

Public Health Reporting and Surveillance of *Vibrio* Infection in Massachusetts

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Overview

- Reporting of *Vibrio*
- *Vibrio* case investigation
- Incidence in the United States & Massachusetts
- *Vibrio parahaemolyticus* and oysters in Massachusetts
- Traceback investigation
- Preventing infection






Reporting of *Vibrio*

Nationally Reportable Condition

- *Vibrio cholera* has been reportable in Massachusetts since 1964
- Vibriosis (non-cholera) became a nationally reportable disease in 2007
 - Reported through the National Notifiable Diseases Surveillance System (NNDSS)



Reporting *Vibrio* in Massachusetts



IN ACCORDANCE WITH M.G.L.c. 111D, s. 6.,
**EVIDENCE OF INFECTION* DUE TO THE FOLLOWING
 INFECTIOUS AGENTS IS REPORTABLE BY ALL
 CLINICAL LABORATORIES**
 TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH


*Evidence of infection includes results from culture methods, specific antigen or genomic tests, histology, other microscopy, and clinically-relevant serologic tests. Infection in Massachusetts' residents, ascertained out-of-state, should also be reported.

REPORT IMMEDIATELY BY PHONE!
 This includes both suspected and confirmed cases.
Telephone: (617) 983-6800 and ask for the Epidemiologist On-Call

● **REPORT WITHIN 24 HOURS ELECTRONICALLY** or Telephone: (617) 983-6801 Confidential Fax: (617) 983-6813

- Anaplasma sp.
- Babesia sp.
- **Bacillus anthracis** ⇄☒
- *Bordetella pertussis*, *B. bronchiseptica*, *B. holmselii* and *B. parapertussis*
- *Borrelia burgdorferi*
- *Borrelia miyamotoi*
- **Brucella sp.** ⇄☒
- *Burkholderia mallei* and *B. pseudomallei* ⇄☒
- *Calymatobacterium (Donovania) granulomatis*
- *Campylobacter* sp.
- *Chlamydia trachomatis*
- *Chlamydiaophila psittaci*
- **Clostridium botulinum** ⇄☒
- *Clostridium difficile*
- *Clostridium perfringens*
- **Clostridium tetani**
- **Corynebacterium diphtheriae**
- *Coxiella burnetii*
- *Cryptococcus gattii*
- *Cryptococcus neoformans*
- *Cryptosporidium* sp.
- *Cyclospora cayentanensis*
- Dengue virus
- **Eastern equine encephalitis virus** ⇄☒
- *Ehrlichia* sp.
- *Entamoeba histolytica*
- *Enterobacteriaceae*, carbapenemase-producing and/or carbapenem-resistant
- Enteroviruses (from CSF)
- *Escherichia coli* O157:H7 or other shiga-toxin producing *E. coli* ⇄☒
- **Francisella tularensis** ⇄☒
- *Giardia* sp.
- **Group A streptococcus, invasive**
- Group B streptococcus (from blood, CSF or other normally sterile body fluid)
- *Haemophilus ducreyi*
- **Haemophilus influenzae** (from blood, CSF or other normally sterile body fluid) ⇄☒
- **Hantavirus**
- **Hemorrhagic fever viruses (including Ebola, Marburg and other filoviruses, arenaviruses, bunyaviruses and flaviviruses)**
- **Hepatitis A virus**
- Hepatitis B virus
- Hepatitis C virus
- Hepatitis D virus
- Hepatitis E virus
- Herpes simplex virus, neonatal infection (onset within 60 days after birth)

- Human immunodeficiency virus (HIV)
- Human prion disease (evidence of)
- Influenza virus (⇄☒ if antiviral resistant)
- **Influenza A virus, novel** ⇄☒
- *Legionella* sp. ⇄☒
- *Leptospira* sp.
- *Listeria* sp. ⇄☒
- Lymphocytic choriomeningitis virus
- **Measles virus** ⇄☒
- Mumps virus ⇄☒
- *Mycobacterium africanum*, *M. bovis*
- *Mycobacterium leprae*
- **Mycobacterium tuberculosis** ⇄☒
- *Neisseria gonorrhoeae* ⇄☒
- *Neisseria gonorrhoeae*, fluoroquinolone or ceftriaxone resistant ⇄☒
- **Neisseria meningitidis** (from blood, CSF or other normally sterile body fluid) ⇄☒
- Noroviruses
- **Novel coronaviruses causing severe disease** ⇄☒
- *Plasmodium* sp. including *P. falciparum*, *P. malariae*, *P. ovale*, and *P. vivax*
- **Poliovirus**
- **Pox viruses, including variola, vaccinia, and other orthopox and parapox viruses**
- **Rabies virus**
- *Rickettsia akari*
- *Rickettsia prowazekii*
- *Rickettsia rickettsii*
- **Rubella virus**
- *Salmonella* sp. (non typhi) ⇄☒
- **Salmonella typhi** ⇄☒
- Shiga-toxin producing organisms ⇄☒
- *Shigella* sp. ⇄☒
- Simian herpes virus
- *Staphylococcus aureus* enterotoxin producing organisms
- *Staphylococcus aureus*, methicillin-resistant (MRSA), invasive
- **Staphylococcus aureus, vancomycin-intermediate (VISA) and vancomycin-resistant (VRSA)** ⇄☒
- *Streptococcus pneumoniae* (from blood, CSF or other normally sterile body fluid) (⇄☒ if patient <18 years)
- *Streptococcus pneumoniae*, invasive, penicillin-resistant
- *Treponema pallidum*
- *Trichinella* sp.
- Varicella-zoster virus
- *Vibrio* sp. ⇄☒
- **West Nile virus** ⇄☒
- Yellow fever virus
- **Yersinia pestis** ⇄☒
- *Yersinia* sp. ⇄☒



Isolates should be submitted to Hinton State Laboratory

MDPH, its authorized agents, and local boards of health have the authority to collect pertinent information as part of epidemiological investigations. M.G.L. c. 111, s. 7J.

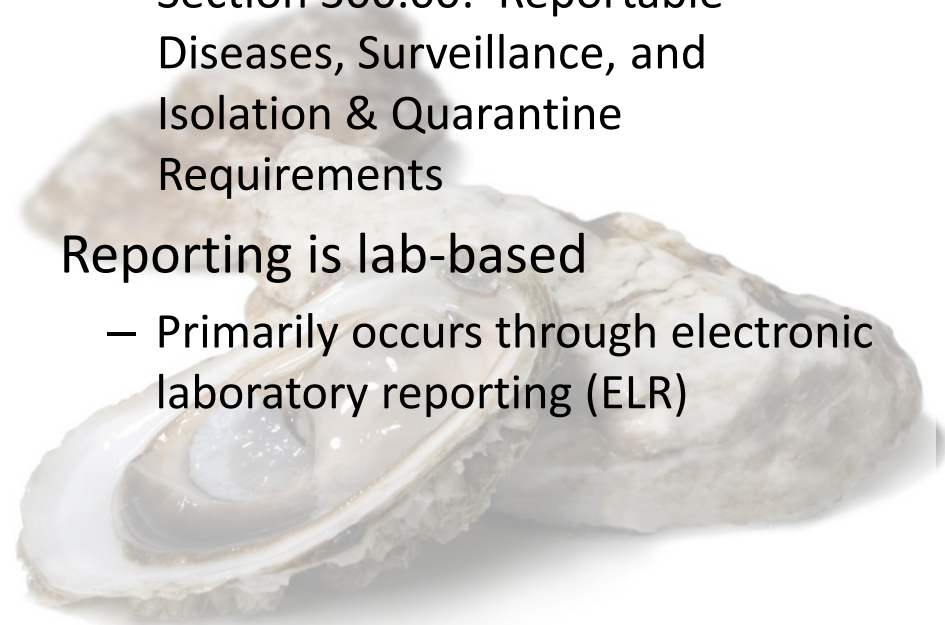
105 CMR 300.000 Reportable Diseases, Surveillance, and Isolation and Quarantine Requirements. Effective December 2013

