

# OUTBREAK RESPONSE PROTOCOL

PROCEDURES FOR RESPONDING TO DISEASE OUTBREAKS IN  
MINNESOTA

OCTOBER 2017

## Outbreak Response Protocol

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*Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.*

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# Key Phone Numbers

## **FOODBORNE, WATERBORNE, VECTORBORNE, AND ZONOTIC DISEASES SECTION (FWVZD):**

651-201-5414

(TOLL FREE) 877-676-5414

## **FOODS, POOLS, AND LODGING SERVICES (FPLS):**

Metro daytime: 651-201-4500

After hours - Office of Emergency Preparedness: 651-201-5735

## **MINNESOTA STATE DUTY OFFICER:**

Metro: 651-649-5451 (24 hour)

Statewide: 800-422-0798 (24 hour)

## **Introduction & Purpose**

The Minnesota Department of Health (MDH) has developed a model for rapid investigation of foodborne, waterborne, and zoonotic disease outbreaks with coordination among local and state epidemiologists, environmental health specialists, laboratorians, agriculture officials and other stakeholders. When staff from the MDH district offices, delegated agencies, or other entities learn of a possible outbreak, they should notify the Minnesota Department of Health Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases (FWVZD) Section immediately to initiate an appropriate outbreak response.

The purpose of this document is to: 1) create a standard protocol for outbreak response; 2) enable stakeholders to work together effectively during outbreak investigations; 3) define roles and responsibilities; and 4) foster effective communication and data sharing among investigation team members.

**\*\*\*This protocol is intended as a general framework; deviations may occur from the outlined procedures if warranted based on the individual situation. \*\*\***

## Abbreviations

ABBREVIATION	FULL TEXT
CDC	Centers for Disease Control and Prevention
CO	Communications Office, MDH
DWP	Drinking Water Protection Section, MDH
EFS	Epidemiology Field Services, MDH
EH	Environmental Health
FPLS	Food, Pools, and Lodging Services Section, MDH
FDA	United States Food and Drug Administration
FWVZD	Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Section, MDH
IDEPC	Infectious Disease Epidemiology, Prevention and Control Division, MDH
LPH	Local Public Health
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
PHL	Public Health Laboratory, MDH
PIO	Public Information Officer, MDH or LPH
USDA	United States Department of Agriculture

## I. Identification of Outbreaks

The MDH FWVZD Section identifies disease outbreaks (Appendix 1a) through:

- Calls from individuals or groups reporting illness - often through the Minnesota Foodborne and Waterborne Illness Hotline
- Routine laboratory-based surveillance of reportable pathogens (Appendix 1b)
- Reports from food service facilities or water systems about ill patrons
- Reports from health care providers about increased illness incidence
- Reports from local public health (LPH) agencies about illness
- Reports from schools, child care and health care facilities
- Reports from animal contact venues about human and/or animal illness
- PulseNet – the national bacterial subtyping network
- Other sources

Cases and complainants are interviewed to determine illness history and exposures in the time period before illness onset. (Complaint Intake Form Appendix 2)

## II. Organizing Response to a Disease Outbreak

When a disease outbreak is identified, the FWVZD Manager will assign a lead MDH epidemiologist to coordinate investigation activities.

In most instances, if the outbreak occurs in a jurisdiction with epidemiology capacity (e.g., Hennepin County, Washington County, Olmsted County), the local epidemiologist will lead the investigation and the assigned MDH epidemiologist will act as liaison and assist as needed. The assigned MDH epidemiologist will be the lead on outbreak investigations involving multiple states or jurisdictions.

If the outbreak involves a licensed facility (or a facility that should be licensed) and environmental health (EH) response is needed, the MDH epidemiologist will notify the Food, Pools, and Lodging Section (FPLS) Outbreak Coordinator. Together they will initiate an immediate conference call which will include: 1) the regulatory authority (e.g., EH supervisor(s) and assigned EH specialist field investigator(s); 2) local epidemiologist(s); 3) and other relevant stakeholders (e.g., Epidemiology Field Services [EFS], Drinking Water Protection [DWP], Minnesota Department of Agriculture [MDA]). The purpose of this conference call is to: 1) provide the current information available on the outbreak and the facilities involved; 2) plan the response activities; 3) assign roles, responsibilities, and Point of Contact (POC); and 4) plan for follow-up communication. It is essential that this team of individuals communicates frequently to exchange information throughout the outbreak investigation.

