

VIBRIO INFECTIONS

***Vibrio* Quick Fact: *Vibrio* Infections are often transmitted through ingestion of raw or undercooked seafood.**

OVERVIEW

Infections caused by *Vibrio* species are largely classified into 2 distinct groups: *Vibrio cholerae* infection and noncholera *Vibrio* infections. The clinical and epidemiologic characteristics of the diverse species can vary dramatically.

Noncholera *Vibrio* Infections:

Vibrio infections typically manifest as a gastrointestinal illness characterized by watery diarrhea, nausea, vomiting, abdominal cramping, fever and headache. In immunocompromised patients and persons with liver disease, infections of the gastrointestinal tract or contaminated wounds (causing tissue necrosis) with *V. vulnificus* can result in septicemia and shock. Many *Vibrio* organisms are halophilic (salt requiring) and prefer marine and brackish environments. They exist in deep-sea salt water and coastal brackish water and can be found in raw or undercooked fish and shellfish (e.g. oysters, crabs, and shrimp). The mode of transmission of *Vibrio* infections is from ingestion of raw or undercooked seafood or contaminated water. Also, transmission may occur from an exposed wound to contaminated seawater. The incubation period of the noncholera *Vibrio* infections are usually 12-24 hours.

Vibrio cholerae infections:

Cholera is an infection of the intestine caused by the bacterium *Vibrio cholerae*. Between 1817 and 1911, six worldwide cholera outbreaks resulted in hundreds of thousands of deaths. The bacterium responsible for the seventh pandemic, now in progress, is known as *V. cholerae* O1, biotype El Tor. Another serotype associated with cholera outbreaks is O139. Other serogroups of *V. cholerae* have been reported in the United States and Georgia; these are referred to "non-O1, non-O139 *V. cholerae*". These serotypes may also cause a cholera-like illness. Cholera is very rare in the United States and most of the cases are linked to eating seafood from the Gulf Coast; outbreaks do not typically occur. Humans are the primary reservoir and environmental reservoirs are likely copepods and other zooplankton in brackish rivers and coastal estuaries. The mode of transmission of cholera is through contaminated seafood or water. The incubation period is usually 2-3 days.

SURVEILLANCE

- All Georgia physicians, laboratories and other health care providers are required by law to report both lab-confirmed and clinical diagnoses of cases of *Vibrio* infections.
- Public health staff interviews every *Vibrio* case with a standardized CDC form to facilitate centralized data collection in the event of an outbreak and obtain pertinent information in case a trace back is warranted.
- In 2008, 10 cases (53%) of *Vibrio* infections were due to the consumption of raw seafood (oysters, crab and fish).
- There are several species of *Vibrio* found in Georgia. Cultures should be sent to the Georgia Public Health Laboratory for species determination (Table 1).

Table 1

NONCHOLERA <i>VIBRIO</i> SPECIES IN GEORGIA, 2008		
Species		#
1	Parahaemolyticus	5
2	Vulnificus	4
3	Alginolyticus	3
4	Mimicus	1
5	Fluvalis	1
	Unknown	4

- Active Surveillance for *Vibrio* infections is conducted through FoodNet, a component of the Emerging Infections Program (EIP). For more information, please visit:

- <http://health.state.ga.us/eip/>
- <http://www.cdc.gov/foodnet/>

INCIDENCE

Noncholera *Vibrio* Infections:

In 2008, there were 18 cases of noncholera *Vibrio* infections reported in Georgia for a rate of 0.19 cases/100,000 populations (Figure 1).

Vibrio cholerae infections:

In 2008, there was one case of *Vibrio cholerae* (serogroup Non-O1) reported in Georgia for a rate of 0.01 cases/100,000 populations (Figure 2)

