1. **Name of the Organism:** *Plesiomonas shigelloides*

   This is a **Gram-negative** rod-shaped bacterium which has been isolated from freshwater, freshwater fish, and shellfish and from many types of animals including cattle, goats, swine, cats, dogs, monkeys, vultures, snakes, and toads.

   Most human *P. shigelloides* infections are suspected to be waterborne. The organism may be present in unsanitary water which has been used as drinking water, recreational water, or water used to rinse foods that are consumed without cooking or heating. The ingested *P. shigelloides* organism does not always cause illness in the host animal but may reside temporarily as a transient, noninfectious member of the intestinal flora. It has been isolated from the stools of patients with diarrhea, but is also sometimes isolated from healthy individuals (0.2-3.2% of population).

   It cannot yet be considered a definite cause of human disease, although its association with human diarrhea and the virulence factors it demonstrates make it a prime candidate.

2. **Nature of Acute Disease:**

   Gastroenteritis is the disease with which *P. shigelloides* has been implicated.

3. **Nature of Disease:**

   *P. shigelloides* gastroenteritis is usually a mild self-limiting disease with fever, chills, abdominal pain, nausea, diarrhea, or vomiting; symptoms may begin 20-24 hours after consumption of contaminated food or water; diarrhea is watery, non-mucoid, and non-bloody; in severe cases, diarrhea may be greenish-yellow, foamy, and blood tinged; duration of illness in healthy people may be 1-7 days.

   The infectious dose is presumed to be quite high, at least greater than one million organisms.
<table>
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<tr>
<th>4. Diagnosis of Human Illness:</th>
<th>The pathogenesis of <em>P. shigelloides</em> infection is not known. The organism is suspected of being toxigenic and invasive. Its significance as an enteric (intestinal) pathogen is presumed because of its predominant isolation from stools of patients with diarrhea. It is identified by common bacteriological analysis, serotyping, and antibiotic sensitivity testing.</th>
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<td>5. Associated Foods:</td>
<td>Most <em>P. shigelloides</em> infections occur in the summer months and correlate with environmental contamination of freshwater (rivers, streams, ponds, etc.). The usual route of transmission of the organism in sporadic or epidemic cases is by ingestion of contaminated water or raw shellfish.</td>
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<tr>
<td>6. Relative Frequency of Disease:</td>
<td>Most <em>P. shigelloides</em> strains associated with human gastrointestinal disease have been from stools of diarrheic patients living in tropical and subtropical areas. Such infections are rarely reported in the U.S. or Europe because of the self-limiting nature of the disease.</td>
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<td>7. Course of Disease and Complications:</td>
<td><em>P. shigelloides</em> infection may cause diarrhea of 1-2 days duration in healthy adults. However, there may be high fever and chills and protracted dysenteric symptoms in infants and children under 15 years of age. Extra-intestinal complications (septicemia and death) may occur in people who are immunocompromised or seriously ill with cancer, blood disorders, or hepatobiliary disease.</td>
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<tr>
<td>8. Target Populations:</td>
<td>All people may be susceptible to infection. Infants, children and chronically ill people are more likely to experience protracted illness and complications.</td>
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<td>9. Food Analysis:</td>
<td><em>P. shigelloides</em> may be recovered from food and water by methods similar to those used for stool analysis. The keys to recovery in all cases are selective agars which enhance the survival and growth of these bacteria over the growth of the background microflora. Identification following recovery may be completed in 12-24 hours.</td>
</tr>
</tbody>
</table>
10. Selected Outbreaks:

Literature references can be found at the links below.

Gastrointestinal illness in healthy people caused by *P. shigelloides* infection may be so mild that they do not seek medical treatment. Its rate of occurrence in the U.S. is unknown. It may be included in the group of diarrheal diseases "of unknown etiology" which are treated with and respond to broad spectrum antibiotics.

Most cases reported in the United States involve individuals with preexisting health problems such as cancer, sickle cell anemia, immunoincompetence, the aged, and the very young, who develop complications.

**MMWR 47(19):1998**

On June 24, 1996, the Livingston County (New York) Department of Health (LCDOH) was notified of a cluster of diarrheal illness following a party on June 22, at which approximately 30 persons had become ill. This report summarizes the findings of the investigation, which implicated water contaminated with *Plesiomonas shigelloides* and *Salmonella* serotype Hartford as the cause of the outbreak.

**MMWR 38(36):1989**

In July 1988, a community hospital in southeastern Missouri reported isolating *Plesiomonas shigelloides* from the stool of a 14-month-old girl with watery diarrhea (no blood or mucus) and fever. Her highest recorded rectal temperature was 102°F (38.9°C). The child was treated with trimethoprim/sulfamethoxazole, and her illness resolved after 5 days.

For more information on recent outbreaks see the CDC.

11. Education and Background Resources:

Literature references can be found at the links below.

Available from the GenBank Taxonomy database, which contains the names of all organisms that are represented in the genetic databases with at least one nucleotide or protein sequence.
12. Molecular Structural Data:

None currently available.

**CDC/MMWR**

The CDC/MMWR link will provide a list of Morbidity and Mortality Weekly Reports at CDC relating to this organism or toxin. The date shown is the date the item was posted on the Web, not the date of the MMWR. The summary statement shown are the initial words of the overall document. The specific article of interest may be just one article or item within the overall report.

**NIH/PubMed**

The NIH/PubMed button at the top of the page will provide a list of research abstracts contained in the National Library of Medicine's MEDLINE database for this organism or toxin.

**AGRICOLA**

The AGRICOLA button will provide a list of research abstracts contained in the National Agricultural Library database for this organism or toxin.

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