Epi Update

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Foodborne Outbreak Investigation at a Resort in Clearwater Pinellas County, May 1-4, 2008

Lea Wansbrough, M.P.H. and Mike Friedman, M.P.H.

Introduction and Background

On May 6, 2008 the Pinellas County Heath Department (PCHD) was contacted by a human resources staff member of a local resort in Clearwater. The staff member reported that two separate groups of approximately 40 conference attendees each had members who complained of gastrointestinal (GI) symptoms during and directly after their visit to the hotel. In addition, 11 staff members had been identified as having recent GI illness, though none were food workers. Most of the attendees arrived at the hotel on May 1, 2008. The illness onset for both groups was reported to be May 3 and 4, 2008. Initial discussions with the resort identified six meals and a snack that were consumed prior to illness onset. A menu of food and beverages served at the conferences, as well as a list of sick employees during the period in question, were obtained from the hotel.

Methods

The Division of Environmental Health and Preparedness (EH&P) staff conducted a joint inspection with the Department of Business and Profession Regulation (DBPR) on May 7, 2008. Inspectors documented temperatures of foods, inspected equipment, observed food handling and hygiene practices, and assessed compliance with established food codes. No food was available for testing. Complete menus of all meals served in the banquet halls for the two groups were obtained.

At the same time as the inspection, interviews were conducted with all of the self-reported ill employees who were available. Follow-up calls were made to any unavailable employees. The interviewers collected symptoms, onset, duration of illness, job duties, and if any family members or close contacts were ill around the same time. Stool samples were also requested of the employees. Only one sample was ultimately obtained.

A standard questionnaire was developed to collect demographic information, clinical data, travel, and food histories. Complete lists of conference attendees were received from each group. Interviews began for Group B on May 7 and Group A on May 8. A case was defined as any person or their guest attending the Group A or B conference, who ate at least one catered meal, and had vomiting and/or diarrhea between May 2 and May 4.

Stool specimen testing was discussed and offered to conference attendees interviewed. Data collected was entered and analyzed using Epi Info 3.3.2.

Results

A total of 90 conference participants were contacted for interviews, and 73 people responded, for an 81.1% response rate. Ten of the 11 (90.9%) employees, 27 of 40 (67.5%) in Group A, and 36 of 39 (92.3%) of Group B participated. Group A had 13 respondents who met the case definition for a 43.3% attack rate. Group B had 16 cases for an attack rate of 44.4%.

The most commonly reported symptoms for both groups were nausea, diarrhea, abdominal pain and vomiting (see Table 1). The median onset of the symptoms is unclear due to the potential for multiple exposures to the causative agent. One stool sample submitted through the Florida Department of Health Bureau of Laboratories tested positive for Norovirus G1 from a hotel employee. The employee's onset of symptoms was on May 3. None of the ill conference attendees contacted agreed to submit stool specimens.

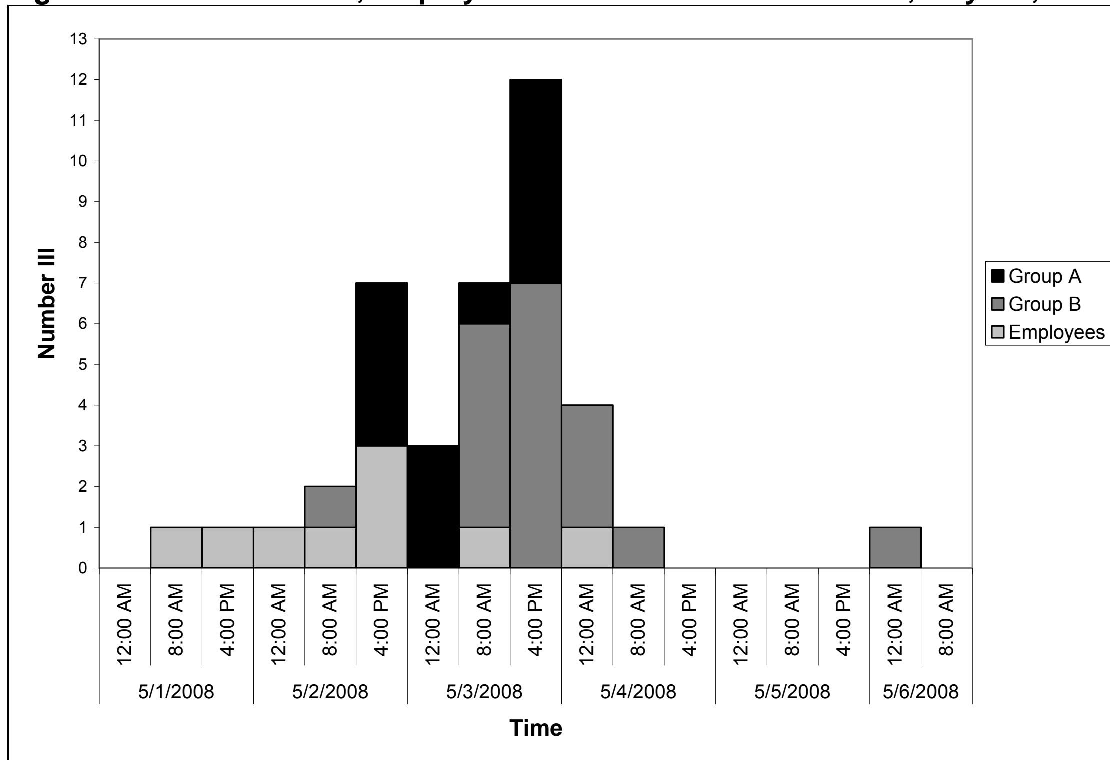
Table 1. Frequency of Symptoms at Resort, May 1-4, 2008, Pinellas County

	Group A		Group B		Combined Groups	
Symptoms	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Nausea	10	76.9%	16	100.0%	26	89.7%
Diarrhea	11	84.6%	12	75.0%	23	79.3%
Abdominal Pain	9	69.2%	14	87.5%	23	79.3%
Vomiting	8	61.5%	12	75.0%	20	69.0%
Fatigue	8	61.5%	12	75.0%	20	69.0%
Chills	4	30.8%	11	68.8%	15	51.7%
Headache	6	46.2%	8	50.0%	14	48.3%
Muscle Aches	5	38.5%	9	56.3%	14	48.3%
Fever	4	30.8%	6	37.5%	10	34.5%
	n=13		n= 16			

The median reported duration of illness for both groups combined was 36 hours with a range of 12-99 hours and a standard deviation of 24 hours. None of the cases sought medical attention, and no stool samples were submitted. No members of Group A or B reported having a similar illness or having close contact with symptomatic people within the two weeks prior to arriving at the hotel.

The illness onset times of the Group A and B attendees and sick employees was obtained and represented on a combined chart (Figure 1). The chart shows that the first people reporting illness were the employees beginning on May 1. There was at least one employee ill before either conference began.

Figure 1. Onset of Illness, Employees and Conference Attendees, May 1-6, 2008, Pinellas County



Based on results from the analytical study, seven items were identified that may have been contaminated at four different meals: sliced tomatoes, cheese, walnuts, pears, cherry tomatoes, grouper, and sausage (Table 2). These items were then evaluated using all available epidemiological data to narrow down the items that were likely to have caused the illness.

In Group A cherry tomatoes had the highest association and strongest statistical significance with the smallest p-value. People in Group A who ate the tomatoes were 27.5 times more likely to become ill than those who did not eat tomatoes. Additionally, ten of the 13 ill people reported eating the cherry tomatoes, two people couldn't recall, and only one person reported not eating the tomatoes. The walnuts and pears were served in the same salad, such that the association is likely because people who had eaten the contaminated tomatoes were likely to have eaten the walnuts and pears as well.

In Group B the only item that was found to have an association with illness and a statistically significant value was the sausage served at breakfast. However, only 12 of the 16 ill people (75%) reported eating it, while the other four ill reported not eating sausage.

Table 2. Food Items with High Association with Illness by Attendee Group, May 1-4, 2008, Pinellas County

	Group A					Group B			
Food Item	**RR**	**95% CI**		**p-value**		**RR**	**95% CI**		**p-value**
Lunch: Deli Brunch, Thursday									
Sliced Tomatoes	18.00	1.50	216.63	0.02					
Dinner: Cocktail Party and Clam Bake, Thursday									
Cheese	6.50	1.00	42.17	0.05					
Walnuts	5.33	0.97	29.39	0.03					
Pears	5.33	0.97	29.39	0.03					
Cherry Tomatoes	27.50	2.62	289.15	0.0008					
Lunch: Italian Buffet, Friday									
Grouper	24.00	1.11	518.61	0.05					
Hot Buffet Breakfast, Saturday									
Sausage Links						3.00	1.19	7.56	0.005

During the facility inspection, the EH&P investigator noted "the facility is very old and the general physical condition of the food preparation and storage areas is marginal…" A full renovation is scheduled. Several significant violations were observed during the environmental field visit. Several sinks, including a hand-washing sink, were without hot water. One reach-in cooler had a temperature of 50°F, and foods were transferred to another cooler per DBPR request. Additionally, employees were preparing fruit without gloves; gloves are required for ready-to-eat food items. The quaternary ammonium sanitizer in the three-compartment sink was at 100 ppm, which is only one-half the recommended concentration. A follow-up visit was scheduled by DBPR due to the critical violations identified.

