



Office of the  
Provincial Health Officer

# British Columbia Ebola Virus Disease (EVD) Contact Investigation and Management Guideline

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Provincial Ebola Expert Working Group

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## Introduction

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The purpose of this guideline is to provide B.C. public health practitioners with evidence-based guidance to identify and manage people who have been in contact with persons under investigation<sup>1</sup> or confirmed<sup>2</sup> Ebola virus disease (EVD) cases. This guideline is aligned with the Public Health Agency of Canada's *Management of cases and contacts of human illness associated with Ebola Virus Disease Interim Guidance*, available at: [www.phac-aspc.gc.ca/id-mi/vhf-fvh/cases-contacts-cas-eng.php](http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/cases-contacts-cas-eng.php).

Controlling the spread of EVD relies on rigorous contact tracing and management to interrupt the chain of transmission. Contact tracing also identifies symptomatic contacts early for appropriate diagnosis and supportive treatment. There is currently no licensed prophylaxis, treatment or vaccine for EVD. Contacts of probable and confirmed EVD cases should be systematically identified and monitored for 21 days from their last exposure. While contact investigation may begin with a person under investigation (PUI), contact management for contacts of a PUI is not initiated until EVD has been confirmed. The level of monitoring and public health intervention will be based on a risk assessment of the nature and likelihood of exposure to a case of EVD.

Contacts who develop symptoms consistent with EVD during their incubation period must be referred for evaluation of their symptoms.

## Contact Classification, Definitions and Risk

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Contacts are categorized and managed based on the likelihood that they were exposed to the Ebola virus either in an affected region or in British Columbia. This reflects that additional considerations are warranted for the person who has come from an area with widespread and intense EVD transmission and concomitant higher exposure risk outside of the health care setting. According to the US Centre for Disease Control, "The high toll of Ebola virus infections among health care workers providing direct care to Ebola patients in countries with widespread transmission or uncertain control measures<sup>3</sup> suggests that there are multiple potential sources of exposure to Ebola virus in these countries, including unrecognized breaches in Personal Protective Equipment (PPE), inadequate decontamination procedures, and exposure in patient triage areas. Due to this higher risk, health care workers who provide direct patient care are classified in the some risk category, for which additional precautions may be recommended upon their arrival in the United States." <sup>4</sup>

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<sup>1</sup> Anyone with a potential exposure to Ebola virus, any symptoms compatible with EVD.

<sup>2</sup> Anyone with laboratory confirmation of EVD infection.

<sup>3</sup> [www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html](http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html)

<sup>4</sup> Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure. [www.cdc.gov/vhf/ebola/exposure/monitoring-and-movement-of-persons-with-exposure.html#recommendations-for-evaluating](http://www.cdc.gov/vhf/ebola/exposure/monitoring-and-movement-of-persons-with-exposure.html#recommendations-for-evaluating)

This B.C. Contact Management Guideline categorizes people at risk of EVD into two categories for contact management purposes:

- ▶ A person who has returned to B.C. from working or living in a country with widespread and intense Ebola virus transmission<sup>5</sup>, or from a country where Ebola is emerging as a concern.
- ▶ A person who has been exposed to a person with EVD in British Columbia.

### **1. Returnees to B.C.**

These are people who have been working or living in a country with widespread and intense Ebola virus transmission<sup>6</sup>, or from a country where Ebola is emerging as a concern, including and categorized as follows:

#### **1.1 Higher Risk**

A person who does not have symptoms and who had unprotected exposure to the Ebola virus (i.e., known EVD exposure or unprotected direct contact):

- ▶ direct or close contact with a probable or confirmed case while they were ill; **OR**
- ▶ percutaneous or mucous membrane exposure or direct skin contact with body fluids of a confirmed or probable case of EVD; **OR**
- ▶ sexual contact with a probable or confirmed EVD case; **OR**
- ▶ laboratory worker processing body fluids of probable or confirmed EVD cases without appropriate PPE or standard biosafety precautions; **OR**
- ▶ not wearing PPE and/or not adhering to appropriate infection prevention and control precautions, who directly or indirectly cared for a probable or confirmed case of EVD (e.g., direct patient care, contact with environment or fomites of a case); **OR**
- ▶ a breach of PPE (of any kind); **OR**
- ▶ direct exposure to human remains of an EVD case without appropriate PPE.

