

Appendix A: Disease-Specific Chapters

Chapter: Amebiasis

Effective: February 2019

Amebiasis

Communicable

Virulent

**Health Protection and Promotion Act:
O. Reg. 135/18 (Designation of Diseases)**

1.0 Aetiologic Agent

Amebiasis is a parasitic infection caused by the protozoa, *Entamoeba histolytica* (*E. histolytica*). Differentiation of the pathogenic *E. histolytica* from the morphologically identical *Entamoeba dispar* (*E. dispar*) is based on immunologic differences and on isoenzyme patterns. Most asymptomatic cyst passers carry *E. dispar*.¹ *E. histolytica* and *E. dispar* are excreted as cysts or trophozoites in stools of infected people.²

2.0 Case Definition

2.1 Surveillance Case Definition

Refer to [Appendix B](#) for Case Definitions.

2.2 Outbreak Case Definition

The outbreak case definition varies with the outbreak under investigation. Please refer to the *Infectious Diseases Protocol, 2018* (or as current) for guidance in developing an outbreak case definition as needed.

The outbreak case definitions are established to reflect the disease and circumstances of the outbreak under investigation. The outbreak case definitions should be developed for each individual outbreak based on its characteristics, reviewed during the course of the outbreak, and modified if necessary, to ensure that the majority of cases are captured by the definition. The case definitions should be created in consideration of the outbreak definitions.

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

3.0 Identification

3.1 Clinical Presentation

Clinical syndromes associated with *E. histolytica* infection include non-invasive intestinal infection, intestinal amebiasis, ameboma (amebic granulomata), and liver abscess.² Most infections are asymptomatic.¹

Persons with non-invasive intestinal infection may be asymptomatic or may have non-specific intestinal tract complaints. Persons with intestinal amebiasis (amebic colitis)

generally have 1 to 3 weeks of increasingly severe diarrhea progressing to grossly bloody dysenteric stools with lower abdominal pain and tenesmus. Weight loss and fever may be present.²

An ameboma may occur as an annular lesion of the cecum or ascending colon that may be mistaken for colonic carcinoma or as a tender extra-hepatic mass, mimicking a pyogenic abscess. Amebomas usually resolve with anti-amebic therapy and do not require surgery.²

In a small proportion of people, extraintestinal disease may occur usually in the liver but can occur in the lungs, pleural space, pericardium, brain skin and genitourinary tract. Liver abscess may be acute with fever, abdominal pain, tachycardia, liver tenderness and hepatomegaly or chronic with weight loss, vague abdominal symptoms and irritability.²

3.2 Diagnosis

See [Appendix B](#) for diagnostic criteria relevant to the Case Definitions.

For further information about human diagnostic testing, contact the Public Health Ontario Laboratories or refer to the Public Health Ontario Laboratory Services webpage: <http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/default.aspx>.

4.0 Epidemiology

4.1 Occurrence

Amebiasis is ubiquitous and occurs worldwide but is more prevalent in areas of poor sanitation.^{1, 2} The proportion of cyst passers who have clinical disease is usually low with higher rates of cyst passage in areas with poor sanitation and crowding, in mental institutions and among men who are sexually active with men. In areas with good sanitation, amebiasis tends to cluster in households and institutions.¹

Amebiasis is a common disease in Ontario. The number of cases remains fairly constant throughout the year, with just a slight peak in the summer months. Between 2013 and 2017, an average of 111 cases (confirmed and probable) of amebiasis were reported per year in Ontario.*

Please refer to Public Health Ontario's (PHO) Reportable Disease Trends in Ontario reporting tool and other reports for the most up-to-date information on infectious disease trends in Ontario.

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

For additional national and international epidemiological information, please refer to the Public Health Agency of Canada and the World Health Organization.

* Data included in the epidemiological summary are from January 1, 2013 to December 31, 2017. Data were extracted from Query on February 7, 2018 and therefore are considered preliminary.

