

## **Vibrio Infection**

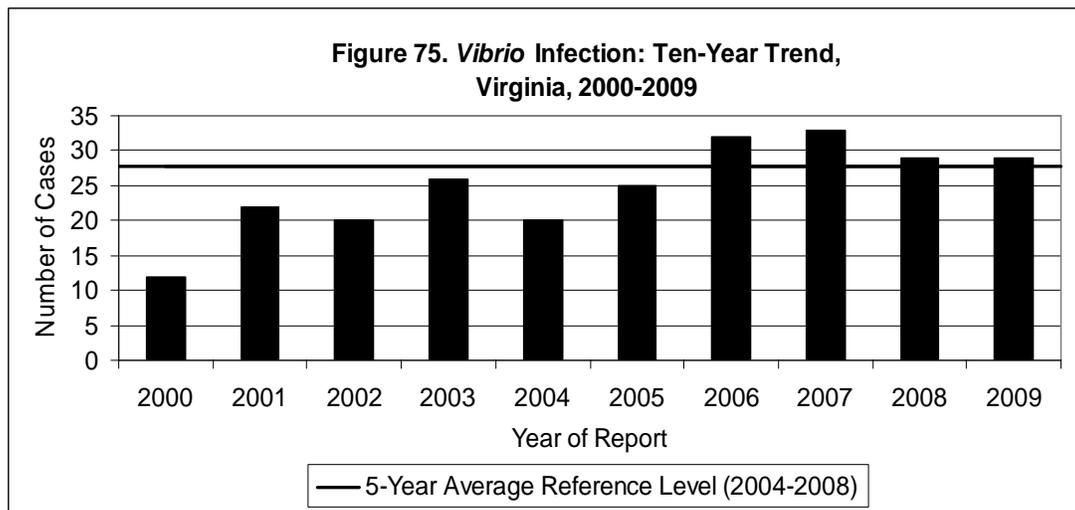
**Agent:** *Vibrio* (bacteria)

**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 2009, 29 cases of *Vibrio* infection were reported in Virginia. This is the same as the 29 cases reported in 2008 and a 4% increase over the five-year average of 27.8 cases per year (Figure 75). The species breakdown among the 29 *Vibrio* infections included nine (31%) infections caused by *V. parahaemolyticus*; seven (24%) caused by *V. alginolyticus*; five (17%) caused by *V. vulnificus*; three (10%) caused by *V. cholera* non 01, non 0139; two (7%) caused by *V. fluvialis*; two (7%) caused by other identified

species of *Vibrio* (*mimicus*, *furnissii*) and two (7%) cases with no species identified. One case was infected with multiple species of *Vibrio*. Illnesses included 10 gastrointestinal infections, nine wound infections, four septicemic infections, three ear infections, one other type of infection (i.e., specimen collected from earlobe) and one case with multiple infection sites (wound and septicemic). Among the 9 infections in which *V. parahaemolyticus* was identified, 6 were gastrointestinal infections, 2 were wound infections, and 1 was an ear infection. Among the 7 infections in which *V. alginolyticus* was identified, three were wound infections, 2 were ear infections, 1 was classified as other infection and 1 was an unknown source of infection. Among the 5 infections in which *V. vulnificus* was identified, 3 were septicemic infections and 2 were wound infections. For *V. cholera* non 01, non 0139, all 3 cases were associated with gastrointestinal infections. For *V. fluvialis*, both cases were associated with gastrointestinal infections.

Thirty-one percent of reported cases occurred in the 60 year and older age group and the incidence rate was the highest in this age group (0.7 per 100,000). The second highest incidence rate was in the 1-9 and 30-39 age groups (0.4 per 100,000), with each age group representing 14 percent of all cases. Incidence was the same (0.3 per 100,000) among whites (16 cases reported) and blacks (4 cases reported).

Among the 29 cases reported in Virginia in 2009, *Vibrio* infection predominantly affected males. Seventy-two percent of infections occurred among males and the incidence rate was three times the rate for females (0.6 and 0.2 per 100,000). Geographically, the eastern region had the largest proportion of cases and the highest incidence rate (48%, 0.8 per 100,000), followed by the central region (21%, 0.5 per 100,000). Fifty-five percent of cases occurred during the third quarter, and onset peaked during the summer month of July (Figure 76). Among cases reported in 2009, no deaths were attributed to *Vibrio* infections.

