

CRYPTOSPORIDIOSIS

REPORTING INFORMATION

- Class A(3)
- Report by the end of the work week
- [Confidential Case Report Card](#) (3812.11 rev. 12/81), [lab report](#) (3833.11) or telephone
- Symptomatic, as well as asymptomatic, cases are reportable
- To facilitate local follow-up of case reports, a detailed [Cryptosporidiosis Case Surveillance Form](#) is provided. Upon completion of this form, a copy should be mailed by the local health department to the Bureau of Infectious Disease Control, ODH, 246 N. High Street, PO Box 118, Columbus, OH 43266-0118.

AGENT

Cryptosporidium parvum or *Cryptosporidium sp.*, a protozoan parasite which produces hardy 4 to 6 µm oocysts. These oocysts are highly infective for humans and most animals, and are resistant to chlorine and other disinfectants. They are difficult to filter from surface water in which they are commonly present.

Infectious dose

The infectious dose is low; as few as 10 oocysts can result in infection.

CASE DEFINITION

Clinical description

An illness caused by the protozoan *Cryptosporidium parvum* and characterized by diarrhea, abdominal cramps, loss of appetite, low-grade fever, nausea, and vomiting. Infected persons may be asymptomatic. The disease can be prolonged and life-threatening in severely immunocompromised persons.

Laboratory criteria for diagnosis

- Demonstration of *Cryptosporidium* oocysts in stool, or
- Demonstration of *Cryptosporidium* in intestinal fluid or small-bowel biopsy specimens, or
- Demonstration of *Cryptosporidium* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Confirmed: a case that is laboratory confirmed

SIGNS AND SYMPTOMS

Persistent watery diarrhea which may contain mucus, often accompanied with abdominal cramps. Less common clinical features include general malaise, low-grade fever, anorexia, nausea, and vomiting. If there is underlying immunosuppression, the severity of symptoms will vary with the degree of immunosuppression. Infected persons can be asymptomatic.

DIAGNOSIS

Identification of *Cryptosporidium* oocysts in the stool. Because most patients shed oocysts for a limited time, stool specimens for microscopic examination must be obtained as soon as possible after onset of illness. Shedding of oocysts can be intermittent, therefore submission of 3 stools, obtained 24 to 48 hours apart within a 10-day period, is recommended.

Laboratory procedures available

[Stool examination](#), using an O & P (ova and parasite) kit, is available at the ODH Laboratory.

Examination for *Cryptosporidium sp.* must be specifically requested; the routine O & P examination does not include staining that will detect this agent. When recommended, initial tests to determine *Cryptosporidium* infection for contacts of confirmed cases can be done by ODH laboratory without charge. To obtain a [fee exemption](#), contact the Bureau of Infectious Disease Control, (614) 466-0265, prior to submitting the specimens.

EPIDEMIOLOGY

Source

Humans, cattle (especially calves), and other domestic animals. The occurrence of *Cryptosporidium* in surface water appears to be widespread; it is presumed that *Cryptosporidium* gains entry into ponds, lakes, and streams via animal excreta containing oocysts.

Occurrence

The extent to which cryptosporidiosis occurs in the U.S. is unknown. Serologic studies suggest that sporadic, mild to moderate, self-limited infections are fairly common, especially in rural areas and among international travelers who might be exposed to inadequately treated water. As with most other cases of transient diarrhea, these are rarely diagnosed etiologically. Attention has been focused on this agent due to two factors: (1) the documentation of several extensive waterborne outbreaks of cryptosporidiosis, and (2) the persistence of this infection in persons with impaired immune function.

Mode of transmission

Via the fecal-oral route, including person-to-person, animal-to-person, waterborne, and foodborne (including raw milk) transmission.

Period of communicability

Oocysts appear in the stool at the onset of symptoms, persist throughout the duration of the illness, and can continue to be shed for several weeks after symptoms resolve. Immunocompromised persons who are unable to clear the infection can remain communicable for extended periods of time.

