January 2012

"The reason for collecting, analyzing and disseminating information on a disease is to control that disease. Collection and analysis should not be allowed to consume resources if action does not follow."

Foege WH., International Journal of Epidemiology 1976; 5:29-37

In This Issue

Commentary from the State Epidemiologist

Richard S. Hopkins, M.D., M.S.P.H.

Preventing infectious diseases

I am getting concerned that together we may have put too much emphasis on case-finding, response to individual cases, and outbreak detection and response, and not enough on encouraging and supporting community effort to prevent communicable disease cases in the first place.

Of course, prevention and control of vaccine-preventable diseases has been a very large success, though we still have some more work to do. Thirty years ago, when I was working at the state level in Colorado, we spent a great deal of time on hepatitis A outbreaks in and around child care centers, public health response to cases of *Hemophilus influenzae* meningitis and septicemia in young children, outbreaks of hepatitis B in healthcare settings, and outbreaks of measles, mumps and rubella. Now all of these activities have been made rare by widespread use of vaccines. Chickenpox cases used to be too numerous to count, and are now disappearing as well. Cases of diseases like polio, diphtheria, and tetanus are as rare as hen's teeth.

However, I fear we have not done as well with primary prevention and control of diseases for which we do not yet have vaccines, or the vaccines are of limited effectiveness (as they seem to be for pertussis and influenza). Some county health departments (CHDs) do really well with these activities, reaching out to organizations and people in their communities to persuade those in charge of various settings to do the right thing for disease prevention. They have moved beyond an exclusive focus on response to cases – which will always be a high priority – to a more balanced focus including primary prevention.

This emphasis on cased-based response at the local level may partly reflect a similar emphasis coming from the state level. There has also been confusion about the proper role of the Department of Health in preventing disease in settings that are inspected and regulated by other agencies. I believe there is enormous scope for cooperative prevention activities with those other agencies, particularly in educating, training, and motivating those in charge of such settings to the right thing with respect to infectious disease prevention. Many of those right things cannot be properly assessed during an inspection, and must be practiced every day in between inspections to be fully effective.

Briefly sketched below are a few of the activities that many of our CHDs do to prevent disease in the community, often in concert with the appropriate regulatory agency, with business owners and their associations, and with other governmental organizations. Note that these are almost all behavioral interventions, which are notoriously hard to carry out successfully but not any the less important for that. The skills of your health education and health promotion staff may be just as necessary in this domain as they are with chronic diseases, tobacco, or HIV/AIDS.

- Work with schools to assure that warm water, soap and towels are available for hand washing in all bathrooms for student use, especially during outbreaks of enteric infections.
- Work with managers of nursing homes, assisted living facilities, and other congregate living facilities to assure high levels of influenza immunization for both residents and staff, every year, and to isolate ill residents from the rest of the population.
- Work with operators of childcare centers, and with parents, to help them implement practical measures to keep children sick with diarrhea or respiratory illness home and out of the childcare centers.
- The same applies for those in charge of schools for children of all ages.
- Work with persons in charge of food service operations to increase the chances that food-handlers with diarrhea will be kept home from work or assigned non-food-handling duties (cash register, sweeping up, busing tables, etc.).
- Work with those in charge of public swimming pools and water parks, and with the public who patronize those facilities, to increase the chances that children and adults with current or recent diarrhea do not swim in those facilities.
- Advocate for effective control of mosquitoes and other potential disease vectors in the community.

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Bureau of Epidemiology Staff Updates

Janet J. Hamilton was selected to be the Surveillance Systems Section Administrator and will continue as Surveillance and Reporting Section Administrator until that position is filled. Janet has been with the Bureau of Epidemiology for seven years, beginning as a Florida Epidemic Intelligence Service Fellow. She was recently elected as an Executive Committee Board Member for the Council of State and Territorial Epidemiologists. Janet holds a Masters in Public Health from the University of Michigan and completed training in public informatics through the Oregon Health Services University. In her free time, Janet enjoys outdoor activities, gardening, and spending time with her husband and young son. She can be contacted at 850.245.4561 or by email at Janet_Hamilton@doh.state.fl.us.

Colin Malone was promoted to Supervisor for the Respiratory Disease Unit. For the last two and one half years Colin has served the Bureau of Epidemiology, first as Influenza Surveillance Epidemiologist and then as Respiratory Disease Surveillance Epidemiologist. During his tenure, he oversaw Florida's influenza and respiratory disease surveillance efforts. Colin has a Masters in Public Health from University of Texas and a Bachelors degree in biology from the University of Florida. Colin enjoys roots music, big novels, and various outdoor pursuits. Colin can be contacted at 850.245.4444 ext. 2403 or by email at Colin_Malone@doh.state.fl.us.

A Review of West Nile Virus Disease in Duval County, 2011

Vincy Samuel, M.P.H., Angela Morgan, R.N., B.S.N, Leena Anil, Ph.D.

BACKGROUND

On July 26, 2011 a mosquito-borne illness alert was issued for Duval County following the report of two neuroinvasive West Nile virus (WNV) illness cases to the Duval County Health Department (DCHD) Epidemiology Program. West Nile virus received national attention when it was introduced into the United States in 1999. The virus was identified in Florida in 2001, and Duval County was one of eight Florida counties to report at least one human case. More WNV illness cases were reported to the DCHD in the following years: one case in 2002, seven in 2003, eight in 2004, and one in 2005. During 2006 through 2009, no WNV illnesses were reported to DCHD. In 2010, one case of WNV illness was reported.

In 2011, Duval County had a resurgence of WNV activity and had the highest number of WNV illness cases in Florida. As of January 1, 2012, twenty cases of WNV illness with onset ranging from June 23 through October 4 had exposure to the virus in Duval County; three asymptomatic Duval blood donors were also identified. Florida, with a total of 24 cases, was one of ten states with the highest number of WNV illness cases in the nation.[1] A description of the Duval outbreak which resulted in the majority of all Florida cases in 2011 and the associated response is provided.

METHODS

Immediately after the 2011 WNV illness outbreak began in Duval County, DCHD Epidemiology was in collaboration with multiple agencies for the initiation of control measures and the continuation of enhanced surveillance methods. The DCHD Epidemiology Program was notified of WNV illness cases from infection control practitioners, hospital labs, or the state health lab. DCHD entered the cases into the state reportable disease database, Merlin. The attack rates of WNV illness were calculated overall and stratified by age and zip code per 100,000 population using 2011 demographic data.[2] The attack rates of WNV illness by smoking status were calculated per 100,000 population using 2010 BRFSS data, and by homelessness using 2010 data.[3,4] Each case was reported to the Department of Health (DOH) Bureau of Environmental Public Health Medicine, and each specimen was sent to the DOH Bureau of Laboratories (BOL) in Jacksonville for confirmation.

