

Cryptosporidiosis

Surveillance and Investigation Protocol

Table of Contents

I.	ABOUT THE DISEASE	2
A.	Clinical Presentation	2
B.	Etiologic Agent	2
C.	Reservoir	2
D.	Incubation Period	2
E.	Mode of Transmission	2
F.	Period of Communicability	3
II.	DISEASE CONTROL AND PREVENTION	3
A.	Disease Control Objectives	3
B.	Disease Prevention Objectives	3
C.	Disease Treatment	4
III.	DISEASE INVESTIGATION	4
A.	Case Definition and Case Classification	4
B.	Reporting Time Frame to Public Health	6
C.	Outbreak Recognition	6
D.	Healthcare Provider Responsibilities	6
E.	Laboratory Responsibilities	6
F.	Local Health Responsibilities	7
G.	State Health Responsibilities	10
IV.	DISEASE SURVEILLANCE	10
A.	Public Health Significance	10
B.	Disease Surveillance Objectives	11
C.	Surveillance Indicators	11
V.	REFERENCES	11

Cryptosporidiosis

Surveillance and Investigation Protocol

I. ABOUT THE DISEASE

A. Clinical Presentation

Cryptosporidiosis is a water and foodborne zoonotic disease caused by the protozoan parasite of the genus *Cryptosporidium*, also known as *Cryptosporidia* or *Crypto*. *Cryptosporidia* are oocyst-forming coccidian protozoa.¹

Cryptosporidiosis commonly presents with frequent non-bloody watery diarrhea, although infections can be asymptomatic. Other symptoms include abdominal cramps, fatigue, fever, nausea, vomiting, anorexia, weight loss, and dehydration. Dehydration can lead to serious complications like electrolyte imbalances, leading to problems with your heart and hypovolemia. Those with weakened immune systems can have severe and long-lasting diarrhea, which can be life-threatening.

B. Etiologic Agent

Cryptosporidium is a single-celled oocyst-forming protozoa that infects humans and animals. There are more than 20 species included in the genus *Cryptosporidium* that have been reported to infect people. However, *Cryptosporidium hominis* and *Cryptosporidium parvum* are responsible for over 90% of human infections. The parasite can live in water, food, soil, or on surfaces that have been contaminated with infected feces. *Cryptosporidium* oocysts are highly resilient, capable of surviving in water and soil for several months under harsh environmental conditions. Even in properly chlorinated swimming pools, they can persist for more than seven days.¹

C. Reservoir

Water, food, soil, infected surfaces, humans, cattle, and other domestic or wild animals can be a reservoir for cryptosporidium.

D. Incubation Period

Symptoms usually develop two to 10 days after infection. The average is seven days.

E. Mode of Transmission

Cryptosporidium is primarily transmitted through the fecal-oral route. Transmission occurs by ingesting contaminated water or food, or through contact with infected animals or people. *Cryptosporidium* has a low infectious dose with as few as 10 oocysts needed to cause infection. Drinking contaminated water or

Cryptosporidiosis

Surveillance and Investigation Protocol

getting water in your mouth from recreational water venues like swimming pools, splash pads, lakes, or rivers are common ways people become infected with *Cryptosporidium*. *Cryptosporidium* also spreads from pets, livestock, and animals at petting zoos, such as pre-weaned calves. Foodborne transmission may occur when contaminated unwashed produce or unpasteurized juices or milk are consumed. Certain people are at higher risk for becoming infected with *Cryptosporidium*, including people who: travel internationally, use recreational water venues, drink untreated water, caregivers for children ages three to 11 years, have contact with farm animals, or are exposed to feces through sexual contact.

F. Period of Communicability

Risk of transmission to others can occur when patient symptoms begin and can continue up to two weeks after symptoms have resolved.²

II. DISEASE CONTROL AND PREVENTION

A. Disease Control Objectives

Reduce the occurrence of secondary cases of *Cryptosporidiosis* by:

- Investigating outbreaks and clusters to identify and remove common sources of disease.
- Identifying cases who work in or attend high-risk settings (i.e., daycare attendees, daycare employees, food handlers) and institute control measures to prevent further transmission.
- Identifying and stopping transmission sources of public health concern (e.g., a recreational or a public water supply) and promptly instituting control measures.

