



Epi Update



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Influenza A Outbreak in a Local Correctional Institution, Miami, April 2008

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Background

On April 7, 2008, the Miami-Dade County Health Department (MDCHD) Office of Epidemiology and Disease Control (OEDC) received a call from a nurse at a local correctional institution (CI) reporting that there were 12 female inmates with influenza-like symptoms. No staff had presented with symptoms. Earliest onset was April 3, 2008 and symptoms included: fever (101° F), cough, and body ache. The symptomatic inmates were held in isolation at a medical dorm. OEDC initiated an investigation.

Methods

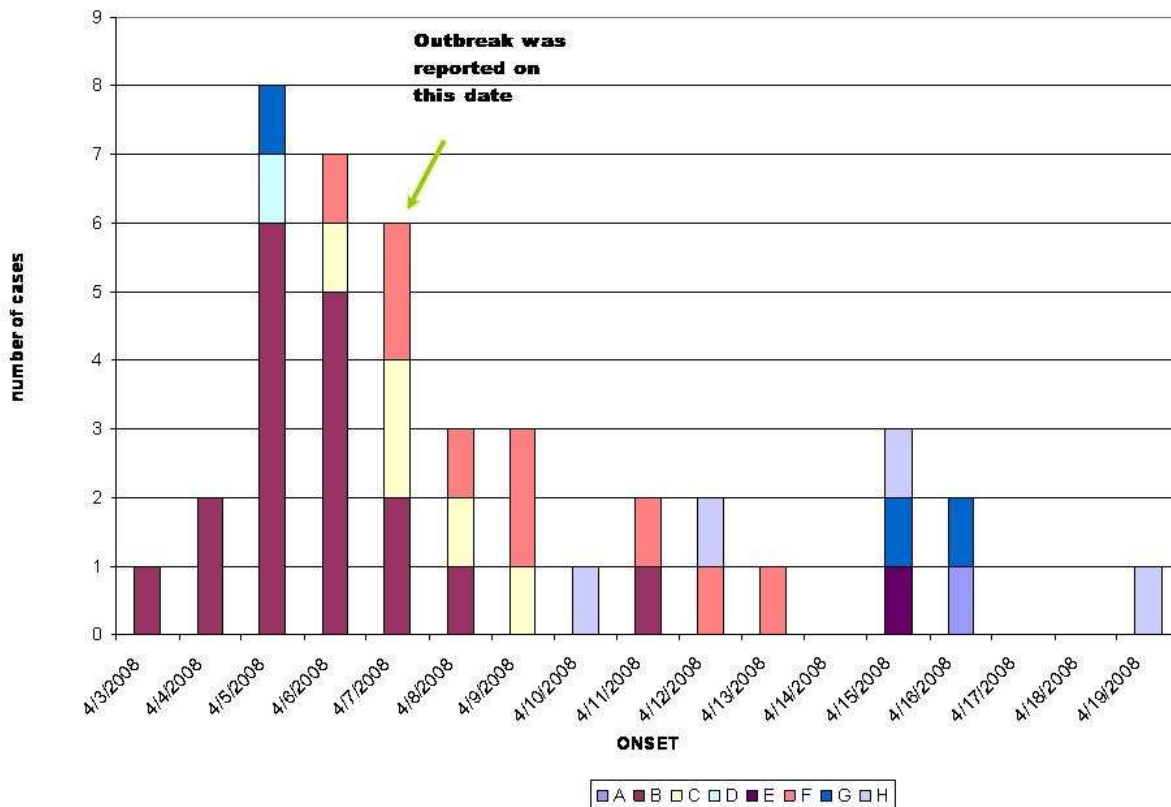
A letter of recommendation on control measures was faxed to the head nurse the same day the report was made. Specimen collection kits for five patients were delivered to the facility the next day for rapid test and viral culture. The case definition for Influenza-like illness (ILI) as per the Centers for Disease Control and Prevention (CDC) is fever of 101.5° Fahrenheit or higher and one of the following: cough, sore throat, headache, or muscle aches in the absence of another known cause. A line list of the cases was created with demographic and clinical information such as: name, date of birth (DOB), sex, resident or staff, dorm, date of onset, date of recovery, symptoms (fever, sore throat, cough, body ache, other), seen by medical doctor, sample collected, results, and influenza shot antecedent for this Influenza season 2007-2008. This spreadsheet was filled out by the nurse of the facility, including periodic updates. Data collected in this spreadsheet was analyzed using Epi Info 2005, version 3.3.2.

Results and Discussion

Distribution in Time and Space

When the outbreak began the local CI had 658 female inmates in eight dorms (from A to H). One hundred twenty of the inmates had influenza shots (18.2%, 120/658) for this influenza season. In the epicurve by dorms (Graph 1), it is possible to see that the first case came from dorm B with onset on April 3. During the next two days, the other eight cases came from this same dorm. On Saturday, April 5, the illness spread to dorms D and G. On Sunday, April 6, illness spread to dorms C and F. On Monday, April 7, when the outbreak was reported, the control measures included in the letter were initiated, including measures such as droplet and contact isolation precautions. As exemplified in the epicurve (Graph 1), the frequency of new cases began to decline from April 8 until the last case onset on April 19.

Graphic 1
Influenza Outbreak Epicurve by Dorms, Local Correctional Institution, Miami, April 2008.



Laboratory

On Tuesday, April 8, five throat swabs were collected from the most acutely ill patients. The rapid tests were done at the Miami State Lab, and one test was reactive to Influenza A. The RT-PCR tests were done at the Jacksonville State Lab; all five specimens tested positive for Influenza A. However, as of April 18 no specific virus had been isolated.

Exposure Analysis

A total of 42 female inmates met the case definition. The median age was 40 years old (Range: 19-61 years). The overall attack rate was 6.4% (Table 1), with the attack rates in dorms B, H, and F higher than the overall rate (18%, 11.4%, and 9.1%, respectively).

Table 1. Influenza Outbreak Attack Rates by Dorms, Local Correctional Institution, Miami, April 2008.

Dorms	Population	Cases	Attack Rates (%)
A	76	1	1.3
B	100	18	18.0
C	98	5	5.1
D	91	1	1.1
E	81	1	1.2
F	99	9	9.1
G	73	3	4.1
H	35	4	11.4
Total	653	42	6.4

Almost one-third of the cases in dorms B, F, and H had the antecedent of the influenza vaccine for this influenza season, whereas in dorm C, 40% of the influenza cases had this antecedent (Table 2). In dorms A, D, E, and G none of the inmates had received the influenza vaccine previously.

Table 2. Distribution of Influenza cases by dorm with and without previous Influenza Shots, Local Correctional Institution, Miami, April 2008.

