

TO: Vermont Health Care Providers, Hospitals, Clinics and Laboratories

FROM: Patsy Kelso PhD, State Epidemiologist for Infectious Disease

SHIGELLOSIS UPDATE AND TREATMENT GUIDELINES

Summary – Confirmed *Shigella sonnei* Outbreak Associated with Wake Robin Community

The Health Department and the Centers for Disease Control and Prevention are investigating an outbreak of shigellosis at the Wake Robin retirement community.

As of November 6, there were 22 laboratory-confirmed cases and at least 44 probable cases (defined as symptoms consistent with shigellosis in individuals who were residents, staff, or visitors to the facility since October 2018).

Background Information on Shigella

Clinical manifestations of shigellosis range from watery or loose stools with minimal symptoms to more severe illness including high fever, abdominal cramps or tenderness, tenesmus, and mucoid stools with or without blood. Symptoms usually resolve in five to seven days but sometimes last for four or more weeks. Asymptomatic infection is possible.

Shigella bacteria are present in the stools of infected people while they have diarrhea, and for up to four weeks after symptoms resolve. The primary mode of transmission is fecal-oral, although transmission can also occur via contact with contaminated surfaces, ingesting contaminated food or water, or sexual contact. The incubation period is one to seven days, but is usually less than four days.

Shigella Advice for Clinicians

Most patients with *Shigella* diarrheal illness require only supportive care, including fluid replacement. Antibiotics may be prescribed when warranted by the severity of illness (including invasive disease), underlying health conditions, or a patient's occupation (e.g. food handler, child care worker/attende, or health care worker).

Common first-line oral antibiotics for susceptible *Shigella* infections are fluoroquinolones (for adults) and azithromycin (for children). Ceftriaxone is an alternative treatment agent.

The strain of *Shigella* in this outbreak is extensively drug resistant with resistance genes to multiple antibiotics, including an extended-spectrum beta lactamase (ESBL) gene. Antimicrobial susceptibility testing shows the strain is NOT susceptible to common treatment agents including ampicillin, azithromycin, ceftriaxone, and trimethoprim-sulfamethoxazole. In addition, this strain of *Shigella* may be harder to treat with ciprofloxacin due to emerging resistance genes. Antimicrobial susceptibility tests may not identify the presence of a ciprofloxacin resistance mechanism.

Diagnosis

- The appropriate specimen for identification of *Shigella* is a stool or a rectal swab containing feces. Sensitivity of diagnosis is improved by submitting a specimen as soon as possible after it is passed.
- Order antimicrobial susceptibility testing of the isolate to guide the choice of antibiotic.
- If *Shigella* is identified by a culture-independent diagnostic test (e.g. PCR), request a culture to obtain an isolate for antimicrobial susceptibility testing.
- Hospital laboratories in Vermont should forward *Shigella* isolates or original specimens to the Health Department Laboratory for further testing, such as molecular subtyping (performed at no charge). Submit specimens through the existing hospital courier service for receipt at the Health Department Laboratory within 48 hours. Stool specimens should be collected and preserved in Cary-Blair medium and refrigerated at 4°C . VDHL Kit #1 (which may be obtained at no charge by contacting the Laboratory's Customer Service at 802-338-4724), or an appropriate culture specimen container (available from hospital laboratories) should be used.

Treatment

- If indicated, choose an antibiotic based on the results of antimicrobial susceptibility testing whenever possible.
- The strain of *Shigella* in this outbreak is NOT susceptible to azithromycin, ceftriaxone, or other antibiotics including ampicillin, nalidixic acid, streptomycin, sulfisoxazole, trimethoprim-sulfamethoxazole, and tetracycline.
- The strain appears to be susceptible to gentamicin and meropenem.
- The strain appears susceptible to ciprofloxacin by antimicrobial susceptibility testing, but has quinolone resistance mechanisms by genetic testing. Ciprofloxacin may not be effective for those with severe disease.
- Consider consulting an infectious disease specialist for management of patients with multidrug-resistant or complicated *Shigella* infections.
- Anti-motility medications that inhibit peristalsis, such as loperamide (e.g. Imodium) or diphenoxylate with atropine (e.g. Lomotil) are contraindicated and may prolong illness and increase the rate of complications.

Report all suspected and confirmed cases to the Health Department's Infectious Disease Epidemiology program at 802-863-7240.

References for Clinicians

[2017 IDSA Clinical Practice Guidelines for the Treatment and Management of Infectious Diarrhea Red Book \(Report of the Committee on Infectious Diseases, American Academy of Pediatrics\)](#)

For more information:

<https://www.cdc.gov/shigella/diagnosistreatment.html>

<https://www.cdc.gov/shigella/treatment/antibiotic-resistance-general.html>

<http://www.healthvermont.gov/immunizations-infectious-disease/food-waterborne-diseases/shigellosis>