Ciprofloxacin- and Azithromycin-Nonsusceptible Shigellosis in the United States

**Summary:** CDC continues to receive new reports of infections with Shigella strains that are not susceptible to ciprofloxacin and/or azithromycin, the antimicrobial agents most commonly used to treat shigellosis. Most cases have been reported among gay, bisexual, and other men who have sex with men (collectively referred to as MSM) in Illinois, Minnesota, and Montana and among international travelers, but cases are also occurring among other populations. Shigellosis is very contagious and can spread quickly through communities and across different segments of the population.

CDC recommends meticulous handwashing and other hygiene practices to prevent shigellosis and encourages patients with symptoms of shigellosis such as diarrhea and fever to visit a healthcare provider. Clinicians should obtain stool cultures from patients suspected of having shigellosis, counsel patients about shigellosis prevention, and, when treatment is required, select drugs based on antimicrobial susceptibility test results.

This Health Alert Network (HAN) Advisory provides the following:

- Information about the current status of the outbreaks;
- Recommendations for clinical management, counseling, and follow-up of exposed patients and their contacts;
- Recommendations on general prevention methods for the public, childcare centers, MSM, and international travelers;
- Information about testing and interpretation of azithromycin susceptibility among shigellae; and
- Information about revisions to CDC’s Shigella website on shigellosis prevention among MSM.

**Resources**

- CDC Shigella page
- Shigella Infections among Gay & Bisexual Men
- Shigella Information for Travelers

Approximately 14,000 laboratory confirmed cases of shigellosis and an estimated 450,000 total cases (72% due to *S. sonnei*) occur in the United States each year.

Washington State receives 100 to 185 reports each year. In 2013, 122 cases were reported.

Link

Resources

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Recommendations for Clinicians

- Obtain stool cultures from patients suspected of having shigellosis.
- Base treatment for shigellosis, when needed, on the antimicrobial susceptibility profile of the individual isolate, or during a local outbreak, that of the outbreak strain.
- Counsel shigellosis patients about the importance of meticulous hand-washing after using the toilet, and avoiding activities most likely to transmit the infection to others, such as preparing food for others, swimming, group play among young children, and certain sexual activities (e.g., anal rimming or fisting).
- Recommend symptomatic contacts of shigellosis patients, particularly those suspected to have a multidrug-resistant strain, seek health care.
- For shigellosis patients with treatment failure or prolonged diarrhea, obtain follow-up stool cultures at short intervals (e.g., semi-weekly) until the patient has a negative culture. Shedding of multidrug-resistant shigellae in feces may be prolonged, particularly if the patient was treated with an antimicrobial medication to which the isolate was resistant. Confirming clearance of shigellae from stool will allow more accurate counseling about the timelines appropriate for return to higher-risk activities.

People at Risk

Young children are the most likely to get shigellosis, but people from all age groups are affected. Many outbreaks are related to childcare settings and schools, and illness commonly spreads from young children to their family members and others in their communities because it is so contagious.

Gay, bisexual, and other men who have sex with men (MSM)† are more likely to acquire shigellosis than the general adult population. Shigella passes from stools [poop] or soiled fingers of one person to the mouth of another person, which can happen during sexual activity. Many shigellosis outbreaks among MSM have been reported in the United States, Canada, Tokyo, and Europe since 1999.

HIV-infected persons can have more severe and prolonged shigellosis, including having the infection spread into the blood, which can be life-threatening.

Large outbreaks of Shigella have occurred in traditionally observant Jewish communities. Documented outbreaks in traditionally observant Jewish communities often begin in childcare settings and spread within and between households during social gatherings.

Travelers to developing countries may be more likely to get shigellosis, and to become infected with strains of Shigella that are resistant to important antibiotics. Travelers may be exposed through contaminated food, water (both drinking and recreational water), or surfaces. Travelers can protect themselves by strictly following food and water precautions, and washing hands with soap frequently. For more information, see

† The term men who have sex with men is used in CDC surveillance systems because it indicates the behaviors that transmit Shigella infection, rather than how individuals self-identify in terms of their sexuality.
Recreational Water Illnesses

During the warm weather months the Chelan-Douglas Health District typically observes a rise in the number of illness reports associated with recreational water use. If you have a patient with gastrointestinal illness or skin irritation ask about possible recreational water exposures.