Dorms	INFLUENZA VACCINE				Total
	Yes	%	No	%	
A	0	0.0	1	100.0	1
B	5	27.8	13	72.2	18
C	2	40.0	3	60.0	5
D	0	0.0	1	100.0	1
E	0	0.0	1	100.0	1
F	3	33.3	6	66.7	9
G	0	0.0	3	100.0	3
H	1	28.0	3	75.0	4
Total	11	26.2	31	73.8	42

On the basis of global surveillance of circulating virus strains, the influenza vaccine may change from year to year; indeed, one of the three strains in the 2007-2008 vaccine is different from the previous year's vaccine. According to the CDC, this year's seasonal influenza vaccine has only been 44% effective.¹

Limitations

Unfortunately, it was impossible to get data on the number of inmates with influenza vaccines by dorms, which would permit a deeper analysis. The only information received was that 18% of the total inmate population had received the influenza vaccine for this 2007-2008 season. No information was received regarding new inmate entrants by dorms before the beginning of this outbreak, nor whether these new cases were new inmates to this CI.

Medical attention

All the patients received medical attention at the facility, with a median of five days for recovery (Range: 2-11 days). None of the ill inmates received anti-viral treatment. The outbreak was closed on April 22 after three days without any new cases since the last case reported on April 19.

Conclusions

This investigation was worked as a seasonal outbreak of Influenza A at a local CI in Miami-Dade County. This outbreak lasted 13 days. Perhaps it would have lasted a shorter period of time if the facility had notified the health department sooner and treated the cases with anti-viral agents.

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Norovirus Outbreak at an Alternative High School for Teen Mothers, Miami-Dade, January 2008

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Background

On January 17, 2008, the Miami-Dade County Health Department (MDCHD) was notified by School Comprehensive Health Services that a high school that provides day care for teenage mothers had a large number of infants and students ill with watery diarrhea. Investigators from the MDCHD Office of Epidemiology and Disease Control (OEDC) and the Environmental Health Division responded to this report and initiated an investigation.

This alternative school provides daycare services to infants/toddlers of teen mothers. There are also students enrolled at the school without children, but who are currently pregnant. During the outbreak, the school had a census of 137 teenage students, 94 staff, and 104 infant/toddlers (aged one month to three years old). The day care has nine classrooms (A through I) with approximately four childcare staff per classroom. Classrooms A through E serve the youngest children (<2 years), and these classrooms are joined together in one large classroom separated by partitions. The childcare staff usually care for infants/toddlers only in their assigned classroom, but some staff movement between classrooms may occur to fulfill minimum staff/child ratios per classroom as required by law.

Methods

Case finding and epidemiologic investigation

On January 17, a list of ill infants/toddlers and staff was faxed to the OEDC and afterwards a letter with recommended control measures for this outbreak was faxed from the OEDC to the school. On the same day, investigators from the OEDC and Environmental Health visited the facility and met with the administrator and school nurse. The OEDC interviewed additional staff and students, many of whom reported gastrointestinal (GI) signs and symptoms. The OEDC investigators communicated with the school nurse daily to ascertain additional cases.

A 60-item questionnaire was developed regarding the recent history of symptoms of GI illness and possible exposures relevant to enteric pathogens. OEDC staff visited the school over a three-day period and interviewed all available students and staff, except high school teachers who did not report any illness. Additional questions were asked of mothers with children attending the daycare center. Data was entered into an EpiInfo database for analysis.

A case definition was developed that included the following categories:

- *Confirmed case* was defined as any staff, teen mother, or infant/toddler of the alternative school/daycare center who developed either vomiting or diarrhea after January 5 and had a positive laboratory result for an enteric pathogen.

- *Probable case* was defined as any staff, teen mother, or infant/toddler of the alternative school/daycare center who developed either vomiting or diarrhea after January 5 and lacked positive laboratory results.
- *Suspect case* was defined as any staff, teen mother, or infant/toddler of the alternative school/daycare center who developed any acute symptoms compatible with GI illness other than vomiting or diarrhea, after January 5.

Laboratory and Environmental Health Investigation

Stool specimens were collected from a convenience sample of ill staff, infants, and students. Specimens were submitted to the Miami State Laboratory for ova and parasite examination and bacterial culture. Specimens were sent to the Tampa State Laboratory for norovirus and rotavirus PCR testing. Inspection of the daycare center and main kitchen were conducted by environmental health staff; water samples from the kitchens and some bathrooms were collected and submitted for testing.

Results

Laboratory and Environmental Results

Stool samples were obtained from 33 individuals. All laboratory results were negative for ova and parasite and bacteria. Fourteen of the 33 samples were tested for norovirus and rotavirus. Eleven of the 14 samples tested were positive for Norovirus, genogroup GII. All 14 specimens were negative for rotavirus. Water samples were negative for fecal coliforms.

Interview Results

A total of 120 people were interviewed; 85 students, 28 childcare staff, and seven foodhandlers and security staff. Information was also provided by mothers of 62 children. Of those interviewed, 75 met one of the case definition categories. Additionally, 13 other people who reported illness were not interviewed because they were not at the facility during the interview days. However, they were included in the analysis since onset dates and symptom information were reported by the school nurse. A total of 88 reported ill, of which 11 cases were confirmed, 68 were probable, and nine were suspect. The main symptoms were diarrhea (80%) and vomiting (47%) (Table 1).

For the purpose of data analysis, attack rates were calculated among the following three groups: 16% (15/94) for staff, 20% (27/137) for students, and 44% (46/104) for infants/toddlers. The following are the median ages for the three groups: 46.5 years (Range: 30-62 years) for staff, 17 years (Range: 13-20 years) for students, and eight months (Range: 1-24 months) for infants/toddlers. Within the infant/toddlers group, 85% (39/46) were less than one year old. The daycare classrooms most affected were C and D (Table 2). These two classrooms are physically located next to each other (Figure 1). The earliest onset date was January 7 among children located in classrooms F, G, and H. Exposure for certain variables among those who were ill and those who were not ill was analyzed with statistically significant findings among infants that had formula only (Table 3).

The epidemic curve (Figure 2) shows that the outbreak occurred over a period of 17 days, which is suggestive of person-to-person rather than point-source transmission. Additional information collected in the course of the investigation suggested that some individuals may have had a similar illness in mid-December, before the two-week Christmas break. Because it is difficult to determine with certainty if this is the same or a different illness, the epicurve was created for the period after classes resumed in January, for which stool specimens from symptomatic individuals could be obtained.

Staff

There were five confirmed, six suspect and four probable cases among the staff. Of the 15 ill staff members, seven (46.6%) were black Non-Hispanic, six (40.0%) were white Hispanic, one (6.7%) was white Non-Hispanic and one (6.7%) was black Hispanic. Five staff were absent from work due to illness at least one day during the outbreak period. One staff sought medical care. Four of the fifteen reported traveling away from home (two in-state, one out-of-state, and one international) since Christmas.