Healthcare providers and clinical laboratories are required by law to report infectious diseases to public health

– Chapter 105, Code of Massachusetts Regulations (CMR), Section 300.00: Reportable Diseases, Surveillance, and Isolation & Quarantine Requirements

Reporting is lab-based

– Primarily occurs through electronic reporting (ELR)



Iceberg of public health reporting

Illness reported to public health



Laboratory identifies pathogen

Laboratory tests for pathogen

Specimen submitted for testing

Person seeks medical care

FOOD SAFETY

PROGRESS REPORT FOR 2013

| Disease Agents | Percentage change in 2013 compared with 2006–2008 | | 2013 rate per 100,000 Population | 2020 target rate per 100,000 Population | CDC estimates that... |
|------------------------------|---|--|----------------------------------|---|---|
| <i>Campylobacter</i> |  |  13% increase | 13.82 |  | For every <i>Campylobacter</i> case reported, there are 30 cases not diagnosed |
| <i>Escherichia coli</i> O157 |  | No change | 1.15 |  | For every <i>E. coli</i> O157 case reported, there are 26 cases not diagnosed |
| <i>Listeria</i> |  | No change | 0.26 |  | For every <i>Listeria</i> case reported, there are 2 cases not diagnosed |
| <i>Salmonella</i> |  | No change | 15.19 |  | For every <i>Salmonella</i> case reported, there are 29 cases not diagnosed |
| <i>Vibrio</i> |  |  75% increase | 0.51 |  | For every <i>Vibrio parahaemolyticus</i> case reported, there are 142 cases not diagnosed |
| <i>Yersinia</i> |  | No change | 0.36 |  | For every <i>Yersinia</i> case reported, there are 123 cases not diagnosed |



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

April 2014

For more information, see <http://www.cdc.gov/foodnet/>

Preliminary FoodNet 2013 Data

CS246920

A close-up photograph of a person's hand holding a large number of small, translucent, shell-like organisms, likely Vibrio. The organisms are scattered across the palm and fingers. Another hand is visible in the upper right, with a finger pointing towards the organisms. The background is blurred, showing what appears to be a wooden chair and a blue fabric. The text "Vibrio Case Investigation" is overlaid in the center of the image.

***Vibrio* Case Investigation**

Vibrio Case Investigation

- Conducted using the state's case management system, the Massachusetts Virtual Epidemiologic Network (MAVEN)
- Responsibility of case investigation falls on the state's 351 local boards of health



Management of cases in Massachusetts: Massachusetts Virtual Epidemiologic Network (MAVEN)

Event Summary

| Basic Information | Notes <small>(Add/Edit Mine)</small> |
|--|---|
| Event ID: 100024160 | <p>05/04/2015 11:25 AM (Generic) - Johanna Vostok [jvostoktest] Interviewed case this morning. He reported consuming six raw oysters as an appetizer at the Broad Street Restaurant on Saturday. He chose which types of oysters he wanted from the menu: 3 Wellfleet oysters and 3 Duxbury oysters.</p> <p>05/04/2015 10:46 AM (Generic) - Johanna Vostok [jvostoktest] From May 1 - October 31, 2015, Vibrio parahaemolyticus cases are being treated as immediate events in MAVEN to allow for expedited interview of cases and prompt traceback of seafood. Please interview the case as soon as possible to identify any</p> |
| Event: Vibrio sp. | |
| Person: John Snow Birth Date: 03/15/1913 (Male) Phone: (617) 500-0000 | |
| Investigation Status: Open | |
| Linked Events/Contacts: 0 linked event(s)/contact(s) (View) | |
| Attachments: 0 attachment(s) (Add) | |
| Notifications: <div style="font-size: small;"> Event Date: 08/06/2014 Event Status: Suspect Event Type: Symptom Onset Date Age at time of event: 101.39 Age unit: Years </div> | |

[Edit Event Properties](#)

Event Information

| Event Data | Lab Results | Concerns | Persons | Tasks | Event Properties | Event History Trail |
|------------|-------------|----------|---------|-------|------------------|---------------------|
|------------|-------------|----------|---------|-------|------------------|---------------------|

| Question Packages | | |
|--|-----------|-------------|
| QUESTION PACKAGE | PERSON | LAST UPDATE |
| 1. Administrative | Event | 10/07/2014 |
| 2. Demographic | John Snow | 10/08/2014 |
| 3. Clinical | John Snow | 10/08/2014 |
| 4. Vaccine and IG Information | John Snow | 10/07/2014 |
| 5. Risk/Exposure/Control & Prevention | John Snow | 05/04/2015 |
| 6. Epi-linked and Outbreak Information | John Snow | 10/07/2014 |
| 7. Traceback | John Snow | 11/10/2014 |

[View Question Package](#)

MAVEN Laboratory Information

| | | | | | | |
|------------|-------------|----------|---------|-------|------------------|---------------------|
| Event Data | Lab Results | Concerns | Persons | Tasks | Event Properties | Event History Trail |
|------------|-------------|----------|---------|-------|------------------|---------------------|

| Labs | | | | | | | |
|---------|---------------|-----------------|-----------------|---|----------------------------|--------------------------------------|-----------------------------------|
| Lab No. | Specimen Date | Specimen Number | Specimen Source | Test | Result | Lab | Ordering Facility |
| ▶ 1 | 07/16/2014 | 20140001 | Stool | Microorganism: Prld: Pt: xxx: Nom: Culture | Vibrio parahaemolyticus | South Shore Hospital Inc - ... | South Shore Hospital Inc - ... |
| 2 | 07/16/2014 | 14EN0001 | Stool | Microorganism: Prld: Pt: xxx: Nom: Culture | Vibrio parahaemolyticus | William A Hinton State Labo... | South Shore Hospital Inc - ... |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | |
|----------------|-------------------|-------------------|
| Add Lab Result | Update Lab Result | Delete Lab Result |
|----------------|-------------------|-------------------|


MAVEN Clinical Question Package

| | | | |
|--|--|----------------------------------|-----------------------------------|
| Diagnosis date: | <input type="text" value="07/17/2014"/> | | |
| Did case have symptoms? | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Symptom onset date: | <input type="text" value="07/14/2014"/> | | |
| Symptom onset time: | <input type="text" value="04:00"/> | AM / PM | <input type="text" value="PM"/> |
| Duration of symptoms: | <input type="text" value="4"/> | unit | <input type="text" value="Days"/> |
| Abdominal cramps: | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Bloody Stool: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Bullae: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Cellulitis: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Diarrhea: | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Max # of stools in 24 hours: | <input type="text" value="12"/> | | |
| Fever: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Headache: | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Muscle aches/pains (myalgia): | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Nausea: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Shock: | <input type="text" value="No"/> | <input type="button" value="v"/> | |
| Vomiting: | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Other symptoms (specify): | <input type="text"/> | | |
| Does patient have underlying illness? | <input type="text" value="Yes"/> | <input type="button" value="v"/> | |
| Please specify: <input type="checkbox"/> | <input type="text" value="Heart disease"/> | <input type="button" value="v"/> | |

