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In This Issue

Changing Surveillance Strategies for Novel Influenza A H1N1

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The Florida Department of Health (FDOH) discontinued reporting of most individual confirmed and probable cases of novel influenza A H1N1 on July 29, 2009. FDOH will continue to monitor individual cases of influenza in special groups and populations. These include: deaths, hospitalized pregnant women, those with life-threatening illness, and outbreaks of influenza or influenza-like illness (ILI). FDOH will continue to produce the novel influenza A H1N1 surveillance report and the traditional influenza surveillance report on a weekly basis. These reports are posted on the Bureau of Epidemiology website: http://www.doh.state.fl.us/disease_ctrl/epi/swineflu/Reports/reports.htm and http://www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/2009/index.html.

Florida will use traditional influenza surveillance systems to track the progress of both the novel H1N1 influenza pandemic and seasonal influenza. These systems work to determine when and where influenza activity is occurring, track flu-related illness, determine what influenza viruses are circulating, detect changes in influenza viruses, and identify any changes in the severity of illness including the impact of influenza on emergency department visits and deaths.

FDOH stopped reporting numbers of all confirmed and probable novel H1N1 influenza cases because of the extensive spread of novel H1N1 influenza within Florida and the United States. It has become extremely resource-intensive to count individual cases. In addition, only a small proportion of people with respiratory illness are tested for novel H1N1. As a result, the number of confirmed and probable cases represents a significant underestimation of the true number of

novel H1N1 influenza cases in Florida, so the true benefit of reporting these numbers each week is questionable. Several special groups will continue to be monitored very closely to help determine the severity of the novel H1N1 influenza virus.

FDOH has multiple influenza surveillance systems in place to monitor influenza activity. These include:

1. Viral surveillance, which monitors:
    a. The percentage of specimens tested for influenza that are positive for influenza,
    b. The types and subtypes of influenza viruses circulating,
    c. Resistance to influenza antiviral medications, and
    d. The emergence of new strains.
2. Sentinel physician surveillance for influenza-like illness, which monitors the percentage of doctor visits for symptoms that could be influenza, and provides an understanding of influenza activity in the general population.
3. Emergency department surveillance, which tracks numbers of patients presenting with influenza-like illness to participating facilities, and aids in understanding the severity of illness.
4. County influenza activity code reporting, which summarizes the geographic spread of influenza by tracking the number of counties affected and the degree to which they are affected.
5. Deaths from the Florida Pneumonia and Influenza Surveillance System that reports the total number of deaths and the number of those that are coded as influenza or pneumonia in the 24 most populous Florida counties. This provides insight into the severity of infection from influenza.
6. The number of laboratory-confirmed cases of influenza A H1N1 in those with life-threatening illness, hospitalized pregnant women, and the number of laboratory-confirmed deaths from influenza of all types among children, which also increases understanding of the severity of influenza illness.
7. Outbreaks of influenza occurring across the state, which aids in understanding how special and/or high-risk populations may be impacted.

FDOH will continue to expand its influenza surveillance to track the progress of novel H1N1 influenza for the upcoming influenza season. FDOH continues to work with the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE) to determine ways to enhance surveillance for novel H1N1 influenza during the 2009-10 influenza season. FDOH is participating in an enhanced influenza surveillance pilot project and is actively working to obtain additional information about hospitalizations. Surveillance strategies will continue to evolve as the novel influenza A H1N1 situation changes.

Thanks to all the county health department epidemiologists for their continued work on case investigations, surveillance, and disease control activities related to novel influenza A H1N1!

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Severe Frequent Mental Distress and Chronic Disease-Related Outcomes Among Florida Adults

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Depression is an important global health issue. Mental distress, depression, anxiety, and other psychological conditions are increasingly being recognized as factors associated with many chronic diseases, including heart disease, arthritis, and diabetes. In 2000, depression was the fourth leading cause of disability-adjusted life years (DALYs) and accounted for nearly 12% of total years lived with disability worldwide. The association between depression and chronic diseases, such as arthritis and diabetes, is well documented in the literature. Frequent mental distress (FMD), often used as a proxy for depression, is currently defined as having 14 or more days of mentally unhealthy days in a 30-day period. The 14-day minimum period is used because clinicians often use a similar period to denote clinical depression. This study examines the relationship between FMD and chronic disease outcomes among Florida adults.

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 U.S. and the U.S. 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. The data are weighted and, therefore, generalizable to the entire Florida adult population.

The prevalence of FMD within a population is assessed using the following BRFSS question: “Now, thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" Using the FMD definition described earlier, a person is classified as either having FMD or not, thus not accounting for increasing levels of depression severity as the number of mentally unhealthy days increases.

Examining the distribution of the number of poor mental health days among Florida adults shows that about 71% report zero days. Of the remaining 29%, over half reported five or fewer days (excluding zero) and 19.7% reported that they had poor mental health all 30 days. The spike observed at 30 reported days raises the question of whether this population should be viewed as a separate entity when categorizing FMD. For this study, we defined FMD in the following manner: low FMD (0-14 mentally unhealthy days); moderate FMD (14-29 mentally unhealthy days); and severe FMD (30 mentally unhealthy days). Subsequently, we examined the distribution of severe FMD and the association between severe FMD and a number of chronic disease outcomes and related behaviors including:

- Arthritis – told by a doctor they have some form of arthritis.
- Heart attack – told by a doctor they had a heart attack.
- Coronary heart disease (CHD) – told by a doctor they had angina or CHD.
- Stroke – told by a doctor they had a stroke.

- Diabetes – told by a doctor they had diabetes (does not include gestational diabetes).
- Sedentary – does not engage in any leisure-time physical activity.
- Hypertension – told by a doctor they had high blood pressure.
- Current smoker – has smoked at least 100 cigarettes and smoked on any of the past 30 days.
- Asthma – ever told by a doctor they had asthma.

Data were analyzed using SAS 9.2 and SUDAAN 10.0. Descriptive statistics were generated using weighted data and chi square analyses were performed to test for statistical significance. Multivariate logistic models were fitted to generate odds ratios.

Results

In 2007, using the trichotomized version of FMD, 90.3% of Florida adults had low FMD, 4.0% had moderate FMD and 5.8% had severe FMD. Table 1 shows the distribution of severe FMD. The prevalence of severe FMD varied significantly by sex (p=0.006), race/ethnicity (p=0.0357), age group (p<0.0001), education level (p<0.0001), income (p<0.0001), and marital status (p<0.0001).

Table 1. Percentage of adults with severe frequent mental distress by sex, race/ethnicity, age group, income, education, and marital status, 2007, Florida BRFSS

		%	95% CI	
All		5.8	5.2	6.4
Sex	Male	4.9	4.1	5.8
	Female	6.6	5.8	7.4
Race/Ethnicity	Non-Hispanic white	5.2	4.7	5.7
	Non-Hispanic black	7.8	5.5	10.8
	Hispanic	7.1	5.3	9.4
Age Group	18-44	6.2	5.2	7.4
	45-64	6.6	5.8	7.5
	65+	3.7	3.1	4.5
Education	<High school (HS)	11.0	8.7	13.8
	HS/<4 yrs. college	6.7	5.6	8.0
	4+ yrs. college	4.5	3.9	5.2
Income	<$25,000	10.3	8.7	12.1
	$25,000-<$50,000	6.5	5.3	7.9
	$50,000+	3.0	2.4	3.7
Married or Cohabitating	Yes	4.2	3.8	5.1
	No	8.1	7.1	9.4

Table 2 shows the prevalence of severe FMD by the chronic disease outcomes and related behaviors used for this study. The prevalence of severe FMD is statistically significantly higher among those with each of the indicators listed.