#### **1.2 At Risk**

- ▶ Returning health care workers and laboratory staff who have had direct contact with EVD patients or sources of the virus, but with no breaches in PPE and consistent use of infection control precautions.
- ▶ Returning health care workers and aid workers who were working in clinical or non-clinical roles and had no direct contact with EVD patients or other sources of Ebola virus.
- ▶ Direct exposure to human remains (e.g. through participation in funeral or burial rites) in the geographic area where the outbreak is occurring with appropriate PPE.

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<sup>5</sup> World Health Organization (2015) Ebola Virus Disease. [www.who.int/csr/disease/ebola/en/](http://www.who.int/csr/disease/ebola/en/)

<sup>6</sup> World Health Organization (2015) Ebola Virus Disease. [www.who.int/csr/disease/ebola/en/](http://www.who.int/csr/disease/ebola/en/)

### 1.3 At Low Risk

A person who has been in a country with widespread and intense Ebola virus transmission within the past 21 days and has had no known exposures.

### 1.4 Other

While some people may initially be considered contacts, further assessment may determine these individuals do not meet the contact definition. This includes travellers returning from countries where Ebola may be identified, but are not experiencing intense and widespread transmission.

## Public Health Measures for Returnee Contacts

### Summary of Public Health Management of Asymptomatic Contacts

For a period of 21 days following exit from an Ebola affected area, asymptomatic individuals should be prepared to self-isolate as quickly as possible if symptoms develop and be aware of how to seek advice on management of their onset of symptoms. Table 1 below provides a summary of the specific recommendations. Additional details of recommended public health measures start on page 10.

**Table 1: Summary of Public Health Management for Returnees to B.C.<sup>7</sup>**

Risk Level	Recommended B.C. Public Health Measures	Federal Measures (Quarantine program)
<b>1.1 Higher Risk</b>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ Recommended to self-isolate. Order to self-isolate at the discretion of the medical health officer.</li> <li>▶ Should remain near a Type Three health facility (up to two hours by land ambulance or private transport).</li> <li>▶ In home, limit contact with other household members (i.e., where possible, separate bedroom).</li> <li>▶ Limit social interactions.</li> <li>▶ Eliminate all contact with animals - see Appendix E for more information</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Daily active monitoring.<sup>8</sup></li> </ul> <p><b>Return to work</b></p> <ul style="list-style-type: none"> <li>▶ Consideration of work that is possible from home/facility where self-isolating.</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ Cannot continue travel.</li> <li>▶ Required to self-isolate.</li> <li>▶ Recommended to stay close to designated EVD treatment site.</li> <li>▶ Required to report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise on self-monitoring.</li> <li>▶ Immediately report to local public health.</li> </ul>

<sup>7</sup> Health facility designation/locations can be found at:  
<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=2AA0A90127D845C697832ED31411A97B&filename=hospital-designation-evd-patients.pdf>.

Risk Level	Recommended B.C. Public Health Measures	Federal Measures (Quarantine program)
<b>1.2 At Risk</b>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ Should remain near a Type Two or Three health facility (up to two hours by land ambulance transport).</li> <li>▶ Travel only on public conveyances that can be exited promptly if symptoms develop.</li> <li>▶ Avoid mass gatherings.</li> <li>▶ Report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Daily active monitoring.</li> </ul> <p><b>Return to work</b></p> <ul style="list-style-type: none"> <li>▶ Is generally acceptable if workplace is within two hours of Type Two or Three facility, but should be discussed with the medical health officer (see Appendix A for decision making considerations).</li> <li>▶ Return to work for health care workers/contractors (both returning and those exposed in B.C.) should be discussed between the health care worker/contractor, medical health officer, director of infection control and director of workplace health (see Appendix A for decision making considerations).</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ May travel by commercial conveyance back to and within Canada.</li> <li>▶ No restrictions on movement.</li> <li>▶ Required to report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise on self-monitoring.</li> <li>▶ Ordered to report to local public health within 24 hours at final destination port.</li> <li>▶ Required to report any symptoms of EVD.</li> <li>▶ Notification to local MHO.</li> </ul>
<b>1.3 Low Risk</b>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ May travel by commercial conveyance back to and within Canada.</li> <li>▶ No restrictions on movement or work.</li> <li>▶ Report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Active monitoring at the discretion of MHO</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ May travel by commercial conveyance back to and within Canada.</li> <li>▶ No restrictions on movement.</li> <li>▶ Required to report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Required to self-monitor.</li> <li>▶ Ordered to report to local public health within 24 hours at final destination port.</li> <li>▶ Required to report any symptoms of EVD.</li> <li>▶ Notification to local MHO.</li> </ul>

<sup>8</sup> **Active monitoring** means public health assumes responsibility for establishing regular communication with the contact, rather than relying solely on the individual to self-monitor and report symptoms if they develop.

