

Emerging Infections Program GEORGIA

Research 151 (Room 5A-185)
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The Georgia Emerging Infections Program is a collaboration between:



Epigram

The Newsletter of the Georgia Emerging Infections Program

Fall 2008

Surveillance Update: Candida

On March 1, 2008, the Georgia Emerging Infections Program (EIP) began population-based laboratory surveillance to determine species distribution and antifungal resistance patterns of *Candida* species causing bloodstream infections.

Candidemia is reported to be the fourth most common cause of hospital-acquired bloodstream infections in the United States. Population-based surveillance to determine species distribution and antifungal resistance of *Candida* species causing bloodstream infections was performed in the Atlanta Metropolitan area from 1992-93 and the Maryland EIP in Baltimore City and County, MD from 1998-2000. Those projects demonstrated a significant burden of disease. To examine current trends and compare them with earlier data, candidemia surveillance is being conducted at both the Georgia and Maryland EIP sites through December 31, 2009.

For this project, we are collecting blood isolates for all species of *Candida* at all labs in Health District 3 (Clayton, Cobb, DeKalb, Douglas, Fulton, Gwinnett, Newton, and Rockdale counties). Isolates are sent to CDC for species confirmation and antifungal susceptibility testing. Other laboratory procedures, such as molecular subtyping, may be performed when indicated. Demographic and clinical data are collected by surveillance personnel at the EIP sites for patients with positive blood cultures for *Candida* to investigate the proportion of patients with community-onset candidemia and to describe morbidity and mortality among candidemia patients.

Since surveillance began in March, 2008, 301 cases of candidemia have been identified from labs in Health District 3 (HD3). 194 isolates have been submitted to the EIP program. Of the 301 cases, the species breakdown has been as follows: 41% *C. albicans*, 28% *C. glabrata*, 16% *C. parapsilosis*, 9%, *C. tropicalis* and 6% other or pending. Fifty-six percent of cases have been identified first by receipt of isolate; 44% were first identified by audit.

Antifungal susceptibility testing will be done by the CDC at a later date on collected isolates. Our goal is to collect >90% of isolates and we are counting on our HD3 laboratories to keep these plates and slants coming. We look forward to sharing additional results with you as they become available. As always, we appreciate your assistance in EIP surveillance activities.

Be on the look out!!

The GAEIP conducts active surveillance for all the organisms listed below. Please be sure to continue to set aside these isolates for us!

Isolates from sterile sites:

- Group A *Streptococcus*
- Group B *Streptococcus*
- *Haemophilus influenzae*
- *Neisseria meningitidis*
- *Streptococcus pneumoniae*
- Methicillin-resistant *S. aureus*
(at selected facilities in HD3)

Isolates from any site (if not sent directly to state lab):

- *Campylobacter*
- *E. coli* O157:H7 & Shiga toxin-producing *E. coli*
- *Listeria monocytogenes*
- *Salmonella*
- *Yersinia*
- *Vibrio*
- *Shigella*

Isolates from blood (HD3 labs only):

◆ *Candida* (all species)

*In addition to these organisms we also conduct "paper" surveillance for *Cryptosporidium* and *Cyclospora*. We are not currently collecting these isolates, but do review laboratory and/or infection control records for these organisms.

Georgia EIP Contact Info

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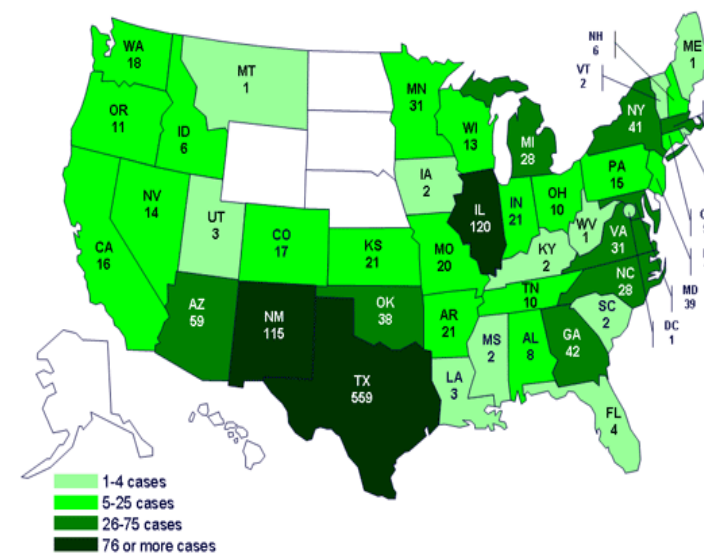
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Cases *Salmonella Saintpaul* Outbreak August 2008, state by state.

