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A Monthly Epidemiology Report

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January Disease Summary

Confirmed and Probable 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.

In January, we observed significantly higher than expected cases of Malaria, Drug Resistant & Susceptible Streptococcal Pneumoniae. Due to increased surveillance because of changes in the case definition, Chronic Hepatitis B Virus was significantly higher than in past years. (Table 1.)

Chronic Hepatitis B Virus (HBV)

In August 2008, the case definition for chronic HBV changed, and as a result the department began actively investigating chronic HBV cases which include obtaining extended data from physicians and patients. More suspected cases were confirmed, which significantly increased the number of confirmed chronic HBV cases.

All physicians, clinics, and laboratories are required to report positive tests of hepatitis. Lab results that should be reported include: Hepatitis panel (Hepatitis A IgM & total antibody, HBV IgM antibody, HBV total core antibody, and HBV surface antigen), HBV DNA, HBV e antigen, HBV e antibody and liver enzyme profiles.

The purpose of reporting this infection is to decrease transmission among susceptible contacts; to establish source of infection; to implement control and prevention measures which may reduce missed opportunities for vaccination; to ensure that infected persons are educated on the need for medical evaluation and on methods of reducing disease progression. Reporting helps to identify infected pregnant women and ensure post-exposure prophylaxis and medical management are given to newborns. It also helps to determine the epidemiological characteristics of HBV to guide prevention and services planning.

Malaria

This month we observed 6 cases of malaria which is half of the total cases we observed the previous year. All of the cases reported traveling to areas where malaria is endemic. Only one of the travelers had received chemo-prophylaxis prior to travel and in one case it is unknown. Miami-Dade county reported 3 cases in January, West Palm Beach reported 1 case and there were a total of 17 cases for the state of Florida.

Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects a certain type of mosquito which feeds on humans. Most cases of malaria occur in people who live in countries with malaria transmission. People who travel from areas with no malaria transmission, to countries with malaria transmission, can become infected with the disease. It can be transmitted from a mother to her baby before or during delivery, through blood transfusions, and through sharing drug needles. Travelers who are visiting the country they were born in, that has malaria transmission are still at risk for acquiring the disease.

Symptoms of malaria include: high fever, chills, flu-like illness, headaches, nausea, vomiting, anemia, and jaundice. Symptoms can begin 7 days to 4 weeks following infection. Four kinds of malaria parasites can infect humans: Plasmodium falciparum, P. vivax, P. ovale, and P. malariae. Infection with P. falciparum, if not promptly treated, may lead to death. Although malaria can be a deadly disease, illness and death from malaria can usually be prevented.

Travelers can prevent infection by taking antimalarial drugs prior to travel. There are several antimalarial drugs that are prescribed according to the country that will be visited. Travelers should inform their doctors at least a month in advance of traveling. Medications should be bought in the U.S. because medicines bought overseas may not be safe or effective. To prevent mosquito bites, travelers should use insect repellent, wear long pants and long-sleeved shirts, stay indoors during dusk and dawn, and sleep under bed nets treated with an insecticide.

Travelers can get more information at <http://www.cdc.gov/malaria/travel/index.htm>

Healthcare providers can call the CDC Malaria Hotline for assistance with the diagnosis and management of suspected cases at (770)488-7788 or (770)488-7100 for after hours consultation. They can also visit www.cdc.gov/malaria for information.

Streptococcal Pneumoniae

This month, twice the number of cases of drug resistant streptococcal pneumoniae were reported in Broward, as were reported in January and December of 2008 (Tab.1). The majority of the cases with streptococcal pneumoniae, drug resistant and susceptible occurred in people over the age of 50. A couple of the drug resistant cases occurred in children. Broward had twice the number of cases of drug resistant streptococcal pneumoniae as Dade county and four times, as many as Palm Beach County.

The *Streptococcus* bacteria is carried in the upper respiratory tract. It is spread by airborne or direct exposure to respiratory droplets from a person who is infected or carrying the bacteria. However, illness among casual contacts is infrequent. The incubation period may vary, but is generally 1 to 3 days. The symptoms of pneumococcal disease vary depending on the illness caused by the bacteria. In adults, symptoms of pneumonia include sudden onset of illness characterized by shaking chills, fever, shortness of breath or rapid breathing, chest pain that is worsened by breathing deeply, and a productive cough. The symptoms of pneumococcal meningitis include stiff neck, fever, mental confusion/disorientation, and photophobia (visual sensitivity to light). The symptoms of bloodstream infection may be similar to some of the symptoms of pneumonia and meningitis, along with joint pain, fever and chills.