Table 2. Prevalence of severe FMD by chronic disease outcome status, 2007, Florida BRFSS

Outcome/Behavior	Yes %	Yes 95% CI		No %	No 95% CI		Chi square p-value
Arthritis	9.3	8.1	10.7	4.6	4.0	5.4	<0.0001
Heart attack	9.5	7.3	12.3	5.5	5.0	6.2	0.0021
CHD	8.6	6.8	10.7	5.6	5.0	6.2	0.0035
Stroke	11.2	8.5	14.7	5.6	5.0	6.2	0.0005
Diabetes	9.2	7.5	11.1	5.4	4.8	6.1	0.0001
Sedentary	10.9	9.3	12.7	4.0	3.5	4.6	<0.0001
Hypertension	7.9	6.7	9.2	4.9	4.3	5.6	<0.0001
Current smoker	11.3	9.5	13.3	4.4	3.9	5.0	<0.0001
Asthma	10.2	8.4	12.5	5.2	4.6	5.9	<0.0001

Table 3 shows the adjusted odds ratios from fitting logistic regression models using each of the chronic disease outcomes/behaviors as dependent variables and each of the sociodemographic variables plus severe FMD as independent variables. Models were fitted using backward elimination and the results from the final models are shown in the table.

Table 3. The adjusted odds ratios for final models examining the association between severe FMD and each chronic disease-related dependent variable, controlling for socio-demographic variables, 2007, Florida BRFSS

		Arthritis		Heart Attack		CHD		Stroke		Diabetes	
		OR	p - value	OR	p - value	OR	p - value	OR	p - value	OR	p - value
Sex	Male	--	--	--	--	--	--			--	--
	Female	1.33	<0.01	0.47	<0.01	0.54	<0.01			0.68	<0.01
Race / ethnicity	Non-Hispanic white	--	--			--	--	--	--	--	--
	Non-Hispanic black	0.83	0.11			0.60	0.01	1.19	0.49	1.77	<0.01
	Hispanic	0.61	<0.01			0.60	0.01	0.52	0.01	0.94	0.66
Age group	18-44	0.11	<0.01	0.04	<0.01	0.05	<0.01	0.18	<0.01	0.12	<0.01
	45-64	0.48	<0.01	0.37	<0.01	0.30	<0.01	0.41	<0.01	0.62	<0.01
	65+	--	--	--	--	--	--	--	--	--	--
Education	<High school (HS)									1.52	<0.01
	HS/<4 yrs. college									1.03	0.74
	4+ yrs. college									--	--
Income	<$25,000	1.67	<0.01	2.09	<0.01	2.03	<0.01	3.84	<0.01	1.75	<0.01
	$25,000-<$50,000	1.36	<0.01	1.60	<0.01	1.50	<0.01	2.37	<0.01	1.23	0.05
	$50,000+	--	--	--	--	--	--	--	--	--	--
Married or cohabitating	Yes	--	--								
	No	0.89	0.05								
Severe FMD	Yes	2.30	<0.01	2.09	<0.01	1.72	<0.01	2.02	<0.01	1.98	<0.01
	No	--	--	--	--	--	--	--	--	--	--

-- referent group

Darkened cells indicate variables removed during backward elimination.

Table 3 (continued). The adjusted odds ratios for final models examining the association between severe FMD and each chronic disease-related dependent variable, controlling for socio-demographic variables, 2007, Florida BRFSS

		Sedentary		Hypertension		Current Smoker		Asthma	
		OR	p - value	OR	p - value	OR	p - value	OR	p - value
Sex	Male	--	--	--	--	--	--	--	--
	Female	1.25	<0.01	0.77	<0.01	0.79	<0.01	1.24	0.01
Race / ethnicity	Non-Hispanic White	--	--	--	--	--	--		
	Non-Hispanic Black	1.43	<0.01	1.70	<0.01	0.44	<0.01		
	Hispanic	1.66	<0.01	0.76	0.03	0.45	<0.01		
Age group	18-44	0.73	<0.01	0.12	<0.01	3.90	<0.01	1.36	<0.01
	45-64	1.00	0.96	1.20	<0.01	3.82	<0.01	1.29	<0.01
	65+	--	--	--	--	--	--	--	--
Education	<High school (HS)	2.60	<0.01			2.35	<0.01		
	HS/<4 yrs. college	1.82	<0.01			1.92	<0.01		
	4+ yrs. college	--	--			--	--		
Income	<$25,000	2.46	<0.01	1.46	<0.01	1.67	<0.01	1.35	<0.01
	$25,000-<$50,000	1.84	<0.01	1.20	0.01	1.42	<0.01	1.06	0.55
	$50,000+	--	--	--	--	--	--	--	--
Married or cohabitating	Yes					--	--		
	No					1.45	<0.01		
Severe FMD	Yes	2.44	<0.01	1.94	<0.01	2.31	<0.01	1.86	<0.01
	No	--	--	--	--	--	--	--	--

-- referent group
Darkened cells indicate variables removed during backward elimination

Controlling for the variables in the final models, the odds of manifesting each of the chronic disease-related outcomes in this study were significantly higher among those with severe FMD compared to their counterparts. Specifically, the odds were: 2.30 times higher for having arthritis; 2.09 times higher for having had a heart attack; 1.72 times higher for having CHD; 2.02 times higher for having had a stroke; 1.98 times higher for having diabetes; 2.44 times higher for being sedentary; 1.94 times higher for having hypertension; 2.31 times higher for being a current smoker; and 1.86 times higher for having an asthma diagnosis.

Conclusion

Historically, using BRFSS data, FMD has been categorized as a dichotomous variable. Individuals defined as having FMD reported 14 or more poor mental health days out of the past 30 days. In Florida in 2007, the distribution of the number of poor mental health days in the past month spiked at 30 days with more than half of those with frequent mental distress reporting they had poor mental health everyday for the past 30 days. This distribution led the authors to ask whether this severe level of FMD is independently associated with chronic disease-related outcomes. Results from chi square analyses show that the prevalence of severe FMD is significantly higher among those manifesting the chronic disease-related outcomes of interest: arthritis, heart attack, CHD, stroke, diabetes, being sedentary, hypertension, current smoking, and asthma. Results from logistic regression analyses indicate that those with severe FMD are at increased odds of having each of the conditions examined.

Mental health is a growing public health concern. The association between poor mental health and chronic disease is well documented in the literature. As the population ages and as the prevalence of obesity continues to increase, the impact of chronic disease-related outcomes on the health system is expected to increase. Examining the characteristics of those with severe FMD opens a promising new area of inquiry for chronic disease surveillance.

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Esophageal Cancer in Florida, 2005

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Esophageal cancer forms in the tissues lining the esophagus (the muscular tube through which food passes from the throat to the stomach). Risk factors that are associated with esophageal cancer include older age, being male, tobacco use, alcohol use, diet, obesity, acid reflux, and Barrett's esophagus (abnormal cells in the lower part of the esophagus).

For this article, data on esophageal cancer incidence and diagnosis stage are from the Florida Cancer Data System (FCDS), and mortality data are from the Florida Department of Health, Office of Vital Statistics. The Florida data are compared with those from the Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute (NCI). The U.S. mortality data reported by SEER are provided by the National Center for Health Statistics (NCHS).

In Florida in 2005, the esophageal cancer incidence rate was 4.7 per 100,000 population and the mortality rate was 4.0 per 100,000 population. Both incidence and mortality rates were higher among those in older age groups and in males. There were no significant racial differences in both incidence and mortality rates in Florida. The 2005 incidence rate was 28% higher than the

rate observed in 1981 (3.7 per 100,000). The 2005 mortality rate did not differ significantly from the rate observed in 1981 (3.8 per 100,000). The Florida incidence rate was higher than the SEER rate overall and among males. The mortality rate in Florida was lower than the U.S. mortality rate (4.4 per 100,000).

Of all Florida esophageal cancer cases, 48.9% were diagnosed at an advanced stage in 2005. The percentage of cases diagnosed at advanced stage was higher among males (50.4%) and whites (49.2%) compared to their counterparts. The percentage of cancer cases diagnosed at an early stage was lower in 2005 (19.0%) compared to the percentage in 1981 (31.0%). The percentage of cancer cases reported without stage information increased in 2005 (32.0%) compared to the percentage in 1981 (26.0%).