Interviews with hotel employees identified that employees began becoming ill on May 1 and continued through May 4. None of the ill employees worked in the kitchen or handled food. Most employees interviewed did eat in the employee cafeteria. The food in the cafeteria is prepared in the main banquet kitchen, and some foods are prepared at the same time as the banquet hall catering items. The hotel has a total of 318 employees; 3% were affected by the illness.

Analysis and Recommendations

Eating several of the food items served at the conference had an association with illness, though the cherry tomatoes were the most likely implicated food vehicle. The illness onset times of the conference Groups A and B were clustered within a 36-hour period, which is consistent with point-source norovirus outbreaks. Since several implicated food items were identified between the two groups, it is likely that more than one instance of contamination occurred. Concurrently, some person-to-person transmission also occurred; first with the employees, and also a possible secondary case among attendees was identified (Figure 1).

The presence of a norovirus-positive resort employee is further evidence that Norovirus G1 was present at the hotel at the time of the outbreak. Due to the fact that employees with similar symptoms reported illness on the two days prior to the first cases from Groups A and B, it is likely that the employees of the hotel were the

source of the infection. No ill food workers were identified during the course of the investigation. It is possible that an ill food worker did not disclose his illness or that an ill food worker was asymptomatic and was involved in the food preparation. In addition, no conference attendees reported similar GI illnesses or contact with symptomatic people for the two weeks prior to the conference, which further supports the hypothesis that the illness originated in the hotel.

Recommendations to prevent future foodborne illness include increasing food worker hygiene education and reviewing the facility's ill worker policy. The glove-use policy should be followed in accordance to DBPR's established practices. Good handwashing practice can reduce the spread of norovirus, particularly from those who may be asymptomatic. Ensuring that symptomatic workers remain at home during acute illness is necessary to prevent food contamination, and also to prevent other employees from becoming ill and missing work. A complete remodeling of the kitchen facility has been scheduled by the resort, which should address the identified condition of the food preparation and storage areas.

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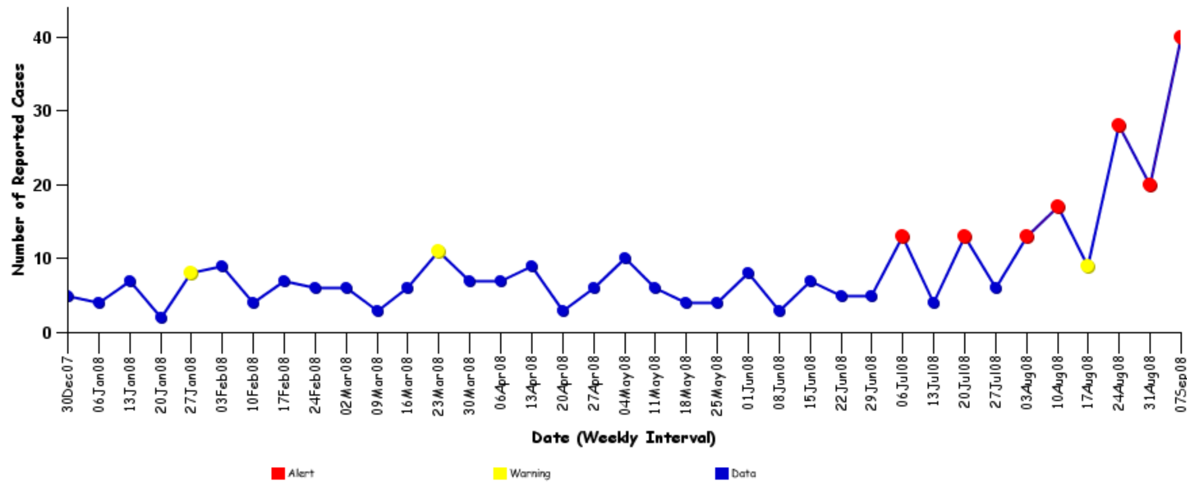
State Syndromic Surveillance System (ESSENCE) Update: Recent Addition of Merlin Data

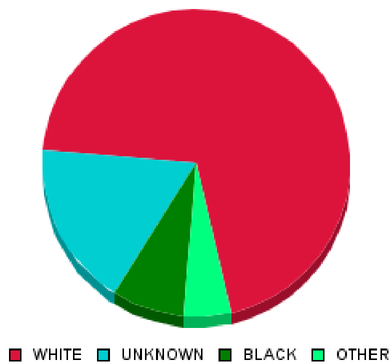
Aaron Kite-Powell, M.S.

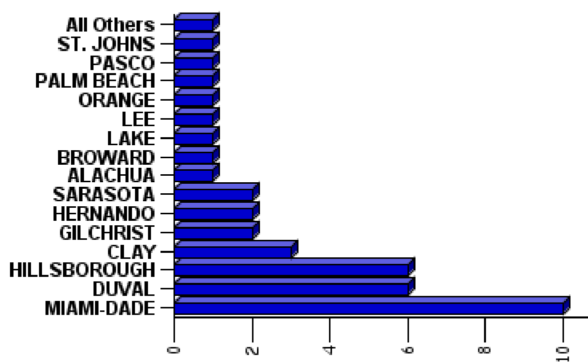
The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) system has gradually expanded to include more hospitals and additional data sources over the last year. As of September 18, 2008, 74 hospitals report emergency room data on a daily basis, and there are a number of others close to participating. This represents approximately 50.2% of all emergency room visits in Florida for 2007.

Since last spring, the Bureau of Epidemiology has been working with the ESSENCE system managers at the Johns Hopkins University Applied Physics Laboratory on adapting ESSENCE to include data feeds from Merlin and the Florida Poison Information Centers. The integration of these data sources into one system will allow the user to perform basic descriptive epidemiology on these data in one system. Some additional testing is still being performed on the Florida Poison Control Centers data, and so it is not yet broadly available. However, the notifiable disease module of ESSENCE (called ESSENCE-ND) has completed testing and is now available for use by Florida Department of Health epidemiologists at the state and county level. The Merlin variables included in ESSENCE-ND are very similar to what is available in the Merlin epi-curve analysis function. ESSENCE-ND provides users the ability to describe the data by person, place, and time. Key features include: graphs, tables, and time series analyses that automatically run on the Merlin data to determine whether the observed number of reported cases is greater than expected. Some examples of the graphs available are provided below and highlight the recent seasonal increase in cryptosporidiosis cases reported in certain areas of the state. Another key feature is the ability to map Merlin data by county or zip code.

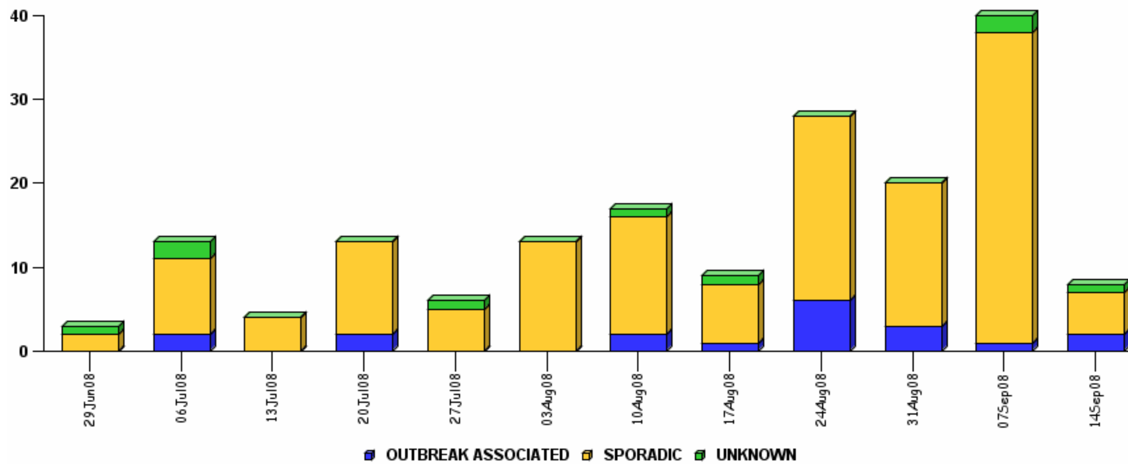
Please contact Aaron Kite-Powell 850.245.4444. Ext. 2638; Aaron_Kite-Powell@doh.state.fl.us at the Bureau of Epidemiology if you have any questions, or if you need assistance recruiting hospitals to participate in the syndromic surveillance portion of ESSENCE.