If the facility in question is not licensed and environmental health response is not needed, the MDH or local epidemiologist will coordinate with involved parties (e.g., private child care, petting zoo).

## III. Outbreak Investigation Process/Roles

### **Epidemiologic investigation**

When there is evidence of an outbreak, FWVZD staff or the local epidemiologist will conduct an epidemiologic investigation to help identify the cause of the outbreak, determine the spread of disease, and identify appropriate control measures.

The lead MDH epidemiologist will immediately notify the FPLS Outbreak Coordinator (a designated replacement should be contacted in the absence of the FPLS Outbreak Coordinator). The roles of the MDH or local epidemiologist leading the investigation are outlined below.

### **Communication**

1. Schedule a conference call with the appropriate environmental health staff, epidemiology staff, and other stakeholders (Public Health Laboratory [PHL], MDA, DWP) as needed

2. Provide the following information during the call:
  - Name and address of the facility
  - Exposure dates and times
  - Number of known ill individuals
  - Suspected or confirmed etiology
  - How the outbreak was identified
  - Other relevant background information
3. Communicate important information shared on multi-state calls with investigation partners (MDH epidemiologists)

### **Laboratory coordination**

1. Obtain a project number for stool submissions
2. Communicate with the PHL what testing should be done on specimens (and when necessary, the expected number of specimens)
3. Provide stool kits for employees and ill patrons as necessary (Appendix 3)
4. Disseminate the summary laboratory results to all relevant public health officials involved in the investigation
5. Provide specimen results to patrons and coordinate with EH to provide results to facility employees

### **Epidemiological investigation**

1. Create a case definition
2. Create an interview form and Tennessen warning for patrons and facility employees
3. Ensure that patrons are interviewed (Appendices 4,5)
4. Decide whether to collect stool samples from cases and facility employees
5. Organize and clean outbreak data
6. Conduct statistical data analyses
7. Develop hypotheses about the cause and spread of disease
8. Communicate results of the data analyses to EH and other public health officials/stakeholders and discuss whether additional follow-up is needed
9. Determine outbreak conclusion and classification (e.g., probable/confirmed, transmission route) using available data
10. Make recommendations about preventing the spread of disease

### **Write a final report summarizing the outbreak and investigation (Appendix 6)**

Detailed and thorough outbreak investigation reports are critical in documenting disease outbreaks in Minnesota and nationally. MDH is responsible for compiling and storing outbreak data, and for summarizing outbreaks; however, delegated agencies are invited to write or contribute to all final reports. Minnesota outbreak investigation reports are included in the annual Minnesota Department of Health Foodborne, Waterborne, and Animal Contact Outbreaks Summary. MDH forwards outbreak information to the Centers for Disease Control and Prevention (CDC) for national archiving.

1. Assign an outbreak classification and transmission route (e.g., confirmed foodborne, probable foodborne, confirmed waterborne) (Appendix 7)
2. Write a summary report for all confirmed and probable outbreaks due to foodborne, waterborne, or zoonotic transmission

3. The summary report should include all epidemiologic findings, laboratory test results, and environmental health findings specifically related to the cause or the extent of the outbreak
4. Draft summary report within 1 month of the conclusion of an outbreak investigation and receipt of the draft EH report. Reports written by delegated jurisdictions should be forwarded to MDH within 1 month of the conclusion of the investigation
5. Forward the draft summary to the EH specialist involved in the investigation for comments
6. Send the reviewed and finalized report to EH specialist, who can provide the report to the facilities involved

## **Report final outbreak data and conclusions to the CDC National Outbreak Reporting System (NORS)**

1. Ensure that all information necessary for reporting to NORS is collected during the investigation
2. Complete a paper NORS form

The current NORS form, guidance document, and appendices can be found on the [National Outbreak Reporting System \(NORS\) \(https://www.cdc.gov/nors/forms.html\)](https://www.cdc.gov/nors/forms.html) website.

## **Environmental health investigation**

The regulatory authority is the main point of contact with the facility; their roles are outlined below.

For EH follow-up involving MDA-regulated facilities (or non-licensed facilities within their jurisdiction) refer to the MDH/MDA Memorandum of Understanding (Appendix 8).