A comprehensive fact sheet with detailed data tables on esophageal cancer in Florida is available at the Florida Department of Health, Bureau of Epidemiology's website at: http://www.doh.state.fl.us/disease_ctrl/epi/cancer/Esophagus_05.pdf.

For additional information, please contact the Florida Department of Health, Bureau of Epidemiology at 850.245.4401 or visit our website at: http://www.floridachronicdisease.org/.

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An Evaluation of *Escherichia coli* O157:H7 Surveillance in Florida, 2003 – 2007

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Escherichia coli O157:H7 is estimated to account for about 73,000 of the 38 million illnesses caused yearly by known pathogens.[1] *E. coli* O157:H7 is an enterohemorrhagic (EHEC) strain of *E. coli*, also known as Shiga toxin-producing *E. coli* (STEC). *E. coli* O157:H7 is a significant cause of diarrheal illness, causing hemorrhagic colitis and hemolytic uremic syndrome (HUS).[2] This pathogen, as with other foodborne illnesses, is significantly under-reported (38 cases estimated for every one reported).[1] Also, the economic costs associated with this illness are quite high. In 2003, infections with *E. coli* O157:H7 were estimated to cost $405 million annually, ranging from $26 (for a case not seeking medical care) to over $6 million (for a case of HUS leading to death).[3] In Florida, an average 70 cases were reported over the last 10 years (1997-2006).[4]

Rule 64D-3, *F.A.C*. requires that practitioners and laboratories report specific notifiable diseases to the Florida Department of Health (FDOH), including *E. coli* O157:H7.[5] The rule also requires laboratories to submit isolates to the Florida Bureau of Laboratories for confirmation. Merlin, the official web-based notifiable disease reporting system, provides real-time dynamic surveillance and analysis capabilities for national and state notifiable diseases for all residents of Florida. Merlin began operations in all Florida counties in January 2001. There are currently about 85 diseases and conditions reportable to this system with over 1,100 active Merlin users ranging from central office employees to regional and county health professionals.

Methods

The main purpose of this surveillance system evaluation was to assess Merlin system attributes as they relate to *E. coli* O157:H7 surveillance, according to the Centers for Disease Control and Prevention (CDC) guidelines.[6] A secondary objective was to assess laboratory diagnostic procedures and reporting of *E. coli* O157:H7 surveillance with a survey of licensed hospital and commercial clinical laboratories (see "Summary of a Laboratory Survey of Enteric Disease Testing and Reporting Practices", also in this issue, for more information).

Merlin was queried for all cases of *E. coli* O157:H7 reported from 2003 through 2007, and case and laboratory surveillance data were linked. Hospital discharge data were obtained from the Florida Agency for Health Care Administration (AHCA) to assess sensitivity.

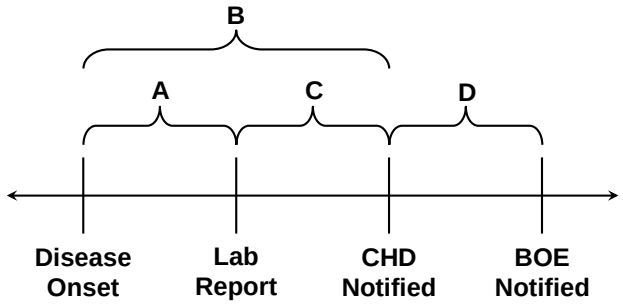
Assessment of Surveillance System Attributes

Simplicity was based on data flow and consistency for type and amount of data collected.

Flexibility was based on the ability of Merlin to adapt to reporting changes and the ease with which additional information can be collected. **Data quality** was assessed by examining completeness, or the percent of cases with values other than 'unknown' or missing, for required identifying variables and date variables.

Timeliness of case reporting was based on intervals between important dates (Figure 1). We calculated the median duration of each interval and the percent of cases reported within one and two incubation periods for intervals A and B, using the median incubation period of four days for *E. coli* O157:H7.

Figure 1. Time Intervals



Sensitivity was assessed by linking de-identified AHCA data about hospital inpatient and emergency department visits with a primary or secondary ICD-9 (International Classification of Disease, 9th Revision) diagnostic code indicative of *E. coli* to Merlin case data. All records containing any ICD-9 code indicative of *E. coli* were requested (codes/definitions in Table 3). A manual linkage was performed based on quarter/year of diagnosis (AHCA), date of event (Merlin), age, gender, race/ethnicity, healthcare facility/provider, patient zip code, and county.

Representativeness was assessed by comparing Florida data to national statistics for *E. coli* O157:H7 obtained from annual notifiable disease summaries for the years 2003-2005.[7-9] The national case definition and manner of reporting *E. coli* O157:H7 changed in 2005. In 2006 and 2007, cases were reported as STEC and not differentiated by their O or H antigens. In Florida (2003-2007), a confirmed case was defined as a clinically compatible case with isolation of *E. coli*

O157:H7 from a clinical specimen.[10] Florida did not adopt the STEC case definition until 2008, so national data reported for 2006 and 2007 were not comparable to Florida data.

We also evaluated the completeness and timeliness of *E. coli* O157:H7 **specimen submission** to the Bureau of Laboratories for confirmation. **Completeness** was based on percent of cases first tested at a commercial/hospital lab and then confirmed by the Bureau of Laboratories. **Timeliness** was based on the time between initial lab test and confirmation test.

Results

Simplicity – The data flow in Merlin can be complicated due to the sheer number of users and the needs of each. *E. coli* O157:H7 case and lab reports can be sent to Merlin via many paths. Demographic, clinical, and often laboratory, information are collected on all reported cases by the county health department (CHD) based on data from physicians, public health nurses, CHD investigations, infection control staff, and laboratories. Laboratory data are obtained from hard-copy lab reports or through electronic lab reporting for some labs. Once cases have been entered into Merlin and submitted, state and regional epidemiologists review records for completeness. Reports may be sent back to CHDs for follow-up. The Bureau of Epidemiology sends data from Merlin to CDC for the weekly national morbidity and mortality reports. Other data recipients may include other DOH bureaus, CHDs, local providers, and the public.

Specific data are required for each reportable disease reported in Merlin. Cases cannot be submitted if any of these data for source fields are missing. Furthermore, during data entry, Merlin provides a screen specifically for setting the status of each case, as confirmed, probable, or suspect, to simplify this process.

Flexibility – Merlin has built-in capabilities that allow flexibility to handle changes in reporting and data collection needs. Because Merlin provides a case status screen for all diseases, changes in case definitions can be easily managed based on the date of report. Further, Merlin has the capability of collecting additional information on diseases with the following options:

1. Outbreak Module – This provides a temporary, centralized data collection tool intended for use in outbreaks. It is easy to create and performs simple data analysis. However, data collected with this are not required for all cases, and data extraction can be difficult.
2. Upload Case Report Form – Another option is to modify the disease-specific case report forms. Using the upload capability, this information can be electronically attached to the case in Merlin in several formats. However, accessing this data requires manual download and data extraction.
3. Extended Data Screen – This is a permanent change in reporting for all cases of a disease, but takes much longer to incorporate since web design and testing is involved. Specific data fields can also be required for all cases reported.

Data Quality – For required variables, the percent of cases with missing or values of 'unknown' ranged from 0-13% (Table 1). Only two variables were less than 90% complete: occupation and daycare-associated. Of the four date variables, only two (date of onset and report to CHD) were over 90% complete. Date of diagnosis and date of lab report were missing on a large proportion of cases. Not all date variables are required. Date reported to CHD became a required variable during the period covered by this evaluation. Currently, date reported to CHD and at least one other date variable (date of onset, diagnosis, or lab report) is required by Merlin.