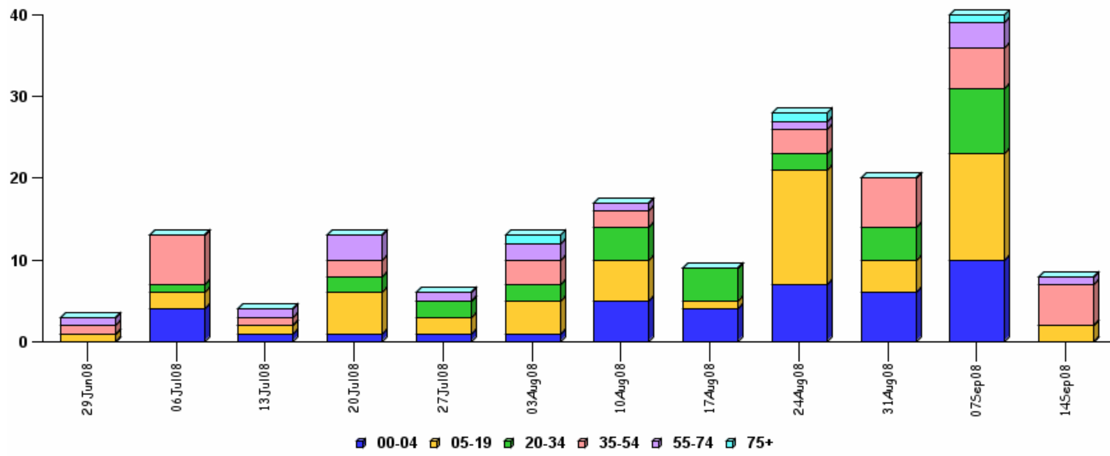




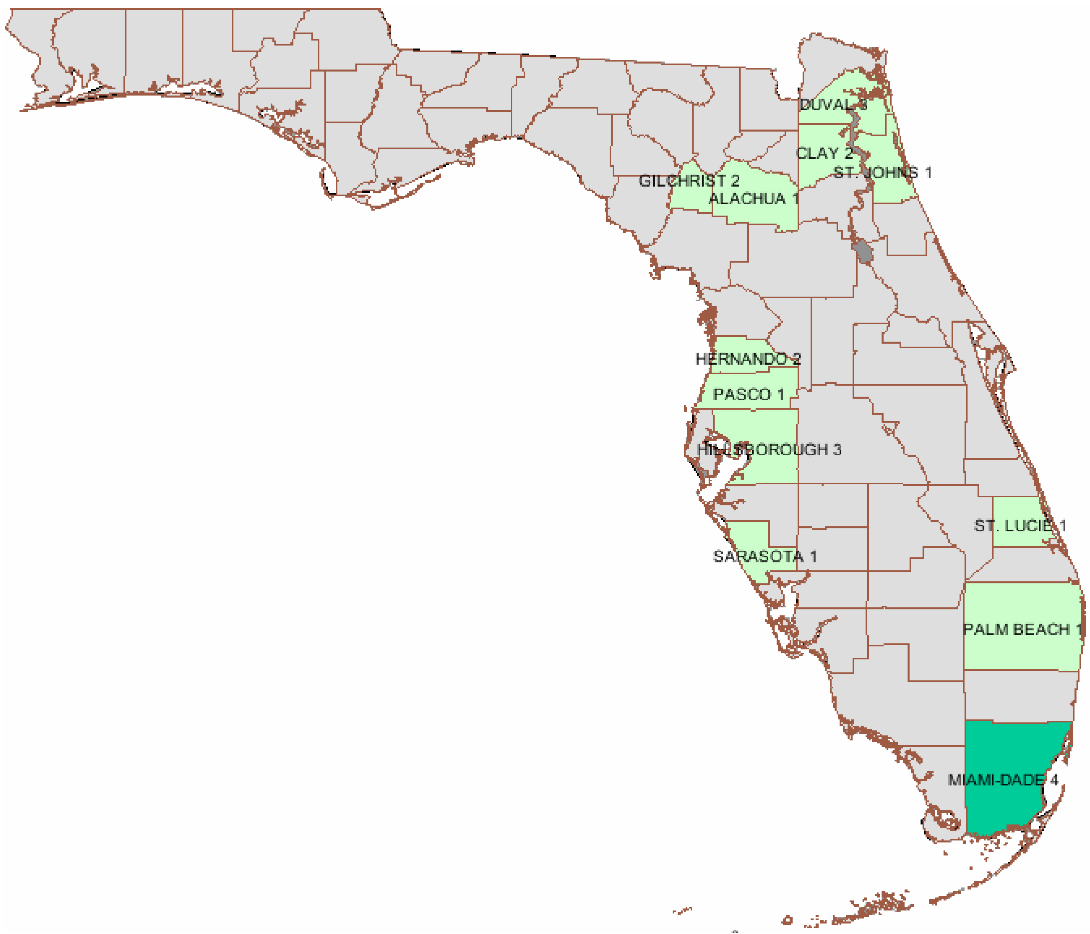
Reported Cryptosporidiosis Cases by Outbreak Status, Florida, 7/2008-9/2008



Reported Cryptosporidiosis Cases by Age Group, Florida, 7/2008-9/2008



Map of Reported Cryptosporidiosis Cases, 9/10/08-9/11/08, Florida.



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Norovirus Illness Cluster Associated with a Local Country Club, Brevard County, April 2008

William Barry Inman, B.A., B.S., C.I.C., C.H.E.; Dean Bodager, R.S., D.A.A.S., M.P.A.; and Sandra Rappel, R.N., B.S.N.

Introduction

On April 13, 2008 the Brevard County Health Department (BCHD) was notified of alleged GI illnesses that occurred in a group of people who attended multiple wedding events on April 11 and 12, at a country club (Facility A) in Titusville, Florida. Initial reported details indicated that the wedding events were attended by as many as 160 people. Initial reported symptoms included vomiting and diarrhea in several people following the wedding. The Brevard County Foodborne Epidemiology team initiated an investigation of this GI illness outbreak on April 14.

Methodology

The BCHD's Epidemiology Program staff obtained information on food workers, foods provided, and a schedule of events from Facility A's owner. Initial interviews of available wedding party members were conducted to obtain additional exposure and cohort information. A partial list of all wedding event attendees was provided by one of the bride's family members.

A custom questionnaire was administered to all those who responded to telephone inquiry and attended wedding events on April 11 and 12. A similar questionnaire was used for interviewing the food workers at Facility A. Surveillance was also conducted to ascertain similar illnesses with exposure to Facility A external to this cohort. No food samples were available for analysis. Two clinical stool specimens from two cases (one primary and one secondary) were obtained on April 21, in coordination with the DeSoto CHD and the Southwest Florida Regional Environmental Epidemiologist. These samples were analyzed for bacterial and viral pathogens by the Bureau of Laboratories (BOL)-Jacksonville.

A case was defined as a person who reported either vomiting or diarrhea within three days of attending all or part of the events held in conjunction with a wedding on April 12, 2008 held at Facility A in Titusville, Florida. Epi-Info 6.0 (Version 3.3.2, February 9, 2005) was used to analyze the collected data. An inspection of Facility A's food preparation areas was performed by the DBPR on April 15. On April 24 the BCHD and the Department of Health (DOH) completed a risk assessment of the statistically-implicated food products at the facility. Interviews of all food workers were also performed by three interviewers during this visit.

Results

A total of 39 attendees of the April 12 wedding events at Facility A consented to a complete interview. Of these, 24 (61.5%) reported GI illness matching the case definition. Illness onsets ranged from April 11 at 6:30 p.m. to April 14 at 12:00 p.m. Two ill individuals did not meet the case definition and were considered as well in the bivariate analysis. One secondary case reported an onset of April 16 at 3:00 p.m. This secondary case was a spouse of an ill person with an onset on April 12. This person attended and consumed food at the golf event, rehearsal dinner, and wedding reception. Another person reported an onset of April 10 at 8:00 p.m. This person attended and consumed food at the golf event and rehearsal dinner on April 11 and only attended the wedding on April 12. Fifteen (62.5%) of the reported illness onsets occurred on April 12.