Students

There were no confirmed cases among the students, although 24 cases were probable and three cases were suspect. Data was only collected on 24 of the 27 ill students. Of the 24 ill, 13 (54.2%) were white Hispanic, eight (33.3%) were black Non-Hispanic, two (8.3%) were Hispanic Other and one (4.2%) was black Hispanic. Ten students were absent from school with a mean of three days absent (Range: 1-10 days). Additionally, ten students had other household members that had been sick with vomiting and diarrhea. None of the students traveled away from home overnight since Christmas. Seven (29.2%) of the ill students were pregnant. None of the students who were ill breastfed her infant.

Infants/Toddlers

Data was collected on 45 of the 46 ill infants. Of those 45 cases, four were confirmed and 41 were probable. There were no suspect cases among the infants/toddlers. Forty-three of the 45 (95.5%) had diarrhea and 24 (53.3%) had vomiting. Abdominal pain and nausea symptoms were not recorded for the infants. Twenty-eight (62.2%) sought medical care, of which 15 of 28 (53.6%) visited their private physician, ten (35.7%) visited the CHI clinic at school, and three (10.7%) visited the emergency department at a hospital. For feeding practices, 28 (62.2%) had formula milk, nine (20.0%) had regular milk and three (6.7%) had a combination of breast milk, regular milk, and formula milk. Of the infants that drank breast milk, two of the three had mothers that used a breastpump during school. Additionally, 31 (68.9%) infants ate cereal, 27 (60.0%) ate foods prepared at home, and 20 (44.4%) ate baby food. Twenty-five (55.6%) of the infants used a pacifier.

Discussion/Conclusion

The propagated epidemic curve (Figure 2) shows that the outbreak occurred over a period of 17 days, which is suggestive of person-to-person transmission of norovirus. The laboratory results, coupled with the symptoms and duration of illness, are also consistent with a disease outbreak caused by norovirus. There was a statistically significant association of infants/toddlers who had the *formula milk only* and became ill (Table 3). Thus, the odds of infants/toddlers becoming ill after exposed to *formula milk only* were 2.26 times higher than among those not exposed to *formula milk only*. No food handlers reported any signs or symptoms. In addition, some subjects described illness starting earlier than the date used for the case definition. It is possible that the outbreak had started earlier. This outbreak demonstrates that norovirus is highly contagious and people working in daycare centers need to pay special attention to children who have norovirus illness since it can spread rapidly throughout such environments.

Table 1. Signs and Symptoms of Confirmed, Probable, and Suspect cases (N=88), Miami, Florida, 2008

	N	%
Diarrhea	70	80
Vomiting	41	47
Abdominal Pain/Cramps*	31	74
Nausea*	10	24
Fever	7	8

*Since children were not interviewed, the denominator to calculate the percent was 42

Table 2. Attack rates Among Daycare Classrooms, Miami, Florida, 2008*

	Age range (in months)	# Ill	Total # in classroom	AR (%)
Room C	10-12	10	11	91
Room D	7-10	10	12	83
Room B	1-7	5	10	50
Room E	2-3	5	10	50
Room F	11-15	6	17	35
Room A	1-5	3	12	25
Room I	18-23	3	12	25
Room H	27-39	2	9	22
Room G	24-26	2	10	20

*AR = Attack Rate

Table 3. Exposure Analysis, Norovirus Outbreak at a Local Alternative School, Miami-Dade, January 2008

Exposure	RR	95% CI	p-value
Infant/Toddler			
Formula milk only	2.26	1.46-3.29	<0.001
Regular milk only	0.41	0.26-0.66	<0.001
Combination of milk ¹	1.1	0.34-1.58	1.00
Student			
Household ill	1.81	1.31-2.19	0.002
Travel history	0.33	0.12-0.75	0.003
Childcare staff			
Household ill	1.39	0.23-4.15	1.00
Changing diapers	0.94	0.27 - 3.32	*0.2849

¹ Combination includes: formula and breast milk, formula and regular milk, or breast and regular milk

*Fisher Exact

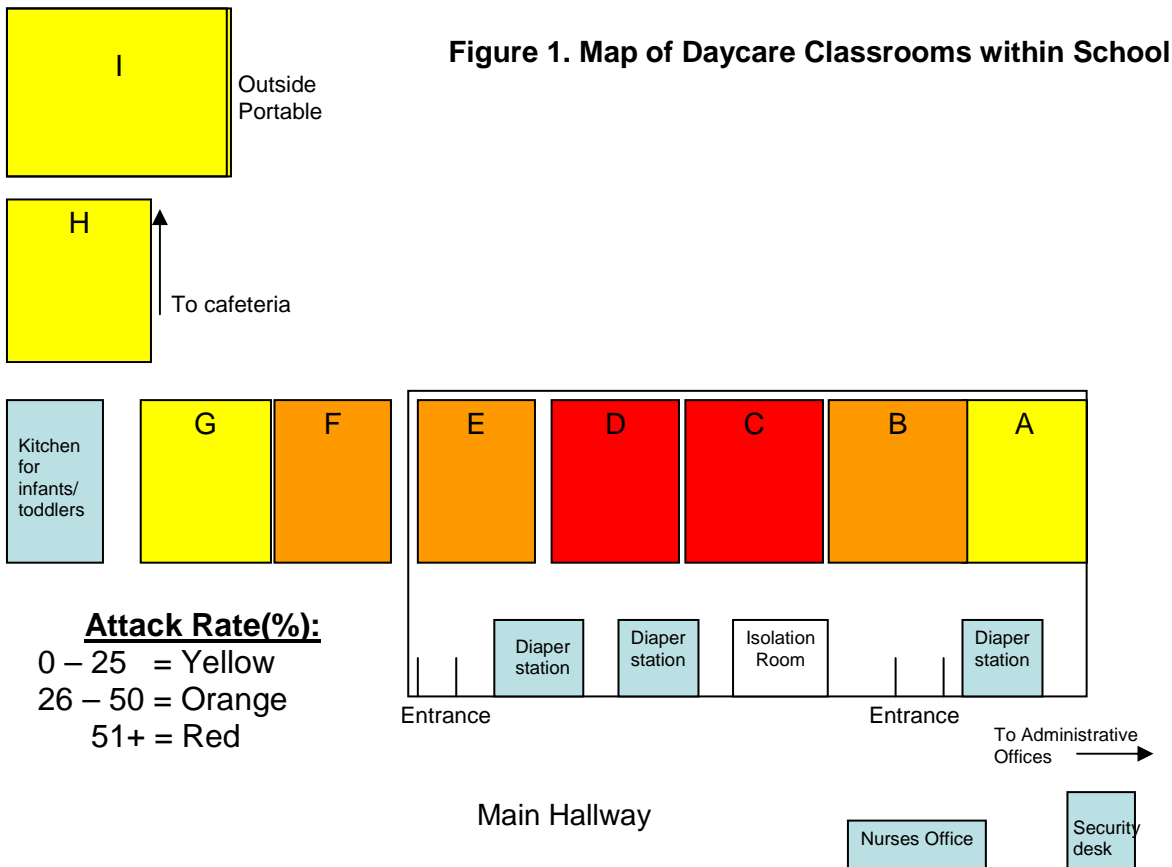


Figure 2. Epidemic Curve of Reported Ill (N=88) from a Norovirus Outbreak at a Local Alternative School, Miami-Dade, January 2008

