

# Appendix A: Disease-Specific Chapters

Chapter: Lassa Fever

Revised December 2014

## Lassa Fever

Communicable

Virulent

**Health Protection and Promotion Act, Section 1 (1)**

**Health Protection and Promotion Act:**

**Ontario Regulation 558/91 – Specification of Communicable Diseases**

**Health Protection and Promotion Act:**

**Ontario Regulation 559/91 – Specification of Reportable Diseases**

### 1.0 Aetiologic Agent

Lassa fever is an acute viral illness lasting 1-4 weeks; caused by Lassa virus, an arenavirus, serologically related to lymphocytic choriomeningitis, Machupo, Junin, Guanarito and Sabia viruses.<sup>1</sup>

### 2.0 Case Definition

#### 2.1 Surveillance Case Definition

[See Appendix B](#)

#### 2.2 Outbreak Case Definition

The outbreak case definitions are established to reflect the disease and circumstances of the outbreak under investigation. The outbreak case definitions should be created in consideration of the provincial surveillance case definition. For example, confirmed outbreak cases must at a minimum meet the criteria specified for the provincial surveillance confirmed case classification. Consideration should also be given to the following when establishing outbreak case definitions:

- Clinical and/or epidemiological criteria;
- The time frame for occurrence (i.e., increase in endemic rate);
- A geographic location(s) or place(s) where cases live or became ill/exposed;
- Special attributes of cases (e.g., age, underlying conditions); and
- Further strain characterization and typing as appropriate, which may be used to support linkage.

Outbreak cases may be classified by levels of probability (i.e., confirmed, probable and/or suspect).

## 3.0 Identification

### 3.1 Clinical Presentation

Onset is gradual, with malaise, fever, headache, sore throat, cough, nausea, vomiting, diarrhea, myalgia, chest and abdominal pain; fever is persistent or spikes intermittently. Inflammation and exudation of the pharynx and conjunctivae are common.<sup>1</sup>

About 80% of human infections are mild or asymptomatic and the remaining have severe multisystem disease.<sup>1</sup>

### 3.2 Diagnosis

[See Appendix B](#)

## 4.0 Epidemiology

### 4.1 Occurrence

Lassa fever is endemic to Guinea, Liberia, regions of Nigeria and Sierra Leone.<sup>1</sup>

No cases have been reported in Ontario.

Please refer to the Public Health Ontario *Monthly Infectious Diseases Surveillance Reports* and other infectious diseases reports for more information on disease trends in Ontario.<sup>2,3</sup>

<http://www.publichealthontario.ca/en/DataAndAnalytics/Pages/DataReports.aspx>

### 4.2 Reservoir

Wild rodents; in western Africa, the multimammate mouse of the *Mastomys* species complex.<sup>1</sup>

### 4.3 Modes of Transmission

Primarily through aerosol or direct contact with excreta of infected rodents deposited on surfaces such as floors, beds or in food and water.<sup>1</sup>

It can also be spread person to person through sexual contact and in hospitals from infected persons' pharyngeal secretions or urine or from contaminated needles, or in laboratory accidents.<sup>1</sup>

### 4.4 Incubation Period

Commonly 6-21 days.<sup>1</sup>

### 4.5 Period of Communicability

Person to person spread may theoretically occur during the acute febrile phase when virus is present in secretions and excretions. Virus can be excreted in urine for 3-9 weeks from onset of illness and can be spread by sexual contact through semen for up to 3 months after infection.<sup>1</sup>

## 4.6 Host Susceptibility and Resistance

All ages are susceptible; the duration of immunity following infection is unknown.<sup>1</sup>

## 5.0 Reporting Requirements

### 5.1 To local Board of Health

Individuals who have or may have lassa fever shall be reported as soon as possible to the medical officer of health by persons required to do so under the *Health Protection and Promotion Act*, R.S.O. 1990 (HPPA).<sup>4</sup>

### 5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry

The board of health shall notify PHO **immediately** by phone upon receiving report.

