

VIBRIO VULNIFICUS INFECTION: Notes about the Disease

NC conducts surveillance for several types of vibrioses.

- *Vibrio cholerae* (serogroup O1 and O139) – causative agents for Cholera
- *Vibrio vulnificus* - causative agent for the most serious *Vibrio* infections in the USA
- Other *Vibrio* species – other *Vibrio* species including *V. cholerae* other than serogroups O1 and O139, *V. parahaemolyticus*, *V. mimicus*, *V. fluvialis*, *V. furnissii*, *V. hollisae*, *V. alginolyticus*, and *V. damsela*.

Remember, although *Vibrio cholerae* is the bacterium that causes cholera, not all strains of *V. cholerae* can cause the disease. Only certain strains of serogroups O1 and O139 have the capability of inducing the severe and rapidly overwhelming diarrheal illness that constitutes classical Asiatic or epidemic cholera. Except for certain parts of the Gulf coast where there is an environmental reservoir of O1 *V. cholerae*, neither of these organisms is endemic in the United States.

Cholera is not a disease that North Carolinians are likely to see or experience unless they travel to a developing nation caught up in the current seventh pandemic of this disease.

Cholera is transmitted by the fecal-oral route and has historically been associated with poor sanitary conditions, particularly fecally contaminated water and shellfish. It has existed as an endemic disease on the Indian subcontinent for centuries, and until the early 1800s, it was confined to southern Asia. Since then there have been seven pandemics, the latest beginning in 1961. Reaching the western hemisphere in 1991, it has affected several Latin American countries, including Mexico.

Although most *V. cholerae* infections are asymptomatic, severe cases of classical cholera with its attendant enterotoxin-induced profuse watery diarrhea (“rice water” stools) can be rapidly fatal unless treated quickly with fluid replacement. Antibiotic treatment is secondary to fluid replacement.

In NC, public health workers need to be aware of the possibility of cholera occurring among travelers returning from developing countries and of a few previous cases in the US from either illegally imported shellfish or Gulf coast oysters.¹⁻² A cholera vaccine is no longer available in the US, as the ineffective one that was manufactured here for many years has been removed from the market. Foreign travelers need to be advised of the standard precautions to prevent diarrheal disease.

Laboratory confirmation by culture and serotyping is an absolute requirement for documentation of cholera, were a suspected case to occur here.

Vibrio infections other than cholera are not uncommon in North Carolina and can be severe in persons who are immunosuppressed or have chronic liver disease or alcoholism. Infection is usually acquired through ingestion of raw or undercooked seafood. Infections in immunocompetent people typically occur after exposure of wounds to estuarine water or occupational exposures.

1. Centers for Disease Control and Prevention. [Epidemiologic Notes and Reports: Toxigenic *Vibrio cholerae* O1 Infection Acquired in Colorado]. *MMWR* 1989;38(2):[19-20], www.cdc.gov/mmwr/preview/mmwrhtml/00001333.htm.
2. Centers for Disease Control and Prevention. [Epidemiologic Notes and Reports: Toxigenic *Vibrio cholerae* O1 Infections—Louisiana and Florida]. *MMWR* 1986;35(38):[606-7], www.cdc.gov/mmwr/preview/mmwrhtml/00000798.htm.