Amebiasis

Entamoeba Histolytica

DISEASE REPORTABLE WITHIN 24 HOURS OF DIAGNOSIS

Per N.J.A.C. 8:57, healthcare providers and administrators shall report by mail or by electronic reporting within 24 hours of diagnosis, confirmed cases of Amebiasis to the health officer of the jurisdiction where the ill or infected person lives, or if unknown, wherein the diagnosis is made. A directory of local health departments in New Jersey is available at http://localhealth.nj.gov.

If the health officer is unavailable, the healthcare provider or administrator shall make the report to the Department by telephone to 609.826.5964, between 8:00 A.M. and 5:00 P.M. on non-holiday weekdays or to 609.392.2020 during all other days and hours.

CDS
Communicable Disease Service

NJ Health
New Jersey Department of Health

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1 THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Entamoeba histolytica (*E. histolytica*) is a protozoan parasite that causes the diarrheal illness known as Amebiasis. Several protozoan species in the genus *Entamoeba* colonize humans, but not all of them are associated with disease. *E. histolytica* is well recognized as a pathogenic ameba, associated with intestinal and extraintestinal infections. The other species are important because they may be confused with *E. histolytica* in diagnostic investigations. It has been established that the invasive and noninvasive forms represent two separate species, respectively *E. histolytica* and *E. dispar*. These two species are morphologically indistinguishable unless *E. histolytica* is observed with ingested red blood cells (erythrophagocystosis). The parasite exists in both trophozoite and cyst form. Cysts are typically found in formed stool, whereas trophozoites are typically found in diarrheal stool.

B. Clinical Description

Only about 10% to 20% of people who are infected with *E. histolytica* become sick from the infection. People exposed to this parasite may experience mild or severe symptoms or no symptoms at all. The symptoms are often quite mild and can include loose stool, abdominal pain, and abdominal cramping, alternating periods of remission or constipation. Severe amebic dysentery is associated with abdominal pain, bloody stools, and fever. Rarely, *E. histolytica* invades the liver and forms an abscess (a collection of pus). In a small number of instances, it has been shown to spread to other parts of the body, such as the lungs or brain, but this is very uncommon.

Laboratory diagnosis is made by microscopic identification of trophozoites or cysts in stool, aspirates, tissue, or tissue scrapings. Other laboratory studies used for diagnosis include, antigen testing, serologic testing, culture and polymerase chain reaction (PCR) assay.

C. Reservoirs

Humans, primarily chronic or asymptomatic carriers, are reservoirs for amebiasis.

D. Modes of Transmission

This parasite is transmitted fecal-orally by ingestion of cysts. This can happen via contaminated food or water or through person-to-person spreadand through certain types of sexual contact (e.g., oral-anal contact).

E. Incubation Period

The incubation period is commonly from two to four weeks, but it can vary from a few days to several months or years.

F. Period of Communicability or Infectious Period

The disease is communicable for as long as the infected person excretes *E. histolytica* cysts, which may continue for years. Some people with amebiasis may carry the parasite for weeks to years, often without symptoms. Asymptomatically infected persons tend to excrete a much higher proportion of cysts and hence are more likely to transmit infection than persons who are acutely ill.

G. Epidemiology

Amebiasis has a worldwide distribution. Prevalence is higher in the tropics, most commonly in areas of poor sanitation. In the United States, amebiasis is most common in people who have traveled to tropical places that have poor sanitary conditions, immigrants from tropical countries that have poor sanitary conditions, people who live in institutions that have poor sanitary conditions and men who have sex with men. The estimated prevalence in the United States is 4%. In New Jersey, an average of 84 cases of amebiasis are reported every year to the New Jersey Department of Health.

2 CASE DEFINITIONS

A. New Jersey Department of Health (NJDOH) Case Definition

1. Clinical Description

Most people who are infected with *E. histolytica* are asymptomatic. Symptoms of intestinal disease are often mild and can include loose stool, abdominal pain and cramping. Amebic dysentery is a severe form of amebiasis associated with abdominal pain, bloody stools, and fever. Extraintestinal forms of infection occur when *E. histolytica* invades the liver and forms an abscess (a collection of pus). In a small number of instances, it has been shown to spread to other parts of the body, such as the lungs or brain, but this is very uncommon.

2. Laboratory Criteria for Diagnosis

Microscopic identification of trophozoites or cysts in stool, aspirates, tissue, or tissue scrapings; OR positive antigen, serologic, culture or polymerase chain reaction (PCR) assay.

3. Case Classification

CONFIRMED

A case that meets the clinical description **and** the criteria for laboratory confirmation as described above.

PROBABLE
Not used.

POSSIBLE
Not used.

Differences from CDC Case Definition

There is no official Centers for Disease Control and Prevention (CDC) case definition for amebiasis. It is not a nationally notifiable disease. The NJDOH case definition is developed by the NJDOH Infectious and Zoonotic Diseases Program (IZDP) epidemiologists, based on guidance from the CDC.