4.2 Reservoir

Humans; usually a chronically ill or asymptomatic cyst passer.¹

4.3 Modes of Transmission

Mainly through ingestion of fecally contaminated food or water containing amoebic cysts, which are relatively chlorine-resistant. Cysts can survive in moist environmental conditions for weeks to months. Transmission may occur sexually by fecal-oral contact with a chronically ill or asymptomatic cyst passer, or direct rectal inoculation through colonic irrigation devices.^{1,2} During the acute phase of the illness, those infected tend to shed more trophozoites than cysts and pose only limited danger to others because of the absence of cysts in dysenteric stools and the fragility of trophozoites.^{1,3}

The infective dose in humans is reported to be fewer than 10 cysts.³

4.4 Incubation Period

From a few days to several months or years; commonly 2 to 4 weeks.¹

4.5 Period of Communicability

During the period that *E. histolytica* cysts are passed, which may continue for years.¹

4.6 Host Susceptibility and Resistance

Susceptibility to infection is general; those harbouring *E. dispar* do not develop disease; susceptibility to re-infection has been demonstrated but is apparently rare.¹

5.0 Reporting Requirements

As per Requirement #3 of the “Reporting of Infectious Diseases” section of the *Infectious Diseases Protocol, 2018* (or as current), the minimum data elements to be reported for each case are specified in the following:

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

6.0 Prevention and Control Measures

6.1 Personal Prevention Measures

- Careful hand hygiene after defecation, sexual contact, and before preparing or eating food.
- Proper hand hygiene is particularly important in institutional settings and for preventing transmission to household contacts.
- Sanitary disposal of fecal material.

- Adequate sanitation of drinking water.
- Sexual transmission may be prevented by use of personal protective measures and avoidance of sexual practices that may facilitate fecal-oral transmission.
- Where water might be contaminated, travelers should be advised of methods to make water safe for drinking, including boiling, chemical disinfection, and filtration.²

6.2 Infection Prevention and Control Strategies

Refer to Public Health Ontario’s website at www.publichealthontario.ca to search for the most up-to-date information on Infection Prevention and Control.

6.3 Management of Cases

In addition to the requirements set out in the Requirement #2 of the “Management of Infectious Diseases – Sporadic Cases” and “Investigation and Management of Infectious Diseases Outbreaks” sections of the *Infectious Diseases Protocol, 2018* (or as current), the board of health shall investigate cases to determine the source of infection. Refer to Section 5: Reporting Requirements above for relevant data to be collected during case investigation.

Advise probable cases to submit a subsequent stool specimen for differentiation between *E. histolytica* and *E. dispar*, before treatment is initiated.

Provide information on personal prevention measures and the prevention of secondary cases.

Exclusion

Symptomatic cases should be excluded from conducting activities in high-risk settings such as the food industry, healthcare[†], or daycare, for 24 hours after diarrhea resolves or for 48 hours after completion of treatment.

Obtain contact information of all contacts for follow-up and contact management.

Provide infection control guidelines where applicable to operators of institutions or premises where cases and/or disease transmission is suspected.

6.4 Management of Contacts

Assess household and other contacts for symptoms and, if symptomatic, advise to seek medical care. Provide information about the spread of infection and how to prevent it. Refer symptomatic household members or sexual contacts for assessment by a physician. Management of symptomatic contacts is the same as for cases.

[†] If the healthcare setting is a hospital, use the “Enteric Diseases Surveillance Protocol for Ontario Hospitals” (OHA and OMA Joint Communicable Diseases Surveillance Protocols Committee 2017, or as current) for exclusion, available at: <https://www.oha.com/labour-relations-and-human-resources/health-and-safety/communicable-diseases-surveillance-protocols>

6.5 Management of Outbreaks

As with most enteric diseases, an outbreak is defined as the occurrence of two or more cases of enteric illness linked by time, common exposure or source and most often location.

Please see the *Infectious Diseases Protocol, 2018* (or as current) for the public health management of outbreaks or clusters in order to identify the source of illness, manage the outbreak and limit secondary spread.

Refer to Ontario's Foodborne Illness Outbreak Response Protocol (ON-FIORP) 2013 (or as current) for multi-jurisdictional foodborne outbreaks which require the response of more than two Parties (as defined in ON-FIORP) to carry out an investigation.