Additionally, DCHD Epidemiology communicated regularly with the City of Jacksonville's Mosquito Control Division to focus their mosquito control efforts in areas where cases had been exposed and where high risk mosquito populations were present. The major lines of defense were surveillance of mosquito light traps and sentinel chickens; inspections of properties in affected areas; biological control, source reduction, and chemical control; and education of local residents. The Mosquito Control Division conducted weekly surveillance activities to monitor light traps and sentinel chickens. Light traps were placed in many Jacksonville neighborhoods to identify which mosquito species existed in the community and their likelihood to transmit the WNV infection, and blood samples were routinely collected from sentinel chickens to determine the presence of WNV in the area. Once a WNV illness case was reported, the Mosquito Control Division inspected the area of exposure and used various mosquito control methods, including treatment of all catch basins and use of fog trucks and aircrafts to spray insecticides. Both DCHD Epidemiology and the Mosquito Control Division educated patients on how to protect themselves through draining standing water and using appropriate insect repellents containing at least 20 to 30 percent of diethyl toluamide (DEET).[5]

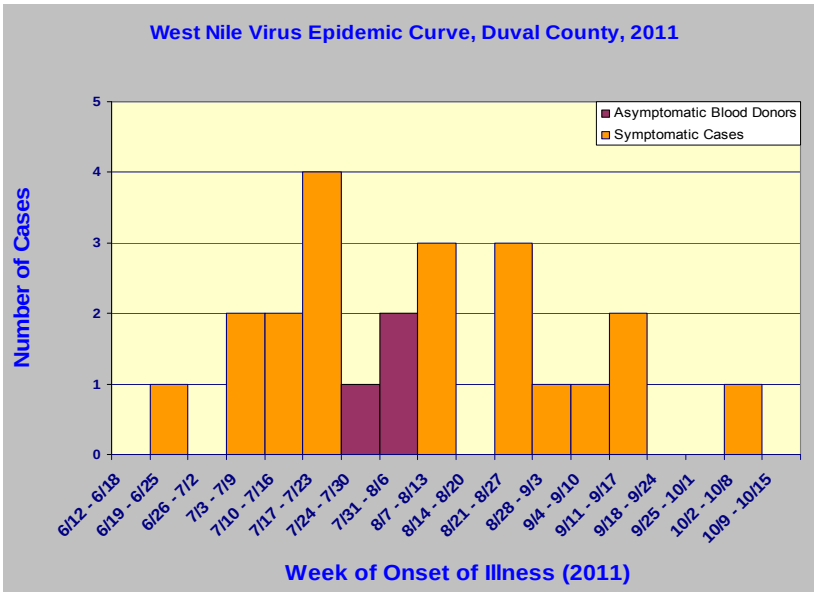
Furthermore, the DCHD public information officer issued a media release every Monday following the declaration of the mosquito-borne illness alert in order to promote awareness to the public and to convey the "Drain and Cover" message. The public information officer and Epidemiology Program also participated in the Emergency Services and Homeless Coalition of Northeast Florida Meeting to facilitate education efforts to the homeless population. Letters were sent to local infection control practitioners to notify them of the mosquito-borne illness alert as well as to recommend screening criteria for arbovirus testing. Moreover, a local hospital hosted a Grand Rounds, at which DCHD presented WNV illness case information and risk factors. EpiCom postings and Biweekly discussions along with the state weekly arbovirus surveillance report kept county health departments and other stakeholders informed across the state of Florida.

RESULTS

In 2011, the attack rate of West Nile Virus illness in Duval County (2.24 cases per 100,000 population) was higher than for the state of Florida (0.13 cases per 100,000 population). Two of the 20 WNV illness cases were visitors from outside of the county but were exposed in Duval, with one a resident of Leon County and the other was a resident of New Jersey. Eleven of the patients were males, and nine were females. The median age of cases was 55 years with a range of 38 to 85 years. Ten (50%) of the patients were over the age of 55 years. The attack rate for the 55 and older age group (4.98 cases per 100,000 population) was higher than the 35 to 54 age group (4 cases per 100,000 population). Sixteen (80%) of the patients presented with neuroinvasive symptoms, and four (20%) of the patients presented with less severe non-neuroinvasive symptoms. Eighteen (90%) of the patients were hospitalized, and two (10%) died. Both patients who died were over the age of 55 years. Eleven (55%) of the patients had pre-existing conditions that may have put them at higher risk

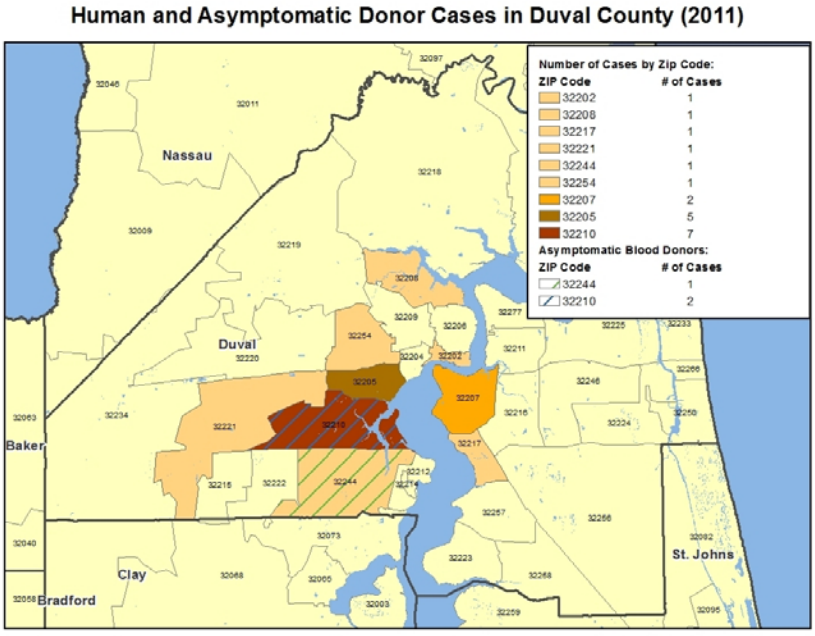
for more severe illness. The onset of illness ranged from June 23 through October 4 as shown in Figure 1.

Figure 1. West Nile Virus Epidemic Curve, Duval County, 2011



Initially, eight of the first ten cases reported exposure in a geographic cluster designated the target zone. The target zone was considered to be the 32210 and 32205 zip codes, where eventually 12 (60%) of the cases resided as shown in Figure 2. Additionally, all three asymptomatic blood donors were identified as residing in the target zone. The suspected exposure sites began to spread east of the St. John's River to the Southside and north to the downtown area in September. The attack rate in the target zone zip codes (17.86 per 100,000 population) was much higher than for the remainder of Duval County (1.32 per 100,000 population).

Figure 2. West Nile Virus – Human and Asymptomatic Donor Cases in Duval County, 2011



Risk factors among the 20 patients included 11 (55%) who were smokers, 15 (75%) who reported outside exposure, four (20%) who were homeless, and 11 (55%) who had pre-existing conditions. Only eight (40%) of the patients used any personal prevention measures such as using mosquito repellent or draining standing water. The attack rate for adult smokers (6.84 per 100,000 population) was higher than that for adult non-smokers (1.28 per 100,000 population). The attack rate for the homeless population was 97.44 cases per 100,000 population.

Light trap mosquito surveillance implemented in the target area in July identified the following mosquitoes: 29.5% *Culex coronator*, 15.5% *Aedes albopictus*, 15.1% *Culex nigripalpus*, 11.6% *Culex pipiens quinquefasciatus*, 10.2% *Aedes aegypti,* and 18.1% others. According to the Mosquito Control Division, *Culex nigripalpus* had been the only species to test positive for WNV in Duval County prior to 2011. Five sentinel chickens tested positive for WNV antibodies; there were no sentinel flocks located in the target zone.

DISCUSSION

The peak period of WNV transmission in Florida is from July through September. In Duval County in 2011, the peak period of transmission was from July through August. Several factors, including drought conditions and aggressive prevention, and control efforts by the county health department and mosquito control, may have played a role in the peak period ending slightly earlier than usual. Once the Mosquito Control Division was notified of a WNV illness case, they took immediate action by inspecting the property where exposure occurred and spraying insecticides in the same neighborhood. Their proactive efforts likely helped to decrease the vector populations. Moreover, DCHD ensured that the "Drain and Cover" message was conveyed regularly through the media and may have modified the behaviors of persons in the community.

