FLORIDA DEPARTMENT OF HEALTH NASSAU COUNTY

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EPIGRAM

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2014: THE YEAR OF EMERGING PATHOGENS

In 2014, the Florida Department of Health was on the front lines in combating a number of emerging public health threats and issues. Some of the most significant threats were posed by pathogens that healthcare workers in the state of Florida, and moreover the United States, had little to no exposure or experience.

Pic. 1 An individual dons a mask to prevent the spread of MERS-CoV.

In the early months of 2014, cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) were on the rise in portions of the Middle East. By May, two cases of MERS in the United States were identified, one of which in the state of Florida. With symptoms ranging from fever and non-productive cough to respiratory failure requiring mechanical ventilation, distinguishing this from other respiratory infections based upon clinical presentation proved difficult. And while the epicenter of this epidemic has remained in the Middle East, there remains very little information regarding the natural reservoir of the virus and possibility of zoonotic transmission. As of December of 2014, the WHO has identified 941 laboratory-confirmed cases, 347 related deaths, and a case-fatality rate of approximately 28-30%.

Pic 2. Aedes vector of Chikungunya Virus

In late 2013, the Chikungunya virus appeared for the first time in the Americas in the islands of the Caribbean. A mosquito-borne illness with a clinical presentation similar to Dengue fever, Chikungunya virus historically had been responsible for a number of outbreaks in Africa, Asia, Europe, and the Indian and Pacific Oceans. Transmitted by *Aedes* mosquitos, a species commonly found throughout the Americas, the virus quickly spread throughout the Caribbean, Central America, and parts of South America via infected travelers. Cases of Chikungunya were quickly identified in the United States, with numerous travelers returning from affected countries, but in June of 2014, the first locally-acquired case was identified in the state of Florida. A total of 1.1 million cases of Chikungunya virus have been reported to the Pan American Health (cont.)

DISEASE REPORTING

Phone: (904) 548-1800

Confidential Fax Line:
(904) 277-7286

After Hours Lines:
(866) 535-0420 (toll free)

Bureau of Epidemiology
24 Hour Reporting Line:
(850) 245-4401

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Fernandina Beach Clinic
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Fernandina Beach, FL 32034
(904) 548-1860

Callahan Clinic
208 Mickler Street
Callahan, FL 32011
(904) 879-2306

Yulee Clinic
528 Page's Dairy Road
Yulee, FL 32097
(904) 548-1880

Hilliard Clinic
37203 Pecan Street
Hilliard, FL 32046
(904) 845-5761

Organization (PAHO). In Florida, 459 travel-associated cases and 11 locally-acquired cases were identified in 2014.

Pic. 3 Aid workers handling the remains of an EVD victim.

Around the same time as the Chikungunya virus first appeared in the Americas, an unspecified hemorrhagic fever was spreading through the African country of Guinea. The hemorrhagic fever was identified as Zaire Ebola virus (ZEBOV), and within a matter of months had spread to several African nations. In September 2014, as the outbreak continued, seemingly isolated on the continent of Africa, the first case of Ebola virus disease (EVD) was diagnosed within the United States. As two additional cases were identified, healthcare associated contacts to the initial case, the healthcare and public health communities were put on alert for the possibility of additional cases. Efforts in Florida have largely been focused on preparing and training those in the healthcare and first responder community to identify, isolate, and inform in the event EVD is identified in our state. As the largest EVD outbreak in history continues, with a reported 21,296 cases and 8,429 deaths, the Florida Department of Health continues to monitor individuals returning from EVD affected countries in Africa and maintains a heightened sense of awareness.

The threat from each of these new and unique pathogens is a reminder of the relatively small nature of the world thanks to modern transportation and globalization. Once too difficult to overcome, the obstacle of harboring a pathogen across continents is now a reality. While the prospect of seeing these and other emerging “foreign” pathogens will be highly likely in the future, we must not fail to acknowledge the emerging public health issues in “our own backyard.”