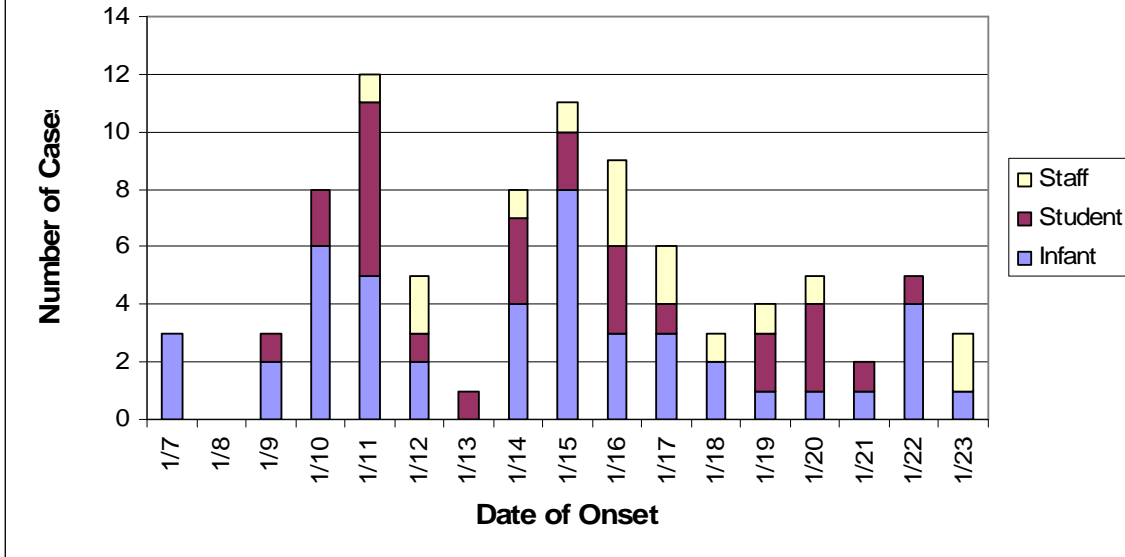
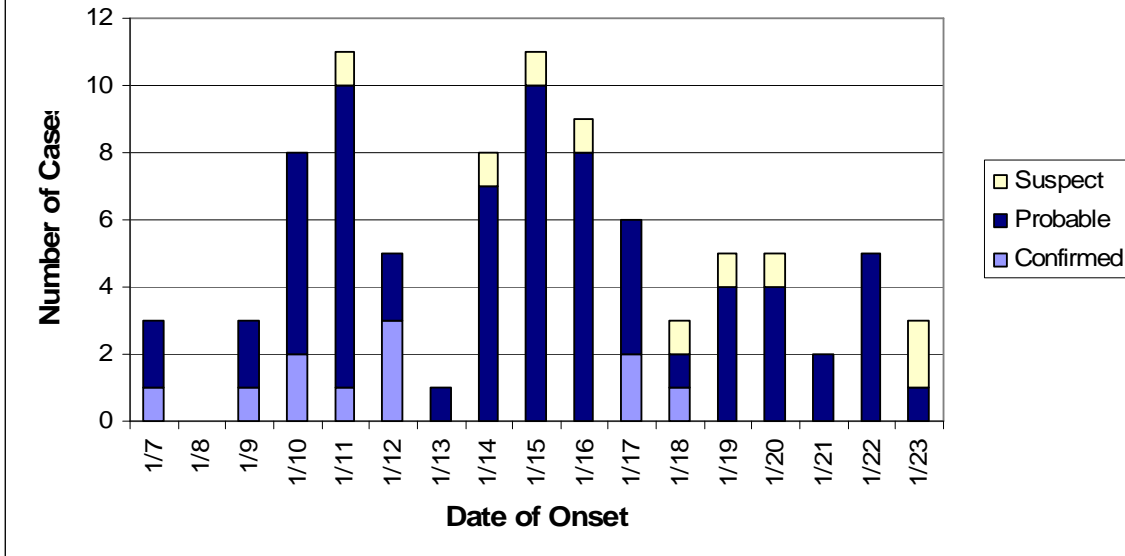


Figure 3. Epidemic Curve of Confirmed, Suspect, and Probable Cases (N=88) from a Norovirus Outbreak at a Local Alternative School, Miami-Dade, January 2008



We want to give special thanks to our interns Kaleeq Lufti and Tina Arcomoni who helped us during this investigation.

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Survey of Hospital Microbiology Laboratories Regarding *Klebsiella pneumoniae* carbapenemase (KPC)-Producing Organisms

Timothy Doyle, M.P.H., Roger Sanderson, M.A., B.S.N., and the KPC investigation team

Background

In April 2008, an investigation was initiated into a cluster of patients at a hospital in Broward County who were infected with *Klebsiella pneumoniae* carbapenemase (KPC)-producing organisms. KPC is a plasmid-mediated enzyme that confers resistance to beta-lactam antibiotics including carbapenems.¹ KPC is primarily produced by the Enterobacteriaceae family of gram-negative bacteria, most commonly *Klebsiella* spp. Some of the patients that were part of the initial cluster were previously hospitalized in Miami-Dade County. As part of this investigation, a survey was conducted of clinical microbiology laboratories at hospitals in Broward and Miami-Dade counties. The objectives of this survey were to characterize current hospital laboratory capabilities for detecting KPC-producing organisms, and to ascertain the extent of KPC infections among hospitalized patients in South Florida.

Methods

A list of all hospitals in Broward and Miami-Dade counties was compiled with contact information for the laboratory director and infection control practitioner. The microbiology laboratory director for each hospital was contacted by telephone and a brief interview survey was conducted. No interviews were conducted for hospitals without their own microbiology laboratory. However, other hospital labs or reference labs that perform microbiological testing for these hospitals were contacted. The survey questionnaire contained approximately 30 questions regarding current knowledge of and practices for detecting KPC-producing organisms. The survey also addressed past history with detecting KPC and extended spectrum beta-lactamase (ESBL) producing organisms and communication between the lab and infection control practitioners at the hospital. Responses were recorded on a paper questionnaire and later entered into an EpiInfo database. In general, data analysis was restricted to hospital-based laboratories and excluded data from commercial reference laboratories. However, data from reference laboratories are noted in some of the results.