Risk factors of WNV illness were collected for each patient to better understand the disease and to determine the target groups for future prevention efforts. In 2011, over 50% of the residents over the age of 55 years experienced higher attack rates and case-fatality rates. Additional efforts to educate this age group should be considered. Smoking is a possible risk factor due to the likelihood that persons may smoke outdoors, in which case they may not apply insect repellent. Pre-existing conditions may make a person more vulnerable to severe illness or a fatal outcome. The two female patients who died had rheumatoid arthritis as a pre-existing condition and were on immune-suppressing medications. Healthcare providers should be encouraged to educate all patients, particularly those at increased risk to take actions to prevent being bitten by mosquitoes. Any outdoor exposure increases the risk of being bitten by an infected mosquito and personal prevention methods should be taken to decrease this risk. Since the homeless are at greater risk for exposure and four of the Duval patients were homeless, outreach was conducted with local homeless shelters for patient navigation and education efforts.

Although *Culex nigripalpus* is the only species of mosquito to have tested positive for WNV in Duval County previously, the other listed species particularly *Culex* spp. may still have the potential to be vectors. Thus, it is important to continue monitoring mosquito populations as changing patterns may require varying approaches of mosquito control. Since sentinel chickens were not in the same zip codes as the positive human cases, the City of Jacksonville's Mosquito Control is currently determining changes in placement of sentinel chicken flocks in preparation for next year's mosquito season.

CONCLUSION

Outreach to healthcare providers to find cases should be conducted by engaging them in discussion and participation at medical rounds to ensure reporting of arbovirus cases. All patients should receive prevention information. However, providing information related to factors increasing disease

risk such as immune-suppression, advanced age, and smoking, will encourage healthcare providers to emphasize prevention with at-risk patients. Although the homeless population can be difficult to target, engaging the local homeless coalition and attempting to secure insect repellants or possibly mosquito netting for this group may help prevent mosquito-borne illness. Furthermore, county health departments should coordinate closely with the local mosquito control division to provide the public with consistent, timely, and accurate information and effective mosquito control efforts. Finally, the community should be educated to minimize mosquito-breeding environments, to wear protective clothing, and regularly use insect repellent to reduce the incidence of the WNV infection as well as other mosquito-borne illnesses.

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Outbreak of Eye Infections in a Long Term Care Facility

Barry Inman, B.A., B.S., C.I.C.

Background

On December 1, 2011 the infection control practitioner (ICP) from a long term care facility (LTCF) notified the Brevard County Health Department (BCHD) of several residents with eye infections. The eye infections were found in residents of the "200" wing of this facility. All residents presented with eye pain, drainage, and red eyes. Cultures indicated the most common microorganism was coagulase-negative staphylococcus (CNS); however, other organisms isolated in conjunction with CNS were *Streptococcus viridans*, *Enterococcus*, Methicillin resistant *Staphylococcus aureus* (MRSA), and *Corynebacterium*. The LTCF has approximately 120 residents and 150 employees. The 200 wing usually maintains a population of approximately 60 residents.

METHODS

BCHD led the investigation. Detailed information was obtained after consulting with the ICP utilizing a survey sheet (see below), chart reviews, and a patient line list (Table 1). The following were reviewed:

What eye medications were administered to the residents?

Was the eye medication re-used by other residents?

Was appropriate infection control technique used in dispensing eye drops?

Were any employees (staff) found to have eye infections?

A case of eye infection was defined as a resident with eye drainage/discharge, pain, and redness who also received ocular treatment.

RESULTS

Descriptive Epidemiology

The investigation revealed that seven residents had been diagnosed and treated for eye infections. Four infections with CNS were identified. The attack rate was 11% (7/60) for residents on the 200 wing of this LTCF. No employees or other residents in other areas of this facility were found with eye infections.

Several of the patients had risk factors such as obesity, diabetes, smoking, alcohol consumption, and dementia. Several of these residents were receiving treatment for dry eye syndrome and provided assistance with activities of daily living (ADL). The attack rate for residents with dry eye syndrome (receiving eye drops) was 5% (3/60) vs. those residents not receiving drops was 6.6% (4/60).

Table 1. Patient Line List

Patient	Gender	Age	Onset	Date of Culture	Culture Results	Treatments for Eye infections
1	F	82	11/1/11	11/18/11	CNS	Tobramycin
2	M	95	11/18/11	11/22/11	*Haemophilus Influenza II*	
3	M	81	11/26/11	11/26/11	CNS, MRSA, *Streptococcus Viridans*	Tobramycin/Cipro
4	M	84	11/27/11	12/1/11	CNS	Tobramycin
5	F	85	11/27/11	12/1/11	CNS, *Enterococcus faecalis, Streptococcus Viridans*	Tobramycin
6	M	88	12/1/11	12/1/11	*Corynebacterium*	Cipro
7	M	57	12/5/11	12/5/11	*M. Morganii*	Garamycin

Analysis

Four cultures were positive for CNS, while one was found with MRSA, two with *Streptococcus viridans*, one with *Enterococcus*, and one with *Morganella morganii*. All seven patients responded to antibiotics, such as aminoglycosides or quinolones. Several of the employees who provided care for residents with activities of daily living (ADL) and administered eye drops had acrylic nails.

CONCLUSIONS

The evidence of many different microorganisms suggests a break in appropriate infection control techniques by the employees. Acrylic artificial nails have been epidemiologically associated with infections due to Gram-negative organisms and yeast.[4] Although staff may have utilized eye drops intended for one patient for treatment of multiple residents, the ICP or supervisory personnel did not observe this.

Conjunctivitis in adults presents as ocular pain, redness, and discharge. In the LTCF, cases may be sporadic or outbreak associated. Many cases are generally non-specific or are of viral origin. *S. aureus* appears to be the most frequent bacterial isolate. Epidemic conjunctivitis may have spread rapidly through the LTCF. Transmission may occur by contaminated eye drops or hand cross-contamination.

RECOMMENDATIONS

These recommendations are likely to reduce the probability of infection from skin flora of the patient. Many of the recommendations have already been implemented by this facility:

- Post notices in the affected unit.
- Patients with eye infections should be placed in a private room using contact precautions, including the wearing of gloves and gowns.
- Patients with similar symptoms should be confined in the same area and away from healthy people.
- Exclude non-essential personnel from the affected unit.
- Dedicate patient care equipment to a single resident. Adequately clean and disinfect before use on another resident, including towels, blankets, and pillowcases.

- Soiled linen should be transported in an enclosed manner, for example, in a plastic bag, and agitation of the linen kept to a minimum.
- Attention to appropriate disinfection should be stressed particularly in the rooms of suspect patients.
- Movement of patients should be discouraged during the critical time period.
- Social activities for the residents should be suspended during the outbreak.
- Residents dining activities were confined to their rooms for the 200 wing.
- Eye drops, including dry eye drops, should not be shared between residents.
- Wash hands before and after applying eye drops or ointments and wear gloves.
- Residents should avoid touching or rubbing eyes as much as possible.
- Eyeglasses should be cleaned twice daily and not shared.
- Use disposable cloth or paper to clean eyeglasses.
- Education concerning appropriate precautions such as good hand hygiene, personal protective equipment, and the risk acrylic nails pose to residents/patients in healthcare setting.

