Miami-Dade County Health Department
Office of Epidemiology and Disease Control

VOLUME 8. ISSUE 3
MARCH 2007

Epi Monthly Report

Salmonella Outbreak in a Day Care Center, Miami-Dade County, 2006

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Background

On October 9, 2006 the Miami-Dade County Health Department, Office of Epidemiology and Disease Control (OEDC), received a phone call from the director of a local day care center reporting a possible outbreak of gastrointestinal illness among 6 children and several other students with similar symptoms. According to the director the children had developed symptoms of diarrhea, vomiting, & abdominal pains over a period of two weeks, with the first case starting September 15, 2006, with no laboratory confirmation.

By the time the OEDC was called a total of 60 children had developed symptoms. The outbreak reached the media and local newspapers in Miami-Dade on October 19, 2006.

The daycare consists of 125 children and 20 staff members, and has 8 color coded classrooms.

Methods

Case definition: The initial case definition was onset of diarrhea, vomiting and/or abdominal pain/cramps in an attendee or staff member of the day care center with onset on or after September 1, 2006.

Epidemiologic investigation: An initial inspection of the facility was conducted on October 9, an epidemiologic investigator and an environmental health inspector. A meeting was held with the staff and certain activities were identified (birthday party / magic pet show) as potential sources of exposure.

Laboratory methods: Two stools were collected from all day care attendees, staff members (teachers, office staff and housekeeping), cater employees and the magic show animals. All stools were collected by staff members or children's parents and brought to the day care facility. The stools were then transported to the Bureau of Laboratories-Miami for testing. All stools were tested for bacteria and ova & parasites, and sent to the Bureau of Laboratories-Tampa for serotyping.

<u>Phase I: Initial Control Measures</u>
Phase I control measures were implemented on October 9, 2006. All staff members were educated on infection control measures, proper hand washing, and recognition of gastrointestinal illness among children.

Recommendations:

- Exclude any child or staff member from the facility if she or he has any diarrhea or vomiting.
- All persons, including children, parents, staff, and service personnel must wash their hands:
  - when entering and leaving the day care
  - after using the bathroom
  - before and after handling food or eating
  - after removing gloves used during diaper change
- No staff involved in food preparation may change diapers while handling

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foods.

- Exclude all volunteers, visitors and instructors of special classes from the day care.

Phase II: Control Measures

Due to the delay in contacting the OEDC, control measures for Phase II were immediately implemented. A letter was sent home to every parent about the outbreak at the center. All ill staff members and children were excluded from the day care for at least 48 hours or 24 hours after their symptoms ceased. Teachers and children were cohorted in their regular classrooms. All other staff members were required to wash their hands upon entering and leaving of classrooms. (*Phase I control measure were still being followed*)

On October 10, Salmonella Group B was identified in 3 of the children's stools. Therefore, it was diagnosed as a *Salmonella outbreak.*

October 16, 2006 one week after initial control measures were implemented, a total of 78 children and 2 staff members were ill. To ensure that control measures were followed, an OEDC investigator went to the day care to oversee morning practices. By 9:00 a.m. all children were in their classrooms. All meals were prepped in the kitchen and served by classroom teachers. Each classroom went to playtime at different times throughout the day.

By October 20, a total of 79 (63.2%) out of 125 children and 3 (13%) out of 23 staff members were ill, with the last onset occurring October 19, 2006, 9 days after phase II was implemented.

Results

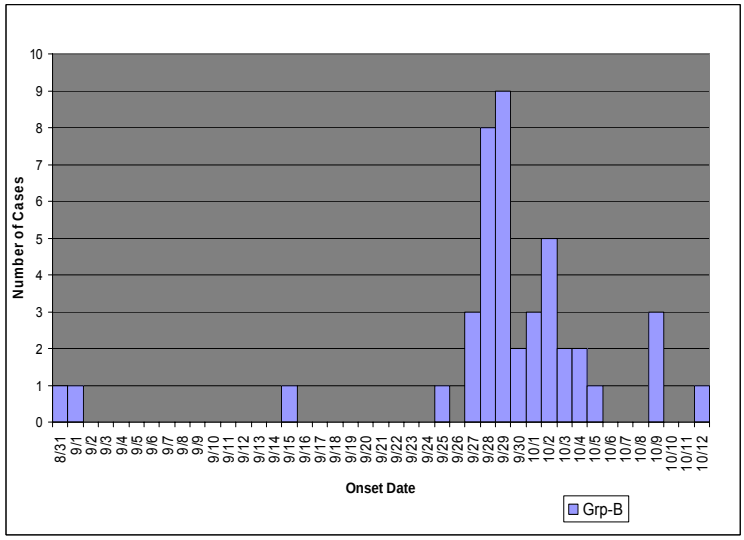
Laboratory:

In total 155 stools were tested (151 from the day care and 4 from the food caterer employees). Testing was also done on 8 of the magic show animals. All stools were tested for bacteria and ova & parasites, and 10 were sent to the Bureau of Laboratories-Tampa for viral testing.
One month later all previously positive children had follow-up culture done by their primary doctor.

