

# Outbreak Response Protocol

PROCEDURES FOR RESPONDING TO DISEASE OUTBREAKS IN  
MINNESOTA

August 2022

## **Outbreak Response Protocol**

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# Key Phone Numbers

## FOODBORNE, WATERBORNE, VECTORBORNE, AND ZOOBOTIC 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

## 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.

The intended audience for this document includes epidemiologists, environmental health specialists, laboratorians, agriculture officials and other stakeholders who participate in Minnesota outbreak investigations.

**\*\*\*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/emails/online submissions 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 molecular 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 Supervisor 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, City of Minneapolis, Olmsted County, Washington County), the local epidemiologist will lead the investigation and an MDH epidemiologist will be assigned to provide direction and technical expertise and/or serve as a back-up for the local epidemiologist should they not be available to lead the investigation. 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 assemble the investigation team, consisting of: 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]). This may include a conference call or response email which will: 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 response planning:
  - 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**

4. The MDH lead epidemiologist/liaison will obtain a project number for stool submissions
5. Communicate with the PHL what testing should be done on specimens (and when necessary, the expected number of specimens)
6. Provide stool kits for employees and ill patrons as necessary (Appendix 3)
7. Disseminate the summary laboratory results to all relevant public health officials involved in the investigation
8. Provide specimen results to patrons and coordinate with EH to provide results to facility employees

### **Epidemiological analysis and procedure**

1. Create a case definition
2. Create (or modify an existing) interview form and Tennessee warning for patrons (paper or electronic)
3. Create (or modify an existing) interview form for facility employees (paper or electronic) and 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 digital NORS form and provide to the MDH lead epidemiologist (for local epidemiologists) or the NORS coordinator (for MDH epidemiologists) for data entry

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).

### **Initial conversations with management & interventions**

1. Visit the implicated facility as soon as possible (typically within hours) after the start of an outbreak investigation
  - On rare occasions, if the investigation is initiated at the end of the day and environmental health specialists cannot visit the restaurant that day, they should reach out to management to put appropriate interventions for disease control into place (e.g., cleaning/sanitizing, exclusion of ill employees, screening)
2. Explain to facility management the nature of the outbreak investigation



## OUTBREAK RESPONSE PROTOCOL

- Current status of the investigation (stick to the facts and not speculations)
  - Never provide patron names or contact information to the facility
3. Collect information about key aspects of the facility's operation (e.g., hours of operation, number of employees)
  4. Identify if the facility has received any patron complaints
  5. Obtain additional patron contact information for case/control finding. The information should span the date range requested by epidemiologists
    - Order of preference for contact information includes: 1) take-out orders; 2) online orders; 3) reservations; 4) Door Dash/third party orders; and 5) credit card receipts with printed or handwritten signatures
    - Other contact information that may be requested includes swim lesson rosters, hotel guest lists, event bookings
  6. 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) or if the facility requests the documentation for their records (Appendix 9)
  7. If the operator has specific questions or concerns about the investigation, environmental health can coordinate with the lead epidemiologist to ensure the operator's questions are answered
  8. Require management to enact prospective employee screening (i.e., employee illness screening form) when appropriate (Appendix 10)
    - Consult with epidemiology for the length of time screening should remain in place (usually at least 5 days)
    - Environmental health specialists should work with operators to check-in on screening and provide consultation when/if ill employees are identified. Notify the lead epidemiologist if new ill employees are identified
    - After screening period, forms can be discarded after review by environmental health specialists (epidemiology does not need copies)
  9. If necessary, provide instructions on appropriate cleaning/sanitizing of the facility

### **Environmental assessment**

1. Gather necessary materials before heading into the field
  - Outbreak-specific employee interview form created by the lead epidemiologist (Examples: Appendix 11)
  - Employee screening form (Appendix 10)
  - Pathogen-specific response checklist and corresponding materials (Appendix 12)
  - Inspection tools (e.g., camera, thermometer, pool kit)
2. Identify and correct environmental factors that may have contributed to the outbreak (Appendix 12). Write corrective orders as needed

3. Assess management oversight (e.g., employee illness policy, handwashing policy, pool log maintenance)
4. Interview employees if necessary (see next section) (Appendix 11)
5. 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?)
6. 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.)
7. Obtain ingredient-level menu information when requested for ingredient-specific analysis
  - E.g., list every ingredient in every menu item, or list every menu item that contains ingredient(s) of interest. Obtaining complete and accurate information may require talking to kitchen managers as well as chefs
8. Obtain invoice information when requested (Appendix 13)
9. Embargo food, close pool, or enact additional interventions if necessary
10. Coordinate with the lead epidemiologist the collection of food, water, animal, or environmental samples

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

1. Review employee illness records and cross reference with employee interviews
2. Obtain a list of all facility employees and their phone numbers
3. Interview all facility employees using a standard questionnaire (Appendix 11) provided by the lead epidemiologist. The standard 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
4. 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
5. Exclude employees in conjunction with pathogen-specific recommendations by the lead epidemiologist

6. Request stool samples from employees and coordinate with the lead epidemiologist to provide results to employees (Appendix 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
7. Provide all facility employee interviews to the lead epidemiologist at the conclusion of the investigation so they can be included in the final records
  - If interviews are submitted electronically via REDCap, there is no need to provide additional employee interview forms to epidemiologists

### **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
5. Notify FWVZD of test results of cases, facility employees, and environmental samples

### **MDA Investigation/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.

## **IV. 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. If the facility decides 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 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.

The regulatory authority will have primary responsibility for notifying the facility about the public notification. Be aware that media may be released quickly once the decision is made to do a public notification (i.e., within hours).

## **V. 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.

## **VI. 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.\*\*\***