

Escherichia coli Infection, Shiga toxin-producing

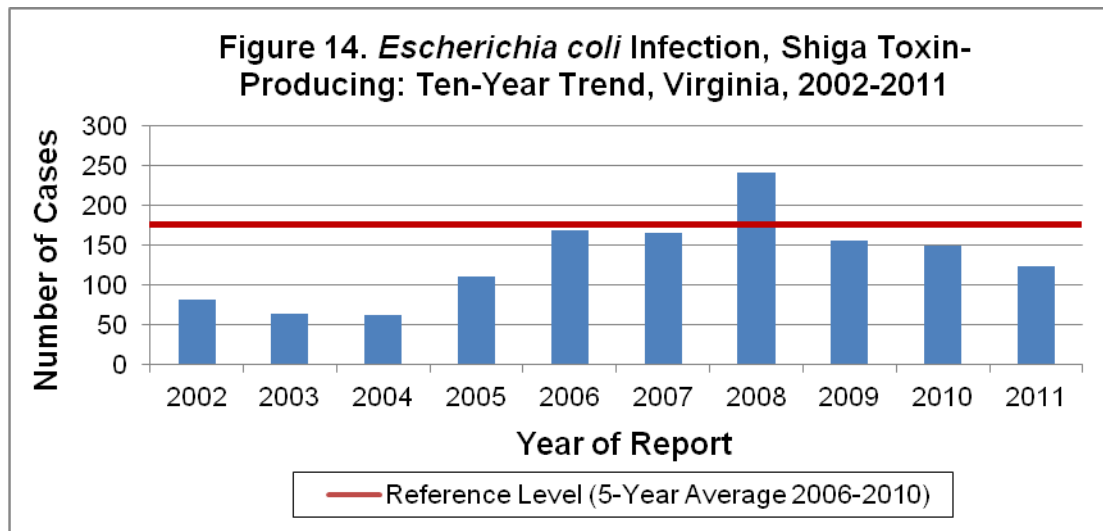
Agent: Shiga toxin-producing *Escherichia coli* (bacteria)

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* (STEC) infection has been a reportable condition in Virginia since 1999. The 123 cases reported in 2011 represent a 17% decrease from the 149 cases reported in 2010 and a 30% decrease from the five-year average of 175.8 cases per year (Figure 14).

The highest rate of infection was seen in the <1 year age group (8.0 per 100,000), followed by the 1-9 year age group (5.1 per 100,000). Other age groups had incidence rates between 0.4 and 1.9 per 100,000. Information on race was not available for 24% of the cases. Among those with race information, the rate for the white population (1.5 per 100,000) was higher than rates for the black (0.5 per 100,000) and “other” (0.2 per

100,000) race populations. Females had higher incidence of infection than males (1.7 and 1.3 per 100,000, respectively). The northwest and northern regions experienced the highest incidence rates (2.5 and 2.2 per 100,000, respectively), while incidence rates in the other regions were much lower (between 0.6 and 1.3 cases per 100,000).

While cases occurred throughout the year, a seasonal pattern was observed with cases peaking during the warmer summer months of May through August (Figure 15). One outbreak attributed to *E. coli* infection was reported during 2011. The outbreak was reported from the northern region; five individuals were infected through person-to-person transmission in a daycare setting.

