Enteric (Gastrointestinal Illness) Disease Investigations
2023 Season Refresher

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Overview

• Refresher on enteric diseases
  • Five steps in enteric disease investigations
• Whole Genome Sequencing (WGS) clusters
• New and updated tools for investigators
• Disease-specific reminders
• MAVEN changes coming soon
Existing, and still relevant resources in MAVEN Help

Recorded webinar presentations
• Introduction to Enteric (Gastrointestinal Illness) Disease Case Investigations (May 2022) Slides, Recording
• Cyclospora and Vibrio Case Investigations (June 2022) Slides, Recording
• Overview and Updates to Cryptosporidium and Shigella Case Investigations (August 2022) Slides, Recording

Tip sheets
• Implementing the Exclusion of Food Handlers with Reportable Conditions
• Creating Foodborne Illness Complaint Events

Other Tools
• Interpreter services are still available to LBOHs through LanguageLine Solutions®
Enteric Disease Overview

• Enteric infections are caused by bacteria, viruses, parasites, and toxins that usually enter the body through the mouth and cause gastrointestinal illness

• Reportable enteric diseases that may require routine or immediate LBOH follow up:

<table>
<thead>
<tr>
<th>Bacterial</th>
<th>Viral</th>
<th>Parasitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botulism</td>
<td>Hepatitis A</td>
<td>Amebiasis</td>
</tr>
<tr>
<td>Campylobacteriosis</td>
<td>Norovirus</td>
<td>Cryptosporidiosis</td>
</tr>
<tr>
<td>Listeriosis</td>
<td>Typhoid Fever</td>
<td>Cyclosporiasis</td>
</tr>
<tr>
<td>Shiga toxin-producing E.coli (STEC)</td>
<td>Vibriosis</td>
<td>Giardiasis</td>
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<tr>
<td>Salmonellosis</td>
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<tr>
<td>Shigellosis</td>
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<tr>
<td>Vibriosis</td>
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</tbody>
</table>
Modes of Transmission

- Ingestion of contaminated food
- Ingestion of contaminated water
- Contact with animals or pets
- Contact with an infected person (direct contact, surfaces)
Enteric Disease in Massachusetts

![Bar chart showing five-year average of confirmed and probable reportable enteric disease cases, 2018-2022](chart)

- Campylobacteriosis: 1492 cases
- Salmonellosis: 1022 cases
- Norovirus: 476 cases
- Giardiasis: 469 cases
- Shigellosis: 199 cases
- Cryptosporidiosis: 179 cases
- Hepatitis A: 129 cases
- STEC: 122 cases
- Vibriosis: 88 cases
- Cyclosporiasis: 69 cases

All reportable enteric diseases with <50 cases were not included. Typhoid fever cases were included in the salmonellosis case count. Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences. Data are current as of 3/27/2023 and may be subject to change.
Enteric Diseases are Seasonal

• ...and that season is now

Reported confirmed & probable cases of *Campylobacter* infection, 2022

Reported confirmed & probable cases of *Salmonella* (Non-Typhoid/Paratyphoid) infection, 2022

Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences. Data are current as of 12/14/22 and are subject to change.
Goals of Enteric Disease Case Interviews

- To identify case-patients and their household contacts who work in high-risk settings (e.g., food handlers, childcare workers, healthcare workers)
- To provide prevention information to case-patients to protect themselves and others from future infections
- To collect exposure information to support the identification of outbreaks and clusters
- To collect clinical information to understand illness trends
Steps in an Enteric Disease Case Investigation

1. Notification
2. Get prepared
3. Contact ordering provider/facility
4. Interview the case
5. Prevent further transmission
6. Notify DPH and other LBOHs as needed

Document investigation steps and information collected in MAVEN question packages
Steps in an Enteric Disease Case Investigation

1) Notification

• LBOHs have primary responsibility to investigate most cases of enteric disease
• New cases flow into your “LBOH Notification for Routine Disease” workflow
• DPH assistance is available for:
  • Immediate diseases
  • Cases included in a Whole Genome Sequencing (WGS) cluster
2) Get Prepared