Table 1. Assessment of Data Quality for the *E. coli* O157:H7 Surveillance System, Florida, 2003-2007

Required Variables in Merlin	No. Complete	% Complete
Last Name	298	100.0
Date of Birth	298	100.0
County	298	100.0
Diagnosis Status	298	100.0
Zip Code	296	99.3
Gender	294	98.7
Location Acquired (Imported)	287	96.3
Race	282	94.6
Ethnicity	276	92.6
Outbreak Associated	273	91.6
Sensitive Occupation	267	89.6
Day Care Associated	259	86.9
Date Variables in Merlin	**No. Complete**	**% Complete**
Date of Disease Onset	284	95.3
Date Reported to CHD	284	95.3
Date of Lab Report	175	58.7
Date of Diagnosis	127	42.6

Timeliness of Case Reporting – Due to missing disease-related dates, time intervals A and C were complete for 57% of cases. Both time intervals B and D were complete for over 90%. The limiting factor for A and C was date of lab report. The median value for the intervals of interest ranged from two (interval C) to eleven days (interval B). The proportion of cases reported within one and two incubation periods was highest for intervals A and C. Only about 40% of cases had a confirmatory lab result or were reported to the CHD within two incubation periods (Table 2).

Table 2. Timeliness of *E. coli* O157:H7 Reporting, Florida, 2003-2007

Time Interval	% Complete	Median Time (days)	% < 1 Incubation Period	% < 2 Incubation Periods
A – Onset to Lab Report	56.7	5	22.5	41.9
B – Onset to CHD Notification	91.3	11	12.8	39.9
C – Lab Report to CHD Notification	56.7	2	-	-
D – CHD to Bureau of Epi Notification	95.3	3	-	-

Sensitivity – Due to inconsistencies in hospital and emergency department coding for *E. coli*, this analysis does not assess the sensitivity of *E. coli* O157:H7 surveillance in Merlin, but rather compares the two datasets. From 2003 through 2007, there were 451 hospital admissions or emergency department visits with an ICD-9 diagnostic code indicative of *E. coli*. Of these, 44% were coded as general *E. coli* infections (008.0) and 36% as unspecified *E. coli* infections. Only 8% were coded as enterohemorrhagic *E. coli* infections, which would include cases of *E. coli* O157:H7. Among the EHEC cases, only 9 (26%) were identified as matching with cases reported to Merlin. The majority (70%) of matches were made between *E. coli* O157:H7 cases in Merlin and visits coded as general or unspecified *E. coli* infections (Table 3).

Table 3. Comparison of *E. coli* O157:H7 Reporting in Merlin and AHCA, Florida, 2003-2007

ICD-9 Diagnostic Code	No. in AHCA	Exact Match[1]	Probable Match[1]	Possible Match[1]
008.0 *E. coli*	199	9	12	5
008.00 *E. coli*, unspecified	162	5	9	8
008.01 Enteropathogenic *E. coli*	0			
008.02 Enterotoxigenic *E. coli* and 008.03 Enteroinvasive *E. coli*[2]	13	1	2	1
008.04 Enterohemorrhagic *E. coli*	34	3	5	1
008.09 Other intestinal *E.coli* infections	43	1	4	3
Total	**451**	**19**	**32**	**18**

[1] Exact = all seven variables matched; Probable = six variables matched; Possible = five variables matched.
[2] Combined 008.02 and 008.03 due to small numbers.

Representativeness of Florida Data – Overall, Florida had lower incidence rates of *E. coli* O157:H7 from 2003-2005 than did the U.S. as a whole. This is likely because the national statistics include data from FoodNet states, which rely on active surveillance for foodborne diseases and likely find more cases than non-FoodNet states that rely on passive surveillance. Based on data available, we were not able to differentiate between FoodNet and non-FoodNet state data for our comparison. Despite the differences in incidence rates, Florida data are comparable to national rates. Florida has higher rates in 1 to 4 year olds, females, and white, non-Hispanic individuals, as does the U.S.

Completeness and Timeliness of Specimen Submission to State Lab – For the 298 *E. coli* O157:H7 cases reported in Merlin, 88 (30%) specimens were submitted directly to a state public health lab. Another 126 (42%) specimens were sent to a state public health lab for confirmation after preliminary diagnosis by hospital or referral labs. Forty (13%) specimens were only tested at a hospital or referral lab. Of the specimens not submitted to the state public health labs for confirmation, 28 (70%) were tested in hospital labs, 8 (20%) were tested in referral labs, and 4 (10%) were tested in out-of-state public health labs. There were 44 (15%) cases with no lab test or result reported in Merlin. Of the 254 cases with reported lab results, a total of 214 (84%) cases were in compliance with Rule 64D-3, *F.A.C.* and confirmed by a state public health lab; an overall compliance rate of 72% for all reported cases.

Of the 126 specimens sent to the Bureau of Laboratories for confirmation, the dates of the first and second (confirmatory) lab report were available for 75% and 99%, respectively. The time between the first and second lab report was calculated for 91 (31%) cases. The median time interval was 13 days (range: 0-280 days).

Discussion

The results of this surveillance system evaluation indicate areas where *E. coli* O157:H7 surveillance in Florida is performing well, and also where improvements can be made.

- ✓ **Flexibility**: Merlin has sufficient flexibility to adapt to changes in *E. coli* O157:H7 reporting with its built-in capabilities. Though these additional capabilities are not without their limitations, they provide options for changing disease surveillance and data analysis needs.

- ✓ **Data quality**: Merlin requires that users report specific variables for any case to be reported. This consistency simplifies the reporting process for CHD staff, and ensures completeness for these variables.
- ✗ **Simplicity**: Due to the complexity inherent in DOH administrative structure (county, regional, and state-level epidemiologists), simplicity of data flow is not likely to be easily addressed.
- ✗ **Timeliness**: Certain aspects of reporting timeliness may be difficult to improve, since time intervals A and B are highly dependent upon the care-seeking behavior of the infected individual. Long A and B intervals can limit the effectiveness of public health prevention and control measures. However, intervals C and D can be controlled by public health actions. As more labs around the state sign up for electronic lab reporting, we may see improvements in the overall timeliness of case reporting. Finally, there were few cases reported to the CHD within one and two incubation periods. This area also needs significant improvement to allow for timely control and prevention efforts.
- ? **Sensitivity**: It was not possible to adequately address sensitivity due to the inconsistencies in hospital discharge data diagnostic coding. These cases were often coded as having *E. coli* strains other than EHEC strains. This may indicate that hospitals need to be educated regarding the difference in *E. coli* strains and the importance of correctly coding this disease due to the severity of illness it can cause, especially in children.
- ✓ **Representativeness**: Even though overall incidence rates are lower for Florida compared to national data, we see similar demographic trends in our *E. coli* O157:H7 cases as does the rest of the country. To get a more accurate comparison of our overall incidence rates, we would need to compare Florida with other non-FoodNet states (states with passive surveillance for *E. coli* O157:H7), though we were not able to do so with available data.
- ✗ **Completeness and timeliness of specimen submission**: Commercial and hospital laboratories in the state are not adequately following Rule 64D-3, *F.A.C.* regarding submission to the Bureau of Laboratories for confirmation. These facilities need to be reminded of this rule and the importance of confirmatory testing for certain diseases. Furthermore, the lag in time between initial and confirmatory testing can have implications for control measures and indicates an area that requires significant improvement.

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Summary of a Laboratory Survey of Enteric Disease Testing and Reporting Practices

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From January through March 2009, the Bureau of Environmental Public Health Medicine, Florida Department of Health (FDOH) conducted a survey of enteric disease testing in Florida. The purpose of this survey was to gain a better understanding of laboratory testing practices among licensed clinical laboratories in Florida. Questions related to *E. coli* O157:H7, *Salmonella, Campylobacter, Cyclospora*, and *Cryptosporidium parvum*.

Methods

A laboratory survey was created using Survey Monkey™ (www.SurveyMonkey.com: Portland, OR), which was reviewed by staff in the Bureau of Environmental Public Health Medicine, the Bureau of Epidemiology, and the Bureau of Laboratories. Questions were related to the types of tests available in stool culture panels, the number of tests performed, and the method of confirming and reporting results.

Information on all clinical laboratories licensed in Florida (1,120) was obtained from the Clinical Laboratories Unit of the Agency for Health Care Administration. This list was manually reduced based on name and internet searches to exclude labs not testing for enteric diseases (e.g. pathology, dermatology, hematology, genetics); on the volume of charges by category (included only labs charging in bacteriology, parasitology, and/or microbiology); and on reporting of cases to Merlin. Finally, only one hospital from each hospital system using the same central lab was included. The final list of licensed clinical laboratories in Florida contained 149 labs.

