

Cryptosporidiosis

PROTOCOL CHECKLIST

- Enter available information into Merlin upon receipt of initial report
- Review background information on the disease and its epidemiology (see [page 2](#)), surveillance case definition (see [page 4](#)), and laboratory testing (see [page 6](#))
- Investigate cases (see [page 7](#))
 - Contact provider if necessary to gather more information
 - Interview patient
 - Review disease facts (see [page 2](#))
 - Modes of transmission
 - Incubation period
 - Symptoms
 - Ask about exposure to relevant risk factors (see [page 8](#))
 - Travel
 - Consumption of raw or unpasteurized milk or dairy products
 - Restaurant meals
 - Source(s) of drinking water
 - Recreational water exposure
 - Contact with livestock, pets, or other animals
 - Sexual contact involving potential fecal exposure
 - Identify symptomatic contacts
 - Determine if an infected patient or symptomatic contact is in a sensitive situation (see [page 11](#))
 - Recommend exclusions for patients or symptomatic contacts (see [page 11](#))
 - Provide education on controlling further spread (see [page 9](#))
 - Practice good hygiene
 - People with diarrhea should not prepare food for others
 - People with diarrhea should not use recreational water venues
 - Avoid contact with immunosuppressed people
 - Avoid fecal exposure during sexual activity
 - Avoid contact with high-risk animals
 - Address individual's questions or concerns
 - Follow up on special situations, including outbreaks or infected persons in sensitive situations (see [page 11](#))
 - Enter additional data obtained from interview into Merlin (see [page 9](#))

Cryptosporidiosis

1. DISEASE REPORTING

A. Purpose of reporting and surveillance

1. To detect individual people with cryptosporidiosis in such a way that public health, medical, or behavioral action can prevent spread from the reported patient.
2. To detect outbreaks of illnesses due to this agent early enough to make a difference to the course of the outbreak.
3. To allow a better understanding of the descriptive epidemiology of cases in order to be able to focus primary case prevention efforts and formulate better prevention strategies.
4. To detect outbreaks of illnesses due to these agents in order to better understand the events that lead to outbreaks and thus be able to focus outbreak prevention efforts (for possible future outbreaks). Note that there are numerous other ways that outbreaks are commonly detected, and this is not the most common.

B. Legal reporting requirements

Laboratories and physicians are required to report persons infected with *Cryptosporidium* to the county health department (CHD) within one working day of identification/diagnosis.

C. County Health Department investigation responsibilities

1. Investigate cases and individuals with potential exposure (**see Section 5 for more information**).
2. Follow up with cases and administer appropriate measures to control further spread, as appropriate. **See Section 6 for recommendations on controlling further spread.**
3. Report all confirmed and probable cases in Merlin.
4. Review reported cases by street address, reporting source, race, ethnicity, age group, onset or report date, etc. to detect possible clusters of infected individuals.

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2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic agent

Cryptosporidiosis (commonly referred to as Crypto) is an infection with a protozoan parasite, *Cryptosporidium hominis* or *C. parvum*, which infects humans, cattle and other mammals. Other species in the genus *Cryptosporidium* rarely infect humans. During the past two decades, Crypto has become recognized as one of the most common causes of waterborne disease (recreational water and drinking water) in humans in the United States. The parasite is found in every region of the U.S. and throughout the world.

The *Cryptosporidium* oocysts (infectious agent) are relatively hardy in the environment and, in the right conditions, can survive for weeks or months. They are resistant to the typical concentrations of chlorine and other disinfectants commonly used for water treatment. They can be killed by heat, removed by adequate filtration, or inactivated by prolonged disinfection processes that in practice may be difficult to achieve.

B. Description of illness

The most common symptom of cryptosporidiosis is mild to severe watery diarrhea. Other symptoms include:

- Stomach cramps or pain
- Dehydration
- Nausea
- Vomiting
- Fever
- Weight loss

Some people with Crypto will have no symptoms at all. While the small intestine is the site most commonly affected, *Cryptosporidium* infections could possibly affect other areas of the digestive tract or the respiratory tract.