• **Familiarize yourself with the disease**
  • Incubation period, symptoms, modes of transmission, high risk foods or exposures, prevention
    • Guide to Surveillance
    • Fact Sheets
  • Food handler exclusion requirements (for case & household contacts)
    • Resource: [Summary of 105 CMR 300, Implementing the Exclusion of Food Handlers with Reportable Conditions](#)
    • Childcare, school, and congregate care exclusion recommendations can be found in Guide to Surveillance chapters

• **Review information available in MAVEN**
  • Demographics: Age, race, address, contact information
  • Lab: Specimen source, test type, ordering facility
3) Contact ordering provider

- Information can be obtained from an Infection Preventionist (if ordering provider is located at a hospital) or nurse at the ordering provider’s office
- During conversation:
  - Confirm contact information, obtain additional phone number(s) or email address
  - Obtain symptom onset date, clinical presentation
  - Collect any available information on exposures during incubation period (e.g., travel)
  - Request case’s occupation and employer
  - Ask if the case has been informed of their diagnosis
- Complete MAVEN question packages with information obtained
4) Interview case

- Introduce yourself and explain why you are calling, what information will be used for, and who has access to information shared
- Complete all question packages (Demographic, Clinical, Risk) with case
  - Exposure history time period of interest is cited at the top of the Risk QP in events
  - If a case is unable to recall food history, answer questions based on what they typically eat
- Document exposure information collected in relevant variables in QPs
What innovative ways have you used to reach cases?

At the MAPHN annual conference in May, we asked attendees for their input. Here are tips and tricks shared by fellow public health nurses.

Making Contact with the Case
• In Framingham we found that people were more likely to pick up the phone 8pm-11pm. In addition, the city customized our caller ID to “Framingham Nurse,” which helped.
• In Southboro we changed phone lines to say Southboro Health Department on caller ID when calling and found residents were more likely to pick up.
• Letters of disease notices to patient by mail.

Language Barriers
• Google docs translate: can translate letters/documents into language spoken.
• sayhi app. Translation is free.
• Use a language line/interpreter for ESL residents.

Other
• Always lead conversation with empathy, “How are you feeling?”
4) Interview case

Pop Quiz: A public health nurse calls you today (6/13) about a specimen you submitted on 6/8 that tested positive for *Salmonella*. You report your symptoms began two days before that. What did you eat during the 7 days prior to illness?

Help to orient the case:

- Remind them the day of the week that their specimen was collected, any major holidays or notable weather during their incubation period.

To help promote recall, ask the case to:

- Review their personal and/or work calendar for scheduled events, appointments that had them travel away from home, etc.
- Review credit card or bank statements online to look for where they may have purchased food (grocery stores, restaurants), places they may have gone (farms, events)
- Review their phone’s photo album
5) Prevent further transmission

The MAVEN Risk QP prompts you to ask about high-risk settings:

Supervised care
Daycares, schools, long term care, correctional facility, etc.

Food handlers
5) Prevent further transmission

Daycare/School Attendee

- Exclusion recommendations can be found in the “Daycare” and “School” sections of the Guide to Surveillance

Long Term Care Resident

- Resource: Infection Prevention in Long Term Care: Gastrointestinal Disease
  - Residents with gastrointestinal symptoms should be placed on standard plus contact precautions for the duration of their illness; those with a bacterial or parasitic infection should remain on precautions until a negative stool specimen is produced.

Evaluate if there is an outbreak: In addition to providing exclusion recommendations and precautions related to the individual, also reach out to the facility to find out if others (staff or attendees/residents) are experiencing similar illness.
5) Prevent further transmission

105 CMR 300 definition
A food handler is defined as any person directly preparing or handling food; any person handling clean dishes or utensils; any person who dispenses medications by hand, assists in feeding, or provides mouth care.

- **In healthcare:** this includes those who set up trays for patients to eat, feed or assist patients in eating, give oral medications or give mouth/denture care.
- **In daycare facilities, schools, and community residential programs:** this includes those who prepare food for clients to eat, feed or assist clients in eating, or give oral medications.