Pneumococcal disease is diagnosed by isolating and culturing the bacteria from the blood, spinal fluid, middle ear, lungs, or other bodily fluids. Pneumococcal disease is treated primarily with penicillin but there has been an increasing prevalence of penicillin resistance, especially in areas of high antibiotic use. A varying proportion of strains may also be resistant to cephalosporins, macrolides (such as erythromycin), tetracycline, clindamycin and the quinolones. Penicillin-resistant strains are more likely to be resistant to other antibiotics. Most isolates remain susceptible to vancomycin, though its use in a β -lactam-susceptible isolate is less desirable because of tissue distribution of the drug and concerns of development of vancomycin resistance. Susceptibility testing should be routine, with empiric antibiotic treatment guided by resistance patterns in the community in which the organism was acquired.

The best way to protect against pneumococcal disease is through vaccination. The increase in antibiotic resistance is partly due to the overuse and/or misuse of antibiotic medications. Antibiotics should not be used to treat colds or viruses. Patients should take all antibiotics as prescribed; making sure to complete the course and avoid using them if they aren't prescribed.

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

	Jan-09	Dec-08	Jan-08	Jan-07	Jan-06	Jan-05	Jan-04	5-Yr Average (Expected #)
Animal Bite, PEP	2	1	0	1	2	0	0	1
Campylobacteriosis	10	6	13	8	5	7	11	9
Ciguatera	0	1	0	0	0	0	0	0
Cryptosporidiosis	2	2	2	2	3	1	6	3
Cyclosporiasis	0	0	0	0	1	1	0	0
Dengue Fever	1	0	4	1	0	0	0	1
E. Coli NS	0	0	1	2	0	0	0	1
EHEC O157:H7	0	0	0	0	0	0	1	0
Giardiasis	5	9	4	3	6	8	5	5
Haemophilus Influenza (Bacteremia)	3	2	0	2	6	1	1	2
Hepatitis A	2	2	3	1	0	1	1	1
Hepatitis B Acute	3	4	3	4	6	3	4	4
Hepatitis B Chronic	17	26	0	0	2	5	0	1
Hepatitis B HBsAg	4	2	5	5	3	5	1	4
Hepatitis C Chronic	122	134	170	107	124	162	150	143
Lead Poisoning	4	5	5	2	2	3	5	3
Legionellosis	0	0	0	2	0	0	2	1
Leprosy	0	0	0	0	0	0	2	0
Listeriosis	0	0	0	0	1	1	0	0
Malaria	6	0	2	1	0	0	1	1
Meningitis-Other	1	1	4	1	4	3	2	3
Meningitis-Strep Pneumoniae	0	0	1	0	1	0	1	1
Meningococcal Disease	0	0	0	0	0	1	1	0
Mumps	0	0	0	0	0	0	1	0
Pertussis	1	0	0	1	0	0	0	0
Salmonellosis	30	25	31	24	25	21	11	22
Shigellosis	0	4	6	23	5	4	14	10
Streptococcal Disease(Invasive Group A)	2	2	2	5	5	1	3	3
Streptococcal Pneumoniae(Drug Resistant)	16	9	8	8	12	4	9	8
Streptococcal Pneumoniae(Susceptible)	8	4	6	4	5	1	3	4
Typhoid Fever	0	0	0	0	0	1	0	0
Varicella	2	2	0	1	0	0	0	1*
Total	241	241	270	208	218	234	235	233

 These diseases are significantly higher than expected for the month.

*Reporting for Varicella began in 2007 therefore the average is for 2 years.

Syndromic Surveillance

Fifteen Broward County hospitals automatically transmit de-identified electronic emergency department chief complaint data to the Broward County Health Department, on a daily basis. Each chief complaint is placed into one of 11 syndrome categories using The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), a data management/analysis system developed by Johns Hopkins University in conjunction with the Department of Homeland Security. The syndrome categories include respiratory, gastrointestinal, injury, influenza-like, shock/coma, neurological, fever, febrile, rash, botulism-like, and other. ESSENCE performs automatic data analysis, establishing a baseline with a 28-day average. Daily case data is analyzed against this baseline to identify statistically significant increases. A yellow flag indicates a mild alert and a red flag indicates a high alert. A BCHD analyst evaluates all alerts daily, to determine epidemiologic clustering by zip code, hospital visited, chief complaint, and the time visited at the ER.

Alerts for all hospital visits: 5 low, 0 high

Table 2. Broward County ESSENCE Alerts, January 1, - January 31, 2009

Alert	Syndrome										
	Influenza like Illness	Botulism-like	Injury	Fever	Gastro-intestinal	Hemorrhagic Illness	Neurological	Rash	Respiratory	Shock/ Coma	Other
Low Level	2	3	0	2	2	2	7	2	2	2	5
High level	1	1	0	4	1	0	1	0	0	2	0

Broward County Influenza Surveillance

Psyche Doe, Influenza Coordinator

The Broward County Health Department epidemiology section routinely conducts surveillance for influenza and influenza-like illness (ILI) using data from a number of sources. These efforts are enhanced during the winter months when an increase in influenza activity is observed across the nation. This summary provides a brief update on influenza surveillance activities for the 2008-09 season. For more information on state and regional influenza surveillance visit this website: www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/index.htm

The primary sources of data used for influenza surveillance in Broward County include outpatient ILI data from 5 sentinel physicians who are a part of the National Influenza Sentinel Provider Surveillance Network, syndromic surveillance data that quantifies ILI from chief complaints in 15 emergency departments (EDs) in Broward County, hospital reports of positive rapid tests for influenza and the Florida Pneumonia & Influenza Mortality Surveillance system which captures data on the number of deaths from pneumonia and influenza by age group.