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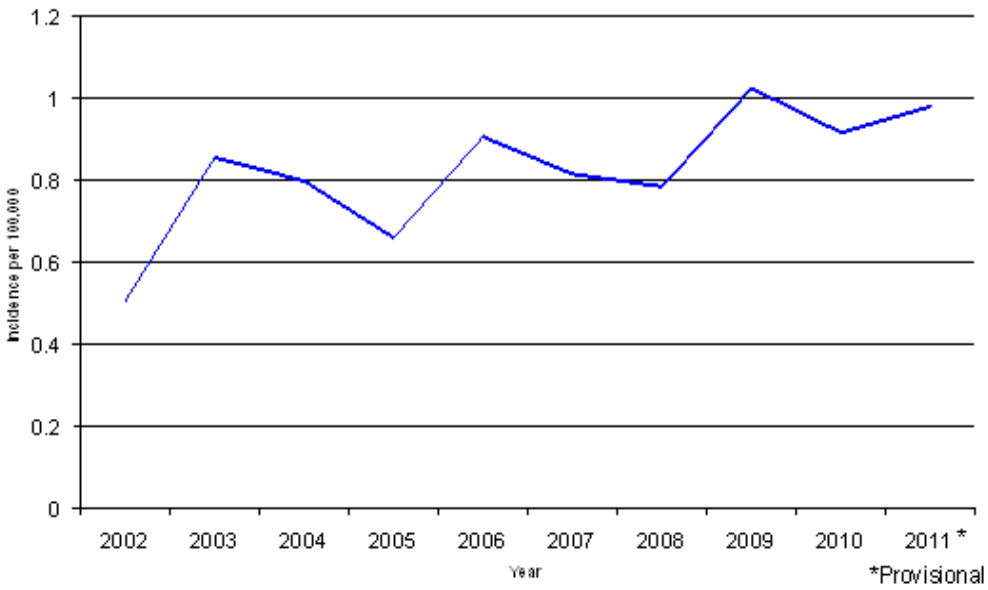
Florida Legionellosis Summary, 2011

Colin Malone, M.P.H.

Disease Abstract

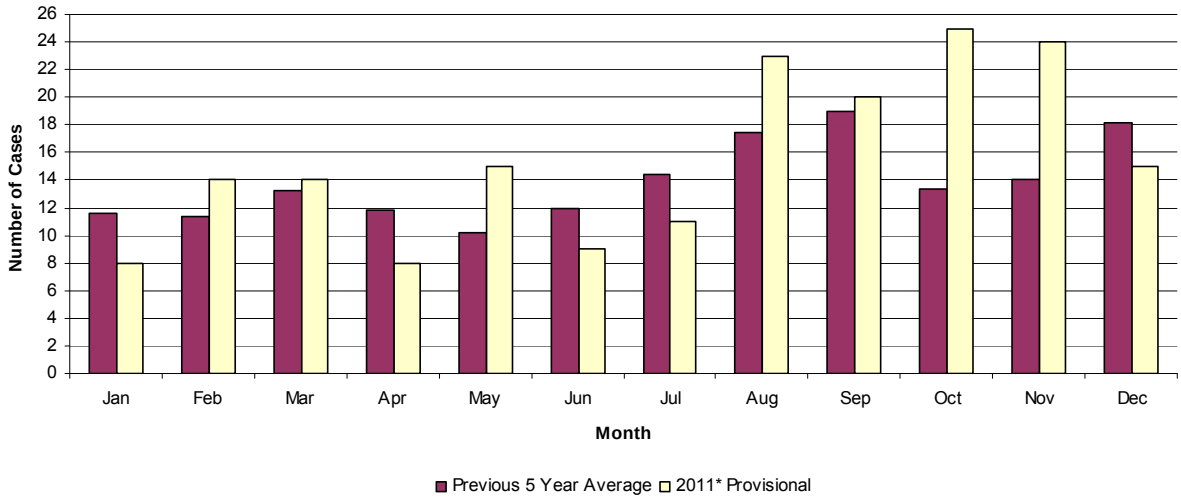
The Florida incidence rate for legionellosis has been steadily increasing over the past decade (Figure 1). In 2011, the incidence rate was 8.7% higher than the average from 2005 to 2009. In 2011, one hundred and eighty-six cases were reported, of which 100% were classified as provisional confirmed cases.

Figure 1: Legionellosis Incidence, Florida, 2002-2011



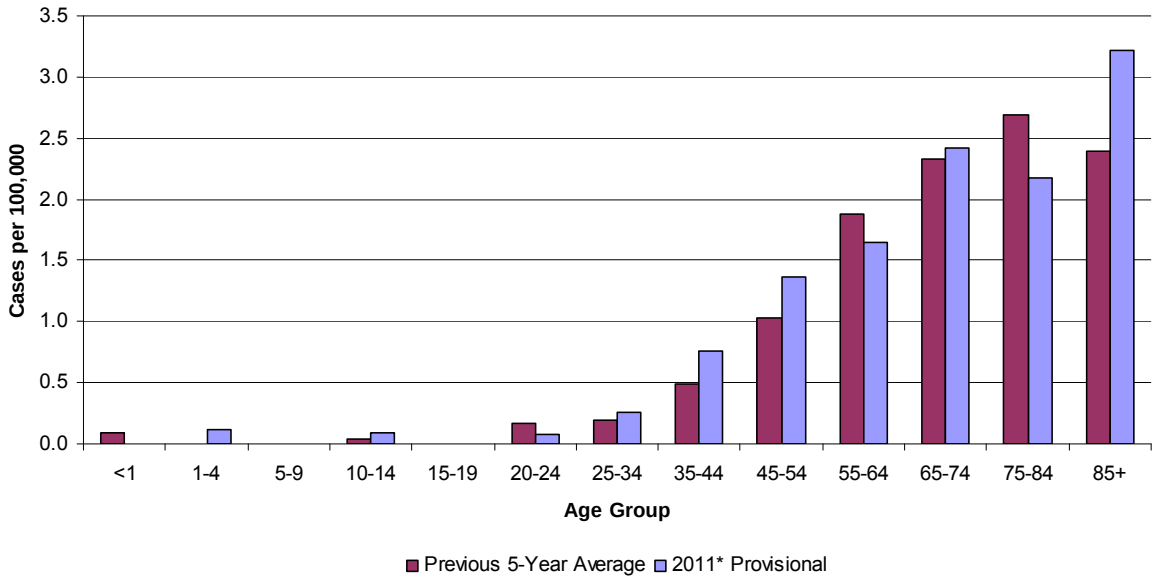
In previous years, the incidence of legionellosis typically increased in the summer months. In 2011, the highest incidence of legionellosis occurred in October, followed by November (Figure 2). Three legionellosis cases in Florida residents in 2011 were outbreak associated, all in Hillsborough County. In October 2011, Hillsborough County Health Department investigated a cluster of legionellosis cases in a mobile home retirement community. One spa and two hot tubs were closed due to a lack of chlorine, and disease information about Legionella was distributed to residents. The likely source was determined to be an outdoor decorative fountain.

Figure 2: Legionellosis Cases By Month of Onset, Florida, 2011



The highest incidence rates continue to occur among adults 45 years of age and older. In 2011, incidence was highest in persons over 85 years of age, while comparing among the five-year average incidences, the 75-84 age group shows the highest incidence of legionellosis (Figure 3). Incidence in several age groups was higher than the previous 5-year average.

