

Gastroenteritis Outbreaks

Important Notice:

All public health recommendations for routine investigations are based on “Control of Communicable Diseases Manual, 20th edition, 2015” (CCDM) unless otherwise stated. Use the CCDM as the 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 subject matter expert at the Communicable Disease Epidemiology section at the Montana DPHHS for further clarification.

PROTOCOL CHECKLIST

- Confirm diagnosis, see outbreak definition (see section 3 and 4.1)
- Verify submission for lab confirmation, if applicable (see section 4.2)
- Review background information on the disease, if known, and its epidemiology (see section 2)
- Prioritize reported cases for follow-up, investigate and interview as appropriate (see section 1.2)
- Contact provider/ reporter to gather more information, if necessary
- Notify state health department of outbreak within 24 hours (ARM) [37.114.204](#) (see section 1.3)
- Retrieve outbreak form (see DPHHS resource website)
- Retrieve line list (see DPHHS resource website)
- Review for use, specific technical assistance guidance documents (see DPHHS resource website)
- Interview patients or facility, cover the following:
 - ┆ Review suspected disease facts with patient/facility (see section 2.2)
 - ┆ 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)
 - ┆ Educate patient on prevention (see section 6)
 - ┆ Address patient’s questions or concerns
- Follow up on special situations, including child, senior and healthcare settings or symptomatic persons employed in sensitive situations (see section 5 and CCDM, review references and additional information or contact CDEpi at 406-444-0273)
- Enter additional data obtained on outbreak form and fax initial form to DPHHS
- Attach any supporting documents to outbreak investigation
- When done with outbreak, submit final outbreakform

1 OUTBREAK 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 an outbreak exists defined in the Administrative Rules of Montana (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 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

Gastroenteritis outbreaks and outbreaks at congregate settings must be reported to DPHHS within 24 hours. The outbreak form should be submitted to DPHHS as part of the outbreak investigation process. Local health officers are required to report information about outbreaks to the Montana Department of Public Health and Human Services (DPHHS) within the timeframes established in (ARM) [37.114.204](#).

2 OUTBREAKS AND THEIR EPIDEMIOLOGY

2.1 Public Health Significance in Montana:

Outbreaks are common in Montana. On average there are about 30 gastroenteritis outbreaks reported each year in the state. The majority of outbreaks are caused by norovirus. Outbreaks occur anytime of the year, though norovirus outbreaks are more likely to occur during winter months.

2.2 Clinical Description of Illness

Refer to CCDM for relevant disease information and its epidemiology, when causative agent is known.

3 OUTBREAK DEFINITION

3.1 General Outbreak Definition

An outbreak is defined as more cases of a particular disease or condition than expected over a given period of time. Two or more cases of a specific illness (e.g. foodborne illness, waterborne exposure) with a suspected common exposure history are treated as an outbreak by public health responders.

4 ROUTINE OUTBREAK INVESTIGATION

In accordance with (ARM) [37.114.314](#), conduct 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 Outbreak

Review the outbreak definition, clinical presentation and laboratory results to confirm the existence of an outbreak. Consult with the CCDM and CDC "[Guidelines for Confirmation of Foodborne-Disease Outbreaks](#)" to determine if this is a foodborne outbreak. Continue to investigate while determining the causative agent. The existence of an outbreak is independent of laboratory confirmation.

4.2 Laboratory Requirements

Generally, at least *two* specimens should be sent to MTPHL for identification and confirmation of a suspected agent as identified in (ARM) [37.114.313](#). If there are barriers to collecting outbreak specimens, consult with CDEpi. Limited funding is available to test outbreak specimens at no charge to the submitter. Determining the causative agent during an outbreak provides useful information regarding strains circulating, helps identify incubation periods and control measures, and provides further understanding of certain diseases and their impact on the health of Montanans.

A laboratory requisition form must be completed for each specimen. 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://www.dphhs.mt.gov/publichealth/lab/diagnostictesting.shtml>.

