

VIBRIO POLICIES & DISEASE INVESTIGATION

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edible JERSEY

Member of Edible Communities

Number 19

Celebrating Local Foods of the Garden State, Season by Season

Winter 2011/12

Considering the **OYSTER**



Edible Communities
2011 James Beard Foundation
Publication of the Year

**JIM WEAVER ▸ GARLIC ▸ KITCHEN FENG SHUI
COOKING SCHOOL GUIDE ▸ TOMS RIVER**

Vibrios

- Naturally occurring bacteria – not associated with sewage or pollution
- *V. vulnificus*
- *V. parahaemolyticus*

Related to:

- *V. cholera* (sewage related, large outbreaks where sewage treatment is inadequate)

Vibrio vulnificus

- Illness very rare – 90 cases in US annually from all causes.
- Few infections outside Gulf, but still a potential problem even in New England.
- Only serious for immune compromised individuals (liver failure, diabetes, steroids).
- Half of all illnesses from wound infections.
- **Half of all illnesses are fatal .**
- ~12/yr deaths associated with shellfish.



What about *Vibrio parahaemolyticus*?

- Sicknesses several hundred people each year nationwide
- More common in higher salinity water when temps are greater than 75 degrees F
- Illnesses more severe in immune compromised individuals
- No mortalities attributed to Vp ; typically

Vibrio parahaemolyticus

- Infectious dose is several thousand cells
- There are benign and infectious strains
- East Coast is different from West Coast
 - Our V.p. tends to be less than 10% virulent and correlation with temperature very clear.
 - West Coast V.p. has been a problem even in low temperature waters (eg. Alaska)
 - and as much as 50% of Vp in a West Coast sample may test as virulent

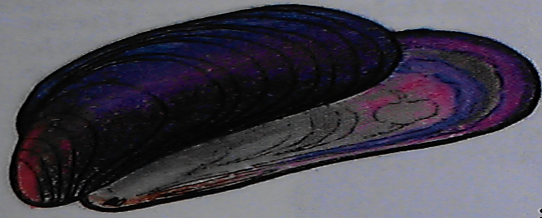




periostracum

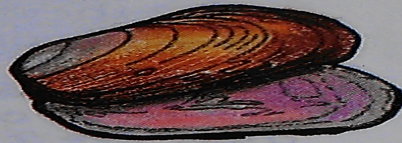


NORTHERN HORSE MUSSEL



BLUE MUSSEL

SAY'S CHESTNUT MUSSEL



umbo
("beak")



CALIFORNIA MUSSEL

Vp Illness History

- Maryland, 1971 - Crabs
- West Coast, 1997 - Oysters (209 persons ill)
- Texas, 1998 - Oysters (416 persons ill)
- New York, 1998 - Oysters (23 persons ill)
- Virginia, 2001 - Oysters (1 person ill)
- Louisiana, 2001 - Oysters (2 persons ill)
- New Jersey, 2001 - Oysters (16 persons ill)
- New Jersey, 2002 - Oysters (2 persons ill)
- Washington State, 2006 - Oysters (177 persons ill)



Vibrio vulnificus Control Plan

- For states that had reported two or more Vv illnesses related to shellfish – ever...
- Must instate plans to reduce illness by 40% over 4 year and 60% over 6 years
 - Education of at-risk population
 - Time-to-temperature
 - Closures, shucking, PHP

V.p. Control Plans

- In states that have had 2 or more illnesses in a 3 year period
- Or one outbreak in the past 5 years
- Or avg. water temps exceed 81 degrees (NJ and South)
- Will instate control measures:
 - PHP, closures, label “for cooking only,” limit time to refrigeration
 - Or other measures based on studies

2008 Vp Outbreak

- 6 cases –reported over a short duration of time within 7-10 days
- Common NJ certified Dealer- oysters
- Harvest dates – particular 2-3 days implicated
- Product handled by a in state dealer to 2 out of state certified dealers before arriving a retail establishments
- Harvest suspended
- NJDOH Firm related recall issued
- Verification of recall and or destruction
- Lessons learned
- SSRSCC meeting held to review outbreak actions
- Vp Subcommittee formed with Del. Bay Shellfisheries Council



Shading on boat

- Required as soon as first oysters are placed on boat
- Must be maintained through Vp Season- June 1-September 5
- Must extend high enough and laterally to the sides to allow air flow and to maintain shading of product; other methods-spraying
- On water enforcement by NJDEP Fish and Wildlife and/NJDHSS



