

Local Health on the Web

[St. Louis County](#)
[St. Louis City](#)
[St. Charles County](#)
[Jefferson County](#)
[Franklin County](#)

Contact Us

Communicable Disease Control Services:
314-615-1630
Fax: 314-615-8346

STD Program:
314-615-8331

TB Program:
314-615-1631

Emergency Preparedness:
314-615-1623

Dolores Gunn, MD

Director

St. Louis County Department of Health

Michael Williams, PhD

Director

Communicable Disease Control Services and Emergency Preparedness

Richard Knaup

Communicable Disease Services Coordinator

John Shelton

Editor

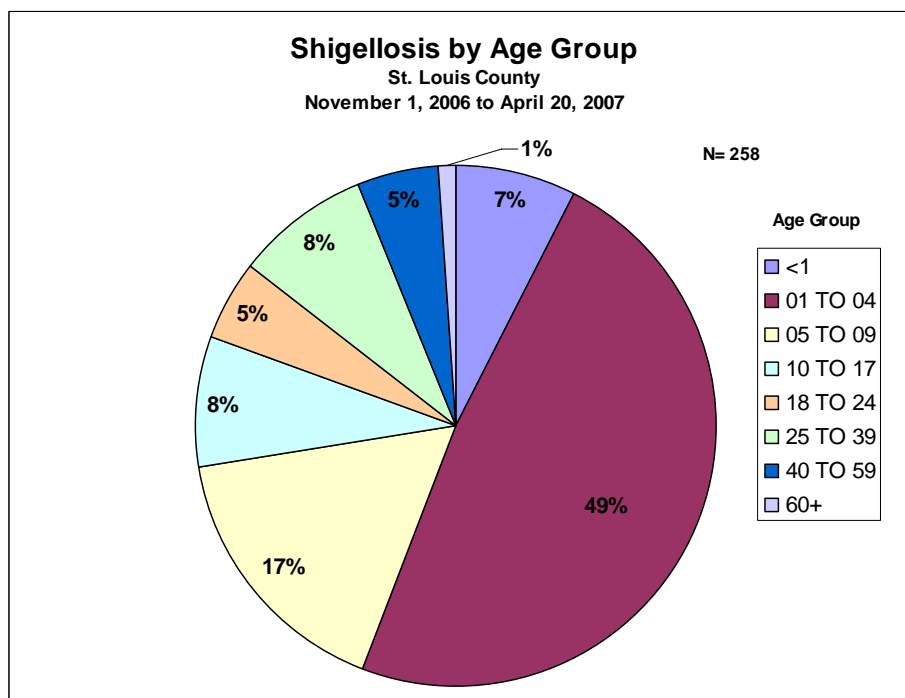
We welcome your comments and suggestions. Please email them to us at: dohcdcs@stlouisco.com

Shigellosis: The Return of an Old Nemesis

Emily Ostmann, MPH
Epidemiology Specialist
St. Louis County Department of Health

Six shigellosis cases were reported among St. Louis County residents during November 2006. This was slightly higher than normal. In mid-November, the St. Louis County Department of Health identified and investigated an outbreak of shigellosis in a daycare center. This marked the beginning of a larger community wide outbreak that soon followed. During January 2007, reports increased to 27 among County residents, the majority occurring among daycare attendees and employees. There were no individual daycare centers with multiple cases at that time. The Communicable Disease Control Services Division closely monitored the increase, and identified that the majority of cases were occurring in the North St. Louis County area.

Subsequently, shigellosis outbreaks occurred in three daycare centers located in North County during early February. At that point, the St. Louis County Department of Health concluded that a community wide outbreak was underway. Shigellosis continues to be reported at an increased level with an increasing number of daycare centers being associated with these cases.



CDC Revises Treatment Recommendations for Gonorrhea

In a MMWR article published April 13, CDC announced that it is no longer recommending fluoroquinolones to treat gonorrhea. Antibiotics in this drug class include ciprofloxacin, ofloxacin, and levofloxacin. CDC reported that between January and June of 2006, about 6% of gonococcal isolates from heterosexual males were resistant to fluoroquinolones.