3 LABORATORY TESTING AVAILABLE

Most commercial laboratories offer testing for detection of *E. histolytica*. The NJDOH, Public Health, Environmental and Agricultural Laboratories (PHEAL) does not routinely test clinical and water samples for *E. histolytica* spp. If testing is needed in an outbreak situation, please contact NJDOH staff to discuss alternatives.

4 PURPOSE OF SURVEILLANCE AND REPORTING AND REPORTING REQUIREMENTS

A. Purpose of Surveillance and Reporting

- To identify whether the patient may be a source of infection for other persons (e.g., a diapered child, daycare attendee, or food handler) and, if so, to prevent further transmission.
- To identify transmission sources of public health concern (e.g., a contaminated public water supply) and to stop transmission from such a source.
- To provide education about reducing the risk of infection.

Laboratory Reporting Requirements

The New Jersey Administrative Code (NJAC) 8:57 stipulates that laboratories report using the Communicable Disease Reporting and Surveillance System (CDRSS) all cases of amebiasis to the local health officer having jurisdiction over the locality in which the patient lives, or, if

unknown, to the health officer in whose jurisdiction the healthcare provider requesting the laboratory examination is located. The report shall contain, at a minimum, the reporting laboratory's name, address, and telephone number; the age, date of birth, gender, race, ethnicity, home address, and telephone number of person tested; the test performed; the date of testing; the test results; and the healthcare provider's name and address.

Healthcare Provider Reporting Requirements

The New Jersey Administrative Code NJAC 8:57 stipulates that healthcare providers report (by telephone, by confidential fax, or in writing) all cases of amebiasis to the local health officer having jurisdiction over the locality in which the patient lives, or, if unknown, to the health officer in whose jurisdiction the healthcare provider requesting the laboratory examination is located. The report shall contain the name of the disease; date of illness onset; name, age, date of birth, race, ethnicity, home address, and telephone number of the person they are reporting. Additionally, the name, address, institution, and telephone number of the reporting official and other information as may be required by NJDOH concerning a specific disease should be reported.

D. Health Officer Reporting and Follow-Up Responsibilities

The New Jersey Administrative Code NJAC 8:57 stipulates that each local health officer must report the occurrence of any case of amebiasis within 24 hours of receiving a report from a laboratory or healthcare provider to the NJDOH. A report must be filed electronically over the internet using the confidential and secure CDRSS.

5 CASE INVESTIGATION

It is the health officer's responsibility to investigate the case by interviewing the patient and others who may be able to provide pertinent information about the case patient's illness. Some of the information required in CDRSS can be obtained from the patient's healthcare provider or the medical record. Much of the information on exposure must be obtained from the case as it not likely in the medical record.

- NJDOH recommends interviewing the patient and asking about exposure history (food, travel, activities), using the incubation period range for amebiasis (2-4 weeks). Specifically, focus on the period beginning a minimum of two weeks before the symptom onset date back to no more than 4 weeks before onset.

- If possible, record any restaurants at which the patient ate, including food item(s) such as unwashed, raw or uncooked food and date(s) consumed.

- Ask questions about travel history and outdoor activities to help identify other potential exposure sources during the incubation period.

- Ask questions about water supply and whether the patient drank untreated water, because amebiasis may be acquired through consumption of untreated water.

- Ask questions regarding household/close contacts. Determine whether the patient attends or works at a daycare facility and/or is a food handler. Food handlers should be excluded from handling food until 24 hours after diarrhea has resolved. These questions are necessary to examine the patient's risk of having acquired the illness from, or potential for transmitting it to, these contacts. These questions are also useful to classify a case as sporadic or part of a household or institutional cluster or outbreak.

- In a case of an outbreak (see section 7 for definition), immediately notify the NJDOH by telephone at 609.826.5964 during business hours and 609.392.2020 after business hours and on weekends and holidays.

- After speaking with case patient and healthcare provider, enter all collected information into the Communicable Disease Reporting and Surveillance System (CDRSS).

B. Other Reporting/Investigation Issues

Once LHD completes its investigation and assigns a report status of "LHD CLOSED" in CDRSS, NJDOH will review the case. NJDOH will approve the case by changing the report status to "DHSS APPROVED". At this time, the case will be locked for editing. If additional information is received after a case has been placed in "DHSS APPROVED" you will need to contact NJDOH to reopen the case. This should be done only if the additional information changes the case status of the report.

Institution of disease control measures is an integral part of the case investigation. It is the health officer's responsibility to understand and, if necessary, institute the control guidelines listed below in section 6, Controlling Further Spread.

6 CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

1. Minimum Period of Isolation of Patient

Food handlers with amebiasis are to be excluded from food handling duties until 24 hours after diarrhea has resolved. In outbreak situations, special precautions such as submission of additional stool specimens before returning to food handling duties may be warranted.

Children should not attend school until diarrhea has resolved.

Since cysts can stay alive for days to weeks patients should not swim for 2 weeks after diarrhea has resolved.