Laboratories were divided into commercial/referral laboratories (15) and hospital laboratories (134). A sampling frame was applied to the hospital labs so that only 50% (67) were contacted for participation by sampling all odd numbered labs in an alphabetical list. All commercial labs were contacted. All hospital laboratories were located in Florida, though some of the commercial labs

are located out-of-state and have licensure within Florida. The 149 sampled labs accounted for 93% of all *E. coli* O157:H7 tests and 91% of all *Salmonella* tests reported from either commercial or hospital labs from 2003 to 2007.

Contact was attempted for 67 hospital/hospital system laboratories and 15 commercial/referral laboratories. Of these, 26 (39%) hospital labs and 8 (53%) commercial labs agreed to participate. Of those agreeing to participate, 22 (85%) hospital and 7 (88%) commercial labs completed the enteric disease survey. The following summary is based on the responses of these 29 laboratories. However, not all questions were answered by all respondents and this is indicated, where appropriate, in the results.

Results

Overall, 23 responding labs report what pathogens were tested for and what tests were used to the requesting clinicians. Three of the responding labs make recommendations for additional testing to the clinicians. Results for each test type are discussed below, by disease.

***E. coli* O157:H7**

The traditional test for *E. coli* O157:H7 starts with culture on sorbitol-MacConkey (SMAC) agar or CT-SMAC (containing cefixime and tellurite). Colonies are then biochemically confirmed as *E. coli* species, checked for Shiga toxin production, and then serogrouped. Real-time polymerase chain reaction (PCR) is also available. There are rapid latex agglutination tests available for presumptive diagnosis of *E. coli* O157:H7. For Shiga toxin detection, enzyme immunoassays (EIA) and real-time PCR are used. For Shiga toxin EIA, there are several kits available, including standard assays and rapid tests.

Commercial/Referral Laboratories.

Of the seven responding commercial labs, four (57%) test for *E. coli* O157:H7 whenever a routine stool culture is ordered, and four labs (57%) test for *E. coli* O157:H7 only when specifically requested by a clinician (one lab did not respond). Two labs (25%) reported performing culture for *E. coli* O157:H7 along with EIA for Shiga toxin, and four (57%) reported performing only EIA for Shiga toxin (one lab did not respond). For those performing culture, only one lab refers isolates to the DOH Bureau of Laboratories for confirmation. The other sends isolates to an out-of-state government facility, such as another state's public health laboratory, for confirmation.

Six commercial labs (86%) report performing EIA for Shiga toxin (one lab does not perform Shiga toxin assays and one did not respond). Of these, 50% refer positive specimens to the Bureau of Laboratories. Other laboratories send specimens to other state or local health departments for confirmation. The most common EIA kit for Shiga-like toxin detection among those testing for Shiga toxin is the Premier EHEC by Meridian Diagnostics, which was reported by all responding labs. Four of five labs reported using a spectrophotometer for reading EIA micro-titer plates. Other reported methods for testing for *E. coli* O157:H7 include visual interpretation and SMAC plate from broth subculture.

All responding commercial labs (six) reported that they inform the requesting clinician about which tests were performed. Of these, 67% were aware of CDC recommendations for testing specimens for *E. coli* O157:H7, and 83% were aware of Florida's Rule 64D-3, *F.A.C*. that requires forwarding positive isolates to the Bureau of Laboratories for confirmation.

Hospital/Hospital System Laboratories.
Of the 22 hospital labs responding to the survey, 17 (77%) reported testing for Shiga toxin or *E. coli* O157:H7 at their hospital. Of those who do not perform in-house testing (five), 40% send specimens to a commercial/referral lab, 40% send specimens to another hospital lab, and 10% send specimens to the state public health lab. For these hospitals without in-house testing, culture for *E. coli* O157:H7 (60%), EIA for Shiga toxin (60%), and PCR for *E. coli* O157:H7 (20%) are available.

For the 17 hospitals with in-house testing: seven (41%) test for *E. coli* O157:H7 only; six (35%) test for Shiga toxin only; and four (24%) test for both. Eleven (65%) test for STEC or *E. coli* O157:H7 whenever a routine stool culture is ordered; six (35%) test when specifically requested by a clinician; and three (18%) test when stool appears bloody, whether or not the test had been specifically ordered. Eleven of the seventeen (65%) can culture for *E. coli* O157:H7 and three (18%) also use latex agglutination tests in addition to culture. Five (29%) labs report that no culture (only EIA) is performed at their lab. Among those that culture for *E. coli* O157:H7 (11), only one performs a Shiga toxin screen prior to culture, and all refer isolates to the Bureau of Laboratories for confirmation.

Among hospitals with in-house testing, nine (53%) perform EIA for Shiga toxin (one uses a rapid EIA test), and one lab reports using an immunochromatographic rapid test. Among labs that test for Shiga toxin, 91% refer positive specimens to the Bureau of Laboratories for confirmation. Commonly reported EIA kits for Shiga-like toxin detection include the Premier EIA by Meridian Bioscience, ProSpecT by Remel, and the rapid test, Immunocard STAT!. Only one lab reported using a spectrophotometer to read microtiter plates.

The majority (82%) of hospital labs inform the requesting clinician about which tests were performed. Also, 82% were aware of CDC recommendations for *E. coli* O157:H7 testing, and 88% were aware of the requirements in Rule 64D-3, *F.A.C.* Of participating laboratories with in-house testing on *E. coli* O157:H7 or STEC, the size of hospitals ranged from 126 beds to 1500 beds. Hospitals that performed tests for Shiga toxin tended to be smaller (median bed size: 316) and have a greater proportion of for-profit hospitals (36%) compared to those with no Shiga toxin tests (median bed size: 473; for-profit: 18%). There were no differences in characteristics between hospitals that perform culture for *E. coli* O157:H7 and those that do not.

Salmonella
Of 29 participating laboratories, 24 perform culture for *Salmonella;* 1 hospital lab did not respond. Of the 24, 88% perform *Salmonella* culture as part of a panel only, 4% as an individual test only, and 8% as either part of a panel or as an individual test. Of 22 hospital laboratories, 19 culture for *Salmonella* and 17 do so as part of a panel only. Four of seven commercial laboratories only perform *Salmonella* cultures as part of a panel. Other organisms included in panels were: *Campylobacter* (92%), *Shigella* (100%), *Yersinia* (42%), and 38% also culture for *E. coli*, *Vibrio*, and others (including *Aeromonas*, *Plesiomonas*, EHEC or STEC EIA, and *Staphylococcus aureus)* (Table 1).

Campylobacter
Twenty-one hospital and six commercial labs answered questions regarding *Campylobacter*. Eighty-six percent of these hospital labs and 83% of the commercial labs perform culture for *Campylobacter*. One commercial lab performs *Campylobacter* testing as an individual test only, and two hospital and three commercial labs offer this culture as a panel or as an individual test. Of the labs that offer culture as part of a panel, 96% also culture for *Salmonella* and *Shigella*, 39%

also culture for *Yersinia*, *Vibrio, E. coli*, and other (including *Aeromonas*, *Plesiomonas*, *Staphylococcus aureus,* and EHEC or STEC EIA) (Table 1).

One hospital laboratory offers serum Enzyme-linked immunosorbent assay (ELISA) testing for *Campylobacter*. Five labs (three hospital and two commercial) offer stool antigen EIA testing for *Campylobacter*. Of these, one hospital lab recommends culture on the report.

Table 1. Laboratories offering culture for *Salmonella* and *Campylobacter*

Organism	Labs Performing Culture	Offered as Single Test Only[1]	Offered as Panel Only[1]	Both[1]	Other Organisms Cultured in Panel[1]
Salmonella	24/27	1 (4%)	21 (88%)	2 (8%)	*Camplyobacter* (92%) *Shigella* (100%) *Yersinia* (42%) *E.coli* (38%) *Vibrio* (38%) Other (38%)
Campylobacter	23/27	1 (4%)	17 (74%)	5 (22%)	*Salmonella* (96%) *Shigella* (96%) *Yersinia* (39%) *E. coli* (39%) *Vibrio* (39%) Other (39%)

[1] Among labs that perform culture for specific organism.