CDC's first line recommendations for treating gonorrhea are now limited to:

ceftriaxone 125 mg IM

or

cefixime 400 mg PO

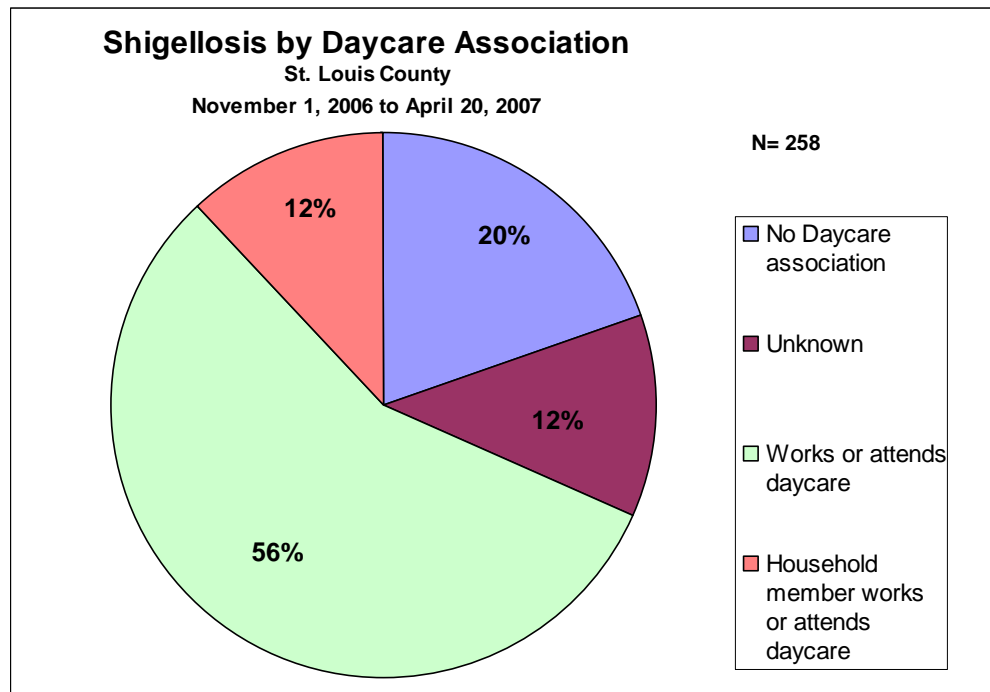
Cefixime is currently only available as a suspension.

For more information, please call the St. Louis County STD Program at 314-615-8331 or the Missouri Department of Health and Senior Services at 573-751-6142.

The entire article is available at the link below:

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5614a3.htm?s_cid=mm5614a3_e

Two hundred and fifty-eight shigellosis cases were reported among County residents between November 1, 2006, and April 20, 2007. Of these, 163 are confirmed and 95 are probable. During this time, 25 daycare centers have had at least one attendee positive for shigellosis. The majority of these are concentrated in North St. Louis County. Case rates in affected St. Louis County Zip codes have ranged from 1.8 to 253.5 per 100,000 population (see accompanying map). Over 50% of the cases reported are associated with daycare. Of the cases not directly associated with daycare, 32% have a household member who is associated with daycare. Attack rates for daycare centers range between 1% and 66%, but individual classrooms have had attack rates as high as 72%. Daycare centers associated with the February outbreaks had the highest number of cases. More recently, affected daycares have had a limited number of cases.



Approximately 50% of cases have occurred among children between the ages of one and four. Median age is 4 years, mean age is 9.9 years (SD=13.9) and the range is from 0 months to 75 years old. In cases under the age of 18, gender is distributed nearly equally with 97 females and 111 males. Females account for 82% of the cases among those 18 years and older, suggesting that female caregivers and staff members in daycares are acquiring the infection via secondary transmission from infected children.

Clinical Features

Shigellosis, caused by *Shigella sonnei*, is a bacterial infection that affects the gastrointestinal system. Symptoms include fever, headache, abdominal cramps and watery diarrhea which can include mucoid stools with or without blood. The incubation period is approximately 1 to 3 days after exposure. Shigellosis is a self-limited illness usually lasting around 4 to 7 days, but can be passed through the stool for 4 weeks after the illness without antimicrobial therapy. Children, the elderly, the debilitated, and the malnourished are at most risk for the illness. Infection occurs by direct or indirect fecal-oral transmission of *Shigella sonnei*. Among the most highly contagious of all bacteria, only 10 organisms are needed to cause an infection. Secondary attack rates can be as high as 40% in households. Many cases are related to the spread of illness in child-care settings.

