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EPI Examiner

A Monthly Epidemiology Report

MARCH 2009

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Monthly Report	762-3891

Edited by Lashawnda White, M.P.H.

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March Disease Summary

Confirmed and probable notifiable disease cases were analyzed by date of event for this report (Table 1). Diseases were categorized as higher than expected using a two standard deviation threshold and as significantly higher than expected according to Pearson's chi-square test for fit of a distribution.

Salmonella cases were significantly higher than expected during March. Hepatitis A continues to be significantly higher than expected. Investigations are ongoing for Salmonella and Hepatitis A. Malaria cases were higher this month, than they've been for March of the last 5 years.

Salmonellosis

Daneshia Roberts, MPH

During the month of March, 30 cases of Salmonella were reported in Broward County. Ninety-seven percent of the cases were acquired in Florida; 4 cases were reported as outbreak associated. Nearly half of the cases were between the ages of 0 and 4 years old. Throughout the month of March, Miami-Dade reported 29 cases; Palm Beach County reported 18 cases and a total of 237 cases were reported for the state of Florida.

Salmonellosis is caused by an infection with the Salmonella bacteria. The bacterium is carried by some animals and may be found on kitchen services, in water, soil, raw meats and in eggs. Salmonella infection can be caused by the ingestion of contaminated foods such as meat, meat products, raw milk/milk products, raw foods, undercooked eggs, egg products, and water. Outbreaks of Salmonella in the U.S. have also been associated with raw fruits and vegetables. Pets such as dogs, cats and reptiles can also be a source of exposure to the bacteria. Salmonella can also be spread from person-to-person through fecal-oral transmission.

It usually takes 12-36 hours after ingesting the bacteria for symptoms of infection to persist. Symptoms of Salmonella can be characterized by acute onset of diarrhea, abdominal pain, vomiting, fever, nausea, and/or headache. In some cases, the infection can become substantially more severe and cause meningitis, cholecystitis, endocarditis, pneumonia, or septic arthritis.

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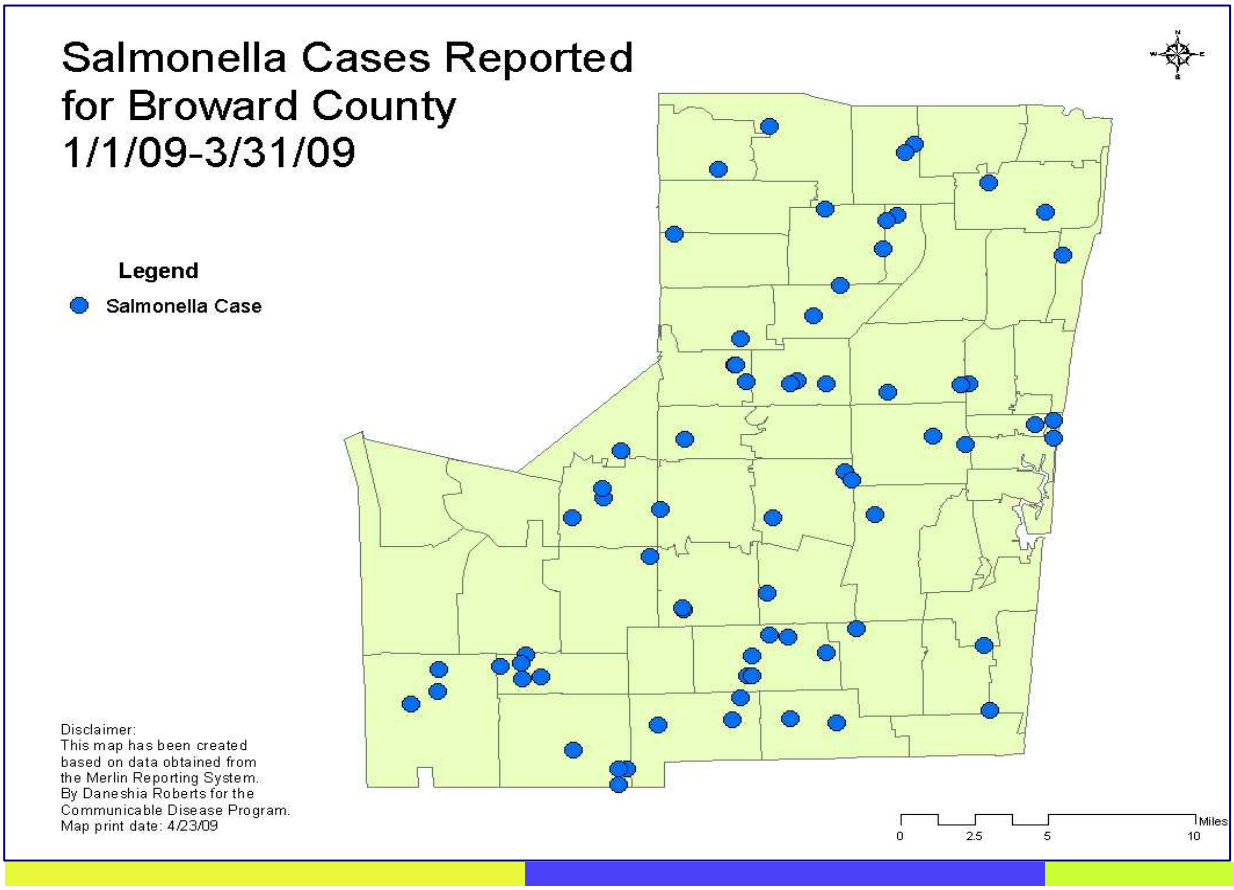
Salmonella infection can be prevented by taking precautions. Food safety practices should be applied when handling food items. Hand-washing is very important in preventing the spread of salmonella and various other diseases.
More information about Salmonella can be found at www.CDC.gov/salmonella

