Cyclospora and Vibrio Case Investigations

June 21, 2022

Geena Chiumento, MPH, Infectious Disease Epidemiologist
Johanna Vostok, MPH, Infectious Disease Epidemiologist
Epidemiology Program | Bureau of Infectious Disease and Laboratory Sciences
MA Department of Public Health
Continuing enteric (gastrointestinal illness) disease case investigation today...

May 24th: Introduction to Enteric (Gastrointestinal Illness) Disease Case Investigations

- In MAVEN Help: Webinar recording, Webinar slides
- Presentation reviewed LBOH follow up of routine enteric disease cases (e.g., *Salmonella*, *Campylobacter*):
  - Goals of enteric case investigations
  - How to prepare for an enteric disease case interview
  - Completing MAVEN question packages for enteric disease events
  - When and how to create a MAVEN Foodborne Illness (FBI) Complaint
    - In MAVEN Help: FBI Complaint Tip Sheet
    - Restricting foodhandlers with enteric disease

Focus on two specific enteric diseases: **Cyclosporiasis** and **Vibriosis**
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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vibrio parahaemolyticus in stool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<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.
**Vibrio & Cyclo** in the context of all reportable enteric diseases

- Estimated **142.7** cases go undiagnosed for every reported case of *Vibrio parahaemolyticus*
- Estimated **83.1** cases go undiagnosed for every reported case of *Cyclospora cayetanensis*

---

### Five-year Average of Probable and Confirmed Reportable Enteric Disease Cases, 2017-2021

<table>
<thead>
<tr>
<th>Disease</th>
<th>Confirmed and Probable Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacteriosis</td>
<td>1442</td>
</tr>
<tr>
<td>Salmonellosis</td>
<td>1045</td>
</tr>
<tr>
<td>Giardiasis</td>
<td>459</td>
</tr>
<tr>
<td>Norovirus</td>
<td>428</td>
</tr>
<tr>
<td>Shigellosis</td>
<td>187</td>
</tr>
<tr>
<td>Cryptosporidiosis</td>
<td>177</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>134</td>
</tr>
<tr>
<td>STEC</td>
<td>119</td>
</tr>
<tr>
<td>Vibrisis</td>
<td>82</td>
</tr>
<tr>
<td>Cyclosporiasis</td>
<td>66</td>
</tr>
</tbody>
</table>

*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 5/18/2022 and may be subject to change.*

---


[https://doi.org/10.3201/eid1701.p11101](https://doi.org/10.3201/eid1701.p11101)
Learning Objectives

• Understand why *Cyclospora* and *Vibrio parahaemolyticus* infections warrant immediate follow up seasonally
• Learn the epidemiology and clinical presentation of these two infections
• Learn how to conduct thorough cyclosporiasis case investigations using a focused questionnaire
• Understand the most pertinent information needed from *Vibrio parahaemolyticus* case investigations
• Understand how information collected during case investigations are used to detect outbreaks and prevent additional illnesses

• BONUS: Understand non-cholera *Vibrio cholerae* infection.
Cyclosporiasis Case Investigation
What is Cyclospora?

*Cyclospora cayetanensis* (Cyclo) is a foodborne/waterborne parasite that causes gastrointestinal illness in humans when ingested

- Infection with *Cyclospora* is known as *Cyclosporiasis*
How do people become infected with Cyclo?

- *Cyclospora* is transmitted through fresh (uncooked) produce or water that has been contaminated with the feces of an infected individual
  - Non-infectious *Cyclo* oocysts are shed in the stool of an infected individual and enter the environment
  - Within 1-2 weeks, the oocysts sporulate and become infectious
  - Food contaminated with infectious oocysts are ingested
  - *Cyclo* invades and reproduces in the intestines, causing gastrointestinal illness
  - Person-to-person transmission is rare
What type of illness does *Cyclo* cause when ingested?

