

# **Mahoning County Public Health**

## **Epidemiology Response Annex**

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## **Mahoning County Public Health: Epidemiologic Response Annex**

### **Rationale:**

This Annex was created to provide guidance on daily communicable disease detection and follow-up and an immediate response to any outbreak of infectious disease (intentional or natural).

### **Responsibilities:**

This Annex will assist to facilitate the surveillance and investigation during an infectious disease outbreak, intentional or non-intentional. Communicable disease investigation (interviews with potential victims, data analysis, and other epidemiological tools) and surveillance (active and passive) will be used to assist in detecting the source of the outbreak, the cause of the outbreak, the intervention tool that should be used, and the end of the outbreak.

### **Assumptions:**

The duties of the epidemiology branch will include but are not limited to the following:

1. Surveillance of incidence of symptoms
2. Assist in the identification of an infectious agent
3. Investigation of possible contacts and cases
4. Identification of possible sources
5. Formation of a case definition
6. Control the spread of disease to prevent additional cases by recommending control measures (Isolation, quarantine, treatment, prophylaxis)
7. Summarize and report findings
8. All staff at the Mahoning County District Board of Health that is identified as an investigator of communicable disease or an epidemiologist will be enrolled and trained in ODRS within 5 days of start date. The county ODRS administrator will be responsible for this task.

## Surveillance and Detection

### Communicable Disease Monitoring:

According to the guidelines established by the State of Ohio (Rules 3703-3-01 through 3701-3-31 of the Ohio Administrative Code), communicable disease listed on the Reportable Infectious Disease list are required to be reported to the local health department. (A list of these reportable conditions can be found in **Attachment A** of this document.) These diseases are logged, investigated and entered in the ODRS system. If one or more of these diseases appears at an unusual rate the local public health investigator and the state epidemiologist can recognize it through monitoring the ODRS system.

### Normal Operations:

#### Normal Business Hours:

- Case Reports are received during normal business hours by fax, postal mail, or through the Ohio Disease Reporting System (ODRS) and by phone. Communicable Disease Line has been established for reporting disease and outbreaks. (Business Hours report algorithm: Attachment G)
- The individual receiving the report is the individual assigned as the “duty officer” or the communicable disease investigator for the day.
- All sexual transmitted diseases, including chlamydia, gonorrhea, syphilis, and HIV are to be sent directly to the Youngstown City Health Department
- Other reportable disease reports can be checked to see which jurisdiction the person resides in by using <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- If the case belongs in another jurisdiction, fax case (if hardcopy) or transfer the case in ODRS.
- Log communicable disease report on the J Drive/Infectious Disease Data/Log Sheet of Reported Diseases. (PW: cdlog)
- Investigate the report per guidelines in the “ODH Infectious Disease Control Manual”. <http://www.odh.ohio.gov/pdf/IDCM/sect3TOC.pdf>
  - If needed, phone the doctor’s office to verify the patient is aware of diagnosis and physician is aware of diagnosis. Any other information the physician can provide in regards to the case investigation. Document information received.
  - If needed phone patient to complete investigation. Remember to give instruction on work exclusion, prophylaxis, and other isolation information. If the patient doesn’t answer leave VM. If the VM is not returned within 2-3 days mail a form letter to patient requesting that they contact you.
  - Offer to mail print information to the patient.
- Add additional information to ODRS case file, Close the report. Print case report and file.

#### After Normal Business Hours

- Reports are received after normal hours come through the phone system and page the duty officer. Only emergency communicable disease calls are addressed after hours. If the call is a non-emergency it will be transferred to the communicable disease duty officer to address the following business day.

The Ohio Department of Health Infectious Disease Manual (IDCM) can be found on line at: <http://www.odh.ohio.gov/healthresources/infectiousdiseasemanual.aspx>. The manual provides guidance on case definition, case status, laboratory criteria for diagnosis, signs and symptoms, diagnosis, epidemiology, and public health management.

