

# Cryptosporidiosis

## **Important Notice:**

All public health recommendations for routine investigations are based on “Control of Communicable Diseases Manual, 20<sup>th</sup> edition, 2015” (CCDM) unless otherwise stated. Use the CCDM as primary resource for case investigations that meet routine follow up. In cases of complicated situations or unique issues not addressed by this manual, please refer to the Administrative Rules of Montana (ARM) Chapter [37.114](#) or contact the designated SME at Communicable Disease Epidemiology section at the Montana DPHHS for further clarification.

## **PROTOCOL CHECKLIST**

- Confirm diagnosis, see case definition (see section 3.3 and 4.1)
- Verify submission for lab confirmation, if applicable (see section 4.2)
- Review background information on the disease and its epidemiology (see section 2)
- Prioritize reported cases for follow up, investigate and interview as appropriate (see section 1.2)
- Contact provider to gather more information, if necessary
- Notify state health department of case by entering available information into the Montana Infectious Disease Information System (MIDIS) within the time frame for the specific disease per (ARM) [37.114.204](#) ( see section 1.3)
- Retrieve disease specific form per the Montana Communicable Disease Reporting Reference for Local Public Health Jurisdictions (see SharePoint → CDEpi → CDEpi Disease Forms)
- Review for use, specific technical assistance guidance documents (see SharePoint →CDEpi →CDEpi Technical Guidance [Diseases A to Z] → disease name → Guidance Documents)
- Interview patient, cover the following:
  - Review disease facts with patient (see section 2.2)
  - Educate patient on prevention (see section 6)
  - Ask about exposures to relevant risk factors (see section 4.3)
  - Determine sensitive occupation (see section 4.3)
  - Identify symptomatic contacts (see section 4.4)
  - Implement Control Measures (see section 5.1)
  - Address patient’s questions or concerns
- Follow-up on special situations, including outbreaks or infected persons in sensitive situations (see section 5 and CCDM, review references and additional information or contact CDEpi at 406-444-0273)
- Enter additional data obtained from interview into MIDIS (fax completed form to DPHHS if indicated on the CD Reporting Reference form)
- Attach any additional lab reports to case investigation (a step in MIDIS)
- When done with investigation, close case in MIDIS

## 1 DISEASE REPORTING

### 1.1 Provider notification to Public Health Authorities

Any person, including, but not limited to a physician, dentist, nurse, medical examiner, other health care practitioner, administrator of a health care facility or laboratory, public or private school administrator, or laboratory professional who knows or has reason to believe that a case exists of a reportable disease or condition defined in the Montana Administrative Rules (ARM) [37.114.203](#) must immediately report to the local health officer.

### 1.2 Local Health Department Follow-up Responsibilities

Immediately after being notified of a case or a potential outbreak of a reportable condition, a local health officer must investigate and implement control measures as indicated by CCDM to prevent or control the transmission of disease per (ARM) [37.114.314](#).

### 1.3 Local Health Department Reporting to State Public Health Authorities

Cryptosporidiosis must be reported to DPHHS within seven days. The disease specific form does not need to be submitted to DPHHS as part of the disease investigation process. Local health officers are required to report information about a case to the Montana Department of Public Health and Human Services (DPHHS) within the timeframes established in (ARM) [37.114.204](#).

## 2 THE DISEASE AND ITS EPIDEMIOLOGY

### 2.1 Public Health Significance in Montana:

Cryptosporidiosis is a somewhat common enteric illness in Montana. On average there are about 60 cases reported each year in this state. This illness is more common during spring and summer months and is often associated with recreational water, but also exposure to livestock, particularly cattle.

### 2.2 Clinical Description of Illness

Refer to CCDM for relevant disease information and its epidemiology.

## 3 CASE DEFINITION

### 3.1 Clinical Description

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.

### 3.2 Laboratory Criteria for Diagnosis

#### Confirmed

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

- Direct fluorescent antibody [DFA] test,

- Polymerase chain reaction [PCR],
- Enzyme immunoassay [EIA], OR
- Light microscopy of stained specimen.

Probable

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

### 3.3 Case Classification

Probable

- A case with supportive laboratory test results for Cryptosporidium 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.

Confirmed

A case that is diagnosed with Cryptosporidium spp. infection based on laboratory testing.

*Comment(s)*

Persons who have a 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.

## 4 ROUTINE CASE INVESTIGATION

In accordance with (ARM) [37.114.314](#) make an epidemiologic investigation to determine the source and possible transmission of infection. Refer to the CCDM regarding additional aspects related to investigation.

### 4.1 Confirm the Diagnosis

Review the clinical presentation and laboratory results to confirm the diagnosis. Consult with the CCDM and CSTE case definition (<http://wwwn.cdc.gov/nndss/script/casedefDefault.aspx>) to determine if this is a case.