Report only case classifications specified in the case definition.

Cases shall be reported using the integrated Public Health Information System (iPHIS), or any other method specified by the ministry **within one (1) business day of receipt of initial notification** as per iPHIS Bulletin Number 17: Timely Entry of Cases.<sup>5</sup>

The minimum data elements to be reported for each case is specified in the following:

- *Ontario Regulation 569* (Reports) under the *Health Protection and Promotion Act* (HPPA);<sup>6, 4</sup>
- The iPHIS User Guides published by PHO; and
- Bulletins and directives issued by PHO.

Once reported, PHO will report confirmed and probable cases of lassa fever immediately to the 24-hour Public Health Agency of Canada emergency line (1-800-545-7661). The Public Health Agency of Canada will be responsible for contacting the International Public Health Authorities under the *International Health Regulations* (IHR, 2005).<sup>7</sup> WHO Collaborating Centers provide support as required.

## 6.0 Prevention and Control Measures

### 6.1 Personal Prevention Measures

For details on personal prevention measures refer to the document: Viral Haemorrhagic Fever Update for Clinicians. Issued by PHO on April 9, 2014:

[http://www.publichealthontario.ca/en/eRepository/VHF\\_Update\\_for\\_Clinicians\\_April\\_9\\_2014.pdf](http://www.publichealthontario.ca/en/eRepository/VHF_Update_for_Clinicians_April_9_2014.pdf)

Check travel health notices for specific recommendations:

<http://www.phac-aspc.gc.ca/tmp-pmv/notices-avis/index-eng.php>

## 6.2 Infection Prevention and Control Strategies

Strategies:

- Strict droplet and contact precautions for hospitalized cases and negative pressure room with door closed and airborne precautions if case has pneumonia.<sup>1</sup>

Public Health response will be under the direction of provincial and federal jurisdictions.

Refer to Public Health Ontario's website at [www.publichealthontario.ca](http://www.publichealthontario.ca) to search for the most up-to-date Provincial Infectious Diseases Advisory Committee (PIDAC) best practices on Infection Prevention and Control (IPAC). PIDAC best practice documents can be found at:

[http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/PIDAC/Pages/PIDAC\\_Documents.aspx](http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/PIDAC/Pages/PIDAC_Documents.aspx)

## 6.3 Management of Cases

Investigate the case to determine source of infection. Refer to *Ontario Regulation 569* under the HPPA for relevant data to collect and ensure to inquire about the following:<sup>6,4</sup>

- Symptoms and date of symptom onset;
- Earliest and latest exposure date;
- Occupational history; and
- Travel history.

Contact identification and tracing:

- Contact history during period of communicability;
- Assessment of type of contact and probability of transmission;
- Identification of contacts for follow-up; and
- Occupational history.

## 6.4 Management of Contacts

Contacts include: people living with, caring for, testing laboratory specimens from or having close/intimate contact with the case, in the 3 weeks after the onset of illness.<sup>1</sup>

Establish close surveillance of contacts including taking body temperature 2 times daily for 3 weeks after last exposure and if temperature above 38.3 degrees C or 101 degrees F, hospitalize immediately while following the infection prevention and control measures described above.<sup>1</sup> Determine contacts place of residence during 3 weeks prior to onset and search for unreported or undiagnosed cases.<sup>1</sup>

## 6.5 Management of Outbreaks

Given the severity and rarity of hemorrhagic fevers, a single confirmed case constitutes an outbreak.

Public Health response will be under the direction of provincial and federal jurisdictions.