<table>
<thead>
<tr>
<th>Clinical features</th>
<th>Watery diarrhea, loss of appetite (anorexia), weight loss, abdominal cramps, bloating/gas, nausea, fatigue, fever, and vomiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubation period</td>
<td>Average of 7 days. Ranges from 2 days to ≥2 weeks</td>
</tr>
<tr>
<td>Duration</td>
<td>Varies but can persist for weeks if untreated</td>
</tr>
<tr>
<td>Treatment</td>
<td>Trimethoprim/Sulfamethoxazole (TMP/SMX; sold under the trade names of Bactrim, Septra, and Cotrim) is the usual therapy and is typically prescribed for 7-10 days.</td>
</tr>
<tr>
<td>Risk groups</td>
<td>Everyone is at risk of infection, but risk may be higher for those who consume fresh produce and those who live in/travel to countries where <em>Cyclospora</em> is endemic.</td>
</tr>
</tbody>
</table>
How is cyclosporiasis diagnosed?

The two main laboratory tests used are:

1. **Microscopy** findings of oocysts resembling *Cyclospora*
2. **PCR** detection of *Cyclospora* organisms or DNA in stool, intestinal fluid/aspirate, or intestinal biopsy specimens

- Cyclo requires special laboratory tests that are not routinely done when stool is tested for parasites; healthcare providers need to specifically request testing for Cyclo
  - This may lead to delays in diagnoses if the provider does not consider Cyclo infection at first, especially in the absence of international travel
General Epidemiology

- Cyclosporiasis “season” is from May 1st to August 31st
- Internationally-acquired cases are commonly seen after travel to tropical and subtropical regions
- Domestically-acquired cases are commonly linked to contaminated, uncooked produce that may or may not be imported
- Previous national outbreaks of domestic cases have been linked to consumption of
  - Raspberries
  - Basil
  - Cilantro
  - Snow peas
  - Lettuce
  - Bagged salad mixes
These data include both internationally and domestically-acquired cyclosporiasis cases. Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences. Data are current as of 5/18/2022 and may be subject to change.
Surveillance at MDPH

**Cyclospora cases warrant immediate follow up from May 1st to August 31st to promptly collect food history information**

- Cases are investigated using MAVEN question packages, and are enhanced May-August with additional food exposure questions from CDC’s *Cyclosporiasis National Hypothesis Generating Questionnaire (CNHGQ)*
  - Demographic info
  - Clinical info
  - Travel history
  - Restaurant and grocery exposures
  - Fresh produce exposures (herbs, fruits, vegetables, prepackaged salads)

- The off-season: September-April
  - Cases reported outside of the summer season are infrequent and will still flow into your immediate disease workflow.
  - MDPH epidemiologists will indicate in a note that routine follow up (without a detailed food history) is warranted.

Notes

Johanna Vostok [jvostoktest] - (Generic) 06/14/2022 03:10 PM
Please disregard the email notification for immediate disease status. Cyclosporiasis cases require immediate case investigation during the summer months of May through August. Since this case was reported between September and April, please complete as a routine investigation.
The CNHGQ

- In the past, investigators have been asked to interview cases using CDC’s CNHGQ (a fillable PDF) in addition to completing MAVEN question packages.
- **NEW THIS YEAR:** A CNHGQ dynamic question package (QP) is available in MAVEN that incorporates detailed produce exposures. (No longer need to use the CNHGQ PDF!)

This QP will not automatically appear when a new Cyclo event is reported. An MDPH epidemiologist will populate the QP in Cyclo events May-August, along with a note containing additional guidance.

CNHGQ 2022 - Cyclospora Food History Questionnaire

Notes

Johanna Vostok [jvostoktest] - (Generic) 06/14/2022 03:10 PM
In addition to completing all the standard question packages, please complete the ‘CNHGQ 2022 - Cyclospora Food History Questionnaire’ for individuals who do not report international travel for the majority the 14 days before illness onset.
LBOH Case Investigation

• Case investigation consists of completion of all MAVEN QPs in addition to the new CNHGQ Food History QP
  • **Exception:** If the case traveled internationally during the 14 days prior to illness onset, the CNHGQ Food History questions do **not** need to be asked
  • Be sure to document travel history in the Risk QP

