

## ***Escherichia coli* O157 and other Shiga toxin producing *Escherichia coli* (STEC) infections**

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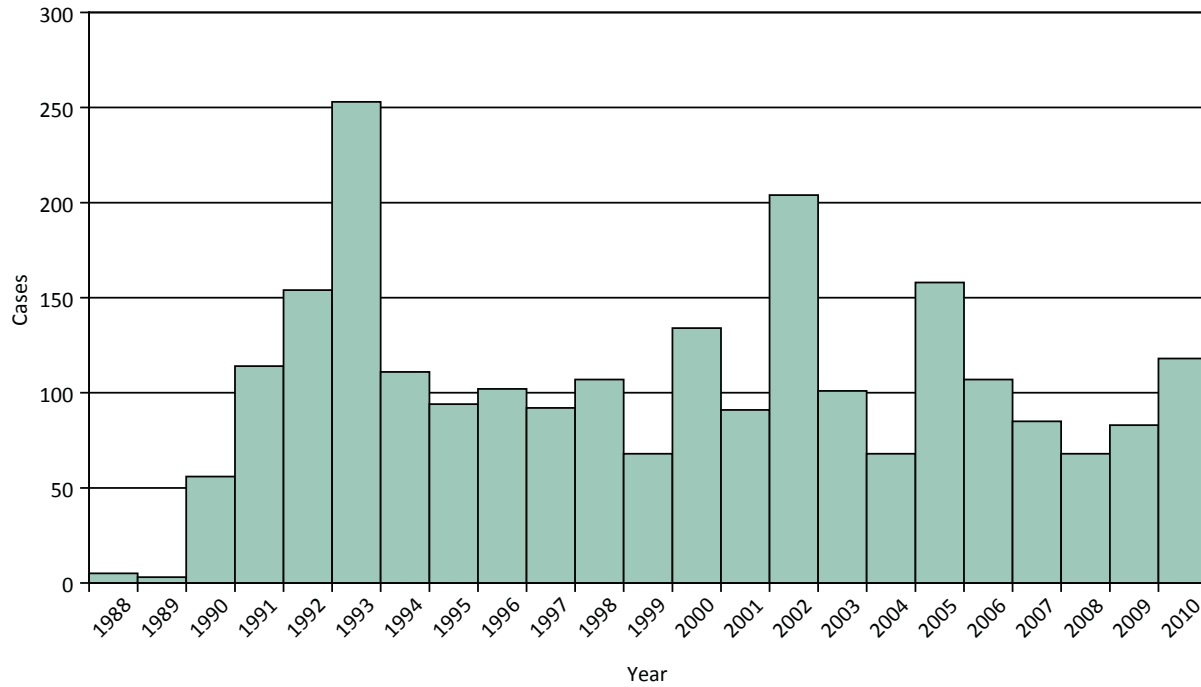
*E. coli* O157 (O157) has become one of the most feared common causes of infectious diarrhea. Oregon has been the setting for many O157 outbreaks, and investigations of those outbreaks combined with the analysis of other surveillance information have contributed greatly to our understanding of this pathogen. Spread by the fecal-oral route, O157 has a number of animal reservoirs, the most important of which are ruminants, including cattle, goats, sheep, deer and elk. Transmission often occurs from consumption of contaminated food or water, as well as direct person-to-person spread.

Mid-to-late summer is the peak season for *E. coli* O157 infections. The overall number of STEC cases increased from 83 in 2009 to 118 in 2010. Most of that trend was driven by increasing recognition of non-O157 serotypes; the numbers for O157 infections specifically changed very little (65 to 72). More labs are testing for the presence of Shiga toxin rather than just O157. Unfortunately, at the same time many labs are dropping culture-based methods, leaving clinicians (and epidemiologists) in the dark as to the specifics of the etiologic agent, and putting more of the diagnostic burden on the public health reference lab.