Illness can be intermittent and prolonged, lasting days to weeks in many patients; over a month in some. Recurrence of symptoms after seeming resolution has been reported frequently. Infection can be severe and persistent in persons who are immunocompromised (e.g., chemotherapy, untreated AIDS).

C. Reservoirs

A wide variety of mammals are hosts for this parasite, which is shed in feces. Young livestock, notably calves and lambs, are commonly infected and may excrete huge numbers of oocysts. While many wild animals (mammals, birds, reptiles) are infected with various species of *Cryptosporidium*, their importance as a source of human infection is not clear.

D. Modes of transmission

Cryptosporidium lives in the intestine of infected humans or animals, and large numbers (10^8 to 10^9 per bowel movement) of oocysts can be excreted in one bowel movement. Shedding of Crypto in the stool begins when the symptoms begin and can last for weeks after the symptoms (e.g., diarrhea) stop. Infection can occur after swallowing the parasite oocysts. *Cryptosporidium* may be found in soil, food, water, or surfaces that have been contaminated with the feces from infected humans or animals. Crypto is not spread by contact with blood. Oocysts are immediately infective to susceptible hosts. The infectious dose can be very low (less than 100). Person-to-person outbreaks occur in congregate settings, particularly in child care settings. However, most recognized outbreaks to date have been waterborne.

Commonly recognized vehicles or mechanisms of transmission include:

1. Drinking fecally contaminated and inadequately treated water;
2. Ingesting fecally contaminated recreational water (pools, water parks, splash pads, rivers, lakes, etc.);
3. Contact with infected persons (i.e., those in the same household or child care) or

- infected animals (e.g., young livestock);
4. Eating food contaminated by animals or food handlers (rarely documented); and
 5. Certain types of sexual contact (e.g., oral-anal contact).

E. Incubation period

The incubation period ranges from approximately 2–14 days, but is typically 5–8 days.

F. Period of communicability

People are infectious as long as oocysts are being shed, which is typically days to weeks, usually 1–2 weeks. Shedding may persist after symptoms resolve, although the concentrations of oocysts (and hence, infectivity) soon decline.

G. Treatment

A 3-day course of Nitazoxanide is approved by the FDA for treatment of diarrhea caused by *Cryptosporidium* species in people ≥ 1 year old with healthy immune systems. For immunocompromised patients, further treatment may be necessary. Ask the patient to consult his/her physician.

Treatment may not eliminate carriage of the organism. For additional information regarding treatment, see www.cdc.gov/parasites/crypto/treatment.html.

H. Prophylaxis

None indicated.

I. Cryptosporidiosis in Florida

Cryptosporidiosis has been reportable in Florida since 1992. Cryptosporidiosis occurs in cyclical trends; the incidence tends to increase every few years. On average, the Florida Department of Health (DOH) receives 400–500 reports of cryptosporidiosis each year. During high incidence years, DOH has received as many as 1,900 reports of cryptosporidiosis. From 2011–2015, the majority (~71%) of these patient infections appeared to be sporadic and the highest rates of illness occurred in the 0–4 year age group (~15 cases per 100,000). Increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water is more common.

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3. CASE DEFINITION

A. Background

An illness characterized by diarrhea, abdominal cramps, anorexia (loss of appetite), or vomiting. Asymptomatic infections do occur, but asymptomatic persons are not considered clinically compatible. The disease can be prolonged and life-threatening in severely immunocompromised persons.

B. Clinical criteria for case classification

Both of the following:

- Diarrhea **and**
- One or more of the following:
 - Abdominal cramps, **or**
 - Anorexia (loss of appetite), **or**
 - Vomiting.

C. Laboratory criteria for case classificationConfirmatory:

One or more of the following:

- Demonstration of *Cryptosporidium* by microscopy and staining, **or**
- Detection of *Cryptosporidium*-specific nucleic acid by polymerase chain reaction (PCR), **or**
- Detection of *Cryptosporidium* by enzyme immunoassay (EIA), **or**
- Detection of *Cryptosporidium* by immunofluorescence assay (IF) (e.g., direct fluorescent antibody [DFA], indirect fluorescent antibody [IFA]).

