

Amebiasis rev Jan 2016

BASIC EPIDEMIOLOGY

Infectious Agent

Entamoeba histolytica, a protozoan parasite. The trophozoite is the active form of the parasite which causes symptoms. Cysts are the infectious form which sometimes develops in the lower intestine but does not cause symptoms. Infected persons may shed both trophozoites and cysts in stool.

Transmission

Transmission is person-to-person or through ingestion of amebic cysts in fecally contaminated food or water. Cysts are relatively chlorine-resistant and can survive in moist environmental conditions for weeks to months. Transmission may also occur sexually by oral-anal contact.

Incubation Period

Variable, from a few days to several months or years; usually 2 to 4 weeks

Communicability

A person is infectious as long as they are shedding amebic cysts in their stool. Cysts may be shed intermittently for months or years if the person is not treated.

Clinical Illness

The symptoms are often mild and can include loose stools, stomach pain, and stomach cramping. A severe form of amebiasis causes stomach pain, bloody or mucoid stools, and fever. After becoming symptomatic, it is possible for cases to experience remission or constipation followed by the recurrence of symptoms. Other symptoms include chronic abdominal pain, amebic granulomata in the wall of the large intestine and ulceration of the skin in the perianal region or in the penile region. Liver abscesses and brain or lung infections occur infrequently. Asymptomatic infections are common. Only about 10% to 20% of people who are infected become sick.

DEFINITIONS

Clinical Case Definition

Infection of the large intestine by *Entamoeba histolytica* can vary in severity, ranging from an asymptomatic infection to mild, chronic diarrhea to fulminant dysentery. Extraintestinal infection can occur (e.g., hepatic abscess).

Laboratory Confirmation

- For intestinal amebiasis
 - Demonstration of cysts or trophozoites of *E. histolytica* in stool, **OR**
 - Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology
- For extra-intestinal amebiasis
 - Demonstration of *E. histolytica* trophozoites in extraintestinal tissue

Case Classifications

- **Confirmed, intestinal amebiasis:** A clinically compatible illness that is laboratory confirmed
- Suspect, intestinal amebiasis: A clinically compatible case with *E. histolytica* detected in stool by use of an antigen-based fecal immunoassay
- **Confirmed, extra-intestinal amebiasis:** A person must meet one of the following:
 - A case with demonstration of the organism, *E. histolytica*, in at least one extra-intestinal tissue sample, **OR**
 - A symptomatic person (with clinical or radiographic findings consistent with extra-intestinal infection) and demonstration of specific antibody against *E. histolytica* as measured by reliable immunodiagnostic test (e.g., EIA) and PCR based assays

SURVEILLANCE AND CASE INVESTIGATION

Case Investigation

It is recommended that local and regional health departments investigate all reported cases of amebiasis to identify potential sources of infection. Sporadic cases of amebiasis do not require an investigation form be sent to DSHS EAIDB unless they are identified as part of a multi-jurisdictional cluster or outbreak. Any case associated with a cluster or outbreak should be interviewed.

Case Investigation Checklist

- ☐ Confirm laboratory results meet the case definition.
- ☐ Review medical records or speak to an infection preventionist or healthcare provider to verify case definition, identify possible risk factors and describe course of illness.
- ☐ If time and resources allow or the case is part of an outbreak or cluster, interview the case to identify potential sources of infection. Ask about possible exposures within the incubation period prior to symptom onset, including:
 - Exposure to a known carrier and/or persons with diarrheal illness within the incubation period.
 - Contact with visitors born outside the U.S. or travelled to a developing country within 6 months prior to onset.
 - Sexual contacts within incubation period.
 - Travel outside the area. Obtain travel dates and locations visited.
 - Attendance or work at a child-care facility by the case or a household member.
 - Note: If the case is not available or is a child, conduct the interview with a surrogate who would have the most reliable information on the case, such as a parent or guardian.
- ☐ Provide education to the case or his/her surrogate regarding modes of transmission and ways to prevent transmission to others. See Prevention and Control Measures.
- ☐ Identify whether there is a public health concern: persons should not work as food handlers, child-care or health care workers, or attend child-care as long as they have diarrhea. See Exclusions.
- ☐ All confirmed and suspect case investigations must be entered and submitted for notification in the NEDSS Base System (NBS). Please refer to the *NBS Data Entry Guidelines* for disease specific entry rules.