In 2014 the United States experienced several large outbreaks of vaccine preventable diseases (VPD). Of note is the sharp rise in cases of measles, a disease thought to have been eliminated (no longer endemic in the US) via the availability and use of a highly effective vaccine. A total of 644 cases of measles were reported in 27 states, with 23 outbreaks comprising 89% of these cases (approximately 25 cases per outbreak). Likewise, an epidemic of pertussis, or “whooping cough,” is ongoing in the state of California, where 10,831 cases with onset in 2014 have been identified. Unlike measles, the pertussis vaccine (Tdap or DTaP) lacks the ability to induce sustaining immunity, with studies indicating waning immunity 3-5 years post-vaccination, necessitating “booster shots.” Regardless of this fact, vaccination rates continue to suffer in the United States, resulting in an increase in vaccine preventable diseases.

Pic. 4 Characteristic Measles rash

In addition to outbreaks of known etiologies, an outbreak of acute flaccid myelitis of unknown etiology has been ongoing as of August of 2014. Individuals affected have sustained acute onset of focal limb weakness and spinal cord lesions largely restricted to gray matter. Suspicion remains that these cases may coincide with the temporal rise in cases of Enterovirus D-68. Much is still left unknown regarding the outbreak of this peculiar disease, with 103 cases identified in 37 states.

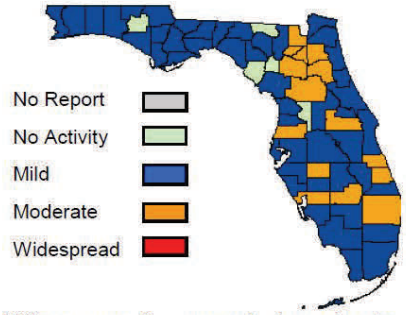
2014 was an exciting year highlighted by a number of emerging public health threats and issues, many of which we remain vigilant in our efforts to control. **As we enter into 2015, we anticipate the emergence of new pathogens, and the Florida Department of Health in Nassau county stands prepared to prevent and control the spread of disease, old or new.**

INFLUENZA SURVEILLANCE UPDATE

National influenza activity:

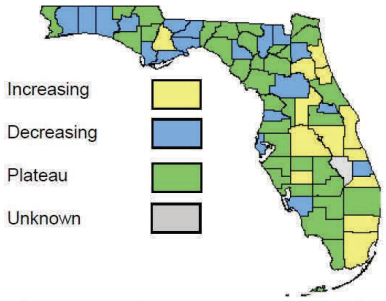
- Influenza activity is elevated nationally.
- **The Centers for Disease Control and Prevention (CDC) has identified an antigenically drifted influenza A (H3N2) strain circulating nationally and in Florida that is different from the strain of influenza A (H3N2) contained in the current 2014-15 influenza vaccine formulations.**
- **The CDC recommends the use of neuraminidase inhibitor antiviral medications, when indicated, for treatment and prevention to influenza, as an adjunct to vaccination. More information can be found here: http://www.floridahealth.gov/diseases-and-conditions/influenza/_documents/Other/influenza-letter-for-health-care-providers.pdf.**

Weekly County Influenza Activity Level
Week 1, 2015



Fifteen counties reported moderate influenza activity.

Weekly County Influenza Activity Trend
for Week 1 Reported by 11:30 a.m January 14, 2015



Thirteen counties reported increasing influenza and ILI activity.

State Influenza and influenza-like illness (ILI) activity:

- **Flu activity remains high in Florida and is widespread**.
- While influenza activity has decreased in recent weeks in some surveillance systems, overall **activity levels remain high and it is too early to tell if the season has peaked.** While biggest increases in ILI activity levels most recently have been in the 65+ age group, activity is still greatest in children. Increased influenza activity in children typically comes ahead of increases in activity in adults and the elderly.
- **Seasons, like this one, where influenza A (H3) is the predominantly circulating strain are typically associated with higher morbidity and mortality particularly in the very young and the elderly.** During flu season, increases in ED visits typically come before increases hospitalizations and deaths. In the past week, the number of pneumonia and influenza associated deaths, particularly in those over the age of 65 have increased. These increases are in line with what we expect to see for severe flu years, like this one. It is likely that flu deaths will reach higher levels later this season since mortality tends to lag behind other indicators.
- **In Florida, the most common influenza subtype detected at the Bureau of Public Health Laboratories (BPHL) in recent weeks has been influenza A (H3).** In the past week, 35 of 70 (50.0%) specimens submitted for influenza testing at BPHL were PCR positive for seasonal strains of influenza: 28 were positive for influenza A (H3), five were influenza A not yet subtyped, one was influenza B Yamagata lineage, and one was influenza B not yet subtyped.
- **Seventeen outbreaks of influenza (two or more cases of influenza or ILI in a specific setting) were reported in week 1.**
- **No pediatric influenza-associated deaths were reported in week 1.**