### 4.2 Laboratory Requirements

An isolate of cryptosporidium does NOT need to be sent to MTPHL for confirmation as identified in (ARM) [37.114.313](#)

For more information on analysis and specimen collection please contact the laboratory conducting the test or the Montana Public Health Laboratory (MTPHL) at 1-800-821-7284. The MTPHL Laboratory Services Manual can be accessed

<http://dphhs.mt.gov/publichealth/LaboratoryServices/PublicHealthLabTesting>

### 4.3 Case Investigation

- a. Contact the medical provider who ordered testing or is attending the case. Utilize the case reporting form to assist in obtaining all of the information necessary to complete a Cryptosporidiosis case report as outlined in (ARM) [37.114.205](#) regarding report contents.
- b. Contact and interview the patient to determine source, risk factors and transmission settings.

Ask about possible exposures in the 1 to 12 days before symptom onset. Consider occurrence, reservoir and routes of transmission when asking about risk factors and potential exposures. For many enteric illnesses, these include, but are not limited to:

- Water
- Animals (especially cattle)
- Food (including raw milk)
- Travel history
- Contact with fecal matter (diapered children, health care workers, sexual contact)
- Contact with any acquaintance or household member with a similar illness.
- Attendance or work in a sensitive occupation (see section 6).

### 4.4 Contact Investigation

Contacts are defined as sexual partners, household members, daycare, group living workers and attendees and those that may have consumed food, water or other beverage or bathed in a recreational water body that is known to be a source of infection.

Based on identified activities, examine dates and locations during the period from illness onset till the resolution of symptoms to identify potential contacts.

Collect the name, age, and phone number of contacts with a similar illness. These persons should be investigated as probable cases. Follow up per CCDM.

### 4.5 Environmental Evaluation

Conduct an environmental evaluation if an ongoing source of exposure is suspected, such as a recreational water venue, drinking water system, or child care facility.

## 5 CONTROL MEASURES

In accordance with (ARM) [37.114.501](#) utilize the control measures indicated in the CCDM for this disease. Contact DPHHS CDEpi for consultation and questions at 406-444-0273.

### 5.1 Case Management

Exclude symptomatic individuals from food handling and from direct care of hospitalized and institutionalized patients; release to return back to work in sensitive occupation (ARM) [37.114.301](#) when asymptomatic. If hospitalized, enteric precautions are recommended. Stress proper hand washing.

## 5.2 Contact Management

A symptomatic contact who meets the probable case definition should be investigated as a case (epi-linked) and be referred for testing.

## 5.3 Environmental Measures

An environmental evaluation is appropriate if an ongoing source of exposure is identified through inspection or more than one case is associated with a venue, such as a recreational water venue or drinking water system. Recreational water venues will entail close evaluation. Work with local Sanitarian and contact CDEpi with any questions at 406-444-0273.

## 5.4 Special Circumstances

Exclude children from daycare until 24 hours after diarrhea stops (ARM) [37.95.139](#). Exclude ill food handlers from work until asymptomatic (ARM) [37.110.210](#) and refer to the CCDM for additional information.

# 6 ROUTINE PREVENTION

**6.1 Immunization Recommendations:** not applicable.

## 6.2 Prevention Recommendations

- Practice good hand hygiene, especially when handling animals, particularly cattle and any contact with feces (including diapered children).
- Do not consume food that may be contaminated
- Do not consume or recreate in, water that might be contaminated.
- If unable to avoid using or drinking water that might be contaminated, then make the water safer to drink such as boiling and/or using specialized filters.
- Avoid eating or drinking from cooking or eating utensils that might be contaminated.
- Avoid fecal exposure during sexual activity. This is a primary source of infection.

# 7 ESCALATION/ACTIVATION OF EMERGENCY OPERATIONAL PLANNING

Investigation guidelines are designed to assist local health jurisdictions in the steps and actions needed to report, investigate and control reported cases of communicable diseases. In the event individual case investigations or other reported cases lead to clusters and/or outbreaks, or investigations outside of a local health jurisdiction, local health jurisdictions need to contact DPHHS under the Administrative Rules of Montana [37.114.314](#) and [37.114.315](#) so DPHHS can consider emergency operational escalation or activation under the Communicable Disease Annex to the DPHHS Emergency Operation Plan.

# 8 REFERENCES AND ADDITIONAL INFORMATION

## Important references:

- A. "Control of Communicable Diseases Manual, 20<sup>th</sup> edition, 2015" (CCDM) American Public Health Association <https://secure.apha.org/imis/ItemDetail?iProductCode=978-087553-0185&CATEGORY=BK>
- B. CDC Cryptosporidium (Crypto) website <http://www.cdc.gov/parasites/crypto/>
- C. Recreational Water Illness Outbreak Response Toolkit: [www.cdc.gov/healthywater/emergency/toolkit/rwi-outbreak-toolkit.html](http://www.cdc.gov/healthywater/emergency/toolkit/rwi-outbreak-toolkit.html)

- D. Healthy Swimming/Recreational Water  
<http://www.cdc.gov/healthywater/swimming/>
- E. Recreational Water Illness and Injury (RWII) Prevention Week  
<http://www.cdc.gov/healthywater/swimming/rwi/rwi-prevention-week/index.html>