Prevention and Control Measures

- Routine hand washing with soap and warm water, especially:
 - Before preparing, handling or eating any food.
 - After going to the bathroom.
 - After changing a diaper.
 - After caring for someone with diarrhea.

- Thoroughly wash fruits and vegetables with potable water.
- Avoid unpasteurized milk, cheese, and other dairy products.
- When traveling internationally to areas with poor sanitary conditions:
 - Drink bottled water or water that has been boiled for at least 1 minute.
 - Don't drink fountain drinks or drinks with ice.
 - Don't eat fruits or vegetables that you don't peel yourself.
 - Avoid uncooked foods.
- Practice safer sex measures, such as the use of condoms and dental dams for oral/anal contact.

Exclusions

School/child-care: No exclusions are specified for amebiasis but the standard exclusion for diarrhea or fever applies:

- Children with diarrhea should be excluded from school/child-care until they are free from diarrhea for 24 hours without the use of diarrhea suppressing medications.
- Children with a fever from any infection should be excluded from school/child-care for at least 24 hours after fever has subsided without the use of fever suppressing medications.

Food Employee: No exclusions are specified for amebiasis but the standard exclusion for vomiting or diarrhea applies:

- Food employees are to be excluded if symptomatic with vomiting or diarrhea until:
 - Asymptomatic for at least 24 hours without the use of diarrhea suppressing medications, OR
 - Medical documentation is provided stating that symptoms are from a noninfectious condition.

Please see Guide to Excluding and Restricting Food Employees in Appendix A.

MANAGING SPECIAL SITUATIONS

Outbreaks

If an outbreak is suspected, notify the DSHS Emerging and Acute Infectious Disease Branch (EAIDB) at (800) 252-8239 or (512) 776-7676.

The local/regional health department should:

- Interview all cases suspected as being part of the outbreak or cluster.
- Request medical records for any case in your jurisdiction that died, was too ill to be interviewed, or for whom there are no appropriate surrogates to interview.
- Prepare a line list of cases in your jurisdiction. Minimal information needed for the line list might include patient name or other identifier, DSHS or laboratory specimen identification number, specimen source, date of specimen collection, date of birth, county of residence, date of onset (if known), symptoms, underlying conditions, treatments and outcome of case, and risky foods eaten, foods eaten leading up to illness, or other risky exposures, such as animal contact and travel, reported by the case or surrogate.

Line list example:

| ID | Name | Age | Sex | Ethnicity | Onset | Symptoms | Food | Animal | Notes |
|----|------|-----|-----|-----------|---------|----------|------------------|--------|-------------|
| 1 | NT | 34 | F | W/N | 2/4/16 | Bl. D, F | Chicken, eggs | Dog | Dog food |
| 2 | PR | 2 | M | U/U | 1/30/16 | V,D,F | Chicken, spinach | None | Brother ill |

- If the outbreak was reported in association with an apparent common local event (e.g., party, conference, rodeo), a restaurant/caterer/home, or other possible local exposure (e.g., pet store, camp), contact hospitals in your jurisdiction to alert them to the possibility of additional cases.
- Work with any implicated facilities to ensure staff and students/residents/volunteers get hand hygiene education and review hygiene and sanitary practices currently in place including:
 - Policies on, and adherence to, hand hygiene.
 - Storage and preparation of food.
 - Procedures for changing diapers and toilet training.
 - Procedures for environmental cleaning.
- Recommend that anyone displaying symptoms seeks medical attention from a healthcare provider.
- Restrict individuals from handling food, engaging in child-care, healthcare work, or attending child-care, as long as they are symptomatic. See Exclusions in Case Investigation section.
- Enter outbreak into NORS at the conclusion of the outbreak investigation. See Reporting and Data Entry Requirements section.

