



Broward County Health Department

EPI Examiner

A Monthly Epidemiology Report

DECEMBER 2009

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Edited by Lashawnda White, M.P.H.

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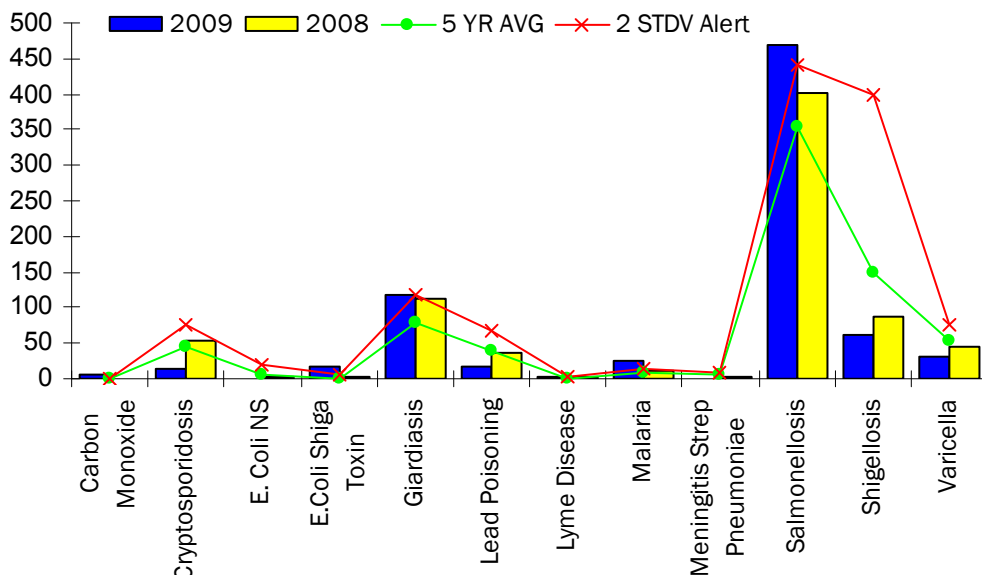
December Disease Summary

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.

Giardiasis was significantly higher than expected as it has been for most of the year. There were 17 cases compared to the five year average of 6 cases. There were slightly fewer cases this month than in November. Malaria and Salmonella were also significantly higher than expected, following the trend for the year. There were three cases of Malaria and none reported in the last five years. Salmonella was more than twice the five year average, 52 vs 21 respectively. Salmonella cases increased from the previous month (Table 1.).

Malaria, lyme disease, giardiasis, salmonellosis and carbon dioxide poisoning were significantly higher than expected for the year. Cryptosporidium, varicella, lead poisoning, *E.Coli* NS, and meningitis from *Streptococcus pneumoniae* were significantly lower than the five year average (Figure 1. & Table 2.)

Fig. 1. Notifiable Diseases with Significant Change for the Year, 2009



Legionellosis

Legionellosis or Legionnaires' disease is an infectious disease caused by gram negative, aerobic bacteria belonging to the genus *Legionella*. Over 90% of legionellosis cases are caused by *Legionella pneumophila*, a ubiquitous aquatic organism that thrives in temperatures between 25 and 45 °C (77 and 113 °F), with an optimum around 35 °C (95 °F).

Legionnaires' disease acquired its name in July 1976 when an outbreak of pneumonia occurred among people attending a convention of the American Legion in Philadelphia. On January 18, 1977 the causative agent was identified as a previously unknown bacterium, subsequently named *Legionella*.

Outbreaks of Legionnaires' disease receive significant media attention. However, this disease usually occurs as single, isolated cases not associated with any recognized outbreak. When outbreaks do occur, they are usually in the summer and early autumn, though cases may occur at any time of year. Each year, between 8,000 and 18,000 people are hospitalized with Legionnaires' disease in the U.S. However, many infections are not diagnosed or reported, so this number may be higher. The fatality rate of Legionnaires' disease has ranged from 5% to 30% during various outbreaks.

