Came within one metre of the person. Was this more than just walking by the person?
- Handled a dead body in the geographic area where an outbreak is occurring
- Laboratory worker processing bodily fluids

If “Yes” to any of the above:

- Was appropriate personal protective equipment (PPE) used?
- How well was the PPE used (including was it appropriately put on and taken off)?
- Was PPE used all the time?
- If working in a laboratory, were appropriate biosafety precautions used at all times?

Was there any handling or ingestion of fruit bats or bush meat (chimpanzees, gorillas, forest antelopes or other animals)?

3. Presence or absence of symptoms compatible with EVD

Is the person feeling well?

Does the person have any symptoms that could be compatible with EVD? (See list in Table 1 above)

If “Yes” → For each symptom, describe the following:

- What symptoms they have?
- When did the symptom start?
- How long has the symptom lasted?
- How severe is the symptom?

DOCUMENT CHANGE HISTORY

Revision Number	Date of Implementation	Description and Change
001	August 29, 2014	Replaced specific countries/areas with the link to PHO’s list on http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/Pages/EVD_Geographic_Areas_Affected.aspx