Presumptive:

One or more of the following:

- Detection of *Cryptosporidium* antigen by immunochromatographic card/rapid card test, **or**
- Detection of *Cryptosporidium* by unspecified immunoassay (IA),
- A laboratory test of unknown method.

D. Epidemiological criteria for case classification

A person who is epidemiologically linked to a confirmed cryptosporidiosis case.

E. Case classificationConfirmed:

A person with confirmatory laboratory evidence.

Probable:

Either of the following:

- A person with presumptive laboratory evidence **or**
- A clinically compatible illness in a person with epidemiological criteria.

F. Criteria to distinguish a new case from previous reports

Not applicable

G. Comments

Persons who have a diarrheal illness and are epidemiologically linked to a probable case because that individual was only diagnosed with cryptosporidiosis by an immunochromatographic card/rapid card test or unknown test method cannot be classified as probable cases.

When available, species designation and molecular characterization should be reported.

In cases linked to animals, testing of asymptomatic animals may be considered. Please call the Bureau of Epidemiology at 850-245-4401 to discuss.

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4. LABORATORY SERVICES

A. Criteria for diagnosis

Diagnosis of cryptosporidiosis is made by examination of stool samples. Because detection of *Cryptosporidium* can be difficult, patients may be asked to submit several stool samples over several days. Most often, stool specimens are examined microscopically using different techniques (e.g., acid-fast staining, direct fluorescent antibody [DFA], and/or enzyme immunoassays for detection of *Cryptosporidium* species antigens).

Molecular methods (e.g., PCR) are increasingly used in reference diagnostic labs since they can be used to identify *Cryptosporidium* species at the species level. Refer to the case definition in [section 3](#) for additional testing methods. Tests for *Cryptosporidium* are not routinely done in most laboratories; therefore, health care providers should specifically request testing for this parasite.

B. Services available at the Bureau of Public Health Laboratories (BPHL)

BPHL uses acid-fast staining of formalinized stool smears to determine the presence or absence of *Cryptosporidium* species.

C. Testing requests

1. Submitting specimens/isolates to BPHL
 - a. All submissions should be accompanied by Clinical Lab Submission Form 1847 FloridaHealth.gov/programs-and-services/public-health-laboratories/forms-publications/index.htmlwww.FloridaHealth.gov/programs-and-services/public-health-laboratories/forms-publications/index.html.
 - b. Electronic Laboratory Ordering (ELO) may also be used by entering a request into the HMS State Laboratory System, placing a bar coded label on the O&P vial, and writing the date collected on the vial.
2. Specimen collection
 - a. A small portion (acorn size) of formed stool or equal portion of liquid stool should be transferred aseptically to an O&P transport vial that is properly labeled (name, date of birth, date collected). Because shedding can be intermittent, at least 3 stool specimens collected on separate days should be examined before considering test results to be negative.

Note: Please select code 1000-intestinal O&P and write “suspect *Cryptosporidium* for confirmation and speciation” in the comment section of the Clinical Lab Submission Form 1847.

3. Packaging and shipping
 - a. Specimens for *Cryptosporidium* testing should be sent to the BPHL in Jacksonville, Miami, or Tampa.
 - b. Place labeled vial in the proper inner/outer container (aluminum screw-cap inner container with spill absorber holds the primary vial and is then placed in an outer cardboard screw-cap container). Please place the Clinical Lab Submission Form 1847 in a plastic Ziploc bag between the inner and outer container. Package according to International Air Transport Association (IATA) regulations, labeling the outer shipping container: *UN3373, Biological Substance Category B*.
 - c. Specimens and isolates should be sent at ambient temperature or cooler, but cool packs should not be in direct contact with vials.
 - d. For shipping guidance, please contact BPHL: FloridaHealth.gov/programs-and-services/public-health-laboratories/locations/index.html.
 - e. BPHL conducts approximately 20, face-to-face trainings per year all over Florida, free of charge. Contact BPHL for packaging and shipping training dates. DOH employees must register for the classes in the DOH online learning management system called, TRAIN.

