

Summary of Notable Outbreaks and Case Investigations, 2007

Section 4

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Listed alphabetically by disease

In Florida, any disease outbreak in a community, hospital, or institution, as well as any grouping or clustering of patients having similar disease, symptoms, syndromes or etiological agents that may indicate the presence of an outbreak, is reportable, as per *Florida Administrative Code*, 64D-3. Selected outbreaks or case investigations of public health interest that occurred in 2007 are briefly summarized below. Following many of these summaries are citations or links where additional information can be found about the event. Investigation summaries are organized by disease name; within each disease category investigations are listed chronologically (January through December, 2007).

Additional disease summaries and information describing epidemiologic events in Florida can be found in *EpiUpdate*. *EpiUpdate*, an online publication of the Bureau of Epidemiology, Florida Department of Health can be accessed through the archive site listed below.

http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/index.html

Food- and waterborne disease outbreaks in Florida are summarized in annual reports produced by the Bureau of Community Environmental Public Health Medicine accessible via the following site below.

<http://www.doh.state.fl.us/environment/community/foods-surveillance/annualreports.htm>

Annual food and waterborne reports include overall statewide data as well as summaries of selected outbreaks. In addition a bibliography of journal and *EpiUpdate* articles on food and waterborne disease can be found at the following site <http://www.doh.state.fl.us/Environment/community/foods-surveillance/index.html> under Environmental Health, Bibliography.

Botulism

Infant Botulism in a Visitor to Palm Beach County, March 2007

The Palm Beach County Health Department Epidemiology and Disease Control Program was notified of an infant at a local hospital who was suspected of having intestinal botulism. The four-month-old infant presented with decreasing ability to breastfeed and swallow, and decreasing motor control of the head of four days duration. The child had received only breast milk. There was no history of ingesting any other food such as honey. The infant and family, visitors to Palm Beach County, reside in southeast Pennsylvania, an area identified as having high concentrations of *Clostridium botulinum* spores in the soil.

After consultation with the Centers for Disease Control and Prevention (CDC), the case was referred to the California Infant Botulism Treatment and Prevention Program. The California clinician in consultation with the child's physician determined that this was a possible case of intestinal botulism and released the infant gamma globulin (BabyBIG®) with instructions for obtaining a stool specimen for culture.

The infant was transferred to a southeast Pennsylvania hospital on March 6, 2007. The gamma globulin was given at that facility. The infant improved and was discharged home on March 13, 2007 with continuing follow-up through the hospital. The CDC received the stool specimen on March 7. Although preliminary 24 hour test results were negative, on March 14 the culture was positive

for Botulinum toxin, type A. Note: the case was not reported in Merlin because the patient was a Pennsylvania resident, and therefore this was not a Florida case.

Suspected Infant Botulism in Orange County, May 2007

The Orange County Health Department investigated a suspected infant botulism case in a two-month-old girl. This infant was hospitalized on May 29, 2007 with hypotonia and constipation. After consulting with the resident physician, the California Infant Botulism Treatment and Prevention Program (IBTPP) released BabyBIG® (human-derived botulism antitoxin antibodies), which was administered to the patient on June 5. The baby demonstrated marked improvement following that treatment.

Fecal samples collected on June 4th and 9th tested negative for toxin and *Clostridium botulinum* at the Centers for Disease Control and Prevention (CDC) Botulism Lab, however the attending physician continued to believe *C. botulinum* was the cause of the patient's illness.

Although the mother of the patient had consumed honey imported from Panama, the patient had no known exposure to the honey. The patient was primarily breastfed, but recent feedings had been supplemented with formula. The parents treated the patient's constipation with corn syrup and prune juice prior to hospitalization. No foods were laboratory tested and the source of the suspected infection remains unknown.

Infant Botulism, Duval County, August 2007

In August 2007, an 8-week-old boy was diagnosed with infant botulism after his stool specimen tested positive for Botulinum toxin, Type A. The California Infant Botulism Treatment and Prevention Program was contacted, and the anti-toxin, BabyBIG®, was administered. Most cases of infant botulism occur in breastfed babies at the first introduction of non-human milk substances. This child was breastfed and was given small amounts of apple juice, corn syrup and a probiotics supplement. Cultures of these items were negative for *C. botulinum*. Extensive interviews with the family and an environmental assessment of the home did not identify any obvious exposures. The father's occupation in the landscaping business is notable in this investigation since evidence suggests that most infant botulism cases acquire their spores by swallowing microscopic dust particles that carry the spores.

For more information about this investigation please visit

Voss, R., K. Van Zile, J. DePasquale, "Infant Botulism, Duval County," *Epi Update*, 2007; November, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007.htm

Brucellosis

Brucellosis Cases Associated with a Hunting Camp, Brevard County, 2007

During 2007, the Brevard County Health Department received reports of three cases of brucellosis which were indirectly or directly related to a hunting camp in the north end of the county.

Case 1: White woman, 57 years of age. She did not participate in hunting, but her spouse is an avid wild hog hunter. In May 2007 her spouse killed and butchered a wild hog. The patient handled his clothes which were grossly contaminated with hog excrement. While handling the contaminated clothes she was experiencing severe dry, cracking skin. In June, she developed symptoms related to brucellosis including, intermittent fever, headache, lethargy, depression, etc. Finally in October, 2007 she was diagnosed and treated for brucellosis. She responded well to the antibiotics and has had no recurrence of symptoms.

Case 2 and 3: Occurred almost simultaneously in November 2007. Case 2 and 3 were in two elderly men who also avidly hunted wild hogs in the same area. Both men developed symptoms of brucellosis and were appropriately treated. The men had killed and butchered a wild hog at the end of September 2007. All three patients as well as other members of the hunting club were counseled about appropriate infection control measures to reduce exposure to *Brucella*.

Chagas Disease

Chagas Disease in Palm Beach County, 2007

Two Palm Beach County residents contacted the Palm Beach County Health Department Epidemiology and Disease Control Program after donating blood found to be positive for antibodies to *Trypanosoma cruzi*, the agent of Chagas disease, a zoonotic disease caused by the bloodborne parasite. They each received letters from the blood bank where the donation had taken place. The blood samples tested both ELISA and RIPA positive. The first patient, originally from Central America, had resided in the U.S. for 5 years. The patient's intermittent symptoms included bloating, headache, myalgia, fever, fatigue, and diarrhea for the past year. He was referred to a PBCHD clinic for evaluation and follow-up. The second patient had no symptoms. She was originally from South America. She had three children who were tested and found to be negative. She was already a PBCHD patient and continued her follow-up there. The Palm Beach County Health Department sent the blood bank a letter to be included with future Chagas disease case notification, giving the local PBCHD Epidemiology Program contact information.