MAVEN Risk Question Package

| | | |
|---|--|-------------------------|
| Did case travel out-of-state or out-of-country during incubation period? <input type="checkbox"/> | No <input type="button" value="v"/> | Add New |
| Have close contacts had similar illness during incubation period? | No <input type="button" value="v"/> | |
| Did the case consume any high-risk animal products during incubation period? | Yes <input type="button" value="v"/> | |
| Product type: <input type="checkbox"/> | Oysters <input type="button" value="v"/> | Add New |
| When purchased: | 07/13/2015 <input type="button" value="calendar"/> | |
| When consumed: | 07/13/2015 <input type="button" value="calendar"/> | |
| 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 <input type="button" value="v"/> | |
| Where purchased/obtained: | Broad Street Restaurant | |
| Type of location where purchased: | Oyster bar or restaurant <input type="button" value="v"/> | |
| Contact Name/Address/Phone # for purchase location: | Broad Street Restaurant 10 Elm Street Boston, MA (617) 555-0000 | |
| Where did the product originate from: | 3 Welfleet oysters, 3 Duxbury oysters | |
| How was it prepared after purchase? | Raw <input type="button" value="v"/> | |

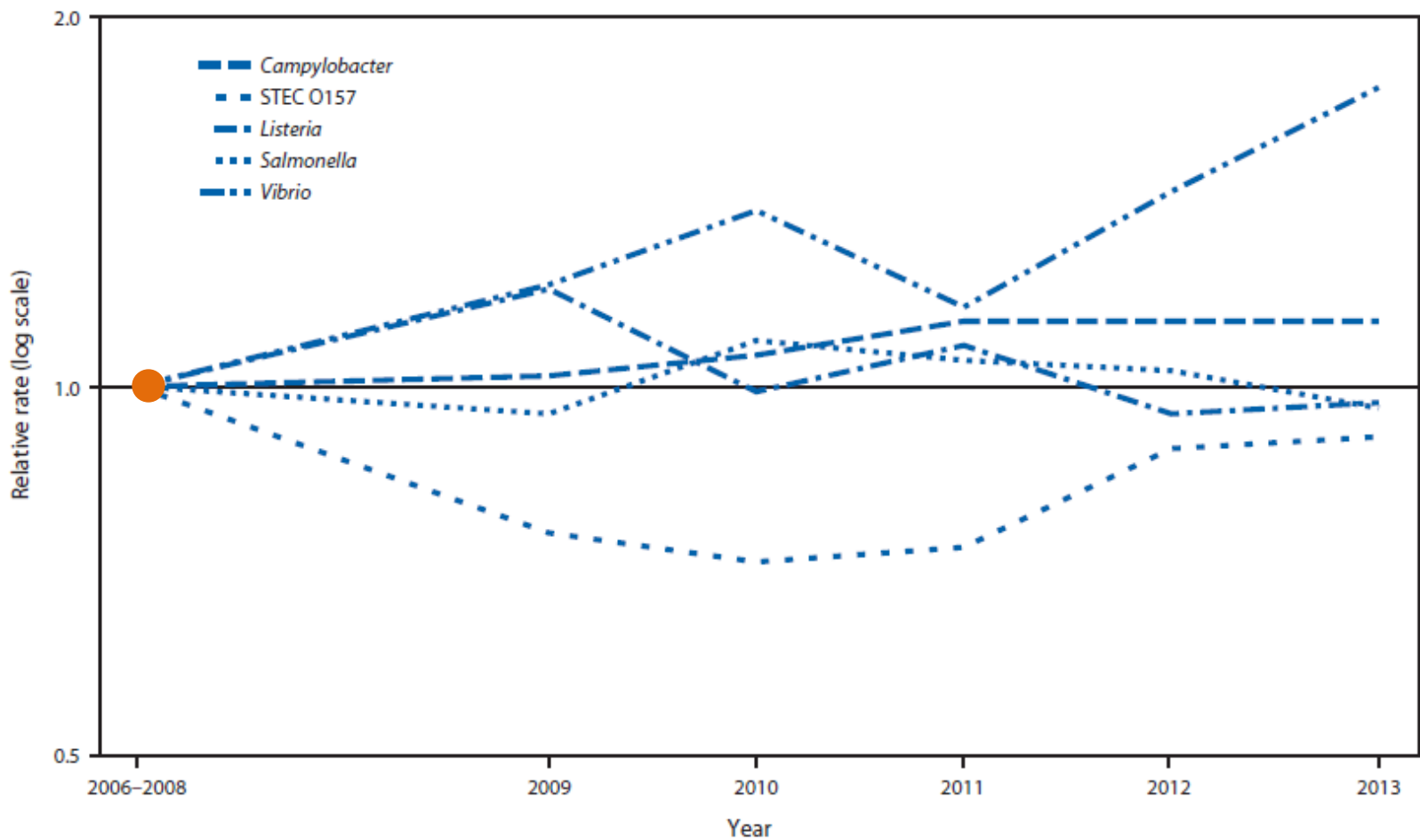
MAVEN Risk Question Package

| | |
|--|---|
| High-risk materials include bodies of water, drippings from raw or live seafood, or other marine or freshwater life. | |
| During incubation period, was case's skin exposed to any high-risk materials? | Yes ▾ |
| Exposure type: ▾ | Body of water ▾ Add New |
| Specify: | Boston Harbor |
| Date: | 07/12/2015  |
| Time | 3:00 |
| Activity at time of exposure: | <input type="checkbox"/> Bitten/stung <input checked="" type="checkbox"/> Boating/skiing/surfing <input type="checkbox"/> Construction/repairs <input type="checkbox"/> Handling/cleaning seafood <input checked="" type="checkbox"/> Swimming/diving/wading <input type="checkbox"/> Walking on beach/shore/fell on rocks <input type="checkbox"/> Other |
| Water type: | Brackish ▾ |
| Did the patient sustain a wound or have a pre-existing wound? | No ▾ |

A photograph of a small boat on the water with four people on board. A large flock of birds is flying overhead. The text 'Incidence in the United States & Massachusetts' is overlaid on the image.