Results:

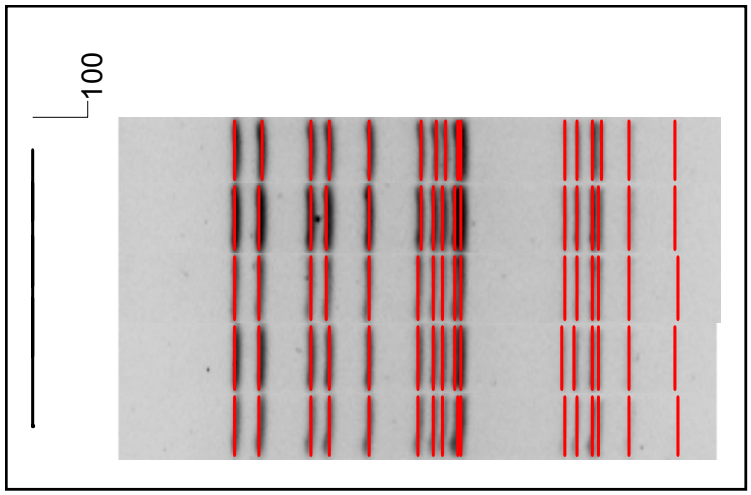
Of the 79 children, 43 (54.4%) tested positive for Salmonella Gp B, 1 (10%) tested positive for Salmonella Gp C1, and of the 10 specimens submitted for viral testing only1 (10%) was positive for G2 strain of Norwalk. Follow-up testing performed on the children resulted negative.

Figure 1. Confirmed positive Salmonella of Attendees at a Local Daycare by Onset Date, September 2006



Pulsed Field Gel Electrophoresis (PFGE) pattern demonstrated that the organism was from the same strain. This pattern was compared to other patterns in the National database and was not linked to any other case.

Figure 2. Pulsed Field Gel Electrophoresis, Salmonella Group B at a local day care, September 2006



Environmental Investigation Results:

Day care food service distribution area: An inspection of the day care food service was conducted by an Environmental Health inspector who found no major violations. The food service report had only one violation, one refrigerator was off temperature by 20 degrees. No food was tested. Water at the facility was tested for indicator organisms and it was found to be satisfactory.

Food caterer: An in-

spection of the caterer by the Department of Business and Professional Regulation showed no major violations. Also a team from OEDC visited the caterer and did not find any problems. All staff from the catering company was tested due to the size of the outbreak. Stools from caterer personnel were negative for all pathogens tested.

Magic show: A visit to the farm where the animals of the magic show were kept was conducted for the purpose of testing the animals for possible pathogens. Eight animals from the magician's farm were tested and were negative for *Salmonella.* Three cages used at the magic show were also tested and were negative.

Conclusions

The source of this *Salmonella* outbreak remains unknown. The evidence obtained from the field investigation was not able to support a particular source. It is clear, however, that the outbreak organism was identical in all cases but one as shown by the PFGE results and serotype group B. The epidemic curve also shows an outbreak that was spread in time but also clustered during one period of days. The most likely explanation is a common source outbreak with additional person to person transmission. Activities may have contributed to the transmission. No recalls of food products were identified within this period of time with this organism and no other outbreaks were identified with this PFGE pattern.

Day care health standards must be followed by all day care facilities and are designed to minimize disease transmission. Administration, inspectors from regulating agencies and healthcare employees need to understand the role and responsibilities of all parties involved; working together to provide the best care that we can to our children is essential.

Future Recommendations

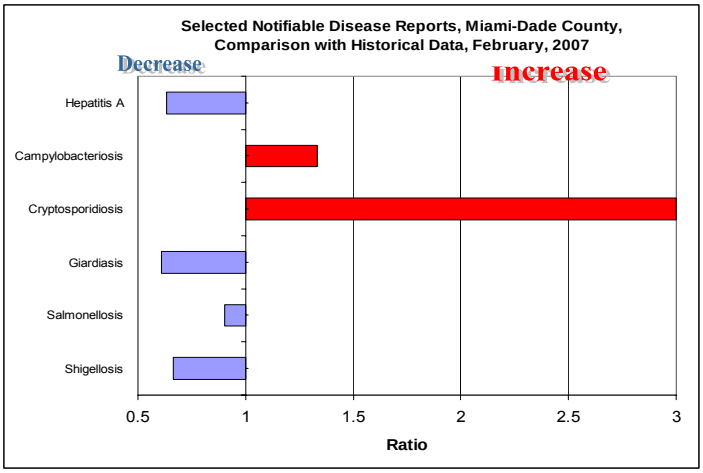
- Day care facility should conduct a training session for staff on hand washing & preventive measures of enteric infections.
- Day care facility staff should wash the hands of all children whenever they enter or leave the facility.
- Day care facility should regularly teach children and employees about hand washing.
- Day care should report any similar illness involving 2 or more children or staff members to the Office Epidemiology & Disease Control within 48 hours.