Results

There were a total of 20 hospital-based labs contacted for the survey that serve 33 separate hospitals in the two counties (Table 1). Another seven hospitals and two outpatient facilities are served by outside commercial reference laboratories. In general, the microbiology supervisor was interviewed; in one instance, the micro supervisor was not available and one of the technicians completed the interview.

Table 1. Hospital Laboratories by County

County	Hospitals	Hospital-based labs	Hospitals served by outside reference labs
Broward	16	5	4
Miami-Dade	24	15	3

Approximately 70% of those interviewed were familiar with KPC (Table 2). A smaller proportion were familiar with the 2008 updates to the Clinical and Laboratory Standards Institute (CLSI) standards in which KPC was discussed, or attended other trainings regarding KPC. A small number of respondents had attended industry sponsored talks on KPC, and some of the larger hospital networks had previous internal seminars or lectures on this topic.

Table 2. Background Knowledge of KPC

	No.	%
Familiar with KPC	14/20	70%
Familiar with 2008 CLSI Standards regarding KPC	10/20	50%
Attended other presentations on KPC	6/20	30%

When asked if their lab currently tests for KPC, eight of 20 respondents answered 'yes' (Table 3). However, results should be interpreted with caution, since the current methods used may not be adequate to detect KPC. Many of the labs are using the VITEK2 automated system and many respondents believed this was adequate to detect KPC. However, past evidence suggests that some KPC-producing isolates have low-level resistance to some carbapenems and that automated systems such as VITEK2 may not detect such KPC isolates.¹ None of the hospital labs reported using the modified Hodge test, which is recommended for detecting KPC.

Table 3. Current Testing for KPC

	No.	%
Does your lab currently test for KPC	8/20	40%
Imipenem/Meropenem/Ertapenem I and R	9/20	45%
Imipenem/Meropenem/Ertapenem MIC of 2 or 4	1/20	5%
Modified Hodge test	0/20	0%
Refer isolates for confirmatory testing	2/20	10%

A total of six hospital labs interviewed reported previously detecting KPC (Table 4). Two of these hospitals are in Broward County with patients that are part of the current cluster investigation. These hospitals are in addition to the hospital where the initial cluster was detected. Four of the hospitals reporting past experience with KPC are located in Miami-Dade County. These hospital labs suspected KPC based on an unusual resistance pattern, but were unable to confirm KPC. Three of the hospitals reported one isolate each, all occurring in the previous three months. Generally, KPC-producing organisms seen by these hospital labs have been *Klebsiella pneumoniae* obtained from urine and respiratory specimens.

One reference lab reported detecting a total of 11 patients with KPC-producing organisms. Most of these patients have been at the hospital in Broward County where the initial cluster was identified. However, the reference lab also detected KPC in an *E. coli* isolate from a different hospital, and in two *K. pneumoniae* isolates from another hospital, both located in Miami-Dade County. The other reference lab interviewed serves primarily an outpatient population and had not previously detected KPC.

Table 4. Past Experience Detecting KPC

	No.	%
Has your lab ever detected any KPC isolates	6/20	30%
Since 1/1/08, have you detected any KPC	4/19	21%
Do you still have stored isolates from KPC patients	4/6	67%
Did you forward isolates to another lab	2/6	33%

All hospital labs reported testing for extended spectrum beta-lactamase (ESBL) producing organisms (Table 5). For those labs using the VITEK2 system, results are considered confirmatory. Labs generally report positive ESBL results to infection control, but not all labs are aware of infection control practices once the results are reported. ESBL has been seen at almost all hospital labs this year, with some hospitals reporting, on average, approximately six to eight ESBL patients per month.

Table 5. Testing for ESBL-Producing Organisms

	No.	%
Does your lab perform screening tests for ESBL	20/20	100%
Do you perform ESBL confirmatory testing	16/20	80%
Do you report positive results to infection control	16/19	84%
Are ESBL patients placed under contact isolation	12/15	80%
Since 1/1/08 has your lab detected ESBL	18/19	95%

Most hospital labs use the VITEK automated system, with approximately half using the VITEK2 and others using the older VITEK legacy system. Some labs are in the process of transitioning from VITEK legacy to VITEK2. The various antibiotic cards or panels used with the VITEK system are shown in Table 6. More than

half of the hospital labs also use the Etest and many use Kirby-Bauer. Two hospital labs and one reference lab use the Microscan system.

Table 6. Current Methods for Antibiotic Susceptibility Testing

Method	No.	Cards/panels
VITEK legacy	8	122, 127, 128, 129, 130, 134, 135, 143
VITEK2	10	09, 13, 16, 18, 21, EXN
Etest	12	
Disk diffusion	5	
Microscan	2	32, 34
Phoenix	0	
Sensititre	0	
Modified Hodge	0	
Kirby-Bauer	11	

The proportion of hospital labs using various beta-lactam antibiotics in susceptibility testing is shown in Table 7. Imipenem was the most common carbapenem used in antibiotic susceptibility testing; Meropenem and Ertapenem were less common. In general, the cut points used for classifying resistant Enterobacteriaceae are based on CSLI standards and are programmed into the automated systems. Some hospital labs reported testing for various beta-lactam antibiotics, but not always reporting these results to the hospital floor, unless specifically requested by the physician. Even though a particular beta-lactam antibiotic may be included on the VITEK card used, it may not be included in the hospital pharmacy formulary, and thus susceptibility results for that antibiotic may not be reported to clinical staff.

Table 7. Beta-lactam Antibiotics Used in Susceptibility Testing for Gram-negatives

	No.	%
Imipenem	16/20	80%
Meropenem	8/20	40%
Ertapenem	7/20	35%
Ceftazidime	12/20	60%
Ceftriaxone	15/20	75%
Cefotaxime	11/20	55%
Cefazolin	14/20	70%
Cefepime	14/20	70%
Cefuroxime	5/20	25%
Aztreonam	5/20	25%
Combinations (ampicillin/sulfbactam)	8/20	40%

In general, most hospital labs have not observed an increase in multi-drug resistant Enterobacteriaceae since the beginning of the year (Table 8). Multi-drug resistant (MDR) Enterobacteriaceae are generally reported from the lab, by telephone, to the infection control staff. At least 11 hospitals place patients with MDR infections on contact isolation precautions, however, in some hospitals, the laboratory staff interviewed were not aware of patient isolation procedures.