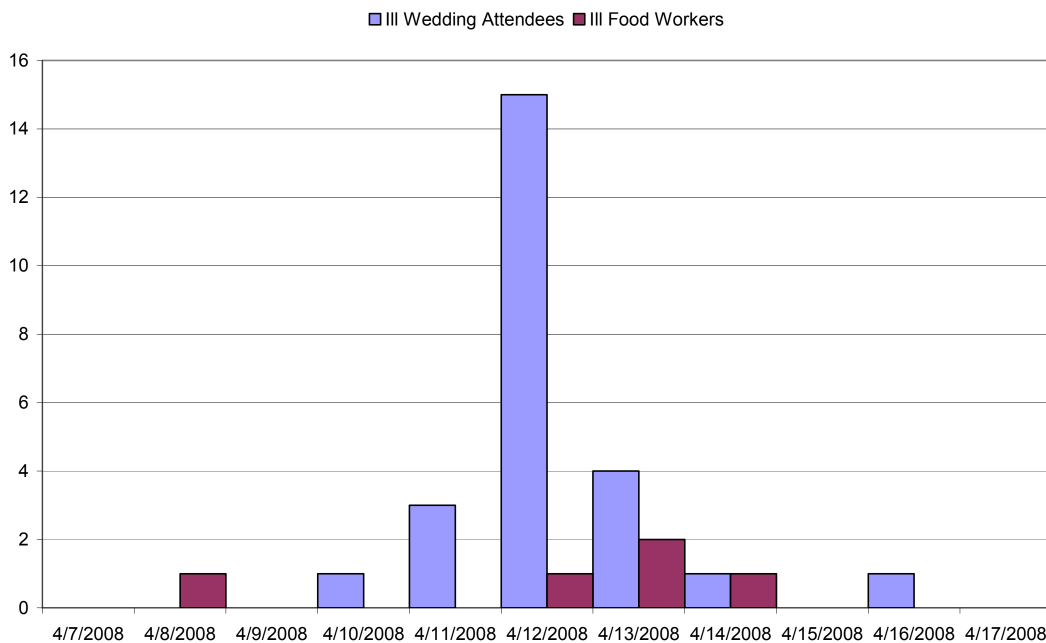
Predominant symptoms described by ill people were diarrhea, nausea, vomiting, fatigue, and weakness. The number of diarrheal episodes in a 24-hour period reported by eight individuals ranged from two to 22 with a median of 8.1 episodes. Table 1 illustrates the symptoms in detail. Two ill individuals were treated in an emergency room by physicians. Duration of the illnesses ranged from eight to 240 hours with a median of 48 hours. The age of the ill people ranged from 14 to 69 years with a median of 42.5 years. Fifteen (62.5%) ill people were female. No other similar illnesses outside of this group were reported to any CHD in the area.

Table 1. Frequency of Symptoms, Gastrointestinal Illness Cluster, Brevard County, April 2008.

	Number	%
Diarrhea (mean=7.9 episodes/24 hours)	20	83.3
Watery	7	35.0
Mucous	2	10.0
Bloody	0	0
Nausea	18	75.0
Vomiting	18	75.0
Weakness	13	54.2
Fatigue	12	50.0
Abdominal Pain	12	50.0
Abdominal Cramps	11	45.8
Headache	4	16.7
Drowsy	4	16.7
Fever	3	13.0
Muscle Aches	3	12.5
Dizziness	3	12.5
Chills	2	8.3

N=24

Fifteen food workers from Facility A were interviewed on April 24 with five describing GI illness. All five reported diarrhea and vomiting, with one describing weakness. Onset dates ranged from April 8 to 14. Four reported working on April 11 and four worked on April 12. Duration ranged from five hours to three days. One food worker (onset April 8) reported working while experiencing some symptoms (worked while ill on April 10 and 11). Two others described having sudden onsets (April 13) of illness while working. The two with sudden onsets immediately went home. One of the ill food workers also reported an ill person in their household with an onset of April 7. In addition, two well food workers reported ill household members with GI illness (onsets April 8 and 15). None of the ill food workers consumed food served at the brunch, golf lunch, or wedding reception. Five well food workers reported eating food from the wedding reception and two from the brunch. Chart 1 depicts the reported illness onsets of food workers and wedding cohort by day.



On April 30 the Bureau of Laboratories reported a positive Norovirus Type G2 on a single stool specimen that had been obtained on April 21 from a case with a reported onset of April 14 at 12:30 p.m. The sample was analyzed using real-time Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) for Norwalk-like virus.

Wedding activities included a bridal brunch on April 11, a groom's golfing event including lunch on April 11, a rehearsal dinner at a local restaurant on April 11, and a wedding reception on April 12. Other than the rehearsal dinner, all foods for these events were prepared by Facility A. The foods for the bridal brunch and the wedding reception were served only to those who attended these events while the lunch for the golfers was served from a menu available to all Facility A attendees that day in the lounge. Table 2 describes the results of the bivariate analysis of these events. Those who ate at the bridal brunch were 1.88 times more likely to become ill as those who did not eat at this function (p=0.022). Further analysis shows that consuming a muffin at the bridal brunch was a statistically significant predictor of illness with a risk ratio of 3.56 (p=0.024 Fishers Exact). Calculated incubation periods of the ill people assuming exposure at the bridal brunch ranges from 6.75 to 51 hours with a median of 28 hours.

Table 2. Meal Exposures Attack Rate Table, GI Illness Cluster, April 11-12, 2008, Brevard County, Florida

Food	Number of people who ate the food				Number of people who did not eat the food				Risk Ratio	p-value
	Ill	Well	Total	% Ill	Ill	Well	Total	% Ill		
Rehearsal Dinner	14	10	24	58.3	10	5	15	66.7	0.87	0.60
Bridal Brunch	17	5	22	77.3	7	10	17	41.2	1.88	0.022
Lounge after Golf	4	7	11	36.4	20	8	28	71.4	0.51	0.049*
Wedding Reception	11	13	24	45.8	13	2	15	86.7	0.53	0.011

* Fisher Exact

Relevant observations by the Florida DBPR of the food preparation facility at Facility A on April 15 included a hand-wash sink utilized to dispose of ice in the bar food preparation area. Utensils and gloved hands were used to handle ready-to-eat food. On April 24 the BCHD investigation team observed gloves on all food workers in the food preparation area all the time they were onsite. All foods for the wedding events at Facility A on April 11 and 12 were prepared on April 11. The plates for the bridal brunch were plated primarily by the executive chef with assistance from a line cook. Foods included quiche, fruit kabobs, salad, and muffins. The muffins were placed on the plate by the food worker who was experiencing diarrheal illness while working on April 11. The food worker left work right after completing this task. It is not known if this worker was wearing gloves and/or whether they had followed appropriate hand washing procedures prior to assisting with plating the foods for the bridal brunch. The muffins are made on-site from frozen batter. The batter is scooped from the container into muffin trays. The muffins are baked until done, cooled, and then placed on the plates just prior to being served.

Conclusions

This cluster of GI illnesses is associated with events at the April 11 and 12 wedding events that occurred at Facility A in Titusville. The majority of the reported illness onsets are clustered in a 24-hour period that strongly suggests a common source. The presence of Norovirus G2 in a stool sample from a patient who met the case definition confirms norovirus as the agent causing this illness cluster. Described symptoms are compatible with a norovirus illness.

The bivariate analysis of the available data indicates that consuming food, specifically the muffin, at the bridal brunch is a predictor of illness. The calculated incubation period range and median for this exposure for the majority of the cases are consistent with that of norovirus. The route of transmission of norovirus particles to

the majority of the cases in this illness cluster most likely occurred during the final preparation of the plates for the bridal brunch, specifically the placing of the muffins on the plate by an infectious, symptomatic food worker. The presence of multiple ill food workers in the food service facility with illness onset after the bridal brunch is most likely due to person-to-person transmission or person-to-fomites-to person transmission. The presence of an ill person in the wedding cohort with an illness onset reported on April 10 may also be a source of person-to-person transmission, particularly to those ill people who did not report consuming the food or attending the bridal brunch. Norovirus is known to be easily transmitted via food, water, or person-to-person. The observed environmental conditions of the food preparation facility at Facility A were somewhat unremarkable; however specific hand washing and glove-use procedures are unknown for April 11. The absence of reported illnesses exterior to this group could indicate that contamination occurred only for the food product made for the group on April 11, would result of the passive nature of foodborne disease reporting, or would indicate an intermittent contamination scenario.

Recommendation

It is imperative that food service facilities constantly and vigorously promote and insist on proper hand washing procedures by food workers during all phases of food preparation, display, and storage. Proper hand washing procedures must be emphasized and used even when gloves are used by food workers to prepare foods. This includes maintaining hand-wash sinks and providing soap and drying devices continuously. Ill food workers must be excluded from food preparation activities. Ensuring properly cleaned and sanitized food contact surfaces and proper temperature controls also greatly contribute to the elimination or reduction of viral particles on fomites or in food products. The possibility that members of the wedding cohort and food worker household members may have contributed to a small number of cases points to a need to educate the general public on the necessity of proper hand washing techniques, especially when one has a diarrheal illness.

Source

Centers for Disease Control and Prevention (CDC) Website,
http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm (Accessed February 13, 2008).

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Factors Associated With Current Smoking Among Floridians With Diabetes

Tammie M. Johnson, M.P.H., Dr.P.H.

This report examines behaviors among Florida adult current smokers with diabetes. Independently, diabetes and smoking have many adverse health effects. Tobacco use is the leading avoidable cause of disease and premature death in the United States. Among people with diabetes, the adverse cardiovascular health effects from smoking are exacerbated because diabetes is also associated with cardiovascular disease. Among those with diabetes, smoking decreases the amount of oxygen reaching tissues, increases cholesterol levels, increases the likelihood of having nerve damage, increases blood pressure, increases blood glucose levels and doubles the risk of cardiovascular disease among those with diabetes. Overall, adults with diabetes who smoke are three times more likely than their non-smoking counterparts to die from cardiovascular diseases.