• Case investigation can begin by contacting the ordering provider to confirm demographic information, collect symptom information and travel history (if available), and identify if the case-patient is aware of their diagnosis
  • Check out the **Introduction to Enteric (Gastrointestinal Illness) Disease Case Investigation webinar from 5/24** for more detailed guidance! [Webinar recording](#), [Webinar slides](#)

• Case investigation should always include conducting a case-patient interview
  • Ordering providers rarely have sufficient details on dates of travel to consider case investigation complete without contacting the case.
Clinical Question Package

Obtain the date contact was made with the case patient

Obtain symptom onset date and duration of illness
Obtain out-of-state or international travel information, including travel dates and destinations

Reminder: If a case-patient spent the majority of their incubation period outside of the country, food exposures in the CNHGQ QP do not need to be completed. These questions should be completed for cases reporting out-of-state travel within the United States.

Travel within Massachusetts does not need to be documented here.
When asking about fresh produce purchased from grocery stores or consumed at restaurants, be sure to collect the establishment name, location, produce/food eaten, and date of purchase for each establishment.

Obtain the shopper card number for stores where produce was purchased from.

If a case uses their phone number to access a store’s loyalty program, or an email to log into a phone app to access a QR code or barcode at checkout, that can alternatively be entered into this field.
Some more about shopper cards

• Shopper “cards” can include loyalty cards, membership cards, warehouse store membership cards, rewards programs, or club cards.
  • Sometimes this is a card number, but other times may be an individual’s phone number
• When MDPH uses an individual’s shopper card to request purchase history information from a retail store, only minimally necessary information is shared.
  • The request can be made using just the shopper card number, location of store(s) reported, and a date range of requested purchases.
  • The retail store does not report back any credit card numbers used to make the purchases.
• Shopper card histories are particularly helpful when:
  1) A case-patient cannot recall the specific products consumed
  2) A common food exposure of an unknown brand at one or more retailers is identified among case-patients
• Occasionally, the last four digits of a credit card may be used if a retail store does not have a loyalty program.
• To learn more: Leveraging Food Purchase History to Solve Foodborne Outbreaks
CNHGQ Food History Question Package

- When asking about specific produce items, be sure to ask about varieties, types, packaging, etc. of produce when prompted in MAVEN.

Obtain additional details when prompted in MAVEN for higher-risk produce items such as basil, cilantro, berries, leafy greens, and prepackaged salad kits.

These food history questionnaires may be time-consuming, but the details obtained are very important to identify the source of infection and enable public health action.

Your interview can (and has!) helped solve an outbreak and prevent additional people from becoming sick!
How is Case Information Used?

• The MDPH epidemiologist assigned to the case will review the information collected during case investigation
  • Epidemiologists will create a MAVEN Foodborne Illness Complaint if a case reports consuming a produce item being investigated at a national level, or a case is identified as part of a local cluster of cases with a shared exposure
• Collected (and deidentified) information will be shared with CDC to assist with detection of common foods across cases nation-wide
• MDPH epidemiologists will perform internal analyses to detect common exposures reported among Massachusetts cases
  • This is streamlined by having CNHGQ data stored in MAVEN, readily available to be extracted and analyzed!

A great example of applied epidemiology in action!
Vibrio Case Investigation
What is *Vibrio*?

- *Vibrio bacteria* naturally live in coastal waters (salt or brackish water) and are present in higher concentrations May-October when water temperatures are warmer. *Vibrio* is not an indication of pollution.
  - People can develop infection from consuming raw or undercooked seafood or shellfish harvested from the water.
- *Vibrio parahaemolyticus (Vp)* is the most common serogroup reported in Massachusetts
  - Documented in shellfish on Cape Cod as early as 1972*
- Other commonly reported serogroups include: *V. alginolyticus, V. fluvialis, V. cholerae*

*Earle and Crisley
*Appl. Environ. Microbiol., 1975*
### How do people become infected with *Vibrio*?

