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An Enterohemorrhagic *Escherichia coli* O26 Outbreak at a Nursery School in Miyazaki, Japan

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Outbreaks of enterohemorrhagic *Escherichia coli* (EHEC) have frequently occurred in nursery schools in Japan (1, 2). We report an outbreak of EHEC O26:H11 (VT1) infection at a nursery school in Miyazaki Prefecture, Japan (Fig. 1). On August 18, 2006, a clinic notified the health center of a case of EHEC O26 VT1 infection. The patient was a 7-year-old girl. On August 21, upon investigation of the family, the VT gene was detected in a stool specimen from the patient’s 4-year-old sister, who attended a nursery school. Furthermore, five children in the same nursery school had diarrhea. The health center received a report of isolation of EHEC O26 (VT1) from two more children at the same nursery school.

Twenty-six isolates from 26 infected persons were analyzed by pulsed-field gel electrophoresis (PFGE). The PFGE patterns after digestion with *Xba*I were the same for all isolates except for one (Fig. 2, no. 26) which differed from the others by only one band (Fig. 2). The results suggest that this outbreak was caused by a common EHEC O26 strain.

The infection source to the first patient was never identified. As shown in Fig. 3, EHEC O26-positive patients continued to be detected over 2 weeks, suggesting person-to-person transmission from the nursery school children to family members. The percentages of infected children appeared to be higher in children ages 0 to 2 years (Fig. 4).

No patient was reported after September 6, and the last patient stopped excreting the pathogen on September 19. We

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Table 1. Detection of EHEC O26:H11

<table>
<thead>
<tr>
<th></th>
<th>Nursery school children</th>
<th>Primary school students</th>
<th>Employee</th>
<th>Family members</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. tested</td>
<td>229</td>
<td>45</td>
<td>49</td>
<td>78</td>
</tr>
<tr>
<td>No. of positive</td>
<td>29</td>
<td>1</td>
<td>0</td>
<td>3*</td>
</tr>
</tbody>
</table>

*: One of them was the first patient.

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We suspected a mass outbreak of EHEC O26 and conducted bacteriological examination of a total of 401 persons: 229 nursery school children, 45 primary school students who attended the after-school care class, 49 nursery school staff members, and 78 family members of the patients. EHEC O26 (VT1) was isolated from 33 persons: 1 primary school student, 29 nursery school children, and 3 family members (one of them was the first patient) (Table 1). Twenty-seven of those persons positive for EHEC O26 were asymptomatic and 6 developed symptoms, such as diarrhea (67%), abdominal pain (50%), fever (50%), and hemorrhagic stool (33%).

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concluded that the outbreak was terminated on September 25.

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REFERENCES