4.3 Outbreak Investigation

- a. Contact the individual(s) or the facility who reported the illnesses. Utilize the outbreak reporting form and line list to assist in obtaining all of the information necessary to complete a report as outlined in (ARM) [37.114.205](#) regarding report contents.
- b. Contact and interview cases and controls, if applicable, to determine source, risk factors and transmission settings. A consult with CDEpi might be helpful to determine what type of investigation is recommended.

Ask about possible exposures before symptom onset. Incubation periods vary depending on agent. 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 (recreational water exposures, what sources of drinking water are used)
- Animals (especially cattle and poultry)
- 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).

Be sure to notify CDEpi if the investigation reveals that the threat to the public may endanger an area outside of your jurisdiction, per ARM [37.114.315](#).

4.4 Contact Investigation

Depending on the causative agent, contacts are defined as sexual partners, household members, daycare attendees, 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. Refer to CCDM for etiologic specific contacts.

Based on identified activities, examine dates and locations during the period from illness onset until 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, child care facility, or other possible source. Be sure to collaborate with environmental health specialists for this activity.

5 CONTROL MEASURES

In accordance with (ARM) [37.114.501](#) utilize the control measures indicated in the CCDM for the disease, if identified. Infection control practices must be employed until tests indicate what organism is responsible for the outbreak, after which, control measures must be taken which are specific for the organism in question (ARM) [37.114.316](#). **Because most acute gastroenteritis outbreaks are caused by norovirus, the following guidelines address control measures for norovirus.** If control measures are adapted to the level of norovirus control, they are likely effective for any other enteric illness outbreak as well. However, control measures for food- and waterborne outbreaks are highly variable depending on investigation findings. For outbreaks in congregate settings, review setting specific guidance under 5.4. Contact DPHHS CDEpi for consultation and questions at 406-444-0273.

5.1 Case Management

Review disease specific investigation guidelines for exclusion rules if causative agent is known. If agent is unknown, exclude those in sensitive occupations at least 24 hours after symptoms resolve. 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 possibly referred for testing.

5.3 Environmental Measures

An environmental evaluation is appropriate in any setting. Environmental cleaning is recommended as follows:

Sodium hypochlorite (chlorine bleach) products with activity against norovirus should be used to disinfect surfaces. Use a chlorine bleach solution with a concentration of 1000–5000 ppm (5–25 tablespoons of household bleach [5.25%] per gallon of water) or other disinfectant registered as effective against norovirus by the Environmental Protection Agency (EPA).

➤ *Note: US EPA-approved cleaning products can be found at the following website:*
http://www.epa.gov/oppad001/list_g_norovirus.pdf

- Particular attention should be given to areas most likely to have the greatest norovirus contamination such as bathrooms and **high-touch surfaces** (e.g., door knobs, computer keyboards and mice, light switches, hand rails, etc.)
- Initial cleaning of contaminated surfaces to remove fecal material or vomitus should be performed **before** chlorine bleach disinfection
- Areas visibly soiled with fecal material or vomitus should be cleaned using hot water and detergent, or steam cleaned
 - *Note: do not vacuum as virus can become airborne*
- Bleach solutions should be prepared for use within 24 hours
- Do not mix bleach and ammonia solutions; doing so can cause deadly vapors
- Do not enter food service area with items soiled with fecal material or vomitus
- Use a utility sink for washing items soiled with fecal material or vomitus

Work with local Sanitarian and contact CDEpi with any questions at 406-444-0273.

5.4 Special Circumstances

Review disease specific investigation guidelines for exclusion rules in special circumstances.

Persons employed in or residing in a sensitive setting may be subject to additional control measures (ARM) [37.114.301](#). Use the following recommendations and rules to help provide guidance to facilities. More control measure resources can be found on the [DPHHS norovirus website](#) and may be shared with facilities experiencing the outbreak. If a viral gastroenteritis outbreak is reported in any of the following facilities, please see special considerations:

5.4a Long term care facility, assisted living facility, or other health care facility:

Follow the [Guideline For The Prevention And Control Of Norovirus Gastroenteritis Outbreaks In Healthcare Settings](#) or use the [summary version prepared by DPHHS](#).