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Incubation Period</th>
<th>Illness Presentation</th>
<th>Specimen Source</th>
<th>Common Serogroups</th>
</tr>
</thead>
</table>
| Consume raw seafood or shellfish              | 24 hours          | Gastrointestinal illness        | Stool                           | *V. parahaemolyticus*  
|                                                |                   |                                |                                 | *V. fluvialis*  
|                                                |                   |                                |                                 | Non cholera *V. cholerae* |
| Break in skin exposed to coastal water or raw seafood drippings | 1-7 Days          | Wound or skin infection         | Skin, wound, or tissue specimen | *V. alginolyticus*  
|                                                |                   |                                |                                 | *V. parahaemolyticus* |
| Other coastal water exposures (swimming)      | Variable          | Ear infection                   | Ear                             | *V. alginolyticus*           |

Other Vibrio specimen sources that have been reported: serum/blood, CSF, bone, synovial fluid, urine, nasopharynx/throat
Confirmed and probable *Vibrio* cases in Massachusetts by serogroup and year, May 1-October 31

Data current as of June 2, 2022 and are subject to change. 
Data source: Bureau of Infectious Disease and Laboratory Sciences

CIDT = culture independent diagnostic tests (e.g., PCR)
When does a *Vibrio* case warrant immediate case investigation?

**Vibrio cholerae**
- Always (year-round)
  - These cases will automatically flow into your immediate disease workflow.

**Vibrio parahaemolyticus** or **Vibrio species** (not further speciated) from stool
- Seasonally (May-October)
  - All Vibrio events will flow into your immediate disease workflow May-October. An epidemiologist will put a note in the event indicating if immediate or routine follow up is warranted.
Cholera (the disease)

- Two serogroups (O1 and O139) of *Vibrio cholerae* bacteria can produce cholera toxin that causes the disease called cholera
  - Cholera disease can cause severe diarrheal illness, and 10% of cases experience life-threatening illness
  - Toxigenic strains of O1 and O139 have caused widespread epidemics
- In the U.S., the occurrence of cholera is very low (0-5 cases per year) and is often due to international travel.
- Confirmation of infection with a toxigenic strain of *V. cholerae* requires that the bacteria be isolated (cultured) and sent to CDC for serogrouping and toxin testing. This takes several weeks and therefore is not known at the time of case investigation.
- It is very unlikely that an individual with no international travel is infected with a toxigenic strain of *V. cholerae* (e.g., has cholera disease).
Immediate disease follow up: *V. cholerae*

- The identification of toxigenic *Vibrio cholerae* O1 and O139, the cause of cholera disease, does not take place in a timely manner.
  - Any *Vibrio* case that may be cholera goes into the immediate disease workflow.

- Labs that will prompt immediate investigation, from any specimen source:

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microorganism: Prld: Pt: xxx: Nom: Culture</td>
<td>Vibrio <em>cholerae</em></td>
</tr>
<tr>
<td>V chol+para+vul DNA: Stl: Ql: Non-probe PCR</td>
<td>Detected</td>
</tr>
<tr>
<td>Vibrio <em>cholerae</em> DNA [Presence] in St by NAA/non-probe detection</td>
<td>Detected</td>
</tr>
</tbody>
</table>

- Variable that moves a *Vibrio* event into immediate disease workflow (Admin QP):

  This variable is auto-populated based on reported labs. After case investigation is completed, this variable may be updated from YES to NO if laboratory testing did not identify toxigenic strains of serogroup O1 or O139.
Non-cholera *Vibrio cholerae*

- **Recommended reading:** [CDC: Non-cholera *Vibrio Cholerae* Infections](https://www.cdc.gov/vibrio/non-cholera-vibrio-cholerae.html)
- *Vibrio cholerae* strains that are not serotypes O1 or O139 and do not produce cholera toxin are called **non-cholera *Vibrio cholerae***
- Non-cholera *Vibrio cholerae* infections:
  - Cause mild gastrointestinal illness or wound infection
  - Can be found in coastal waters off the United States
  - Can cause infection via consumption of raw or undercooked shellfish
  - Are the third most common *Vibrio* serogroup causing infection in the United States

![Confirmed and probable *Vibrio cholerae* cases in Massachusetts by year (year-round)](image)

CIDT = culture independent diagnostic testing (e.g., PCR)

Data current as of June 2, 2022 and are subject to change.
Data source: Bureau of Infectious Disease and Laboratory Sciences
Immediate disease follow up: *Vibrio parahaemolyticus* from stool

- During the summer, all Vibrio events are treated as an immediate disease to ensure prompt follow up of gastrointestinal infection caused by *Vibrio parahaemolyticus*
Why oysters?