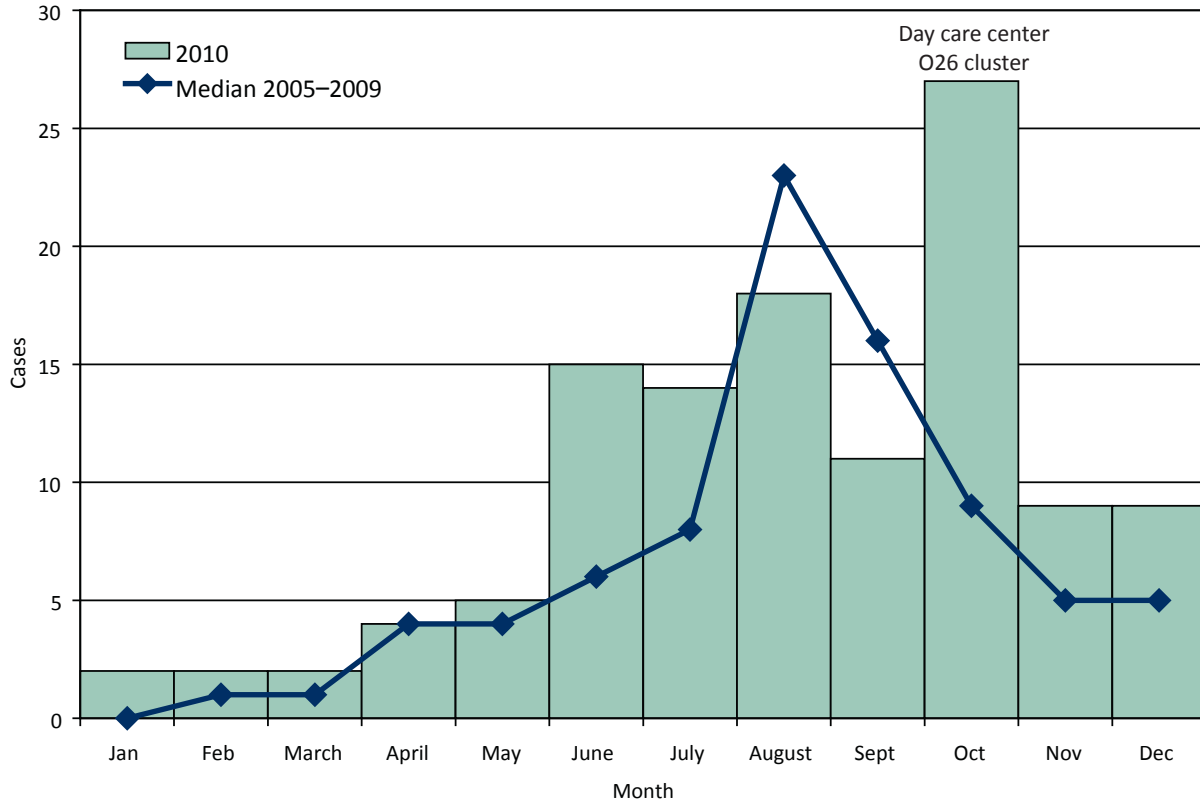
We investigated eight clusters of STEC infections in 2010: seven O157 outbreaks and one cluster of O26 infections—the latter the largest in US history (which turns out to be not saying much, and only a minority of the infected children at this day care center were even symptomatic, much less seriously so). One cluster with 11 cases was presumptively foodborne, but no source was identified. One very interesting cluster was traced to consumption of artisanal cheese from Washington state. Only a single Oregon case led to the unraveling of that mystery and unfortunately also to the untimely end of that producer's storied career.

Non-O157 STEC are a small but growing proportion of the problem, with increasing use of Shiga-toxin screening tests driving that trend. In 2010, 55 (27.5%) of 200 STEC for which the serotype had been determined were not O157, up from 12% in 2008–2009. The most common serogroups, other than O157, remain O26, O121, O111 and O103. No cases of O104 infection (the serogroup behind the massive 2011 German outbreak) have ever been seen in Oregon. Eternal vigilance is the price of freedom.

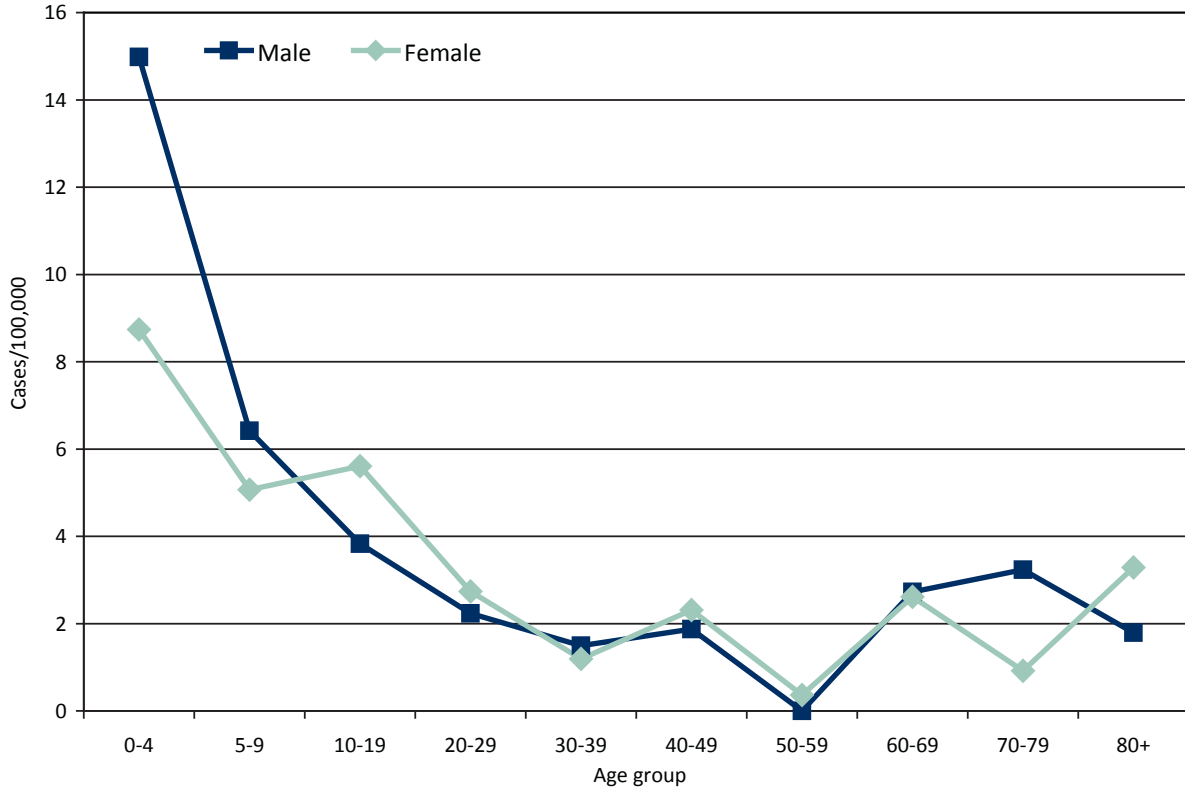
### STEC infection by year: Oregon, 1988–2010