For more information about *T. cruzi* infection investigations in Florida please visit Shultz, R., D. Stanek, C. Blackmore, "*Trypanosoma cruzi* Infections in Florida," *EpiUpdate*, 2007; December, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/December2007EpiUpdate

Chemical

Waterborne, 2007 Outbreak Related to Exposure to Chemicals, Osceola County, August, 2007

On August 13 the Osceola County Health Department learned from a local radio station broadcast of acute illnesses in approximately a dozen children who had been at a swimming party at an apartment complex public pool prior to illness onset. The initial investigation uncovered 16 people seen through the hospital emergency department, of whom four were admitted for shortness of breath, difficulty breathing, and respiratory distress. Interviews of two of the admitted children were conducted and it was established that some type of chemical exposure likely occurred. Eleven people were determined by attending physicians to be ill with respiratory illness attributed to chlorine exposure. A case was defined as respiratory illness in a person at the apartment complex pool on August 13, 2007, with illness onset after the pool pump was turned on and characterized by at least one of the following symptoms: burning eyes, sore throat, watery eyes, coughing, sneezing, burning inside the nose, wheezing, chest tightness, or shortness of breath. A total of 13 persons reported or experienced symptoms that matched the case definition. Eleven of twelve people interviewed reported a strong smell prior to illness onset. This smell was described as chlorine, bleach, and bitter. Ten people reported the presence of bubbles rising to the surface from the return jets prior to illness onset. The symptoms reported by both the cases and attending medical professionals are consistent with either chlorine or hydrochloric acid exposure. On August 13 and August 14, 2007, the implicated swimming pool was evaluated by environmental health personnel. Assuming (based on both reported

observations and illnesses) that five gallons of 10 percent liquid chlorine was added to 345 gallon filter pack, the resulting level of free chlorine would have been approximately 1449 ppm.

Additional resources

American Academy of Family Physicians, 2000. "Mass Psychogenic Illness," Familydoctor.org, <http://familydoctor.org/online/famdocen/home/articles/648.html>

Centers for Disease Control and Prevention, "Ocular and Respiratory Illness Associated with an Indoor Swimming Pool—Nebraska, 2006," *MMWR*, 56(36); 929-932, <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5636a1.htm>

Jones, T., "Mass Psychogenic Illness: A Case Report and Overview," *Psychiatric Times*, Vol. XVII, Issue 4, 2000, <http://www.psychiatrictimes.com/p000463.html>

Ciguatera

Ciguatera Fish Poisoning Associated with Consumption of Smoked Amberjack, Broward County, February, 2007

In February 2007, the Broward Regional Environmental Epidemiologist investigated an outbreak of ciguatera fish poisoning associated with three out of four friends who had consumed smoked amberjack at a poker party. Within 3-9 hours after consumption, the three friends developed symptoms of diarrhea, pin-prickling in the hands and feet, itching, weakness in the legs, joint and muscle pain, fatigue, reversal of hot/cold sensation, hypersensitivity to hot and cold, abdominal pain, rash, numbness in the teeth/gums, and/or body aches. No leftover fish was available for analysis. None of the individuals visited a physician for diagnosis. Ciguatera fish poisoning was determined to be the agent responsible for the illnesses based on the incubation period and symptoms reported as well as the type of fish consumed. The recreationally caught fish had been professionally smoked and vacuum packed into 50 packages with approximately 4-5 fillets each. The fish had been consumed since September 2006 without any problems. At the poker party, the fisherman who had caught the fish decided to serve the remaining packages of the smoked amberjack. No other possible exposures were noted in the investigation.

Three Ciguatera Fish Poisoning Outbreaks in Palm Beach County, August, 2007

The Palm Beach County Department of Health Epidemiology and Disease Control Program investigated three separate incidences of ciguatera fish poisoning that occurred during the month of August, 2007. A total of ten people were known to have been affected. The first occurrence was a family of five affected after ingesting a barracuda they had caught in Palm Beach County coastal waters. The second incident occurred after a family ingested a grouper that was caught in Broward County waters. Two people were affected. The third incident was a family of three who ingested a barracuda purchased at a local fish market. Of the ten people affected, six were seen by health care providers. Three received mannitol infusions. One person was hospitalized with acute respiratory failure. The fish market was investigated by PBCHD Environmental Health and the Florida Department of Agriculture and Consumer Safety (DACS). A sample of the grouper caught in Broward County waters tested positive for ciguatera toxin.

Ciguatera Fish Poisoning Outbreak in Southwest Florida, September 2007

On September 18, 2007, the Collier County Health Department (CHD) received a call from a local hospital concerning a man who presented to the emergency department with nausea, vomiting, diarrhea, tingling of the mouth and hand, slow heart beat, and low blood pressure. His wife and son had similar symptoms and were being evaluated at another local hospital. All three people were admitted to the hospital and subsequently diagnosed with ciguatera fish poisoning. The age of the cases ranged from 21-48 years. The incubation period ranged from three to 7.5 hours, and the duration of symptoms ranged from 14-64 days.

The suspect fish was initially identified as a kingfish caught on September 16 in the Gulf of Mexico, approximately 32 miles west of Marco Island. The Collier CHD collected an uneaten portion of the implicated fish specimen and sent it to the Food and Drug Administration (FDA) Gulf Coast Seafood Laboratory for analysis. On September 28, the FDA Gulf Coast Seafood Laboratory examined the raw fish sample for the presence of ciguatera related toxins using a sodium channel-specific neuroblastoma ("cytotoxicity") assay. Caribbean ciguatoxin-1 (C-CTX-1) was used as a standard. The "cytotoxicity" test result was positive, 1.2 ng C-CTX-1eq/g of fish flesh was found. On October 12, confirmation testing (LC-MS) was done, and the sample was positive for Caribbean ciguatoxin-1. The FDA Gulf Coast Seafood Laboratory identified the fish as a barracuda. On November 28, this was confirmed by DNA bar-coding analysis at the University of Guelph in Ontario, Canada. Currently there is no mechanism to determine if a fish is toxic unless "cytotoxicity" assays are conducted in a laboratory.

For more information about this investigation please visit

Harder, T., P. Castellon, "Ciguatera Outbreak in Southwest Florida," *EpiUpdate*, 2007; December, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/December2007EpiUpdate.pdf

***Clostridium perfringens* (probable)**

Foodborne Illness at a Church Benefit in Palm Beach County, December 2007

A foodborne illness outbreak occurred at a World AIDS Day benefit luncheon held at a local church in Palm Beach County in December 2007. Participating agencies were contacted by the Palm Beach Health Department Epidemiology and Disease Control Program to identify individuals who had attended or eaten the food. A total of 159 lunches were served, 47 at the church and 112 as take-out. A questionnaire was developed and interviews took place by telephone. A case was defined as a person experiencing abdominal cramps and/or diarrhea within a 3-42 hour period after eating a meal consisting of barbeque chicken, yellow rice, green beans, and cake and served at the benefit held at a local church in Belle Glade, FL on December 5, 2007. A total number of 52 persons were interviewed with 28 (54%) meeting the case definition. Symptoms reported included diarrhea, abdominal cramping and nausea. Onset of symptoms occurred 3-42 hours after ingestion of the meal, with a mean of 13 hours. Food samples and a stool specimen were sent to the Bureau of Laboratories for testing. *Clostridium perfringens* at an SPC of greater than 10^5 per gram of food was found in food samples. The stool specimen was negative for enteric pathogens. PBCHD Environmental Health Program investigated the details of food preparation, delivery and handling at the church. An unlicensed caterer had prepared the food.

Escherichia coli

***Escherichia coli* O157 Outbreak at a Day Camp in Pinellas County, Florida, June 2007**

In June 2007, five cases of Shiga toxin-producing *Escherichia coli* (STEC) infections were reported to the Pinellas County Health Department. Four cases were campers and staff at a week-long day camp. The fifth ill person did not attend the day camp but became ill after an exposed sibling developed symptoms.

Stool samples from four people, thirty animals, and four environmental soil samples from the grounds of the petting zoo were collected. Four human clinical isolates, nine animal fecal isolates and four environmental isolates yielded *E. coli* O157:NM (nonmotile) strains with an indistinguishable pulsed-field gel electrophoresis (PFGE) pattern. The PFGE pattern was unique and did not match any other STEC strains seen in the community or the PulseNet database. However, one animal fecal isolate had a different PFGE pattern from the human clinical isolates. The animals were placed under voluntary quarantine and returned to the owner's property.