Figure 1

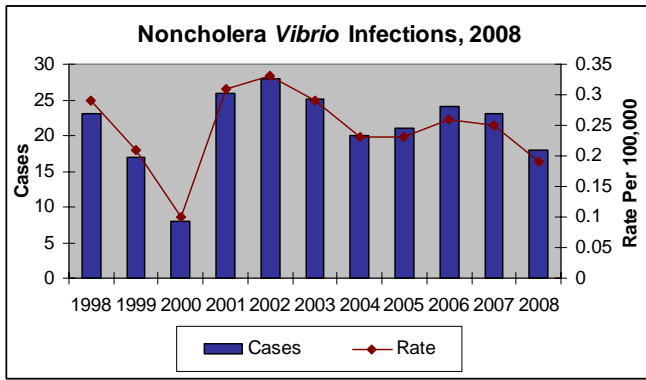


Figure 4

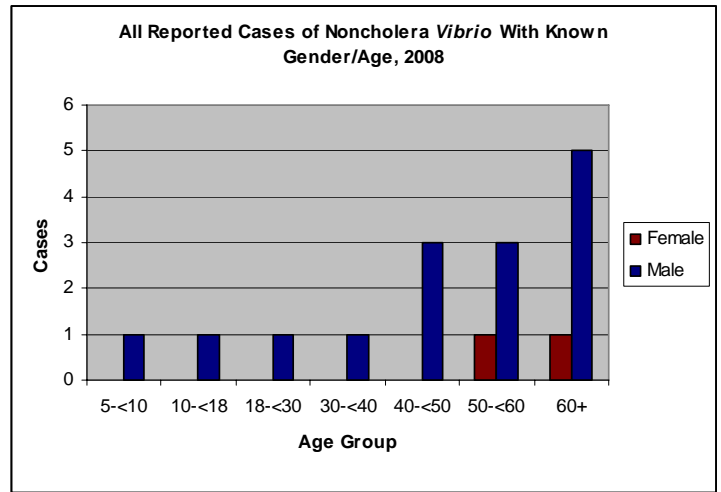
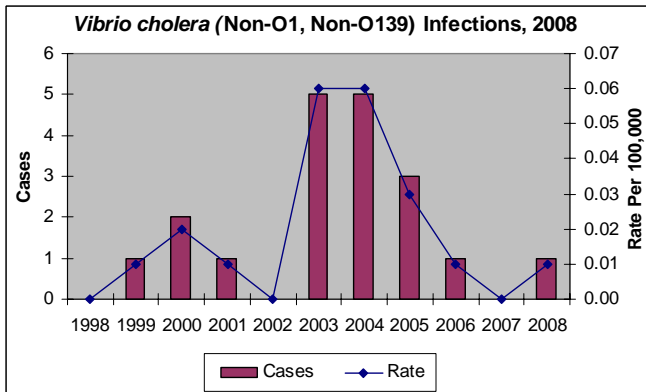


Figure 2



IMPACT AND PREVENTION OF *VIBRIO* INFECTIONS

In 2008, one reported case died from a *Vibrio* infection. In Georgia, approximately ¾ of all *Vibrio* deaths are due to *Vibrio vulnificus*, including the death reported in 2008. *Vibrio* infections often occur during the summer months. It is important to obtain adequate travel history to and from endemic areas and food consumption data to assist efforts in product trace-back and to prevent outbreaks. Recent travel to and from cholera-endemic areas of the world is the source for most cases of *Vibrio cholerae* (serotypes O1 and O139). If severe disease is not treated, rapid dehydration, acidosis, circulatory collapse, hypoglycemia (in children), renal failure, and death can occur. In addition, avoid consuming undercooked raw seafood, especially oysters, for the prevention of *Vibrio* infections. For more information on oyster safety, please visit: www.safeoysters.org.

DEMOGRAPHICS

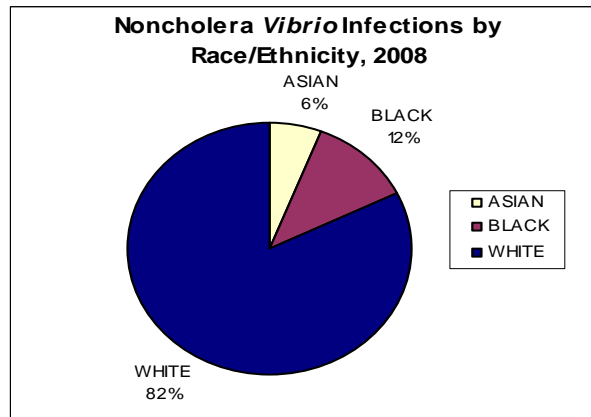
Noncholera *Vibrio* Infections:

In 2008, of the reported cases with known race and ethnicity, 82% of cases were White, 12% of cases were Black and 6% were Asian (Figure 3). The highest cases reported were in the age group 60+ and infections were mostly seen in Males (Figure 4).

***Vibrio cholerae* infections:**

In 2008, there was one case of *Vibrio cholerae* (Non-O1) and the infection was seen in a Male.

Figure 3



For more information:

<http://health.state.ga.us/epi/foodborne>

<http://health.state.ga.us/pdfs/epi/gers/Jul07GER.pdf>