LOUISIANA DEPARTMENT OF HEALTH Public Health	**Louisiana Health Alert Message 25-3: Increase in Severe Vibrio vulnificus Infections in Louisiana**
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Louisiana Health Alert Message 25-3

Increase in Severe *Vibrio vulnificus* Infections in Louisiana

The Louisiana Department of Health (LDH) has noted a recent increase in *Vibrio vulnificus* infections. To date this year, 17 cases of *Vibrio vulnificus* have been reported among Louisiana residents. All of these patients were hospitalized, and four of these illnesses resulted in death. This represents a higher number of *Vibrio vulnificus* cases and deaths than are typically reported. During the same time period over the previous 10 years, an average of seven *Vibrio vulnificus* cases and one death were reported each year.

Of those 17 cases, 75% of them reported wound/seawater exposure.

Amid increasing water temperatures and extreme weather events (e.g., heat waves, flooding, and severe storms) [1], **people who are at increased risk for *V. vulnificus* infection (those with underlying health conditions such as liver disease, diabetes, and immunocompromising conditions [2]) should exercise caution when engaging in coastal water activities**.

Prompt treatment is crucial to reduce mortality from severe *V. vulnificus* infection.

Background

Vibrio are bacteria that cause an estimated 80,000 illnesses each year in the United States. About a dozen species of *Vibrio* are pathogenic to humans. ***Vibrio* bacteria thrive in warmer waters—especially during the summer months (May to October) and in low-salt marine environments like estuaries**. One species, *V. vulnificus*, is known to cause life-threatening infections. About 150–200 *V. vulnificus* infections are reported nationally each year, and **about one in five people with this infection die**—sometimes within 1–2 days of becoming ill.

Unlike other *Vibrio* species, *V. vulnificus* is **primarily transmitted through open-wound contact with salt water or brackish water**, but occasionally (in approximately 10% of cases) the bacteria also can infect people if they eat raw or undercooked shellfish. Person-to-person transmission has not been reported.

***V. vulnificus* wound infections have a short incubation period and are characterized by necrotizing skin and soft tissue infection**, with or without hemorrhagic bullae. Many people with *V. vulnificus* wound infection require intensive care or surgical tissue removal.

Recommendations for Healthcare Professionals
This guidance pertains to managing severe *V. vulnificus* wound infections.

Diagnosis

- **Consider *V. vulnificus* as a possible cause of infection in wounds** that were exposed to coastal waters, especially in patients at higher risk for *Vibrio* infection, including those with underlying health conditions such as liver disease (including alcohol-associated liver cirrhosis), diabetes, and immunocompromising conditions [3].
- If *V. vulnificus* infection is suspected,
    - Obtain wound or hemorrhagic bullae cultures and send all *V. vulnificus* isolates to the Louisiana State Public Health Laboratory (SPHL).
        - Blood cultures are recommended in addition to wound and hemorrhagic bullae cultures if the patient is febrile, has hemorrhagic bullae, or has signs of sepsis.
    - Ask the patient or family about relevant exposures, including whether they entered coastal water with an open wound; acquired a scratch or a cut while in coastal water; or had open-wound contact with raw or undercooked seafood.

Clinical Management

- **Initiate treatment promptly**. Early antibiotic therapy and early surgical intervention improve survival. **Do not wait** for consultation with an infectious disease specialist or laboratory confirmation of *V. vulnificus* infection to initiate treatment.
- Antibiotic therapy
    - Doxycycline (100mg orally or intravenously twice a day for 7–14 days) and a third-generation cephalosporin (e.g., ceftazidime 1–2g intravenously or intramuscularly every 8 hours) are recommended. [3]
    - Alternate regimens include a third-generation cephalosporin with a fluoroquinolone (e.g., 500mg ciprofloxacin orally twice a day) or a fluoroquinolone given alone. [4,5].
    - Children may also be treated with a combination regimen of a third-generation cephalosporin plus doxycycline or ciprofloxacin, or with an alternative regimen of trimethoprim-sulfamethoxazole plus an aminoglycoside [6]. In selecting a regimen, clinicians should be aware of guidance from the American Academy of Pediatrics:
        - Fluoroquinolones should not be used routinely as first-line agents in children younger than 18 years except when specific indications exist or in specific conditions for which there are no alternative agents (including oral agents) and the drug is known to be effective for the specific situation. [7]
        - Use of tetracyclines as a class of drugs in pediatric patients historically has been limited because of reports that this class could cause permanent dental discoloration in children younger than 8 years. More recent data suggest that doxycycline can be administered for short durations (i.e., 21 days or less) without regard to the patient's age. [8]
    - Doses should be appropriately adjusted for renal and hepatic function.
    - If appropriate, consult a microbiologist or infectious disease specialist.

- Give careful attention to the wound site. Necrotic tissue should be debrided. Severe cases might require aggressive debridement, fasciotomy, or amputation of the infected limb.

Clinician Reporting

Vibriosis is a Class B condition, with reporting required within one business day. Positive *Vibrio* laboratory tests for that are not sent through an automated feed should be reported to the respective LDH regional surveillance epidemiologist. To reach LDH's on-call Epidemiologist, call 800-256-2748.

LDH continues to monitor reports of *V. vulnificus* infections.

Recommendations for Laboratories

- Clinical laboratories should submit known or suspected *Vibrio* isolates to the Louisiana State Public Health Laboratory .

For More Information

- *Vibrio* Species Causing Vibriosis
- *Vibrio* Information for Health Professionals & Laboratorians
- *Vibrio vulnificus* and Wounds
- *Vibrio* and Oysters

References

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3. Liu JW, Lee IK, Tang HJ, et al. Prognostic factors and antibiotics in *Vibrio vulnificus* septicemia. *Arch Intern Med*. 2006 Oct; 166(19): 2117–23.
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6. American Academy of Pediatrics. Other *Vibrio* Infections. In: Red Book: 2021–2024 Report of the Committee on Infectious Diseases, 32nd ed. 2021 January. Itasca, IL.
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