Oysters are filter feeders

• Feed on particles (algae) in surrounding seawater by filtering water through gills
• Each oyster filters 50 gallons of water per day
• Oysters can accumulate *Vibrio* as they filter water
  • May result in concentrations 100 times greater than those found in surrounding seawater
Why oysters?

- **Vibrio** levels in oysters are influenced by environmental conditions, harvest methods, and handling after harvest
  - *V. parahaemolyticus* has one of the fastest growth rates of all estuarine bacteria (doubles every hour at 90°F)
  - Time-temperature abuse promotes growth of bacteria
  - The [Massachusetts Vibrio Control Plan](#) outlines harvesting and handling guidance to limit **Vibrio** growth in harvested oysters prior to consumption
Vibrio Prevention

Gastrointestinal Infection
• The following do not kill Vibrio bacteria:
  • Lemon juice
  • Hot sauce
  • Drinking alcohol while eating oysters
• The only way to kill Vibrio in shellfish and seafood is to cook it properly

Wound Infections
• Stay out of coastal water if you have a wound (including from a recent surgery, piercing, or tattoo) or cover the wound with a waterproof bandage
• Protect yourself from incurring wounds in coastal water or when handling shellfish (e.g., wear shoes, protective clothing, gloves)
For *V. parahaemolyticus* or *V. species* detected in stool, May-October

**KEY STEPS IN IMMEDIATE CASE FOLLOW UP**
Case Investigation

• Consists of completion of all MAVEN question packages
• For cases warranting immediate follow up: goal to interview the case within 1 business day of report to public health
• Most— if not all— questions can be answered by the case, not the physician
  • If your routine practice is to contact the ordering provider’s office first, it is recommended you not delay case interview by more than a day if you have difficulties reaching a medical provider
Symptom onset date and time are important for ensuring seafood consumption occurred during incubation period. If a case reports multiple shellfish exposures, a clearly defined incubation period can help determine the most likely cause of illness.
Did the case consume any high-risk animal products during incubation period?
- Yes
- Product type: Oysters
- When purchased: 08/01/2022
- When consumed: 08/01/2022
- Time consumed (i.e., 09:30 AM): 05:00 PM
- Amount consumed: 6
- Was it harvested by the case or a friend of the case? No
- Where purchased/obtained: The Pearl Restaurant
- Type of location where purchased: Oyster bar or restaurant
- Contact Name/Address/Phone #: 50 Ocean Avenue, Vineyard Haven, MA, (508) 123-4567
- Where did the product originate from: Duxbury, Katama, one other case cannot recall
- How was it prepared after purchase?:
  - Raw
  - Fully Cooked
  - Undercooked
  - Unknown
Additional Details

• For *Vibrio parahaemolyticus* detected in a stool specimen, the assigned Epidemiologist of the Day (EOD) at MDPH will put a note in the event outlining additional details needed about any seafood/shellfish consumed.

Really Important

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Johanna Vostok [jvostoktest] · (Generic)</strong> 06/09/2022 10:55 PM</td>
</tr>
<tr>
<td>From May 1 - October 31, 2022, cases of <em>Vibrio parahaemolyticus</em> isolated from stool are treated as immediate events in MAVEN to allow for expedited interview of cases and prompt traceback of seafood. Please interview the case to identify any high-risk food items (i.e. shellfish) consumed prior to symptom onset.</td>
</tr>
</tbody>
</table>
| If seafood/shellfish consumption is reported, please find out:  
1) Was a credit card was used? If so, please obtain the last four digits of the credit card and the last name of the card holder.  
2) Regardless of payment method:  
- Size of the dining party?  
- Other items purchased on the same bill?  
- Date & TIME the seafood/shellfish was consumed? |
| This information is important to accurately trace back the source of the seafood consumed. |
We *really* need those details...