### **Environmental assessment**

1. Gather necessary materials before heading into the field
  - Outbreak-specific employee interview form created by the lead epidemiologist (Examples: Appendices 9, 10)
  - Employee screening form (Appendix 11)
  - Pathogen-specific response checklist and corresponding materials (Appendix 12)
  - Inspection tools (e.g., camera, thermometer, pool kit)
2. Visit the implicated facility as soon as possible (typically within hours) after the start of an outbreak investigation
3. Explain to facility management the nature of the outbreak investigation
  - Current status of the investigation (stick to the facts and not speculations)
  - Never provide patron names or contact information to the facility
4. Collect information about key aspects of the facility's operation (e.g., hours of operation, number of employees)
5. Identify and correct environmental factors that may have contributed to the outbreak (Appendix 12). Write corrective orders as needed.
6. Identify if the facility has received any patron complaints
7. Interview employees if necessary (see next section) (Appendices 9,10)
8. Assess management oversight (e.g., employee illness policy, handwashing policy, pool log maintenance)
9. Obtain additional patron contact information (e.g., reservation lists, credit card receipts, swim lesson rosters) for case/control finding



10. Evaluate specific duties/work flow of employees of interest (e.g., how were the tomatoes prepared and by whom? Who is testing and monitoring chemical levels in the pool?)
11. Obtain complete and accurate menus from food service facilities. Menus should be from the time period of interest and include all possible food items available to patrons (e.g., specials, desserts, sides, happy hour, etc.)
12. Obtain invoices and ingredient information when requested (Appendix 13)
13. Embargo food, close pool, or enact additional interventions if necessary
14. Coordinate with the lead epidemiologist the collection of food, water, animal, or environmental samples
15. Provide the facility with the documentation of statutory authority (non-compliance letter) if the facility is not providing requested data (e.g., patron receipts, employee information) (Appendix 14)

### **Interview and exclude employees when appropriate**

1. Review employee illness records and cross reference with employee interviews
2. Request management to enact prospective employee screening (i.e., employee illness screening form) when appropriate (Appendix 11)
3. Obtain a list of all facility employees and their phone numbers
4. Interview all facility employees using a standardized questionnaire (Appendices 9, 10) provided by the lead epidemiologist. The standardized questionnaire will include a Tennessee warning and questions in regard to:
  - Asking the employees' permission to share findings with facility management
  - Employees' work history or schedule during the identified critical time period
  - Employees' job tasks and responsibilities
  - Employees' illness history for a given time period
  - Recent illness among household members
  - Other facilities where employees work
5. Ensure compliance with employee interviews by establishing a deadline with the facility management if needed
  - Employees that have not completed an interview by this deadline cannot work until they are interviewed
  - Deadlines can be created in collaboration with the lead epidemiologist on a case-by-case basis
6. Exclude employees in conjunction with pathogen-specific recommendations by the lead epidemiologist
7. Request stool samples from employees and coordinate with the lead epidemiologist to provide results to employees (Appendices 3)
  - Bacterial results (e.g., *Salmonella*) are generally available in about 3-4 business days from the time the specimen is received at the PHL
  - Viral results (e.g., norovirus) and parasitic results (e.g., *Cryptosporidium*) are generally available in about 1-2 weeks from the time the specimen is received at the PHL
8. Provide all facility employee interviews to the lead epidemiologist at the conclusion of the investigation so they can be included in the final records

### **Coordinate a meeting with the facility's management**

If necessary, the regulatory authority will coordinate a meeting or conference call with the management of the facility. When agreed upon, the lead epidemiologist and other appropriate staff may participate in

person or via conference call. The purpose of the meeting is to explain the status of the investigation and make detailed recommendations regarding operations to the facility's management. The facility will be informed of media requests and all participants will develop consistent messages for the media and the public.

### **Closing and reopening a facility involved in an outbreak**

The regulatory authority is responsible for closing licensed facilities during an outbreak investigation if it is warranted to protect public health. The lead epidemiologist will provide advice regarding the prevention of disease transmission from a facility implicated in an outbreak and issue employee work restrictions when necessary. Closure of a facility should be communicated with the lead epidemiologist as soon as possible. The decision of closure should include criteria for reopening; these criteria should be discussed and determined by all involved stakeholders.

If the implicated facility is not licensed by the state or delegated agency (e.g., petting zoo) the lead epidemiologist can provide recommendations for closure or restrictions directly to facility management or to other stakeholders (e.g., tribal government). If the implicated facility is not licensed by the state or delegated agency, and should be licensed, the lead epidemiologist can work with the appropriate regulatory agency to ensure compliance.