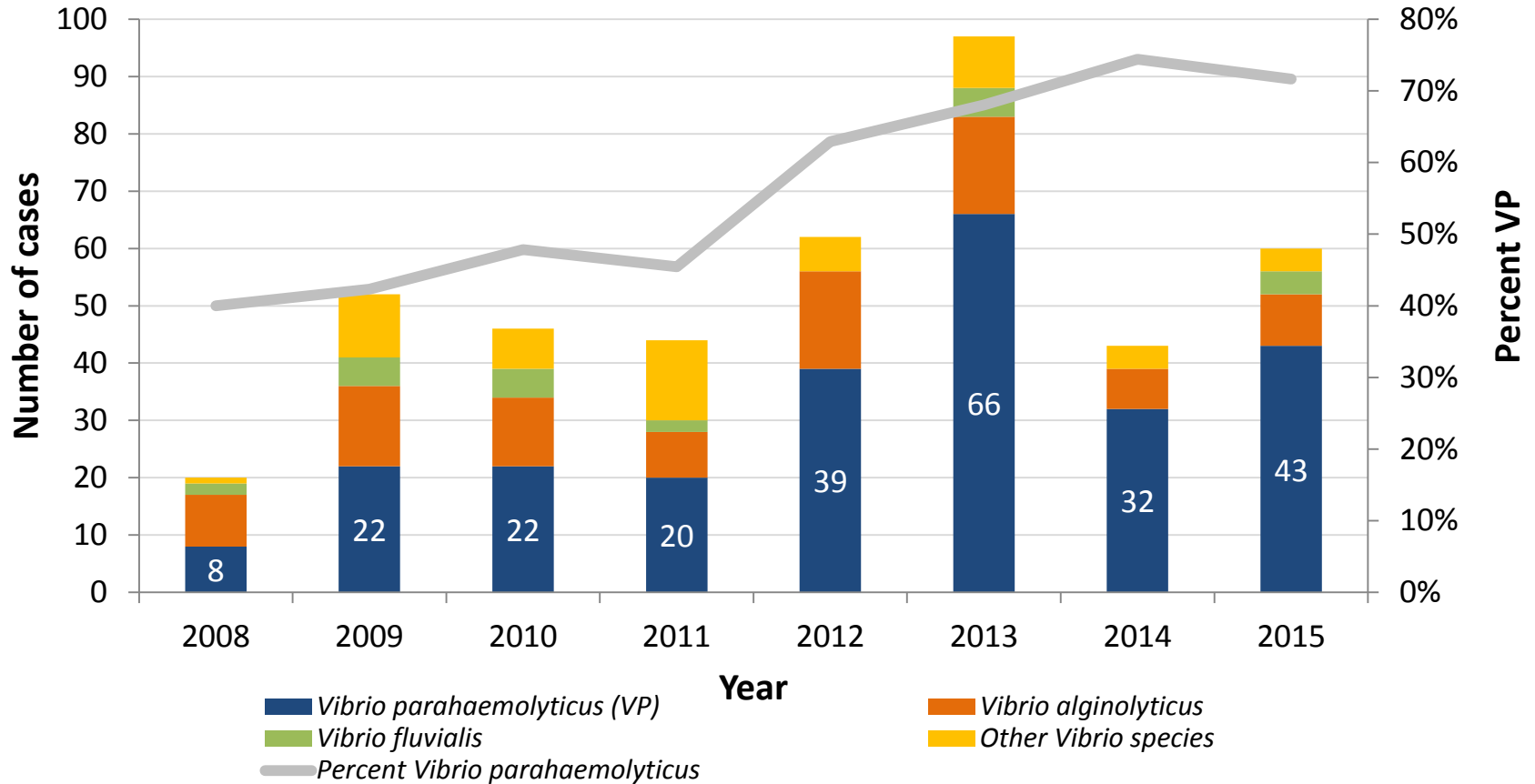
Incidence in the United States & Massachusetts

Relative rates of culture-confirmed infections compared with 2006–2008 rates, by year — FoodNet, United States, 2006–2013



Confirmed *Vibrio* cases in Massachusetts by species

May 1 – October 31



“Other” *Vibrio* species

2008-2015

- Includes *Vibrio cholerae*, *Vibrio vulnificus*
 - 0-3 cases of *Vibrio vulnificus* reported annually
 - 52% associated with out-of-state travel
 - 0-8 cases of *Vibrio cholerae* reported annually
 - 50% associated with out-of-state travel



A wide-angle photograph of an oyster farming operation in a bay. Numerous rectangular wooden racks are suspended in the water, each covered with a grid of oyster shells. The racks are arranged in rows, extending from the foreground into the distance. The water is calm, and the sky is overcast. The overall scene depicts a large-scale aquaculture facility.

***Vibrio parahaemolyticus* and
Oysters in Massachusetts**

Vibrio parahaemolyticus

- Naturally inhabits coastal waters of the US and Canada
- Present in higher concentrations during the summer
- Normally present in many types of raw seafood
 - Not all strains are pathogenic
 - Gastrointestinal illness is commonly associated with raw oyster consumption



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?

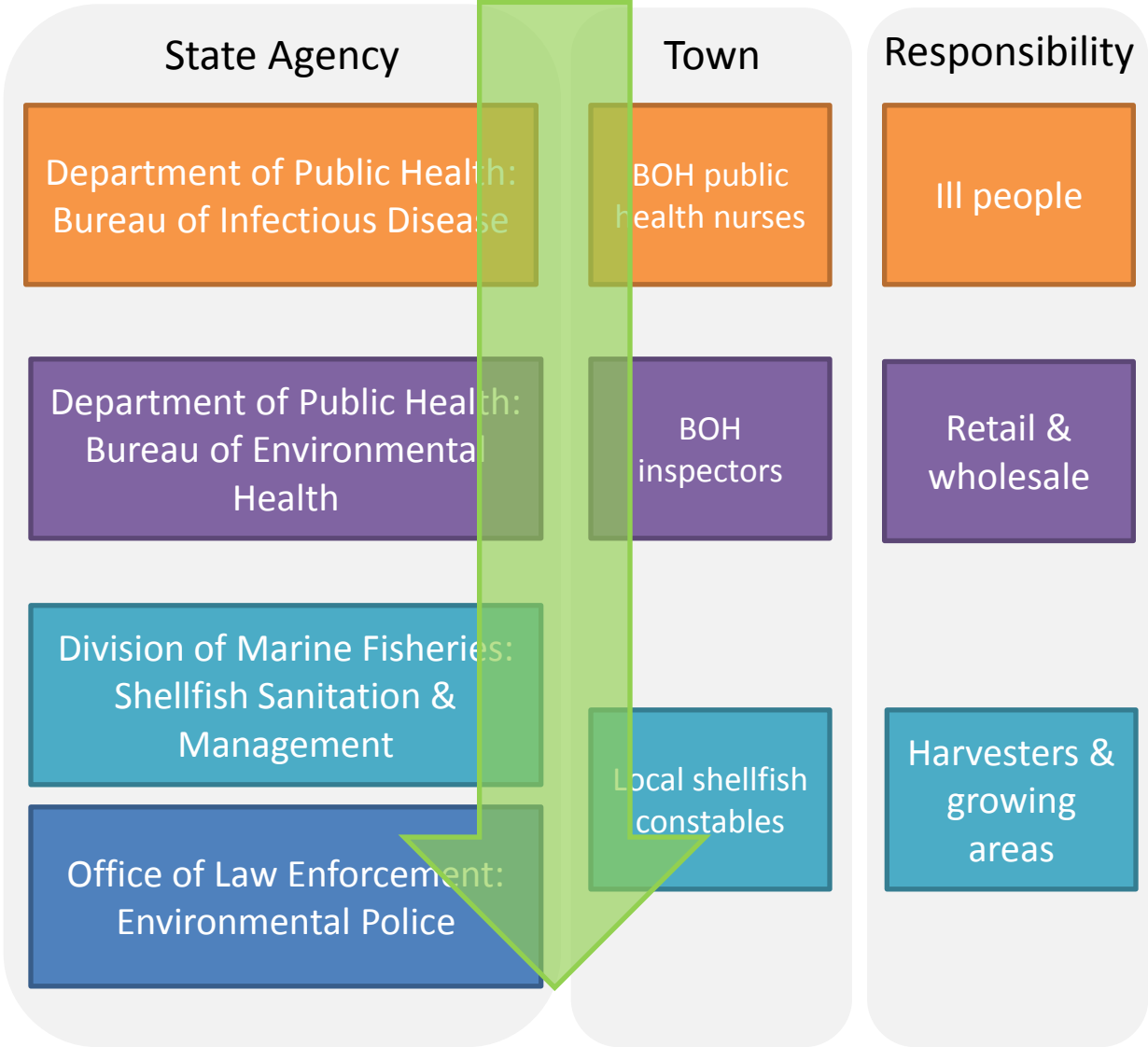
- *Vibrio parahaemolyticus* levels in oysters are influenced by environmental conditions, harvest methods, and handling after harvest
 - Time-temperature abuse promotes growth of bacteria
- Commonly consumed raw
 - No opportunity for *Vibrio* to be killed