Serogroups and PFGEs

Shigella sp. isolates are routinely sent by clinical laboratories to the Missouri Department of Health Laboratory for confirmation. There, serogroups and pulsed field gel electrophoresis (PFGE) types are identified. Due to the overwhelming number of shigellosis cases in the St. Louis area, not all isolates were typed.

Serogroups for 143 cases were all found to be *Shigella sonnei* (Group D). PFGEs were identified for 71 cases, and of them, 91% were the MOS325 strain or one very similar.

Antibiotic Effectiveness

Antibiotic susceptibility testing performed on *Shigella* cultures included ampicillin, ciprofloxacin, levofloxacin, ceftriaxone, and trimethoprim-sulfamethoxazole (TMP/SMZ). Ciprofloxacin and levofloxacin are not recommended for use in children under 18, so physicians have most often prescribed TMP/SMZ and azithromycin for them. Treatment information is available for 92 confirmed cases. Of those, 49% were prescribed TMP/SMZ and 26% were prescribed azithromycin. Trimethoprim- sulfamethoxazole failed 16% of the time at the time the first follow-up specimen was obtained, 48 hours after the discontinuation of antibiotics. Azithromycin was 100% effective in the follow-up culture, but since this antibiotic is long acting and can stay in the system up to 5 days, there may be a question of validity in the follow-up culture.

Control Measures

Shigellosis is one of the 70 reportable conditions in Missouri, and there are standard control measures that are required even outside of a community-wide outbreak. The Missouri Communicable Disease Investigation Reference Manual requires that "*cases and ill contacts of shigellosis patients should be excluded from foodhandling, the care of children of patients, and other occupations that pose significant risk of transmission*". The cultures must be obtained 24 hours apart, and 48 hours after the completion of antibiotic therapy, with results reported to the local public health department. These standards apply to daycare attendees or staff members:

- With confirmed shigellosis
- Who are symptomatic and epidemiologically linked to a confirmed case

The St. Louis County Department of Health vigorously enforced this policy as the number of cases continued to climb.

In addition to excluding children from daycare, the St. Louis County Department of Health provided clear instructions about handwashing, diapering and sending children home if they had signs of diarrhea. After one child with shigellosis has been identified in a facility, all symptomatic children and staff are required to have two negative cultures according to the state policy. No children or staff members may return without Department of Health approval. As an added control measure, St. Louis County Public Health Nurses and environmental inspectors visited daycares that were affected by outbreaks and other large daycare facilities in North County that did not yet have any cases of shigellosis. These educational measures play an important role in raising awareness for daycare operators. Hospital emergency departments in St. Louis County and St. Louis Children's Hospital were alerted to the outbreak and encouraged to help identify symptomatic patients who attend or work at a daycare.

In March, in order to expand awareness of the outbreak, the St. Louis City Health Department and the St. Louis County Department of Health issued a Health Alert notifying local physicians of the increase in *Shigella sonnei* cases. The alert included information about treatment, control measures, and general nature of shigellosis. The Missouri Department of Health and Senior Services daycare licensing program identified Zip codes in St. Louis City and St. Louis County with high shigellosis case rates, and mailed informational materials to facilities located in these areas. The Environmental Protection Division of the St. Louis County Department of Health delivered information about shigellosis to daycares in the affected area.

Conclusion

Few bacteria are needed to transmit shigellosis from person to person through the fecal-oral route. Settings such as daycare facilities are at higher risk of an outbreak of the illness. St. Louis County has experienced a large increase of shigellosis cases, and in coordination with State and regional public health agencies, is working to reduce the number of cases through education and intensive application of outbreak control measures.

Links for Further Information

Missouri Department of Health and Senior Services, "Communicable Disease Investigation Reference Manual."

<http://www.dhss.mo.gov/CDManual/Shigella.pdf>

Centers for Disease Control and Prevention, Health Information, "Shigellosis", Frequently Asked Questions.

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/shigellosis_g.htm

(12 October 2005)

Reference

Mandell, G.L., Bennett, J.E., & Dolin, R., (2005). Mandell, Douglas, and Bennett's Principles and practice of infectious diseases, 6th edition. Volume 2. Philadelphia, PA: Elsevier Churchill Livingstone.