Stomach and Intestinal Illness:

Cryptosporidium (Crypto)

Crypto has become one of the most common causes of water recreation diarrhea illness in the United States. The germ is found in people’s stool. It’s highly resistant to chlorine disinfection and can survive in a pool for as long as ten days. Swallowing contaminated water is how people are often infected. To help stop the spread of Crypto, people with diarrhea shouldn't go swimming. Learn more at Crypto, CDC.

Giardia

Giardia is another common cause of diarrhea and is found in infected people's stool. It can take about 45 minutes for this germ to be killed by chlorine disinfection in pools. You shouldn't swim if you have diarrhea and you should always avoid swallowing water while swimming. Learn more at Giardia, CDC.

Shigella

Shigella causes severe diarrhea, which is often bloody. It can be spread if an infected person with diarrhea swims or plays in areas such as beaches or inadequately disinfected pools. Having hand washing stations with soap near swimming areas helps keep the water from becoming contaminated. Childcare centers shouldn't provide water play areas. Learn more at Shigellosis, CDC.

E. coli O157:H7

People have gotten an E. coli infection by swallowing lake water while swimming. Symptoms are similar to Shigella and include severe diarrhea and bloody stool. This infection can also be life-threatening and cause permanent damage to the kidneys. Swimming in inadequately disinfected pools or contaminated beaches are potential sources of infection. Learn more at E. coli, CDC.

Norovirus

Noroviruses are very contagious and can spread through an infected person's stool or vomit. The illness often begins suddenly and usually includes nausea, vomiting, diarrhea, and stomach cramps. Chlorine disinfection helps kill this virus in pools, but lakes and beaches can be contaminated. Avoid swallowing water while swimming to help prevent infection. Learn more at Norovirus, CDC.
Recreational Water Illnesses

Skin Irritations

Hot Tub Rash - *Pseudomonas* dermatitis / Folliculitis

Hot Tub Rash or dermatitis is an infection that causes an itchy bumpy rash on the skin. The rash usually occurs within days of swimming in poorly maintained hot tubs or spas, but can also be spread by swimming in a contaminated pool or lake. Properly maintaining hot tubs and pools helps eliminate the germ that causes this rash. Learn more at [Hot Tub Rash, CDC](http://www.cdhd.wa.gov).

Swimmer’s Itch - *Cercarial* dermatitis

Swimmer's itch is a rash caused by an allergic reaction to parasites that typically infect some birds and mammals. The parasites come from infected snails which live in lakes, ponds, and oceans. People are not suitable hosts for the parasite's life cycle, so after burrowing into a swimmer's skin, the parasite soon dies. Reduce your risk by not swimming in area's known to have a swimmer's itch problem or where snails are commonly found, and showering or towel drying immediately after leaving the water. More tips on reducing the risk and treating swimmer's itch are at [Swimmer’s Itch, CDC](http://www.cdhd.wa.gov).

Swimmer’s Ear - *Otitis* externa

Swimmer's ear is an infection of the outer ear canal and can affect anyone, but is most common in children. Symptoms usually start a few days after swimming and include ear pain, itchiness, redness, swelling, and pus draining from the infected ear. It can be treated with antibiotic ear drops. Swimmer's ear is caused when water stays in the ear canal for long periods of time, allowing germs to grow and infect the skin. When swimming, try to keep ears dry. If water gets in your ear, tilt your head with ear facing down and gently pull your earlobe in different directions to help the water drain out. Learn more at [Swimmer's Ear, CDC](http://www.cdhd.wa.gov).

Cyanobacteria - Blue-green Algae

Cyanobacteria, or blue-green algae, are found in lakes, rivers, ponds, and seawater. Sometimes cyanobacteria is toxic and people can experience skin, eye, or ear irritation with contact. If toxic cyanobacteria is swallowed, it can cause stomach cramps, vomiting, diarrhea, sore throat, fever, headache, muscle and joint pain, or nerve and liver damage. Avoid swimming in or having contact with algal blooms. Don’t let pets drink or swim in waters with algal blooms. Learn more about [Blue-Green Algae](http://www.cdhd.wa.gov).

Chemical Sensitivity

Some people can experience allergic reactions, such as skin redness and itching, to chemicals used in pools. The reactions commonly occur within an hour or two of being in the water. It's also possible that improper use of chemicals or a chemical release at a pool could expose people to skin or respiratory irritants.