This season's data sources suggest a similar distribution of ILI incidence to last year's incidence. ESSENCE data from hospital EDs suggests that ILI incidence is slightly lower than last year's for all ages (Fig.1). ILI visits through the end of January did not exceed the two standard deviation threshold. Children and youth under the age of 20 showed a higher incidence than all ages combined. The percentage of visits for this age group was higher than last year for the month of January (FIG.2).

Fig 1.

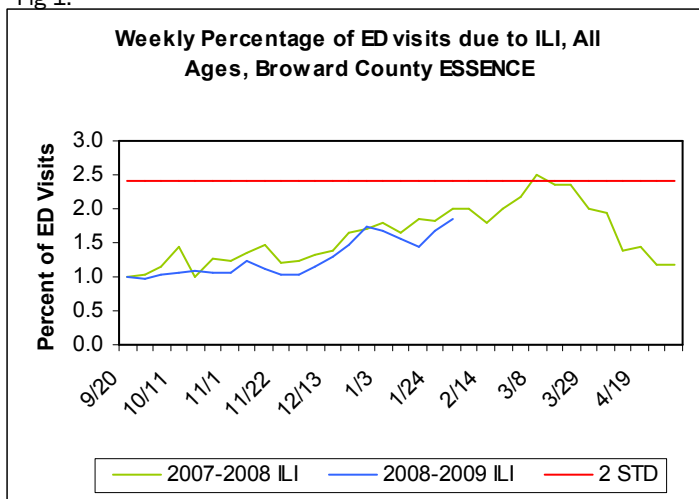
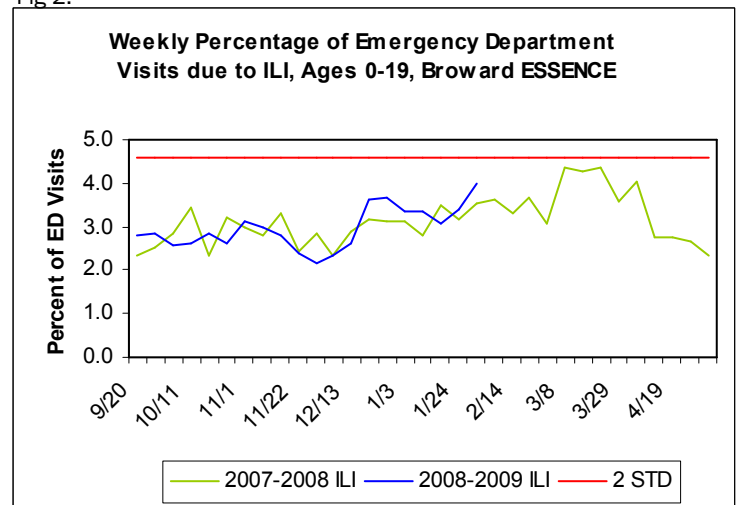


Fig 2.



Prevention

Influenza is a highly contagious respiratory illness, which enters through the nose and settles in the respiratory tract. According to the CDC the single best way to protect against influenza is to get vaccinated every year. Early September is the best time to get vaccinated, although December or later isn't too late to still get vaccinated. Flu season can begin as early as late September and last as late as May. Anyone who wants to reduce their chances of getting the flu can get vaccinated. However, it is recommended by ACIP that people at high risk for complications from the flu, and people who live with or care for those at high risk for complications from flu should get vaccinated each year.



Other measures to prevent the flu include: Avoid close contact with people who are sick. Stay home from work, school, and errands when sick. Cover mouth and nose with a tissue when coughing or sneezing which may prevent others from getting sick. Washing hands often will help protect from germs. Avoid touching eyes, nose or mouth. Get plenty of sleep, be physically active, manage stress, drink plenty of fluids, and eat nutritious foods.

Influenza Facts:

- 5% to 20% of US population gets the flu every year.
- More than 200,000 people in the US are hospitalized from flu complications every year, and approximately 36,000 people in the US die from flu every year.
- In Florida, more than 6,000 hospitalizations are due to flu complications every year and more than 3,000 people die from flu complications every year.

The following resources can be used to find out more information on influenza throughout the country: www.CDC.gov/flu or www.CDC.gov/flu/weekly/fluactivity.htm