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Vibriosis (non-cholera Vibrio species infections)

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Vibriosis (non-cholera *Vibrio* species infections)


Overview^(1,3)

Several nontoxigenic *Vibrio* species (ie, those that do not cause cholera) can cause a variety of clinical syndromes, including gastroenteritis, wound infection, and bacteremia. Gastroenteritis is the most common syndrome and is characterized by acute onset of watery stools and crampy abdominal pain. Approximately half of those afflicted will have low-grade fever, headache, and chills; approximately 30% will have vomiting. Spontaneous recovery follows in 2 to 5 days. Primary septicemia is uncommon but can develop in immunocompromised people with preceding gastroenteritis or wound infection. Wound infections can be severe in people with liver disease or who are immunocompromised. Septicemia and hemorrhagic bullous or necrotic skin lesions can be seen in people with infections caused by *Vibrio vulnificus*, with associated high morbidity and mortality rates.

Non-cholera *Vibrio* species are natural inhabitants of marine and estuarine environments. Most infections occur during summer and fall months, when *Vibrio* populations in seawater are highest. Gastroenteritis usually follows ingestion of undercooked seafood, especially oysters, crabs, and shrimp. Wound infections can result from exposure of a preexisting wound to contaminated seawater or from punctures resulting from handling of contaminated shellfish. Exposure to contaminated water during natural disasters such as hurricanes has resulted in wound infections. Transmission of infection person to person has not been reported. People with liver disease, low gastric acidity, and immunodeficiency have increased susceptibility to infection with *Vibrio* species.

For a complete description of Vibriosis (non-cholera *Vibrio* species infections), refer to the following texts:

- *Control of Communicable Diseases Manual*. (CCDM), American Public Health Association. 19th ed. 2008.
- American Academy of Pediatrics. *Red Book: 2012 Report of the Committee on Infectious Diseases*. 29th ed. 2012.
- *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*. 7th ed. 2010.

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Case Definitions⁽²⁾

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:

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.

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

Comment: Genera in the family *Vibrionaceae* (not all have been recognized to cause human illness) currently include:

- Aliivibrio
- Allomonas
- Catenococcus
- Enterovibrio
- Grimontia
- Listonella
- Photobacterium
- Salinivibrio
- Vibrio

Information Needed for Investigation


Verify clinical diagnosis. What laboratory tests were conducted? What were the results?

Establish the extent of illness. What are the patient's clinical symptoms? Determine if household or other close contacts have similar symptoms.

Determine the source of infection to prevent other cases. Has the patient traveled? Has the patient recently been in contact with or consumed seafood? Has the patient participated in recreational water activities such as swimming or wading in the ocean/sea?

Notification and Control Measures

- Contact the [District Communicable Disease Coordinator](#), the [Senior Epidemiology Specialist](#), or the Department of Health and Senior Services' Situation Room (DSR) at 800-392-0272 (24/7) immediately if an outbreak* of Vibriosis is suspected.

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- Contact the Bureau of Environmental Health Services at (573) 751-6095 and the Section for Child Care Regulation at (573) 751-2450, if the case is associated with a child care center.
- Contact the Section for Long Term Care Regulation at (573) 526-8524, if the case is associated with a long term-care facility.
- Contact the Bureau of Health Services Regulation at (573) 751-6303, if the case is associated with a hospital, hospital-based long-term care facility, or ambulatory surgical center.

*Outbreak is defined as the occurrence in a community or region, illness(es) similar in nature, clearly in excess of normal expectancy and derived from a common or a propagated source.

Control Measures^(1,3)

Seafood should be cooked adequately and, if not ingested immediately, should be refrigerated. Cross-contamination of cooked seafood by contact with surfaces and containers contaminated by raw seafood should be avoided. Uncooked mollusks and crustaceans should be handled with care and gloves can be worn during preparation. Abrasions suffered by ocean bathers should be rinsed with clean fresh water. All children, immunocompromised people, and people with chronic liver disease should avoid eating raw oysters or clams and should be advised of risks associated with seawater exposure if a wound is present or likely to occur.

Laboratory Procedures


Vibrio organisms can be isolated from stool of patients with gastroenteritis, from blood specimens, and from wound exudates. Because identification of the organism in stool requires special techniques, laboratory personnel should be notified when infection with Vibrio species is suspected.

Acceptable specimens for the Missouri State Public Health Laboratory (SPHL) are pure inoculated culture slants, and raw stool specimens. The SPHL does not accept mixed cultures or plates. The Enteric Bacteriology section does offer certain non-routine testing of raw specimens for Vibrio species. However, raw stool specimens will only be accepted from city or county health departments unless previous approval has been obtained. Enteric collection and transport kits are available by calling (573) 751-3334, 8:00 a.m. – 5:00 p.m., Monday through Friday.

Reporting Requirements

Vibriosis (non-cholera Vibrio species infections) is a Category 3 disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services within three (3) calendar days of first knowledge or suspicion:

1. For confirmed and probable cases of, complete a “[Disease Case Report](#)” (CD-1) and a [Cholera and Other Vibrio Illness Surveillance Report](#) (CDC 52.79).
2. Entry of the completed CD-1 into the WebSurv database negates the need for the paper CD-1 to be forwarded to the District Health Office.
3. Send the completed secondary investigation form ([Cholera and Other Vibrio Illness Surveillance Report](#)) to the District Health Office.

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4. All outbreaks or “suspected” outbreaks of Vibriosis (non-cholera *Vibrio* species infections) must be reported as soon as possible (by phone, fax, or e-mail) to the [District Communicable Disease Coordinator](#). This can be accomplished by completing the [Missouri Outbreak Surveillance Report](#) (CD-51).
5. If an outbreak is associated with food, complete a [CDC 52.13](#) form (National Outbreak Reporting System - Foodborne Disease Transmission). Send the completed form to the District Communicable Disease Coordinator at the conclusion of the outbreak.
6. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the [District Communicable Disease Coordinator](#).

References

1. American Academy of Pediatrics. *Red Book: 2012 Report of the Committee on Infectious Diseases*. Pickering LK, ed. 29th ed. Elk Grove Village, IL: American Academy of Pediatric; 2012, pp 791-792.
2. Centers for Disease Control and Prevention. Epidemiology Program Office, Division of Public Health Surveillance and Informatics, *Nationally Notifiable Infectious Diseases, United States 2012*. http://www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm (7/12).
3. American Public Health Association (2009). Cholera and Other Vibriosis. In D. Heymann (Ed.), *Control of Communicable Diseases Manual*. (19th ed., pp. 120-134).

Other Sources of Information

1. Centers for Disease Control and Prevention. *Management of *Vibrio vulnificus* Wound Infections After a Disaster*. <http://emergency.cdc.gov/disasters/disease/vibriofaq.asp> (7/12)
2. Centers for Disease Control and Prevention. **Vibrio parahaemolyticus**. <http://www.cdc.gov/nczved/divisions/dfbmd/diseases/vibriop/>. (7/12)
3. Centers for Disease Control and Prevention. *Cholera and Other *Vibrio* Illness Surveillance System*. http://www.cdc.gov/nationalsurveillance/cholera_vibrio_surveillance.html. (7/12)