D. Interpretation of results

Results will indicate whether *Cryptosporidium* oocysts are present or not present.

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5. CASE INVESTIGATION

All people with a positive *Cryptosporidium* result, regardless of laboratory method, should be investigated and interviewed.

A. Investigate and interview

1. The purposes of investigation, interview, and/or counseling are to:
 - a. Determine whether the person with the reported case may have put or be putting others at risk in a sensitive situation;
 - b. Determine whether the person with the reported case may be part of an outbreak, as a trigger for further investigation; and
 - c. Convey a highly focused, brief educational intervention to a person who is still symptomatic (or their parent or guardian) about how to avoid infecting others.
2. Contact the case to complete an interview as soon as possible after being reported to optimize recall.
 - a. If contact information for the case-patient is not received in the initial case report, contact the reporting physician or laboratory to obtain contact information.
 - b. Make at least three phone call attempts to reach the case.
 - c. Calls should be made at different times of the day, with at least one attempt in the evening.
3. A standard Cryptosporidiosis Case Report Form that is based off the Extended Data screen in Merlin can be used to guide the interview.

See [FloridaHealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-crypto.pdf](https://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-crypto.pdf).

4. Items to cover during interview include:
 - a. Provide brief background on disease, including possible modes of transmission, incubation period, symptoms, etc.
 - b. Activities during exposure period (14 days before onset) include:
 - i. Contact with any acquaintances or household member with a similar illness (anyone meeting the probable case definition should be reported and investigated in the same manner as a confirmed case);
 - ii. Travel outside Florida or the United States (document dates and locations of travel);
 - iii. Consumption of high-risk foods (e.g., raw milk or raw milk products);
 - iv. Source(s) of drinking water as well as water from streams or lakes;
 - v. Recreational water exposure (this includes swimming, playing, or other exposure to lakes, streams, swimming pools, water parks, splash pads, or wading pools where water may have been swallowed);
 - vi. Contact with livestock (e.g., calves and lambs), pets, or other animals (including farms and petting zoos);
 - vii. Person-to-person contact involving diapered children or adults, or sexual contact involving potential fecal exposure (e.g., oral-anal contact).
 - c. Determine if others (e.g., family, friends, co-workers, customers, patients, etc.) are known or thought to be ill with similar symptoms. If so, inquire about possible common source exposures. Obtain the name, phone number or address, and clinical information of the other ill people. Anyone meeting the probable case definition should be reported and investigated in the same manner as a confirmed case.
 - d. Determine if the case or any of their symptomatic household or other close contacts are associated with **sensitive situations**. Sensitive situations for enteric diseases generally include attendees or employees of a day care/child care setting, food handlers, or employees in a health care setting with direct patient care. Determine the dates and times he/she worked to determine the risk of transmission to others. **See Section 7 for recommended exclusions for symptomatic persons or contacts in sensitive situations.**
 - e. Provide basic instruction to patients and potentially exposed contacts about hand washing after defecation, diaper changing, and before food preparation; about avoiding swimming for two weeks after cessation of diarrhea; about the importance of proper food handling and adequate cooking for meat; and, in general, provide education about minimizing fecal contamination in daily life. **See Section 6 for recommendations on controlling further spread.**

B. Environmental evaluation

During routine case investigations of cryptosporidiosis, if a particular food or water exposure is suspected as the likely source of infection, then the CHD investigator should complete the Tri-Agency Foodborne Illness Survey/Complaint Form: [FloridaHealth.gov/diseases-and-conditions/food-and-waterborne-disease/_documents/triagency-form.pdf](https://www.floridahealth.gov/diseases-and-conditions/food-and-waterborne-disease/_documents/triagency-form.pdf). The CHD investigator should record that complaint in their complaint log and forward it to the appropriate agency with jurisdiction.

