

Ministry of Health  
Infectious Diseases Protocol

# Appendix B: Provincial Case Definitions for Diseases of Public Health Significance

**Disease: Amebiasis**  
Effective: February 2019

# Amebiasis

## 1.0 Provincial Reporting

Confirmed and probable cases of disease

## 2.0 Type of Surveillance

Case-by-case

## 3.0 Case Classification

### 3.1 Confirmed Case

Laboratory confirmation of infection with or without clinically compatible signs and symptoms:

- Demonstration of ingested red blood cells in hypertrophied trophozoites of *Entamoeba histolytica* (*E. histolytica*) in preserved stool samples;  
**OR**
- Positive for *E. histolytica* by stool antigen enzyme-linked immunosorbent assay (ELISA) or PCR on unpreserved stool samples;  
**OR**
- Demonstration of hypertrophied trophozoites in intestinal tissue biopsy or ulcer scrapings (e.g., Iron-Haematoxylin [IH] stained smears);  
**OR**
- Demonstration of hypertrophied trophozoites in extra-intestinal tissues (e.g., Haematoxylin & Eosin [H&E] stained sections).

### 3.2 Probable Case

- Clinically compatible signs and symptoms in a person with an epidemiologic link to one or more laboratory-confirmed cases;  
**OR**
- A person with or without clinically compatible signs and symptoms and the presence of *E. histolytica/Entamoeba dispar* (*E. dispar*) cysts and trophozoites by microscopy.

## 4.0 Laboratory Evidence

### 4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of amebiasis:

#### Intestinal amebiasis

- Demonstration of ingested red blood cells in hypertrophied trophozoites of *E. histolytica* in preserved stool samples;  
**OR**

- Demonstration of positive ELISA or PCR for *E. histolytica* on unpreserved stool samples;  
**OR**
- Demonstration of hypertrophied trophozoites in intestinal tissue biopsies or ulcer scrapings by histological staining or IH staining techniques.

## Invasive amebiasis

- Demonstration of hypertrophied *E. histolytica* trophozoites in extra-intestinal tissue.

## 4.2 Approved/Validated Tests

- Ova & Parasite screening (IH staining and F-E concentration) on stool samples preserved in sodium acetate-acetic acid-formalin (SAF) fixative.
- Stool antigen detection using ELISA or DNA detection by PCR on unpreserved stool samples, to distinguish between *E. histolytica* and *E. dispar*.
- IH staining of smears prepared from colonic fluids or biopsies preserved with SAF fixative.
- H&E staining on intestinal or extra-intestinal sections.

## 4.3 Indications and Limitations

- If hypertrophied trophozoites of *E. histolytica* found in IH stained smear, no further confirmatory tests are required. If positive for *E. histolytica/dispar* by screen, then ELISA should be performed on unpreserved stool sample to distinguish between *E. histolytica* and *E. dispar*.
- Permanent staining, such as IH, are for the trophozoite forms; they may not detect the presence of cyst forms, especially when they are few in numbers.
- The antigen of *E. histolytica* can only be detected in “fresh” unpreserved stool specimens, not in old or preserved ones.
- Colonic fluids may yield positive results provided they are preserved in SAF fixative immediately after collection; *E. histolytica* trophozoites usually show in IH smears prepared from this type of specimen.
- H&E sections show the presence of *E. histolytica* trophozoites in the infected tissue but the procedure is time consuming and a negative smear is inconclusive.
- Patients with early infections may not exhibit a detectable IgG response. IgM testing is not available.

## 5.0 Clinical Evidence

- Clinically compatible signs and symptoms are characterized by intermittent cramps, vomiting, and general malaise. More severe amebic dysentery includes a sudden onset of fever, severe abdominal cramps, and an average of 15 to 20 stools per day consisting of liquid feces flecked with bloody mucus. Death may occur from peritonitis resulting from gut perforation or from cardiac failure.
- Invasive infections may affect various organs. Invasive infection (e.g., hepatic amebiasis, ameboma) may also occur. Invasive amebiasis will always be

symptomatic with fever, abdominal pain, malaise, and elevated liver function tests (for liver disease).

## 6.0 ICD 10 Code(s)

IA06 Amebiasis

## 7.0 Comments

- Non-hypertrophied “*E. histolytica/dispar*” in stool is not considered as conclusive evidence. Additional testing is required to differentiate between *E. histolytica* and *E. dispar*.

## 8.0 Sources

Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System: Amebiasis (*Entamoeba histolytica*) - 1990 Case Definition [Internet]. Atlanta, GA: U.S. Department of Health & Human Services; 1990 [cited December 5, 2014]. Available from: <https://www.cdc.gov/nndss/conditions/amebiasis/case-definition/1990/>

Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.

## 9.0 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	3.1 Confirmed Case	First bullet revised to read “Demonstration of ingested red blood cells in hypertrophied trophozoites of <i>Entamoeba histolytica</i> ( <i>E. histolytica</i> ) in preserved stool samples”. Second bullet: added “enzyme-linked immunosorbent assay”. Removed: “Positive serological test(s) for <i>E. histolytica</i> , titre ≥1:512”. Third and fourth bullets: added “hypertrophied” before “trophozoites”.
April 2015	4.1 Laboratory Confirmation	Intestinal amebiasis section revised. Removed “Demonstration of positive serological test(s) for <i>E. histolytica</i> , titre ≥1:512” from Invasive amebiasis.

Revision Date	Document Section	Description of Revisions
April 2015	4.2 Approved / Validated Tests	<p>First bullet: changed “O&amp;P” to “Ova &amp; Parasite”.</p> <p>Removed the following from section 4.2 and added to section 4.3: “If hypertrophied trophozoites of <i>E. histolytica</i> found in IH stained smear, no further confirmatory tests are required. If positive for <i>E. histolytica/dispar</i> by screen, then ELISA should be performed on unpreserved stool sample to distinguish between <i>E. histolytica</i> and <i>E. dispar</i>.”</p> <p>Removed: “Serological tests (e.g., IgG ELISA test, indirect haemagglutination [IHA] test)”.</p> <p>Third bullet: Added “with” to “preserved <b>with</b> SAF”.</p>
April 2015	4.3 Indications and Limitations	<p>First bullet: See section 4.2 above.</p> <p>Removed: “Serology tends to be positive with invasive disease (e.g., colitis, hepatic abscess). However, diarrhea alone rarely causes serology to be positive at &gt;1:512;” and “Only serum samples are suitable for serology.”</p>
April 2015	5.0 Clinical Evidence	Entire section updated.
April 2015	7.0 Comments	First bullet removed: “According to the 2005 case definition, individuals that had an epidemiologic link to a confirmed case met the confirmed case definition. However, based on the 2008 case definition, these cases are now classified as probable.”
April 2015	8.0 Sources	Updated.
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance.