Figure 1. Distribution of Salmonella cases from Broward County from January 1, 2009-March 31, 2009.



Giardiasis

Giardiasis is a diarrheal illness caused by the microscopic protozoan parasite, Giardia *intestinalis, lamblia* or *duodenalis*. Once a person or animal has been infected with Giardia, the parasite lives in the intestine and is passed in feces. Because the parasite is protected by an outer shell, it can survive outside the body and in the environment for long periods of time (i.e., months). It can survive the normal amounts of chlorine used to purify community water supplies, and can live for more than 2 months in cold water. As few as 10 of the microscopic parasites in a glass of water can cause a severe case of giardiasis in a human being who drinks it.

During the past 2 decades, Giardia infection has become recognized as a common cause of waterborne disease in humans in the United States. Giardia can be found worldwide and within every region of the United States. It's estimated that between 1% and 20% of the U.S. population has giardiasis, and this figure may be 20% or higher in developing countries, where giardiasis is major cause of epidemic childhood diarrhea.

Signs and Symptoms

Giardia infection can cause a variety of intestinal symptoms, which include, diarrhea, abdominal cramps, gas or flatulence, greasy stools that tend to float, and upset stomach or nausea. These symptoms may lead to weight loss and dehydration. Some people with Giardia infection have no symptoms at all, in fact as much as two thirds of people who are infected, show no signs or symptoms. Symptoms of giardiasis normally begin 1 to 2 weeks (average 7 days) after becoming infected. In otherwise healthy persons, symptoms of giardiasis may last 2 to 6 weeks. Occasionally, after short-term symptoms of giardiasis pass, the disease begins a chronic phase. Medications can help decrease the amount of time symptoms last.

Diagnosis

Diagnosis is confirmed by taking stool samples and sending them to the lab to be examined for Giardia parasites. Giardia can be hard to diagnose, therefore several samples may be needed to find the parasite. Less often, doctors make the diagnosis by looking at the lining of the small intestine with an endoscope and taking samples form inside the intestines to be sent to the lab.