Signs and Symptoms

Legionella occurs in a severe form of the disease which usually produces pneumonia and a milder form which does not produce pneumonia and is called Pontiac fever. Some people can be infected with the *Legionella* bacterium and have no symptoms of illness at all.

Symptoms of the more severe *Legionella* may be similar to many other forms of pneumonia, so it can be hard to diagnose at first. Signs of the disease may include: a high fever, chills, cough, muscle aches and headaches. Symptoms usually begin 2 to 14 days after being exposed to the bacteria.

The symptoms of Pontiac Fever usually last for 2 to 5 days and may begin a few hours to 2 days after initial exposure to the bacteria. Signs of Pontiac Fever may also include fever, headaches, and muscle aches; however, there is no pneumonia. Symptoms go away on their own without treatment and without causing further problems.

Transmission

The *Legionella* bacteria are found naturally in the environment, usually in water. The bacteria grow best in warm water, like the kind found in hot tubs, cooling towers, hot water tanks, large plumbing systems, or parts of the air-conditioning systems of large buildings. They do not seem to grow in car or window air-conditioners.

People get Legionnaires' disease when they breathe in a mist or vapor (small droplets of water in the air) that has been contaminated with the bacteria. One example might be from breathing in the steam from a whirlpool spa that has not been properly cleaned and disinfected. Most people exposed to the bacteria do not become ill.

The bacteria are NOT spread from one person to another person.

Outbreaks are when two or more people become ill in the same place at about the same time, such as patients in hospitals. Hospital buildings have complex water systems, and many people in hospitals already have illnesses that increase their risk for *Legionella* infection. Other outbreaks have been linked to aerosol sources in the community, or with cruise ships and hotels, with the most likely sources being whirlpool spas, cooling towers (air-conditioning units from large buildings), and water used for drinking and bathing.

Diagnosis

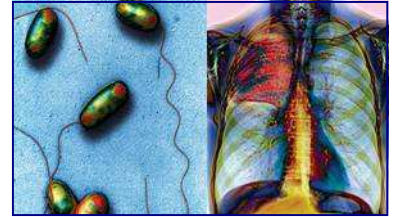
Most people with Legionnaires' disease will have pneumonia since the *Legionella* bacteria grow and thrive in the lungs. Pneumonia is confirmed either by chest x-ray or clinical diagnosis. Several laboratory tests can be used to detect the *Legionella* bacteria within the body. The most commonly used laboratory test for diagnosis is the urinary antigen test, which detects *Legionella* bacteria from a urine specimen. If the patient has pneumonia and the test is positive, then the patient is considered to have Legionnaires' disease. Additionally, if the *Legionella* bacteria are cultured (isolated and grown on a special media) from a lung biopsy specimen, respiratory secretions, or various other sites, the diagnosis of Legionnaires' disease is also considered confirmed. Finally, paired sera (blood specimens) that show a fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1 when drawn shortly after illness and several weeks following recovery, can also be used to confirm the diagnosis.

Treatment

Legionnaires' disease can be very serious and can cause death in up to 5% to 30% of cases. Delays in receiving treatment leads to higher fatalities. Most cases can be treated successfully with antibiotics, and healthy people usually recover from infection. The antibiotics used most frequently have been levofloxacin and azithromycin. Pontiac fever requires no specific antibiotic treatment.

