

## Vibrio Infection

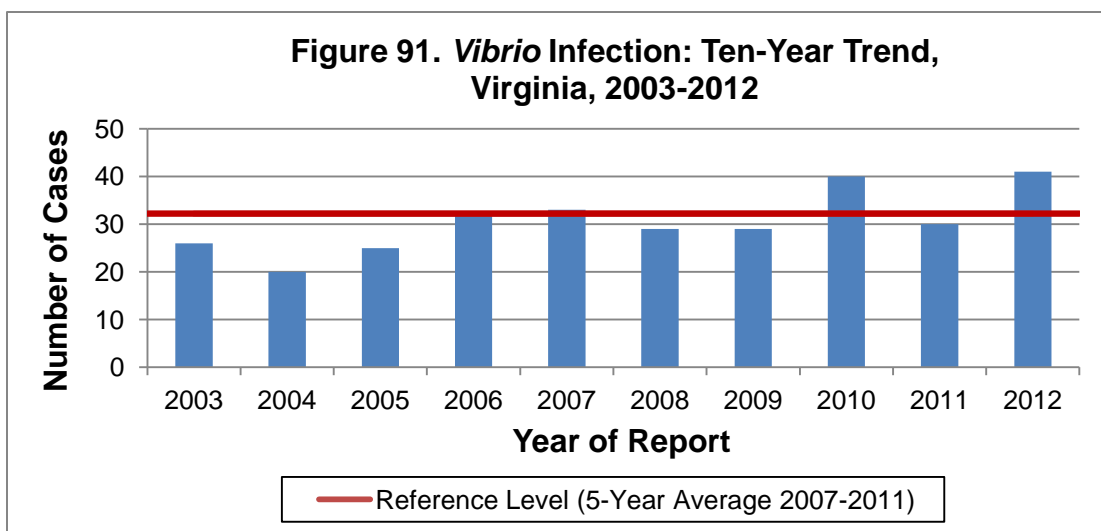
Agent: *Vibrio* (bacteria)

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 coastal 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 2012, 41 cases of *Vibrio* infection were reported in Virginia. This is higher than both the 30 cases reported in 2011 and the five-year average of 32.2 cases per year but similar to the 40 cases reported in 2010 (Figure 91). The species breakdown among the

41 *Vibrio* infections included 19 (46%) infections caused by *V. parahaemolyticus*; 8 (20%) caused by *V. vulnificus*; 5 (12%) caused by *V. alginolyticus*; 3 (7%) caused by *V. cholerae* (non O1, non O139), 3 (7%) caused by *Vibrio* with no species identified; 2 (5%) caused by *Grimontia hollisae*, and 1 (2%) caused by *V. mimicus*. Illnesses included 15 gastrointestinal infections, 4 ear infections, 14 wound infections, 7 bloodstream infections, and 1 urinary tract infection (Table 13).

**Table 13. *Vibrio* Infections by Species and Specimen Source, 2012**

<i>Vibrio</i> Species	<i>Vibrio</i> Specimen Source				
	Wound	Stool	Ear	Blood	Urine
<i>V. parahaemolyticus</i>	7	9	1	2	0
<i>V. vulnificus</i>	4	0	0	4	0
<i>V. alginolyticus</i>	2	0	3	0	0
<i>V. cholera</i> non O1, non O139	0	2	0	0	1
<i>Vibrio</i> , unspciated	1	1	0	1	0
<i>Grimontia hollisae</i>	0	2	0	0	0
<i>V. mimicus</i>	0	1	0	0	0

The largest number of cases occurred in the 60 year and older age group (10 cases), followed closely by the 10-19 year age group (9 cases). Though the numbers of cases are similar between these two groups, the breakdown of specimen collection sites is quite different. Among 10-19 year olds, five specimens were collected from wounds, two were from stool, and two were from the ear. For the 60 year and older group, five specimens were collected from the blood, three were from stool, and two were from wounds. No cases were reported among children less than one year of age and 3 to 5 cases were reported in each of the remaining age groups. Among the 61% of cases for whom race information was available, incidence rates were similar for whites and blacks (0.3 and 0.2 per 100,000, respectively).

In Virginia, *Vibrio* infections typically affect males more often than females and this was true in 2012, when 78% of cases were male. Geographically, the eastern region had the highest number of cases and the highest incidence rate (16, 0.9 per 100,000) followed by the central region (11, 0.8 per 100,000). Cases were clustered in the summer and early fall, with onset of illness for 63% of cases occurring in July, August, and September (Figure 92). Hospitalization information was available for 40 (98%) patients, with 22 cases (55%) reported as being hospitalized. Among the *Vibrio* infections reported in 2012, one death occurred in a male in the 50-59 year age group. *V. parahaemolyticus* was cultured from the patient's blood prior to death.