Smaller size harvest boats

Retrofitted-product shaded from the first harvest



Vibrio parahaemolyticus Contingency Plan

Summer 2009

Revised March, 2009

New Jersey Department of Environmental Protection

Bureau of Marine Water Monitoring

and

New Jersey Department of Health and Senior Services

Shellfish Program

OYSTER TEMPERATURE MONITORING AND OBSERVATION OF VERIFICATION

- On site weekly evaluation and inspection by NJDOH staff
- Refrigeration evaluated for:
 - Size-Must be capable of holding day's maximum harvest
 - Capacity- Evaluation of tonnage, insulation, blowers
 - Temperature -Use of continuous recording chart thermometers with alarm; use of laser thermometers
 - DEADLINE- Start of Vp season, if not capable, will not be able to operate

Establishment	Date	Money Isl.	On Arrival	T # Blowers	T Cooler	T Product	RT	DR	Notes
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Ocean View Harvesting

	06/22/2009								not operating
	06/29/2009								not operating
	07/06/2009								not in operation
	07/14/2009	70		33	43	39			
	07/20/2009								not operating
	07/27/2009								no oysters
	08/03/2009								no oysters
	08/10/2009								no oysters
	08/17/2009	70-78							cooler off / no oysters
	08/25/2009								cooler off / no oysters
	08/31/2009								cooler off / no oysters

Robbins & Robbins

	06/22/2009			44	44.8				no product
	06/29/2009			45	45				
	07/06/2009	72, 73		32.5, 37	46	44			
	07/14/2009			34, 39, 39.5					no oysters
	07/20/2009			34, 41, 31					no oysters
	07/27/2009			35, 38.5, 40					
	08/03/2009			40.5, 33, 38.5					no oysters
	08/10/2009		60, 51, 63	43, 37, 43.5					
	08/17/2009	70-78	56, 54	34.5, 39, 38					
	08/25/2009		59, 55	34.5, 37, 38.5					
	08/31/2009		61, 62	33, 31.5, 30					

Add' | ANNUAL outreach

- Outreach (LINCS) announcement to local health departments
- Handout to retail food establishments regarding receipt ;handling and preparation, emphasis on “take out”

Meeting with clam/oyster industry-Atlantic Coast Shellfisheries Council and Delaware Bay Shellfisheries Council to further impress their adoption and performance of Vp handling protocols

DISEASE INVESTIGATION

- NJDOH Communicable Disease reporting receive lab reports from hospitals, labs-isolated from stool sample
- Species confirmed-voluntary submission to NJDOH state lab for further confirmation & if needed can send to CDC- More requests from CDC for serotyping
- Regional epidemiologists work in conjunction with local and county health departments
- Obtain whenever possible physician and hospital records

DISEASE INVESTIGATION CON' T

- County Epi/local health department nurses contact individual case to collect food consumption history
- Repeated attempts sometimes necessary; doesn't remember place of purchase or consumption ; relatives remember ; notice on front door
- Need complete food consumption history of any/all shellfish; 7 days previous
- Names of food establishment/s; local health dept. immediately inspects inclusive of tags/invoices and temperature check

PATIENT'S NAME:	TEL.: Home	Work
ADDRESS:		
PHYSICIAN'S NAME:	TEL.:	

- PATIENT IDENTIFIERS NOT TRANSMITTED TO CDC

SEND COMPLETED REPORT TO STATE INFECTION CONTROL



CHOLERA AND OTHER VIBRIO ILLNESS SURVEILLANCE REPORT

State will forward to: Centers for Disease Control and Prevention
 Enteric Diseases Epidemiology Branch
 1600 Clifton Road, MS D36
 Atlanta, GA 30333
 Fax 404-639-2205
 OHS 2992-0004 Exp. Date 05/30/2010