Courtesy of CDC

www.cdc.gov/salmonella/saintpaul/map.html

Investigation of Outbreak of Infections of *Salmonella Saintpaul*

The GDPH has been working with CDC, FDA, and other sites to investigate a large outbreak of more than 1400 *Salmonella Saint Paul* infections (42 Georgia cases). Initial epidemiological investigations identified tomatoes, often consumed in salsa or as an ingredient in other dishes, as a source of infection. Additional investigations, in which patients infected with the outbreak strain and well persons were asked about consumption of various food items, identified jalapeño peppers to be the likely source of the outbreak. FDA has identified the *S. Saint Paul* outbreak PFGE pattern in cultures of jalapeño peppers from a Texas distributor originating from Mexico. The timely submission of isolates to state public health laboratories for serotyping and PFGE was crucial to identifying and investigating this outbreak.

Project Updates

2008 ABCs Surveillance Officer Meeting Held in Cartersville

In June, surveillance personnel from each of the 10 EIP sites met at Red Top Mountain State Park in Cartersville, GA for their yearly meeting. The annual group photo can be seen below.



New Staff

Snehal Patel is the new ABCs Coordinator at the Georgia State Health Department. She received an MPH in Epidemiology from Emory Rollins SPH in 2002, a BS in Biology and a BA in French from Wofford College in 2000. She has worked as a Clinical Research Coordinator at UCSD, research assistant at CDC and is fluent in French, Swahili, and Gujarati.

Oidda Moseru is the new Research Nurse with Georgia EIP. She has worked in hospital and public health settings in Tanzania and the U.S. before joining EIP. She earned her MSN at Emory in 2006 and is currently an MPH candidate at Emory Rollins SPH Global Environmental Health with concentration in Infectious Diseases. Oidda is also fluent in French and Swahili.

Laura Calder has joined Georgia EIP as a part-time Assistant Surveillance Officer. She earned her BA in Anthropology with a minor in Psychology from the University of Georgia in 2006. She worked in Japan for a year before joining Georgia EIP and is currently working on FoodNet projects. Laura is a first year student in the Global Environmental Health department at Emory Rollins SPH.

Influenza Surveillance and Vaccine Effectiveness

Every year 5% to 20% of the U.S. population gets the flu; more than 200,000 people are hospitalized from flu complications and about 36,000 die from flu. To estimate disease burden, the EIP Influenza Project conducts surveillance for laboratory-confirmed influenza related hospitalizations in 12 metropolitan areas of 10 states. Georgia EIP conducts surveillance in the 8 Atlanta counties of HD3. Cases are identified by reviewing hospital laboratory and admission databases and infection control logs for adults and children with a documented positive influenza test.

Influenza viruses are responsible for annual epidemics of respiratory disease that affect all segments of the U.S. population. Young children are at higher risk of influenza-associated complications and hospitalizations compared with older children and adults. Because children play an important role in the transmission of influenza viruses, as they acquire and shed influenza viruses more frequently than adults, EIP is completing a special study to learn more about this population. Vaccination with the Trivalent-Inactivated Influenza Vaccine (TIV) is the major strategy for reducing the effect of influenza virus infections. The TIV study aims to evaluate the overall effectiveness of TIV among children aged 6-59 months in preventing hospitalizations with community-acquired influenza virus infections, during the local season.

On October 1, 2007 surveillance began for the 2007-2008 flu season. We identified 270 adult and 71 pediatric laboratory confirmed, hospitalized influenza cases through the month of April. Among the 71 pediatric cases, 26 met eligibility criteria for the TIV study. 18 of the eligible cases were enrolled and interviews were conducted to examine the role that vaccine and medical history, as well as, social and environmental factors play in their influenza infection. We appreciate the HD3 laboratories and infection prevention's cooperation and look forward to working with you in the 2008-2009 season. Special study up next: Estimating the effectiveness of TIV in preventing laboratory-confirmed influenza hospitalizations among adults aged 50 years and older. Surveillance for the new season begins October 1, 2008.

Recent EIP Publications

Epidemiology of group B streptococcal disease in the United States, 1999-2005.

Phares CR, Lynfield R, Farley MM, et al. JAMA. 2008 May 7; 299(17) : 2056-65.

Continued decline in the incidence of *Campylobacter* infections, FoodNet 1996-2006.

Ailes E, Demma L, Hurd S, et al. Foodborne Pathog Dis. 2008 Jun; 5(3) : 329-37.