The designated 2250 sq ft animal interaction area housed 28 goats, 1 sheep and 1 llama and was enclosed by a gated fence. Campers had unlimited access to the animals through a single combined entry and exit. Four hand-washing facilities were located outside the enclosed animal area near the combined entry and exit. Signs were displayed on each hand-washing facility to instruct campers to wash their hands. Staff were present near the exit to supervise compliance with hand-washing.

Even with risk-reduction measures in place, outbreaks of STEC may result from improper hand-washing techniques and through contamination of clothing or shoes.

Gastrointestinal Illness, Un-Confirmed Etiologic Agent

Gastrointestinal Illness Outbreak Associated with a Wedding Reception, Pasco County, March 2007

On March 25, 2007, the Pasco County Health Department was contacted by wedding reception attendees experiencing gastrointestinal symptoms. A survey of attendees determined that a total of 26 (28%) of 93 persons who attended the wedding reception on March 25, 2007 became ill following the suspected meal. The mean onset of the symptoms was 36.4 hours with a range of 19-61 hours. Predominant symptoms included diarrhea (92%), nausea (73%), vomiting (62%), loss of appetite (62%) and abdominal pains (58%). Statistical analysis of information from cases and controls implicated the pasta salad which had an odds ratio of 4.6 with a 95% confidence interval of (1.2136-20.2559) and a p-value of 0.0209. The majority of the food items served had been provided by an unlicensed caterer located in Hillsborough County. A field visit to the caterer's commissary showed the facility was inadequate for commercial food preparation. Some of the catering staff may have been experiencing gastrointestinal symptoms before or during the event.

Five symptomatic attendees were given stool sample collection containers; no specimens were returned for laboratory diagnostic testing. Norovirus was the suspected foodborne pathogen associated with this outbreak.

For more information about this investigation please visit

Wydotis, M., M. Friedman, et al. "Wedding Reception Associated Norovirus Foodborne Outbreak Investigation, Pasco County, March 23, 2007," *EpiUpdate*, 2007; June, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/June2007EpiUpdate.pdf

Outbreak of Gastrointestinal Illness following a Seafood Festival, Nassau County, May 2007

The Nassau County Health Department's (NCHD) Epidemiology Program received notification of persons with gastrointestinal (GI) illness following a large annual seafood festival held from May 4-6, 2007 on Amelia Island, FL. NCHD received 48 reports of GI illness in festival attendees from May 8-31, 2007. Illness reports were received from multiple sources: a local hospital, a neighboring CHD, Department of Business and Professional Regulation restaurant complaints, and citizen phone calls. NCHD initiated a case-control study to compare persons who developed GI illness and attended the festival to persons who attended the festival and did not develop GI illness.

Results from the case-control study showed that the cases had a common exposure to a single food stand at the festival. The predominant symptoms of ill persons were nausea, vomiting, weakness, fatigue, diarrhea, and abdominal cramps, with a mean incubation period of 34.6 hours and mean duration of illness of 48.4 hours. The item found to be statistically associated with illness was fresh squeezed lemonade purchased from a single food stand at the festival. Of the cases, 29 out of 30 consumed lemonade from the stand on a single day. One case did not drink the lemonade but consumed funnel cake prepared at the stand. The stand was operated by a single employee working three-hour food worker shifts. The stand was staffed by high school volunteers who often worked ungloved and had minimal food hygiene training.

Gastrointestinal Illness Outbreak at a Construction Site in Miami Beach, Miami-Dade County, June 2007

On June 4, 2007, the Miami-Dade County Health Department Office of Epidemiology and Disease Control (MDCHD-OEDC) received a phone call from the Miami Beach Fire Rescue Department reporting that several workers at a construction site on Miami Beach had fallen ill. Some of the ill workers were taken to two local hospitals in ambulances. Firefighters stated that the construction workers had recently eaten food purchased at a mobile truck that frequently serves lunch at that site.

Interviews were conducted using the MDCHD Environmental Health Foodborne Illness Survey/ Complaint tool. Three stool samples and two vomitus samples were collected and sent to the Bureau of Laboratories-Miami for bacterial stool culture and ova and parasite testing. A case was defined as a construction worker who was present at the work site on June 4th and had symptoms of diarrhea and/or vomiting.

A total of nine construction workers met the outbreak case definition. The analysis was based on interviews obtained from six workers. The median age for the ill workers was 24 years (range: 19-51 years) and five (83.3%) were male. The mean incubation period from the time of eating lunch from the truck to the onset of illness was 2 hours and 15 minutes (range: 1 hour to 3 hours, 10 minutes). Nausea, vomiting, and diarrhea were symptoms experienced by all of the ill workers while five (83.3%) also had symptoms of cramps, chills, weakness, and fatigue.

Staphylococcus aureus was isolated in large quantities from all five of the stool and vomitus samples. Enterotoxin testing was not performed. Stool samples were negative for *Salmonella*, *Shigella*, *Campylobacter*, *Escherichia coli* O157:H7, or other bacterial pathogens. Food from the lunch truck was discarded and not tested. Therefore, no specific enterotoxin could be isolated from epidemiologically implicated food.

The suspected common food vehicle in this outbreak was a rice, meat, and egg dish bought from an illegal and unapproved source. This outbreak is suspected to be caused by *Staphylococcus aureus* enterotoxin based on the short apparent incubation period and symptoms. The diagnosis is not directly supported by the laboratory data.

For more information about this investigation please visit

O'Connell, E., J. Suarez, et. al., "Gastrointestinal Illness Outbreak at a Construction Site in Miami Beach, Miami-Dade County, June 2007" *EpiUpdate*; 2007, November, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/November2007EpiUpdate.pdf

Public Drinking Water System Bacterial Contamination Investigation, City of West Palm Beach, September-October 2007

On September 26, 2007 routine sampling for bacteria identified the presence of fecal coliform and *Escherichia coli* in the City of West Palm Beach's drinking water distribution system. Samples collected on September 27, 2007 also tested positive for fecal coliform and *E. coli*. On September 28, 2007 the City notified the Palm Beach County Health Department of the results and initiated a system wide boil water order impacting nearly 120,000 people. The boil water notice remained in effect for nine (9) days until the system was absent of fecal coliform and *E. coli*.

Following the boil water alert issued on the afternoon of Friday September 28th, the Palm Beach County Health Department requested via the media that persons in the affected area report gastrointestinal (GI) illness to the Palm Beach County Health Department. Over the next two weeks a total of 128 persons reported illness that met the case definition of "abdominal pain or diarrhea in a person who consumed water from the West Palm Beach Public Water Supply after September 1, 2007." The top three symptoms were diarrhea (87.5%), abdominal pain (85.2%) and nausea (54.7%). All GI symptoms were resolved within 2-3 days of onset.

A cross sectional, random sample, telephone interview survey was conducted to assess the association between recent tap water consumption and GI illness. During the three week data collection period from October 12 to November 2, 2007, 315 telephone interviews were completed, each from distinct households. Of those interviewed, 38 (12%) reported illness. Among the 38 people with illness, abdominal pain and diarrhea were the most common symptoms. Most illnesses lasted five days or less, but eight people reported illness lasting ten days or longer, suggesting multiple etiologies for the illnesses described. Only six of these respondents sought medical care for their illness and no-one was laboratory diagnosed with a specific waterborne pathogen.

An association between increased levels of tap water consumption and GI illness was observed. This association was consistent, and demonstrated a dose response relationship across increasing levels of consumption.