The following recommendations may reduce spread in health care settings during an outbreak:

- ☒ Patient Cohorting And Isolation Precautions:
 - Place patients on Contact Precautions in a single occupancy room if they have symptoms consistent with norovirus gastroenteritis.
- ☒ Hand Hygiene:
 - Encourage residents and staff to wash hands frequently with soap and water

- ☐ Patient Transfer and Ward Closure:
 - Consider closing wards and limit new admission.
- ☐ Diagnostics:
 - Ensure lab specimens are obtained to determine causative agent.
- ☐ Personal Protective Equipment:
 - Gowns and gloves may be recommended when entering symptomatic patient rooms.
- ☐ Environmental Cleaning (see section 5.3)
- ☐ Staff Leave and Policy:
 - Exclude ill personnel from work for 48-72 hours after symptoms resolve.
- ☐ Visitor:
 - Establish visitor policy and/or close facility to visitors.
- ☐ Education:
 - Provide staff, patients and visitors with information regarding disease transmission, control measures and clinical signs and symptoms, as well as policies and procedures during an outbreak. Consider regular training.
- ☐ Active Case-Finding:
 - When an outbreak is suspected, actively search for additional cases.
- ☐ Communication and Notification:
 - Develop written policies and procedures and communicate them to all parties involved in a timely fashion.

5.4b Schools, child care, and other group settings:

- ☐ Hand Hygiene: Encourage children and staff to wash hands frequently with soap and water
- ☐ Ensure anyone ill with a diarrheal illness does not handle food (per ARM [37.110.210](#))
- ☐ Recommend ill individuals to remain home (*required* for child care attendees per ARM [37.95.139](#) and staff [37.95.184](#))
- ☐ Wash laundry thoroughly, if applicable
- ☐ Environmental cleaning (see section 5.3)

5.4c Restaurants, banquets, and other food establishments:

- ☐ Hand Hygiene: Encourage staff to wash hands frequently with soap and water
- ☐ Ensure anyone ill with a diarrheal illness does not handle food (per ARM [37.110.210](#))
- ☐ Wash table linens, napkins, and other laundry thoroughly
- ☐ Environmental cleaning (see section 5.3)
- ☐ Inspection if warranted

5.4d Private Residences, others:

- ☐ Do not prepare food while you are sick
- ☐ Wash your hands carefully and frequently with soap and water
- ☐ Wash fruits and vegetables and cook shellfish thoroughly

- ❓ Clean and disinfect kitchen utensils, counters, and surfaces that may have norovirus on them
- ❓ Wash table linens, napkins, and other laundry thoroughly.

5.5 Monitor Efficacy of Control Measures

Once control measures are implemented in an outbreak setting, monitoring for new onset cases should continue. This period is dependent upon the causative pathogen's incubation period, and generally should be 2-3 incubation periods since the last onset of the last individual's illness onset date. If cases continue to appear, reevaluate:

- Efficacy of control measures used
- If expansion of control measures is necessary
- Source of infection for new cases

The outbreak may be declared over after 2-3 incubation periods have passed with no new onsets of illness. Submit the final outbreak form via fax to CDEpi at 1-800-616-7460.

6 ROUTINE PREVENTION

6.1 Immunization Recommendations: not applicable in most cases.

6.2 Prevention Recommendations

- Practice good hand hygiene: Wash hands well with soap and water.
- Carefully watch foods and vegetables, separate meats and cook shellfish well.
- Do not prepare food when ill.
- Clean and disinfect contaminated surfaces.
- Wash laundry thoroughly.
- 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 by 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 ACKNOWLEDGEMENTS

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8 REFERENCES AND ADDITIONAL INFORMATION

Important references:

- A. "Control of Communicable Diseases Manual, 19th edition, 2008" (CCDM) American Public Health Association <http://www.apha.org/publications/bookstore/ccdmmobile.htm>
- B. CDC Norovirus website_ <http://www.cdc.gov/norovirus/>
- C. Guideline For The Prevention And Control Of Norovirus Gastroenteritis Outbreaks In Healthcare Settings_ <http://www.cdc.gov/hicpac/pdf/norovirus/Norovirus-Guideline-2011.pdf>