**ESCHERICHIA COLI O157:H7**

*Escherichia coli* O157:H7, an enterohemorrhagic strain of *E. coli* (EHEC), is the agent for an illness of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP) are serious complications. Approximately 2-7% of patients with EHEC diarrhea progress to HUS, with children under 5 years of age being at greatest risk. Transmission is mainly by ingestion of contaminated food; inadequately cooked beef, raw milk or other foods contaminated with animal feces. It also may be waterborne or transmitted person to person in families, child care centers and custodial institutions.

**Laboratory Criteria for Confirmation:**
- Isolation of *Escherichia coli* O157:H7 from a specimen, OR
- Isolation of Shiga toxin-producing *E. coli* O157:NM* from a clinical specimen, OR
- Isolation of Shiga toxin-producing *E. coli*, (serogroup, non-O157, or not serogrouped).

*NM—Designation for stains of *E. coli* O157:H7 that have lost the flagellar “H” antigen and are nonmotile.

**Case Classification**
*Confirmed:* A case that is laboratory confirmed.
*Probable:*
- A case with isolation of *E. coli* O157 from a clinical specimen, pending confirmation of H7 or Shiga toxin, OR
- A clinically compatible case that is epidemiologically linked to a confirmed or probable case.

*Suspected:* A case of postdiarrheal HUS or TTP.

**Epidemiology**

<table>
<thead>
<tr>
<th>Kentucky</th>
<th>2003</th>
<th>Rate per 100,000</th>
<th>U. S. Rate (2002) per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>29</td>
<td>0.7</td>
<td>1.36</td>
</tr>
</tbody>
</table>

**Cases by Gender**

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>12</td>
<td>1.2</td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>0.8</td>
</tr>
</tbody>
</table>

*E. coli* O157:H7 Incidence in Kentucky, 1994-2003

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In 2003 there was an overall decrease in the reported cases of E. coli. The highest rates were in the 0-4 and 10-19 year age groups, 2.6 and 1.4 cases per 100,000 respectively. Cases occurred from January to December. There were 2 separate events where 2 or more related persons were infected from the same source. Through Pulse Field Gel Electrophoresis, it is now possible to link two or more cases of E. coli to a common source within the state or the U.S.