Association of IS1016 with the *hia* Adhesin Gene and Biotype V and I in Invasive Nontypeable *Haemophilus influenzae*

Satola SW, Napier B, and Farley MM. Infect Immun. 2008 Sept 15.

Don't forget about our website:

<http://health.state.ga.us/eip>

Project Updates

Shigella Infections Continue Across GA in 2008

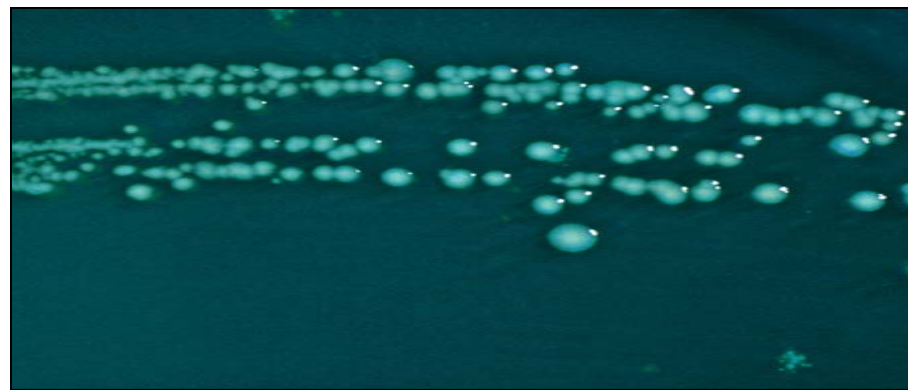
Shigellosis is a bacterial infection spread from person-to-person but also transmitted through contaminated food or water. It is easily transmissible due to its small infectious dose. Symptoms include diarrhea, fever, and abdominal cramps. The most common species are *Shigella sonnei* and *flexneri*. Shigellosis is cyclical in Georgia, with statewide epidemics occurring every 4 to 7 years. These peaks of increased disease are driven by *S. sonnei* infections in daycare and elementary-school-aged children. The most recent increase in Georgia began in 2006 and continues in 2008.

Total numbers of *Shigella* cases increased from 680 in 2005 to 1659 in 2007. In the first half of 2008, 700 reports of shigellosis in Georgia have been received. In 2007, 94% of known species isolates were *S. sonnei*, 44% of reported cases ranged from age 1-5 years, 50% were white, and 52% were female. These statewide increases do not occur uniformly throughout the state. For example, during the previous increase (2001), infections occurred in the Atlanta area and then spread to the rest of the state. While reports of infection also were frequent in Atlanta in 2006, rates of shigellosis were highest in the southeastern parts of the state. In 2007, cases increased dramatically in northwest Georgia.

A review of outbreaks reported to the Georgia Division of Public Health (GDPH) highlights the areas of the state being affected by the current epidemic. In 2007, 36 outbreaks (2 or more cases of *Shigella* infections with similar location and timeframe) of shigellosis were reported. Thirty occurred in schools or daycare centers, and most outbreaks occurred in the north Georgia. This was an increase from 13 reports in 2006. Only seven *Shigella* outbreaks have been reported so far in 2008.

Multi-drug resistance in this pathogen is important to monitor. The Georgia Public Health Laboratory (GPHL) tests a systematic selection of isolates submitted for antibiotic resistance. Of 378 isolates tested in 2007, 73% were resistant to ampicillin and 75% were susceptible to trimethoprim-sulfamethoxazole. Forty isolates were resistant to both drugs. Only one isolate was resistant to ciprofloxacin.

Public Health response to Shigellosis case reports includes laboratory confirmation, speciation, and pulsed-field gel electrophoresis (PFGE) and susceptibility testing for a selection of isolates. District epidemiologists interview parents of young children and persons in certain occupations to identify clusters of illness and ensure appropriate measures are taken regarding hygiene and follow-up cultures.



Colonial morphology displayed by *Shigella Boydii* bacteria cultivated on a Hectoen enteric agar. Courtesy of CDC's Public Health Image Library, <http://phil.cdc.gov/Phil/details.asp>

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EIP on the Web

Georgia Emerging Infections Program

<http://health.state.ga.us/eip>

ABCs Web Page

www.cdc.gov/ncidod/dbmd/abcs

FoodNet Web Page

www.cdc.gov/foodnet/

CDC Influenza Web Page

www.cdc.gov/flu/

Georgia Division of Public Health

www.health.state.ga.us/

SENDSS disease reporting

<https://sendss.state.ga.us/sendss/login.screen>