

Recommendations for Control of *Shigella* Diarrhea during a Regional Increase or Outbreak

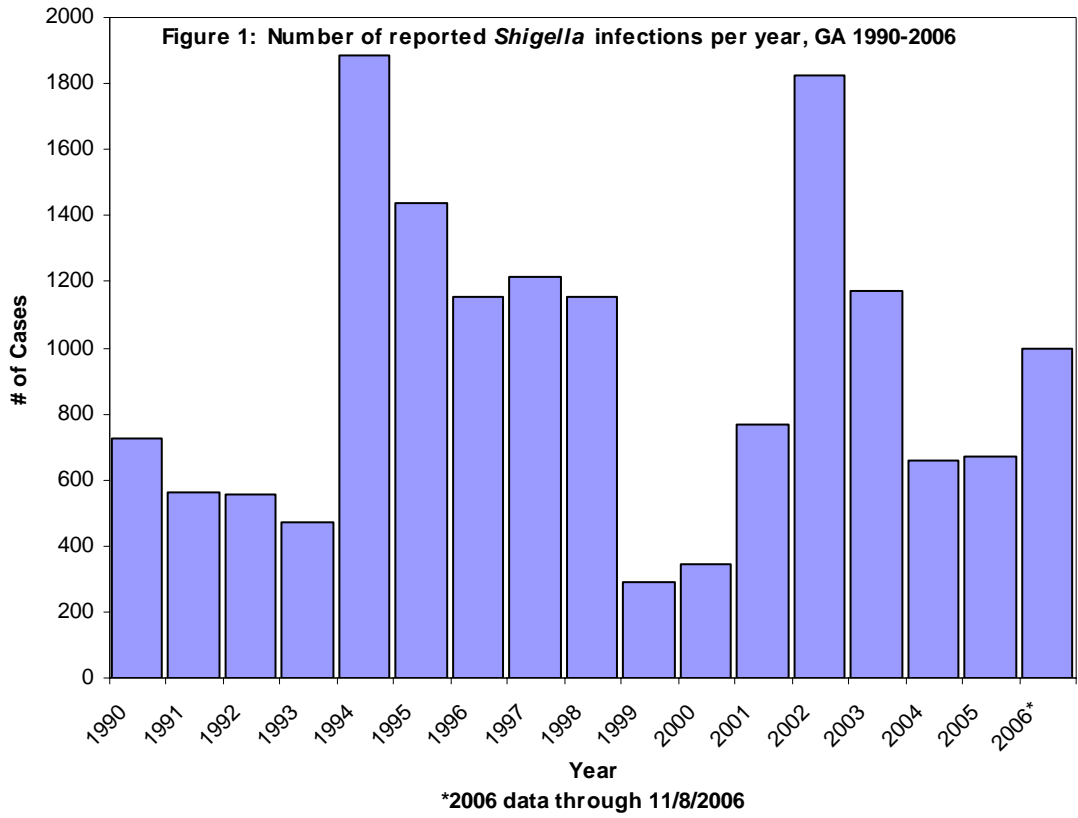
Reports of *Shigella* infections in Georgia have increased during 2006 (See Figure 1). Typically, cases of shigellosis increase for a few years, decrease for a few years, and then increase again. It is not uncommon for community-wide outbreaks to occur, and they are difficult to control. Most epidemiologic investigations do not identify point sources of exposure, although it is possible to become infected with *Shigella* by eating contaminated food or drinking or swimming in contaminated water. Instead, the spread of shigellosis tends to be consistent with person-to-person transmission through the fecal-oral route or fomites.

Control measures for shigellosis are a challenge. An organized effort to promote handwashing with soap and water is still the single most important control measure to decrease transmission. Outbreaks among children, especially young children in schools or childcare centers, are difficult to control. Shigellosis is extremely contagious and can spread easily from person-to-person and through fomites. Young children may not wash their hands carefully and this contributes to rapid spread of the infection. Even when schools and child care centers are diligent in implementing control measures, spread may still occur, particularly if there are a large number of cases in the community. The importance of handwashing before meals, before preparing food, and after using the toilet or changing diapers should be stressed with parents and teachers.

Antimicrobials have limited role in the control of epidemic shigellosis and should be reserved for patients with severe disease or for contacts of the infected persons (e.g. daycare center attendees, workers in day care centers, and foodhandlers) when epidemiologically indicated. Patients should follow their healthcare provider's advice about antibiotic treatment. Although antibiotics are effective in reducing duration of illness and eradicating the organism from stool, *Shigella* organisms can acquire antibiotic resistance rapidly. In 2005, more than 85% of *Shigella* isolates sent to the Georgia Public Health Laboratory were resistant to Ampicillin; 25% were resistant to Trimethoprim-Sulfamethoxazole.

This document contains specific recommendations about control of *Shigella* infections in childcare centers and schools, instructions about collection and submission of stool specimens to the Georgia Public Health Laboratory, and a list of educational resources.

For additional information or educational materials, contact your local health department of the Georgia Division of Public Health, Epidemiology Branch (404-657-2588).