Examples of roles that are generally considered to have food handling duties

<table>
<thead>
<tr>
<th>Always</th>
<th>Most of the time</th>
<th>Sometimes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook/food prep worker</td>
<td>Food establishment manager</td>
<td>Physician</td>
</tr>
<tr>
<td>Bartender</td>
<td>Grocery store worker</td>
<td>Physician assistant</td>
</tr>
<tr>
<td>Waiter/waitress</td>
<td>Food processing plant worker</td>
<td>Nurse</td>
</tr>
<tr>
<td>Childcare worker</td>
<td>Host/hostess</td>
<td>Health aide</td>
</tr>
<tr>
<td>Dentist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental hygienist</td>
<td>Pharmacist</td>
<td></td>
</tr>
<tr>
<td>Dishwasher</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6) Notify DPH and other LBOHs as needed

• Report any **suspected outbreak** of illness within 24 hours to MDPH:
  • If case investigation indicates two or more people from different households became ill with similar symptoms after a common exposure, notify the Division of Epidemiology *(617) 983-6800*
    • Can also be reported as a MAVEN cluster or foodborne illness complaint event

• Create a **MAVEN Foodborne Illness (FBI) Complaint**
  • FBI complaint events are used to communicate high-risk exposures reported by diagnosed cases to those who permit or license implicated food establishments
    • Food Protection Program (FPP) reviews FBI complaints and forwards them to the appropriate jurisdiction
    • LBOHs are expected to notify inspectional services for establishments within their jurisdiction. The MAVEN FBI complaint event can be printed to share with inspectors who are not on MAVEN.
Foodborne Illness (FBI) Complaint Events in MAVEN

• Create a MAVEN Foodborne Illness (FBI) Complaint event if the case reports the following during their incubation period:
  • Eating a food away from home with sufficient details available (name of establishment, location, and date of purchase/consumption)
  • Eating a food consistent with the pathogen
    • Always create one for raw milk, unpasteurized juice/cider, or raw shellfish
  • Handling a locally produced pet food or pet treat
  • Is an infant that is primarily formula-fed

Guidance is available in MAVEN Help: Creating Foodborne Illness Complaint Events

• Updates to the FBI Tip Sheet for 2023:
  • Creating FBI complaint events for infants who are primarily formula fed
  • Reminder to obtain a 72-hour food history for undiagnosed complainants
When is it “too late” to investigate?

• MDPH advises that enteric disease cases within 2 months of their event date should be investigated by reaching out to the case and ordering provider.

When is an investigation lost to follow up?

• It is recommended that at least three call attempts are made at different times of day before considering a case lost to follow up.
• If a case has not responded to outreach attempts, contact should be made with the ordering provider to collect:
  • Clinical presentation and symptom onset
  • Occupation and employer
  • Any available risk information
What would help improve your jurisdiction’s enteric disease case investigations?

At the MAPHN annual conference in May, we asked attendees for their input. Here is feedback from fellow public health nurses.

**Information sharing with clinicians**
- Best way to establish HIPPA/ok-to-share with health department if we do not have access to fax machine
- Where are we on eCR and access to medical records within MAVEN?
- Public health EHR system and secure email would be fabulous to modernize things

**Assist food handlers excluded from work**
- Offer free stool testing for all individuals who are excluded from work due to food handling duties – help increase compliance and facilitate return to work. Burden to protect public health should not fall on individual.
- Financial assistance for food handlers missing work due to enteric disease

**Communication**
- Community education regarding infectious disease surveillance and case investigations and what to expect. It is difficult to have resources to do so by yourself.
- Now that “emergency over” – texting– how would you word that text?