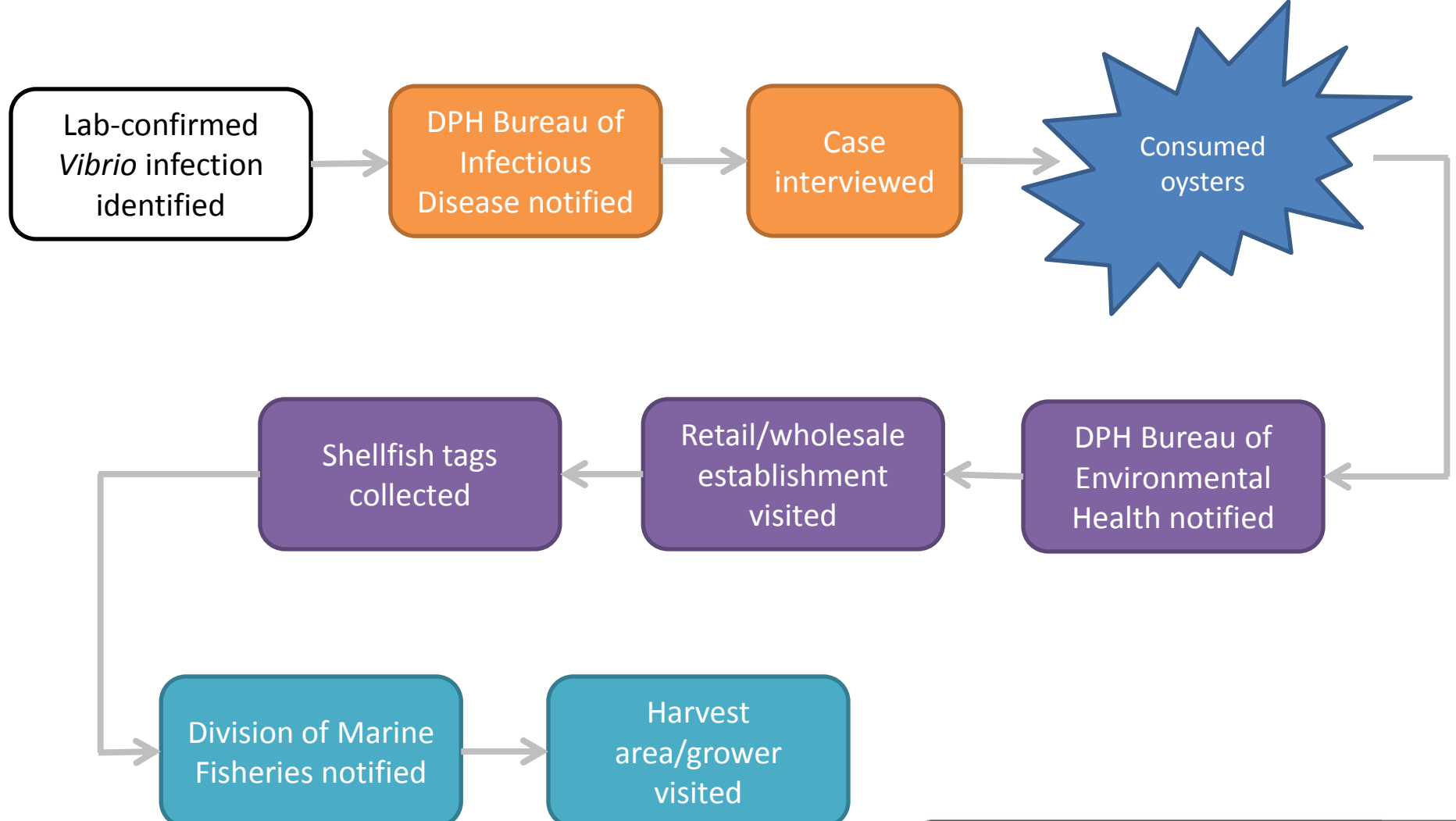




***Vibrio* Traceback Investigation**

Information





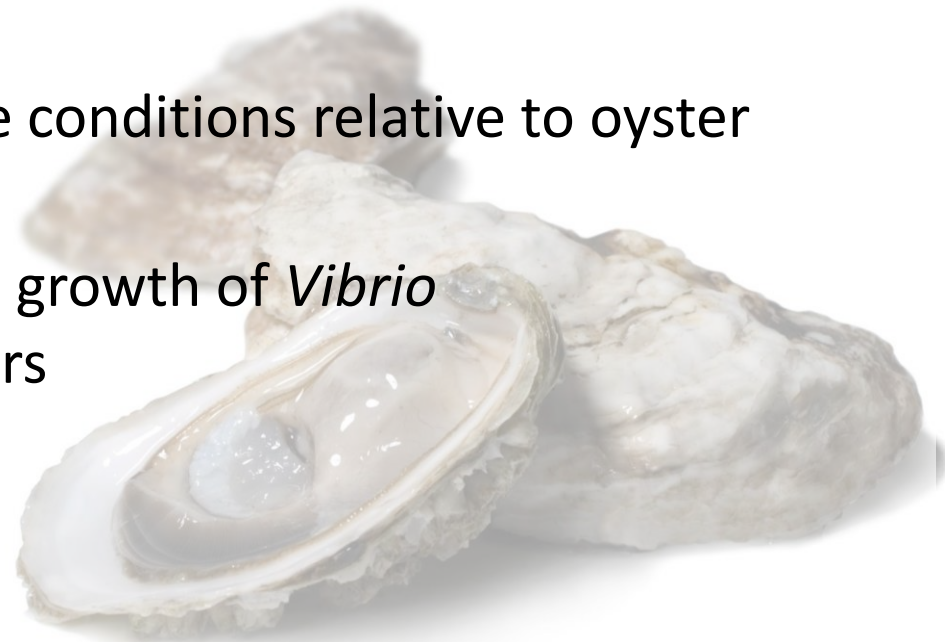
| | | |
|--|---|-----------------|
| | DEALER NAME _____ | CERT. NO. _____ |
| | Dealer Address _____ | |
| | City, State Zip Code _____ | |
| | ORIGINAL SHIPPER'S CERT. NO. IF OTHER THAN ABOVE: _____ | |
| | HARVEST DATE: _____ | |
| | HARVEST LOCATION: _____ | |
| TYPE OF SHELLFISH: _____ | | |
| QUANTITY OF SHELLFISH: _____ | | |
| THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY AND THEREAFTER KEPT ON FILE FOR 90 DAYS. | | |
| RETAILERS: INFORM YOUR CUSTOMERS This tag is required to be attached until the container is empty and thereafter kept on file for 90 days. This tag is required to be attached until the container is empty and thereafter kept on file for 90 days. This tag is required to be attached until the container is empty and thereafter kept on file for 90 days. This tag is required to be attached until the container is empty and thereafter kept on file for 90 days. This tag is required to be attached until the container is empty and thereafter kept on file for 90 days. | | |