Methods

The data used for this report are from the 2007 Florida Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an on-going, cross-sectional, population-based telephone survey of non-institutionalized adults 18 years of age and older in randomly selected households in the United States and the US territories. The BRFSS elicits from respondents information pertaining to a variety of disease states, risk factors, preventive health practices, and emerging health issues. In addition, demographic and socioeconomic data are collected. BRFSS data are collected monthly through telephone interviews and aggregated and weighted annually by the

Centers for Disease Control and Prevention (CDC) Behavioral Sciences Branch. Adults 18 years of age and older are randomly selected from eligible households for interview.

The 2007 Florida BRFSS had nearly 40,000 respondents. A person was defined as a diabetes case if they answered “Yes” to the following question: “Have you ever been told by a doctor that you have diabetes?” Women that answered “Yes – but only told during pregnancy” and respondents indicating they had been told they have pre-diabetes were not included in this definition. The BRFSS does not discern whether a person has type 1 or type 2 diabetes. A person was defined as a current smoker if they indicated they smoked at least 100 cigarettes in their lifetime and smoked on some or all of the 30 days prior to survey administration.

The prevalence of current smoking among those with diabetes was significantly less than smoking rates among those without diabetes (19.7%, p=0.00). Overall, 15.7% of Florida adults with diabetes were current smokers. Table 1 shows the prevalence of current smoking among adults with diabetes by the socio-demographic variables listed. The prevalence of current smoking among those with diabetes did not vary significantly by sex, race/ethnicity, or education level. Smoking rates among those with diabetes in the 65 years of age and older group were significantly less than those in the younger age groups (age 18-44 p=0.00; age 45-64 p=0.00). Overall, 8.6% of those aged 65 years and older currently smoked. About one-in-four adults with diabetes aged 18-44 years currently smoked and about one-in-five adults with diabetes aged 45-64 years currently smoked. Adults with diabetes who earned $50,000 or more per year had a current smoking prevalence rate 39% lower compared to those earning less than $25,000 per year (p=0.01). The prevalence of current smoking among adults with diabetes who were married or living as an unmarried couple was 42% lower than their unmarried/uncoupled counterparts.

Table 1. Percentage of Adult Current Smokers with Diabetes, by Sex, Race/Ethnicity, Age Group, Education level, Annual Income, and Marital Status, 2007 Florida BRFSS.

		Percent	95% CI
All		15.7	13.5-18.2
Sex	Male	17.0	13.7-21.0
	Female	14.3	11.6-17.6
Race/Ethnicity	Non-Hispanic White	15.7	13.2-18.5
	Male	17.1	13.3-21.8
	Female	13.9	11.3-17.1
	Non-Hispanic Black	16.6	10.2-25.9
	Male	16.6	7.2-33.7
	Female	16.6	9.0-28.7
	Hispanic	13.6	8.0-22.1
	Male	17.1	8.7-30.7
	Female	9.9	4.1-22.2
Age Group (Yrs.)	18-44	25.4	17.1-36.0
	45-64	20.9	17.1-25.2
	65+	8.6	6.3-11.7
Education	<High School (HS)	22.3	15.2-31.3
	HS / < 4 Yrs. College	14.4	11.1-18.6
	4+ Years College	14.7	12.0-18.0
Annual Income	< $25,000	19.4	15.3-24.4
	$25,000 - <$50,000	16.6	12.7-21.5
	$50,000+	11.9	8.4-16.6
Married or Unmarried Couple	Yes	13.5	10.9-16.5
	No	19.2	15.3-23.8

To gain a better understanding of the associations between being a current smoker and the demographic variables listed in Table 1, logistic regression models were constructed to quantify these associations. When constructing the logistic models for this analysis using the variables listed in Table 1, only three variables were

statistically significant: race/ethnicity, age group, and income. To increase the sample size for comparison, for this analysis non-Hispanic blacks and Hispanics were grouped into one race/ethnic category and referred to as “NH black/Hispanic”. Table 2 shows the results from the logistic regression analysis.

Table 2. The Odds (likelihood) of Being a Current Smoker among Adults with Diabetes, Controlling for Race/Ethnicity, Age Group, and Income, 2007 Florida BRFSS

		All		Non-Hispanic Whites		NH Black/Hispanic	
		OR	CI	OR	CI	OR	CI
Race/Ethnicity	Non-Hisp. White	--	--	--	--	--	--
	NH Black/Hispanic	0.6	0.3 - 0.9	--	--	--	--
Age Group (Yrs.)	18-44	4.5	2.2 – 9.0	5.9	2.9 – 12.0	2.2	0.5 – 8.9
	45-64	4.0	2.3 – 6.7	5.8	3.7 – 9.0	1.2	0.4 – 3.7
	65+	--	--	--	--	--	--
Annual Income	< $25,000	2.9	1.7 – 4.7	2.3	1.3 – 4.0	14.7	4.2 – 51.5
	$25,000 - <$50,000	1.9	1.1 – 3.1	1.8	1.1 – 3.2	6.8	1.8 – 25.2
	$50,000+	--	--	--	--	--	--

OR = Odds Ratio; CI = 95% Confidence Interval; NH = Non-Hispanic

The likelihood of being a current smoker among adults with diabetes did not vary significantly by sex, education, or marital status; therefore, these variables were removed from the logistic regression model. The likelihood varied significantly by race/ethnicity, age group, and income, when controlling for all three variables. However, the magnitude of the likelihood of being a current smoker by age group and income varied by the revised race/ethnic categories.

Overall, controlling for race/ethnicity, age group, and income, NH black/Hispanic adults with diabetes were 40% less likely to be current smokers compared to non-Hispanic whites. Adults with diabetes in the 18-44 years age group were 4.5 times and those in the 45-64 years age group were four times more likely than their counterparts aged 65 years and older to be current smokers. Those earning less than $25,000 and those earning $25,000 to less than $50,000 per year were 2.9 and 1.9 times, respectively, more likely than those earning $50,000 or more per year to be current smokers.

Among non-Hispanic white adults with diabetes, those aged 18-44 and the 45-64 years age groups were nearly six times more likely than those aged 65 years and older to be a current smoker. In addition, those earning less than $25,000 per year were 2.3 times and those earning $25,000 to less than $50,000 per year were 1.8 times more likely than their counterparts earning $50,000 per year to be a current smoker.

Among black/Hispanic adults with diabetes, the strength of the association between income and current smoking was much more pronounced than that observed among non-Hispanic whites and the association between age group and current smoking observed among non-Hispanic whites was not observed among black/Hispanic adults. Among black/Hispanic adults with diabetes, those earning less than $25,000 per year were 14.7 times more likely and those earning $25,000 to less than $50,000 per year were 6.8 times more likely to be current smokers compared to their counterparts earning $50,000 or more per year.

Tobacco use greatly affects the health of those with diabetes. Understanding the associations between current smoking and socio-demographic variables is important when planning and implementing tobacco-related public health interventions.

For more information about this subject, see "Tobacco Use Among Floridians with Diabetes: Data from the 2007 BRFSS and Tobacco Callback Survey" at: http://www.doh.state.fl.us/disease%5Fctrl/epi/BRFSS_Reports/TobaccoUse_Diabetes.pdf.

Tammie Johnson is a chronic disease epidemiologist with the Bureau of Epidemiology.

MRSA Infection Control Practices in Florida Hospitals in Comparison to Published Guidelines

Leah Eisenstein, M.P.H. and Roger Sanderson, M.A., B.S.N.

Introduction

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a major cause of both healthcare-associated and community-associated infections. According to the Centers for Disease Control and Prevention (CDC) data, the proportion of infections that are antimicrobial resistant has been growing in healthcare settings. Guidance documents for the control of multidrug-resistance organisms (MDROs), including MRSA, have been written by CDC's Healthcare Infection Control Practices Advisory Committee (HICPAC), the Society for Healthcare Epidemiology of America (SHEA), and the Association for Professionals in Infection Control and Epidemiology (APIC) (see references). The HICPAC and SHEA guidelines share some common recommendations for the control of prevention of MRSA and other epidemiologically important MDROs, though differ in other areas.[1,2] The key difference between these documents is that while SHEA guidelines offer one set of recommendations for all settings, HICPAC guidelines utilize a two-tiered approach. The first tier includes general recommendations for all healthcare settings, regardless of the prevalence of MDRO while the second tier includes recommendations for intensified interventions to prevent MDRO transmission when prevalence is not decreasing despite routine control measures or when the first case or outbreak of an MDRO is identified in a facility.[1] APIC's guide builds upon these documents and provides more detail on how to implement the strategies outlined in the HICPAC and SHEA guidelines.