Cryptosporidium parvum

Twenty-one hospital and six commercial labs answered questions regarding *Cryptosporidium*. Sixteen hospital and five commercial labs responded that they perform testing for *Cryptosporidium*. See Table 2 for the specific tests offered. When asked about the default test if not specified by a clinician, three labs respond that they require the clinician to specify a test, five default to acid fast stain, two to direct fluorescent antibody (DFA), seven to stool antigen ELISA, and one to immunochromatographic assay.

Table 2. Offered testing for *Cryptosporidium parvum*

Test	Hospital Laboratory	Commercial Laboratory
Acid Fast	6	4
Stool Antigen ELISA	7	3
EIA	3	0
DFA	2	1
Immunochromatographic Assay	1	0

Cyclospora

Twenty-one hospital and six commercial labs answered questions regarding *Cyclospora* testing were. Testing for *Cyclospora* is performed in seven hospital and four commercial labs. Four hospital labs perform this test as part of a panel. Five hospital labs answered that they forward all positive slides to the Bureau of Laboratories.

Representativeness of Sample

Due to the low response rate, responding labs were not representative of the overall sample of clinical labs. There were 150 *E. coli* O157:H7 tests and 31,077 *Salmonella* tests reported from the 149 sampled hospital and commercial/referral labs from 2004 through 2007. The responding labs accounted for only 40 (27%) *E. coli* O157:H7 and 7,688 (25%) of *Salmonella* tests, with the responding hospitals having a greater proportion of reported tests than commercial labs. Furthermore, responding hospital labs were larger (median: 383 beds) vs. non-respondents (median: 238 beds, p-value = 0.02), and more likely to be not-for-profit (NFP) hospitals (respondents: 73% NFP; non-respondents: 49% NFP; p-value = 0.04).

Conclusions

Because this was not a representative sample, we cannot make generalizations about the entire population of licensed clinical labs in Florida. Conclusions are limited to the responding sample. However, the results of this enteric disease laboratory survey demonstrate the wide range of testing practices performed by the responding labs. Among commercial/referral labs, EIA for *E. coli* O157:H7 was most common, with few reporting performing culture, though this is the recommended test for *E. coli* O157:H7 by CDC.[1] Also, few commercial labs report being in compliance with Rule 64D-3, *F.A.C.*[2], which requires isolates to be sent to the Bureau of Laboratories for confirmation. Conversely, the majority of hospital/hospital system laboratories report routinely culturing for *E. coli* O157:H7 and sending isolates and Shiga toxin-positive specimens to the Bureau of Laboratories for confirmation. For other enteric diseases, there is a wide variety of organisms included in standard stool culture panels among hospital and commercial laboratories. While the majority of labs test for standard enteric diseases such as *Salmonella*, *Campylobacter*, and *Cryptosporidium parvum*, relatively few of the responding labs test for *E. coli* O157:H7 and *Cyclospora* in Florida.

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Florida Influenza Surveillance Report

Kateesha McConnell, M.P.H.

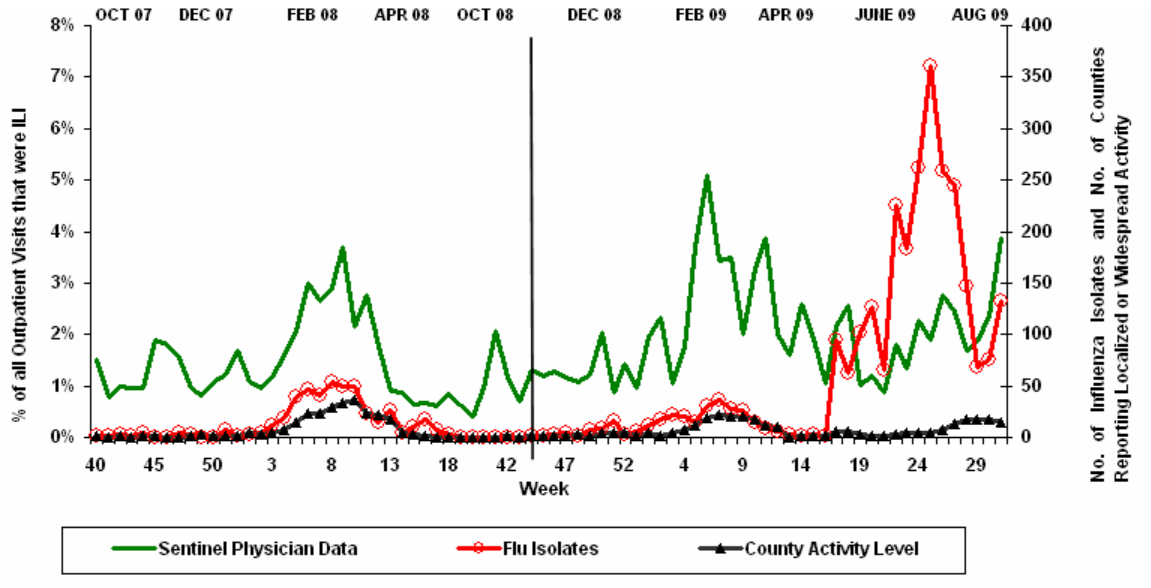
For the most up-to-date information regarding influenza surveillance and the progress of influenza season and the novel H1N1 pandemic in Florida, please visit the Bureau of Epidemiology influenza surveillance reports website at:
http://www.doh.state.fl.us/disease_ctrl/epi/htopics/flu/reports.htm.
FDOH is also producing a novel influenza A H1N1 surveillance report. This report is updated weekly and available at: http://www.doh.state.fl.us/disease_ctrl/epi/swineflu/Reports/reports.htm.

Influenza surveillance in Florida consists of seven surveillance components*: 1) Florida Sentinel Physician Influenza Surveillance Network (FSPISN); 2) Florida Pneumonia and Influenza Mortality Surveillance System; 3) Bureau of Laboratories viral surveillance; 4) County influenza activity levels; 5) Notifiable Disease Reports: influenza-associated deaths in children, post-influenza infection encephalitis and novel influenza cases; 6) Influenza or influenza-like illness (ILI) outbreaks; 7) Syndromic surveillance. These data sources indicate ILI activity continues to remain higher than expected for this time of year across the state and novel H1N1 outbreaks are ongoing. Nearly 100% of the influenza viruses being detected are novel H1N1 viruses and surveillance data indicate there is wide variability seen across the state in ILI activity.

Each week an activity code for the state as a whole is reported to the Centers for Disease Control and Prevention (CDC). There are five possible categories: No Activity, Sporadic, Local, Regional, or Widespread. Regional activity has been reported in Florida for this reporting week (week 31). Florida meets the CDC regional activity definition, which is: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions. The CDC report can be viewed at http://www.cdc.gov/flu/weekly/usmap.htm.

During week 31 (08/02/09-08/08/09), the proportion of patient visits for ILI as reported by the Florida Sentinel Physician Influenza Surveillance Network was 3.88%. This is above the state threshold for moderate activity of 2.98%.

Seventy-seven of 144 (53%) ILI specimens tested by Bureau of Laboratories were positive for influenza. The graph that follows shows the progression of the 2007-2008 and 2008-2009 Florida influenza seasons as monitored by three** of seven surveillance systems.