Risk Level	Recommended B.C. Public Health Measures	Federal Measures (Quarantine program)
<b>1.4 Other</b>	<p>No specific measures need to be taken.</p> <p>Guidance to be determined on a case-by-case basis by local public health authority.</p>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ May travel by commercial conveyance back to and within Canada.</li> <li>▶ No restrictions on movement.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise on self-monitoring.</li> <li>▶ Notification to local MHO.</li> </ul>

## 2. People Exposed in B.C.

If a case of EVD is identified B.C., contacts will be categorized and managed as follows:

### 2.1 Higher Risk

A person who does not have symptoms and who had unprotected exposure to the Ebola virus (i.e., known EVD exposure or unprotected direct contact):

- ▶ direct or close contact with a probable or confirmed case while they were ill; **OR**
- ▶ percutaneous or mucous membrane exposure or direct skin contact with body fluids of a confirmed or probable case of EVD; **OR**
- ▶ sexual contact with a probable or confirmed EVD case; **OR**
- ▶ laboratory worker processing body fluids of probable or confirmed EVD cases without appropriate personal protective equipment (PPE) or standard biosafety precautions; **OR**
- ▶ not wearing PPE and/or not adhering to appropriate infection prevention and control precautions, who directly or indirectly cared for a probable or confirmed case of EVD (e.g., direct patient care, contact with environment or fomites of a case); **OR**
- ▶ a breach of PPE (of any kind); **OR**
- ▶ direct exposure to human remains of an EVD case without appropriate PPE.

### 2.2 At Risk

- ▶ Health care workers, laboratory staff and others who have had direct contact with EVD patients or sources of the Ebola virus in B.C., but with no breaches in PPE and consistent use of infection control precautions.

**Note:** The use of PPE for EVD patients requires training, practice, competence and observation to ensure the correct donning and doffing.<sup>9</sup> In recent cases of nosocomial transmission outside of affected areas, self-contamination during doffing appears to be a high risk event for exposure that

<sup>9</sup> B.C.'s Ebola Virus Disease Guideline, and donning/doffing guidance can be found at:  
<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=0A814666016549EC8E43E31660178157&filename=british-columbia-ebola-virus-disease-personal-protective-equipment-guidelines.pdf>

may be unrecognized by the health care worker. It may be difficult for health care workers to fully describe if appropriate PPE was in place, or be confident that no breach of PPE/infection prevention and control precautions occurred. In these situations, additional inquiry of the types of PPE and infection prevention and control measures used may be required to fully assess the appropriateness of PPE, to determine which risk category (at risk or at higher risk) the contact belongs.

- ▶ People who interacted with a probable or confirmed EVD case, but without direct or close contact (i.e., did not touch the person or their bodily fluids and did not come within one meter of the person, except for just walking by them).

### **2.3 At Low Risk**

A person who has worn appropriate PPE without a breach and been involved with terminal cleaning of a hospital room used by an EVD patient where the patient is no longer present, or involved with cleaning a contaminated space in the community.

## **Public Health Measures for Contacts of B.C. Cases**

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### **Summary of Public Health Management of Asymptomatic Contacts**

For a period of 21 days following contact with a source of Ebola virus in B.C., asymptomatic individuals should be directed to do the following. All contacts should be prepared to self-isolate as quickly as possible if symptoms develop and be aware of how to seek advice on management of their onset of symptoms. Table 2 identifies recommended public health measures for these people.



**Table 2: Summary of Public Health Management for Contacts of B.C. Cases<sup>10</sup>**

Risk Level	Recommended B.C. Public Health Measures
<b>2.1 Higher Risk</b>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ Recommended to self-isolate. Order to self-isolate at the discretion of the MHO.</li> <li>▶ Should remain near a Type Three health facility (up to two hours by land ambulance or private transport).</li> <li>▶ In home, limit contact with other household members (i.e., where possible, separate bedroom).</li> <li>▶ Limit social interactions.</li> <li>▶ Eliminate all contact with animals - see Appendix E for more information</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Daily active monitoring.<sup>11</sup></li> </ul> <p><b>Return to work</b></p> <ul style="list-style-type: none"> <li>▶ Consideration of work that is possible from home/facility where self-isolating.</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>

