

# Vibriosis (non-cholera species) Surveillance Protocol

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## **Provider Responsibility**

1. Report all cases to your local health department within the timeframe indicated:  
Sporadic case of vibriosis – should be reported within 72 hours of diagnosis  
  
Outbreaks of vibriosis – should be reported immediately (see definition of outbreaks in local health department responsibility section)

## **Laboratory Responsibility**

1. Report all positive *Vibrio* tests to the local health department in the patient's county of residence within 72 hours of result. Report the result by electronic messaging when possible, or send or fax a copy of the laboratory result to the local health department in the county of residence of the case patient.
2. Submit all *Vibrio* isolates to the Office of Laboratory Services (OLS) for confirmation and serotyping at 167 11<sup>th</sup> Avenue, South Charleston, WV 25303. For forms and other information, visit [www.wvdhhr.org/labservices](http://www.wvdhhr.org/labservices) .

## **Local Health Department Responsibility**

*For investigation of sporadic cases:*

Initial report must be filed within 72 hours of first notification

1. Complete the WVEDSS Vibriosis Disease Reporting Form. Use of the WVEDSS Reporting Form will prompt a complete and appropriate investigation, to include:
  - Consumption of shellfish
  - Travel history including trips to coastal areas (including dates and locations)
  - Skin exposure to salt water or raw seafood (including date and location)
2. If the case reports consumption of shellfish in the 7 days prior to illness, obtain the details of the exposure, including name and location of restaurant, date of consumption, and type of shellfish consumed.

If the shellfish was purchased/consumed locally, as soon as possible, obtain the shellfish labeling tags from the retail site(s) and collect information about the supplier and harvest site of the shellfish. Also obtain from the restaurant, how the shellfish was prepared and handled prior to consumption. Call and give this information to DIDE so that it may be forwarded to the appropriate state health department.

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If the shellfish was consumed during travel to another state, provide the restaurant information to DIDE so that it may be forwarded to the appropriate state health department.

3. Because vibriosis is not transmitted person-to-person, there are no individual isolation control measures necessary. If a case is a food handler, or other high-risk occupation, counsel them to exclude themselves from work until symptoms stop, as would be the recommendation for any diarrheal illness.

*For investigation of a suspected outbreak:*

Outbreak is defined as greater than expected numbers of cases reported during a certain time frame

Foodborne disease outbreak is defined as two or more persons who experience similar illness after ingestion of a common food. Please note exceptions: one case of botulism, *Vibrio cholerae* or chemical poisoning constitutes an outbreak.

Waterborne disease outbreak is defined as two or more persons who experience similar illness after consumption or use of water intended for drinking or recreational use.

1. Obtain case histories for preliminary reports as in sporadic cases above. Focus on possible common source exposures.
2. Verify the diagnosis.
3. Gather a 7 day food history (specifically shellfish) and history of commonly associated exposures such as restaurants, and salt water activities.
4. Contact DIDE and notify of suspected outbreak
5. Consult outbreak investigation protocol for complete instructions on investigation of an outbreak.  
(<http://www.dhr.wv.gov/oeps/disease/ob/Documents/Outbreak%20Investigation%20protocol.pdf>)

### **State Health Department Responsibility**

1. Prompt and complete reporting of vibriosis cases to the Centers for Disease Control (CDC) through WVEDSS

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2. Report cases of vibriosis to COVIS (CDC) by completing the COVIS surveillance report form
3. Provide technical assistance and consultation regarding surveillance, investigation, control measures and prevention of vibriosis
4. Notify CDC and/or corresponding state health department where shellfish was harvested, when a case of vibriosis reports shellfish consumption
5. Summarize surveillance data for cases of vibriosis on an annual basis

### **Disease Control Objectives**

Prevent additional cases of vibriosis by early recognition and investigation of outbreaks of vibriosis so that common food sources can be removed from commerce in a timely fashion.

### **Disease Prevention Objectives**

Reduce the incidence of vibriosis by education of the general public to:

- Practice proper seafood handling, including thorough cooking and avoidance of cross contamination of ready to eat foods with raw seafood
- Avoid unsafe foods such as raw oysters, clams and shellfish
- Avoid exposure of open wounds or broken skin to sea water or raw shellfish

### **Disease Surveillance Objectives**

1. To determine the incidence of vibriosis in West Virginia.
2. To identify demographic characteristics of persons with vibriosis.
3. To detect any increase in the number of cases of vibriosis or any unusual clustering of cases.

### **Public Health Significance**

Sporadic cases and common-source outbreaks of *V. parahaemolyticus* have been reported in many parts of the world, particularly Japan, southeastern Asia and the United States. An estimated 4500 cases of *V. parahaemolyticus* infection occur each

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year in the United States. However, the number of cases reported to CDC is much lower because surveillance is complicated by underreporting. Several large foodborne outbreaks have occurred in the United States in which undercooked seafood was the source. Consumption of raw or undercooked clams or oysters is often implicated in individual cases.

*V. vulnificus* infection has been reported in many areas of the world including Israel, Japan, the Republic of Korea, Spain Taiwan and Turkey. It is the most common agent of serious infections caused by *Vibrio* species in North America, however it is also underreported. Between 1988 and 2006, CDC received reports of more than 900 *V. vulnificus* infections from the Gulf Coast states, where most cases occur. Before 2007, there was no national surveillance system for *V. vulnificus*, but CDC collaborated with the states of Alabama, Florida, Louisiana, Texas, and Mississippi to monitor the number of cases of *V. vulnificus* infection in the Gulf Coast region.