FDOH-Nassau Health Bulletins, Advisories and Alerts Issued

Alerts:

- CDC Health Alert Network - CDC Health Update Regarding Treatment of Patients with Influenza with Antiviral Medications. January 9, 2015. CDC

For additional information regarding bulletins, advisories and alerts visit our website or the Department of Health's Online News-room at: http:// www.nassau.floridahealth.gov *and* http://newsroom.doh.state.fl.us

December 2014: Reported Cases in Nassau County, Previous Three-Year Period Comparison

Period Comparison

Disease Name	Selection Date 12/01/2014 - 12/31/2014 Cases	Rates*	Compare Date 1 12/01/2013 - 12/31/2013 Cases	Rates*	Compare Date 2 12/01/2012 - 12/31/2012 Cases	Rates*	Compare Date 3 12/01/2011 - 12/31/2011 Cases	Rates*
County: NASSAU								
Campylobacteriosis	1	1.31	0	0.00	1	1.34	1	1.35
Carbon Monoxide Poisoning		0.00	0	0.00	1	1.34	0	0.00
Dengue Fever		0.00	1	1.34	0	0.00	0	0.00
Escherichia coli, Shiga Toxin-Producing (STEC) Infection		0.00	1	1.34	0	0.00	0	0.00
Giardiasis, Acute		0.00	0	0.00	0	0.00	3	4.06
Haemophilus influenzae Invasive Disease		0.00	0	0.00	1	1.34	0	0.00
Hepatitis B, Chronic		0.00	0	0.00	0	0.00	1	1.35
Hepatitis C, Chronic	10	13.11	3	4.01	4	5.37	3	4.06
Meningococcal Disease		0.00	1	1.34	0	0.00	0	0.00
Pertussis		0.00	0	0.00	0	0.00	1	1.35
Rabies, Possible Exposure		0.00	0	0.00	2	2.69	0	0.00
Salmonellosis		0.00	0	0.00	2	2.69	4	5.42
Strep pneumoniae Invasive Disease, Drug-Resistant		0.00	0	0.00	1	1.34	0	0.00
Varicella (Chickenpox)		0.00	3	4.01	0	0.00	0	0.00
Total:	**11**	**14.42**	**9**	**12.04**	**12**	**16.11**	**13**	**17.61**
STATEWIDE TOTAL								
Campylobacteriosis	158	0.81	222	1.15	163	0.86	220	1.16
Carbon Monoxide Poisoning	22	0.11	10	0.05	7	0.04	6	0.03
Dengue Fever	3	0.02	10	0.05	26	0.14	4	0.02
Escherichia coli, Shiga Toxin-Producing (STEC) Infection	20	0.10	38	0.20	31	0.16	22	0.12
Giardiasis, Acute	44	0.23	89	0.46	90	0.47	117	0.62
Haemophilus influenzae Invasive Disease	13	0.07	40	0.21	21	0.11	21	0.11
Hepatitis B, Chronic	358	1.83	320	1.66	320	1.68	272	1.44
Hepatitis C, Chronic	1,779	9.10	1,421	7.36	1,754	9.21	1,818	9.60
Meningococcal Disease	2	0.01	6	0.03	4	0.02	3	0.02
Pertussis	10	0.05	74	0.38	26	0.14	32	0.17
Rabies, Possible Exposure	261	1.33	223	1.15	172	0.90	205	1.08
Salmonellosis	282	1.44	418	2.16	334	1.75	368	1.94
Strep pneumoniae Invasive Disease, Drug-Resistant	13	0.07	57	0.30	57	0.30	55	0.29
Varicella (Chickenpox)	44	0.23	44	0.23	57	0.30	59	0.31
Total:	**3,009**	**15.40**	**2,972**	**15.39**	**3,062**	**16.08**	**3,202**	**16.91**