For each interviewed sporadic case of cryptosporidiosis with an environmental exposure that could affect many people (e.g., a restaurant, water park, or high-risk commercially

distributed food item), review complaint logs and recent cryptosporidiosis cases in Merlin for additional cases that may be linked to the same facility or exposure source. A joint investigation/environmental assessment for single, sporadic cases of cryptosporidiosis is not necessary. If additional cases are suspected or an outbreak is detected, the Regional Environmental Epidemiologist should be notified, and a joint investigation/environmental assessment will be conducted with the appropriate regulatory authority. Investigation guidelines and forms for when and how to perform a joint investigation/environmental assessment are available on the Food and Waterborne Disease Program's Investigation Tools webpage at FloridaHealth.gov/diseases-and-conditions/food-and-waterborne-disease/_documents/guidelines-for-determination-of-a-joint-investigation.pdf. Technical assistance is also available from your Regional Environmental Epidemiologist, if needed, at FloridaHealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/environmental-epi-map.pdf.

If an animal venue such as a petting zoo is suspected, consult the *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011*: www.cdc.gov/mmwr/pdf/rr/rr6004.pdf.

C. Merlin data entry

Create a case in Merlin under disease code **CRYPTOSPORIDIOSIS-13680**. Enter the data collected into Merlin, being sure to include all required fields on the Basic Data screen, complete the Case Symptoms screen and the Extended Data screen, and attach all relevant labs. Please attach **ALL** labs received via electronic laboratory reporting (ELR) to the case. Confirmed cases can be epi-linked to confirmed and probable cases. Probable cases can only be epi-linked to confirmed cases.

Persons who have a diarrheal illness and are epidemiologically linked to a probable case because that individual was only diagnosed with cryptosporidiosis by an immunochromatographic card/rapid test or unknown test method cannot be classified as probable cases and should not be entered into Merlin.

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6. CONTROLLING FURTHER SPREAD

A. Patient/household education on prevention recommendations

1. Case should be educated on preventing transmitting infection to others.
 - a. Wash hands after using the toilet, changing diapers, and handling soiled clothing or linens.
 - b. People with diarrhea should not prepare food for others.
 - c. People with diarrhea should not use recreational water venues (e.g., pools, lakes, interactive fountains, water parks) until 2 weeks after symptoms resolve.
 - d. Avoid contact with immunosuppressed people.
 - e. Avoid fecal exposure, including oral-anal contact, during sexual activity.
 - f. Symptomatic individuals should be excluded from sensitive situations (e.g., child care settings and health care settings).

2. General information on preventing disease may also be covered.
 - a. Wash hands thoroughly after contact with animals, particularly young livestock or animals with diarrhea.
 - b. Avoid water that might be contaminated.
 - i. Do not drink untreated water from shallow wells, lakes, rivers, springs, ponds, and streams.
 - ii. Do not drink untreated water or use ice made from untreated water during community-wide outbreaks of disease caused by contaminated drinking water.
 - iii. Do not swallow recreational water. For more information on recreational water-related illness, visit CDC's Health Swimming website: www.cdc.gov/healthywater/swimming/.
 - iv. Do not drink untreated water or use ice made from untreated drinking water in countries where the water supply might be unsafe. For information on traveler's health and cryptosporidiosis, visit CDC's *Yellow Book*: wwwnc.cdc.gov/travel/page/yellowbook-home-2014/.
 - v. Obtain recommendations on safe drinking water sources if severe flooding occurs. Shallow private wells in flooded areas may need to be checked before use. Check for a fecal indicator before use.
 - c. If you are unable to avoid using or drinking water that might be contaminated, then you can make the water safer to drink by doing one of the following:
 - i. Heat the water to a rolling boil for at least 1 minute (at altitudes greater than 6,562 feet [$>2,000$ meters], boil water for 3 minutes).
 - ii. Use a filter that has an absolute pore size of 1 micron or smaller or one that has been rated by the National Science Foundation for "cyst removal." For information on choosing a water filter, see CDC's *Fact Sheet: A Guide to Water Filters*: www.cdc.gov/parasites/crypto/gen_info/filters.html.
 - iii. Chemical treatments are often not effective for preventing cryptosporidiosis and are not recommended.
 - d. Avoid food that might be contaminated.
 - i. Use safe, uncontaminated water to wash all food that is to be eaten raw.
 - ii. Wash and/or peel all raw vegetables and fruits before eating.
 - iii. Avoid consuming unpasteurized milk products and juices.
 - iv. Avoid eating uncooked foods when traveling in countries with minimal water treatment and sanitation systems. Follow additional food and water precautions provided in the CDC's *Yellow Book* when traveling to these countries: wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/food-water-precautions.