2. Minimum Period of Quarantine of Contacts

Food handlers who are contacts of a confirmed case, and who have diarrhea shall be considered the same as a case-patient and be excluded from food handling duties until 24 hours after diarrhea has resolved and be advised to maintain appropriate hand hygiene upon their return.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

1. Daycare/School

Since amebiasis may be transmitted person-to-person through fecal-oral transmission, it is extremely important to carefully follow cases of amebiasis in a daycare/school setting. General recommendations include the following:

- Children/students with amebiasis who have diarrhea should be excluded until their diarrhea has resolved.
- Children/students with amebiasis who have no diarrhea and are otherwise not ill may remain in the program.

Daycare: Since most staff in daycare programs are considered food handlers, those with *E. histolytica* in their stools who have diarrhea must not prepare food or feed children until 24 hours after their diarrhea has resolved and be advised to maintain appropriate hand hygiene upon their return.

School: Students or staff who handle food and have amebiasis infection and have diarrhea must not prepare food until 24 hours after their diarrhea has resolved and be advised to maintain appropriate hand hygiene upon their return.

2. Residential Programs

Actions taken in response to a case of amebiasis in a community residential program will depend on the type of program and the level of functioning of the residents.

In **long-term care facilities**, residents with amebiasis should be placed on standard (including enteric) precautions until their diarrhea has resolved. Staff members who give direct patient care (e.g., feed patients, give mouth or denture care, or give medications) are considered food handlers and should be treated as such (See section 6A above).

In **residential facilities for the developmentally disabled**, staff and clients with amebiasis must refrain from handling or preparing food for other residents until 24 hours after their diarrhea has subsided and be advised to maintain appropriate hand hygiene upon their return.

In addition, staff members with amebiasis who are not food handlers should not work until their diarrhea has resolved.

If an outbreak is detected or suspected in a long-term care facility or community residential program, the facility must report the outbreak to its LHD. Facility management should also report any such outbreak to the Division of Health Facilities Evaluation and Licensing at 609-292-0412. *(This applies to Assisted Living Facilities, Assisted Living Programs, Comprehensive Personal Care Homes, Residential Health Care Facilities, and Adult and Pediatric Day Health Services Facilities ONLY.)*

7 OUTBREAK SITUATIONS

Reported Incidence Is Higher Than Usual/Outbreak Suspected

If the number of reported cases of amebiasis in a city/town is higher than usual, or if an outbreak is suspected, investigate to determine the source of infection and mode of transmission. A common vehicle (such as recreational water, drinking water, food, or association with a daycare or institutional setting) should be sought and applicable preventive or control measures should be instituted. Control of person-to-person transmission requires special emphasis on personal cleanliness including proper hand hygiene and sanitary disposal of feces. NJDOH staff can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several jurisdictions and therefore be difficult to identify at a local level.

8 PREVENTIVE MEASURES

Preventive Measures/Education

Educate families, personnel, and residents of institutions, especially adult personnel of daycare centers, in personal hygiene and prevention measures.

Hand washing with soap and water is preferred over hand sanitizer. Hand sanitizer is effective against trophozoites passed in the stool, but not against the cyst form that exists in the environment.

To avoid exposure and transmission, individuals should:

- Wash their hands thoroughly with soap and water frequently when ill with diarrhea, or when caring for someone with diarrhea, after using the toilet or helping someone use the toilet, after changing diapers, changing soiled sheets, before eating or preparing food.
- Wash their own hands as well as the child's hands and dispose of diapers in a sanitary manner.
- Avoid swallowing recreational water, including pool or natural water. *E. histolytica* is not killed by low doses of chlorine or iodine; do not rely on chemical water purification tablets (such as halide tablets) to prevent amebiasis.
- Avoid swimming while ill with diarrhea, and for at least two weeks after diarrhea resolves. Infected persons may continue to shed the parasite during this time. This measure is essential for children in diapers.
- Shower with soap and water before entering recreational water, including swimming pools and hot tubs. Wash thoroughly, especially rectal and genital areas, before entering swimming water, water parks, or other public bathing areas.
- Take children on frequent bathroom breaks and check diapers often.
- Change diapers in the bathroom or a diaper-changing area, not at pool or waterside.
- Cook food thoroughly to kill parasites, bacteria, or viruses that may be present.

- Not eat fruit that has already been peeled or cut, or raw vegetables that may be contaminated.
- Drink only pasteurized milk or dairy products. Avoid eating unpasteurized dairy products or drinking raw milk.
- When hiking or camping, be aware of the risks of drinking water from streams or lakes. Do not drink untreated water from a surface water supply, such as a pond, lake, or stream. Although the water may appear to be clean, it may contain *E. histolytica* parasites, which cannot be seen without a microscope.
- If untreated water is all that is available there are several methods to disinfect water before drinking, rinsing uncooked foods, or brushing teeth such as boiling, use of chemicals, filters and ultraviolet light. Information on healthy drinking water can be found at http://www.cdc.gov/healthywater/drinking/travel/index.html.
- Avoid sexual practices that may involve direct contact with feces. Latex barrier protection should be emphasized as a way to prevent the spread of *E. histolytica* to sexual partners, as well as to prevent exposure to and transmission of other pathogens.

Additional Information

An Amebiasis FAQ can be obtained at https://www.nj.gov/health/cd/topics/amebiasis.shtml

References

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