The authors would like to acknowledge the following persons for their support throughout this investigation: Dr. Fermin Leguen, Dr. Kenneth Soyemi, Erin O'Connell, Rene Borroto-Ponce, Barbara Garcia, Tim Doyle, State Lab-Miami and Tampa, Hendry County Health Department, Miami-Dade County Health Department Environmental Health Office, Dr. Carina Blackmore, and Department of Business and Professional Regulation.

TO REPORT ANY DISEASE AND FOR INFORMATION CALL:

Office of Epidemiology and Disease Control

Childhood Lead Poisoning Prevention Program	(305) 470-6877
Hepatitis	(305) 470-5536
Other diseases and outbreaks	(305) 470-5660
HIV/AIDS Program	(305) 470-6999
STD Program	*(305) 325-3242*
Tuberculosis Program	*(305) 324-2470*
Special Immunization Program	(786) 845-0550



AVIAN FLU WATCH

Unless indicated, information is current as of March 28, 2007



- **Since 2003, 281 human cases of avian influenza (H5N1) have been confirmed** by the World Health Organization (WHO). Of these, 169 have been fatal.
- **Countries with confirmed *human* cases** include Cambodia, China, Djibouti, Indonesia, Thailand, Vietnam, Iraq, Azerbaijan, Egypt and Turkey.
- **No human cases of avian influenza (H5N1) have been reported in the United States.**
- **The most recent confirmed human cases of infection with H5N1 have occurred in Egypt.** A 6 year old girl and 5 year old boy were both hospitalized March 25 with symptoms. A 3 year old girl developed symptoms March 22 and was admitted to the hospital March 24. March 20 the Egyptian Ministry of Health announced another human case with H5N1 infection; the 2 year old boy developed symptoms March 15 and was admitted to the hospital the next day. On March 13 a 10 year old girl was hospitalized with symptoms. Also from Egypt, a 4 year old boy was hospitalized March 8th after developing symptoms March 7th. A 4 year old girl was hospitalized February 25 after becoming symptomatic February 26. Preliminary investigations for these recent cases from Egypt suggest they had contact with backyard poultry and/or sick poultry; their condition remains stable. Close contacts for these two cases remain healthy but have been placed under close observation. To date Egypt has had 29 confirmed H5N1 human cases, 13 have been fatal. Lao People's Republic has confirmed its first death from H5N1; the case was announced initially February 27 and later died March 7th. The second human case, a 42 year old woman, with H5N1 infection from Lao People's Republic died March 4th after being hospitalized with fever February 28th. A duck on her property tested positive for H5; contacts are being closely monitored though none show signs of infection. In China, a 44 year old female who developed symptoms February 18, was hospitalized Feb. 22nd and is in critical condition. This female is a farmer that kept birds in her backyard according to an investigation. To date, China has had 23 confirmed H5N1 cases, 14 of these have been fatal.
- **H5N1 has been confirmed in *birds* in several other countries since 2003.** H5N1 has been documented in birds in more than 30 countries in Europe & Eurasia, South Asia, Africa, East Asia and the Pacific, and the Near East. For a list of these countries, visit the World Organisation for Animal Health Web Site at http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm.
- **No restrictions on travel to affected countries have been imposed.** Travelers should avoid contact with live poultry and monitor their health for ten days after returning from an affected country.

SOURCES: World Health Organization; World Organisation for Animal Health; Centers for Disease Control and Prevention

PARTICIPATE IN INFLUENZA SENTINEL PROVIDER SURVEILLANCE

Why does Florida need influenza sentinel providers?
Sentinel providers are key to the success of the Florida Department of Health's Influenza Surveillance System. An influenza sentinel provider conducts surveillance for influenza-like illness (ILI) in collaboration with the Florida State Health Department, Bureau of Epidemiology and the Centers for Disease Control and Prevention (CDC). Data reported by sentinel providers, in combination with other influenza surveillance data, provides a national picture of influenza virus and ILI activity in the U.S. and Florida.