Sources and for more information visit: http://www.cdc.gov/legionella/patient_facts.htm and http://en.wikipedia.org/wiki/Legionnaires%27_Disease

Fig.2



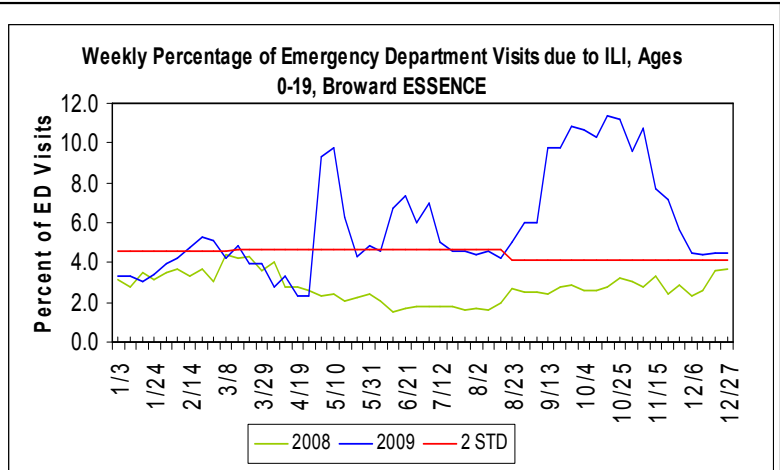
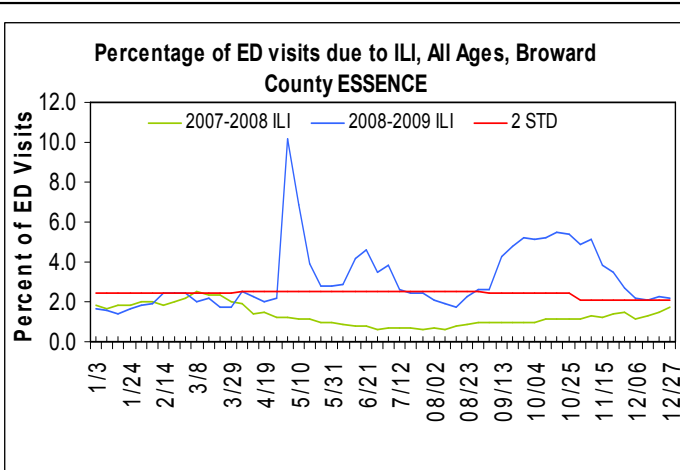
Legionella bacterium found in lungs

Fig.3



Broward County Influenza Surveillance

Psyche Doe, Influenza Coordinator



Broward County ILI incidence declined for the month of December. Emergency Department visits declined and we are seeing a decline in hospital labs reporting Influenza A positive results. Broward is also noticing a decline in physician lab reporting of ILI, also.

ILI incidence in youth and children continues to comprise the largest percentage of persons presenting to the Emergency Department in Broward County with ILI symptoms. ILI incidence among this age group is showing a decline for the month of December, but it still slightly above the 2 standard deviation threshold.

H1N1 Update:

As of December 31, 2009 Broward County has confirmed 11 deaths due to H1N1. During the month of December, the Jacksonville state lab tested 133 specimens for influenza, of those 12 specimens were confirmed H1N1 positive and one specimen tested positive for H3, which is seasonal influenza. While most cases of H1N1 Swine Flu are mild, there are exceptions. Pre-existing health conditions often play a role in how individuals react to the flu. To-date, there have been 174 laboratory confirmed H1N1 Swine Flu deaths in Florida. The Centers for Disease Control and prevention has reported that the Clinical trials for the H1N1 Swine Flu vaccine for healthy adults are going well with no adverse side effects among those tested. The Centers for Disease Control and Health and Human Services announced that healthy adults will require just one dose of the vaccine.

*CDC continues to recommend individuals receive both H1N1 flu vaccine and seasonal flu vaccine this season, so they are protected from all potential types of influenza virus that may be circulating in communities. While the vast majority of influenza circulating in communities is H1N1, there are other types of influenza virus circulating that can also make you ill.

*The same manufacturers who produce seasonal flu shots are producing the H1N1 flu vaccine this season, using already well-established manufacturing and testing processes.

*Both H1N1 and seasonal flu vaccine are available in two types: an inactivated injectable vaccine and a nasal spray comprised of live weakened virus that does not cause the flu. The nasal spray is recommended for those 2 to 49-years-old, who are not pregnant and do not have health problems or compromised immune systems.