I. DEMOGRAPHIC AND ISOLATE INFORMATION

REPORTING HEALTH DEPARTMENT										
1. First three letters of patient's last name: [] [] [] (1-3)			State: [] [] (4-5)		City: (6-15)			County/Parish: (16-20)		
State Epi No.: (21-23)			State Lab Isolate ID: (24-44)		CDC USE ONLY			FDA No.: (45-48)		
2. Date of birth: Mo. [] [] Day [] [] Yr. [] [] (9-13)		3. Age: Years [] [] Mos. [] [] (14-16)		4. Sex: (17) M (1) F (2) Unk. (3)		5. Ethnicity: (18) Hispanic or Latino Origin? Yes (1) No (2) Unk. (3)		6. Race: (19) Black or African American (1) American Indian/ Alaska Native (2) Asian (3) White (4) Unk. (5)		7. Occupation: (21-23)
8. <i>Vibrio</i> species isolated (check one or more):										
Species				Source of specimen(s) collected from patient			Date specimen collected		If wound or other, specify site:	
				Stool Blood Wound Other			Mo. Day Yr.			
<i>V. alginolyticus</i> _____				[] [] [] []			[] [] []		(24-25) _____ (26-30)	
<i>V. cholerae</i> O1 _____				[] [] [] []			[] [] []		(31-32) _____ (33-37)	
<i>V. cholerae</i> O139 _____				[] [] [] []			[] [] []		(38-39) _____ (40-44)	
<i>V. cholerae</i> non-O1, non-O139 _____				[] [] [] []			[] [] []		(45-46) _____ (47-51)	
<i>V. cincinnatiensis</i> _____				[] [] [] []			[] [] []		(52-53) _____ (54-58)	
<i>V. damsela</i> _____				[] [] [] []			[] [] []		(59-60) _____ (61-65)	
<i>V. fluvialis</i> _____				[] [] [] []			[] [] []		(66-67) _____ (68-72)	
<i>V. furnessii</i> _____				[] [] [] []			[] [] []		(73-74) _____ (75-79)	
<i>V. holisae</i> _____				[] [] [] []			[] [] []		(80-81) _____ (82-86)	
<i>V. matschinkovii</i> _____				[] [] [] []			[] [] []		(87-88) _____ (89-93)	
<i>V. mimicus</i> _____				[] [] [] []			[] [] []		(94-95) _____ (96-100)	
<i>V. parahaemolyticus</i> _____				[] [] [] []			[] [] []		(101-102) _____ (103-107)	
<i>V. vulnificus</i> _____				[] [] [] []			[] [] []		(108-109) _____ (110-114)	
<i>Vibrio</i> species - not identified _____				[] [] [] []			[] [] []		(115-116) _____ (117-121)	
Other (specify): _____				[] [] [] []			[] [] []		(122-123) _____ (124-128)	
9. Were other organisms isolated from the same specimen that yielded <i>Vibrio</i> ? Specify organism(s): _____					10. Was the identification of the species of <i>Vibrio</i> (e.g., <i>vulnificus</i> , <i>fluvialis</i>) confirmed at the State Public Health Laboratory? Yes (1) No (2) Unk. (3)					
11. Complete the following information if the isolate is <i>Vibrio cholerae</i> O1 or O139:										
Serotype (41) (check one)			Biotype (42) (check one)			Toxicogenic? (43) (check one)			If YES, toxin positive by: (check all that apply)	
Inaba (1) Not Done (4)			El Tor (1) Not Done (2)			Yes (1) No (2) Unk. (3)		ELISA (45)		
Ogawa (1) Unk. (4)			Classical (1) Unk. (4)					Latex agglutination (46)		
Hikojima (1)								Other (specify): _____		
								(47-49)		



Predisposing Factors

- Compromised immune systems
- Cancer patients
- Alcoholism; liver and kidney disease-don't know - some individuals concurrent diagnosis
- Medications; ant-acids treatments ex. Prilosec
- Elderly ; pregnant women
- Diabetics/Pre-Diabetics- don't know
- Medications being taken....
- **COMPLETE HISTORY** through interview/and clinical reports from health provider

