



Philadelphia Department of Public Health
Division of Disease Control

JAMES W. BUEHLER, MD
Health Commissioner

NAN FEYLER, JD, MPH
Deputy Commissioner for Public Health Programs

CAROLINE C. JOHNSON, MD
Director, Division of Disease Control

Health Advisory

Ciprofloxacin-resistance in *Shigella* isolates in Philadelphia

April 7, 2015

From August to December 2014, the Philadelphia Department of Public Health (PDPH) identified six isolates of domestically-acquired *Shigella sonnei* that were resistant to ciprofloxacin. All six isolates were from adult men who identified as men who have sex with men (MSM) and four were known to be infected with HIV. Ciprofloxacin is currently the preferred drug used to treat shigellosis in adults due to high levels of resistance to ampicillin and trimethoprim/sulfamethoxazole (Bactrim). In the past five years, 59% of tested *Shigella* isolates in Philadelphia were resistant to ampicillin and 60% were resistant to Bactrim (Figure). In 2014, 16% of isolates were resistant to ciprofloxacin. Nationally, multi-drug resistant *Shigella* is an increasing public health problem. In 2014, a large, multi-state cluster of ciprofloxacin-resistant *Shigella* was detected with approximately half of the cases associated with international travel.¹

Shigellosis has a very low infectious dose, is highly contagious, and is spread through the fecal-oral route. Symptoms of shigellosis typically begin one to four days after exposure to the bacteria and include diarrhea, fever, abdominal cramps, nausea, or vomiting. Severe complications including dehydration, bacteremia, and seizures may develop in young children, the elderly, and immunocompromised individuals.

Healthcare providers are advised to culture the stool of patients presenting with symptoms consistent with shigellosis and to request antimicrobial susceptibility testing on all *Shigella* isolates. Antibiotic therapy may be recommended to help shorten the duration of illness and reduce disease transmission, but is typically reserved for patients with severe disease, who are immunocompromised, or working in high-risk settings (childcare, healthcare, foodhandling). Treatment should be tailored on the basis of antimicrobial susceptibility testing. Individuals who work in or attend high-risk settings are to be excluded from these settings until two negative stool cultures are obtained.

Given the changing epidemiology of shigellosis in Philadelphia, healthcare providers are encouraged to educate patients that shigellosis can be acquired via sexual activity, particularly through oral-anal and oral-genital contact. The use of latex barriers such as condoms and dental dams can reduce the risk of transmission. Additionally, all patients should be reminded to wash hands with soap and water after using the bathroom or changing diapers to decrease the risk of transmission.

¹Bowen A, Hurd J, Hoover C, et al. Importation and Domestic Transmission of *Shigella sonnei* Resistant to Ciprofloxacin — United States, May 2014–February 2015. *MMWR* 2015;64:318-20.

SUMMARY POINTS

- Ciprofloxacin-resistance in domestically-acquired *Shigella* infections has been detected in Philadelphia.
- Due to unpredictable drug resistance, all *Shigella* isolates should undergo antimicrobial susceptibility testing.
- Antibiotic therapy is indicated for those with severe infections, who are immunocompromised, or who are at high risk for spreading the infection to others.
- Report all cases of shigellosis to PDPH by calling 215-685-6748 or faxing 215-238-6947.

Figure: Percentage of isolates (N=300) resistant to ampicillin, tmp/sfx (Bactrim), and ciprofloxacin in *Shigella* isolates – Philadelphia, 2010-2014