The most likely cause of the bacterial contamination identified on September 26, 2007 was the interruption of the chlorine supply (1-2 hours) as a result of the failure of an automatic chlorine supply switch and operator error; coupled with the identification on November 6, 2007 of a 36 inch pipe within a 1 million gallon storage tank that allowed partially disinfected water to enter directly into the water distribution system. On October 29, 2007 the city switched from the use of chloramines as their disinfectant to free chlorine at increased levels (10-14 ppm) that lasted approximately three (3) weeks. The city remained on free chlorine (consisting of <4 ppm) until February 14, 2008.

Hepatitis A

Hepatitis A Associated with Consumption of Fruit Smoothies, Orange County, April 2007

During the first week of April 2007 the Orange County Health Department received notification of three people infected with hepatitis A, with illness onsets between March 24 and April 6, 2007. One Brazilian restaurant was identified in common for all three cases. Onsets of illnesses were March 24th, April 1st and April 6th. All three people were IgM positive for hepatitis A and exhibited compatible symptoms. Ages ranged from 23-31 years. Two were hospitalized. All reported consuming the same type of food product, an acai fruit smoothie with various toppings such as strawberries, banana, & granola from the Brazilian restaurant during a period from February 10 through March 13, 2007. One person consumed this product every weekend during this time frame. Another reported a single visit on March 1st with consumption of the acai fruit smoothie. The third described visits to the facility on March 9th and 13th with consumption of the acai smoothie both times. Extensive surveillance efforts did not reveal any additional cases. An onsite inspection was conducted. Observations included: the blender utilized to mix these ingredients did not appear to be properly washed, rinsed, and sanitized on a routine basis, improper or non-existent hand-washing procedures, hand-washing sinks improperly maintained and used, and poor personal hygiene practices.

Malaria

Malaria Screening and Prophylactic Treatment among Recently Arrived Burundian Refugees, Duval County, Florida, July 2007

In July 2007, the Duval County Health Department (DCHD) was alerted to an EPI-X report from the Centers for Disease Control and Prevention (CDC) regarding undocumented and/or insufficient pre-departure therapy for malaria among East African refugees resettling in the U.S. A joint investigation between the Florida Department of Health (FDOH) Bureau of Tuberculosis (TB) and Refugee Health, the Bureau of Community Environmental Health, the Bureau of Epidemiology and the Bureau of Laboratories (BOL) in conjunction with DCHD Epidemiology and Refugee Health Programs was initiated. The CDC coordinated with the FDOH Bureau of TB and Refugee Health to provide a list of all Burundian refugees who had relocated to the Jacksonville area prior to July, 2007. The DCHD Epidemiology Program used this list to begin locating the Burundian refugees who had arrived during the specified period and treating them using the joint CDC/IOM guidelines that were provided. Of the 32 refugees identified as having arrived during the target time period, several lacked documentation of pre-departure therapy and some had no medical records. In total, 32 refugees were prophylaxed with Malarone. No active cases of malaria were identified in this group of refugees.

Increased global travel, immigration, and the presence of anopheline vectors throughout Florida and the U.S. contribute to the ongoing threat of malaria transmission. The importation of malaria also demonstrates critical implications for clinical care, blood safety, and the possibility of autochthonous transmission.

For more information regarding the investigation please visit

T. Azarian, R. Kay, L. Smith, "Malaria among Recently Arrived Burundian Refugees: A Public Health Response," *Epi Update*, 2008; January, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2008/January2008EpiUpdate.pdf

Malaria in a Traveler with Exposure in a Non-Malaria Endemic Location, Volusia County, Florida, August 2007

In August 2007, Volusia County Health Department was notified of a presumptive case of malaria. The individual was hospitalized on August, 8 2007 with severe headache, fever, nausea, and jaundice. Laboratory results were later confirmed by the Centers for Disease Control and Prevention (CDC) to be malaria (*Plasmodium falciparum*). The 19-year-old man had traveled to Great Exuma, Bahamas for a vacation from July 21 to July 29, 2007, spending time with a parent who resided there. During his visit the man went night fishing on several occasions and remembers receiving numerous mosquito bites. No malarial prophylaxis was taken. In 2006, CDC had issued a travel advisory for this island due to 19 cases identified during the spring and summer. This advisory had been changed, however, as there were no further cases of malaria on the island and malaria was not considered to be endemic.

In the summer of 2007, a second case of malaria (*P. falciparum*) was identified by the Ministry of Health of the Bahamas. Due to the new outbreak situation, on August 23, 2007, CDC changed the recommendation for travelers to Great Exuma to again include anti-malarial chemoprophylaxis.

Additional resources

http://archive.nassauguardian.net/pubfiles/nas/archive/images_pages/05242007_A04.pdf

<http://wwwn.cdc.gov/travel/contentMalariaBahamas.aspx>

<http://wwwn.cdc.gov/travel/contentMalariaBahamas07.aspx>

<http://wwwn.cdc.gov/travel/yellowBookCh4-Malaria.aspx>

Measles (Rubeola)

Measles Outbreak Response Using the Incident Command System (ICS), Alachua County, May 2007

In May 2007, five patients with laboratory confirmed measles were found to be epidemiologically linked to a patient who had returned from India in early April. All five patients were part of an eastern religious sect with low vaccination rates. The response to the measles outbreak used an Incident Command Structure (ICS) that mobilized resources from multiple areas of the community and health department towards a single coordinated and organized containment strategy.

On Sunday, April 29th, a student health clinic contacted the Alachua County Health Department on-call nurse to report identification of Koplik spots on a patient suspected to have measles. On April 30th, the health department went to the home of the student to complete an interview to identify a source, elicit contacts, and draw blood to verify the diagnosis. Information from the interview indicated that multiple person-to-person transmissions had occurred, and the outbreak was already in the third generation. Altogether, five patients sought medical care in eleven different instances; only one healthcare practitioner recognized measles and reported it to the local health department.

Active surveillance was conducted at eight primary care and hospital healthcare providers, the area private/charter schools, and a day care on the temple grounds. Over 250 contacts were identified. An outbreak was set up in the Merlin outbreak module to track these contacts. The program was able to record the demographics, the vaccination history, and the contacts by person or setting. The activities of people with laboratory confirmed measles were hand charted on individual calendars marking the onset of symptoms, the incubation period to identify the source, and the period of communicability.

By June 1, when the event was declared over, more than 200 people received MMR vaccine at the health department. The use of an Incident Command System (ICS) in the public health response resulted in a quick response and an organized operation. It set clear daily objectives, identified who was responsible for which actions, appointed a public information spokesperson, provided operations command oversight, and allowed for the event sequence to be captured by the planning section.

For more information about this investigation please visit
E. Wilson, "Measles Response Using the Incident Command System (ICS)," *EpiUpdate*,
2007; November, [http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/
November2007EpiUpdate.pdf](http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/November2007EpiUpdate.pdf)

Mycoplasma pneumoniae

***Mycoplasma pneumoniae* Outbreak in a Private School, Duval County, October 2007**

In October of 2007, the Duval County Health Department's (DCHD) Epidemiology Program was notified by a local school about a possible outbreak of respiratory illness or walking pneumonia. The symptoms included fever, cough, difficulty breathing, and headache.

