

## **Escherichia coli Infection, Shiga Toxin-Producing**

Agent: Shiga toxin-producing *Escherichia coli* (bacteria)

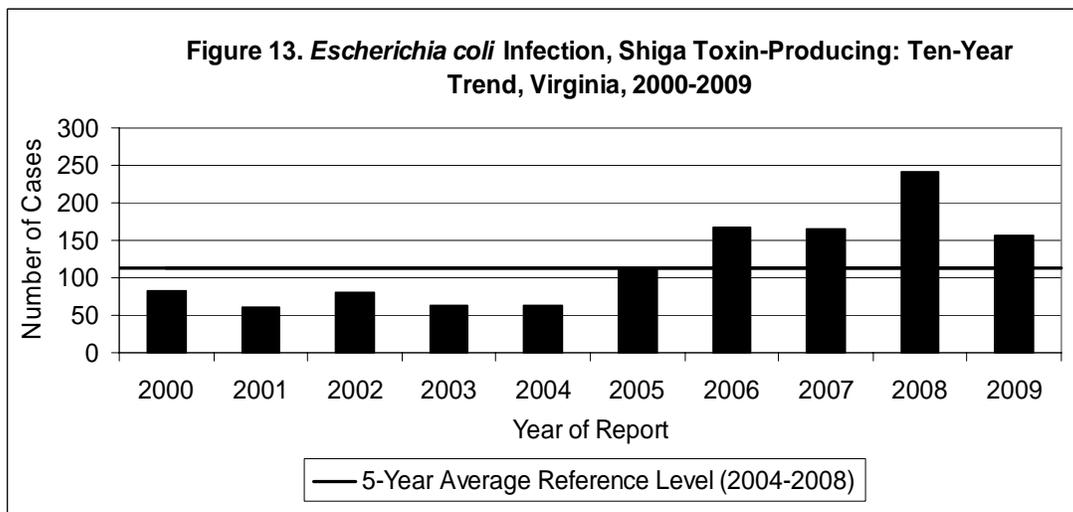
Mode of Transmission: Ingestion of food or water contaminated with human or animal feces, or direct transmission from infected persons or animals. Fomites and contaminated environment may also play a role in transmission.

Signs/Symptoms: Non-bloody to bloody diarrhea and severe abdominal cramps with little or no fever. In some people, including children less than five years of age and older adults, the infection can cause a complication called hemolytic uremic syndrome (HUS), in which the red blood cells are destroyed and the kidneys fail.

Prevention: Hands should be washed carefully after using the bathroom, after changing diapers or cleaning a child who has used the bathroom, after handling animals or their feces, and before preparing and eating food. All ground beef should be cooked thoroughly to an internal temperature of at least 160°. Raw milk, unpasteurized dairy products, and unpasteurized juices should not be consumed.

Other Important Information: The most virulent serotype in the shiga toxin-producing pathotype is *E. coli* O157:H7. In the U.S., *E. coli* O157:H7 is the serotype most commonly associated with hemolytic uremic syndrome (HUS). See section on Hemolytic Uremic Syndrome for more information.

Shiga toxin-producing *E. coli* infection has been a reportable condition in Virginia since 1999. During 2009, 156 cases were reported in the state. This is a 35% decrease from 2008, and a 4% increase from the five-year average of 149.4 cases per year (Figure 13).



The highest rate of infection was seen in the less than one year age group (8.6 per 100,000), followed by the 1-9 year age group (6.7 per 100,000). Other age groups had incidence rates between 0.4 and 2.5 per 100,000. Information on race was not available for 53% of the cases. Among those with race information, the rate for the white population was higher (1.2 per 100,000) than rates for the black and “other” populations (0.3 and 0.4 per 100,000, respectively). Females and males had similar incidence (2.1 and 1.9 per 100,000, respectively). The northwest and northern regions reported the highest incidence rates (3.2 and 2.8 per 100,000, respectively), whereas incidence rates in the

other regions ranged from 0.9 to 1.7 per 100,000. The lowest incidence rate was observed in the eastern region. Cases occurred throughout the year, but peaked in the warmer months, between April and August (Figure 14). One outbreak attributed to *E. coli* infection was reported during 2009. The multistate outbreak involved 72 cases, two of which were Virginia residents, and was associated with consumption of raw cookie dough.