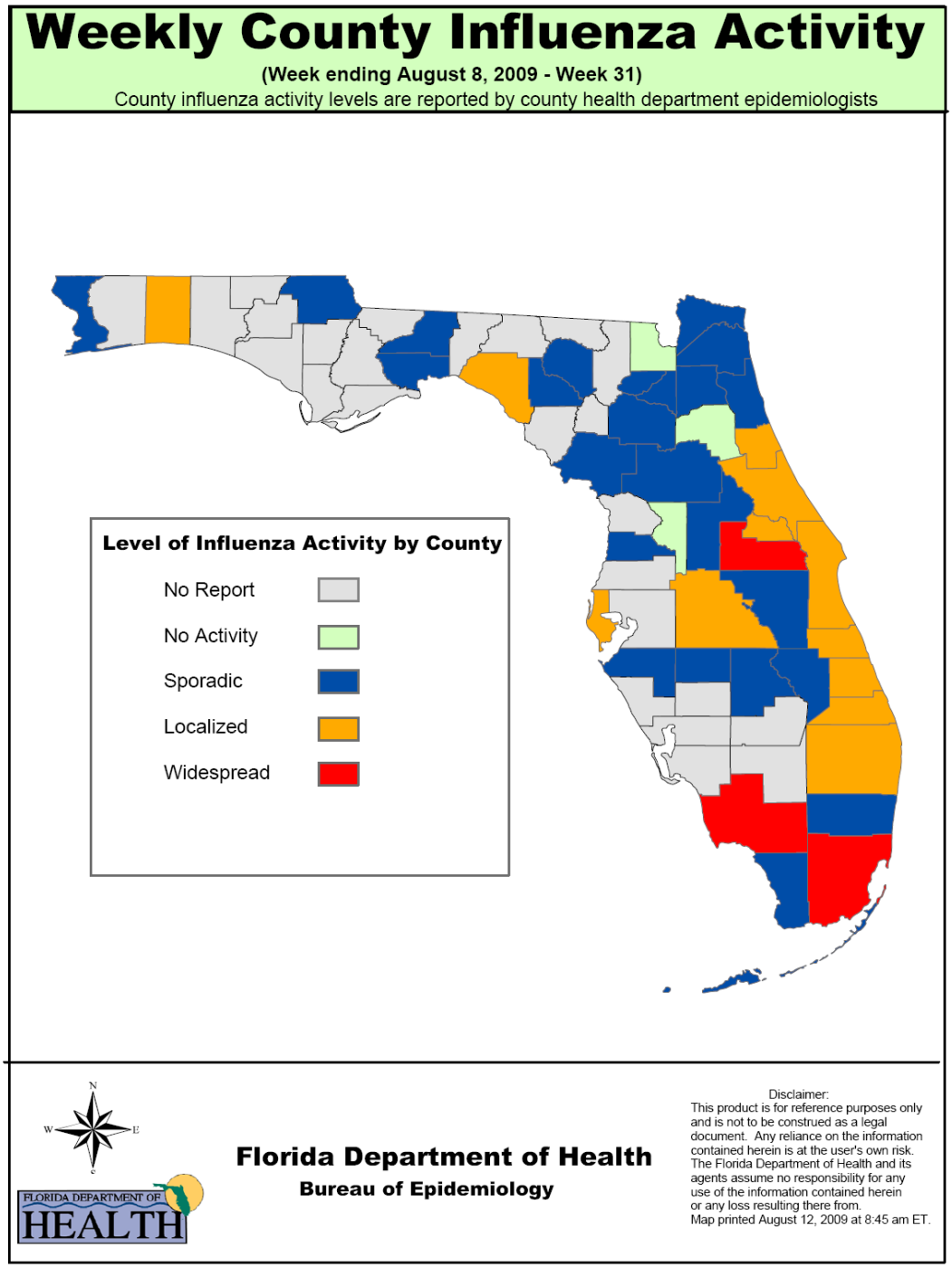
*The purposes of these surveillance systems are to determine when and where influenza activity is occurring, to identify circulating viruses, to detect changes in the circulating influenza viruses, to track patterns of influenza-associated morbidity and mortality, and estimate the overall impact of influenza in the state of Florida.

**1) FSPISN, 2) State Laboratory Viral Surveillance, and 3) County Activity Levels.

During week 31, three counties reported widespread activity. Twelve counties reported localized activity. Twenty-four counties reported sporadic activity and three counties reported no activity. Twenty-five counties did not report.

Please note: data reported from counties reporting after the deadline are recorded but may not be included in the activity map that follows.

Activity Level	County
No Report	Bay, Calhoun, Charlotte, Citrus, Columbia, DeSoto, Dixie, Franklin, Gadsden, Gilchrist, Glades, Gulf, Hendry, Hillsborough, Holmes, Jefferson, Lee, Liberty, Madison, Pasco, Santa Rosa, Sarasota, Walton, Washington
No Activity	Baker, Putnam, Sumter
Sporadic	Alachua, Bradford, Broward, Clay, Duval, Escambia, Hardee, Hernando, Highlands, Jackson, Lafayette, Lake, Leon, Levy, Manatee, Marion, Monroe, Nassau, Okeechobee, Osceola, St. Johns, Suwannee, Union, Wakulla
Localized	Brevard, Flagler, Indian River, Martin, Nassau, Okaloosa, Palm Beach, Polk, St. Lucie, Seminole, Taylor, Volusia
Widespread	Collier, Miami-Dade, Orange



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Florida Year-to-Date Mosquito-Borne Disease Summary Through July 21, 2009

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During the period from January 1 through August 17, 2009, the following arboviral activity was recorded in Florida:

Eastern equine encephalitis virus (EEEV) Activity
Positive samples were obtained from 60 equines, 1 captive bird, 136 sentinel chickens, and 68 live wild birds, and one mosquito pool in 31 counties.

West Nile virus (WNV), St. Louis encephalitis virus (SLEV) Activity
Positive samples from three sentinel chickens were received from two counties. Samples from two live wild birds from two counties tested positive for antibodies to a flavivirus; either WNV or SLEV.

Highlands J virus (HJV) Activity
Positive samples were obtained from 60 sentinel chickens in 8 counties.

California encephalitis group viruses (CEV) Activity
None

In addition, the following imported mosquito-borne disease was reported:

Dengue Virus (DENV)
Eighteen imported cases were reported from eight counties: Alachua (1), Brevard (3), Broward (4), Dade (2), Hillsborough (4), Lee (4), Orange (4), and Sarasota (2). Countries of origin included Puerto Rico (3), Dominican Republic (3), Panama (2), Bolivia (2), India (2), Brazil (1), Honduras (1), Suriname (1), the Philippines (1), and Columbia (1).

Malaria
Sixty-two imported cases were reported from fifteen counties: Alachua (2), Broward (17), Clay (13), Dade (13), Duval (5), Escambia (6), Lee (6), Manatee (6), Orange (6), Palm Beach (7), Pasco (2), Pinellas (2), Polk (3), and Seminole (3). Countries of origin included Haiti (30), Nigeria (6), Sierra Leone (2), Malawi (3), South Africa (1), Ghana (5), Zambia (1), Honduras (1), India (3), Guinea (1), Mexico (1), Thailand (1), Pakistan (1), Kenya (1), Congo (1), Dominican Republic (1), Togo (1), and Sudan/Uganda (1). Eighty-two percent of cases (51/62) were diagnosed with *Plasmodium falciparum,* 13% (8/62) were *Plasmodium vivax*, and three were not determined.

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, 279 reports representing a total of 689 dead birds (53 crows, 23 jays, 45 raptors, and 568 others) were received from 51 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Report dead birds to www.myfwc.com/bird/.