**Collection of exposure information by ordering providers**
- Education/training to point-of-care sites on DPH exact policies and interviewing documentation in patient file, not just a small note that does not address DPH surveillance documentation
- Policy changes for MDs, NPs, and other healthcare providers: use some visit with interviewing so its not just a small note in patient file
- Policy change from primary care/medical side to take a more thorough history from patient when they first present with symptoms

**Improved information on initial report in MAVEN**
- Lack of information in MAVEN at times, i.e. phone number, physician information, if seen in ER who to call if patient sent home
- Put case’s email into MAVEN!
- Offer option for cases to complete an online questionnaire for food interview questions – might help with recall and amount of information people share vs. phone interview
WHOLE GENOME SEQUENCING (WGS) CLUSTERS
Submission of bacterial isolates to SPHL

Specimen submitted for testing at a clinical or commercial laboratory

Bacterial organism isolated

Bacterial isolate sent to MA State Public Health Lab (SPHL)

Whole genome sequencing is performed*

• Isolates required to be submitted per 105 CMR 300: Campylobacter, Listeria, Salmonella, Shiga-toxin producing E. coli (STEC), Shigella, Vibrio, Yersinia

• Isolates routinely sequenced: Listeria, Salmonella, STEC, Shigella, Vibrio
• Isolates sequenced upon request (usually when an epi-link is identified): Campylobacter, Yersinia
Whole Genome Sequencing (WGS)

- All organisms have a unique genetic code (genome) composed of nucleotide bases
- Sequencing is determining the order of the nucleotide bases
  - If you know the bases in an organism, you have identified its unique DNA fingerprint
- Sequences are analyzed by SPHL laboratorians and uploaded into a national database, PulseNet
WGS Cluster Investigations

- WGS cluster investigations are led by an MDPH epidemiologist and are considered something warranting immediate investigation.
- WGS clusters can be:
  - **Local**: genetically related cases reside only in MA
  - **Multi-state**: genetically related cases live in MA and outside of the state
- Role of MDPH epidemiologist:
  - Ensuring all cases have been interviewed with standard question packages in MAVEN
  - Reviewing demographic and exposure information across cases to develop a hypothesis about a common exposure
    - If a hypothesis is identified, work with others to investigate and test hypothesis (e.g., perform food/environmental testing, develop an analytic study)
Impact on LBOHs/Case Investigation

Could include:

- Expedited case interview
- Repeated case interviews
- Interview with more detailed questions
  - National Hypothesis Generating Questionnaire (NHGQ)
  - Focused Questionnaires
- Request for shopper purchase history information
WGS Clusters in Massachusetts

**Key Points**

- We investigate ~70 WGS clusters annually
- Over half of all WGS clusters investigated are *Salmonella*
- Approximately 20% of all confirmed *Salmonella* cases are included in a WGS cluster annually
Impact of reporting lag in WGS clusters

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Contaminated food eaten</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Symptoms begin</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Symptoms persist. Medical attention is sought, and clinical testing pursued</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Laboratory tests clinical sample</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>Clinical lab reports cause of illness</td>
</tr>
<tr>
<td>3</td>
<td>9-16</td>
<td>Bacterial isolate submitted to SPHL</td>
</tr>
<tr>
<td>3</td>
<td>16-21</td>
<td>SPHL performs WGS</td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>Isolate’s WGS compared with others in MA</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>WGS is shared with CDC via PulseNet</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>CDC reviews WGS, determines if related to national isolates</td>
</tr>
</tbody>
</table>

Bottom line: Complete collection of MAVEN Risk Question Package variables when a case is first reported helps with early outbreak detection and prevents further delays in identifying a common exposure once included in a WGS cluster.

Adapted from: [CDC Timeline for Identifying and Reporting Illnesses in Foodborne Outbreaks](https://www.cdc.gov/foodborneoutbreaks/timeline_of_event.html)
# Outbreak Exposures Identified via WGS or PFGE Cluster Investigations