7.0 References

1. Heymann DL, editor. *Control of Communicable Diseases Manual*. 20 ed. Washington, D.C: American Public Health Association; 2015.
2. Committee on Infectious Diseases, American Academy of Pediatrics. Section 3: Summaries of Infectious Diseases: Amebiasis. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, editors. *Red Book: 2018 Report of the Committee on Infectious Diseases*. 31 ed. Itasca, IL: American Academy of Pediatrics; 2018.
3. Binet R. *Entamoeba histolytica*. 2012. In: *Bad Bug Book, Foodborne Pathogenic Microorganisms and Natural Toxins* [Internet]. 2 ed. Silver Spring, MD: U.S. Food and Drug Administration. Available from: <https://www.fda.gov/Food/FoodborneIllnessContaminants/CausesOfIllnessBadBugBook/default.htm>
4. Health Protection and Promotion Act, R.S.O. 1990, Reg. 569, Reports, (2018). Available from: <https://www.ontario.ca/laws/regulation/900569>

8.0 Document History

Table 1: History of Revisions

Revision Date	Document Section	Description of Revisions
April 2015	General	New template. Section 9.0 Document History added.
April 2015	1.0 Aetiologic Agent	Revised “an enteric infection” to “a parasitic infection”.
April 2015	2.2 Outbreak Case Definition	Updated.
April 2015	3.1 Clinical Presentation	Added “(amebic granulomata)” after “ameboma”.

Revision Date	Document Section	Description of Revisions
April 2015	3.2 Diagnosis	Entire section updated.
April 2015	4.1 Occurrence	<p>First paragraph 1: First and second sentence combined.</p> <p>Added: "In areas with good sanitation, amebiasis tends to cluster in households and institutions."</p> <p>Second paragraph: Updated "Between 2003 and 2007, an average of 738 cases occurred per year" to "Between 2007 and 2011, an average of 791 cases (confirmed and probable) of amebiasis were reported per year in Ontario."</p> <p>Added the website link to the PHO Monthly Surveillance Reports.</p>
April 2015	4.3 Modes of Transmission	Entire section updated.
April 2015	4.6 Host Susceptibility and Resistance	Added "Host" to the title.
April 2015	5.1 To local Board of Health	Revised "Confirmed and suspected cases shall be reported" to "Individuals who have or may have amebiasis shall be reported as soon as possible..."
April 2015	5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry	<p>Title changed from "To Public Health Division".</p> <p>Note revised from "Cases identified as both <i>dispar</i> and <i>histolytica</i> are not reportable" to "Cases identified as <i>E. dispar/histolytica</i> are reportable as probable..."</p> <p>In the last paragraph, the list of documents that specify minimum data elements to be reported has been updated.</p>
April 2015	6.1 Personal Prevention Measures	<p>Removed "Control Measures include education on the following".</p> <p>Added second bullet: "Proper hand hygiene is particularly important in institutional settings and for preventing transmission to household contacts."</p>

Revision Date	Document Section	Description of Revisions
April 2015	6.2 Infection Prevention and Control Strategies	Entire section updated.
April 2015	6.3 Management of Cases	Disease-specific information to be obtained during case management updated. The following note added: “*If the healthcare setting is a hospital, use the “Enteric Diseases Surveillance Protocol for Ontario Hospitals” (OHA and OMA Joint Communicable Diseases Surveillance Protocols Committee, February 2014, or as current) for exclusion...”
April 2015	6.4 Management of Contacts	Entire section updated.
April 2015	6.5 Management of Outbreaks	Added: “Refer to Ontario’s Foodborne Illness Outbreak Response Protocol (ON-FIORP) for multi-jurisdictional foodborne outbreaks which require the response of more than two Parties (as defined in ON-FIORP) to carry out an investigation.”
April 2015	7.0 References	Entire section updated.
April 2015	8.0 Additional Resources	Entire section updated.
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance. Common text included in all Disease Specific chapters: Surveillance Case Definition, Outbreak Case Definition, Diagnosis, Reporting Requirements, Management of Cases, and Management of Outbreaks. The epidemiology section and references were updated and Section 8.0 Additional Resources, was deleted.
February 2019	1.0 Aetiologic Agent	Removed “non-pathogenic” from description of <i>E. dispar</i> .