B. Disease Prevention Objectives

Reduce risk of disease by educating the public on prevention strategies:

- Always wash your hands with soap and water after contact with animals, after using the toilet, changing diapers, helping someone with diarrhea clean up, and before preparing food.
- Do not drink untreated water or use ice from untreated water sources, including during international travel.
- Follow local drinking water advisories.
- Always boil untreated water before use. Bring to a full rolling boil for at least one minute, or for three minutes at elevations above 6,500 feet.³
- It is important to avoid swimming in recreational water while sick, especially when experiencing diarrhea. If diagnosed with *Cryptosporidiosis* you should not swim in recreational water for at least two weeks after symptoms have resolved.⁴

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Cryptosporidiosis

Surveillance and Investigation Protocol

- To prevent the spread of *Cryptosporidium* through food, practice proper handwashing before, during, and after handling food, and ensure that anyone experiencing diarrhea or other gastrointestinal symptoms does not participate in food or beverage preparation.⁵
- Follow safe food handling practices by thoroughly cooking eggs, meat, and poultry; washing fruits and vegetables before eating; and preventing cross-contamination during food preparation.
- Avoid unsafe foods such as unpasteurized milk, cheese, juice, and cider.
- If you are immunocompromised, avoid contact with farm animals and their feces.

C. Disease Treatment

Most individuals with healthy immune systems will recover from *Cryptosporidiosis* on their own. Anti-diarrheal medication should only be taken when consulted with a healthcare provider. The Food and Drug Administration (FDA) has approved nitazoxanide to treat diarrhea caused by *Cryptosporidium* in immunocompetent people ages one year or older. Nitazoxanide is an oral antiprotozoal medication that works by stopping the growth of the parasite. Dosing guidelines for people with healthy immune systems can be found at www.cdc.gov/cryptosporidium/hcp/clinical-care/. Healthcare professionals may retest stool at least one week after the last dose of nitazoxanide and may consider longer courses of treatment if symptoms have not resolved.

Those who are more vulnerable to dehydration, such as pregnant women or young children, should stay hydrated by drinking plenty of fluids. Those infected with *Cryptosporidiosis* who have weakened immune systems should contact their healthcare provider right away. For individuals with HIV, the National Institutes of Health provides specific recommendations for the treatment of [children](#) and [adults and adolescents](#).

III. DISEASE INVESTIGATION

A. Case Definition and Case Classification

Clinical Criteria

A gastrointestinal illness characterized by diarrhea and one or more of the following: diarrhea duration of 72 hours or more, abdominal cramping, vomiting, or anorexia.

Laboratory Criteria

Confirmatory laboratory evidence: Evidence of *Cryptosporidium* organisms or DNA in stool, intestinal fluid, tissue samples, biopsy specimens, or other biological samples by certain laboratory methods with a high positive predictive value (PPV), e.g.,

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Cryptosporidiosis

Surveillance and Investigation Protocol

- Direct fluorescent antibody (DFA) test,
- Polymerase chain reaction (PCR),
- Enzyme immunoassay (EIA), OR
- Light microscopy of stained specimens.

Probable laboratory evidence: The detection of *Cryptosporidium* antigen by a screening test method, such as immunochromatographic card/rapid card test; or a laboratory test of unknown method.

Epidemiologic Linkage

A case that meets the clinical criteria and is epidemiologically linked to a confirmed case.

Criteria to Distinguish a New Case from an Existing Case

A case should only be counted as a new case if the following criteria are met:

- For immunocompetent people: at least 30 days have passed since the onset of the case's preceding *Cryptosporidium* infection AND there was a period of recovery between illnesses.
- For immunocompromised individuals: 365 days have passed since the previously reported infection.

Case Classifications

Confirmed:

A case that is diagnosed with *Cryptosporidium* spp. infection based on laboratory testing using a method listed in the confirmed criteria.

Probable:

- A case with supportive laboratory test results for *Cryptosporidia* spp. infection using a method listed in the probable laboratory criteria. When the diagnostic test method on a laboratory test result for *Cryptosporidiosis* cannot be determined, the case can only be classified as probable, **OR**
- A case that meets the clinical criteria and is epidemiologically linked to a confirmed case.

Comments

Persons who have diarrheal illness and are epidemiologically linked to a probable case because that individual was only diagnosed with cryptosporidiosis by an immunocard/rapid test/ or unknown test method cannot be classified as probable cases. These epi-links can be considered suspect cases only. Notification to CDC of confirmed and probable cases is recommended.

Cryptosporidiosis

Surveillance and Investigation Protocol

B. Reporting Time Frame to Public Health

Report all cases to the local health department within the following timeframe:

- Sporadic case of *Cryptosporidiosis*: within 72 hours of diagnosis.
- Outbreak of *Cryptosporidiosis*: immediately (see outbreak recognition and definition below).