### **Clinical Description**

*Vibrio* infections can result in diarrhea, wound infection or septicemia. Infection with most *Vibrio* species, including *V. parahaemolyticus* usually results in diarrheal illness, characterized by sudden onset of watery diarrhea often accompanied by abdominal cramping. Bloody diarrhea, vomiting, headache and low grade fever can also occur. *V. vulnificus* most commonly causes wound infections or septicemia. Persons with liver disease, chronic illness or are immunocompromised are at higher risk to develop more severe illness.

### **Etiologic Agent**

Non-cholera *Vibrio* infections are caused by bacteria in the genus *Vibrio*. The most common species reported are *Vibrio parahaemolyticus* and *Vibrio vulnificus*, although many other species exist.

### **Reservoir**

*Vibrio* naturally live in marine coastal environments or in brackish water and are present in higher concentrations during warm summer months. Most species live in salt water. *Vibrio* species that cause illness are not found naturally in West Virginia, however, opportunity exists for West Virginia residents to be exposed to *Vibrio spp.* during travel to coastal areas or when consuming raw or undercooked seafood such as oysters, crab or shrimp. The presence of *Vibrio spp.* in water is not a sign of pollution. The amount of *Vibrio spp.* in water is directly related to the water temperature, increasing with rising water temperatures. *V. parahaemolyticus* and *V. vulnificus* naturally occur in coastal

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waters in the United States and Canada. Although *V. vulnificus* occurs at highest concentrations along the Gulf Coast and in the Northeast.

### **Mode of Transmission**

Vibriosis is usually a result of ingesting the organism in raw or undercooked seafood (such as oysters, crab or shrimp). Wound infections can occur when a person with a wound has contact with seawater or a person sustains cuts while handling raw shellfish. *Vibrio* infections are not known to spread from one person to another.

### **Incubation Period**

The incubation period for *Vibrio* infections is species dependent. For *V. parahaemolyticus*, the usual period is 12-24 hours with a range of 4-96 hours. For *V. vulnificus*, the usual period is 12-72 hours.

### **Period of Communicability**

*Vibrio* infections are not known to spread from person-to-person.

### **Outbreak Recognition**

An outbreak is defined as greater than expected numbers of cases reported during a certain time frame or when clustered cases of Vibriosis are reported. Vibriosis most commonly occurs in the U.S. during the warmer months of the year, and major outbreaks of *V. parahaemolyticus* have occurred during that time. Sporadic cases occur along all coasts of the U.S; however the majority are reported from the Gulf Coast. Outbreak recognition and investigation requires timely and complete epidemiological investigation (risk factors, food history, exposure to salt water, etc.) paired with timely and complete laboratory investigation (serotyping).

Several large foodborne outbreaks have occurred in which undercooked seafood was the food vehicle, typically oysters or clams. Although shellfish should always be harvested from “clean” waters, monitored by a shellfish program, this does not guarantee the safety of the shellfish because *Vibrio* naturally live in harvest waters. If not handled properly after harvesting and before preparation, shellfish containing very low levels of organisms can become highly contaminated and cause significant outbreaks.

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### Case Definition

#### Clinical Description

An infection of variable severity characterized by watery diarrhea, primary septicemia, or wound infection. Asymptomatic infections may occur, and the organism may cause extra-intestinal infection.

#### Laboratory Criteria for Diagnosis

Isolation of a species of the family *Vibrionaceae* (other than toxigenic *Vibrio cholerae* O1 or O139, which are reportable as cholera) from a clinical specimen.

#### Case Classification

*Probable:* A clinically compatible case that is epidemiologically linked to a confirmed case.

*Confirmed:* A case that meets the laboratory criteria for diagnosis. Note that species identification and, if applicable, serotype designation (i.e., *Vibrio cholerae* non-O1, non-O139 or *Grimontia hollisae*) should be reported.

### Preventive Interventions

- Do not consume raw seafood, especially oysters, particularly if you are immunocompromised or have chronic liver disease.
- Cook molluscan shellfish (oysters, clams, and mussels) thoroughly to an internal temperature of 145°F for 15 seconds. Do not eat shellfish that do not open during cooking.
- Avoid cross contamination of cooked seafood and other foods with raw seafood and juices from raw seafood.
- Obtain oysters from reputable sources. Although eating oysters from “clean” waters or in restaurants with “high turnover” does not provide protections, since *Vibrio* naturally live in waters where oysters are harvested.
- Do not expose open wounds or broken skin to sea water, or to raw shellfish harvested from sea water.

### Treatment

Most episodes of gastroenteritis are self-limited and do not require treatment other than oral rehydration and supportive therapy. Antibiotic therapy can benefit people with severe diarrhea, wound infection, or septicemia. Septicemia should be treated with a third-generation cephalosporin plus doxycycline. In younger children, a combination of

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trimethoprim-sulfamethoxazole and an aminoglycoside is an alternative regimen. Wound infections may require surgical debridement of necrotic tissue, if present.

### **Surveillance Indicators**

- Proportion of investigations with complete clinical and demographic information.
- Proportion of cases with complete information on seafood/shellfish consumption
- Proportion of cases with complete information on skin exposure to salt water
- Proportion of cases with complete travel history

### **References**

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