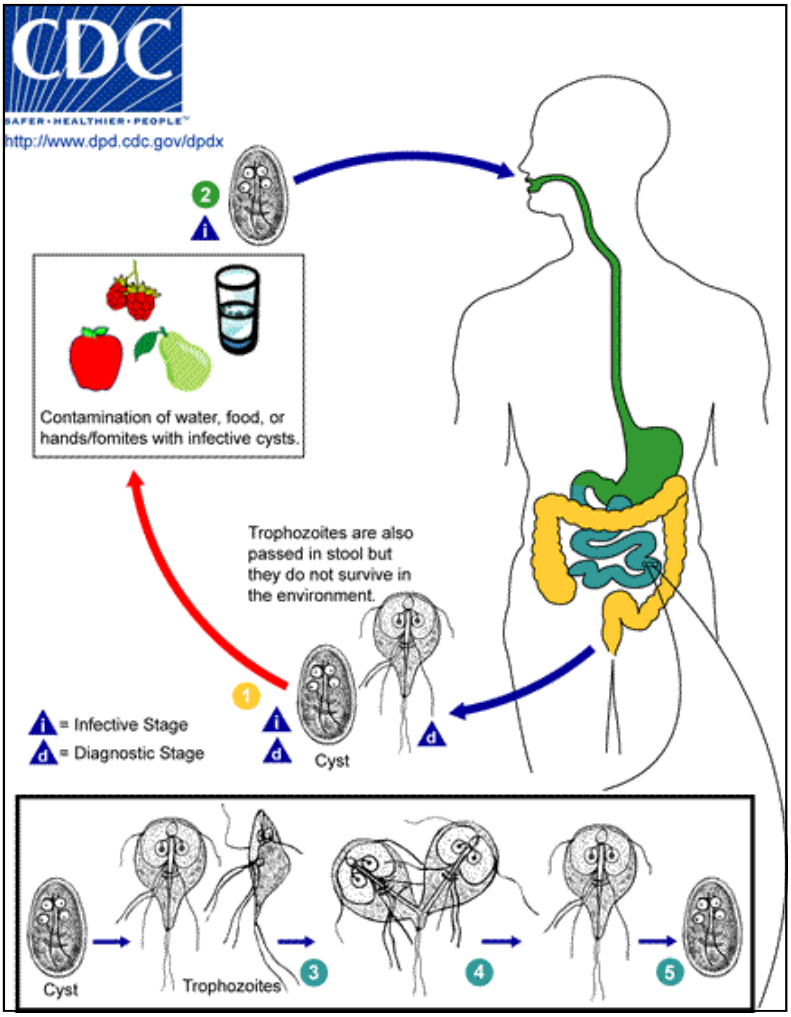
Transmission

The Giardia parasite lives in the intestine of infected humans or animals (e.g., cats, dogs, cattle, deer, and beavers). Millions of germs can be released in a bowel movement from an infected human or animal. Giardia is found on surfaces or in soil, food, or water that has been contaminated with the feces from infected humans or animals. You can become infected after accidentally swallowing the parasite; you cannot become infected through contact with blood. In a child-care center or any facility caring for a group of people, giardiasis can easily pass from person to person. At home, an infected family dog with diarrhea may pass the parasite to human family members who take care of the sick animal.

Giardia can also be spread by:

- Accidentally swallowing Giardia picked up from surfaces (such as bathroom fixtures, changing tables, diaper pails, or toys) contaminated with feces from an infected person or animal.
- Drinking water or using ice made from contaminated sources (e.g., lakes, streams, wells that are shallow [less than 50 feet], poorly monitored or maintained).
- Swallowing recreational water contaminated with Giardia. Recreational water includes water in swimming pools, water parks, hot tubs or spas, fountains, lakes, rivers, springs, ponds, or streams that can be contaminated with feces or sewage from humans or animals.
- Eating uncooked food contaminated with Giardia.
- Traveling to countries where giardiasis is common and being exposed to the parasite as described in the bullets above.
- Exposure to human feces through sexual contact.