Table 8. Recent Trends in Multi-Drug Resistant Enterobacteriaceae

	No.	%
Since 1/1/08, observed increase in MDR Enterobacter	5/20	25%
Report MDR Enterobacter to infection control	16/20	80%
Communicate by phone	14/16	88%

Conclusions

As part of this investigation, communicating by telephone with the hospital labs regarding KPC was a constructive first step in raising awareness about this emerging health threat. Several hospital labs expressed interest in learning more about KPC and in receiving additional information from the health department and

from colleagues. The cluster of KPC investigated in Broward County is probably not the first instance of this problem in a South Florida healthcare facility. The lab survey revealed that this problem has probably occurred in some hospitals in the past, but KPC does not yet appear to be widespread among hospitals in the region. However, the extent of past problems is difficult to know with certainty, because labs have generally not been using the recommended modified Hodge test to detect KPC. Most lab directors have heard of KPC and are taking steps to build their lab capacity for detecting these organisms. In addition, KPC-producing organisms have been previously observed in hospitals in Northeast Florida.²

Recommendations

Hospital laboratories should continue to build their capacity to detect KPC-producing organisms. Labs should implement the modified Hodge test when appropriate. Suspect isolates can also be forwarded to a commercial reference laboratory for further confirmation using the modified Hodge test. Hospital labs should also include Ertapenem and Meropenem in their antibiotic susceptibility testing.¹

Detection of KPC-producing organisms by the hospital laboratory should be reported promptly to the hospital infection control service. Infected patients should be placed under contact isolation precautions.³ If infected patients are transferred to another facility, their KPC infection status should be shared with the receiving facility so that appropriate infection control precautions can be implemented.

Presently, the Florida Department of Health has no immediate plans to make individual instances of infection with KPC-producing organisms reportable to public health authorities, either from clinicians or laboratories. However, reference diagnostic testing to confirm KPC may be available upon request from the Florida Department of Health, Bureau of Laboratories-Jacksonville. Under Florida administrative code, hospitals and laboratories are required to report "*any grouping or clustering of patients having similar etiological agents that may indicate the presence of a disease outbreak...*"⁴ As such, any cluster of KPC-producing organisms that may represent an outbreak should be reported to the local county health department.

The Bureau of Laboratories-Jacksonville will continue to forward KPC suspect isolates to CDC for molecular confirmation (BLA_{KPC}) and susceptibilities after confirming the identification of *Klebsiella pneumoniae*, as well as the Hodge test. Call the Bureau of Laboratories-Jacksonville at 904-791-1605 with any questions.

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2008 Annual Epidemiology Statewide Seminar Summary

Leesa Gibson, M.S.

The Bureau of Epidemiology is proud to report that its 13th annual statewide seminar was very well attended and received. It was held in Orlando at the Rosen Plaza Hotel on May 29–30, 2008. Prior to the official start of the seminar, the graduation ceremony for the Florida Epidemic Intelligence Service fellows was held at the conference site on May 28. A total of 204 participants attended the seminar from across the state representing 43 counties. A number of Florida Department of Health divisions and bureaus, in addition to the Bureau of Epidemiology, were represented. Representatives from other organizations, such as Disney World Safety and Health, University of Miami, Tampa General Hospital, and the National Health Institutes, also attended.

Five plenary sessions were held as well as four breakout sessions each consisting of four tracks. Sixty-five speakers presented at these sessions. The sessions covered a broad variety of topics and targeted all skill levels. To make the conference presentations more widely available to all of our colleagues, PDF copies of the PowerPoint presentations from the conference can be found at:

http://www.doh.state.fl.us/disease_ctrl/epi/Statewide/Conference_Materials/Index.html

Poster Session

In addition to the formal presentations, the professional poster session provided an excellent venue to learn about work being done throughout the state. Submissions came from colleagues in a wide variety of settings including epidemiology programs, the Bureau of Laboratories, academic programs, and others. Congratulations to all who displayed their work at the poster session! The high quality of the poster submissions made it very challenging for judges to select the “best” of each category. Winning submissions, authors, and their categories follow.

Chronic Disease

“Compare Overweight and Obesity in Each County in Florida, 2002, 2007”

Bonnie Yu, M.S., M.A.S.; Youjie Huang, M.D., Dr.P.H., M.P.H.

Communicable Disease

“Gene Sequencing Methods Allow for the Surveillance and Characterization of Strain Type of Norovirus Infection in Outbreaks of Gastroenteritis”

Brittany Caddick, APHL-CCID/CDC EID Fellow; Lillian Stark, Ph.D., M.S., M.P.H.

County Health Department

“A Cluster of Cytomegalovirus (CMV) Infections in a Neonatal Intensive Care Unit (NICU)”

Anita Lewis, M.P.H.; Samantha Rivers, M.P.H., M.S.; John DePasquale, M.D., M.P.H.

Environmental Health

“Evaluating Socio-Demographic Characteristics near National Priority List Sites in Florida using Census Data and GIS”

Greg Kearney, M.P.H., Dr.P.H.; Cynthia Harris, Ph.D.; Richard Gragg, Ph.D.; C. Perry Brown, M.S.P.H., Dr.P.H.

Early Detection/Preparedness

“Potential Improvement in Timeliness of Infectious Disease Notification Attributable to Electronic Laboratory Reporting — Florida, 2002–2006”

John M. DePasquale, M.D., M.P.H.; Aaron Kite-Powell, M.S.; Richard S. Hopkins, M.D., M.S.P.H.

Epidemic Intelligence Service

“Recommendations for the Analysis and Interpretation of CDC eFORS Data: Florida’s Approach for Conducting a State-Based Analysis Project”

Becky Lazensky, M.P.H.; Leah Eisenstein, M.P.H.; John Middaugh, M.D.; Roberta Hammond, Ph.D., R.S.

Other (Maternal/Child Health, Injury, etc)

“Natural Disaster and Disability: Case Study of the Florida 2004 Hurricane Season Based on the BRFSS”
Erin Defries, M.P.H.; Nur Zeinomar, M.P.H.; Jayson Caraccciolo, M.P.H.; Elena Anderson, Ph.D.; Babette Brumback, Ph.D.

Special thanks to the Florida Environmental Health Association for sponsoring the Poster Session reception by providing refreshments.