C. Outbreak Recognition

Cryptosporidium is the leading cause of outbreaks associated with recreational water venues, with the greatest incidence from July to October during the summer and early fall. Outbreak recognition requires timely and complete epidemiological investigation paired with timely and complete laboratory investigation.

Outbreak of *Cryptosporidiosis*: An outbreak is defined as either a greater than the expected number of cases occurring within a specific time frame, or the identification of two or more cases that are epidemiologically linked to a common source by location and time of exposure.

Waterborne Disease Outbreak: Two or more people are epidemiologically linked by time, location of exposure (i.e., water source), and experience a similar illness and epidemiologic evidence implicates the water as the likely source of the illness.

Foodborne Disease Outbreak: Two or more individuals experience a similar illness after ingestion of a common food, and epidemiologic analysis implicates the food as the source of the illness.

D. Healthcare Provider Responsibilities

1. Report all positive *Cryptosporidiosis* tests electronically or by fax to the local health department in the patient's county of residence within 72 hours of diagnosis.
2. Report outbreaks of *Cryptosporidiosis* to the local health department immediately by phone.
3. Implement contact precautions in addition to standard precautions for diapered or incontinent people in healthcare settings for the duration of their illness.
4. Use environmental cleaning agents effective against *Cryptosporidium* for environmental cleaning. Hydrogen peroxide is preferred over bleach for environmental cleaning due to the organism's extreme chlorine tolerance.¹

E. Laboratory Responsibilities

1. Report all positive *Cryptosporidium* laboratory results to the local health department in the patient's county of residence within 72 hours of result.

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Cryptosporidiosis

Surveillance and Investigation Protocol

2. Submit *Cryptosporidium* specimens associated with suspected or confirmed outbreak to the West Virginia Office of Laboratory services (WV OLS) along with a completed [Microbiology Laboratory Specimen Submission Form](#). For instructions on specimen collection, see [Stool Specimen Collection Instructions](#) (Enteric).
3. Follow shipping and handling instructions when sending *Cryptosporidium* specimens to the Office of Laboratory Services Microbiology Lab at 167 11th Avenue, South Charleston, WV 25303.
4. Laboratories with questions about specimen submission, shipping, or test results should call (304) 558-3530.

Possible *Cryptosporidium* outbreak specimens received at WV OLS will be tested using the BIOFIRE FILMARRAY Gastrointestinal (GI) Panel. The BIOFIRE GI panel contains two assays for the detection of *Cryptosporidium*: Crypt 1 and Crypt 2. The BIOFIRE GI Panel results are meant to be used in conjunction with other clinical, laboratory, and epidemiological data. Specimens positive for Crypt 1 and Crypt 2 assays will be forwarded to the Centers of Disease Control and Prevention (CDC) for further speciation and/or whole genome sequencing (WGS) to help determine outbreak etiology. Use the to submit specimens.

F. Local Health Responsibilities

For sporadic cases:

1. Start investigating cases within 72 hours of first notification.
2. Use the [Enteric Case Report Form](#) to guide the interview.
3. Collect exposure history for the 10 days prior to the case's illness onset, including:
 - a. Consumption of untreated water;
 - b. Contact with recreational water (e.g., pools, splash pads, rivers, lakes);
 - c. Exposure to farm animals, livestock, or their feces;
 - d. International travel;
 - e. Contact with a confirmed case of *Cryptosporidiosis*;
 - f. Attendance or employment at a daycare or child care facility.
4. Provide the case with education on control and [prevention measures](#).
5. Enter case investigation into the WVEDSS case report form and attach the Enteric Case Report Form in the Attachments Section of the Supplemental Info Tab within two weeks of LHD notification.
6. Identify other cases and investigate case(s) completely as above.
 - a. Symptomatic people who are epidemiologically linked to a case that meets confirmatory lab criteria meet Probable case criteria and must be investigated.
 - b. Open a case investigation in WVEDSS for all epi-linked Probable cases. Enter the case investigation and attach the Enteric Case Report Form in the Attachments Section of the Supplemental Info Tab within two weeks of LHD notification.