IMPORTANT

Name of Hospital: _____
 Address: _____

State: _____ Age: _____ Sex: _____

II. CLINICAL INFORMATION

Vibrio species: _____

1. Date and time of onset of first symptoms: Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <small>(10-1)</small> Hour Min. am (P) <input type="text"/> <input type="text"/> <input type="text"/>		2. Symptoms and signs: Fever max. temp. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> F (C) Nausea Vomiting Diarrhea (max. no. stools/24 hours: _____) Visible blood in stools Abdominal cramps		Yes () No () Unk. () Headache Muscle pain Cellulitis Bullae Shock (systolic BP < 90) Other		Yes () No () Unk. () Site: _____ Site: _____ (specify): _____	
3. Total duration of illness: (days)	4. Admitted to a hospital for this illness? (55) Yes () No () Unk. () Admission date: <input type="text"/> <input type="text"/> <input type="text"/> Discharge date: <input type="text"/> <input type="text"/> <input type="text"/>	5. Any sequelae? (e.g., amputation, skin graft) (56) if YES, describe: Yes () No () Unk. ()		6. Did patient die? (56) if YES, date of death: Yes () No () Unk. () <input type="text"/> <input type="text"/> <input type="text"/>			
7. Did patient take an antibiotic as treatment for this illness? (50) Yes () No () Unk. () If YES, name(s) of antibiotic(s): 1. _____ 2. _____ 3. _____		Date began antibiotic: Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		Date ended antibiotic: Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			
8. Pre-existing conditions? Alcoholism Diabetes on insulin? Peptic ulcer Gastric surgery type: _____ Heart disease Heart failure? Hematologic disease type: _____ Immunodeficiency type: _____ Liver disease type: _____ Malignancy type: _____ Renal disease type: _____ Other specify: _____			9. Was the patient receiving any of the following treatments or taking any of the following medications in the 30 days before this Vibrio illness began? Yes () No () Unk. () If YES, specify treatment and dates: Antibiotics Chemotherapy Radiotherapy Systemic steroids Immunosuppressants Antacids H ₂ -Blocker or other ulcer medication (e.g., Tagamet, Zantac, Omeprazole)				

III. EPIDEMIOLOGIC INFORMATION

1. Did this case occur as part of an outbreak? (Two or more cases of Vibrio infection) Yes () No () Unk. () if YES, describe: _____		(52-53)					
2. Did the patient travel outside his/her home state in the 7 days before illness began? Yes () No () Unk. () Patient home state: <input type="text"/> <input type="text"/> City/State/Country: _____ If YES, list destination(s) and dates: 1. _____ 2. _____ 3. _____		Date Entered: Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Date Left: Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>					
3. Please specify which of the following seafoods were eaten by the patient in the 7 days before illness began: (if multiple times, most recent meal)							
Type of Seafood	Yes () No () Unk. ()	Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <small>(104-108)</small>	Any eaten raw? Yes () No () Unk. ()	Type of seafood	Yes () No () Unk. ()	Mo. Day Yr. <input type="text"/> <input type="text"/> <input type="text"/> <small>(104-108)</small>	Any eaten raw? Yes () No () Unk. ()
Clams	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>	Shrimp	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>
Crab	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>	Crawfish	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>
Lobster	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>	Other shellfish	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>
Mussels	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>	(specify): _____	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>
Oysters	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>	Fish	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/>
				(specify): _____			

III. EPIDEMIOLOGIC INFORMATION (CONT.)

Vibrio species: _____

4. In the 7 days before illness began, was patient's skin exposed to any of the following? Yes (1) No (2) Unk. (3)

A body of water (fresh, salt, or brackish water) (329) If YES, specify body of water location: _____ (329-340)

Drippings from raw or live seafood (329)

Other contact with marine or freshwater life (329) If YES to any of the above, answer each:

Date of exposure: Mo. Day Yr. (330-332)	Handling/cleaning seafood (340)	Construction/repairs (340)
Time of exposure: Hour Min. (333-334) am (4) pm (5) (335)	Swimming/diving/wading (340)	Bitten/stung (340)
	Walking on beach/shore/fell on rocks/shells (340)	Other: (specify) (340)
	Boating/skiing/surfing (340)	_____ (340-345)

• If skin was exposed to water, indicate type: (329) Additional comments: _____ (329-330)

Salt (1) Brackish (2) Unk. (3)

Fresh (4) Other (5) (specify): _____ (329-330)

• If skin was exposed, did the patient sustain a wound during this exposure, or have a pre-existing wound? (choose one): (329)

YES, sustained a wound. (1) YES, had a pre-existing wound. (2) YES, uncertain if wound new or old. (3) NO. (4) Unk. (5)

If YES, describe how wound occurred and site on body: _____ (329-330)

(Note: Skin bullae that appear as part of the acute illness should be recorded in section II, Clinical Information, only). _____ (329-330)

If isolate is *Vibrio cholerae* O1 or O139 please answer questions 5 - 8.