Golden Partnership Awards

Thank you for the many excellent nominations for the Golden Partnership Awards. Golden Partnership Awards are given to recognize achievement in epidemiology and public health practice, leadership during a public health emergency, collaboration and teamwork on an outbreak investigation, and partnership and direction in moving toward excellence in public health epidemiology. The four selected winners of the 2008 awards were:

- Dr. Marsha Bertholf, The Blood Alliance, nominated by Robyn Kay, Duval CHD;
- Dr. Phil Barkley, Dr. Ronald Berry, Dr. Guy Nicolette, Sue Greishaw, Diane Pecora and the staff of the University of Florida Student Health Center, nominated by Joan Munden and Emily Wilson, Alachua CHD;
- Dr. Thomas Holt, Director and State Veterinarian, nominated by Dr. Carina Blackmore and Dr. Danielle Stanek, Environmental Health, DOH; and
- Dr. Egilda Terenzi, University of South Florida Student Health Service, nominated by Warren McDougle, Hillsborough CHD.

Congratulations to our outstanding partners!

Exhibitors

Many thanks to all the exhibitors for taking the time and effort to present at Statewide. Exhibitors allowed for direct interaction with the seminar attendees, and promoted progress toward the bureau's initiatives. The 2008 exhibits and responsible staff members included:

- Merlin - Bernard Schmidt
- Environmental Health, DOH - Carina Blackmore
- Florida Environmental Health Association (FEHA) - Ed Bettinger
- Florida Department of Health Emergency Notification System (FDENS) -Valerie Beynon
- 64D-3 - Janet Hamilton
- Behavioral Risk Factor Surveillance System (BRFSS) - Melissa Murray
- Immunization - Cathy Mellinger
- Florida Cancer Data System - Jill MacKinnon; and
- Florida Community Health Assessment Resource Tool Set (CHARTS) - Jason Hight.

Results of the evaluations of the seminar are being compiled and will be available soon. Preliminary analysis of the participants' evaluations indicates that it was a very positive experience. Bureau staff received many comments, verbally and in writing, that the seminar was well organized and had a high quality and variety of topics and presenters. Many also mentioned that this was the best Statewide Epidemiology Seminar they had attended.

In summary, this year's seminar was very successful. Planning for next year's seminar will start soon. If you are interested in being a presenter, please contact Leesa Gibson at 850-245-4409 or by email at Leesa_Gibson@doh.state.fl.us.

Florida Year-to-Date Mosquito-Borne Disease Through June 21, 2008

Rebecca Shultz, M.P.H., Caroline Collins, Danielle Stanek, D.V.M., Carina Blackmore, D.V.M., Ph.D.

During the period from January 1 to June 21, 2008, the following arboviral activity was recorded in Florida: Eastern equine encephalitis virus (EEEV), West Nile virus (WNV), St. Louis encephalitis virus (SLEV), Highlands J virus (HJV), and California encephalitis group viruses (CEV).

EEEV Activity: Positive samples from 38 horses, 44 sentinel chickens, and 28 live wild birds were received from 29 counties. EEEV was cultured from a pool of 50 *Culex salinarius* and a pool of 50 *Cx. nigripalpus*, both collected on February 13 in Volusia County and two pools of 50 *Culiseta melanura* collected on March 19 and May 7 in Flagler County. Volusia and Walton counties have each declared a mosquito-borne illness advisory due to increased arboviral activity reported in areas of their counties.

WNV/SLEV Activity: Positive samples of WNV antibody from two sentinel chickens were received from Putnam and Walton counties, and one horse from Madison County, with an onset of April 15. Flavivirus-reactive samples from two live wild birds were received from Hillsborough and Santa Rosa counties. It was not determined whether the wild bird samples were reactive specifically to SLEV or WNV.

HJV Activity: Positive samples from 14 sentinel chickens were received from eight counties. HJV was isolated from three pools of 50 *Culex nigripalpus* collected on February 22, February 26, and March 28 in Volusia County and one pool of *Cs. melanura* collected on March 19 in Flagler County.

CEV Activity: None.

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. Since January 1, 335 reports representing a total of 833 dead birds (26 crows, 37 jays, 33 raptors, and 737 others) were received from 51 of Florida's 67 counties. Please note that the 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 following web site for more information:

<http://www.doh.state.fl.us/environment/community/arboviral/index.html>. The Department of Health Disease Outbreak Information Hotline offers recorded updates on the latest medical alerts issued and surveillance information at 888.880.5782.

Rebecca G. Shultz is the Arthropod-borne Disease Surveillance Coordinator with the Bureau of Community Environmental Health, FDOH. She can be contacted at 850.245.4444 Ext. 2437, or by email at Rebecca_Shultz@doh.state.fl.us. Caroline Collins is an arbovirus program specialist with the Bureau of Community Environmental Health, FDOH. She can be contacted at 850.245.4444 Ext. 2994, or by email at Caroline_Collins@doh.state.fl.us. Dr. Stanek is a medical epidemiologist in the Division of Environmental Health, FDOH. 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 and the State Environmental Epidemiologist in the Division of Environmental Health, FDOH. She can be contacted at 850.245.4732, or by email at Carina_Blackmore@doh.state.fl.us.

Florida Influenza Surveillance Report

Kate Goodin, M.P.H., Kateesha McConnell, M.P.H.

Influenza surveillance in Florida consists of six surveillance components: 1) Florida Sentinel Physician Influenza Surveillance Network (FSPISN); 2) Florida Pneumonia and Influenza Mortality Surveillance System;

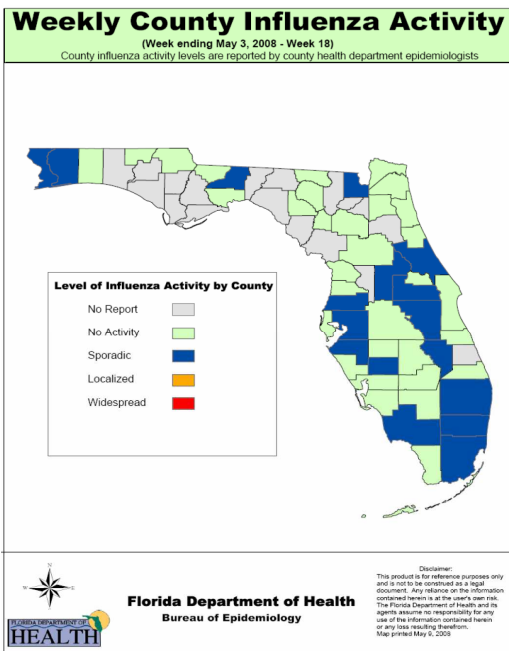
3) State laboratory viral surveillance; 4) County influenza activity levels; 5) Notifiable Disease Reports; and 6) Influenza or influenza-like illness (ILI) outbreaks.

During reporting weeks 19 and 20, there was no statewide influenza activity reported, according to the CDC influenza activity criteria. The proportion of patient visits for ILI as reported by the FSPI SN averaged 0.51% for these two weeks and this is below the state threshold for moderate activity of 1.75%. There were no influenza outbreaks reported around the state. Since September 30, 2007, Florida Department of Health Laboratories have tested a total of 787 specimens for influenza viruses and 440 (56%) were positive. Among the 440 influenza viruses, 369 (84%) were influenza A viruses and 71 (16%) were influenza B viruses. During weeks 19 and 20, no counties reported widespread or localized activity. Several counties reported sporadic activity and the majority of counties reported no activity.