<sup>10</sup> Health facility type definitions found at: <http://www2.gov.bc.ca/gov/DownloadAsset?assetId=2AA0A90127D845C697832ED31411A97B&filename=hospital-designation-evd-patients.pdf>

Risk Level	Recommended B.C. Public Health Measures
<b>2.2 At Risk*</b>	<p><b>* Specific guidance for At Risk category to be determined on a case-by-case basis by local public health.</b></p> <p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ Should remain near a Type Two or Three health facility (up to four hours by land ambulance transport).</li> <li>▶ Should not travel outside of their region.</li> <li>▶ Travel only on public conveyances that can be exited promptly if symptoms develop.</li> <li>▶ Avoid mass gatherings.</li> <li>▶ Report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Daily active monitoring.</li> </ul> <p><b>Return to work</b></p> <ul style="list-style-type: none"> <li>▶ Is generally acceptable, but should be discussed with the medical health officer (see Appendix A for decision making considerations).</li> <li>▶ Return to work for health care workers/contractors should be discussed between the health care worker/contractor, the medical health officer, director of infection control and director of workplace health (see Appendix A for decision making considerations).</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>
<b>2.3 Low Risk</b>	<p><b>Movement</b></p> <ul style="list-style-type: none"> <li>▶ May travel by commercial conveyance within Canada.</li> <li>▶ No restrictions on movement or work.</li> <li>▶ Report any planned travel.</li> </ul> <p><b>Monitor</b></p> <ul style="list-style-type: none"> <li>▶ Advise to self-monitor.</li> <li>▶ Avoid anti-pyretic medications.</li> <li>▶ Active monitoring at the discretion of medical health officer.</li> </ul> <p><b>Other prevention</b></p> <ul style="list-style-type: none"> <li>▶ Avoid elective medical procedures.</li> <li>▶ Should not donate blood/tissue.</li> </ul>

<sup>11</sup> Active monitoring means public health assumes responsibility for establishing regular communication with the contact, rather than relying solely on the individual to self-monitor and report symptoms if they develop.

## Description of Public Health Measures for Contacts

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The level of public health intervention for contacts is based on whether or not they have returned from working or living in a country with widespread or intense EVD transmission, or from countries where EVD is emerging as a concern, and their risk of exposure. Public health measures include:

### Movement guidance

Contacts who are self-monitoring for the development of symptoms of EVD should be prepared to self-isolate as quickly as possible, and therefore avoid situations where it would be difficult to leave immediately. While the risk of transmission at symptom onset is still low, rapid self-isolation facilitates early access to care, and reduces the number of contacts exposed to the person under investigation. Limitations on social/mass gatherings may also prevent person-to-person transmission of circulating infections (e.g., influenza), which can complicate the assessment of symptom onset during the incubation period. Movement limitations for asymptomatic contacts are therefore based on needs for public health follow-up and access to care rather than risk of transmission during the incubation period.

- ▶ Regional public health should work with contacts, their primary care provider, BC Emergency Health Services and the nearest provincially designated treatment centre to develop a **transport plan** if symptoms develop.<sup>12</sup>
- ▶ Public health will review travel plans reported by contacts, and may report out-of-country planned travel to the federal quarantine officer.
- ▶ Public health will review potential encounters with the health care system for the contact being monitored, including any home visitation health services for household members, to ensure all providers of care are aware that this person is a contact being followed by public health.
- ▶ Return to work/school considerations should be based on the likelihood of exposure, the nature of work, and the ability to self-isolate if symptoms develop.
  - No undue hardship should be encountered as a result of this. Supports for those off of work/school may be available; however, details on these are still to be determined.
  - Public health notification of the employer or school should respect the privacy of the individual. If the MHO makes a determination there are compelling circumstances that affect the health or safety of patients or other health care workers, disclosure of information about a health care worker should follow requirements under the *Freedom of Information and Protection of Privacy Act*.
- ▶ Medical health officers should consider using statutory powers of the *Public Health Act* if non-compliance with public health measures is likely.<sup>13</sup>

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<sup>12</sup> B.C. EVD Transportation Policy:  
<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=219785B7DB3C41C0B1CC1104999D9E72&filename=bc-evd-transportation-policy.pdf>

## Monitoring for symptoms

All asymptomatic contacts should be instructed in self-monitoring for symptoms of EVD (see Appendix B), including twice daily temperature monitoring. If necessary, public health staff should teach contacts how to accurately take their own temperature, and provide a thermometer if they do not have access to one. If delivery of a self-monitoring kit is required, this should be done while minimizing exposure (e.g., by courier without signature required for thermometers and email for self-monitoring sheets). Contacts should be advised to avoid taking medications that are known to lower fever to avoid masking of symptoms. Where a child has been identified as a close contact, all caregivers should be instructed on what symptoms to watch for, how to take the child's temperature and what to do if the child develops symptoms consistent with EVD.