The school had a total enrollment of 391 students. Initially, seven symptomatic children were reported. One of the children, a six-year-old female, was hospitalized with pneumonia, fever, and Stevens Johnson syndrome. This child and one contact from the school were confirmed by chest X-ray and a serologically positive IgM to have *Mycoplasma pneumoniae*. *M. pneumoniae* is a very small bacterium spread through respiratory droplet transmission that accounts for 15-20% of community acquired lower respiratory infections and has the highest rate of infection in individuals aged 5-20 years.

Illness within the school population was assessed. A line list of symptomatic individuals was compiled. School absenteeism records were retrospectively assessed for the two months prior to the onset of symptoms for the first case. In total, 68 individuals experienced illness that met the case definition; 27 were ill in October and 41 in November. Symptoms included cough (36 [46%]), fever (50 [63%]), sore throat (36 [46%]), and ear ache (8 [10%]). One patient was hospitalized.

There were five cases of laboratory confirmed *M. pneumoniae* and 9 cases of physician diagnosed illness; including one parent and one teacher. Strict hand and respiratory hygiene were implemented as well as enforcement of exclusion criteria for ill students and staff.

This outbreak identified the need for general respiratory guidelines that are applicable to a multitude of events. In response, guidelines were developed to address the control of respiratory illnesses in schools and facilities.

Norovirus

Norovirus Outbreak at a Homeless Shelter, Hillsborough County, January 2007

On January 17, 2007 a homeless shelter's pediatric nurse called the Hillsborough County Health Department (HCHD) reporting there were a large number of people ill at the facility. The initial phone call report indicated that 20 out of 25 people who had eaten food the evening of January 11, 2007 and the morning of January 12, 2007, became ill with symptoms of fever, diarrhea and vomiting. One resident was seen at a hospital emergency department on January 11, 2007 and discharged with a diagnosis of an undetermined foodborne illness.

On January 18, 2007 HCHD Environmental Health and Epidemiology staff conducted a joint site visit at the facility. Interviews were conducted with general and cafeteria staff. No cafeteria staff had been ill; 1-2 other staff members and/or volunteers had been ill. Inspection of the kitchen, daycare and school were conducted. No evidence of a foodborne or point source outbreak was detected.

During the site visit the facility staff stated that records for onset, symptoms, and duration were not available. Any information pertaining to resident illness was communicated in passing between the residents and the Director of Activities.

A total of 43 residents and four staff members of the homeless shelter were identified as having a gastrointestinal illness meeting the outbreak case definition. On January 19, 2007 three out of the nine stool samples collected tested positive for norovirus type G2. Despite the initial report of a foodborne illness, the epidemiologic evidence indicates (varying onset dates, no evidence of case clustering) that this virus was likely spread from person-to-person.

For more information about this investigation please visit

K. Fraser, "Norovirus Outbreak at a Homeless Shelter," *Epi Update*, 2007; June,

http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/June2007EpiUpdate.pdf

Norovirus Outbreak after a Baby Shower in Highlands County, February 2007

The Highlands County Health Department (HCHD) investigated an outbreak of Norovirus in attendees of a baby shower on February 25, 2007. A list of all attendees and foods served was provided to HCHD and a standardized questionnaire was administered to all attendees. Data from the questionnaire was analyzed using EpiInfo 3.3.2. Predominant symptoms of the 16 people who met the case definition were nausea (100%), abdominal pain (93.8%), cramps (87.5%), vomiting (75%), and diarrhea (75%). Eating the chicken salad (attack rate = 86.7%, RR = 6.07) and the meatballs (attack rate = 75%, RR = 2.57) were statistically associated with illness, with p-values of <0.01 and 0.012, respectively.

Stool samples and leftover food samples were collected and sent to the Bureau of Laboratories-Tampa for analysis. Stool sample analysis yielded norovirus type G2. Norovirus type G2 was not detected in the chicken salad sample, but this does not rule it out as the outbreak responsible vehicle. The assay is experimental, and Norovirus is very difficult to isolate from food specimens. Given the strong statistical association between the chicken salad and illness, coupled with biological plausibility, the chicken salad is still thought to be the culprit of the outbreak. During the investigation it was learned the caterer had prepared the food at her home while caring for her sick grandchildren who were

reported to be suffering from rotavirus. Furthermore the caterer was unlicensed and the matter was turned over to the Department of Business and Professional Regulations for further action.

Norovirus Healthcare Facility Outbreak in Assisted Living and Skilled Nursing Areas, Collier County, May 2007

Outbreak 1 and 2 occurred in the same general facility with one in an assisted living area and one in a skilled nursing area. Dates of onset began on May 22, 2007 for the skilled nursing facility and on May 27, 2007 for the assisted living facility residents. Among employees, dates of onset began on May 25 at the skilled nursing facility and on May 30 at the assisted living facility.

Facility A (assisted living facility): A total of 48 residents and 13 employees experienced symptoms (diarrhea, vomiting and nausea). The duration of illness was from less than one day to five days. Thirty-four percent were ill for one day or less. Duration of illness data was available for only 44 out of the 61 (72.1%) persons ill. The age of those ill ranged from 43-97 years with a median of 88 years. Sixty-seven percent of those ill were women and 33% were men. Three specimens tested positive for norovirus type G2 on June 1, 2007.

Facility B (skilled nursing facility): Dates of onset began on May 22, 2007 and occurred in residents through June 3, 2007. In total, 62 residents and 13 employees experienced symptoms (diarrhea, nausea, vomiting). The duration of illness lasted from less than one day to five days. As is frequent during Norovirus outbreaks a plurality of persons (57.3%) had symptoms for one day or less. Duration of illness data was available for 70 out of 75 (93.3%) persons ill. The age of those ill ranged from 59-99 years with a median of 88 years. Seventy-nine percent of those ill were women; 21% were men. Two specimens tested positive for norovirus type G2 on June 1, 2007.

Restaurant-Associated Norovirus Outbreak, Broward County, October 2007

On October 24, 2007, the Broward Regional Environmental Epidemiologist received a call from the Florida Department of Business and Professional Regulation (DBPR) regarding a possible foodborne disease outbreak associated with a local restaurant in Deerfield Beach, FL. An environmental and epidemiological investigation as well as a retrospective cohort study was performed. Sixteen (16) of the 28 persons interviewed matched the case definition. Three individuals submitted stool samples for analysis and were positive for Norovirus type G1. Based on the environmental and epidemiological data collected, the specific source of the outbreak was unable to be determined. The reported onset dates and times of illnesses were clustered indicating a point source exposure, such as food or water. Two possible food exposures (a dinner and a luncheon) were noted that fit within the incubation period for Norovirus. There were no other common exposures and/or events noted among cases.

Pertussis

Cluster of Pertussis Cases, Charlotte County, September 2007

On Friday, September 21, 2007, the Charlotte County Health Department (CCHD) Epidemiology Program received a phone call from a man concerned about his 11-week-old grandchild who had been hospitalized for whooping cough. Until this phone call, CCHD had not received any reports of possible pertussis cases. This call prompted immediate action to verify if this was a true case of pertussis and to begin an epidemiological investigation.

The infant had a history of runny nose, cough, and congestion with onset on September 6th. The symptoms progressed to paroxysmal cough, vomiting after coughing, cyanotic episodes, and pneumonia. The child was hospitalized in isolation on September 13 and treated with azithromycin. The presumptive clinical diagnosis was pertussis, and lab work was ordered through the hospital laboratory. *Bordetella* direct fluorescent antibody (DFA) test and titers were negative. *Bordetella* culture and polymerase chain reaction (PCR) tests were ordered, but not completed because specimens were not sent on appropriate media. The infant improved with antibiotic treatment and was discharged on September 18th. Despite the clinical presentation consistent with pertussis, the treating pediatrician did not report the case to the CCHD due to the lack of laboratory confirmation.