Figure 3: Legionellosis Incidence Rate by Age Group, Florida 2011



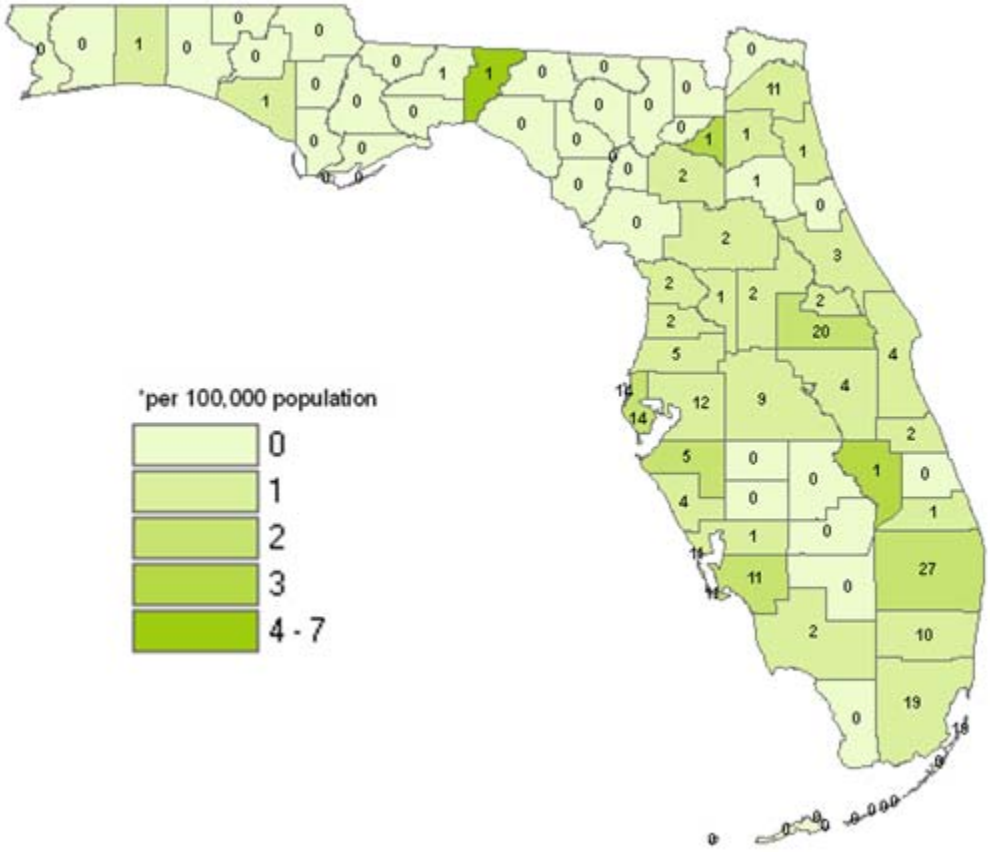
Legionellosis: Crude Data	
Number of Cases	186
2011 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	8.7%
Age (yrs) Mean Median Min-Max	 61.8 62 2 - 98

In 2011, an extended data screen was added to Merlin that collects data on possible legionella exposures. All 186 cases had data entered into the legionella extended data screen. The possible exposure routes most commonly reported were use of a detachable showerhead (61 cases), recent travel (28 cases), and decorative fountain exposure (20 cases). Thirteen people had documented recent inpatient hospital stays. Of all 186 provisional confirmed cases, 184 were investigated and 157 were interviewed.

The legionella incidence rate per 100,000 among men was 1.2, compared to .7 for women. The provisional 2011 incidence rate of legionellosis per 100,000 was 1.0 for whites and .6 for blacks, and .3 for those who report Hispanic ethnicity compared to 1.2 for Non-Hispanics.

Legionellosis cases were reported in 34 of 67 counties in Florida. Counties in the central, southwestern, and southeastern regions of Florida reported the highest incidence rates.

Map 1: Legionellosis Cases and Incidence Rates* by County, Florida 2011



Prevention

Recommendations to decrease the proliferation of or exposure to *Legionella* bacteria include:

- Drain cooling towers when not in use, and mechanically clean periodically to remove scale and sediment.
- Use appropriate biocides to limit the growth of slime-forming organisms.
- Do not use tap water in respiratory therapy devices.
- Maintain hot water system temperatures at ≥ 50°C (122°F).
- Provide proper maintenance of hot tub/spas.

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Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm.

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Outbreak of Acute Respiratory Illness in a Long Term Care Facility

Barry Inman, B.A., B.S., C.I.C.

BACKGROUND

A nursing facility in Brevard County experienced an outbreak of acute respiratory illness (ARI) during the second week of November through the first week of December 2011. The Brevard County Health Department (BCHD) was notified on November 30, 2011. The nursing home's infection control practitioner (ICP) was consulted on December 1 and 5, 2011. The ICP stated that the population of the facility was approximately 100 residents and 140 employees. The outbreak of ARI was initially noticed in Wing I. Residents and employees experienced ARI primarily in Wing I.

The outbreak resolved on December 10, 2011 and Wing I was reopened for normal business operation at that time.

METHODS

BCHD consulted with the ICP and ensured that all rooms and bathrooms had soap, sinks, gloves, paper towels, and hand rinses available. Demographic and clinical data were collected by survey. Several of the staff were also interviewed.

Three nasopharynx specimens were obtained, two from patients and one from an employee. Specimens were sent to the Bureau of Laboratories-Jacksonville (BOL).

For the purposes of this investigation, a confirmed case is defined as a resident or employee whose viral culture is positive for enterovirus. A presumptive case is defined as a resident or employee who had symptoms of ARI (cough, nasal congestion, sore throat, and/or fever) between November 16 and December 6, 2011. None of the cases had abnormal chest X-rays.

RESULTS

Interviewed staff reported frequent hand washing. Soap, paper towels, and gloves were available in the rooms of the residents. Hand rinse was made available to employees. Staff was instructed in proper hygiene and disinfection techniques.

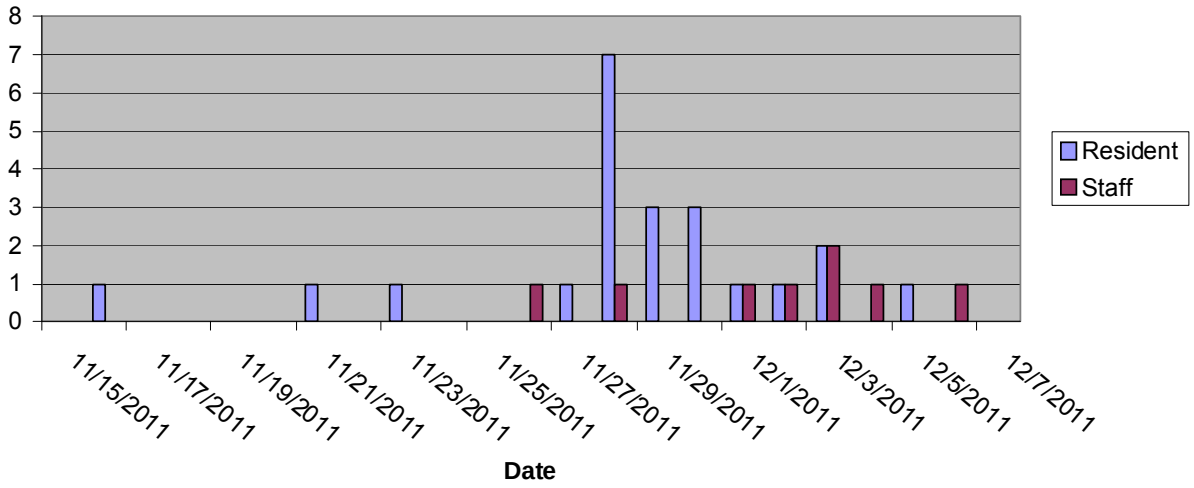
Descriptive Epidemiology

Twenty-two cases of ARI were identified among residents and eight among employees. The attack rate for the residents was 22% (22/100). The attack rate among employees was 5% (8/140).

The epidemic curve indicates person-to-person transmission and a short incubation period (about one to four days) (Table 1). Beginning on November 16, one resident developed suspicious signs and symptoms. Onset appeared to be rapid and recovery occurred in approximately one to two weeks. The outbreak initially began with residents and spread to employees in Wing I.