B. Isolation of cases

People with diarrhea should stay home from day care, school, or work until they are asymptomatic for 24 hours. Follow-up or release from isolation based on stool testing is not required. **See Section 7 for recommended exclusions for symptomatic cases in sensitive situations.**

C. Management of contacts

1. Symptomatic contacts: symptomatic contacts should be investigated and managed in the same manner as a confirmed case. Symptomatic contacts of confirmed cases meet the probable case definition and should be reported in Merlin. **See Section 7 for recommended exclusions for symptomatic contacts in sensitive situations.**

2. Asymptomatic contacts: contacts who are symptom-free may be permitted to continue in their sensitive situation.

D. Laboratory testing during outbreaks

1. Laboratory testing should be performed to assist in public health decision making and for epidemiologic studies. County health departments should distribute stool specimen kits and submit the stool specimens to BPHL for analysis.
2. Symptomatic contacts may be required to submit stool specimens to establish the etiology of the outbreak.
3. Once the etiologic agent for the outbreak has been identified (4–6 specimens) further testing is usually not required for public health purposes.

E. Food or water is implicated as the source of an outbreak

Contact your Regional Environmental Epidemiologist for investigation assistance and guidance: [FloridaHealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/environmental-epi-map.pdf](https://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/environmental-epi-map.pdf).

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7. MANAGING SPECIAL SITUATIONS

A. Determining a sensitive situation

Sensitive situation is not defined in Rule 64D-3 in relation to any particular disease. The examples provided in Rule 64D-3 are all related to enteric infections, but we should not assume that all sensitive situations are equal for all diseases, especially given the markedly different age distributions, and presumed different risk of transmission by age.

Section 64-D3-3.037(3) specifically gives CHD Directors/Administrators the authority to decide what is a sensitive situation and provides broad authority to take necessary action to control disease.

For example, a CHD director may use his/her discretion to designate an elementary school, or the lower grades of an elementary school, as a sensitive situation, but he/she is not required to do so. This decision should be based on evidence of transmission within a particular setting.

B. Case or symptomatic contact attends or works at a day care facility

1. Exclusion: before returning to a day care facility, patient should be asymptomatic for 24 hours. Follow-up or release from isolation based on stool culture results is not required.
2. Instruct the operator and other staff in proper methods for food handling and hand washing, especially after changing diapers.

3. Interview the operator and check attendance records to identify other cases that occurred during the previous month.
4. Instruct the operator to notify the CHD immediately if new cases of diarrhea occur. Call or visit once each week for 2 weeks after onset of the last case to verify that surveillance and appropriate hygienic measures are being implemented. Manage newly symptomatic children as outlined below.
5. Outbreak: defined as ≥ 2 cases of gastrointestinal illness with similar symptoms occurring within 72 hours among children or staff who do not live in the same household; if the etiologic agent is known, an outbreak is defined as 2 or more cases occurring within the incubation period for the disease.
 - a. If an outbreak is identified, do a sanitary inspection and consult the *Guidelines for Control of Outbreaks of Enteric Disease in Child Care Settings*: [FloridaHealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/guidelines-for-control-of-outbreaks-of-enteric-disease-in-child-care-settings.pdf](https://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/guidelines-for-control-of-outbreaks-of-enteric-disease-in-child-care-settings.pdf).
 - b. Exclusion and isolation – All persons with diarrhea, vomiting, or fever in the absence of another known cause will be excluded from the facility. A child who develops symptoms of gastrointestinal illness while at the day care should be isolated from other children until the parent or guardian removes the child from the facility.
 - c. Readmission – Release of persons from exclusion may occur when they are asymptomatic for 48 hours without the use of antidiarrheal, antiemetic, or antipyretic medication.
 - d. Personal control measures – All persons, including (but not limited to) children, parents, siblings, staff, visitors, and service personnel will be required to wash their hands with soap and water upon entering the facility, after using the bathroom, after assisting with toileting or diaper changes, after playing outside, before and after handling food or eating, and before leaving the facility.
 - i. Hand hygiene procedures will be reviewed, monitored, and enforced daily.
 - ii. Adults will supervise children's hand washing; infants' hands will be washed after diaper changes.
 - iii. Staff involved in food preparation will not change diapers.
 - iv. Alcohol-based hand sanitizers may be used to supplement, but not replace, soap and water hand hygiene.
 - e. Environmental control measures
 - i. Ensure that hand toys are limited to single-child use between cleaning and sanitizing (this may be accomplished, for example, by [1] collecting a toy after a child has finished playing with it and disinfecting it before allowing another child to play with it; or [2] removing toys from circulation after children finish playing with them and disinfecting them at intervals or at the end of the day).
 - ii. Ensure that food is served in individual portions.
 - iii. Prohibit use of swimming pools or water play features. If present during an outbreak, these features should be emptied until disease control measures end. If a feature cannot be emptied, consult the county health department's Environmental Health Program for advice on disinfection.
 - iv. Prohibit playing with clay, dough, or sand and other toys that cannot be disinfected. Potentially contaminated items that cannot be disinfected should be discarded.