An interview with family members revealed that three household contacts had cough, including the child's mother and grandmother, who each work in separate long term care (LTC) facilities in Sarasota County, and a 3-year-old sibling. In addition, the index baby and the symptomatic sibling are attendees of a day care center. An interview with the day care center director revealed that several other children in the center had coughs, but no staff were symptomatic. A list of the symptomatic children was provided to the CCHD, and these families were contacted for interviews and screening for pertussis.

On Sunday, September 23rd, CCHD held a screening for symptomatic contacts. Specimens (nasopharyngeal and nasal swabs) were collected from 12 contacts and tested for *Bordetella*, influenza, and RSV at the Bureau of Laboratories-Jacksonville. This included the index baby, five household contacts, and six daycare contacts. The symptomatic contacts in sensitive situations were excluded from work and/or attendance at daycare and LTC facilities.

Preliminary laboratory results became available on September 25. Of 12 specimens tested, four were PCR-positive for *Bordetella pertussis*, including the index baby. Based on these presumptive results, antibiotic prophylaxis was initiated. A total of 51 contacts (six household, 45 day care) received prescriptions for antibiotic prophylaxis with azithromycin or erythromycin. In addition, 12 daycare staff members were given the Tdap vaccine.

Final bacteriology results were received from the Bureau of Laboratories-Jacksonville on October 1st. Three specimens were PCR positive for *Bordetella pertussis*. This included the index baby, and the baby's mother and grandmother. Of the three PCR-positive specimens, the specimen obtained from the infant's mother was also culture positive.

The three laboratory-confirmed cases were reported in Merlin. Active surveillance was initiated in the day care to identify additional cases. Surveillance was also conducted in the two Sarasota County LTC facilities where the infant's mother and grandmother were employed. No additional cases were identified.

For more information about this investigation please visit

S. Traynor, "Cluster of Pertussis Cases, Charlotte County," *EpiUpdate*; 2007, December, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/December2007EpiUpdate.pdf

Primary Amebic Meningoencephalitis

Primary Amebic Meningoencephalitis Cases, Orange and Osceola Counties, July-September 2007

During the summer of 2007 between July 26-September 3, the Orange and Osceola County Health Departments received reports from local medical personnel of three cases of primary amebic meningoencephalitis (PAM). Illness onsets were reported to be June 6, August 2, and August 31. Two of the cases were initially reported as suspect bacterial meningitis cases. During microscopic examination of the cerebrospinal fluid, motile amebas were observed. All three cases were confirmed by the Centers for Disease Control and Prevention. Epidemiological investigations revealed two of the individuals had known lake exposure at different locations in Orange County prior to illness onset. The epidemiological investigation of the third case did not reveal any relevant exposures. Risk communication efforts included press conferences, educational handouts, posting of signage at regulated locations, and reverse phone calls.

For more information about this investigation please visit

S. Matthews, et al., "Primary Amoebic Meningoencephalitis- Arizona, Florida, and Texas, 2007"
Morbidity and Mortality Weekly Report, Vol. 57, No. 21, 2007

Red Tide

Early Detection of a Northeast Florida Red Tide through an Investigation of a Cluster of Respiratory Irritation Complaints, September 2007

The Nassau County Health Department (NCHD) received a phone call from a supervisor of a local dredging company reporting a cluster of respiratory illnesses in employees of a beach dredging project. Thirteen employees stationed on Fernandina Beach, FL began reporting symptoms on September 25th, 2007. Ill employees reported cough, eye irritation, sneezing, sniffing, and throat irritation. Since employees were exposed to sediment dredged from the Atlantic Ocean and deposited onshore, the initial hypothesis was that the employees were exposed to hazardous waste materials mobilized during the dredging operations.

Upon NCHD arrival at the beach site on September 25, 2007, environmental conditions such as the taste and odor of the air, the volume of dead fish along the shoreline, and the clinical symptoms experienced by both the company employees and NCHD staff, were suggestive of a red tide event. The FDOH Aquatic Toxins Programs was contacted immediately and assisted the NCHD in coordinating with the Florida Fish and Wildlife Conservation Commission (FWC) Research Institute to conduct water testing. Samples collected on September 25, 2007 revealed positive levels of *Karenia brevis* in Nassau County samples and later in samples collected up to approximately 200 miles from the dredging site. The method of detection was unusual, as human health symptoms preceded discovery of the bloom through satellite imagery, routine beach water sampling, or fish kill or wildlife morbidity reports. FWC historical data indicates that *Karenia brevis* was not previously detected in Nassau County.

For more information regarding this investigation please visit

R. Lazensky, A. Reich, "Early Detection of a Northeast Florida Red Tide, *Karenia brevis*, in Employees of a Nassau Beach Dredging Project," *EpiUpdate*, 2007; November, http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/November2007EpiUpdate.pdf

Rickettsiosis

First Probable Case Report of *Rickettsia parkeri* Spotted Fever Rickettsiosis in Florida, Escambia County, July 2007

On July 27, 2007, the Epidemiology Department of the Escambia County Health Department (ECHD) initiated an epidemiologic investigation of a locally acquired suspected case of rickettsial disease. In early June 2007, the patient was mountain biking near Pensacola, Florida. Following the bike ride, he discovered one tick attached to the right side of his abdomen, and another on his left leg. Approximately 10 days later, he became ill and sought medical attention.

The patient was a 30-year-old white man in good general health. He presented to the local emergency department June 14th with fever (39.2°C/102.6°F), headache and neck pain, fatigue, numerous scratches, and an area of cellulitis on his tibia. Other symptoms reported by his wife, but not documented in the medical charts, included: red circular areas at the bite sites, chills, high fever (104°F), sweating, headaches, and white spots on the tongue. The patient was diagnosed with a staphylococcal infection.

A convalescent blood sample collected on July 24th was submitted to the Florida Department of Health (DOH) Bureau of Laboratories (BOL)-Pensacola on August 2nd, and shipped to the BOL-Jacksonville for Rocky Mountain Spotted Fever (RMSF) testing. A second convalescent blood sample was collected on August 9th and also shipped to BOL- Jacksonville for RMSF testing.

Both samples were tested for RMSF using an indirect fluorescent antibody (IFA) serological assay, and found to be marginally positive (1:64). The samples were then forwarded to the Centers for Disease Control and Prevention (CDC). Serological test results from the CDC suggest that the patient was positive for *Rickettsia parkeri* (not explicitly reportable in the U.S. and the state of Florida at this time). Further evidence to support the *R. parkeri* diagnosis was that a photograph of the tick, taken by the patient's wife, was identified by CDC as *Amblyomma maculatum*, the Gulf Coast tick known to carry *R. parkeri*.

Eschars caused by *R. parkeri* may appear similar to those caused by methicillin-resistant *Staphylococcus aureus* (MRSA), but may not respond to all MRSA treatment regimens. *R. parkeri* infections will resolve with standard rickettsial illness therapies including doxycycline with concurrent symptomatic care.

This is the first probable case of illness due to the obligate intracellular bacterium *R. parkeri* reported in a Florida resident.