<table>
<thead>
<tr>
<th>Listeria</th>
<th>Salmonella</th>
<th>Shiga toxin-producing E. coli</th>
<th>Shigella</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice cream</td>
<td>Peanut butter</td>
<td>Ground beef</td>
<td>Gay &amp; bisexual men</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>Onions</td>
<td>Baby spinach</td>
<td>People experiencing homelessness</td>
</tr>
<tr>
<td>Frozen vegetables</td>
<td>Cucumbers</td>
<td>Cake mix</td>
<td></td>
</tr>
<tr>
<td>Packaged salads</td>
<td>Frozen shredded coconut</td>
<td>Romaine lettuce</td>
<td></td>
</tr>
<tr>
<td>Enoki mushrooms</td>
<td>Ground turkey</td>
<td>Flour</td>
<td></td>
</tr>
<tr>
<td>Bean sprouts</td>
<td>Wood ear mushrooms</td>
<td>SoyNut Butter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Papaya</td>
<td>Prepackaged cookie dough</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen raw tuna</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kratom</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backyard poultry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small turtles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTI-STATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCAL</td>
<td>Retail delis</td>
<td>Restaurants</td>
<td>Childcare facilities</td>
</tr>
<tr>
<td></td>
<td>Restaurants</td>
<td>Ground beef</td>
<td>Elementary schools</td>
</tr>
<tr>
<td></td>
<td>Dehydrated dog treats</td>
<td>Recreational water</td>
<td>Recreational water</td>
</tr>
<tr>
<td></td>
<td>Live bird markets</td>
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</tr>
</tbody>
</table>

PFGE = Pulsed-field gel electrophoresis. PFGE was used for “DNA fingerprinting” prior to the transition to WGS in 2019.
TOOLS FOR INVESTIGATORS
MAVEN Wizards

- A wizard is a virtual question package that pulls a subset of questions from multiple other MAVEN question packages.
- Over the past year, we considered creating wizards for enteric disease investigations.
  - Ultimately, they were determined not to be the best option for enteric disease investigations because asking a subset of risk questions would not provide a complete picture of the source of an infection.
  - Reminder: all of these questions are needed to detect and investigate outbreaks!
- However, in the MAVEN release anticipated in July 2023, unnecessary/repetitive questions will be dropped from question packages.
Disease-specific TIP SHEETS

• Can’t remember the difference between *Shigella* and *Salmonella*?
• Has it been a while since you investigated a case of *Vibrio*?
• Are you responsible for investigating 20 different diseases and could use a quick reference to remember which is which?

**NEW!**

Disease-specific TIP SHEETS in MAVEN Help

*Campylobacter*
*Salmonella*
*Norovirus*
*Giardia*
*Shigella*
Quick disease and transmission refresher

How you get notified

Resources to help you get prepared

List of items to ask when you reach out to the ordering provider

Which question packages to complete with some reminders
### Reminders for handling high-risk settings to prevent further transmission

<table>
<thead>
<tr>
<th>Food handlers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• If individual meets the 10S CMR 300 definition of a food handler (see definition in “Get Prepared”), they must be excluded from food handling duties until meeting clearance criteria.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

### When you should notify DPH

#### Notify DPH as Needed

<table>
<thead>
<tr>
<th>Long-term care</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Staff who meet the definition of a food handler should be excluded following food handler criteria above.</td>
</tr>
<tr>
<td>• Residents should be placed on standard plus contact precautions for the duration of their illness and remain on precautions until a negative stool specimen is produced.</td>
</tr>
</tbody>
</table>

#### Other Notes

- Suspected outbreaks are reportable to MDPH within 24 hours. If case investigation indicates that two or more people from different households became ill with similar symptoms after a common exposure, notify the Division of Epidemiology. (617) 983-6800
- Ensure MAVEN foodborne illness consultation if the case reports any of the following during their incubation period:
  - Eating food away from home with sufficient details available (name of establishment, location, and date of purchase/consumption at a minimum; ideally also item(s) consumed).
  - Eating a food consistent with the pathogen, especially high-risk foods like raw milk, unpasteurized juice/cheese, or raw shellfish.
  - Handling a locally produced pet food or pet treat, or an infant that is primarily formula fed.

### Recommendations regarding call attempts to case, information to collect if they cannot be reached

#### Additional resources

- May 2022 webinar: Introduction to Enteric (Gastrointestinal Illness) Disease Case Investigations Slides, Recording
- MDPH Division of Epidemiology: (617) 983-6800
DISEASE-SPECIFIC REMINDERS
**Cyclospora & Vibrio: Seasonal switch from routine to immediate**

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cyclospora</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vibrio parahaemolyticus in stool</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**As an immediate disease:**

- Expectation to conduct case investigation within 1 business day of report
- Prioritize over routine investigations
- An MDPH epidemiologist will also be assigned to the case to ensure prompt case investigation and assist with follow-up as needed
Why the seasonal switch?