Mechanisms for contacts to alert public health in the event they develop symptoms should be provided with self-monitoring education, along with a plan on how to access health care.

Education resources for self-monitoring from the Public Health Agency of Canada are in Appendix C.

## Other prevention measures

To reduce the risk of exposure to health care settings, contacts are advised to avoid having any elective medical procedure involving body fluid exposures (including dental work) during the 21 day monitoring period. All contacts should not donate blood (or any other body fluid or tissue) during the 21 day monitoring period.

General principles and recommendations for animal interaction should be discussed with all contacts (Appendix E). An individual Care Plan Template for monitoring instructions is provided in Appendix D.

## Management of symptom onset

If any contact develops fever  $\geq 38^{\circ}\text{C}$  or other EVD symptoms within the 21 day monitoring period, they should be instructed to self-isolate as quickly as possible and contact their local public health official immediately for further direction. The public health official will advise which facility to go to, how to get there and will inform the receiving facility of the patient's arrival. If the symptomatic person requires medical attention before they can speak with their local public health official, they should activate their plans for attending their designated health facility, including alerting them about their travel history and symptoms immediately. The symptomatic person should be transported by ambulance or private vehicle. They should not take public conveyances.

If a person that is symptomatic for EVD is in contact with an animal(s), they should be instructed to cease all contact. The BCCDC (604 707-2400) can be contacted for further direction on the management of animals potentially exposed to Ebola virus.

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<sup>13</sup> See B.C. guidance on Ebola Virus Disease Related Orders.

## Public Health Agencies Involved in Identifying and Following Contacts

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The Canadian Border Services Agency is identifying travellers who have been through an EVD-affected country (i.e., Liberia, Guinea, Sierra-Leone) or countries in which Ebola may be emerging as a concern. Any such traveller is referred to a Public Health Agency of Canada quarantine officer who will screen them for EVD. Depending on the travel history, they may be screened by a temperature measurement, symptom questions and exposure assessment.

Asymptomatic travellers from EVD-affected countries are interviewed on their exposures to determine if they are “At Risk” or “At Higher Risk” of contact with EVD.<sup>14</sup> Reporting of returning travellers identified by quarantine officers is described in Appendix E - EVD Quarantine to Local Public Health Flow Chart. Travellers from countries where Ebola is an emerging concern are provided with advice regarding symptoms and self-monitoring and public health is notified of their arrival.

All travellers who are febrile or have other EVD compatible symptoms will be referred for a medical assessment at their point of entry into Canada. The quarantine officer will coordinate symptomatic incoming traveller transfers with local and provincial emergency and public health authorities.

### Reporting and Surveillance of Contact Tracing Activities

It is important to collect standard information on all contacts to support appropriate management as well as regional, provincial and national monitoring and risk assessment.

Reporting of contacts should follow the B.C. Surveillance Plan for EVD cases and contacts, available at: [www.bccdc.ca/dis-cond/a-z/\\_e/Ebola/InfoHealthProfessionals/default.htm](http://www.bccdc.ca/dis-cond/a-z/_e/Ebola/InfoHealthProfessionals/default.htm).

In addition, all health authority employee contacts should be reported to the provincial Workplace Health Call Centre (1-866-922-9464).

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<sup>14</sup> [www.gazette.gc.ca/rp-pr/p1/2014/2014-11-15/html/order-decret-eng.body.html](http://www.gazette.gc.ca/rp-pr/p1/2014/2014-11-15/html/order-decret-eng.body.html)

## Appendix A: Management of People “At Risk” Subsequent to Exposure to Ebola – Considerations for Contact-Specific Decision Making

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The following should be considered in developing the management plan for people who have been determined to be “At Risk” subsequent to exposure to Ebola:

1. Estimated risk of developing Ebola virus disease.
2. Feasibility of the person to self-monitor to detect symptoms early.
3. Feasibility of public health to actively monitor the person to detect symptoms early.
4. Co-existing medical condition, which produce symptoms that may be confused with Ebola, resulting in a compromised ability to rely on symptom monitoring (e.g., a condition affecting temperature regulation so that fever might not be readily detected, inflammatory bowel disease, pregnancy).
5. Psychological effects of exposure (e.g., the person is experiencing high levels of anxiety that will affect work performance).
6. For the exposed health care worker/contractor: If the person, the medical health officer, the director of infection control and director of workplace health fail to agree on the management plan, a summary of the discussion will be elevated to senior management for further consideration, and potentially to the provincial health officer. It should also be noted that this process will not preclude any of the parties from exercising their own authority (e.g., the medical health officer issuing orders under the *Public Health Act*).

## Appendix B: Symptoms of Ebola Virus Disease

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- ▶ 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

## Appendix C: Education Resources for Self-Monitoring from the Public Health Agency of Canada

### EBOLA VIRUS DISEASE (EBOLA) SYMPTOM MONITORING—AT A GLANCE

Take your temperature **2x/DAY**.

1



Report into either the Public Health Agency of Canada or  
local public health office as instructed.

2



If you start to feel sick call public health and follow their instructions.

3



If you don't report as instructed, you are subject to **fin**es or **jail**.

\$\$\$

Pub.: 140342



## EBOLA VIRUS DISEASE (EBOLA) HOW TO USE YOUR THERMOMETER

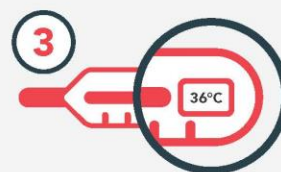
Take your temperature **2x/DAY**.



Turn the thermometer on.



Hold the tip under your tongue for up to **60 seconds** until it beeps.



Read the temperature.



Write your temperature on the form you got at the airport.



You can clean your thermometer with soap and water.



If your temperature is **100.4°F/38°C** or higher or you are feeling sick, contact your local public health authority immediately for further instructions.

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## EBOLA VIRUS DISEASE SELF-MONITORING INSTRUCTIONS FOR TRAVELLERS ENTERING CANADA

As a traveller who has visited Guinea, Liberia or Sierra Leone in the **PAST 21 DAYS**, you are required to:

- Report to a public health authority or the Public Health Agency of Canada, and
- Monitor yourself for signs and symptoms of Ebola for up to 21 days.

You must:

- Measure and record your body temperature, and
- Immediately report any symptoms of illness.

FROM \_\_\_\_\_ TO \_\_\_\_\_  
(dd/mm/yyyy) (dd/mm/yyyy)

### HOW TO SELF-MONITOR FOR SYMPTOMS OF EBOLA



You must watch for symptoms and check your temperature for up to **21 DAYS** after you arrive in Canada.

If possible, avoid taking medications that may reduce fever (such as Tylenol, Advil or Aspirin). Ask a health care provider or pharmacist if you are not sure whether a medication will reduce a fever. If you must take a medication that may reduce fever, contact your local public health authority for advice.

### HOW TO USE THE DAILY TEMPERATURE RECORDING FORM:

- 1 Check your temperature twice daily (*morning and evening*) with an oral thermometer (*in your mouth*).  
**Do not share your thermometer with anyone else.** Record your temperature each time.
- 2 Write down any symptoms you develop.
- 3 Write down any medications you take that may reduce fever.



### WHAT TO DO IF YOU HAVE SYMPTOMS OF EBOLA

If you develop any of the following symptoms, avoid physical contact with other people and call your local public health authority for advice right away.



- |                                   |                            |               |                    |
|-----------------------------------|----------------------------|---------------|--------------------|
| • fever of 38°C (100.4°F) or more | • muscle pain and weakness | • sore throat | • stomach pain     |
| • chills                          | • feeling generally unwell | • diarrhea    | • unusual/new rash |
| • severe headache                 |                            | • vomiting    | • unusual bleeding |

If you are very ill, call 911 and tell them about your travel history and that you may have symptoms of Ebola.

General information on Ebola is available on [Canada.ca/ebolavirus](http://Canada.ca/ebolavirus). For additional information, contact your local public health authority.



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## Appendix D: Template – Care Plan for Contacts

### Instructions for At-Risk Travellers Returning from Ebola Affected Areas

**Client Name:**

**CD Specialist:**

**CD Specialist Phone Number (Call Mon-Fri 8:30am – 4:30pm):**

**Medical Health Officer (MHO) On-Call Number (Call on weekends & evenings):**

#### Your 21 Day Monitoring Period

You should monitor your health for 21 days after you leave an Ebola affected country.