Incubation period

The range is 1 to 12 days, with an average of about one week.

PUBLIC HEALTH MANAGEMENT

Case

Investigation

All cases or positive laboratory findings reported to the local health department should be followed up with a telephone call to obtain demographic and epidemiologic data. The [Cryptosporidiosis Case Surveillance Form](#) is a useful guide for this inquiry. No further work-up is recommended if neither the case nor any household member is employed in a sensitive occupation (direct food handling, child care center, or direct patient care), or attends a child care center, unless there is evidence that the case is part of an outbreak. If the case or any household member is employed in a sensitive occupation, other household members with diarrhea should submit stool specimens for *Cryptosporidium* testing.

Treatment/therapy

Treatment is entirely supportive, and is directed toward avoiding dehydration. There is no antiparasitic drug effective against *Cryptosporidium*.

Isolation and Follow-up specimens

Section [3701-3-13](#) of the Ohio Administrative Code states:

"A person infected with one of the following specified diseases or conditions shall be isolated as set forth below:

- (G) Cryptosporidiosis, where the person works in a sensitive occupation or is a child in a child care center, such a person shall be excluded from work or the child care center and may return only when the following conditions are met:
- (1) The child may return to a child care center and the person may return to work in the sensitive occupation if his or her diarrhea has ceased, provided that his or her duties do not include food handling.
 - (2) A food handler may only return to work after his or her diarrhea has ceased and after three consecutive follow-up stool specimens are negative for *Cryptosporidium*."

Submit 3 stool specimens collected within a 10-day period. Obtain the first specimen no sooner than 48 hours after cessation of diarrhea or, if being treated, at least 48 hours after completion of antibiotic therapy. Obtain the remaining specimens at least 24-48 hours apart.

Public Health Significance

Ohio food service operation rules do not allow food preparation by persons who are infected with a disease in a communicable form that can be transmitted by foods. See Food Service Operation Law and Rules, Ohio Department of Health publication 2231.32 (rev. 11/97) for more information (OAC chapter [3701-21-06 \(A\)](#) included in Section 2 of this manual).

Contacts

If the case or a household contact (of a confirmed case) is employed in a sensitive occupation or is a child care attendee, all household members with diarrhea should submit stool specimens for *Cryptosporidium* testing.

When a case of cryptosporidiosis is identified in a child care center, other children with diarrhea should submit stool specimens for *Cryptosporidium* testing.

Coworkers with diarrhea who have been exposed to a case of cryptosporidiosis should submit stool specimens for *Cryptosporidium* testing.

Prevention and control

Person-to-person transmission

Educate the general public in personal hygiene, particularly thorough hand washing with soap and warm water after using the bathroom, changing diapers, and before handling food.

Animal-to-person transmission

Wash hands thoroughly after handling household pets, laboratory and farm animals, or after working in soil. Soil can become contaminated when an animal with cryptosporidiosis leaves its droppings there.

Foodborne transmission

Wash and/or cook food. Food that will be eaten uncooked should be washed with purified (boiled or filtered) water before serving. Do not drink or eat any of the following items unless they are pasteurized: milk, dairy products, juices and ciders.

Waterborne transmission

Heating water to a rolling boil for one minute destroys oocysts. Do not drink or swallow water directly from rivers, lakes, streams, the ocean, swimming pools, hot tubs, or jacuzzis.

Testing water for presence of oocysts is not economically feasible, and does not produce results which can be interpreted with confidence. Well water can be tested for coliforms to determine if animal waste is entering the system. Installation of a chlorinator on a well contaminated by fecal coliforms is not effective against the oocysts of *Cryptosporidium*.

Extra precautions for people with severely weakened immune systems

Minimize risk of infection by using bottled water or point-of-use filters for tap water of surface origin. Bottled water must be carefully selected--only water that has been distilled or purified by reverse osmosis is reliably free of oocysts. Only point-of-use filters that remove particles one micron or less in diameter should be considered.