### **Write final reports**

1. Provide written summary of EH findings to the lead epidemiologist at the conclusion of the EH investigation and by request of the lead epidemiologist (e.g., observations of hand hygiene, illness log, food flows, glove use, etc.)
2. Review and provide feedback on the draft outbreak investigation report to the lead epidemiologist (Appendix 6)
3. Provide a final outbreak investigation report to the facility

## **Laboratory investigation**

The appropriate section (Infectious Disease Laboratory or Environmental Laboratory) of the PHL will coordinate its investigative response activities with FWVZD and the EH agency. The roles and responsibilities of the PHL include:

1. Make recommendations for proper collection of specimens and provide appropriate materials
2. Recommend appropriate transport conditions for specimens
3. Make recommendations for testing strategies when the etiologic agent is unknown
4. Assist in the interpretation of laboratory results

Notify FWVZD of test results of cases, facility employees, and environmental samples

## **IV. Product Traceback**

FWVZD is responsible for coordinating tracebacks with MDA, the United States Food and Drug Administration (FDA), the United States Department of Agriculture (USDA), and CDC, as appropriate.

The regulatory authority will assist with tracebacks by obtaining pertinent information (e.g., invoices, food flow) from the facilities and completing the MDA traceback form on specific products of interest (Appendix 13).

The regulatory authority will also be responsible for embargoing product, assessing the availability of product for testing, and ensuring that contaminated product is discarded and not available in the facility.

MDA inspectors are responsible for the onsite collection of food samples. The regulatory authority and the lead epidemiologist will coordinate with MDA.

MDA is responsible for sharing information on product recalls with FWVZD, the regulatory authority, and other stakeholders in a timely manner.

## V. Communications

All stakeholders involved in the investigation are expected to maintain open and clear communication to facilitate timely response.

### **Working with the facility in response to media inquiries**

Inquiries from the media regarding an outbreak will be referred to the MDH Communications Office (CO) as well as the local Public Information Officer (PIO) if the outbreak is in a delegated jurisdiction. The CO, in collaboration with staff from FWVZD and the appropriate regulatory authority, will coordinate the development of media messages relating to the outbreak. All stakeholders involved in the investigation should be notified of the media request as soon as possible.

For EH follow-up involving MDA-regulated facilities (or non-licensed facilities within their jurisdiction), refer to the MDH/MDA Memorandum of Understanding (Appendix 8).

In the event of a media inquiry regarding the outbreak:

1. The regulatory authority will have primary responsibility for notifying the facility about the initial inquiry
2. The regulatory authority or lead epidemiologist will share with the facility the planned response to the media inquiry (e.g., status of the investigation, legal obligations for sharing information with the public)
3. Should the facility decide to respond to a media inquiry or otherwise notify the public, the regulatory authority and lead epidemiologist will coordinate with the facility as needed to ensure consistent and accurate messaging

## Response to legal inquiries

Legal inquiries regarding an outbreak investigation will be referred to the lead epidemiologist.

## Public notification of an outbreak

The decision to proactively notify the public about an outbreak will be made by Infectious Disease Epidemiology, Prevention, and Control (IDEPC) management and the regulatory authority (with appropriate approvals). The CO will coordinate news conferences, development and distribution of news releases, and other vehicles for notifying the public about an outbreak if they are deemed appropriate. In general, the public will be notified about an outbreak only when such notification is necessary to: 1) alert individuals who may have been exposed to an illness to seek medical attention or take other protective measures; 2) inform individuals who may be at risk of exposure, or who could expose others, to take appropriate steps to prevent the transmission of illness, and; 3) find additional cases in order to appropriately characterize the outbreak.

## VI. Data Maintenance

FWVZD and local epidemiologists will maintain appropriate records for all outbreaks investigated in the state. The lead epidemiologist will provide all information requested on CDC's outbreak report form (NORS form). In addition, FWVZD will compile and publish a Foodborne, Waterborne, and Animal Contact Outbreaks Summary for each calendar year.

## VII. After Action Review

An after action review will be conducted at the request of any stakeholder involved in the investigation. FWVZD and the regulatory authority (and other agencies as appropriate) will meet to discuss the lessons learned from the outbreak investigation and opportunities for improvement. Situations that may warrant an after action review include:

1. A breakdown in the process
2. Any deviation from protocol
3. New or unique situations
4. Periodic verification or self-evaluation

**\*\*\*This protocol is intended as a general framework; deviations may occur from the outlined procedures if warranted based on the individual situation.\*\*\***