During the monitoring period, you must:

- Take your temperature in the morning and in the evening and record the temperature on the form given to you by the Quarantine Officer.
- Report your temperatures and symptoms on a daily basis to your CD Specialist.
- Report any temperature above 38 degrees Celsius or any symptoms compatible with Ebola immediately to the Medical Health Officer (MHO) On-Call.

**Your monitoring period is from [INSERT DATE] to [INSERT DATE].  
Your last check-in with your CD Specialist will be on [INSERT DATE].**

#### It is important that you:

- Stay within 2 hours of certain designated hospitals. In [HEALTH AUTHORITY], this means within 2 hours of [HOSPITAL]. If you have any travel plans outside of this area during your monitoring period, you will need to provide dates and locations of travel in advance to your CD Specialist.
- Do not travel on public transport (e.g. bus or train) unless it can be exited promptly if symptoms develop.
- Do not go to any walk-in clinic, doctor's offices or hospitals during your monitoring period without first contacting and receiving instructions from your CD Specialist or the Medical Health Officer (MHO) On-Call. If you require routine bloodwork or other appointments, please let your CD Specialist know.
- Do not take any fever-reducing medications (e.g. Tylenol/Acetaminophen or Advil/Ibuprofen) without first consulting with your CD Specialist or the MHO.
- Avoid elective medical or dental procedures. (If necessary, please talk to your CD Specialist).
- Do not donate blood or other body tissues.
- Do not have any contact with farms or livestock.
- Avoid being licked on the face by your pet and avoid sharing the same bed.
- Avoid mass gatherings (e.g. concerts, large sporting events). This may prevent you getting other viral infections like Influenza that can have similar symptoms of early Ebola disease and would also limit the amount of people you could expose should you develop symptoms of Ebola.
- Discuss with your CD Specialist any plans to return to work prior to doing so.
- Take care of your own physical and mental well-being. Ensure you have supports in place to help you.

**If you have a fever or other symptoms:**

- Please speak with the Medical Health Officer (MHO) On-Call at [TEL #] immediately, PRIOR to presenting to any clinic or hospital unless it is a medical emergency.
- Stay by the phone – someone will call you back with instructions for what to do next.
- Self-isolate at home (or wherever you are residing during your monitoring period).
- Activate your Emergency Plans for Self-Isolation.

**Your Emergency Plans for Self-Isolation**

This is a plan for how you will self-isolate and get to the hospital (if necessary) in the event you develop symptoms.

Plans to self-isolate in my home/temporary residence:

Plans for someone to drop off food or other items for me if necessary:

Plans for who will be an alternate caregiver and take over care of children and/or pets, and plans for transport and isolation of pet, if necessary:

Transportation Plan: If instructed to do so by the MHO, plans for how to get to the nearest designated hospital:

**Symptoms to watch out for:**

- Fever
- Feeling very tired or unwell (malaise/fatigue)
- Muscle or joint aches (Myalgia/arthralgia)
- Headache
- Sore throat
- Red eyes (Conjunctival redness)
- Chest or abdominal pain
- Nausea or vomiting
- Diarrhea
- Unusual bleeding
- Rash

## Appendix E: Management of an Interaction between Human Ebola Virus Disease Contacts and Animals

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*The information below is aligned with the guidance in development by the Canadian Council of Chief Veterinary Officers.*

Currently, the range of species that Ebola can infect is poorly understood. It is known to be able to naturally infect humans, non-human primates and potentially some other forest dwelling species. Experimental infection of non-human primates, pigs and some small laboratory mammals has also been achieved. Seroconversion of dogs living in regions with outbreaks of EVD has also been reported, although it is unclear whether dogs develop clinical infections, are able to shed the virus or able to infect humans. The potential for Ebola to infect other domestic species is unclear, and out of an abundance of caution, one must assume that various domestic species could be infected and could transmit the virus until there is adequate evidence to the contrary.

Given the high incidence of animal ownership and other animal contacts in Canada, there is some potential for subsequent exposure of an animal to Ebola should an infected person enter the country or a close contact of an imported case become infected.

Once a person develops symptoms of EVD, they are considered infectious. Therefore a human or animal that someone encounters after the onset of symptoms, could potentially be exposed to the virus and become infected. Given the seriousness of EVD and the many knowledge gaps regarding the Ebola virus in animals, identification of contact between a person with symptomatic EVD and an animal necessitates investigation. National guidance for animal exposure risk assessment is under development.

