

Vibrio Infection

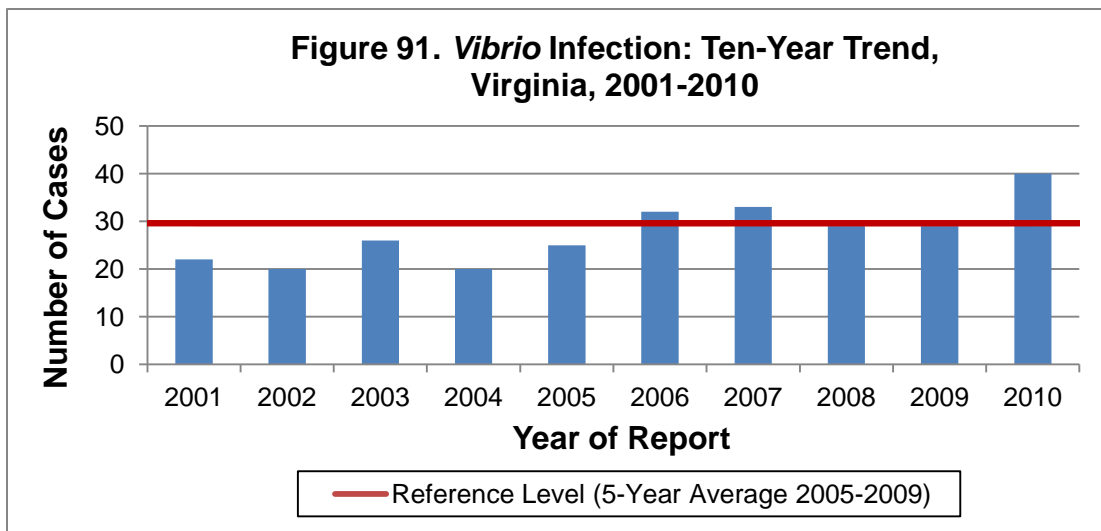
Agent: *Vibrio* (bacteria)

Mode of Transmission: Gastroenteritis is usually related to the consumption of raw or undercooked seafood, particularly shellfish. Several large foodborne outbreaks of *Vibrio parahaemolyticus* have occurred in the United States in which undercooked seafood was the food vehicle. Wound infections arise from environmental exposures, usually from brackish waters or from occupational injuries (e.g., among fishermen).

Signs/Symptoms: Syndromes associated with *Vibrio* infection include diarrhea, wound infection, and septicemia. Diarrheal illness is most common and includes watery stools, cramping, and abdominal pain. Low-grade fever, headache and chills are seen in half of those ill with diarrheal illness, while 30% of those with diarrheal illness will experience vomiting. Wound infection is usually severe in those who have liver disease or are immunosuppressed. Among those infected with *V. vulnificus*, over 50% of patients with primary septicemia die.

Prevention: Seafood should be cooked adequately and should be refrigerated. Abrasions suffered by those swimming in the ocean should be rinsed with clean, fresh water. Most people are probably susceptible, especially those with liver disease, decreased gastric acidity, diabetes, peptic ulcers, or immunosuppression. People in high risk groups should refrain from consuming raw or undercooked shellfish.

Other Important Information: Marine coast areas are the natural habitat of *Vibrio*. During the cold season, organisms are found in marine silt; during the warm season, they are found free in coastal waters and in fish and shellfish. Most *Vibrio* infections occur during summer and fall months, when levels of bacteria in brackish waters and estuaries are highest.



During 2010, 40 cases of *Vibrio* infection were reported in Virginia. This is greater than the 29 cases reported in 2009 and a 38% increase over the five-year average of 29.6 cases per year (Figure 91). The species breakdown among the 40 *Vibrio* infections included 17 (43%) infections caused by *V. parahaemolyticus*; nine (23%) caused by *V. alginolyticus*; seven (17%) caused by *V. vulnificus*; two (5%) caused by *V. cholera* non O1, non O139;

two (5%) caused by *V. fluvialis*; two (5%) caused by *Grimontia hollisae* (formerly known as *V. hollisae*) and one (2%) case with no species identified. Illnesses included 16 wound infections, 14 gastrointestinal infections, four ear infections, three septicemic infections, two other types of infection (i.e., specimens collected from respiratory sites) and one case with multiple infection sites (wound and septicemia) (Table 12).

Table 12. *Vibrio* Infections by Species and Site/Source of Infection, 2010

Species	Site/Source of Infection					
	Wound	Gastrointestinal	Ear	Septicemic	Other	Multiple
<i>V. parahaemolyticus</i>	9	8	0	0	0	0
<i>V. alginolyticus</i>	3	0	4	0	2	0
<i>V. vulnificus</i>	4	0	0	2	0	1
<i>V. cholera</i> non O1, non O139	0	1	0	1	0	0
<i>V. fluvialis</i>	0	2	0	0	0	0
<i>Grimontia hollisae</i>	0	2	0	0	0	0

The largest proportion of cases (35%) and the highest incidence rate (1.0 per 100,000) occurred in the 60 year and older age group. The second highest incidence rate was in the 50-59 age group (0.8 per 100,000), which represented 20 percent of all cases. Incidence among whites (0.2 per 100,000, 14 cases) was twice the rate among blacks (0.1 per 100,000, 1 case), although race was unknown for 60% of the cases.

Among the 40 cases reported in Virginia in 2010, *Vibrio* infection predominantly affected males. Sixty-three percent of infections occurred among males and the incidence rate was twice the rate for females (0.6 and 0.3 per 100,000, respectively). Geographically, the eastern region had the largest proportion of cases and the highest incidence rate (55%, 1.2 per 100,000), followed by the central region (15%, 0.4 per 100,000). Fifty-five percent of cases occurred during the third quarter, and onset peaked during the summer months of June, July, August and September (Figure 92). Among cases reported in 2010, two deaths were attributed to *Vibrio* infections (*V. vulnificus* and *V. cholera* non O1, non O139). Both occurred in males in the 60 year and older age group.