Many Florida hospitals have adopted policies and procedures to reduce the transmission of MRSA but there is no systematic information available on what types of initiatives have been implemented in Florida. To address this issue, the Florida Hospital Association (FHA) conducted a survey of all Florida hospitals licensed by the Agency for Health Care Administration (AHCA) in December 2007. FHA worked with representatives of the Florida Professionals in Infection Control (FPIC), DOH, and AHCA to develop the survey instrument. The survey was intended to improve understanding of MRSA prevention strategies and practices that have been implemented in Florida hospitals. The purpose of this article is to highlight some of the findings from this survey to assess how well Florida hospitals are adhering to HICPAC and SHEA guidelines for MRSA infection control. Complete results are available upon request (please contact Leah Eisenstein at Leah_Eisenstein@doh.state.fl.us)

Method

A detailed survey was developed by FHA, in conjunction with DOH, FPIC, and AHCA to address MRSA infection control issues including active surveillance cultures (ASC), contact precautions, staff education, antibiotic utilization review, incidence surveillance, adherence to hygiene policies, future plans, and potential barriers. The survey was distributed via email to the chief executive officer of each AHCA licensed Florida hospital, who was asked to forward the email to the Director of Infection Control. Two options for participation were provided: a hardcopy of the survey could be downloaded, completed, and faxed to FHA or the survey could be completed online using SurveyMonkey.com. The survey was distributed on December 6, 2007. FHA administered the survey, collected the responses, and cleaned the dataset. Hospital identifiers were removed before FHA released the data to other agencies, including DOH.

DOH received the dataset on February 21, 2008. Only responses from acute-care and federal hospitals were included in this analysis and data; responses from long-term care, rehabilitation, psychiatric, and intensive residential treatment facilities were excluded. Data were analyzed using SAS version 9.1. The results of the survey were compared to the published HICPAC and SHEA guidelines regarding ASC, contact precautions, staff education, antibiotic utilization review, and monitoring of MRSA incidence over time, adherence to hand hygiene, and environmental cleaning.

Results

Florida has 213 acute-care hospitals of varying size and the survey was distributed to each facility. Some infection control practitioners responded to the survey on behalf of multiple hospitals. A total of 94 surveys representing 131 facilities (61.5% of the 213 facilities surveyed) were completed.

Facilities were first asked what factors were considered when planning their MRSA surveillance, prevention, and control program plan (Table 1). The most common factor reported was past and current MRSA transmission data specific to facility. Of interest, 61 (46.6%) of the responding facilities considered failure of routine measures to decrease MRSA incidence/ prevalence when developing their MRSA control plan. This response was used to approximate which facilities that should have HICPAC tier two intensified interventions as part of their MRSA control plan, including but not limited to implementing ASC and monitoring environmental cleaning performance.

Both HICPAC and SHEA guidelines recommend implementing ASC for patients in high risk populations, however HICPAC recommends this only as part of intensified interventions.[1,2] Overall, 96 (73.3%) of the 131 responding facilities reported having some kind of ASC protocol in place (Table 2). Of the 61 facilities that should include tier two intensified interventions in their MRSA control plans, 47 (77.0%) reported having an ASC protocol.

HICPAC guidelines specify that when ASC is implemented as part of tier two intensified interventions, contact precautions should be implemented for people being tested until the surveillance culture is reported negative for MRSA. A total of 70 (72.9%) of the 96 facilities with an ASC protocol reported placing some or all patients being screened for MRSA in contact precautions until surveillance cultures are found to be negative (37.5% place all in isolation precautions, 27.1% place only patients with a history of MRSA in isolation precautions, and 8.3% place other select patients in isolation precautions). The remaining 26 (27.1%) facilities with an ASC protocol do not place patients in contact precautions.

Both HICPAC and SHEA guidelines recommend contact precautions for all MRSA colonized and infected patients.[1,2] Of the 131 responding facilities, 105 (80.2%) reported placing all patients colonized or infected with MRSA in contact precautions (Table 2). Only four (3.1%) reported not putting any MRSA patients in contact precautions. Two of these four facilities do place all patients colonized or infected with MRSA in private rooms or cohort when private rooms are not available.

Both HICPAC and SHEA guidelines recommend staff education, antibiotic utilization review, and MRSA incidence surveillance.[1,2] Additionally, SHEA guidelines recommend monitoring staff compliance with hand hygiene policies and HICPAC guidelines recommend monitoring patient room cleaning performance as part of tier two intensified interventions.[1,2] Compliance with these recommendations was very high, ranging from 77.9% to 100.0% (Table 2). Of the 61 facilities that should include tier two intensified interventions in their MRSA control plans, 54 (88.5%) reported having a process for monitoring cleaning and disinfection of patient rooms.

Table 2 summarizes the key infection control measures that were addressed in this survey and the guidelines from which each recommendation came. HICPAC tier one recommendations and SHEA recommendations apply to all 131 facilities, while HICPAC tier two recommendations apply to on the 61 facilities that considered failure of routine measures to decrease MRSA incidence/ prevalence when developing their MRSA control plan. HICPAC tier one had four recommendations while HICPAC tier two and SHEA each had six recommendations.

The distribution of the number of satisfied recommendations is presented in Table 3. Of the 131 responding facilities, 83 (63.4%) met all four of the HICPAC tier one recommendations and 70 (53.4%) met all six of the SHEA recommendations. Of the 61 facilities that should have tier two recommendations in their MRSA control plan, 31 (50.8%) met all six HICPAC tier two recommendations. The greatest compliance was in mid-sized facilities (200-299 beds).

Additionally, facilities were asked about future plans for and barriers to MRSA prevention and control. One hundred and one (77.1%) of the 131 responding facilities reported intent to enhance MRSA prevention and control strategies by December 31, 2008 (approximately one year after the survey was completed). Lack of compliance was the most commonly reported barrier to MRSA prevention and control (56.5%) (Table 4).

Discussion

This survey provides the first comprehensive snapshot of Florida hospitals' MRSA infection control practices. The percentage of the 131 responding facilities that met individual criteria ranged from 73.3% for ASC (which is recommended by SHEA for all facilities, but is only recommended as part of tier-two recommendations by HICPAC) to 100.0% for staff education.

Compliance with all of the recommendations assessed in this survey ranged from 50.8% for HICPAC tier two recommendations to 53.4% for SHEA recommendations to 63.4% for HICPAC tier one recommendations. Compliance might be expected to increase with facility size, as it seems logical that the larger facilities would have more resources. However, when stratified by facility size, the percentage of facilities that met all recommendations was highest in the mid-sized facilities (200-299 beds), and lowest in the smallest facilities (<100 beds). The largest facilities (400+) were only slightly more compliant than the smallest facilities.

HICPAC and SHEA guidelines are a template for developing infection control programs for MRSA and other MDROs in healthcare settings. However, approaches to prevention and control should be tailored to the specific needs of each facility as some control strategies may not be as feasible as others in a given facility. For example, ASC in a small hospital with no in-house laboratory may not be as beneficial as intensified hand hygiene compliance and environmental controls. The optimal infection control program should be based on local data and risk assessment as discussed in the SHEA/APIC position statement on the use of ASC. [3]

APIC recently conducted an online survey of APIC 12,000 members to determine if additional MRSA interventions have been adopted since the release of APIC's National MRSA Prevalence Study in June 2007.[4] Their survey found that 76% of infection prevention and control professionals surveyed had implemented additional interventions in the last year, although 54% felt their institution could be doing more to prevent MRSA.[4] Better surveillance technology and additional staff were among the top priorities for improvement, while more aggressive hand hygiene programs and greater compliance with environmental cleaning and decontamination practices were other potential areas for improvement.[4] All of these issues were mentioned as barriers to effective MRSA prevention and control in the survey of Florida hospitals as well.

Surveys, such as the national APIC survey and the Florida hospital survey reported here, are the key to establishing a baseline for what practices have been implemented and monitoring future progress towards the elimination of MRSA in hospital settings. The majority (77.1%) of Florida hospitals are planning enhancements in their MRSA infection control strategies within the next year. Monitoring these improvements, as well as MRSA prevalence and incidence rates will provide useful guidance for best practices.

Table 1. Factors Considered When Developing MRSA Surveillance, Prevention, and Control Programs, 2007 Florida Hospital Association Survey on MRSA Infection Control Practices in Hospitals

Factor	Frequency	Percent of all Facilities (n=131)
Past and current MRSA transmission data specific to facility	109	83.2%
Availability of local resources	89	67.9%
Hospital/Health System Policy Decision	67	51.1%
Incidence or prevalence of MRSA not decreasing despite use of routine measures	61	46.6%
Published MRSA data from facilities of similar demographic and geographic characteristics	50	38.2%
Local MRSA data available from the health department	27	20.6%
None of the above	8	6.1%

Table 2. Key Recommendations and the Organization from which the Recommendation Came, 2007 Florida Hospital Association Survey on MRSA Infection Control Practices in Hospitals

Patient Category	Frequency	Percent of all Facilities (n=131)	HICPAC Tier 1 (n=131)	HICPAC Tier 2 (n=61)	SHEA (n=131)
ASC protocol for high risk populations	96	73.3%		X	X
Contact precautions for all patients infected or colonized with MRSA	105	80.2%	X	X	X
Educate facility staff on policies and procedures to reduce the transmission of MRSA	131	100.0%	X	X	X
Review antibiotic utilization to promote judicious use of antimicrobial agents	102	77.9%	X	X	X
Monitor incidence of MRSA over time	126	96.2%	X	X	X
Monitor staff compliance with facility's hand hygiene policies in ≥1 patient care area	127	96.9%			X
Monitor cleaning and disinfection of patient rooms	106	80.9%		X	