**If the case diagnosis is determined to be a Class A disease, within any status, it must be reported immediately to the health department and to the Ohio Department of Health. During all hours this is to be done by contacting a member of the ORBIT team 24/7 phone number.**

### **ODRS**

All reportable diseases in Ohio are required to be entered into the Ohio Disease Reporting System (ODRS). This is a statewide electronic reporting system. Access must be obtained through your local administrator. The recommendation is that reports are to be entered into this system within 24 hours of receipt of the report by the local health jurisdiction. Enter as many fields as possible and utilize the notes sections to add comments that may be helpful to others referencing this case. The reports are also kept in hard copy at the health district. (See Attachment B for ODRS access protocols)

The Mahoning County epidemiologist is the administrator for Mahoning County in ODRS. The Mahoning County District Board of Health shall ensure onboarding of new epidemiologists to be registered with the Ohio Disease Reporting System (ODRS) within 5 business days of hire. When a new employee at the health departments or hospitals requires access, the epidemiologist has them complete the ODRS agreement form and then registers them in the system. The epidemiologist also provides the training to be health department and hospitals ODRS users.

At the end of each month, an ODRS report is created and all entered cases are reviewed for accuracy, timeliness, and completeness. The number of cases are also logged by month and compared to previous monthly and years of the same disease.

### **Surveillance Systems:**

Surveillance is a core public health function and has been defined as the regular collection, meaningful analysis, and routine dissemination of relevant data for providing opportunities for public health action to prevent and control disease. Surveillance can be considered information for action.

### **Epi Center and NRDM**

EpiCenter is a syndromic surveillance system that monitors hospital ED visits and alerts users via e-mail when statistical elevations in any given syndrome occur. National Retail Data Management or NRDM is a real-time web based database system that tracks over-the-counter sales of certain pharmaceutical products and has alerting capabilities when sales exceed expected levels. Both of these systems are monitored by the Epidemiologist when alerts are triggered. The

nursing director, medical director, and health commissioner are also trained in both of these systems and are assigned this task in the absence of the epidemiologist. Surveillance of EpiCenter and NRDM is enhanced during an event. (See Attachment F for Alert Response Protocol). The Mahoning County epidemiologist will assist new employees with receiving access to the surveillance systems through ODH. The epidemiologist will provide training to the new employees on the systems.

### **Epi X**

Epi X is the Center for Disease Control and Prevention's (CDC) web based information exchange system for public health professionals. Through Epi X, public health professionals can access and share preliminary health surveillance information, quickly and securely. Users can also be actively notified of breaking health events as they occur. Participation in Epi X is limited to public health officials as designated by each health agency. The epidemiologist is the designee who has access to Epi X and checks it daily Monday thru Friday.

### **Influenza Surveillance**

Each fall we begin influenza surveillance system for the entire school year. We follow school and daycare absences, lab testing, hospital admission, OTC sales, ED visits, and physician office rapid testing.

### **Employee Training**

All new staff at the Mahoning County District Board of Health that may be tasked with disease investigation and/or outbreak response are required to take the "[\*Epidemiology: A Basic Public Health Science\*](#)" course from University of North Carolina Center for Public Health Preparedness. New public health nurses will be oriented by the epidemiologist on ODRS, daily communicable disease investigation, outbreaks, and local, state, and national surveillance systems. New sanitarians will be oriented on how to conduct food borne complaints. All of these employees are trained on the Epidemiology Response Annex and the Foodborne Outbreak Appendix. The Mahoning County District Board of Health shall ensure onboarding of new epidemiologists to be registered with the Ohio Disease Reporting System (ODRS) within 5 business days of hire.

## **Outbreak Detection & Response**

### **Identification of an Outbreak or Unusual Disease**

- 1) An unusual number or cluster of cases with the same diagnosis or symptoms is detected
  - a. Compare the current numbers with historical data
  - b. Check EpiCenter to determine if activity shows any illness
  - c. Check the Environmental Health Food Complaint log for any matching types of cases or sources.
  - d. Review all available surveillance data
- 2) Class A illness is suspected or confirmed and reported: Disease of major public health concern because of severity of disease or the potential for epidemic spread.