All three of the nasopharyngeal specimens tested negative at BOL for influenza A and B by RT-PCR; while one resident was positive for enterovirus (serogroup was not identified). Seventy-five percent of the residents and 30% of the employees had received an influenza vaccination.

Table 1. Onset of ARI



CONCLUSIONS

The clinical, epidemiological, and laboratory data indicated that this outbreak may have been associated with enterovirus (serotype was not identified), though the detection of enterovirus in one nasopharyngeal specimen could have been an incidental finding.

Enteroviruses are small viruses that are made of ribonucleic acid (RNA) and protein. This group includes the polioviruses, coxsackieviruses, echoviruses, and other enteroviruses. There are three polioviruses and over 60 non-polio enteroviruses that can cause disease in humans. Enteroviruses are very common. They are second only to the rhinoviruses (common cold) as the most common viral infectious agents in humans. The enteroviruses cause an estimated 10-15 million symptomatic infections a year in the United States. Enteroviruses can be found in respiratory secretions (e.g., saliva, sputum, or nasal mucus) and stool of an infected person. Other persons may become infected by direct contact with secretions or stool from an infected person or by contact with contaminated surfaces or objects, such as a drinking glass or telephone. Most people who are infected with a non-polio enterovirus have no disease at all. Infected persons who become ill usually develop mild upper respiratory symptoms (summer cold), a flu-like illness with fever and muscle aches, or an illness with a rash. Long-term sequela is rare.

ACTIONS AND RECOMMENDATIONS

BCHD issued the following recommendations to the infection control practitioner and the administrator of the nursing home:

- Post notices in the affected unit.
- Patients with upper respiratory illness should be placed in a private room using contact- droplet precautions; including the wearing of gloves and face protection within three feet of the patient.
- Patients with similar symptoms should be confined in the same area and away from healthy people.
- Employees who exhibit symptoms should stay home.
- Exclude non-essential personnel from the affected unit.
- Movement of patients should be discouraged during the critical period.
- Social activities for the residents should be suspended during the time of illness.

- Residents dining activities where confined to their rooms for the wing I.
- Dedicate patient care equipment to a single resident or among symptomatic residents. Adequately clean and disinfect before use on another resident.
- Attention to appropriate disinfection should be stressed particularly in the rooms of suspect patients.
- Soiled linen should be transported in an enclosed manner, for example, in a plastic bag, and agitation of the linen kept to a minimum.
- Hands are the most likely means by which viral spread occurs and therefore should be washed after contact with ill persons or contaminated clothing and surfaces. Good hygiene including hand washing and the use of gloves should be stressed to all employees. Hands must also be washed after removal of gloves. Alcohol hand rinse may also be utilized (use generous amount).
- Education concerning transmission of ARI, hand washing, and disinfection procedures should be provided by the Infection Control/Nursing personnel.

References:

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Enteroviruses: Alexander Velazquez, MD; Chief Editor: Burke A Cunha, MD. http://emedicine.medscape.com/article/217146-overview

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Public Health History – The Control of Communicable Disease

Kim Bowman C.P.M.

The following article was originally published in the March 1938 "Florida Health Notes," the official monthly publication of the State Board of Health. The article was written by the Director of the Gadsden County Health Unit at the time, Dr. K.K. Waering.

The Control of Communicable Disease

The desire to control and prevent communicable disease is one of the main incentives that lead to the establishment of a full-time health service. No other function requires as much constant attention and supervision, nor benefits a community more than an effective program of communicable disease control.

Knowledge of how disease is spread assists understanding of the role of the county health unit in its control. In general, three elements are necessary to the spread of contagious disease. The first of these is an active case or carrier of any disease, which may be designed as an "active focus." The second element is a group of susceptible or unprotected individuals. The third is a way or means of contact between the first two, which may be direct or through the intermediation of organic or

inorganic matter. When these three elements are present under favorable conditions, disease will spread with ease and to the extent of the number of individuals exposed.

Reasoning along these same lines, it is evident that to control disease effectively, we must know where the active focus exists. Ordinarily, physicians report whatever cases of a communicable disease occur in their practice. Without the presence of a local health department, however, their reports travel the long route to the central office and time elapses before much action can be taken to "neutralize" the active focus. Through a local health department, this valuable time is saved; trained personnel go into action immediately and further spread is prevented.

There are certain measures which, when diligently applied, are relatively effective in "neutralizing" the active focus. Chief amongst these are isolation and quarantine. Isolation refers only to the patient or active case of the disease and indicates segregation of this individual from other members of the family. Isolation is an effective measure but breaks down unless carefully supervised by trained health personnel. Likewise, quarantine or segregation of persons, who have been exposed to the patient, requires constant supervision. Only a locally situated health department can insure the successful maintenance of these measures. Because of it is proximity, frequent home visits can be made and more time can be devoted to the actual instruction of those attending the sick individual. Furthermore, it is possible to make a more detailed study of the origin of the disease and trace all suspicious carriers. Such a study requires time and perseverance, but often is rewarded by the finding of a person who, unwittingly, has been spreading disease.

Reporting, isolation, and quarantine are regulatory measures directed at the first and third elements of our communicable disease cycle, the active focus and the immediate contacts. They are only effective when put into operation quickly and maintained constantly, and this can best be attained through locally situated, trained personnel. It is only necessary to review the weekly bulletins of the United States Public Health Service to note the relative completeness and accuracy of communicable disease reporting insured by full-time health units, in contrast to the discrepancies and incompleteness of other areas. This does not mean that there is "more" disease in counties possessing local health service, but rather that more active foci are brought to light; more of them are investigated, isolated, quarantined; and further spread abated much more frequently than would otherwise be the case.

However, far more can be accomplished in certain specific diseases through measures directed at the second element of the communicable disease cycle, the susceptible or unprotected individuals. In this instance, disease prevention rather than disease control is the objective. Through vaccination or immunization, individuals who are susceptible to typhoid fever, small pox, diphtheria, can be rendered immune. This service can best be realized through systematic campaigns and regularly scheduled immunization clinics at vantage points over a small area. A full-time health department is in a better position to carry such campaigns to a successful termination because of the active participation of lay-personnel in most of its programs. By this means, such campaigns are previously publicized and as a result, the majority of susceptible individuals are reached.

Perhaps the greatest service that a full-time health department renders its community in the control of disease is education. The majority of county health units keep their public well informed as to the occurrence of disease within its borders and what measures to adopt for their safety. Information regarding disease is always forthcoming by word-of-mouth, pamphlets, and newspaper articles.

In conclusion, it can be said that a community blessed with a full-time health unit is not only a healthier community, but also a wiser one.

Florida Year-to-Date Mosquito-Borne Disease Summary Through December 31, 2011

Leena Anil, Ph.D., Danielle Stanek, D.V.M., Carina Blackmore, D.V.M., Ph.D.

During the period of January 02, 2011 – December 31, 2011, the following arboviral activity was recorded in Florida:

Eastern Equine Encephalitis Virus (EEEV)
Positive samples from six equines, 45 sentinel chickens and 19 live wild birds have been received from 18 counties.

West Nile Virus (WNV)
Twenty-four human cases of WNV infection have been acquired in Florida in 2011 with onset in June (1), July (8), Aug (8), Sep (5) and Oct (2). Twenty cases were exposed in Duval; 18 of these cases were Duval County residents, one was a Leon County resident, and one case was a New Jersey resident. Four additional cases were acquired in Clay (1), Leon (1), Miami-Dade (1) and Palm Beach (1) counties. Three positive asymptomatic blood donors were reported in Duval County. Positive samples from 227 sentinel chickens, three equines and one live wild bird (flavivirus positive) have been received from 24 counties.