REPORTING AND DATA ENTRY REQUIREMENTS

Provider, School, Child-Care Facility, and General Public Reporting Requirements

Confirmed and clinically suspected cases are required to be reported **within 1 week** to the local or regional health department or the Texas Department of State Health Services (DSHS), Emerging and Acute Infectious Disease Branch (EAIDB) at **(800) 252-8239** or **(512) 776-7676**.

Local and Regional Reporting and Follow-up Responsibilities

Local and regional health departments should:

- Enter the case into NBS and submit an NBS notification on all **confirmed** and **suspect** cases.
 - Please refer to the *NBS Data Entry Guidelines* for disease-specific entry rules.
 - A notification can be sent as soon as the case criteria have been met. Additional information from the investigation may be entered upon completing the investigation.
- If investigation forms are requested, they may be faxed to 512-776-7616 or emailed securely to an EAIDB foodborne epidemiologist.

When an outbreak is investigated, local and regional health departments should:

- Report outbreaks within 24 hours of identification to the regional DSHS office or to EAIDB at **512-776-7676**
- Enter outbreak information into the **National Outbreak Reporting System (NORS)** at the conclusion of the outbreak investigation.
 - For NORS reporting, the definition of an outbreak is two or more cases of similar illness associated with a common exposure.
 - The following should be reported to NORS:
 - Foodborne disease, waterborne disease, and enteric illness outbreaks with person-to-person, animal contact, environmental contact, or an indeterminate route of transmission.
 - Outbreaks as indicated above with patients in the same household.
 - Enter outbreaks into NORS online reporting system at <https://wwwn.cdc.gov/nors/login.aspx>
 - Forms, training materials, and other resources are available at <http://www.cdc.gov/nors/>
- To request a NORS account, please email FoodborneTexas@dshs.state.tx.us
 - Please put in Subject Line: NORS User Account Request
 - Information needed from requestor: name, email address, and agency name
 - After an account has been created a reply email will be sent with a username, password, and instructions for logging in.

LABORATORY PROCEDURES

CLINICAL SPECIMENS:

Testing for amebiasis is widely available from most private laboratories. Specimens should not be submitted to the DSHS laboratory unless approved by EAIDB. Submission of specimens to the DSHS laboratory will be considered during outbreak investigations. Contact an EAIDB foodborne epidemiologist to discuss further.

Specimen Collection

- Collect stool during acute phase of illness, if possible.
- Submit a stool specimen in a sterile, leak-proof container.
 - Required volume: >20 g fresh stool.
 - If fresh stool cannot be transported to laboratory within 5 hours, specimens should be placed in PVA and formalin immediately.

Submission Form

- Use DSHS Laboratory G-2B form for specimen submission.
- Make sure the patient's name, date of birth and/or other identifier match exactly what is written on the transport tubes and on the G-2B form.
- Fill in the date of collection and select the appropriate test.
- If submitting as part of an outbreak investigation, check “Outbreak association” and write in name of outbreak.
- Payor source:
 - Check “IDEAS” to avoid bill for submitter

Specimen Shipping

- Transport temperature: May be shipped at ambient temperature.
- Ship specimens via overnight delivery.
- DO NOT mail on a Friday unless special arrangements have been pre-arranged with DSHS Laboratory.
- Ship specimens to:

Laboratory Services Section, MC-1947
 Texas Department of State Health Services
 Attn. Walter Douglass (512) 776-7569
 1100 West 49th Street
 Austin, TX 78756-3199

Causes for Rejection:

- Specimen not in correct transport medium.
- Missing or discrepant information on form/specimen.
- Unpreserved specimen received greater than 5 hours after collection.
- Specimen too old.

FOOD SAMPLES AND ENVIRONMENTAL SWABS:

Testing of food and environmental swabs for *E. histolytica* is NOT available at the DSHS laboratory.

UPDATES

January 2016

- Revised the Exclusion section to provide clarity.
- Expanded the NORS sub-section in the Reporting and Data Entry Requirements section to include the NORS outbreak definition and the types of outbreaks that should be reported in NORS.
- Expanded the Laboratory Procedures section to address the unavailability of food and environmental swab testing for *E. histolytica* at the DSHS laboratory.