

Escherichia coli Infection, Shiga Toxin-Producing

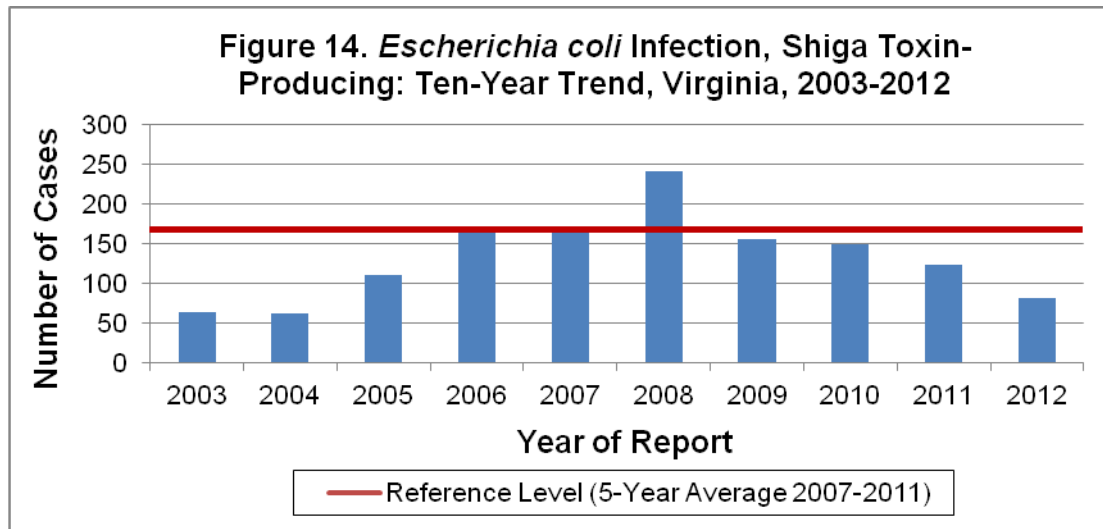
Agent: Shiga toxin-producing *Escherichia coli* (bacteria)

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 environments may also play a role in transmission.

Signs/Symptoms: Diarrhea, which may be bloody or non-bloody, 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 the section on Hemolytic Uremic Syndrome in this report for more information. Shiga toxin-producing *E. coli* (STEC) infection has been a reportable condition in Virginia since 1999.



The 81 cases of STEC reported in 2012 represent a 34% decrease from the 123 cases reported in 2011 and a 51% decrease from the five-year average of 166.8 cases per year (Figure 14).

The highest rate of infection was seen in the 1-9 year age group (2.8 per 100,000), followed by the 10-19 year age group (2.0 per 100,000). Other age groups had incidence rates between 0.4 and 1.0 per 100,000. Information on race was not available for 23% of the cases. Among those with race information, the rates were similar among racial groups, ranging from 0.7 to 0.9 per 100,000. Males had a slightly higher incidence of infection than females (1.1 and 0.9 per 100,000, respectively). The northwest and

southwest regions experienced the highest incidence rates (1.7 and 1.3 per 100,000, respectively), while incidence rates in the other regions were between 0.4 and 1.0 case per 100,000.

While cases occurred throughout the year, cases peaked during the warmer summer months of June through August (Figure 15). Three outbreaks attributed to *E. coli* infection were reported during 2012.

All three outbreaks involved multi-state clusters with Virginia having one case involved in each outbreak. Two of the outbreaks were food-related, while no source was identified for the third outbreak.