5. If patient was infected with *V. cholerae* O1 or O139, to which of the following risks was the patient exposed in the 4 days before illness began? Yes (1) No (2) Unk. (3)

Raw seafood (331)	Other person(s) with cholera or cholera-like illness (331)	
Cooked seafood (332)	Street-vended food (332)	
Foreign travel (333)	Other: (specify): _____ (333)	

6. If answered "yes" to foreign travel (question III. 5), had the patient been educated in cholera prevention measures before travel? Yes (1) No (2) Unk. (3) (331)

If YES, check all source(s) of information received:

Pre-travel clinic (133)	Friends (135)	Travel agency (134)
Airport (departure gate) (133)	Private physician (134)	CDC travelers' hotline (134)
Newspaper (135)	Health department (133)	Other (specify): (134)

7. If answered "yes" to foreign travel (question III. 5), what was the patient's reason for travel? (check all that apply) (140-145)

To visit relatives/friends (40)	Other (specify): (40) _____
Business (40)	
Tourism (40)	Unk. (40)
Military (40)	

8. Has patient ever received a cholera vaccine? Yes (1) No (2) Unk. (3) (140)

(If YES, specify type most recently received: Oral (40) Parenteral (40))

Most recent date: Mo. Day Yr. (141-145)

If domestically acquired illness due to any *Vibrio* species is suspected to be related to seafood consumption, please complete section IV (Seafood Investigation).

ADDITIONAL INFORMATION or COMMENTS

<p>Person completing section I - III: _____ Date: Mo. Day Yr. (147-149)</p> <p>Title/Agency: _____ Tel.: _____</p>	<p>CDC Use Only Source: (143)</p> <p>Comment: (144-145) _____</p> <p>Syndrome: (146) _____</p> <p>CDC Isolate No. _____ (146-149)</p>
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WHAT TO CHECK/WHAT TO GET

BE THOROUGH

- **Ask** establishment PIC or owner- What companies do you purchase shellstock from? CAN BE MANY AND VARY IN TYPE*/ DELIVERIES
- **Ask** – How much product is handled and served in a week? CAN BE MUCH MORE THAN IMAGINED
- **Ask**- for tags and invoices- Review/Focus on **2** weeks/ volume before **DATE OF CONSUMPTION**

Perform /Inspection Report

- **Check** temps- all reefer units where fish/shellstock stored
- **Check** time temperature handling and preparation-
- **Ask**- How is an order prepared and served? **Try to observe !**
- **Ask**- Is product shucked at the beginning of the day/how much? How long is it out of reefer while being shucked?
- **Ask**- Is product served from any display/buffet in service area?
- *- look at menu!!!! -Sampler



BEST TIME
FOR
OYSTERS
SEPT → MARCH

LIVE
KUMOMOTO
OYSTERS
\$15.99
DOZEN

SHELL FISH
SPECIAL
LIVE CLAMS & MUSSELS!
\$3.99
POUND

LARGEST
SECTION
LIVE PEN
COVE
MUSSELS
\$4.49
LB

LIVE
MIYAGI
OYSTERS
\$9.99
DOZEN

LIVE
QUILCENE
OYSTERS
\$7.99
DOZEN
OR
5 DOZ F
\$35

KUSHI
OYSTERS
\$15.99
DOZEN

CHERRYSTONE
CLAMS
\$3.99
LB

Oysters

Oysters

Clams

Mussels

What to leave with:

- Copies of tags- What IF not retained????
Chapter 24 – Out of Compliance/violation-serious
- Copies of invoices- Important for verification
- List of wholesalers purchase from- Feel complete that you captured complete purchase history and amount.
- Generate inspection report- Send report, tags invoices, pictures etc...



What follow up w info occurs?

- NJDOH continues traceback w NJ Certified Dealer
- NJDOH can/may issue embargo; recall of product
- NJDOH reports to sourcing state the implicated harvest water/s.....
- Follow up by state to the waters- May result in closure
- Increased sampling and monitoring to reopen the harvest waters- MINIMUM 2 weeks-1 month to reopen.
- Economic Impact to Shellfish Industry



“Can you recommend a wine that goes well with seafood, Zoloft, and Lipitor?”

Thank you !



- My contact:
- Cali Alexander NJDOH Seafood/Shellfish Project Coordinator
- 609 826 4935 Cell-201 214 1480
- calliope.alexander@doh.state.nj.us
- Sources of info: web
 - NJDOH Seafood/Shellfish Project
 - USFDA –Seafood Safety
 - ISSC –Interstate Shellfish Sanitation Conference