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Cryptosporidiosis

Surveillance and Investigation Protocol

7. Institute appropriate control measures.
 - a. Wash hands frequently with soap and water. Alcohol-based hand sanitizers are **not** effective against *Cryptosporidium*.
 - b. When cleaning for *Cryptosporidium* infection, hydrogen peroxide is preferred over bleach for environmental cleaning because *Cryptosporidium* is tolerant to chlorine.¹
 - c. Do not use public swimming areas while experiencing diarrheal illness. If you are diagnosed with *Cryptosporidiosis*, wait at least two weeks after diarrhea has completely resolved before participating in recreational water activities.
 - d. Do not swallow recreational water. See Centers for Disease Control and Prevention's [Healthy Swimming](#) for more information.
 - e. Do not drink untreated surface water or use ice made from untreated surface water .
 - f. Do not wash fruits or vegetables with untreated surface water.
 - g. Do not consume unpasteurized milk or apple cider.
 - h. Follow local drinking water advisories.
 - i. When traveling to countries where the water might be unsafe, do not use or drink inadequately treated water or ice and avoid eating uncooked foods.
 - j. Shower before participating in recreational water activities. Showering for just one minute before entering the water helps keep the pool cleaner, allows chlorine or bromine to work more effectively, improves water quality, reduces the risk of waterborne illnesses, and decreases the amount of chemicals needed to maintain safe conditions.⁴
 - k. Practice safe sex by:
 - i. Waiting to have sex for two weeks after you no longer have diarrhea to prevent transmitting *Cryptosporidium* to your partner.
 - ii. Washing your hands, genitals, and anus with soap and water before and after sexual activity.
 - iii. Using barrier methods during sex.
8. Notify the Office of Epidemiology and Prevention Services (OEPS) Epidemiologist On-Call at (304) 558-5358 ext. 2 of any suspected or confirmed outbreaks within one hour of local health department notification.

If the case works in or attends a daycare facility:

- Interview manager/operator and check records to identify any additional cases within the past month.
- Provide education to the manager/operator about the symptoms of *Cryptosporidium*, how it is spread, and prevention measures.
- Ensure staff members follow strict and frequent hand hygiene, diapering, toileting, food handling and cleaning, and sanitation procedures.
- Exclude children with diarrhea from child care settings until their diarrhea has stopped.

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Surveillance and Investigation Protocol

- Move adults with diarrhea to jobs that minimize opportunities to spread infection such as administrative work instead of food preparation.
- Collect stool samples from any symptomatic staff members and/or attendees.
- Conduct an environmental inspection if there are any other suspected cases.
- Instruct the manager/operator to notify the local health department if new cases of gastrointestinal (GI) illness occur.
- Recommend staff observe children during handwashing to encourage good hand hygiene after they use the toilet, have their diaper changed, and before eating.
- Educate staff to wash their hands using soap and water for at least 20 seconds after using the toilet, after helping a child use the toilet, after diapering a child, and before handling or eating food.
- Educate staff on hygienic diapering practices, including: keeping the diaper-changing area separate from food preparation and play areas, using disposable gloves during diaper changes and changing gloves after each use, using disposable paper over diaper-changing surfaces and replacing it after each diaper change, ensuring children wear clothing covering their diaper to reduce leaks, and when staffing allows having separate people perform food handling and diaper-changing duties.⁶
- To help reduce the spread of germs, clean surfaces regularly and follow the recommended procedures for cleaning, sanitizing, and disinfecting child care facility surfaces.

If the case is a food handler:

- Interview the manager/operator and check attendee records to identify suspect cases that occurred the previous month. Ask if there have been any complaints from any patrons during the past month.
- Conduct an environmental inspection of the facility.
- Collect stool samples from all symptomatic individuals.
- Exclude symptomatic individuals who are involved in food handling based on exclusion criteria found in the [2013 FDA Food Code](#).
- Educate staff on the importance of good handwashing, personal hygiene, and excluding themselves from work when they have diarrheal illness.
- Follow the [2013 FDA Food Code](#) guidance to allow food handlers to return to work.

If the case works at a healthcare or residential care facility:

- Educate staff on hand washing with soap and water. Alcohol-based hand rub is not effective against *Cryptosporidium*.
- Identify any abnormal incidence of diarrhea within the last month and recommend testing for symptomatic staff, residents, and patients.
- Educate facility healthcare providers on CDC recommendations for treatment, period of communicability after diarrhea has stopped, and prevention.
- Exclude symptomatic individuals who are involved in the care of the elderly, immunocompromised, and institutionalized patients until illness has resolved.

Surveillance and Investigation Protocol

- Follow the [2013 FDA Food Code](#) for recommendations on exclusion and return to work criteria for food handlers in healthcare facilities.
- Implement contact precautions in addition to standard precautions for incontinent residents for the duration of their illness.
- Cohort symptomatic residents to the extent possible.
- Thoroughly clean and disinfect the environment using a disinfectant effective against *Cryptosporidium*. Hydrogen peroxide cleaners are recommended over bleach-based products because the organism is tolerant to chlorine.
- Asymptomatic individuals with adequate hygienic habits do not need to be excluded but should be counseled on the importance of good handwashing, personal hygiene, notifying their supervisor whenever they have diarrheal illness, and not coming to work ill.