For more information about this investigation please visit

S. Thouvenel-Romans, S. Rivers, G. Danyluk, R. Shultz, D. Stanek, "First Probable Case Report of *Rickettsia parkeri* Spotted Fever Rickettsiosis in Florida," *EpiUpdate*, 2007; October http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007/October2007EpiUpdate.pdf

Salmonellosis

Confirmed Salmonellosis Outbreak, Palm Beach County, January 2007

On January 24, 2007, the Palm Beach County Health Department (PBCHD) was notified of two positive Salmonellosis cases possibly associated with attending a statewide soccer tournament held in Palm Beach County on January 13th and 14th, 2007. The PBCHD-Environmental Health (PBCHD-EH) and the Department of Business and Professional Regulation (DBPR) investigated the food concession and its commissary. A total of 144 persons were interviewed. Thirteen persons met the case definition: a person experiencing abdominal cramps, along with nausea or vomiting within 12-72 hours after attending the soccer event. Incubation periods ranged from 12-72 hours. Duration of illness ranged from 48-500 hours, with a mean of 142 hours and a median of 120 hours. Statistical analysis of the data suggested a statistical significance (p -value <0.001) for a person to become ill and have eaten food from the implicated concession. The PBCHD-EH and DBPR investigation disclosed various violations with one particular food item: turkey drumsticks. Temperatures of the cooked and mishandled drumsticks were not measured. Eating turkey drumsticks was also highly significantly associated with illness, with a p -value of <0.001 .

Scombroid Poisoning

Scombroid Fish Poisoning Associated with Escolar, Lee County, March 2007

On March 30, 2007 the Lee County Health Department (LCHD) reported three people with scombroid fish poisoning following the consumption of escolar at a local restaurant on March 23, 2007. A sample of the fish was tested by the Florida Department of Agriculture and Consumer Services (FDOACS) laboratory and was found to have an elevated histamine level of 216 $\mu\text{g/g}$, indicating the product was decomposed and not fit for human consumption. According to the FDA guidelines, histamine concentrations near or above 100mg/100g are typically noted in actual illnesses. (Units used to report histamine measurements do vary and can be confusing: $\mu\text{g/g}=\text{ppm}$, $100\text{mg}/100\text{g} = 1\text{mg/g} = 1000\mu\text{g/g} = 1000 \text{ ppm}$). The escolar was a wild-caught product imported from Ecuador. The distributor destroyed all of the remaining fish as witnessed by the FDA. (Lee County had a previous scombroid outbreak in 2001 associated with escolar).

For more information about this investigation please visit

Terzagian, R., "Scombroid Fish Poisoning Associate with Escolar, Lee County, 2007" *EpiUpdate*; 2007, May http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2007_index.html

Additional resources

Food and Waterborne Disease Program Annual Report, 2001; Scombroid Fish Poisoning, Lee County, April, 2001, p. 14 <http://www.doh.state.fl.us/environment/community/foodsurveillance/annualreports.htm>

***Serratia marcescens* associated with Heparin and Saline flushes, December 2007**

The Florida Department of Health Bureau of Epidemiology began assisting the Centers for Disease Control and Prevention (CDC) in assessing an outbreak of *Serratia marcescens* bacteremias in the outpatient setting on December 18, 2007.

The Food and Drug Administration (FDA) issued a recall of the heparin flush on December 20th. They

stated that the firm is not in compliance with the Quality System regulation and failed to have adequate controls to ensure necessary sterility of its pre-filled syringes.

The Florida Department of Health (FDOH) was notified by CDC on January 15th about an investigation regarding *Serratia marcescens* associated with prefilled saline syringes manufactured by Am2Pat (a.k.a Sierra prefilled).

The total number of reported Florida cases of *Serratia marcescens* infection associated with heparin use was 42. Of the isolates that were sent to the CDC for testing, 32 were confirmed as related or closely related to the outbreak strain.

The FDOH objective was to assist the healthcare community in preventing new infections by identifying this product and removing it from distribution and circulation.

For more information about this investigation please visit
 Food and Drug Administration http://www.fda.gov/oc/po/firmrecalls/am2pat12_07.html
 Food and Drug Administration <http://www.fda.gov/cdrh/recalls/recall-122007.html>
 Centers for Disease Control and Prevention <http://www.bt.cdc.gov/coca/updates/2008/2008jan22.asp#24>

Shigellosis

Shigellosis Outbreak in Citrus County, April 2007

The Citrus County Health Department (CCHD) Epidemiology Program, investigated an outbreak of *Shigella sonnei* in the community and in day-care centers from April-June, 2007. Between April 1 and April 10, 2007, five confirmed cases of shigellosis were reported that included children at the same day-care center; many of these had the same day of onset. One case had an onset in mid-March but was not reported until April and was attending day-care. By April 16th, confirmed cases had been identified in five day-care facilities; the CCHD instituted an Incident Command System. The Merlin outbreak module was used to assist in outbreak management. All day-care facilities were visited by epidemiologic and environmental staff; and the medical community was notified of the recommended control measures, exclusion policy, and treatment guidelines.

Additional confirmed and suspected cases were found in children and in food handlers and health care workers, not linked to day-care centers. Secondary cases occurred within families of affected children. Early in May, a community awareness campaign using local print and TV media was developed for the schools, businesses, parks, churches, and government sites.

By May 7th, nine daycares had confirmed shigellosis cases and nine other facilities had diarrheal illnesses and were considered 'suspect' centers (total of 47% of all centers). By May 16th, there were almost 200 confirmed, probable, and suspect cases in the community. Eighty-four percent were in those ages 0-14 years. Seven elementary schools had cases but few cases were in the same classroom. Enhanced surveillance continued and the outbreak was declared over early in July 2007.

Eleven specimens were analyzed for PFGE patterns; these specimens were obtained between April 15th and April 28th. Eight of the specimens had the same pattern; the remaining three specimens each had a unique pattern. The eight with the same pattern represented four different day cares; among these specimens, four had antibiograms. Half of these antibiograms were bactrim resistant. One

elementary school had four cases with three different PFGE patterns; two of the cases were in the same classroom but had different patterns.

A case-control study was conducted by a Florida EIS Officer using day-care centers as the unit of study. It was designed to detect differences between affected and unaffected day-cares. Risk factors were found to be the size of the center, diaper changing, meals and snack provision and preparation, cleaning, and absentee illness policy. Larger centers and those enrolling toddlers were found to be at more risk for having cases. These centers had more susceptible hosts and had increased risk for transmission among young children who are mobile and have poor hand-washing skills. Improper hand hygiene by staff after diaper changing and before preparing and serving food was found to be a risk factor. Lack of attention to cleaning toys, along with not sending symptomatic staff home were also risk factors associated with increased risk of illness.

For more information regarding the investigation please visit EpiCom postings (April 16, April 25, May 22, and July 10, 2007) by Virginia Crandall, R.N., B.S.N., M.P.H., Citrus County Health Department

***Staphylococcus aureus* (including antibiotic resistance, MRSA, VISA)**

***Staphylococcus aureus* enterotoxin foodborne Outbreak at the Calhoun County Correctional Institution, August 2007**

On August 10, 2007 the Florida Department of Health, Bureau of Community Environmental Health received a report that numerous employees working the midnight shift at the Calhoun County Correctional Facility had fallen ill after consuming a pot luck meal. The Regional Environmental Epidemiologist investigated the complaint and learned that fifteen employees had become ill after eating barbecued turkey and ham prepared the day before by fellow employees and left out at room temperature for approximately sixteen hours prior to consumption. Testing performed by the Bureau of Laboratories-Jacksonville, Florida isolated >200,000/g of *Staphylococcus aureus* in the ham. The presence of $\geq 100,000$ /g of *S. aureus* from epidemiologically implicated food meets the criteria for confirmation of *S. aureus* as the agent responsible for an outbreak¹.