- v. Prepare fresh disinfectant solutions daily according to manufacturer's instructions.
- vi. Regularly clean and disinfect tables and other frequently touched surfaces.
- vii. Clean and disinfect potty chairs after each use.
- viii. Clean and disinfect bathrooms multiple times during the day.
- f. Consult with the Bureau of Epidemiology for outbreaks of enteric disease that continue for more than 2 maximum incubation periods after initiation of the control measures specified above.

C. Case or symptomatic contact is a food handler

1. Exclusion: before returning to food handling, patient must be asymptomatic.
2. Contact your Regional Environmental Epidemiologist: [FloridaHealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/environmental-epi-map.pdf](https://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/surveillance-and-investigation-guidance/_documents/environmental-epi-map.pdf).

D. Case or symptomatic contact works at a health care or residential care facility

Exclusion: before returning to a health care or residential care facility, patient must be asymptomatic for 24 hours.

E. Contaminated swimming pools

Fecal accidents in pools pose a significant risk to other bathers. However, the loose fecal matter oozing out from the diaper of a toddler with an infection is an even greater risk to others and is much less likely to be detected than visible, formed stool. There are general guidelines for dealing with generic "stool-in-pool" events. Pool contamination from someone known to have cryptosporidiosis is unlikely to show up outside the context of an outbreak investigation.

For additional information regarding responding to fecal accidents in pools, see: www.cdc.gov/healthywater/swimming/pdf/fecal-incident-response-guidelines.pdf.

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8. IMPORTANT LINKS

- A. CDC's Parasites–*Cryptosporidium***
www.cdc.gov/parasites/crypto/gen_info/index.html
- B. Tri-Agency Foodborne Illness Survey/Complaint Form**
[FloridaHealth.gov/diseases-and-conditions/food-and-waterborne-disease/_documents/triagency-form.pdf](https://www.floridahealth.gov/diseases-and-conditions/food-and-waterborne-disease/_documents/triagency-form.pdf)
- C. CDC's Healthy Swimming website**
www.cdc.gov/healthywater/swimming/
- D. Cryptosporidium and water**
www.cdc.gov/parasites/crypto/

E. CDC's Cryptosporidium and Travel Website

wwwnc.cdc.gov/travel/yellowbook/2016/infectious-diseases-related-to-travel/cryptosporidiosis

F. CDC's Fact Sheet: A Guide to Water Filters

www.cdc.gov/parasites/crypto/gen_info/filters.html

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9. REFERENCES

- A. Heymann, D.L. (Ed.). (2015). *Control of Communicable Diseases Manual* (20th ed.). Washington: American Public Health Association.
- B. American Academy of Pediatrics. (2015). *Red Book: 2015 Report of the Committee on Infectious Diseases* (30th ed.). Grove Village, IL: American Academy of Pediatrics.