G. State Health Responsibilities

1. Provide technical expertise and consultation on surveillance, investigation, prevention, and implementation of control measures.
2. Assist local health jurisdictions during outbreak responses to *Cryptosporidium*.
3. Develop guidance documents, protocols, and health alerts for public health and health care providers.
4. Coordinate the public health response between internal partners, other state agencies, and federal partners including the Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration (FDA), United States Department of Agriculture (USDA), and West Virginia Office of Environmental Health Services (OEHS).
5. Complete reporting of *Cryptosporidium* cases to the Centers for Disease Control and Prevention (CDC) through WVEDSS.
6. Notify the CDC of outbreaks through the National Outbreak Report System (NORS).

IV. DISEASE SURVEILLANCE

A. Public Health Significance

While most cases of *Cryptosporidiosis* are sporadic, it is the leading cause of outbreaks of diarrhea linked to water with over half of the waterborne disease outbreaks associated with public swimming pools, hot tubs, and splash pads.⁷ *Cryptosporidiosis* is the third leading cause of diarrhea associated with animal contact. Since 2019, West Virginia has had an average of 82 cases of *Cryptosporidiosis* each year. According to the CDC, from 2009–2017, there were 444 *Cryptosporidiosis* outbreaks reported, resulting in 7,465 cases in 40 states and Puerto Rico. The number of reported outbreaks has increased an average of approximately 13% per year. Leading causes include swallowing contaminated water in pools or water playgrounds, contact with infected cattle, and contact with infected people in childcare settings.⁷

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

Cryptosporidiosis

Surveillance and Investigation Protocol

People at the greatest risk of infection are children under the age of two, people who have contact with farm animals or livestock, men who have sex with men, people with exposure to untreated water sources, and close contacts of infected people. Immunocompromised people, particularly people who have HIV, are at risk of severe and life-threatening illness from *Cryptosporidium* infections due to their inability to clear the parasite.

B. Disease Surveillance Objectives

- To identify the temporal, geographic, and demographic occurrence of *Cryptosporidiosis* to guide prevention and control activities.
- To define the epidemiologic characteristics of *Cryptosporidiosis* cases.
- To promptly identify and implement control measures for *Cryptosporidiosis* outbreaks.

C. Surveillance Indicators

- Report on proportion of cases with complete demographic information.
- Proportion of investigations with complete information on high-risk occupations.
- Report on the proportion of cases with risk factor information.

V. REFERENCES

1. American Academy of Pediatrics, Summaries of Infectious Disease. In: Kimberlin DW, Banerjee R, Barnett ED, Lynfield R, Sawyer MH, eds. Red Book: 2024 Report of the Committee of Infectious Diseases. American Academy of Pediatrics; 2024: 338-341
2. About crypto infections. Centers for Disease Control and Prevention. June 5, 2024. <https://www.cdc.gov/cryptosporidium/about/index.html>.
3. Preventing crypto. Centers for Disease Control and Prevention. May 8, 2025. Accessed September 11, 2025. <https://www.cdc.gov/cryptosporidium/prevention/index.html>.
4. Preventing swimming-related illnesses. Centers for Disease Control and Prevention. January 30, 2025. Accessed March 27, 2025. <https://www.cdc.gov/healthy-swimming/prevention>.
5. Preventing and controlling crypto at Camps. Centers for Disease Control and Prevention. July 7, 2025. Accessed September 11, 2025. <https://www.cdc.gov/cryptosporidium/prevention/preventing-and-controlling-crypto-at-camps.html#:~:text=Food%20safety,from%20food%20and%20beverage%20handling>.
6. Preventing and controlling crypto at Childcare Facilities. Centers for Disease Control and Prevention. July 7, 2025. Accessed September 9, 2025. <https://www.cdc.gov/cryptosporidium/prevention/preventing-and-controlling-crypto-childcare-facilities.html>.

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov

September 2025

Cryptosporidiosis

Surveillance and Investigation Protocol



7. Cryptosporidiosis outbreaks - United States, 2009–2017. Centers for Disease Control and Prevention. June 27, 2019. Accessed March 27, 2025.
<https://www.cdc.gov/mmwr/volumes/68/wr/mm6825a3.htm>.

Office of Epidemiology and Prevention Services
Division of Communicable Disease Epidemiology
350 Capitol Street Room 125, Charleston, WV 25301-3715
Phone: (304) 558-5358 ext. 2 Fax: (304) 558-6335 www.oeps.wv.gov