Figure 2. *Giardia Intestinalis* Lifecycle



Prevention

- Wash hands frequently, particularly before handling or eating food, after using the restroom, and after every diaper change, even if wearing gloves.
- Do not swallow recreational water, untreated water from shallow wells, lakes, rivers, springs, ponds, or untreated water or ice from countries where the water supply might be unsafe.
- Avoid eating uncooked foods when traveling in countries with minimal water treatment and sanitation systems.
- Avoid fecal exposure during sexual activity. This is especially important while experiencing diarrhea caused by giardiasis.

To Prevent Spreading Giardia to Others:

- Wash your hands with soap and water after using the toilet, changing diapers, and before eating or preparing food.
- Do not swim in recreational water for at least 2 weeks after diarrhea stops-Giardia can be passed in stool and can contaminate water for several weeks after symptoms have ended.
- Avoid fecal exposure during sexual activity.

Source and more information can be found at: http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm

Table 1. Selected Reportable Communicable Diseases and Other Conditions Broward County Health Department

	Mar-09	Feb-09	YTD Mar-09	Mar-08	Mar-07	Mar-06	Mar-05	Mar-04	5-Yr Average (Expected #)
Animal Bite, PEP	0	2	4	1	1	0	0	2	0.8
Brucellosis	1	0	1	0	1	0	1	2	0.8
Campylobacteriosis	3	8	21	5	2	5	4	2	3.6
Ciguatera	0	0	0	0	0	3	0	0	0.6
Cryptosporidosis	0	0	2	3	3	5	2	3	3.2
Cyclosporiasis	0	0	0	0	0	0	1	0	0.2
Dengue	0	1	2	0	0	0	0	0	0.4
E. Coli NS	1	1	3	0	1	0	0	0	0.2
EHEC O157:H7	0	0	0	3	0	0	0	0	0.6
Encephalitis other	0	0	0	0	0	0	1	0	0.2
Giardiasis	9	10	24	7	7	10	7	4	7.0
Haemophilus Influenzae Invasive	4	2	9	2	1	2	4	1	2.0
Hepatitis A	5	5	12	1	1	1	1	4	1.6
Hepatitis B Acute	4	4	13	2	1	6	3	5	3.4
Hepatitis B Chronic	8	19	79	1	1	2	6	0	2.0
Hepatitis B HBsAg	1	3	11	5	3	2	5	6	4.2
Hepatitis C Chronic	29	65	313	157	126	127	174	162	149.2
Lead Poisoning	0	2	6	0	3	1	8	8	4.0
Legionellosis	0	1	2	0	1	1	0	2	0.8
Listeriosis	0	0	0	0	0	2	0	0	0.4
Malaria	2	2	10	0	0	0	0	0	0.0
Meningitis-Group B Strep	0	0	0	0	0	1	0	0	0.2
Meningitis-Other	3	0	4	1	2	4	2	2	2.2
Meningitis-Strep Pneumoniae	0	0	0	0	1	1	0	1	0.6
Meningococcal Disease	1	2	3	0	2	1	0	1	0.8
Mercury Poisoning	0	0	1	1	0	1	0	0	0.4
Pertussis	1	0	2	0	0	4	0	0	0.8
Salmonellosis	29	23	81	15	19	15	16	15	16.0
Shigellosis	4	2	6	9	58	6	6	9	17.6
Staphyloccoccus Aureus (GISA/VISA)	0	1	1	0	0	0	0	0	0.2
Streptoccal Pnemoniae(Drug Resistant)	6	10	32	12	7	3	11	5	7.6
Strep Pnemoniae(Susceptible)	4	3	15	5	7	2	3	5	4.4
Streptoccal Disease(Invasive Group A)	1	1	4	1	7	2	4	5	3.8
Varicella	7	3	12	3	12	0	0	0	7.5*
Total	123	170	673	234	267	207	259	244	215.5

Data accessed on 4/30/09 from FL Merlin Communicable Disease Reporting System.

These diseases are significantly higher than expected for the month.