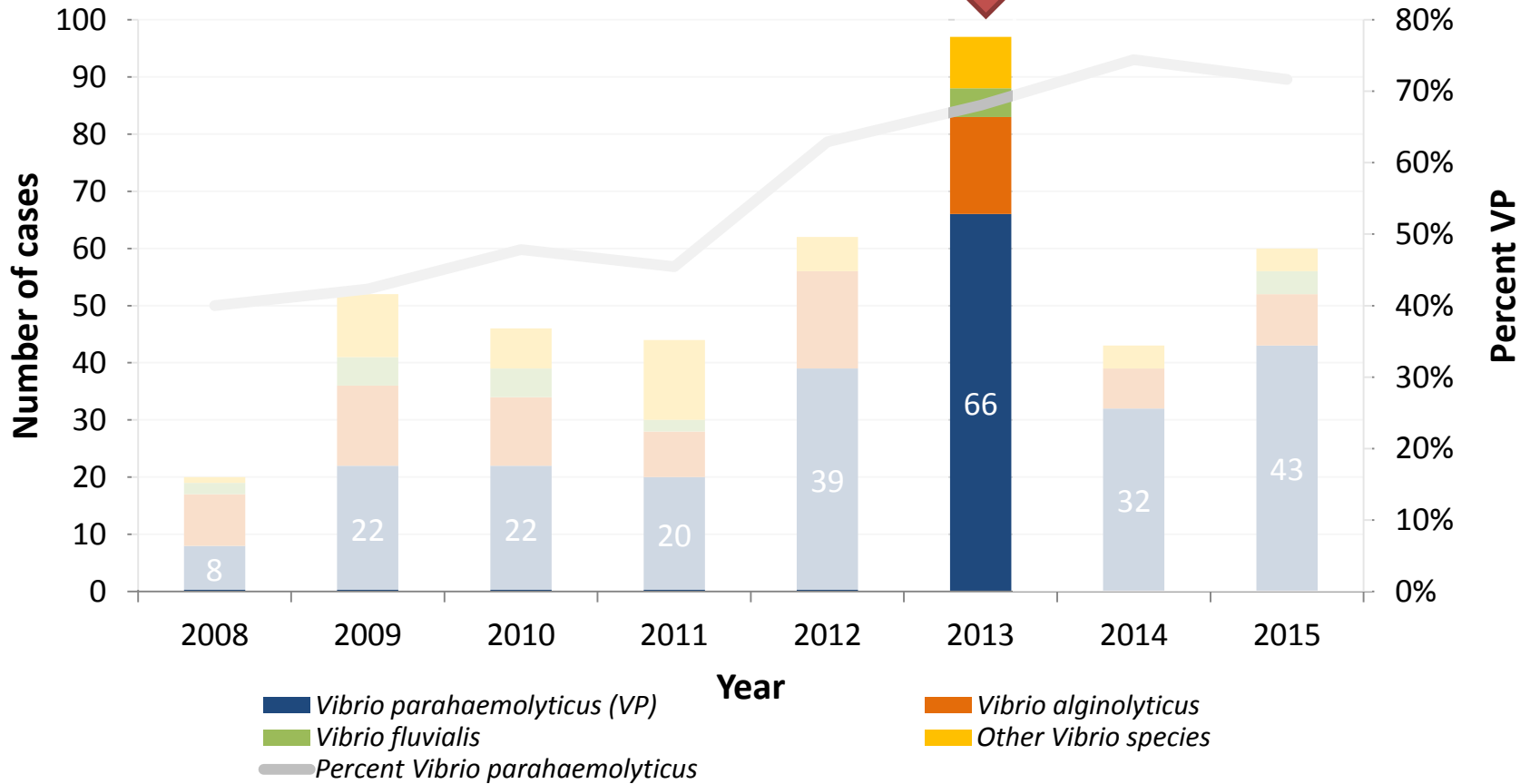
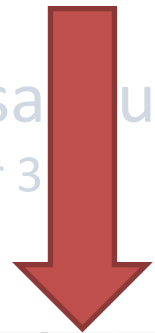
Preventing Infection

Preventing Infection: *Vibrio parahaemolyticus* Control Plan

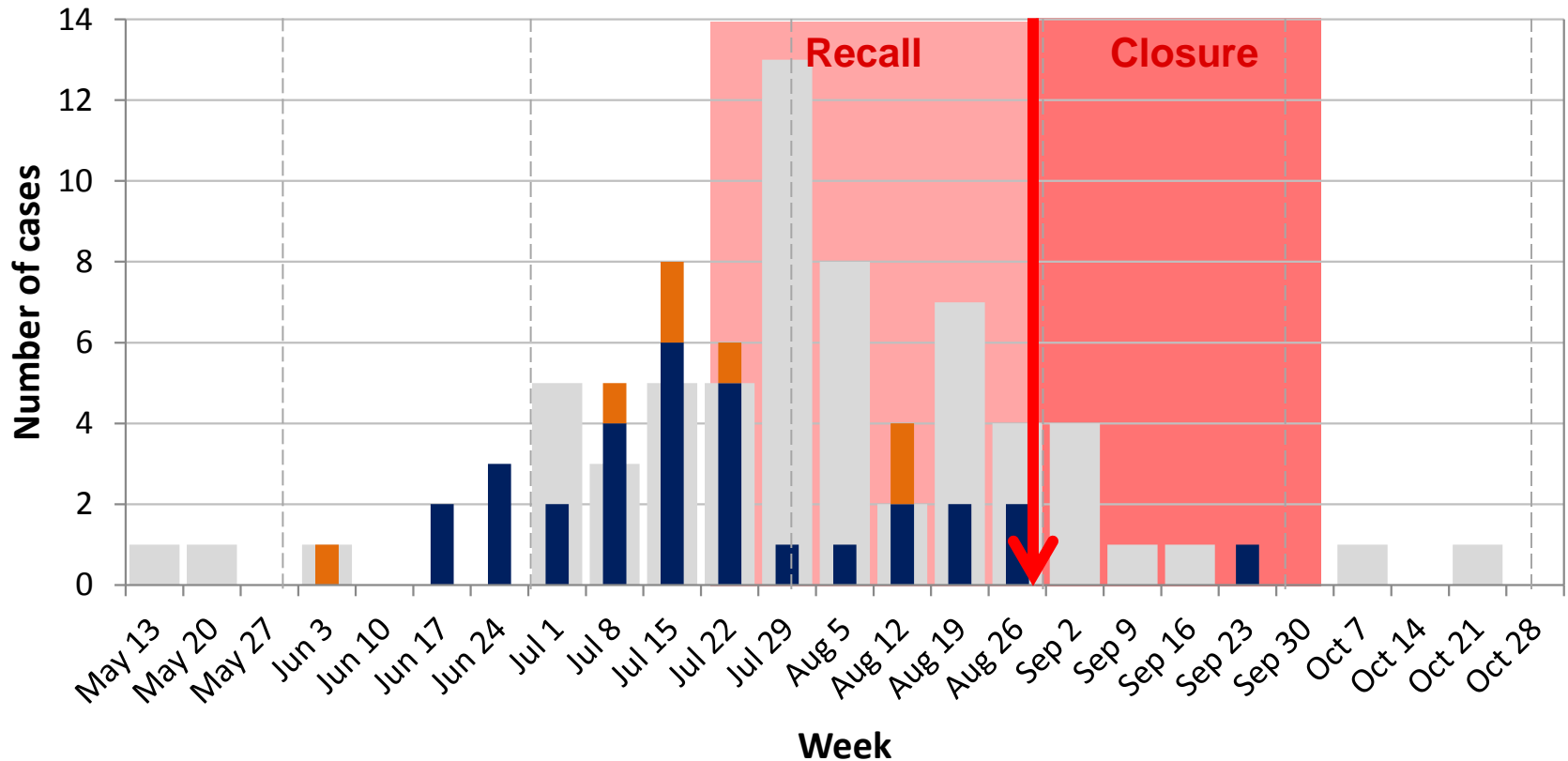
- First implemented in 2012 due to warming air and water temperatures
- Developed by the Division of Marine Fisheries and DPH Bureau of Environmental Health
- Aims to:
 - Manage time-temperature conditions relative to oyster harvest and handling
 - Prevent/limit post-harvest growth of *Vibrio parahaemolyticus* in oysters



Confirmed *Vibrio* cases in Massachusetts by species, May 1 – October 3



Confirmed *Vibrio parahaemolyticus* cases in Massachusetts, 2013: week reported to MDPH vs. week of seafood consumption



5 cases with oyster exposure and no consumption date; 18 with no or unknown seafood consumption.