If a companion animal<sup>15</sup> is deemed to have potentially been exposed to Ebola, this may involve a complex and expensive 21 day strict quarantine. In some situations, euthanasia may be considered because of an inability to safely and effectively quarantine an animal. To prevent this, it is recommended to minimize contact with companion animals.

Should a food animal group be exposed, preventing the need for quarantine is desired due to the cost and logistical challenges, animal welfare concerns with quarantine or depopulation, and the potential economic impacts on the livestock industry. To prevent this, it is recommended that people who develop EVD do not have contact with livestock.

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<sup>15</sup> For the purposes of this appendix, 'companion animal' refers to any animal kept in a household, including exotic animals and pet pigs (e.g. Vietnamese pot-bellied pigs).

## Guiding Principle

- ▶ Recognizing that many households have pets, that pets have therapeutic benefit, and that contacts have a varying level of risk of developing symptoms, animal management should be discussed on a case-by-case basis.

## Recommendations

### *Higher risk contacts*

- Eliminate all contact with **all animals**
  - Eliminate all contact with livestock
  - Eliminate all contact with companion animals
    - Rehoming of companion animals or higher risk contacts should be considered
    - If a companion animal cannot be rehomed, it should be contained in a separate area of the home and cared for by another household member.

### *At risk contacts*

- Eliminate all contact with **livestock**
- Limit contact with **companion animals** to avoid potential transmission to, and quarantine of, companion animals.<sup>16, 17, 18</sup> A decision about the level and type of contact with a companion animal will be made on a case-by-case basis between the human contact and the public health practitioner.
  - Companion animals may be kept at home and regular care may be provided. To minimise potential transmission, avoid being licked on the face and sleeping in the same bed.
  - Rehoming of companion animals can be considered in situations where quarantine is difficult because of the animal species (e.g. non-human primates and some other exotic pets), temperament (e.g. highly active, fearful or aggressive with strangers), health status of the animal (e.g. requires medical care such as regular medication that cannot be provided during quarantine) or for logistical reasons (e.g. large number of pets, lack of access to a suitable quarantine facility)

### *Low risk contacts*

- Eliminate all contact with **livestock**

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<sup>16</sup> Pets of potentially exposed individuals pose no threat to caretakers. Since EVD is only transmitted when people are symptomatic, pets of asymptomatic human contacts have not been exposed. Therefore there are no restrictions on pets of asymptomatic human contacts that are temporarily rehomed.

<sup>17</sup> Consideration should be given to the positive and negative consequences of avoiding or limiting contact between humans and their companion animals.

<sup>18</sup> Contacts should be informed of the potential consequences of choosing not to follow these recommendations (i.e. if the contact becomes symptomatic there is a high likelihood that their pet will be placed in a strict 21 day quarantine or, in some cases, euthanasia may be the only alternative).

### *Persons Under Investigation*

- If the human contact develops symptoms consistent with EVD, all contact with animals should cease immediately.
  - The companion animal should be cared for by someone else.<sup>19</sup> If this is not possible, the animal should be placed in a crate or shut in a room with no direct contact with the PUI.
  - If a delay is anticipated until the time when the animal will be assessed and/or removed, enough food and water should be provided.
  - If the PUI must provide care or food/water, direct contact with the animal should be avoided and hands should be washed thoroughly (or an alcohol-based hand sanitizer applied) before contact with the animal, its food or any other item with which the animal will have contact.

### *Cases*

- If the human contact tests positive for Ebola, the animal will need to be assessed for its risk of exposure/infection and further managed.
  - The assessment and management of an exposed animal will be a collaborative decision between the BCCDC, MHO, PHO and Chief Veterinary Officer (CVO).
  - If exposure is deemed to have occurred, the animal will need to be quarantined or euthanized. The decision will be based on risk and operational considerations.
  - The Animal Health Center is the quarantine location for companion animals in BC. If quarantine is possible, the CVO will coordinate the transport and the quarantine.

The BCCDC can be reached at 604-707-2400 for further consultation.

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<sup>19</sup> If the animal has had contact with the human contact after he/she developed symptoms, consult with public health authorities prior to asking someone else to care for the animal.

## Appendix F: EVD Quarantine to Local Public Health Information and Decision Flow Chart for Health Authorities