Table 2. Broward Essence Activity March 1 - March 31, 2009

Syndrome										
Influenza like Illness	Botulism-like	Injury	Fever	Gastro-intestinal	Hemorrhagic Illness	Neurological	Rash	Respiratory	Shock/ Coma	Other
0	3	5	0	2	4	4	3	1	1	3
0	0	5	0	0	1	0	1	0	0	2

Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)

On a daily basis, 15 Broward County hospitals automatically transmit de-identified electronic emergency department chief complaint data to the BCHD. Each chief complaint is placed into one of 11 syndrome categories using ESSENCE, a data management/analysis system developed by Johns Hopkins University in conjunction with the Department of Homeland Security. ESSENCE performs automatic data analysis, establishing a baseline with a 28-day average. Daily case data is then analyzed against this baseline to identify statistically significant increases. A yellow flag indicates a mild alert and a red flag indicates a high alert. Daily, a BCHD analyst evaluates all alerts to determine epidemiologic clustering by zip code, hospital visited, chief complaint, and the time visited at the ER.

Alerts for all hospital visits: 2 low, 1 high

Broward County Influenza Surveillance

Figure 3.

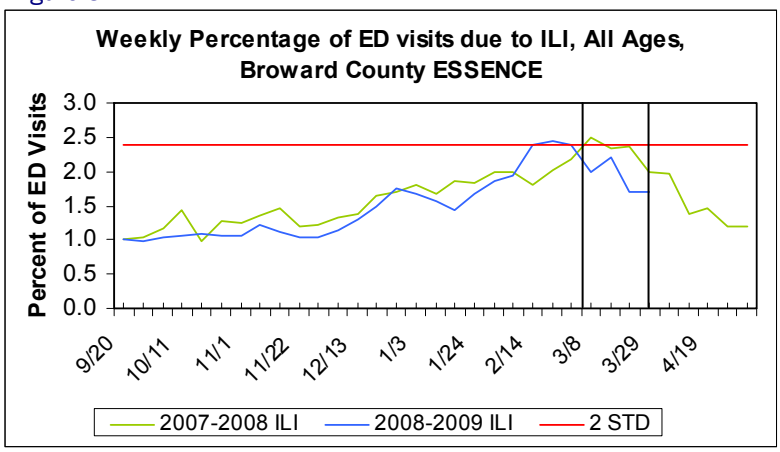
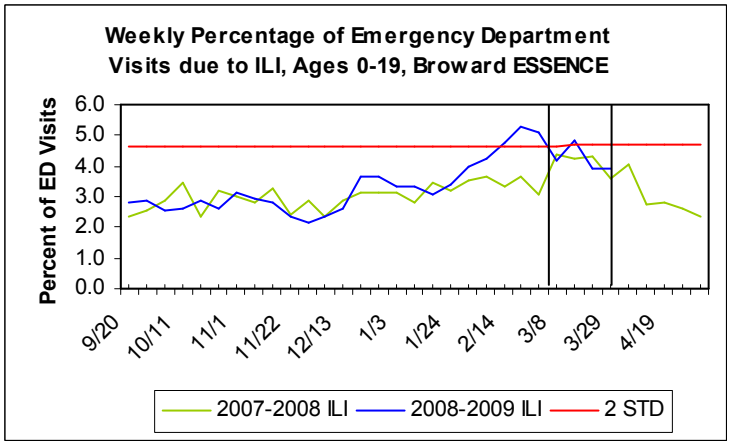


Figure 4.



Overall, the percentage of visits due to ILI, decreased in March. ILI visits were lower than what they were the same time last year. Incidence did not exceed the 2 standard deviation threshold (Fig 3.). ED visits due to ILI were higher for children and youth compared to all age groups, which was observed in previous months (Fig 4.). ILI visits for this age group decreased throughout the month except for a peak in visits which exceeded the 2 standard deviation threshold in the second week of March (Fig 4.).

The Broward County Epidemiology Program would like to thank the nurses, physicians, labs and all our community partners for their support in communicable disease reporting.