Data current as of May 2015
Data source: Bureau of Infectious Disease.

Massachusetts Closes Waters to Oyster Harvesting After Vibrio Outbreak

MA Shuts Down Several Oyster Beds for Vibrio; Recall Ordered

Oyster bed closures leave aquaculturists reeling



"This marks the first time the state has closed

specific oyster beds the

INFECTIOUS DISEASE

Bacterial outbreak roils Mass. oyster industry

Published September 16, 2013 · Associated Press



10



13



Oyster cultivator Don Merry holds his oyster seed before spreading the seed into the waters of Duxbury Bay in Duxbury, Mass. Oyster harvesting on Massachusetts' South Shore has been closed since Aug. 30, 2013 due to bacterial contamination from the *Vibrio parahaemolyticus* bacteria and may remain closed until mid-October. (AP Photo/Stephan Savola) (AP2013)

BOSTON – A mystery of sorts threatens to stunt Massachusetts' small but growing oyster industry after illnesses linked to bacterial contamination forced the state to shut down beds for the first time ever.

The culprit is the *Vibrio parahaemolyticus* bacterium, which has occurred in state waters since the 1960s. Theories abound about the recent increase in illnesses linked to Massachusetts - but those are only theories.

Health Video



Mott
work
expe



Study: Measles vaccine could protect against other illnesses



Killing cancer one gene at a time



Study: Vitamin D supplements might help some lose weight

"...this year's closures affect about 14 percent of Massachusetts growers..."

Preventing Infection: Improved Communication

- Changes made after 2013 season:
 - Vibrio Working Group established
 - Improved training and guidance for local public health nurses
 - Improved management of information using MAVEN



Vibrio Working Group

- First meeting April 15, 2014
- Discuss new cases under investigation
- Aggregate traceback information across cases
 - Discuss possible closures of harvest areas
- Work to improve *Vibrio* investigation in Massachusetts



Vibrio parahaemolyticus Infection

What is *Vibrio parahaemolyticus*?

V. parahaemolyticus is a germ (a bacterium) in the same family as the bacteria that cause cholera. It naturally lives in coastal waters in the United States and causes an infection of the bowel.

What are the symptoms of *V. parahaemolyticus* infection?

A person may have watery diarrhea, often with stomach cramps, nausea, vomiting, and chills. Symptoms usually appear within 24 hours of swallowing the germs. Illness usually lasts 3-5 days. People with weakened immune systems or chronic liver disease are at a higher risk of becoming ill.

How does infection with *V. parahaemolyticus* occur?

V. parahaemolyticus must be swallowed to cause illness in most cases. This usually happens by eating raw food or drinking water that is contaminated with the germs. Most people become infected by eating undercooked or undercooked shellfish, particularly oysters. Illness can also occur by eating undercooked shrimp. Less commonly, this germ can cause an infection in the skin when an open wound is exposed to warm seawater. It is not spread from person to person.

How is *V. parahaemolyticus* infection diagnosed and treated?

Your doctor, nurse, or health center must send a stool, wound, or blood sample to a laboratory. In addition to drinking plenty of liquids to replace fluids lost through diarrhea, treatment is not necessary for most cases of *V. parahaemolyticus* infection. There is no evidence that antibiotics decrease the length of the illness. People usually recover on their own in two to five days.

How can *V. parahaemolyticus* infection be prevented?

Most infections caused by *V. parahaemolyticus* in the United States can be prevented by properly cooking seafood. When an outbreak is traced back to an oyster or other shellfish bed, health officials may close the bed until the salt and temperature conditions are less favorable for this germ. People should not consume oysters self-harvested from closed or contaminated oyster beds. Wound infections can be prevented by avoiding exposure of open wounds to warm seawater.

The following advice can reduce the risk of foodborne illness from shellfish:

- When ordering shellfish in restaurants, ask that they be fully cooked unless they have been treated with a method to reduce *Vibrio* (such as pressure treatment)
- Keep raw foods from touching cooked foods and surfaces used for cooking and eating.

- Preparing oysters and other shellfish in the shell:
 - **Before** cooking: Discard any with open shells
 - **During** cooking: Boil for 3-5 minutes after shells open
 - **After** cooking: Discard any with shells that did not open
- Preparing shucked oysters:
 - **Boil** or simmer for at least 3 minutes or until the edges curl
 - **Fry** at 375 degrees Fahrenheit for at least 3 minutes
 - **Broil** 3 inches from heat for 3 minutes
 - **Bake** at 450 degrees Fahrenheit for 10 minutes

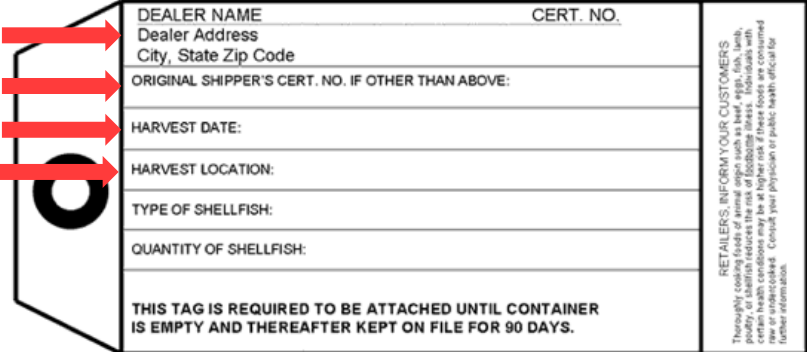
Are there any health regulations for people with *V. parahaemolyticus*?

Yes. Health care providers are required by law to report cases of illness to the local board of health.