GUIDELINES FOR CONTROL OF DIARRHEAL ILLNESS IN ELEMENTARY SCHOOLS AND CHILD CARE CENTERS

I. Schools and child care centers with children or staff with diarrhea:

- Children with diarrhea should be excluded from attending the school until they no longer have symptoms.
- Children should have access to sinks and liquid soap for handwashing. Children should be instructed in proper handwashing and should wash their hands under running water with soap for twenty seconds, and dry them with a paper towel. Young children may need to be supervised and assisted by a staff member.
- All children should wash their hands or have their hands washed by a staff member:
 - on arrival;
 - after going to the toilet or after a diaper change;
 - before all meals, including snacks.
- Staff or volunteers should monitor children at the bathroom to ensure proper handwashing.
- Diaper tables should be cleaned and disinfected with a dilute bleach solution or other disinfectant used according to product label after **each** diaper change.
- Surfaces such as doorknobs, computer keyboards, and other frequently touched areas should be disinfected frequently with dilute bleach solution or other disinfectant used according to product label. Bathrooms, food service areas, and even buses should be cleaned frequently.
- All plastic toys should be disinfected each day. Cloth toys that cannot be disinfected should be removed.
- Staff that prepare or serve food should not change diapers or assist children in using the toilet if possible.
- Children should **never** prepare food or serve food, and should be discouraged from sharing food.
- Staff should wash their hands:
 - on arrival;
 - after diaper changes;
 - after assisting children at the toilet;
 - before serving or eating food.

- Daily attendance records and records of reason for absence should be maintained. Staff should inform the school or childcare center director when any child has loose stools or increased frequency of stool.

If two or more children or staff members in your school or child care center are ill with diarrhea or any child is ill with bloody diarrhea, please contact your local health department. In addition, if any child is diagnosed with an infection due to *Shigella*, *Salmonella*, *Campylobacter*, *E. coli* O157, *Yersinia*, *Giardia*, *Cyclospora*, or *Cryptosporidium*, please immediately contact your local health department.

II. Schools or childcare centers with children who have been diagnosed with *Shigella* or *E. coli* O157:

In addition to following the handwashing and environmental cleaning procedures described above:

- All children and staff with diarrhea should be excluded from the childcare center while symptomatic and should visit a healthcare provider to obtain a stool culture and specific treatment if indicated.
- Contact your local health department about recommendations for re-admittance of children and staff who were infected with *Shigella* or *E. coli* O157. In general, young children and adults who handle food should not return to school or childcare centers until they have had 2 negative stools collected 48 hours apart.
- Staff members should not work while they have diarrhea.
- A reasonable sick leave policy should be established so that ill or culture positive staff will not suffer financial hardship while staying home with diarrhea.
- A letter should be sent to the parents of the children attending the school. It should emphasize handwashing and encourage parents to call their local health department if their children develop diarrhea.

III. Specific Situations for persons infected with *Shigella*:

- Determine if the *Shigella* case whose symptoms have resolved is a public health hazard. In general, children 5 years and older and adults do not pose a risk of spread of infection unless they prepare or serve food.
- Stress handwashing and inform patients that they may carry *Shigella* and could spread the bacterium to others.

- Coordinate efforts with the local health department's Environmental Health team.
- Infected but asymptomatic children less than 5 years of age could be "cohorted" as an alternative to excluding them from the center.
- One daycare site could serve as a cohorting site for several daycare centers.
- If the child is close to five years of age, is toilet trained, has formed stools and demonstrates good handwashing techniques, they may not need to be cohorted or excluded.

COLLECTING AND SENDING SPECIMENS

The Georgia Public Health Laboratory is available to receive stool samples related to outbreaks. When we are facing a substantial increase in shigellosis, we need to be careful not to overwhelm our lab.

- Please limit the number of stool specimens to be sent to the lab to 5-10 samples per outbreak.
- Stool cultures are only recommended for:
 - people with diarrhea;
 - persons who develop fever or abdominal cramps or vomiting after exposure to someone with diarrhea;
 - food handlers exposed to a person with diarrhea.

Isolation of *Shigella* from stool is difficult; even if collection techniques are rigidly adhered to, the recovery rate of *Shigella* in stool is only about 80% in persons with *Shigella* diarrhea. Therefore, children with diarrhea who have negative stool cultures may still have *Shigella* diarrhea.

Stool should be placed in a Para-Pak stool culture outfit for enteric pathogens. These specimens should **not** be kept refrigerated. Please call the Epidemiology Branch at 404-657-2588 if you are planning to submit stool specimens to the Georgia Public Health Laboratory. Ensure that each specimen is properly collected, packaged for shipping, and labeled for submission to the Georgia Public Health Laboratory.

SHIGELLOSIS RESOURCES

Handwashing posters can be downloaded from
<http://health.state.ga.us/pdfs/epi/handwashing.03.pdf>
or requested from the Epidemiology Branch (404-657-2588).

GDPH Fact sheet:
<http://health.state.ga.us/pdfs/epi/foodborneIllnessManual.pdf> (page 219)

CDC frequently asked questions:
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/shigellosis_g.htm