Shigellosis - Technical Information

**Clinical Features**  Watery or bloody diarrhea, abdominal pain, fever, and malaise.

**Etiologic Agent**  Four species of *Shigella: boydii, dysenteriae, flexneri, and sonnei.*

**Incidence**  Approximately 14,000 laboratory confirmed cases of shigellosis and an estimated 448,240 total cases (85% due to *S. sonnei*) occur in the United States each year. In the developing world, *S.flexneri* predominates. Epidemics of *S. dysenteriae* type 1 have occurred in Africa and Central America with case fatality rates of 5-15%.

**Sequelae**  Reiter's syndrome is a late complication of *S. flexneri* infection, especially in persons with the genetic marker HLA-B27. Hemolytic-uremic syndrome can occur after *S. dysenteriae* type 1 infection. Convulsions may occur in children; the mechanism may be related to a rapid rate of temperature elevation or metabolic alterations.

**Transmission**  A small inoculum (10 to 200 organisms) is sufficient to cause infection. As a result, spread can easily occur by the fecal-oral route and occurs in areas where hygiene is poor. Epidemics may be foodborne or waterborne. *Shigella* can also be transmitted by flies.

**Risk Groups**  In the United States, groups at increased risk of shigellosis include children in child-care centers and persons in custodial institutions, where personal hygiene is difficult to maintain; Native Americans; orthodox Jews; international travelers; men who have sex with men; and those in homes with inadequate water for handwashing.

**Surveillance**  All reported cases are laboratory-confirmed in states or at CDC. Shigellosis is a notifiable infectious disease.

**Trends**  Decreasing incidence in cases since 1995; characteristically, *S. sonnei* causes large periodic outbreaks.

**Challenges**  Increasing resistance to available antimicrobial agents among isolates acquired domestically and abroad; absence of effective vaccines; modifying handwashing behavior to control prolonged community-wide outbreaks; identifying
targeted prevention measures in high-risk groups (e.g., Native Americans, Orthodox Jews, men who have sex with men, and children who attend daycare).

**Opportunities**

A major initiative to strengthen laboratory, epidemiologic, and public health capacity to detect and respond to epidemic *S. dysenteriae* type 1 in southern Africa could be duplicated in other regions at risk. Partnerships with local health departments and communities may lead to investigations of transmission and new prevention materials. Subtyping of *S. sonnei* by pulsed field gel electrophoresis can improve outbreak detection and control.

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