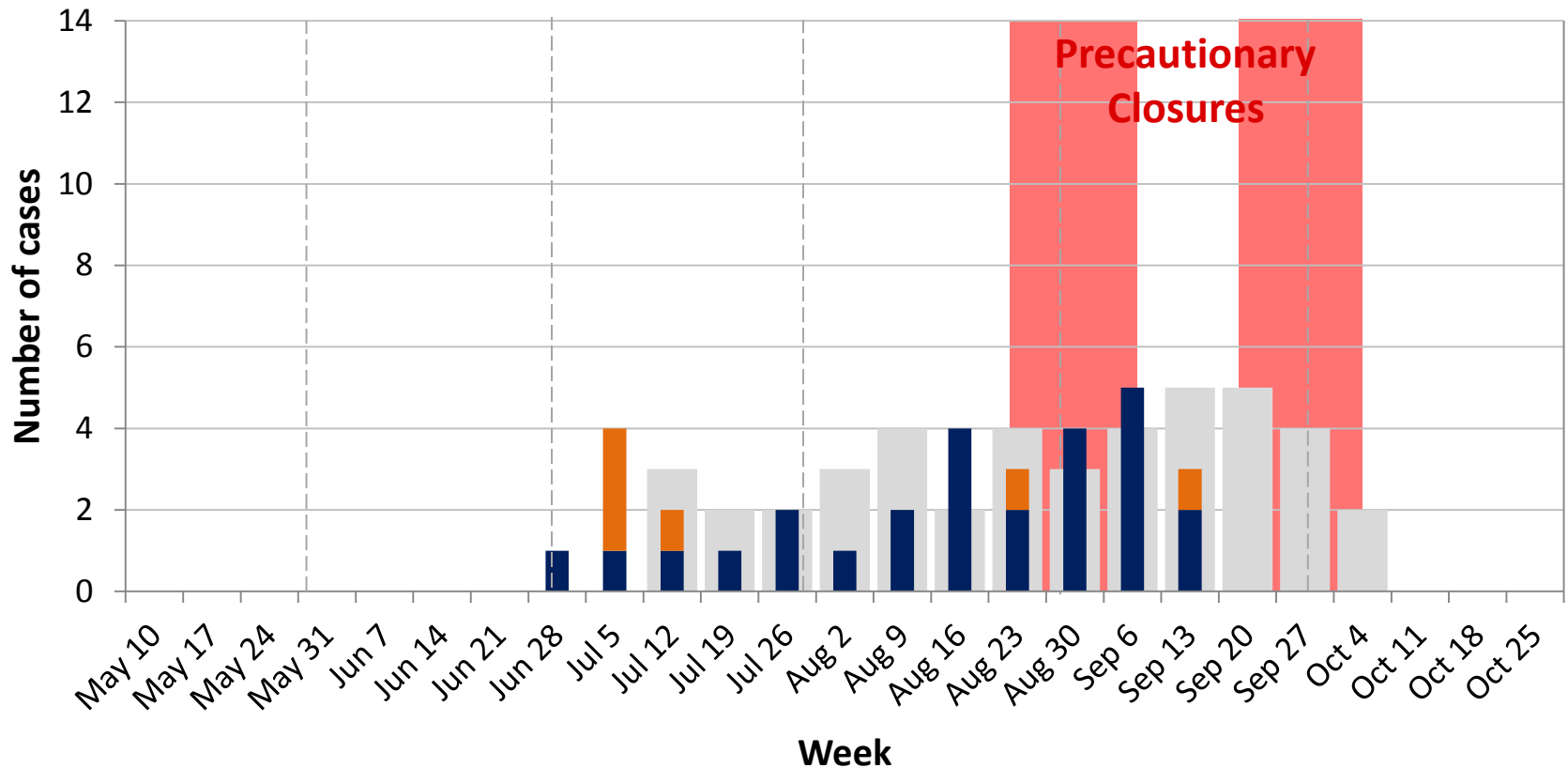
In order to protect the public, workers at food-related businesses diagnosed with *V. parahaemolyticus* infection are advised not to return to work until their diarrhea is gone. Food-related businesses include restaurants, sandwich shops, hospital kitchens, supermarkets, dairy or food-processing plants. This also includes workers in schools, residential programs, day-care and health care facilities who feed, give mouth care or give medicine to clients.



MAVEN Traceback Question Package

| | | | |
|---|---|---|---|
| Distributor (name, address, phone): <input type="checkbox"/> | Oyster Lovers LLC, 100 Main St, Wellfleet MA 508-222-0000 | | |
| Distributor certification number: | 165 962 | | |
| Was an inspection completed for this distributor? | Yes <input type="button" value="v"/> | | |
| Distributor inspection date: | 05/06/2015 <input type="button" value="c"/> | | |
| Original Shippers Certification Number: | 123 456 | | |
| Implicated food item: | Oysters <input type="button" value="v"/> | | |
| How was product distributed to retail outlet? | Shellstock <input type="button" value="v"/> | | |
| Name of retail establishment: | Broad Street Restaurant | | |
| Was an inspection completed for this retail establishment? | Yes <input type="button" value="v"/> | | |
| Establishment inspection date: | 05/06/2015 <input type="button" value="c"/> | | |
| Date retail outlet received product: | 05/01/2015 <input type="button" value="c"/> | | |
| MA harvest location: | Cape Cod Bay, CCB11 - Wellfleet Harbor | | |
| Designated Shellfish Growing Areas | | | |
| Was seafood imported from another country? | No <input type="button" value="v"/> | | |
| Are shipping tags available from the suspect lot? | Yes <input type="button" value="v"/> | | |
| Harvest Date: | 04/30/2015 <input type="button" value="c"/> | | |
| Are physical characteristics of the harvest area available? | Yes <input type="button" value="v"/> | Scale: | F <input type="button" value="v"/> |
| Maximum ambient temperature: | 90 | Date | 07/11/2014 <input type="button" value="c"/> |
| Surface water temperature: | 60 |  | |
| Salinity (ppt): | 35 | | |
| Total rainfall (inches in previous 5 days): | 1.2 | | |
| Fecal coliform count: | 5 | | |
| Was there evidence of improper storage, cross-contamination, or holding temperature at any point? | <input type="button" value="v"/> | | |
| | | DEALER NAME _____ CERT. NO. _____ Dealer Address _____ City, State Zip Code _____ ORIGINAL SHIPPER'S CERT. NO. IF OTHER THAN ABOVE: _____ HARVEST DATE: _____ HARVEST LOCATION: _____ TYPE OF SHELLFISH: _____ QUANTITY OF SHELLFISH: _____ THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY AND THEREAFTER KEPT ON FILE FOR 90 DAYS. | |
| | | <small>RETAILERS, INFORM YOUR CUSTOMERS Thoroughly cooking fresh of animal origin such as beef, eggs, fish, lamb, poultry, or salmon reduces the risk of foodborne illness. Individuals with food allergies should read labels carefully and avoid products containing new or undisclosed allergens. Consult your physician or public health official for further information.</small> | |

Confirmed *Vibrio parahaemolyticus* cases in Massachusetts, 2015: week reported to MDPH vs. week of seafood consumption



1 VP case with seafood exposure and no consumption date; 8 with no or unknown seafood consumption;

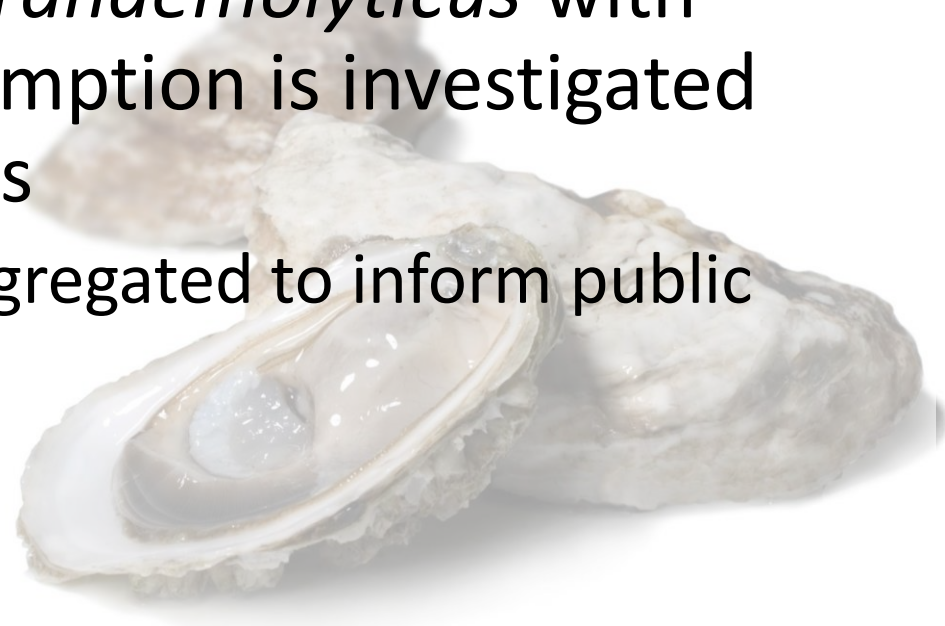
Data current as of October 5, 2015
Data source: Bureau of Infectious Disease.



Summary

In Summary...

- *Vibrio* case investigation begins with report of a positive clinical laboratory result
- Approximately 70% of *Vibrio* cases reported in Massachusetts are *Vibrio parahaemolyticus*
- Each case of *Vibrio parahaemolyticus* with reported oyster consumption is investigated by three state agencies
 - Case information is aggregated to inform public health action



Thank you

Questions?

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