Week 20 is the end to the official influenza season. Weekly reports distribution will resume at the start of the next influenza season. Influenza activity will continue to be monitored through the FSPI SN and laboratory surveillance. Although influenza activity is markedly decreased in the summer months, it is still possible for outbreaks and sporadic cases to occur. Counties that have increased reports of ILI or identified ILI outbreaks are still encouraged to obtain clinical specimens from those patients.

The full report for each report week during the 2007-2008 influenza season is available on EpiCom and on the Bureau of Epidemiology website: http://www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/reports.htm.

The 2008-2009 influenza season will begin on September 28, which is the beginning of CDC surveillance week 40. At that time, weekly reports will be once again be distributed to all of our epidemiology staff and other public health partners.



Kateesha McConnell is the Florida Epidemic Intelligence Service Fellow with the Volusia County Health Department. She can be contacted at 386.274.0642, or by e-mail at Kateesha_McConnell@doh.state.fl.us. Kate Goodin is a surveillance epidemiologist with the Bureau of Epidemiology, Florida Department of Health. She can be contacted at 850.245.4444 Ext. 2440 (office), 850.922.9299 (fax), or by email at Kate_Goodin@doh.state.fl.us

Florida Environmental Health Association (FEHA) Announces Call for Posters at Annual Education Meeting and Trade Show in Palm Beach Gardens



The Florida Environmental Health Association (FEHA) is actively seeking posters for its 60th Annual Education Meeting and Trade Show, August 11-15, 2008, at PGA National Resort and Spa, Palm Beach Gardens, Florida. Poster presentations provide a unique opportunity to share scientific research and findings with colleagues and conference participants in an open and relaxed environment. Students are strongly encouraged to submit posters on any environmental public health topic or issue.

Poster judging will occur between 5:00-6:00 p.m. on Wednesday, August 13. There will be three awards given for best posters. Posters will be reviewed for relevance to environmental public health research or environmental public health practice, as well as for content and organization.

Requirements

The poster board must be three feet tall by four feet wide. Electricity and/or internet connections will not be provided. People displaying posters must at least be registered the day of poster display. People presenting the poster are encouraged to supply their own easels or tabletop display boards and handouts of their poster.

Applicants will be notified of the acceptance of their poster after their registration for the conference is confirmed. A limit of 25 posters will be chosen for display and should be submitted by **July 15, 2008** via email or regular mail to the following:

greg_ Kearney@doh.state.fl.us
Greg Kearney, Dr.P.H., M.P.H., RS (FEHA Academic Committee Chair)
Florida Department of Health, Division of Environmental Health
4052 Bald Cypress Way, Bin A08
Tallahassee, FL 32399

If you would like more information on the Annual Education Meeting, or would like to submit a poster abstract, please visit the FEHA website at <http://www.feha.org>.

Dr. Kearney is an Environmental Epidemiologist with the Florida Department of Health, Division of Environmental Health. For further information you may contact him at 850.245.4577.

Just Published

Mortality Surveillance: 2004 to 2005 Florida Hurricane-Related Deaths. American Journal of Forensic Medicine & Pathology. 29(2):148-153, June 2008.

Ragan, Patricia Ph.D.; Schulte, Joann D.O., M.P.H.; Nelson, Stephen J. M.D.; Jones, Ken T.

Upcoming Events

Bureau of Epidemiology Monthly Grand Rounds

Date: Last Tuesday of each month

Time: 10 a.m.-11 a.m.

Location: Building 2585, Room 310A

Dial-In Number: 877.646.8762 (password: Grand Rounds)

Upcoming Topics:

July 29 – “Pain Clinic Staph Outbreak Investigation in Leon County”, presented by Catherine Kroll, M.P.H., FL EIS Fellow

August 26 – “Gene Sequencing Methods Allow for the Surveillance and Characterization of Strain Type of Norovirus Infection in Outbreaks of Gastroenteritis”, presented by 2008 Statewide Poster Winner Brittany Caddick, A.P.H.L.-CCID/CDC EID Fellow

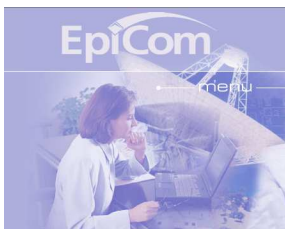
September 30 – “Fetal Death Cluster in Bay County”, presented by Bill Sappenfield, M.D., M.P.H. and Sohyun Park, Ph.D., M.S., R.D./K.D.A.

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/freqrpt.asp>. Counts can be displayed by disease, diagnosis status, county, age group, gender, or time period.

This Month on EpiCom

Christie Luce



EpiCom is located within the Florida Department of Health’s Emergency Notification System (FDENS). The Bureau of Epidemiology encourages *Epi Update* readers not only to register on the EpiCom system by emailing the Florida Department of Health Emergency Notification System Helpdesk at FDENS-help@doh.state.fl.us, but to sign up for features such as automatic notification of certain events. 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 agencies during emergency situations. Following are selected recent postings:

- Outbreak of GI illness in a correctional facility, Santa Rosa County
- Influenza A outbreak in a correctional facility, Miami-Dade County
- Sporadic CJD case, Brevard County
- Investigation of suspect hepatitis E, Sarasota County
- Bat tests positive for rabies, Miami-Dade County
- Suspected foodborne outbreak at a hotel, Pinellas County
- Listeriosis confirmed in mother and infant, Volusia County
- Salmonella Typhi in a person with history of travel to India, Alachua County
- Meningococcal disease associated with a daycare center, Miami-Dade County
- Gastroenteritis at a homeless shelter, Broward County
- Probable meningococcal meningitis in an airline passenger, Palm Beach County
- Two separate Ciguatera outbreak investigations, Miami-Dade County

- Possible foodborne outbreak at a wedding reception, Miami-Dade County
- Lead Paint Standard violations and recalls online:
http://www.doh.state.fl.us/environment/community/lead/The_Lead_Alert_Network.htm.

Christie Luce is the Surveillance Systems Administrator for the Bureau of Epidemiology. She can be contacted at 850.245.4444 Ext. 2450, or by email at Christie.Luce@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: http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/index.html. The current issue of Epi Update is available online: http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2008/MayJune2008EpiUpdate.pdf. For submission guidelines or questions regarding Epi Update, please contact Gail Morales, Communications Coordinator at 850.245.4444 Ext. 2401, or by email at Gail.Morales@doh.state.fl.us.