- If case is having difficulty recalling date, time, or location of purchase:
  - Suggest looking at credit card or bank statements, personal calendar
- Restaurant consumption of oysters:
  - Were oysters consumed during happy hour, as an appetizer, or as a meal?
  - Did the menu indicate where the oysters were from or the type of oysters consumed (e.g., Duxbury, Katama, Island Creek)?
  - Sometimes restaurants offer many different types of oysters that a patron can choose from.
- If case consumed multiple types of oysters and cannot recall types:
  - Does case have a credit card receipt for the purchase? Are the types listed on the receipt?
  - Try to help case remember by looking retail establishment or restaurant online to see if types offered are on menu or website.
How case investigation information is used

- Information on seafood consumed and purchase details are relayed to the MDPH Food Protection Program (FPP)
  - Local health inspectors should reach out to the Food Protection Program before conducting an inspection to ensure complete information is obtained. (617) 983-6712
- FPP works with the local health department where a given restaurant or retail store is located to conduct an inspection and obtain shellfish tags (if applicable)
  - Establishments are required to hold shellfish tags for 90 days after sale
  - Tags have detailed information as to where and when the oysters were harvested
- Trace back information is aggregated across cases. If multiple cases trace back to the same harvest area, a voluntary or regulatory closure may occur to prevent additional illnesses.
Those with *Vibrio* from a non-stool source

**INVESTIGATION OF NON-ENTERIC VIBRIO INFECTION**
Vibrio wound and ear infections

- Clinical Question Package
  - Bullae
  - Cellulitis
  - Ear Pain or Discharge
  - Other symptoms (specify)
- Risk Question Package
  - Focus on the question “…was case’s skin exposed to any high-risk materials?” rather than food consumption.
Vibrio wound and ear infections

- Follow up is generally not warranted at body of water that a case reported exposure to prior to infection
  - Vibrio naturally exists in coastal waters
- The public health “action” to prevent additional illnesses is education to the case and/or community rather than closure or treatment of an implicated bathing beach
Summary
Resources

• GI Jane & Joe Program (*GI* = *Gastrointestinal*)
  • MDPH’s enteric case investigation assistance team. May be available to assist LBOHs and MDPH epidemiologists with *Vibrio* and *Cyclo* case interviews.

• Foodborne illness information for healthcare and public health professionals
  • Guide to Surveillance, Reporting, and Control *Disease-specific case investigation guidance*
  • Infectious Disease Reporting and Regulations *Regulations related to reporting requirements and exclusion of food handlers*
  • Disease-specific fact sheets *Includes Cyclospora, Cholera, and Vibrio parahaemolyticus*

• Massachusetts Vibrio Control Plan

• Leveraging Food Purchase History to Solve Foodborne Outbreaks

• CDC’s general webpages on *Vibrio* and *Cyclo*
  • Non-cholera *Vibrio cholerae*
Key Takeaways

**Cyclo**
- **Goal for each case:** Prompt and complete collection of all food history questions for cases reporting no international travel
- **Notification of cases:** All cases go into your immediate workflow year-round; only those reported May 1st – August 31st warrant immediate follow up.
- **New this year:** PDF food history questionnaire has been replaced with a CNHGQ food history question package in MAVEN

**Vibrio**
- **Goal for each case:** Prompt and detailed collection of seafood consumption for cases of *Vibrio parahaemolyticus* detected in stool, May-October
- **Notification of cases:**
  - Events with Vibrio cholerae labs flow into immediate disease workflow year-round
  - May-October: All Vibrio events go into your immediate workflow. An MDPH epidemiologist will put a note in the event indicating if immediate or routine follow up is warranted.
- **To keep in mind:** We have been seeing an increase in reported cases of non-cholera *V. cholerae*. The disease cholera is rare and associated with international travel. A *Vibrio cholerae* lab result does not mean a case has cholera disease.

Local health inspectors should reach out to the Food Protection Program before conducting an inspection associated with Cyclo or Vibrio to ensure complete information is obtained. *(617) 983-6712*

Epidemiologists are always available to answer questions and assist! *(617) 983-6800*
Q&A