St Louis Encephalitis Virus (SLEV) activity: Positive samples from 64 sentinel chickens have been received from five counties.

Dengue Virus (DENV)
Seven cases of locally acquired dengue have been reported in Miami-Dade (January, August and September), Martin (July), Hillsborough (September) and Palm Beach (two cases in September) counties. Sixty-one cases of dengue with onset in 2011 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were Aruba, Bahamas (14), Bangladesh (3), Brazil (3), Colombia, Costa Rica, Cuba (5), Dominican Republic, Grenada, Guyana, Haiti (2), India, Jamaica (2), Nicaragua (2), Pakistan, Panama (2), Puerto Rico (11), St. Lucia (2), Trinidad (4), Turks and Caicos Islands, Venezuela and Vietnam. Counties reporting cases were Brevard (2), Broward (4), Clay (2), Columbia, Flagler (2), Gulf, Hendry, Hillsborough (3), Lee, Marion, Martin, Miami-Dade (19), Orange (4), Osceola, Palm Beach (9), Pasco, Pinellas, St. Johns (3), St. Lucie (3) and Washington.

Malaria
Ninety-five imported cases of malaria with onset in 2011 have been reported. Countries of origin were: Afghanistan (5), Brazil, Cameroon, East Timor, Ethiopia (2), Eritrea (2), French Guiana, Gabon, Ghana (6), Guinea Conakry, Guyana (2), Haiti (27), Honduras (4), India (14), Kenya, Liberia (2), Libya, Mali (2), Nigeria (9), New Guinea, Pakistan, Peru, Rwanda, Senegal, Uganda (5), Venezuela and West Africa. Counties reporting cases were: Alachua (2), Brevard (5), Broward (13), Citrus, Collier (2), Duval (10), Escambia, Gulf, Hillsborough (7), Indian River, Lee (5), Leon (3), Miami-Dade (19), Manatee (3), Okaloosa, Orange (5), Palm Beach (6), Pasco (2), Pinellas, Santa Rosa, Seminole, St. Johns and St. Lucie (4). Fifty-nine (62.0%) were diagnosed with *Plasmodium falciparum,* 33 (35.0%) with *Plasmodium vivax,* one (1.0 %) with *Plasmodium ovale,* one (1.0 %) with *Plasmodium malariae,* and one (1.0 %) with undetermined.

Dead Bird Reports
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. In 2011, three hundred and thirty-four reports representing 993 dead birds (46 crows, 57 jays, and 73 raptors, 817 others) were received from 45 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/

See the program web site for more information:
http://www.doh.state.fl.us/Environment/medicine/arboviral/index.html.

Please contact the Arthropod-borne Disease Surveillance Coordinator, Dr. Leena Anil at 850.245.4444 Ext.2437 or by email at Leena_Anil@doh.state.fl.us. Dr. Stanek is a medical epidemiologist with the Bureau of Environmental Public Health Medicine. She can be contacted at 850.245.4117, or by email at Danielle_Stanek@doh.state.fl.us. Dr. Blackmore is the State Public Health Veterinarian, the State Environmental Epidemiologist, and the Bureau Chief of the Bureau of Environmental Public Health Medicine. She can be contacted at 850.245.4732, or by email at Carina_Blackmore@doh.state.fl.us. The Bureau of Environmental Public Health Medicine is part of the Division of Environmental Health.

Influenza Incidence Surveillance Project (IISP) New Site Recruitment

Colin Malone, M.P.H.

The Bureau of Epidemiology is currently recruiting new providers for the Influenza Incidence Surveillance Project (IISP). The IISP project is coordinated nationally by the Centers for Disease Control and Prevention (CDC) and Council of State and Territorial Epidemiologists (CSTE) and currently has 12 participating states and municipalities. The IISP project measures influenza-like illness (ILI) and influenza incidence among persons enrolled as patients in selected outpatient practices.

IISP sites are asked to submit specimens from the first 10 ILI patients seen weekly. IISP specimens are tested by Polymerase Chain Reaction (PCR) for influenza and also for other non-influenza pathogens, which is not available in other surveillance systems. Data collected is analyzed and reported weekly to each site. Data is also sent to the CDC and used in influenza surveillance activities. Materials are provided free of charge to the participating sites. The Bureau of Epidemiology is seeking two new providers to add to the four providers currently enrolled as Florida IISP sites.

Participation Requirements:

- 100-200 patients visits per week.
- Electronically submit ILI visit counts and total patient counts to DOH weekly.
- Collect ILI specimen and demographic information on the first 10 ILI patients seen in the clinic weekly.
- Ability to determine total patient population.

If you are interested in participating or require additional information, please contact Colin Malone.

Colin Malone is the Respiratory Disease Unit Supervisor for the Bureau of Epidemiology, Florida Department of Health. Colin can be contacted at 850.245.4444 ext. 2403 or by email at Colin_Malone@doh.state.fl.us.

Reportable Diseases in Florida

Up-to-date information about the occurrence of reportable diseases in Florida, based on the Merlin surveillance information system, is available at the following site: http://www.floridacharts.com/merlin/fregrpt.asp. Counts can be displayed by disease, diagnosis status, county, age group, gender, or time period.

Monthly Notifiable Disease Data

Table 1. Provisional Cases* of Selected Notifiable Diseases, Florida, December 1-31, 2011

	Month				Cumulative (YTD)	
Disease Category	**2011**	**2010**	**Mean†**	**Median¶**	**2011**	**2010**
A. Vaccine Preventable Diseases						
Diphtheria	0	0	0.0	0	0	0
Measles	0	0	0.2	0	8	1
Mumps	2	2	3.2	3	11	10
Pertussis	20	35	26.0	31	313	328
Poliomyelitis	0	0	0.0	0	0	0
Rubella	0	0	0.0	0	0	0
Smallpox	0	0	0.0	0	0	0
Tetanus	0	0	0.2	0	3	5
Varicella	74	61	105.6	61	865	977
B. CNS Diseases & Bacteremias						
Creutzfeldt-Jakob Disease	3	2	2.0	2	17	13
Haemophilus influenzae (Invasive Disease)	25	17	16.8	17	233	191
In Children 5 Years or Younger	1	3	3.8	4	23	34
Listeriosis	10	3	5.0	5	37	54
Meningitis (Bacterial, Cryptococcal, Mycotic)	19	15	21.0	21	192	183
Meningococcal Disease	2	4	5.0	4	51	60
Staphylococcus aureus (VISA, VRSA)	1	0	0.2	0	3	1
Streptococcal Disease, Group A (Invasive Disease)	25	38	28.0	23	248	268
Streptococcus pneumoniae (Invasive Disease)						
Drug Resistant	57	102	98.4	102	644	816
Drug Susceptible	63	88	87.0	88	680	693
C. Enteric Infections						
Campylobacteriosis	176	112	98.0	95	2,085	1,211
Cholera	1	3	0.6	0	11	4
Cryptosporidiosis	32	40	47.6	40	438	408
Cyclospora	7	2	2.0	2	61	63
Escherichia coli, Shiga toxin-producing (STEC)**	17	9	11.8	10	157	85
Giardiasis	135	185	146.6	167	1,266	2,139
Hemolytic Uremic Syndrome	0	0	0.8	1	4	8
Salmonellosis	510	447	532.4	496	5,938	6,281
Shigellosis	202	168	131.0	168	2,639	1,212
Typhoid Fever	0	1	1.4	1	8	22
D. Viral Hepatitis						
Hepatitis A	18	16	15.2	15	112	178
Hepatitis B (Acute)	29	25	34.4	35	227	315
Hepatitis C (Acute)	14	9	6.6	9	101	105
Hepatitis +HBsAg in Pregnant Women	45	33	55.2	59	482	438
Hepatitis D, E, G	0	1	0.4	0	10	1

* Confirmed and probable cases based on date of report in Merlin. Merlin incidence data for 2011 are provisional, data for 2010 was finalized on April 1, 2011. Tuberculosis data are reported in HMS and historic data are available in TIMS.