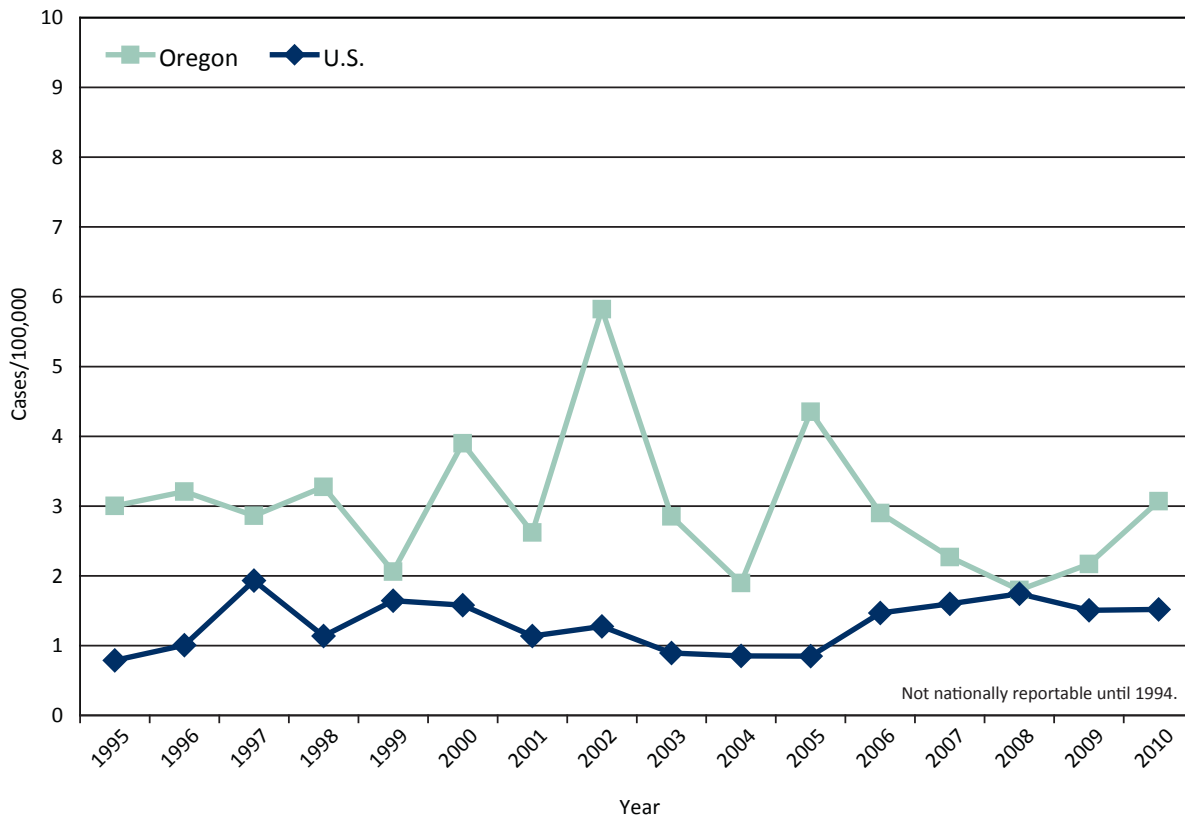
### STEC infection by onset month: Oregon, 2010



### Incidence of STEC infection by age and sex: Oregon, 2010



### Incidence of STEC infection: Oregon vs. nationwide, 1995–2010



# Incidence of STEC infection by county of residence: Oregon, 2000–2010