Additional resources

¹Procedures to Investigate Foodborne Illness, Fifth Edition, p. 127

Cluster of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Skin Infections in a Volusia County School, October 2007

On October 17, 2007 the Volusia County Health Department (VCHD) received a report from the Volusia County School Health Coordinator of six cases of suspected skin infections among students at a local high school. Upon further investigation, there was indication that the cases represented two different clusters of skin infections. Three cases were among students participating on the football team and the other three cases were associated with a familial cluster with no identifiable link to the student athletes. Onset of the skin infections ranged from October 3-October 13, 2007. Three cases were laboratory confirmed as methicillin-resistant *Staphylococcus aureus*. All six students were diagnosed, treated and cleared to return to school by a physician. The Volusia County Epidemiology Department in conjunction with the school health coordinator provided education and prevention materials to the school and sent a letter and fact sheet home to parents. A VCHD epidemiologist provided an educational presentation to the county's school principals and athletic directors regarding MRSA prevention especially in athletic settings.

For more information about MRSA in schools please visit Centers for Disease Control and Prevention at http://www.cdc.gov/ncidod/dhqp/ar_mrsa_in_schools.html

Vancomycin-Intermediate *Staphylococcus aureus* (VISA) Case Detected in Orange County, December 2006

The Orange County Health Department investigated the first case of vancomycin-intermediate *Staphylococcus aureus* (VISA) to be detected in Florida. On December 1, 2006, a 46-year-old woman visiting Orlando from Connecticut presented to an emergency room with a five day history of generalized weakness, a nosebleed, discoloration of feet and toes, evidence of skin lesions, and a diffuse mottling of her skin. She had a history of polycystic kidney disease with renal failure, coronary artery disease, and methicillin-resistant *S. aureus* (MRSA) sepsis. The patient was admitted to the intensive care unit with a diagnosis of septic shock and treated with vancomycin and ceftriaxone.

Multiple blood samples taken between December 1st and December 8th had positive cultures for MRSA with a vancomycin minimum inhibitory concentration (MIC) of two. A blood sample taken on December 11th cultured MRSA with a vancomycin MIC of four, indicating that while hospitalized, the bacteria's susceptibility to vancomycin had decreased and was now classified as VISA. For VISA strains, resistance is thought to be associated with vancomycin exposure; this patient was treated with vancomycin from December 2nd-December 7th. Note that because the patient was a Connecticut resident, she was not reported as a Florida case.

For more information about this investigation please visit Eisenstein, L., R. Sanderson, "Vancomycin-intermediate *Staphylococcus* (VISA) Acquired in Florida," *EpiUpdate*, 2007; March 29. http://www.doh.state.fl.us/Disease_ctrl/epi/Epi_Updates/2007/March2007Epi%20Update.pdf

A Case of Vancomycin Intermediate Resistant *Staphylococcus aureus* In Palm Beach County, December, 2007

The Palm Beach County Health Department Epidemiology Program was notified December 3, 2007 of a patient with a possible vancomycin intermediate resistant *Staphylococcus aureus* (VISA) at a local hospital. The patient was a Palm Beach County resident with a history of systemic lupus erythematosus with lupus nephritis, who was on hemodialysis. She was hospitalized at a local hospital November 26, 2007 after missing several dialysis treatments. Blood cultures were drawn after the patient developed a fever. The blood cultures were positive for *Staphylococcus aureus* and read by the hospital at a minimum inhibitory concentration (MIC) of 6 to vancomycin. The isolate was sent to the Bureau of Laboratories and on to the Centers for Disease Control and Prevention (CDC) for confirmation. The CDC confirmed the finding of intermediate resistance with a reading of an MIC of 4 to vancomycin. Current MIC breakpoints for VISA are defined as a vancomycin MIC = 4-8. The patient has a history of MRSA bacteremia intermittently treated with vancomycin. This case represents the first case of VISA in a Florida resident.

Syphilis

Syphilis Outbreak in Adolescents and Young Adults, Hillsborough County, 2007

Historically populations under 20 report the lowest number of early syphilis cases statewide. However, in Hillsborough County an increase in cases of syphilis emerged within the Tampa, FL area. During the 1st quarter of the year, Hillsborough County experienced a 54% increase in early syphilis cases compared to the same period in 2006. A total of 46 cases (13 infectious syphilis and 33 early syphilis) were reported in the first three months. While a significant proportion of these cases occurred among men who have sex with men (MSMs), for the first time in years cases had increased among teens and African American women primarily living in a low socioeconomic area within Tampa.

The Florida Bureau of Sexually Transmitted Disease Prevention and Control activated its state-wide Syphilis Outbreak Response Team to investigate and control this outbreak. Members were temporarily detailed to Hillsborough County for one to two weeks during the period from June to late August to ensure ongoing assistance with containment.

Of the 358 syphilis interviews conducted in 2007, 10.3% (37) of those were among adolescents aged 12-17. Approximately 86% of those interviewed were non-hispanic black, 8% non-Hispanic white, and 3% Hispanic. At diagnosis, 5% had primary syphilis, 35% had secondary syphilis, and 60% were diagnosed with early latent syphilis. Over half of those interviewed had had previous STD infections: chlamydia (19%), gonorrhea (5%), or both (30%).

Health alerts were sent by the Hillsborough County Health Department director to health care providers and community organizations. Memorandums of Agreement were set with community partners to assist with targeted education and screenings in communities and schools identified through case investigations as well as health care facilities. Nearly, 38% of cases were detected through active case finding. Additionally, staff have partnered with community based organizations to increase opportunities for education and screening.

Typhus Fever

Typhus Fever (Endemic) Case in Hillsborough County, Florida, April 2007

The Hillsborough County Health Department Epidemiology Program investigated a case of endemic (Murine) typhus fever (*Rickettsia typhi*). The 62-year-old woman was reported in Merlin as a confirmed case, as her clinical symptoms (headache, fever, joint pain) and laboratory results (4-fold rise in IgG antibody titer) met the case definition. She was treated successfully with doxycycline. The patient was likely exposed in mid-April 2007 from fleas near the house in which she was living just north of Tampa, FL. She was living with a cat, and a neighborhood dog was, at times, in the house. Additionally, she reported being bitten directly by fleas in the backyard area.

In the last five years, there have been four other confirmed cases of endemic typhus fever in Florida. Typhus fever outbreaks that are spatially linked (same neighborhoods) have been documented previously in other states. No other cases were identified in Hillsborough County.

Varicella

Varicella Outbreak in Martin County Schools, November 2006 to March 2007

The Martin County Health Department Division of Epidemiology investigated several varicella outbreaks in Martin County Schools from November 30, 2006 to March 7, 2007. A total of 42 cases of varicella (31 confirmed and 11 probable) were reported. The 42 cases were reported by school health nurses (64.3%), physicians (28.6%) and child care centers (7.1%). Ages ranged from 7-months-old to 17-years-old. Cases were found among child care centers (8), elementary schools (23), middle schools (8), and high schools (2). One had unknown school status. Six of the 42 cases were also household members. Immunization records were retrieved indicating 34 cases (80.9%) were previously vaccinated, 4 cases (9.5%) were not previously vaccinated, 2 cases (4.8%) were less than 1-year-old, and 2 cases (4.8%) had been previously diagnosed with the disease. Schools were notified through collaborative efforts with the school health nurses, principals, and school board. Letters and information on varicella were sent home with the students and faculty in order to alert anyone who may have been exposed and/or at high risk.

(Varicella was added to the list of reportable diseases in the updated version of F.A.C. Chapter 64D-3, effective November 30, 2006).