

Vibrio Infection

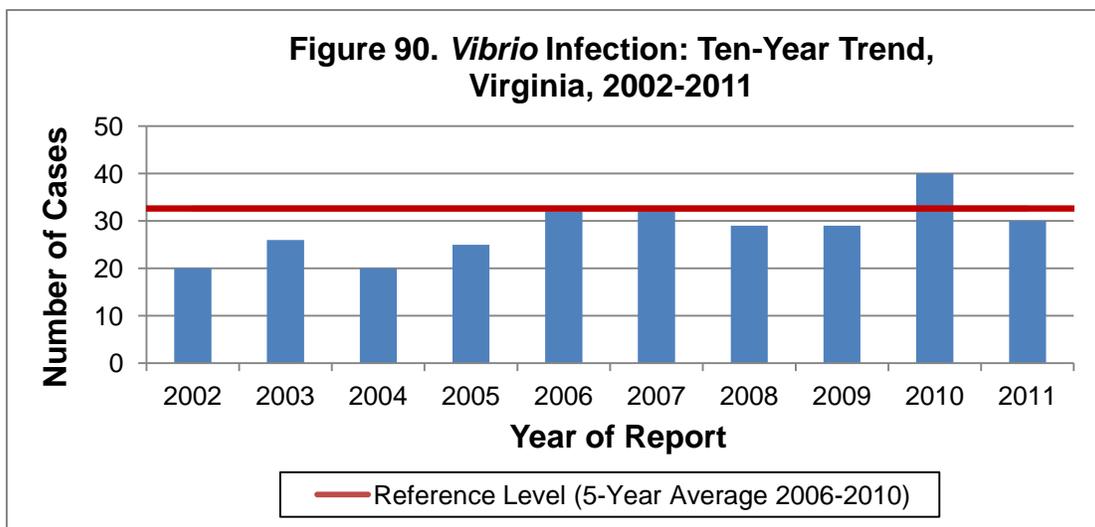
Agent: *Vibrio* (bacteria)

Mode of Transmission: Gastroenteritis caused by *Vibrio* 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 occur when seawater carrying the *Vibrio* bacteria enters the body through a break in the skin, 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 (bloodstream infection). 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 considered 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 2011, 30 cases of *Vibrio* infection were reported in Virginia. This is lower than the 40 cases reported in 2010 but similar to the five-year average of 32.6 cases per year (Figure 90). The species breakdown among the 30 *Vibrio* infections included 18 (60%)

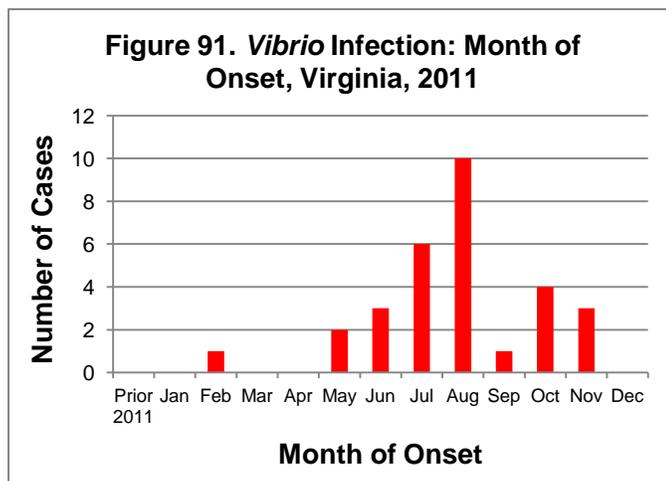
infections caused by *V. parahaemolyticus*; three (10%) caused by *V. fluvialis*; two (7%) caused by *V. alginolyticus*; two (7%) caused by *V. vulnificus*; two (7%) caused by *V. cholera* non O1, non O139; two (7%) cases with no species identified, and one (3%) caused by both *V. parahaemolyticus* and *V. alginolyticus*. Illnesses included 14 gastrointestinal infections, six ear infections, five wound infections, four septicemic infections, and one urinary infection (Table 12).

Table 12. *Vibrio* Infections by Species and Site/Source of Infection, 2011

Species	Site/Source of Infection				
	Wound	Gastrointestinal	Ear	Septicemic	Urinary
<i>V. parahaemolyticus</i> *	4	9	2	3	0
<i>V. fluvialis</i>	0	2	0	1	0
<i>V. alginolyticus</i> *	0	0	2	0	0
<i>V. vulnificus</i>	1	0	1	0	0
<i>V. cholera</i> non O1, non O139	0	2	0	0	0
<i>Vibrio</i> , unspciated	0	0	1	0	1
<i>V. parahaemolyticus</i> / <i>V. alginolyticus</i> coinfection	0	1	0	0	0

The largest proportion of cases (27%) and the highest incidence rate (0.6 per 100,000) occurred in the 60 year and older age group. The second highest incidence rate was in the 50-59 age group (0.5 per 100,000), which represented 17% of all cases. The incidence rate among whites (0.3 per 100,000, 14 cases) was higher than the rate among blacks (0.2 per 100,000, 3 cases), although race was unknown for 40% of the cases.

In Virginia, *Vibrio* infections affect males more often than females. Sixty percent of infections in 2011 occurred among males and the incidence rate was higher for males than females (0.5 and 0.3 per 100,000, respectively). Geographically, the eastern region had the largest proportion of cases and the highest incidence rate (53%, 0.9 per 100,000), followed by the northern region (30%, 0.4 per 100,000). Sixty-three percent of cases occurred during the months of June, July, and August, and onset peaked during the month of August (Figure 91).



Among cases reported in 2011, three deaths were attributed to *Vibrio* infections (all *V. parahaemolyticus*). All three deaths occurred in males. One death occurred in each of the 40-49, 50-59, and 60 year and older age groups.