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

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Upcoming Events

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

September 28: TBA

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, July 1-31, 2009

	Month				Cumulative (YTD)	
Disease Category	**2009**	**2008**	**Mean†**	**Median¶**	**2009**	**2008**
A. Vaccine Preventable Diseases						
Diphtheria	0	0	0	0	0	0
Measles	0	0	0	0	5	0
Mumps	1	1	1.2	1	11	17
Pertussis	51	45	25.4	23	308	132
Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	0	0	0	2
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0
Varicella	41	62	N/A	N/A	896	1,142
B. CNS Diseases & Bacteremias						
Creutzfeldt-Jakob Disease	0	2	1.6	1.5	11	10
H. Influenzae (invasive)	16	15	11.4	3	160	81
in those ≤5	4	8	5.2	4	20	49
Listeriosis	3	3	2.8	3.5	9	20
Meningitis (bacterial, cryptococcal, mycotic)	24	17	12.4	11	127	97
Meningococcal Disease	6	6	5.8	5	41	40
Staphylococcus aureus (VISA, VRSA)	1	0	0	0	4	0
Streptococcal Disease, Group A, Invasive	23	21	23	21	185	170
Streptococcus pneumoniae (invasive disease)						
Drug resistant	31	45	41.6	43	525	458
Drug susceptible	35	28	34.6	32	482	434
C. Enteric Infections						
Campylobacteriosis	136	112	102.8	101	611	599
Cholera	0	0	0	0	0	0
Cryptosporidiosis	36	36	34	36	175	195
Cyclospora	9	18	13.8	10	26	46
Escherichia coli, Shiga-toxin producing (STEC)**	8	2	4	3	89	27
Giardiasis	216	98	104.4	98	1092	660
Hemolytic Uremic Syndrome	0	0	0.6	1	2	0
Salmonellosis	701	595	506.2	511	2613	2442
Shigellosis	24	83	114.2	101	251	545
Typhoid Fever	1	1	1.2	1	8	8
D. Viral Hepatitis						
Hepatitis A	14	13	20.8	24	126	92
Hepatitis B, Acute	27	34	37.2	36	192	203
Hepatitis C, Acute	6	8	3.4	2	40	32
Hepatitis +HBsAg in pregnant women	47	56	45.6	56	347	375
Hepatitis D, E, G	0	1	0.2	1	3	1

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2009 is provisional, data for 2008 was finalized on April 1, 2009

† 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, July 1-31, 2009

	Month				Cumulative (YTD)	
Disease Category	**2009**	**2008**	**Mean†**	**Median¶**	**2009**	**2008**
F. Vector Borne, Zoonoses						
Dengue	0	0	2.8	4	18	20
Eastern Equine Encephalitits††	0	0	0.2	1	0	0
Ehrlichiosis/Anaplasmosis	2	4	2.6	3	8	8
Leptospirosis	0	0	0.2	1	0	0
Lyme Disease	13	11	5.6	5	39	31
Malaria	17	5	7	7	57	27
Plague	0	0	0	0	0	0
Psittacosis	0	0	0	0	0	1
Q Fever (acute and chronic)	0	0	0.4	1	1	0
Rabies, Animal	18	18	17.2	18	100	81
Rabies (possible exposure)	232	152	128.4	141	1,002	906
Rocky Mountain Spotted Fever	1	2	2.4	3	4	6
St. Louis Encephalitis††	0	0	0	0	0	0
Toxoplasmosis	1	1	0.6	1.5	2	4
Trichinellosis	0	0	0	0	0	1
Tularemia	0	0	0	0	0	0
Typhus Fever (epidemic and endemic)	0	0	0	0	0	0
Venezuelan Equine Enchephalitis††	0	0	0	0	0	0
West Nile Virus††	0	0	1.2	3	0	0
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	0	0	0	1	0
Brucellosis	1	0	0	0	6	2
Glanders	0	0	0	0	0	0
Hansen's Disease (Leprosy)	0	0	0.2	1	2	5
Hantavirus Infection	0	0	0	0	0	0
Legionella	17	13	11.8	12	88	82
Melioidosis	0	0	0	0	0	0
Vibriosis	11	11	12.2	11	46	49

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2009 is provisional, data for 2008 was finalized on April 1, 2009

† 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 2009 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.

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 to register on the EpiCom system by emailing the Florida Department of Health Emergency Notification System Helpdesk at FDENS-help@doh.state.fl.us. Users are invited to contribute appropriate public health observations related to any suspicious or unusual occurrences or circumstances through the system. EpiCom is the primary method of communication between the Bureau of Epidemiology and other state medical agencies during emergency situations. The following are titles from select recent postings:

- Pertussis in a family, Escambia County
- Novel H1N1 confirmed cases, Madison County
- *Naegleria fowleri*/primary amebic meningoencephalitis death, Nassau County
- Possible HCV infections associated with a surgical technician at a hospital, New York
- Confirmed novel H1N1 death, Polk County
- Influenza A outbreak at Ringling College of Art and Design summer camp, Sarasota County
- Novel H1N1 flu death, Sarasota County,
- Novel H1N1 in a Clay County camper associated with a Tennessee church camp
- H1N1 and influenza-like illness in residential camp, Clay County
- Cluster of influenza-like illness at local business, Nassau County
- Cluster of influenza-like illness in a Mississippi church group, Orange and Osceola counties
- Novel H1N1 death in a 41-year-old, Orange County
- Influenza-like illness cluster in a care facility, Hillsborough County
- Meningococcal disease in a 66-year-old man, Miami-Dade County
- Influenza outbreak in a church day camp, Hillsborough County
- Two deaths from novel influenza H1N1, Palm Beach County
- First novel H1N1 death, Lee County
- Two deaths in persons with confirmed novel influenza H1N1, Hillsborough County
- Death with novel H1N1 2009 influenza virus in a 40-year-man, Hernando County
- Novel H1N1 deaths, Miami-Dade County
- CDC Interim Guidance: People who have close contact with pigs in non-commercial settings, 07/23/09
- Suspected novel influenza H1N1 outbreak in jail, Pinellas County
- Influenza exposures at a day camp, Polk County
- First confirmed case of novel H1N1 influenza, Taylor County
- Influenza-like illness cluster in a summer camp, Lake County
- Influenza-like illness cluster at a local military facility, Okaloosa County
- Imported malaria case in a visitor, Clay County
- *Salmonella* outbreak investigation, Pinellas County
- Suspected severe Influenza A H1N1 in a healthy young man, Walton County
- Two deaths in persons with novel H1N1 influenza, Orange County
- Possible daycare-associated rotavirus outbreak, Duval County
- Follow-up on jail influenza outbreak – confirmed H1N1, Pinellas County

- Rabid fox, Hernando County
- First cases of novel H1N1, Suwannee County
- Confirmed cluster of Novel H1N1 Influenza A at local childcare facility, Nassau County
- Investigation of lab-identified cluster of *Salmonella* Group Z, multi-county
- Cluster of influenza-like illness at a long-term care facility, Brevard County
- Confirmed Novel H1N1 at a summer recreation camp, Hendry County
- Influenza-like illness outbreak at overnight camp, Hillsborough County
- Fatal illness in a young healthy woman wiith novel H1N1 influenza infection, Hillsborough County
- Multiple influenza investigations and responses, Hillsborough County
- H1N1 death, Hillsborough County
- CDC HAN notice: change in recommended time at home for those sick with novel H1N1 infection
- Four influenza-like illness or influenza H1N1 investigations, Miami-Dade County
- First confirmed case of novel H1N1, Wakulla County
- Meningococcemia in a 16 year old, Brevard County
- Influenza-like illness and novel H1N1 Influenza A clusters, Palm Beach County
- H1N1 in a summer camp setting, St. Johns County
- Meningococcal disease, Hillsborough County
- Rabies alert, Duval County
- Typhoid fever in a young traveler, Alachua County
- Juvenile raccoon bite investigation, Clay County
- H1N1-associated death in a young healthy resident, Seminole County
- Transfusion-associated malaria update, Hillsborough County
- First novel H1N1 influenza A death, Pinellas County
- Duval CHD issues health advisory for St. Johns River for Cyanobacteria, Duval County
- Two deaths with novel Influenza A H1N1, Miami-Dade County
- Influenza-like illness outbreak in jail – not yet known to be H1N1, Polk County
- Influenza-like illness in staff at a local hospital emergency department, Collier County
- Novel H1N1 and influenza-like illness clusters, Sarasota County
- Update on novel influenza A H1N1, Duval County
- Eighteenth death of a person infected with novel influenza A H1N1, Miami-Dade County
- Novel H1N1-associated death, Alachua County
- Multiple influenza-like illness outbreaks, presumed novel H1N1, Hillsborough County

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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 at* http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2009/August2009EpiUpdate.pdf.

For submission guidelines or questions regarding Epi Update, please contact Leesa Gibson at 850.245.4409 or by email at Leesa_Gibson@doh.state.fl.us.