What data do sentinel providers collect and how do they report?
Sentinel providers report the total number of patient visits each week and number of patient visits for ILI by age group (0–4 years, 5–24 years, 25–64 years, and ≥ 65 years) year round. These data are transmitted once a week via the internet or via fax to a central database at CDC. Most providers report that it takes **less than 30 minutes a week** to compile and report their data. In addition, sentinel providers can submit specimens from a subset of patients to the state laboratory for virus isolation **free of charge**.

Who can be an Influenza Sentinel Provider?
Providers of any specialty (e.g., family practice, internal medicine, pediatrics, infectious diseases) in any type of practice (e.g., private practice, public health clinic, urgent care center, emergency room, university student health center) are eligible to be sentinel providers.

Why Volunteer?
Epidemics of influenza usually occur during the winter months and are responsible for approximately 36,000 deaths per year in the United States. Influenza and pneumonia together were the eighth leading cause of death in Florida in 2004, with over 3,000 deaths statewide. Serious complications due to influenza can also occur in persons with chronic health conditions such as heart disease, diabetes, or HIV. Recently, human infections and deaths from bird flu (influenza A H5N1) reported worldwide since 2003 have generated great concern for this or another strain's potential for a pandemic.

Data from sentinel providers are critical for monitoring the impact of influenza. In combination with other influenza surveillance data, they can be used to guide prevention and control activities, vaccine strain selection, and patient care. Sentinel providers receive feedback on the data submitted, summaries of Florida and national influenza data, a free subscription to CDC's Morbidity and Mortality Weekly Report (valued at $150.00) and the Emerging Infectious Diseases Journal. Most importantly, the data provided are critical for protecting the public's health.

For more information, please contact **Erin O'Connell** at 305-470-5660.

About the Epi Monthly Report

The Epi Monthly Report is a publication of the Miami-Dade County Health Department, Office of Epidemiology and Disease Control, The publication serves a primary audience of physicians, nurses, and public health professionals. Articles published in the Epi Monthly Report may focus on quantitative research and analysis, program updates, field investigations, or provider education. For more information or to submit an article, contact Diana Rodriguez, Managing Editor at 305-470-5660.

Monthly Report
Selected Reportable Diseases/Conditions in Miami-Dade County, February 2007

Diseases/Conditions	2007 this Month	2007 Year to Date	2006 Year to Date	2005 Year to Date	2004 Year to Date	2003 Year to Date
AIDS *Provisional	57	123	245	229	232	181
Campylobacteriosis	17	22	16	8	12	17
Chlamydia trachomatis	N/A	N/A	628	624	492	619
Ciguatera Poisoning	0	0	0	0	0	0
Cryptosporidiosis	5	5	2	3	1	2
Cyclosporosis	0	0	0	0	0	0
Dengue Fever	1	1	0	0	0	0
E. coli, O157:H7	0	0	0	0	0	0
E. coli, Non-O157	0	0	0	0	0	0
Encephalitis (except WNV)	0	0	0	0	0	0
Encephalitis, West Nile Virus	0	0	0	0	0	0
West Nile Fever	0	0	0	0	0	0
Giardiasis, Acute	13	21	23	13	25	15
Gonorrhea	N/A	N/A	216	259	202	298
Hepatitis A	4	5	6	4	5	2
Hepatitis B	3	3	3	2	4	2
HIV *Provisional	108	210	200	226	260	265
Influenza A (H5)	0	0	0	0	0	0
Influenza Isolates	0	0	0	0	0	0
Influenza Novel Strain	0	0	0	0	0	0
Influenza, Pediatric Death	0	0	0	0	0	0
Lead Poisoning	12	17	20	11	23	19
Legionnaire's Disease	0	0	0	0	0	0
Leptospirosis	0	0	0	0	0	0
Lyme disease	0	0	0	0	0	0
Malaria	0	0	0	0	0	0
Measles	0	0	0	0	0	0
Meningitis (except aseptic)	0	0	0	0	0	0
Meningococcal Disease	0	2	3	1	1	2
Mumps	0	0	0	0	0	0
Pertussis	5	7	1	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	30	46	39	24	31	35
Shigellosis	15	20	19	22	21	36
Streptococcus pneumoniae, Drug Resistant	5	5	6	1	2	10
Syphilis, Infectious	N/A	N/A	45	29	34	32
Syphilis, Other	N/A	N/A	66	78	130	177
Tetanus	0	0	0	0	0	0
Toxoplasmosis	1	1	0	0	0	1
Tuberculosis *Provisional	13	30	32	29	23	31
Typhoid Fever	0	0	1	1	1	1
Vibrio cholera Type O1	0	0	0	0	0	0
Vibrio cholera Non-O1	0	0	0	0	0	0

* Data on AIDS are provisional at the county level and are subject to edit checks by state and federal agencies.
** Data on tuberculosis are provisional at the county level.