- 3) Food or Water borne Outbreak: 2 or more cases of similar illness after ingestion of a common food source. Cases will be assigned an outbreak number by ODH and will be entered into ODRS and NORS (See Attachment J for protocol)

**Initial Notification:**

- Identification of an unusual number of cases or Class A disease needs to be reported within 3 hours to the Epidemiologist, Nursing Director, Environmental Health Director, and Health Commissioner.
- Contact the Ohio Department of Health Bureau of Infectious Disease Control to provide information, receive an outbreak number, and obtain resources and advice needed for the investigation.

**Ongoing Communications:**

- Depending on the incident and information available, public health recommendations will be provided within 6 hours of agent identification.
- Notification made to any additional internal and external response partners. This could be for notification and/or to ask for assistance.
- Contact the other health department in the county if necessary.
- Alert NECO epidemiologists through the OPHCS NECO list serve within 12 hours of identification as needed per the severity of the outbreak using the NECO Epidemiology Incident Management Document (Appendix H).
- Notify any agencies that may be affected or may assist with active surveillance depending on the nature of the illness and/or outbreak. Such as MD offices, EDs, schools, child care centers, etc.
- All emergency communications will follow the Mahoning County Comprehensive Communications Annex.

**Establish an Outbreak Response Team**

- An Outbreak Response Team will be established using the epidemiologist, public health nurses, Nursing Director, sanitarians (if indicated), and the Environmental Health Director.
- Develop a hypothesis generating questionnaire to interview cases and contacts.
- The nursing and environmental staff and the epidemiologist have been trained in investigating outbreaks. They are trained in interviewing, data entry, and specimen collection so they can assist with surge to assist during an investigation.
- If the outbreak becomes large enough or involves multiple staff and/or other agencies, ICS will be established by the Health Commissioner. A PIO will be appointed to the response team. (See ICS Chart in Appendix K)
- The Epidemiology Section of the ICS structure will be established with a Epi Team Leader, Investigation Coordinator, Surveillance Coordinator, Contact Tracing Unit Leader, Data Entry Unit Leader. (Job Action Sheets can be found in Attachment C)
- Follow Foodborne Outbreak Procedure for notifications, collaborations and job duties for each discipline. (Attachment L)

**Develop a Plan**

- Consult the ODH Infectious Disease Manual and other available resources for information and guidance on the disease being investigated and what further actions need to be taken.
- See Appendix K for Foodborne Outbreak investigations, if necessary.
- Develop a hypothesis for the outbreak.
- Establish a methodology and tools to be used for the investigation. (Investigation forms, fact sheets, etc).
- Determine if Medical Reserve Corps volunteers should be activated for assistance with interviews and/or a phone bank.
- Provide information to staff/volunteers who may be answering the phones as well as Health Commissioner and PIO.
- Two Epidemiology “To Go” Kits have been assembled for investigations.
- If the outbreak may affect additional counties, they will be notified.
- If the outbreak escalates where we require additional assistance or supplies follow the NECO Epidemiology Incident Management Document (Appendix H) for notification and request procedures.

#### **Case List:**

- Establish a **Case Definition (see Attachment C)** based on symptoms, laboratory findings, and early epidemiology investigation.
- Interview all known cases and identify any additional cases and/or contacts
- Compile a list of cases using the tools selected for the incident, including:
  - **Person-** name, gender, and age
  - **Demographic Information**
  - **Illness-** date (and time) of onset, symptoms, lab findings
  - **Location-** Illness occurred or linked to (if different than home address)
- Identify and compile a list of secondary cases
- Identify exposed contacts
- Epidemiologist will construct an **Outbreak Curve (See Attachment C)** to assist with case finding, pattern of spread, identification of causative agent, and effective control measures.
- Change interview form as needed.
- Calculate **Attack Rate (See Attachment C)** based on early interview to assist with case findings.
- Statistical software can also be used. SPSS or Epi Info can be utilized for analysis.

#### **Prevention and Control measures**

- Implement prevention and control measures to reduce the spread of disease
- Provide vaccination and/or treatment to cases and contacts, if indicated
- Employ standard precautions and then any other precautions needed for the specific illness identified. (**See Attachment D**)
- Enforce isolation, quarantine, and/or exclusion, if indicated.