**Goal: To quickly conduct case interview and obtain an accurate food history.**
This allows for identification of common exposures among cases, and prevention of additional illness.

**Cyclospora**
- No routine whole genome sequencing to identify cases likely to have a shared exposure.
- Foods or restaurants commonly reported across cases are investigated.
- Implicated foods are recalled and removed from the food supply.

**Vibrio parahaemolyticus (Vp)**
- Bacteria naturally increase in coastal water during the summer.
- Shellfish exposures reported by cases are shared with the MDPH Food Protection Program for prompt traceback.
- Commonly implicated harvest areas may have a voluntary or regulatory closure to prevent further illnesses.

For a more in-depth review:
Cyclospora and Vibrio Case Investigations (June 2022) Slides, Recording
New Risk Questions in Crypto and Shigella Events

• In October 2022, MAVEN Risk Question Packages were updated for these events to align with the diseases’ modes of transmission: waterborne, animal contact, person-to-person
• Updates made collect sufficient details to allow for further follow up to be conducted

For a more in-depth review:

Overview and Updates to Cryptosporidium and Shigella Case Investigation (August 2022) Slides, Recording
COMING SOON

Early July MAVEN H Release

ENTERIC DISEASE MAVEN UPDATES
Clinical QP: Symptoms list

- Excessive list of symptoms reduced
  - Goal: keep symptoms most common with each disease’s presentation
  - Additional symptoms reported the case or their clinician can be documented in “Other symptoms (specify)”

<table>
<thead>
<tr>
<th>Kept</th>
<th>Dropped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal cramps</td>
<td>Abdominal pain</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Anorexia</td>
</tr>
<tr>
<td>Fever</td>
<td>Bloating</td>
</tr>
<tr>
<td>Headache</td>
<td>Bloody stool</td>
</tr>
<tr>
<td>Nausea</td>
<td>Fatigue</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Joint aches/pains</td>
</tr>
<tr>
<td>Other symptoms (specify)</td>
<td>Malaise</td>
</tr>
<tr>
<td></td>
<td>Muscle aches/pains</td>
</tr>
<tr>
<td></td>
<td>Stool with mucus</td>
</tr>
<tr>
<td></td>
<td>Weight loss</td>
</tr>
</tbody>
</table>

Example: **Norovirus**
Clinical QP: Medications, Clinician

Update: Unnecessary and repetitive questions removed.
Risk QP: Supervised care setting

1) Prompt added across enteric disease events

2) Supervised care type list expanded

Update: Prompt and drop-down updated to improve completion and collection of information.
Risk QP: Animal Exposures

1. Any contact with household pets (e.g., cats, dogs, backyard chickens, rodent, reptiles, pets in aquariums)?

2. Did the case visit, work, or volunteer on a farm, ranch, petting zoo, or other setting that has animals, including reptiles, amphibians, or birds?

   Select animal type(s) at location, regardless of direct contact:
   - Amphibian
   - Bird
   - Cat
   - Chicken
   - Cow
   - Dog
   - Goat
   - Horse
   - Pig
   - Rodent
   - Reptile
   - Sheep
   - Turkey
   - Other
   - Unknown

_Update_: Existing question broken into two to prompt recall and improve collection of this information
Risk QP: Pet food

Exposure to pet food, pet treats, or chews (e.g. pig ears, rawhide chews)? Please include all pet foods and treats directly handled by the case, as well as those fed to household pets that were not directly handled.

Update: Rephrased to improve data collection based on risk.
Contact Us!

• Division of Epidemiology 617-983-6800
  • Call with questions related to:
    • Reportable disease investigations
    • Definition of a food handler in any setting
    • Infection control recommendations for high-risk settings
  • Notify Epi Program about:
    • Potential clusters or outbreaks (any setting), diagnosed or undiagnosed

• Food Protection Program 617-983-6712
  • Call with questions related to:
    • Definition of a food handler in food settings
    • Working with a food establishment to restrict a food handler
    • Inspections
  • Notify FPP about:
    • Food safety complaints
    • Potential clusters or outbreaks (food establishment), diagnosed or undiagnosed
Q&A