† Mean of the same month in the previous five years

¶ Median for the same month in the previous five years

** Includes E. coli O157:H7; Shiga toxin-positive, serogroup non-O157; and Shiga toxin-positive, not serogrouped

N/A indicates that no historical data is available to caculate mean and median

Table 1. (Cont'd) Provisional Cases* of Selected Notifiable Diseases, Florida, December 1-31, 2011

	Month				Cumulative (YTD)	
Disease Category	**2011**	**2010**	**Mean†**	**Median¶**	**2011**	**2010**
E. Vectorborne, Zoonoses						
Dengue	10	11	7.0	7	73	192
Eastern Equine Encephalitits††	0	0	0.0	0	0	4
Ehrlichiosis/Anaplasmosis	1	2	1.4	2	25	14
Leptospirosis	1	0	0.4	0	4	2
Lyme Disease	17	7	5.8	5	125	84
Malaria	6	18	9.4	9	99	139
Plague	0	0	0.0	0	0	0
Psittacosis	0	0	0.0	0	0	0
Q Fever (Acute and Chronic)	0	0	0.2	0	0	0
Rabies (Animal)	8	12	9.4	10	120	121
Rabies (Human)	0	0	0.0	0	0	0
Rabies (Possible Exposure)	337	289	194.6	158	2,419	2,114
Rocky Mountain Spotted Fever	5	1	3.6	4	18	14
St. Louis Encephalitis††	0	0	0.0	0	0	0
Toxoplasmosis	2	1	1.6	1	7	10
Trichinellosis	0	0	0.0	0	0	0
Tularemia	0	0	0.0	0	0	0
Typhus Fever (Epidemic and Endemic)	0	0	0.2	0	2	0
Venezuelan Equine Enchephalitis††	0	0	0.0	0	0	0
West Nile Virus††	2	2	0.4	0	23	12
Western Equine Encephalitis††	0	0	0.0	0	0	0
Yellow Fever	0	0	0.0	0	0	0
F. Others						
Anthrax	0	0	0.0	0	1	0
Botulism, Foodborne	0	0	0.0	0	0	0
Botulism, Infant	0	1	0.2	0	0	1
Brucellosis	0	1	1.0	1	11	9
Glanders	0	0	0.0	0	0	0
Hansen's Disease (Leprosy)	3	0	0.4	0	11	12
Hantavirus Infection	0	0	0.0	0	0	0
Legionellosis	15	14	18.2	20	186	172
Melioidosis	0	0	0.0	0	0	0
Tuberculosis	49	56	80.8	78	700	835
Vibriosis	9	16	10.8	10	154	130

* Confirmed and probable cases based on date of report in Merlin. Merlin incidence data for 2011 are provisional, data for 2010 was finalized on April 1, 2011. Tuberculosis data are reported in HMS and historic data are available in TIMS.

† Mean of the same month in the previous five years

¶ Median for the same month in the previous five years

†† Includes neuroinvasive and non-neuroinvasive

Note: The 2011 case counts are provisional and are subject to change until the database closes. Cases may be deleted, added, or have their case classification changed based on new information and therefore the monthly tables should not be added to obtain

Please refer any questions regarding the data presented in these tables to Leah Eisenstein at Leah_Eisenstein@doh.state.fl.us or (850) 245-4444 Ext. 2481.

Upcoming Events

Bureau of Epidemiology Monthly Grand Rounds
Date: Last Tuesday of each month, except in December
Time: 10 a.m.-11 a.m., E.T.
Location: Building 2585, Room 310A
Dial-In Number: 877.646.8762 (password: Grand Rounds)

February 28, 2012: "Descriptive Analysis of the Relationship between ESSENCE and Hospital Laboratory Surveillance in Detecting Influenza-Like Illnesses in Seminole County, January-March 2009," presented by Tara A. Richardson, M.P.H., Healthcare-Associated Infection Epidemiologist with the Bureau of Epidemiology.

Recently Published Papers and Reports

Robyn Kay worked with a team to determine healthcare-associated infection (HAI) prevalence in nine hospitals in Jacksonville, Florida, to evaluate the performance of proxy indicators for HAI's, and to refine methodology in preparation for a multistate survey. The result of the study, "Prevalence of Healthcare-Associated Infections in Acute Care Hospitals in Jacksonville, Florida," is published in the March 2012 edition of *Infection Control and Hospital Epidemiology* and is available at http://www.jstor.org/stable/10.1086/664048.

This Month on EpiCom

Janet J. Hamilton, M.P.H.

EpiCom is located within the Florida Department of Health's Disaster Emergency Notification System (FDENS). The Bureau of Epidemiology encourages *Epi Update* readers to register on the EpiCom system by emailing the Florida Department of Health Emergency Notification System Helpdesk at FDENS-help@doh.state.fl.us. Users are invited to contribute appropriate public health observations related to any suspicious or unusual occurrences or circumstances through the system. EpiCom is the primary method of communication between the Bureau of Epidemiology and other state medical and public health agencies during emergencies. The following are titles from selected recent postings:

- Confirmed *Vibrio cholerae* in resident, Lake County
- Pertussis in infant, Brevard County
- Gastrointestinal (GI) illnesses at skilled nursing facility, Palm Beach County
- GI illnesses at assisted living facility, Orange County
- Pertussis in teenager, Nassau County
- *Vibrio vulnificus* case, Palm Beach County
- Scombroid poisoning, Palm Beach County
- GI illness in two drivers, Miami-Dade County
- Fatal *Capnocytophaga* infection, Sarasota County
- Meningococcal disease, Volusia County
- Resolved GI outbreak at assisted living facility, Indian River County
- GI illnesses at long-term care facility, Clay County
- Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) in a long-term care facility, Orange County

- GI illness outbreaks in multiple assisted living facilities, Orange County
- Foodborne illness outbreak investigation, catered Christmas Eve party, Miami-Dade County
- Meningococcal disease, Miami-Dade County
- Rabid raccoon, Bay County
- *Cronobacter sakazakii* infant case, Escambia County
- Mumps case on cruise ship, Brevard County
- Suspect Scombroid poisoning, Santa Rosa County
- Confirmed Norovirus outbreak in long-term care facility, Clay County
- Suspected foodborne outbreak involving a buffet restaurant, Hillsborough County
- Legionellosis death in a Canadian resident while on vacation, Hillsborough County
- Two cases of Meningococcemia with respiratory symptoms, Miami-Dade County
- *Strongyloides stercoralis* disease, Miami-Dade County
- Three GI outbreaks, Miami-Dade County
- Influenza-like Illness (ILI) outbreak in assisted living facility, Orange County

Janet Hamilton is the Surveillance Systems Section Administrator and the Acting Surveillance and Reporting Section Administrator for the Bureau of Epidemiology. Janet can be contacted at 850.245.4561 or by email at Janet_Hamilton@doh.state.fl.us.

Epi Update is the peer-reviewed journal of the Florida Department of Health, Bureau of Epidemiology and is published monthly on the Internet. Current and past issues of *Epi Update* are available online at http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/index.html.

For submission guidelines or questions regarding *Epi Update*, please contact Kim Bowman at 850.245.4409 or by email at Kim_Bowman@doh.state.fl.us.