*We recommend anyone within the priority groups get vaccinated, even if they believe they have already contracted H1N1. Unless a person has had a state laboratory confirmed case of H1N1, it can not be certain they have contracted H1N1.

PRECAUTIONS:

*As always, people with respiratory illness should stay home from work or school to avoid spreading infections, including influenza, to others in the community. *Avoid close contact with people who are coughing or otherwise appear ill. *Avoid touching your eyes, nose and mouth. *Wash hands frequently to lessen the spread of respiratory illness. *People experiencing cough, fever and fatigue, possibly along with diarrhea and vomiting, should contact their physician/health care provider. *Cough or sneeze into a tissue or into your upper sleeve, not your hands and put your used tissue in the waste basket.

If you think you have influenza, please call your health care provider and discuss whether you need to be seen in their office or at the emergency department, and stay home.

Table 1. Selected Reportable Communicable Diseases and Other Conditions through December, Broward County, FL

	Nov-09	Dec-09	5-Yr AVG	YTD Dec-09	YTD Dec-08	Dec-08	Dec-07	Dec-06	Dec-05	Dec-04
Animal Bite, PEP	0	0	1.6	11	23	1	3	3	0	1
Campylobacteriosis	6	6	7.8	85	114	6	6	11	8	8
Carbon Monoxide Poisoning	0	2	0	5	0	0	0	0	0	0
Ciguatera	0	0	0.2	5	2	1	0	0	0	0
Cryptosporidiosis	1	1	1.6	14	54	2	0	1	5	0
Cyclosporiasis	0	0	0.4	4	1	0	0	2	0	0
Dengue Fever	0	0	0.2	6	9	0	1	0	0	0
E. Coli Not Serogrouped (NS)	0	0	0.4	0	3	0	1	1	0	0
E.Coli Shiga Toxin	1	1	0.2	18	4	1	0	0	0	0
Giardiasis	17	15	6.2	117	113	11	6	9	4	1
Group A Streptococcus	3	2	2.4	29	21	2	1	4	3	2
Haemophilus Influenzae Invasive	1	1	2	22	17	2	2	2	2	2
Hepatitis A	2	0	2.2	30	15	3	2	2	3	1
Hepatitis B Acute	1	0	5	34	45	5	4	5	2	9
Hepatitis B Chronic	23	30	22	395	477	32	17	23	17	21
Hepatitis B HBsAg	1	1	3.2	53	56	5	1	1	6	3
Hepatitis C Chronic	167	148	198.4	1,996	2,395	177	191	176	191	257
Lead Poisoning	0	0	2.8	18	36	5	4	2	1	2
Legionellosis	1	3	1.2	16	10	0	1	4	1	0
Listeriosis	1	0	0.2	2	6	0	0	1	0	0
Lyme Disease	0	0	0	4	2	0	0	0	0	0
Malaria	2	3	0	26	12	0	0	0	0	0
Meningitis Group B Streptococcus	0	0	0.2	0	1	0	0	0	0	1
Meningitis Other*	0	0	2.2	16	18	1	1	6	1	2
Meningitis Streptococcus Pneumoniae	0	0	0	0	4	0	0	0	0	0
Meningococcal Disease	0	1	0.2	5	2	0	0	0	1	0
Mercury Poisoning	0	1	0.8	5	11	2	0	0	2	0
Novel Influenza	3	0	0	428	0	0	0	0	0	0
Pertussis	0	0	0.8	6	7	0	0	3	0	1
Salmonellosis	52	43	21	468	402	25	19	27	19	15
Shigellosis	4	2	6.8	62	87	4	5	13	5	7
Staphylococcus	0	2	0	2	0	0	0	0	0	0
Streptococcus Pneumoniae	3	4	5.8	46	53	4	8	4	7	6
Streptococcus Pneumoniae Drug R	8	8	4.6	78	77	9	2	9	2	1
Typhoid Fever	0	1	0	4	3	0	0	0	0	0
Varicella	1	3	2	32	45	2	2	1	0	0
Vibrio (all)	1	0	0.2	7	2	1	0	0	0	0
Total	299	278	302.6	4,049	4,127	301	277	310	280	340

Data accessed 2/15/10 from FL Merlin Communicable Disease Reporting System. *Bacterial, cryptococcal, & mycotic meningitis

█ Diseases are significantly higher than expected for the month.