## 7.0 References

1. Heymann DL, editor. Control of communicable diseases manual. 19th ed. Washington, DC: American Public Health Association; 2008.
2. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Monthly infectious diseases surveillance report. Toronto, ON: Queen's Printer for Ontario; 2014. Available from: <http://www.publichealthontario.ca/en/ServicesAndTools/SurveillanceServices/Pages/Monthly-Infectious-Diseases-Surveillance-Report.aspx>
3. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Reportable disease trends in Ontario, 2011. Toronto, ON: Queen's Printer for Ontario; 2014. Available from: [http://www.publichealthontario.ca/en/eRepository/Reportable\\_Disease\\_Trends\\_in\\_Ontario\\_2011.pdf](http://www.publichealthontario.ca/en/eRepository/Reportable_Disease_Trends_in_Ontario_2011.pdf)
4. *Health Protection and Promotion Act*, R.S.O. 1990, c. H.7. Available from [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_90h07\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm)
5. Ontario. Ministry of Health and Long-Term Care. Timely entry of cases. iPHIS Bulletin. Toronto, ON: Queen's Printer for Ontario; 2014:17.
6. *Reports*, R.R.O. 1990, Reg. 569. Available from: [http://www.e-laws.gov.on.ca/html/regs/english/elaws\\_regs\\_900569\\_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900569_e.htm)
7. World Health Organization. International health regulations. 2<sup>nd</sup> ed. Geneva: WHO; 2005. Available from: <http://www.who.int/ihr/9789241596664/en/>

## 8.0 Additional Resources

Public Health Agency of Canada. Case definitions for diseases under national surveillance: addition of diseases associated with potential bioterrorist agents. *Can Commun Dis Rep*. 2002;28(21):173-8. Available from: <http://www.collectionscanada.gc.ca/webarchives/20071222160105/http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02vol28/dr2821ea.html>

Public Health Agency of Canada [Internet]. Travel health notices. Ottawa, ON: Her Majesty the Queen in Right of Canada; [updated 2014 Jun 6; cited 2014 Jun 18]. Available from: <http://www.phac-aspc.gc.ca/tmp-pmv/notices-avis/index-eng.php>

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Viral haemorrhagic fever: update for clinicians. Toronto, ON: Queen's Printer for Ontario; 2014. Available from: [http://www.publichealthontario.ca/en/eRepository/VHF\\_Update\\_for\\_Clinicians\\_April\\_9\\_2014.pdf](http://www.publichealthontario.ca/en/eRepository/VHF_Update_for_Clinicians_April_9_2014.pdf)

World Health Organization, Department of Communicable Disease Surveillance and Response. WHO recommended surveillance standards. 2<sup>nd</sup> ed. Geneva: WHO; 1999. Available from: [http://www.who.int/csr/resources/publications/surveillance/WHO\\_CDS\\_CSR\\_ISR\\_99\\_2\\_EN/en/](http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_CSR_ISR_99_2_EN/en/)

## 9.0 Document History

Table 1: History of Revisions

Revision Date	Document Section	Description of Revisions
December 2014	General	New template. Title of Section 4.6 changed from “Susceptibility and Resistance” to “Host Susceptibility and Resistance”. Title of Section 5.2 changed from “To Public Health Division (PHD)” to “To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry”. Section 9.0 Document History added.
December 2014	2.2 Outbreak Case Definition	Entire section revised.
December 2014	4.1 Occurrence	Addition of “Please refer to the Public Health Ontario...”
December 2014	4.3 Modes of Transmission	Addition of “or in laboratory accidents.”
December 2014	4.5 Period of Communicability	Entire section revised.
December 2014	5.1 To Local Board of Health	Entire section revised.
December 2014	5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry	Entire section revised.
December 2014	6.1 Personal Prevention Measures	Entire section revised.
December 2014	6.2 Infection Prevention and Control Strategies	Entire section revised.
December 2014	6.3 Management of Cases	Removal of “Specific treatment with Ribavirin within the first 6 days of illness...”
December 2014	6.4 Management of	Entire section revised.

<b>Revision Date</b>	<b>Document Section</b>	<b>Description of Revisions</b>
	Contacts	
December 2014	7.0 References	Updated.
December 2014	8.0 Additional Resources	Updated.