Table 3. Number of Recommendations Satisfied for HICPAC and SHEA Guidelines, 2007 Florida Hospital Association Survey on MRSA Infection Control Practices in Hospitals

Number of Recommendations Satisfied	HICPAC Tier 1		HICPAC Tier 2		SHEA	
	Frequency	Percent of All Facilities (n=131)	Frequency	Percent of All Facilities (n=61)	Frequency	Percent of All Facilities (n=131)
1	3	2.3%	-	--	3	2.3%
2	6	4.6%	4	6.6%	-	--
3	39	29.8%	1	1.6%	2	1.5%
4	83	63.4%	9	14.8%	22	16.8%
5	N/A	N/A	16	26.2%	34	26.0%
6	N/A	N/A	31	50.8%	70	53.4%

Table 4. Distribution of Barriers to Effective MRSA Prevention and Control, 2007 Florida Hospital Association Survey on MRSA Infection Control Practices in Hospitals

Description of Barrier	Frequency	Percent of All Facilities (n=131)
Lack of practice compliance	74	56.5%
Hand washing/hygiene	41	31.3%
Funding/resources	36	27.5%
Surveillance/testing/infection control	20	15.3%
Need for education regarding multidrug-resistant organisms	17	13.0%
Environmental	16	12.2%
Public health	11	8.4%
Communication	10	7.6%
Political	3	2.3%

References

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Leah Eisenstein is an epidemiologist with the Bureau of Epidemiology. Roger Sanderson is a regional epidemiologist with the Bureau of Epidemiology, based in Tampa.

Flu Season is Here!

Kateesha A. McConnell, M.P.H.

This year, the 2008-2009 influenza (flu) season began on Sunday, September 28, 2008. Before discussing influenza surveillance activities in the state, I would like to take the opportunity to introduce myself. My name is Kateesha McConnell and I am the new Respiratory Disease Surveillance Epidemiologist in the Bureau of Epidemiology. I came to this position from the Florida Epidemic Intelligence Service (FL EIS) program. I am very pleased to be here and look forward to working with the county health departments (CHD) and other public health partners on a wide range of respiratory disease issues. Fall is the time of year when an increase in respiratory illnesses is seen.

The DOH, Bureau of Epidemiology and Bureau of Laboratories work in collaboration with the CDC to conduct and coordinate influenza surveillance in the state of Florida. Through voluntary reporting of influenza data by healthcare providers, laboratories, vital statistics offices, and CHDs, DOH develops a statewide picture of influenza virus activity, which in turn contributes to surveillance efforts at the national level. The purposes of these surveillance systems in Florida are to: 1) determine when and where influenza activity is occurring; 2) identify circulating viruses; 3) detect changes in the circulating influenza viruses; 4) track patterns of influenza-associated morbidity and mortality; and 5) estimate the overall impact of influenza in the state of Florida.

Florida influenza surveillance summary reports are published each week from October through mid-May at http://www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/reports.htm, during the traditional influenza surveillance season. DOH is recognized each season at a national level for the robustness and excellence of the influenza surveillance programs. This is due to the hard work and dedication of the many surveillance partners engaged in influenza surveillance each year.

The Florida influenza surveillance system is comprised of the following six components:

- Florida sentinel influenza surveillance
- Florida laboratory surveillance
- Florida county activity code reporting
- Florida pneumonia and influenza mortality surveillance
- Influenza and/or Influenza-like-Illness (ILI) outbreaks
- Notifiable disease reports of pediatric influenza mortality and human influenza due to novel or pandemic strains

Please note that these six surveillance system components are not designed for detecting early cases of novel or avian influenza. A comprehensive set of recommendations for individuals that should be tested for novel or avian influenza can be found at the DOH website at: http://www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/AvianFluUpdate6806.doc.

Testing for novel or avian virus infection is recommended for a patient who has an illness that requires hospitalization or is fatal and has ILI symptoms. The patient must also have confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis is not known. Potential exposure within ten days of symptom onset is an additional requirement for testing.

I would like to encourage all counties to participate in each component of influenza surveillance during the 2008-2009 season. Not only will your participation improve statewide surveillance, but it will also aid in monitoring the impact of influenza within your own communities. In addition, county influenza surveillance activities, as measured by reporting county influenza activity codes, is a valuable component of the epidemiology portion of the CHD snapshot. County activity codes should be submitted each Tuesday by 5:30pm to EpiGateway at: https://www.epicomfl.net/index.html during influenza season. The information entered from each county will be compiled and disseminated in the weekly influenza surveillance report. I look forward to this upcoming year and I want to thank everyone in advance for making this a productive surveillance season!

Kateesha A. McConnell is the respiratory disease surveillance epidemiologist with the Bureau of Epidemiology.

Florida Year-to-Date Mosquito-Borne Disease Summary Through October 4, 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 through October 4, 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).

Escambia County has issued a mosquito-borne illness alert, and **Holmes, Jackson, Jefferson, Leon, Volusia, Walton, and Washington** counties have declared a mosquito-borne illness advisory due to increased arboviral activity.

EEEV Activity
A locally-acquired EEE case was confirmed in a Leon County resident in August. Positive samples from 102 sentinel chickens, 84 equines, two other mammals, three dead birds, and 79 live wild birds were received from 37 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 one pool of 50 *Culiseta melanura* collected on March 19 in Flagler County. Six counties (Holmes, Jackson, Jefferson, Volusia, Walton, and Washington) have declared a mosquito-borne illness advisory due to increased arboviral activity reported in areas of their counties.

WNV/SLEV Activity
Two locally-acquired WNV neuroinvasive disease cases were confirmed in Escambia County residents in September. A Wakulla County resident was also found to have WNV disease, though it is likely that the infection was acquired out-of-state. Positive samples of WNV antibody from 11 sentinel chickens and one horse were received from 11 counties. Flavivirus-reactive samples from three live wild birds were received from Hillsborough, Okaloosa, 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 52 sentinel chickens were received from 15 counties. HJV was isolated from three pools of 50 *Culex nigripalpus* collected on February 22, February 26, and March 28 in Volusia County and two pools of *Cs. melanura* collected on March 19 and May 7 in Flagler County.

CEV activity
LaCrosse encephalitis was confirmed in a Hillsborough County resident with travel history to North Carolina. This case was reported as a Florida case acquired out-of-state. La Crosse virus is in the California Encephalitis group of viruses. California serogroup virus was isolated from a pool of *An. crucians* collected on July 16 in Santa Rosa County.

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, 463 reports representing a total of 1,100 dead birds (37 crows, 57 jays, 55 raptors, and 951 others) were received from 57 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 following web site for more information:
http://www.doh.state.fl.us/environment/community/arboviral/index.html. Also, the Disease Outbreak Information Hotline offers recorded updates on medical alert status and surveillance at **888.880.5782.**

Rebecca G. Shultz is the Arthropod-borne Disease Surveillance Coordinator with the Bureau of Community Environmental Health. Caroline Collins is an arbovirus program specialist with the Bureau of Community Environmental Health. Dr. Stanek is a medical epidemiologist with the Division of Environmental Health. Dr. Blackmore is the Bureau Chief in the Bureau of Environmental Public Health Medicine.

Announcements

“Get Smart About Antibiotics Week” is a Success!
Danielle Pellegrino

DOH, in partnership with the CDC, participated in the first national "Get Smart about Antibiotics Week." During the week of October 6-10, 2008, awareness for appropriate antibiotic prescribing and antibiotic use was promoted. A press release was sent to Florida media and to all DOH employees and an informational display was set up in the main lobby of the Prather Building. CDC's "Get Smart" materials will be circulated to county health departments. DOH efforts will also include encouraging basic hand-washing practices to prevent the spread of viruses and bacteria. For more information about the "Get Smart" program, please visit the CDC's website at: www.cdc.gov/drugresistance/community or the Florida "Get Smart” website at: www.doh.state.fl.us/disease_ctrl/epi/FGS/FL_GetSmart.html.

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:

October: “Tobacco Use Among Floridians With Diabetes,” presented by Tammie Johnson, M.P.H., Dr.P.H.

November: “Racial Disparity in Breast, Cervical, and Colorectal Cancers in Florida,” presented by Youjie Huang, M.D., Dr.P.H., M.P.H.

December: TBA

January: "Epidemiology and Environmental Health Strike Team Exercise Overview," presented by Lauren Ball, D.O., M.P.H.

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.

