Appendix A: Disease-Specific Chapters

Chapter: Amebiasis

Revised April 2015
Amebiasis

- Communicable
- Virulent

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

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

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. 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);
- Further strain characterization and typing as appropriate, which may be used to support linkage; and
- Outbreak cases may be classified by levels of probability (i.e., confirmed, probable and/or suspect).
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. Most infections are asymptomatic. 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.

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.

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.

3.2 Diagnosis

See Appendix B for diagnostic criteria relevant to the Case Definition.

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. The proportion of cyst passers who have clinical disease is usually low with higher rates of cyst passage in areas with poor sanitation, mental institutions and among men who are sexually active with men (probably *E. dispar*). In areas with good sanitation, amebiasis tends to cluster in households and institutions.

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 2007 and 2011, an average of 791 cases (confirmed and probable) of amebiasis were reported per year in Ontario.

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 excreter, 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, 5

The infective dose in humans is reported to be fewer than 10 cysts.5

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

5.1 To local Board of Health
Individuals who have or may have amebiasis 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).6

5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry
Report only case classifications specified in the case definition using the integrated Public Health Information System (iPHIS), and any other method specified by the ministry within five (5) business days of receipt of initial notification as per iPHIS Bulletin Number 17: Timely Entry of Cases.7

Note: Cases identified as E. dispar/histolytica are reportable as probable and require further sampling to differentiate pathogenic E. histolytica from the morphologically similar but non-pathogenic E. dispar.

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

- Ontario Regulation 569 (Reports) under the (HPPA);8, 6
- The iPHIS User Guides published by PHO; and
• Bulletins and directives issued by PHO.

6.0 Infection Prevention and Control (IPAC) 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 IPAC Strategies

• Implementation of routine practices and contact precautions for hospitalized/institutionalized patients for the duration of illness.2
• Advise symptomatic individuals against attending public swimming venues.9

Refer to Public Health Ontario’s website at www.publichealthontario.ca to search for the most up-to-date Provincial Infectious Diseases Advisory Committee (PIDAC) best practices on IPAC. PIDAC best practices documents can be found at: http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/PIDAC/Pages/PIDAC_Documents.aspx.

6.3 Management of Cases

Investigate cases to determine the source of infection. Refer to Section 5: Reporting Requirements above for relevant data to be collected during case investigation. The following disease-specific information should also be obtained during case management:

• Symptoms and date of symptom onset;
• Occupational history;
• Residency/attendance at a facility or institution; and
• History of institutionalization.

Advise probable cases to submit a subsequent stool specimen for differentiation between E. histolytica and E. dispar, before treatment is initiated. See Labstract for more information.10

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.

### 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.

Provide public health management of outbreaks or clusters in order to identify the source of illness, stop the outbreak and limit secondary spread. As per this Protocol, outbreak management shall comprise of, but not be limited to, the following general steps:

- Confirm diagnosis and verify the outbreak;
- Establish an outbreak team;
- Develop an outbreak case definition;
- Implement prevention and control measures;
- Implement and tailor communication and notification plans depending on the scope of the outbreak;
- Conduct epidemiological analysis on data collected;
- Conduct environmental inspections of implicated premises where applicable;
- Coordinate and collect appropriate clinical specimens where applicable;
- Prepare a written report; and
- Declare the outbreak over in collaboration with the outbreak team.
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.

7.0 References


8.0 Additional Resources


9.0 Document History

Table 1: History of Revisions

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Document Section</th>
<th>Description of Revisions</th>
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</thead>
<tbody>
<tr>
<td>April 2015</td>
<td>General</td>
<td>New template.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section 9.0 Document History added.</td>
</tr>
<tr>
<td>April 2015</td>
<td>1.0 Aetiologic Agent</td>
<td>Revised “an enteric infection” to “a parasitic infection”.</td>
</tr>
<tr>
<td>April 2015</td>
<td>2.2 Outbreak Case Definition</td>
<td>Updated.</td>
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<tr>
<td>April 2015</td>
<td>3.1 Clinical Presentation</td>
<td>Added “(amebic granulomata)” after “ameboma”.</td>
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<tr>
<td>April 2015</td>
<td>3.2 Diagnosis</td>
<td>Entire section updated.</td>
</tr>
<tr>
<td>April 2015</td>
<td>4.1 Occurrence</td>
<td>First paragraph 1: First and second sentence combined. Added: “In areas with good sanitation, amebiasis tends to cluster in households and institutions.” 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.” Added the website link to the PHO Monthly Surveillance Reports.</td>
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<tr>
<td>April 2015</td>
<td>4.3 Modes of Transmission</td>
<td>Entire section updated.</td>
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<tr>
<td>April 2015</td>
<td>4.6 Host Susceptability and Resistance</td>
<td>Added “Host” to the title.</td>
</tr>
<tr>
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<td>5.1 To local Board of Health</td>
<td>Revised “Confirmed and suspected cases shall be reported” to “Individuals who have or may have amebiasis shall be reported as soon as possible…”</td>
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<td>5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry</td>
<td>Title changed from “To Public Health Division”. Note revised from “Cases identified as both <em>dispar</em> and <em>histolytica</em> are not reportable” to “Cases identified as <em>E. dispar/histolytica</em> are reportable as probable…” In the last paragraph, the list of documents that specify minimum data elements to be reported has been updated.</td>
</tr>
<tr>
<td>April 2015</td>
<td>6.1 Personal Prevention Measures</td>
<td>Removed “Control Measures include education on the following”. Added second bullet: “Proper hand hygiene is particularly important in institutional settings and for preventing transmission to household contacts.”</td>
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<td>6.2 Infection Prevention and Control Strategies</td>
<td>Entire section updated.</td>
</tr>
<tr>
<td>April 2015</td>
<td>6.3 Management of Cases</td>
<td>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…”</td>
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