#### **Sample Collection and Submission**



- Collection of samples is specific to the outbreak and ODH epidemiologists will assist in the need to collect samples the forms needed, and the media needed for sample collection.
- Use the appropriate sample collection it's and check media expiration dates
- Follow the appropriate packing and shipping guidelines.

### **Provide pre and/or post exposure treatment**

Vaccine, antibiotic, or other distribution might be required during certain outbreaks and events. The Epidemiologist, Public Health Nurses and Clerical would all participate to provide pre and/or post exposure treatment. The *Mahoning County Mass Clinic Annex* would be utilized if indicated by the event.

### **Quarantine**

Limitation of movement (LOM) or quarantine may be implemented during an event to prevent further spread of disease and morbidity. This would be based on disease and per the Ohio Infectious Disease Control Manual. The Mahoning County Health Commissioner would decide when LOM or quarantine is needed bases on surveillance and investigation information. The *Community Containment Annex* would be followed for this.

### **Analyze data and Interpret results**

- All data (interview and sample collection) need to be analyzed using available statistical software. (Epi Info, SPSS, Excel)
- Conclusions will be based on data results and laboratory findings.

### **Demobilization**

- At the daily operations meeting:
  - Determine the days operations: phone bank, interviews, active surveillance
  - Determine the amount of staff needed for the following day's operations.
  - Determine what IC positions are still needed:
    - Is PIO and communications staff still needed?
    - Can Incident Commander maintain all operations?
      - If so, transfer of command to Epidemiology Chief to complete the operation.
  - Can the DOC be closed and daily operations meeting cease?
- Releasing staff and resources from operations
  - Determine which positions/staff members can be released to return to their daily duties
  - Determine if phone bank can be closed (if applicable) and staff and volunteers can be released from their duties.
- Debrief all staff as they are released to return to normal duties.
- Document all staff and other resources being released.

### **Outbreak Conclusions**

- An outbreak can be declared over once a lab confirmed case has not been reported for two consecutive incubation periods
- Submit all written reports and forms to ODH, as required
- Communicate all findings to the Board of Health, Health Commissioner, etc.
- ODH confirms proper investigation and submits summary report to CDC.
- Submit finalized outbreak summary to Deputy Director of Environmental Health for audit purposes.
- A Formal After Action and Corrective Action report should be written and approved within 30 days of the end of the outbreak. (Attachment I)
- A formal Thank you letter and brief write up, including conclusions of the incident should be sent to the affected facility. (If needed)

### **Plan review and maintenance:**

This Epidemiology Response Annex will be reviewed and updated yearly. Both epidemiologists currently on staff are considered “Tier 2” epidemiologists. The nursing and sanitarian staff member are provided at least one refresher on preparedness and outbreak response in order to maintain the surge capacity at the Mahoning County Board of Health. The nursing and sanitarian staff also participate in multiple foodborne and other communicable disease response efforts throughout the year.

### **Review and Development Process**

- The planning shall be initiated and coordinated by the Emergency Preparedness Coordinator. Planning shall address revisions to the Epidemiology Annex. The Emergency Preparedness Coordinator will form a collaborative planning team to include the following:
  - MCDBOH managers including internal Subject Matter Experts (SME’s)
  - Mahoning County Healthcare Coalition: that includes representative for access and functional needs and external Subject Matter Experts (SME’s)
- Revisions will be determined on an annual revision schedule and by identifying gaps and lessons learned through exercise and real-world events, or by the direction of the MCDBOH Management Team or Health Commissioner. Production of an after action report following the exercise of a plan or annex, will determine the need for the level of revision needed to existing annexes. Applicable findings from AAR/IPs must be reviewed and addressed during review of each plan component.
- Once these elements are identified, revised processes are developed for improvement or replacement. In order to maintain transparency and record of collaboration, MCDBOH will present the Annex to the Mahoning County Healthcare Coalition and record meeting minutes to sustain a record of recommendations from collaborative meetings.