Monthly Notifiable Disease Data

Table 1. Provisional Cases* of Selected Notifiable Diseases, Florida, September 1-30, 2008

	Month				Cumulative (YTD)	
Disease Category	**2008**	**2007**	**Mean†**	**Median¶**	**2008**	**2007**
A. Vaccine Preventable Diseases						
Diphtheria	0	0	0	0	0	0
Measles	0	0	0	0	0	5
Mumps	1	2	1	1	11	12
Pertussis	46	17	22	19	220	182
Poliomyelitis	0	0	0	0	0	0
Rubella	1	0	0	0	3	0
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0	0	1	3
Varicella	90	80	N/A	N/A	1,272	943
B. CNS Diseases & Bacteremias						
Creutzfeldt-Jakob Disease	7	0	0	0	19	11
H. Influenzae (invasive)	14	8	8	8	108	86
in those ≤5	1	1	1	1	13	13
Listeriosis	3	3	4	3	29	19
Meningitis (bacterial, cryptococcal, mycotic)	22	8	11	10	163	118
Meningococcal Disease	5	8	7	8	46	53
Staphylococcus aureus (VISA, VRSA)	1	0	N/A	N/A	1	0
Streptococcal Disease, Group A, Invasive	14	21	15	13	204	240
Streptococcus pneumoniae (invasive disease)						
Drug resistant	34	38	36	38	542	555
Drug susceptible	30	40	30	30	502	458
C. Enteric Infections						
Campylobacteriosis	106	81	73	79	825	795
Cholera	0	0	0	0	1	0
Cryptosporidiosis	124	140	77	80	389	502
Cyclospora	1	0	1	1	55	31
Escherichia coli, Shiga-toxin producing (STEC)**	12	9	10	9	117	99
Giardiasis	145	138	114	111	918	950
Hemolytic Uremic Syndrome	0	0	0	0	1	6
Salmonellosis	639	569	583	550	3,629	3,207
Shigellosis	39	111	133	113	645	1,805
Typhoid Fever	1	2	2	2	11	8
D. Viral Hepatitis						
Hepatitis A	16	24	37	27	130	130
Hepatitis B, Acute	34	32	36	34	263	285
Hepatitis C, Acute	6	3	3	3	46	38
Hepatitis +HBsAg in pregnant women	44	54	44	45	469	454
Hepatitis D, E, G	0	0	N/A	N/A	0	2

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2008 is provisional, data for 2007 are finalized
† 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
†† Includes neuroinvasive and non-neuroinvasive
N/A indicates that no historical data is available to caculate mean and median

Table 1. (cont.) Provisional Cases* of Selected Notifiable Diseases, Florida, September 1-30, 2008

	Month				Cumulative (YTD)	
Disease Category	**2008**	**2007**	**Mean†**	**Median¶**	**2008**	**2007**
F. Vector Borne, Zoonoses						
Dengue	3	2	2	2	27	24
Eastern Equine Encephalitits††	1	0	0	0	1	0
Ehrlichiosis/Anaplasmosis	1	2	2	1	9	13
Leptospirosis	0	0	0	0	0	0
Lyme Disease	24	8	7	8	73	21
Malaria	8	5	6	6	43	46
Plague	0	0	0	0	0	0
Psittacosis	1	0	0	0	4	0
Q Fever (acute and chronic)	0	0	0	0	0	2
Rabies, Animal	12	8	16	15	102	102
Rabies (possible exposure)	163	109	100	91	1,192	1,035
Rocky Mountain Spotted Fever	3	4	1	1	13	12
St. Louis Encephalitis††	0	0	0	0	0	0
Toxoplasmosis	4	0	1	0	11	3
Trichinellosis	0	0	0	0	1	0
Tularemia	0	0	0	0	0	0
Typhus Fever (epidemic and endemic)	0	0	0	0	0	1
Venezuelan Equine Enchephalitis††	0	0	0	0	0	0
West Nile Virus††	2	0	10	7	4	3
Western Equine Encephalitis††	0	0	0	0	0	0
Yellow Fever	0	0	0	0	0	0
G. Others						
Anthrax	0	0	0	0	0	0
Botulism-Foodborne	0	0	0	0	0	0
Botulism-Infant	0	1	0	0	1	1
Brucellosis	5	1	1	1	7	6
Glanders	0	0	0	0	0	0
Hansen's Disease (Leprosy)	2	2	1	0	7	6
Hantavirus Infection	0	0	0	0	0	0
Legionella	19	17	16	16	115	112
Melioidosis	0	0	0	0	0	0
Vibriosis	14	11	12	12	78	71

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2008 is provisional, data for 2007 are finalized
† 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
N/A indicates that no historical data is available to caculate mean and median

Note: The 2008 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 a year to date number.

Please refer any questions regarding the data presented in these tables to Kate Goodin at Kate_Goodin@doh.state.fl.us or 850.245.4444 Ext. 2440.

Correction: Reportable Diseases in Florida

Errors were identified in the notifiable disease table published in the August/September 2008 Epi Update (Table 1. Provisional Cases* of Selected Notifiable Diseases, Florida, August 1-31, 2008). Below is a corrected version of this table.

Table 1. Provisional Cases* of Selected Notifiable Diseases, Florida, August 1-31, 2008

	Month				Cumulative (YTD)	
Disease Category	**2008**	**2007**	**Mean†**	**Median¶**	**2008**	**2007**
A. Vaccine Preventable Diseases						
Diphtheria	0	0	0	0	0	0
Measles	0	0	0	0	0	5
Mumps	0	1	1	1	10	10
Pertussis	41	24	22	21	174	165
Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	0	0	2	0
Smallpox	0	0	0	0	0	0
Tetanus	1	2	0	0	1	3
Varicella	40	57	N/A	N/A	1,182	863
B. CNS Diseases & Bacteremias						
Creutzfeldt-Jakob Disease	1	1	1	0	12	11
H. Influenzae (invasive)	13	5	5	5	94	78
in those ≤5	0	2	1	1	12	12
Listeriosis	6	4	3	4	26	16
Meningitis (bacterial, cryptococcal, mycotic)	32	10	13	12	141	110
Meningococcal Disease	1	5	4	3	41	45
Staphylococcus aureus (VISA, VRSA)	0	0	N/A	N/A	0	0
Streptococcal Disease, Group A, Invasive	19	27	18	15	190	219
Streptococcus pneumoniae (invasive disease)						
Drug resistant	52	47	35	33	507	517
Drug susceptible	36	33	30	27	472	418
C. Enteric Infections						
Campylobacteriosis	120	114	108	114	719	714
Cholera	0	0	0	0	1	0
Cryptosporidiosis	70	138	57	35	265	362
Cyclospora	7	6	5	6	54	31
Escherichia coli, Shiga-toxin producing (STEC)**	16	14	10	10	105	90
Giardiasis	113	155	125	130	773	812
Hemolytic Uremic Syndrome	1	1	1	1	1	6
Salmonellosis	547	518	577	568	2,990	2,638
Shigellosis	62	206	156	148	606	1,694
Typhoid Fever	3	1	2	3	10	6
D. Viral Hepatitis						
Hepatitis A	20	21	31	35	114	106
Hepatitis B, Acute	22	25	37	38	229	253
Hepatitis C, Acute	2	7	5	5	40	35
Hepatitis +HBsAg in pregnant women	47	51	42	43	425	400
Hepatitis D, E, G	0	1	N/A	N/A	0	2

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2008 is provisional, data for 2007 are finalized

† 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

†† Includes neuroinvasive and non-neuroinvasive

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

Table 1. (cont.) Provisional Cases* of Selected Notifiable Diseases, Florida, August 1-31, 2008

	Month				Cumulative (YTD)	
Disease Category	**2008**	**2007**	**Mean†**	**Median¶**	**2008**	**2007**
F. Vector Borne, Zoonoses						
Dengue	3	7	3	2	24	22
Eastern Equine Encephalitits††	0	0	1	0	0	0
Ehrlichiosis/Anaplasmosis	1	2	1	1	8	11
Leptospirosis	0	0	0	0	0	0
Lyme Disease	19	5	6	5	49	13
Malaria	7	12	10	11	35	41
Plague	0	0	0	0	0	0
Psittacosis	0	0	0	0	3	0
Q Fever (acute and chronic)	0	0	0	0	0	2
Rabies, Animal	8	17	18	18	90	94
Rabies (possible exposure)	122	130	114	117	1,029	926
Rocky Mountain Spotted Fever	4	1	2	2	10	8
St. Louis Encephalitis††	0	0	0	0	0	0
Toxoplasmosis	2	0	1	1	7	3
Trichinellosis	0	0	0	0	1	0
Tularemia	0	0	0	0	0	0
Typhus Fever (epidemic and endemic)	0	0	0	0	0	1
Venezuelan Equine Enchephalitis††	0	0	0	0	0	0
West Nile Virus††	1	3	8	11	2	3
Western Equine Encephalitis††	0	0	0	0	0	0
Yellow Fever	0	0	0	0	0	0
G. Others						
Anthrax	0	0	0	0	0	0
Botulism-Foodborne	0	0	0	0	0	0
Botulism-Infant	1	0	0	0	1	0
Brucellosis	0	1	1	1	2	5
Glanders	0	0	0	0	0	0
Hansen's Disease (Leprosy)	0	0	0	0	5	4
Hantavirus Infection	0	0	0	0	0	0
Legionella	13	17	15	11	96	95
Melioidosis	0	0	0	0	0	0
Vibriosis	13	19	16	17	64	60

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2008 is provisional, data for 2007 are finalized
† 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
N/A indicates that no historical data is available to caculate mean and median

Note: The 2008 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 a year to date number.

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.

Christie Luce is the Surveillance Systems Administrator for Bureau of Epidemiology.

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