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

ESSENCE is 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 on de-identified electronic emergency department chief complaint data from 15 hospitals in Broward County. Daily case data is then analyzed against this baseline to identify statistically significant increases.

Table 2. Broward County ESSENCE Alerts, Dec. 1 - Dec. 30, 2009

Alert	Syndrome										
	Influenza like Illness	Botulism-like	Injury	Fever	Gastro-intestinal	Hemorrhagic Illness	Neurological	Rash	Respiratory	Shock/ Coma	Other
Low Level	0	3	4	2	2	0	2	1	2	0	1
High level	0	0	0	0	0	0	0	1	1	0	3

Table 3. Selected Reportable Communicable Diseases and Other Conditions the Year 2009, Broward County, FL

	5-Year						
	2009	Average	2008	2007	2006	2005	2004
Animal Bite, PEP	11	18.2	23	20	18	25	5
Campylobacteriosis	85	92.6	114	89	89	75	96
Carbon Monoxide Poisoning	5	0	0	0	0	0	0
Ciguatera	5	3	2	5	8	0	0
Cryptosporidiosis	14	45.2	54	27	43	65	37
Cyclosporiasis	4	6.4	1	0	7	22	2
Dengue Fever	6	6.2	9	16	3	3	0
E. Coli Not Serotyped (NS)	0	6	3	15	10	2	0
E.Coli Shiga Toxin	18	0.8	4	0	0	0	0
Giardiasis	117	79.2	113	67	77	62	77
Group A Streptococcus	29	33.4	21	46	39	33	28
Haemophilus Influenzae Invasive	22	20.6	17	20	25	26	15
Hepatitis A	30	26.6	15	22	29	33	34
Hepatitis B Acute	34	47.2	45	28	47	47	69
Hepatitis B Chronic	395	339.2	477	296	328	303	292
Hepatitis B HBsAg	53	43.6	56	39	28	51	44
Hepatitis C Chronic	1,996	2,539	2,395	2,217	2,095	2,852	3,136
Lead Poisoning	18	38	36	55	19	31	49
Legionellosis	16	13.6	10	16	20	6	16
Listeriosis	2	6.4	6	2	10	9	5
Lyme Disease	4	1.2	2	1	2	1	0
Malaria	26	7.2	12	4	6	5	9
Meningitis Group B Streptococcus	0	1.6	1	2	4	0	1
Meningitis Other*	16	24.2	18	17	37	26	23
Meningitis Streptococcus Pneumoniae	0	5.4	4	7	5	5	6
Meningococcal Disease	5	6.4	2	9	5	10	6
Mercury Poisoning	5	5.2	11	2	3	8	2
Novel Influenza	428	0	0	0	0	0	0
Pertussis	6	5.6	7	3	10	5	3
Salmonellosis	468	355	402	317	354	393	309
Shigellosis	62	149.2	87	369	70	86	134
Staphylococcus	2	0	0	0	0	0	0
Streptococcus Pneumoniae	46	52.6	53	63	42	55	50
Streptococcus Pneumoniae Drug R	78	64.2	77	57	70	53	64
Typhoid Fever	4	2.4	3	2	2	3	2
Varicella	32	53	45	61	1	0	0
Vibrio (all)	7	4.4	2	5	2	9	4
Total	4,056	4,083	4,139	3,904	3,521	4,314	4,536

*Includes bacterial, cryptococcal, and mycotic meningitis

Data accessed on 2/15/10 from FL Merlin Communicable Disease Reporting System.

Diseases are significantly higher than expected for the year.

Diseases are significantly lower than expected for the year.



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