Epi Update

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Chagas Disease in Florida

Elizabeth Radke, M.P.H.

Figure 1. *Trypanosoma cruzi* and *Triatoma sanguisuga*

As many as eight to eleven million people in Mexico, Central America, and South America have Chagas disease. Most people are asymptomatic and do not know they are infected. However, approximately 20% to 30% of those with chronic infection will develop clinically apparent disease, making it a significant public health concern.

Chagas disease is caused by infection with *Trypanosoma cruzi*, a protozoan parasite. In Chagas endemic countries, it is typically transmitted by infected triatomine bugs, commonly known as kissing bugs. The insects defecate during or after feeding and the feces enter the human body through the bite wound or mucous membranes. Alternatively, transmission can occur congenitally (from mother to infant), through blood transfusion or organ transplantation, accidental laboratory exposure, or rarely through ingestion of food contaminated by infected bugs. Transmission in the U.S. is rare and does not follow the same pattern as endemic countries. Congenital and transfusion transmission are more common, mostly attributed to better housing conditions. Additionally, the triatomine species present in the U.S. (*Triatoma sanguisuga)* prefer animal hosts and do not defecate immediately after feeding.

Although autochthonous transmission in Florida has not yet been documented, it is possible due to the demonstrated presence of both infected triatomine bugs and infected reservoirs such as raccoons. There have been cases of autochthonous transmission in Texas, Tennessee, California, and Louisiana. People in less affluent areas of Florida likely have a greater chance of becoming infected.

Once transmission has taken place, most infected individuals experience an acute illness phase with mild symptoms or nonspecific febrile illness that frequently goes unrecognized. After four to eight weeks or more, individuals enter the chronic phase and parasites are generally not detected in the blood. Without treatment, they will remain infected for life. As previously mentioned, some people will remain asymptomatic (indeterminate infection) but 20% to 30% will experience clinical symptoms including cardiac damage. This can range from mild changes on electrocardiogram to severe arrhythmias, cardiomyopathy, and sudden death. The digestive tract can also be involved leading to megaesophagus or megacolon. Finally, the peripheral and central nervous systems can be affected.

Since the introduction of blood donation screening for Chagas in 2007, more chronic infections in the U.S. are being recognized. The blood centers perform an enzyme-linked immunosorbent assay (ELISA). Donations that have repeat reactive ELISAS should be confirmed with a radioimmuno-precipitation assay (RIPA). In a 2005 study by the American Red Cross to evaluate the Chagas screening assay used by blood donation centers, 51% of donors with repeat reactive screening tests had positive results on RIPA. Blood banks should notify individuals with positive results and, ideally, provide contact information for the county health department (CHD) to the donor as well as notify the CHD of the result. CHDs are encouraged to develop relationships with blood centers to facilitate this flow of information.

Due to the cost of RIPA, some blood centers opt not to perform confirmatory testing since the blood is not used if ELISA is positive. The Florida Department of Health (FDOH) and CDC encourage blood centers to perform RIPA as a public health service, but if the center is unwilling to provide this testing, the sample should be sent to CDC for confirmation through a state laboratory. If the clinical and epidemiologic factors are consistent with an acute infection, CDC can examine whole blood for the presence of parasites (mark Chagas culture and parasitology and Chagas PCR on lab form). For chronic infections, which is typically what is identified by blood centers, CDC can perform testing on serum (mark Chagas serology on the form). The submission form is located at http://www.doh.state.fl.us/environment/medicine/arboviral/pdfs/CDCChagasSubmission.pdf.

Although Chagas is not a reportable disease, FDOH would like to collect basic information on infected individuals to get a better idea of the groups at risk for Chagas disease in Florida. Once an individual has laboratory confirmation, the CHD is encouraged to contact the individual for an interview and fill out the brief case report form (Appendix B) and fax it to FDOH. The form is located at http://www.doh.state.fl.us/environment/medicine/arboviral/pdfs/2007/ChagasCRF.pdf. The case should also be entered into the Chagas outbreak module in Merlin (#1366). Any family members who may be infected should also be tested.

Infected individuals should be referred to a local physician or clinic for follow-up care and treatment. In the U.S., antitrypanosomal medication (nifurtimox or benznidazole) is only available through CDC under an investigational drug protocol. The physician should call CDC to determine whether treatment is indicated. The CDC consultation line for physicians is (770) 488-7775. Medications are free of charge for eligible patients and will be shipped directly to the physician's office. Many infected individuals will not have access to healthcare or may be uninsured and

unable to afford treatment. CHDs should attempt to identify physicians or clinics in their area that may be willing to treat these patients on a sliding fee scale or at a reduced cost.

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2008 Behavioral Risk Factor Surveillance System (BRFSS) Data Report

Bo (Bonnie) Yu, M.A., M.A.S.

The Florida Department of Health is pleased to announce the release of the 2008 Florida Behavioral Risk Factor Surveillance System (BRFSS) State Data Report.

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 U.S. territories. It is the largest health-risk behavior database and the largest telephone survey in the world. In 2008, 10,874 adults participated in the survey in Florida, which provides a rich data source to assess personal health behaviors that contribute to morbidity and mortality. In the data book, BRFSS survey data are adjusted, or weighted, so that the resulting estimates are generalizable to all Florida adults.

Several new questions were added to the 2008 survey. These include questions about caregiver obligations, cancer prevalence, injury and disability, risk perception and attitudes towards alcohol, as well as drugs and tobacco. Data was collected on cancer prevalence for the first time in Florida through the survey. The data indicate that 9.4% of Florida adults were ever told by a doctor they had cancer. Of these, 3.1% of women are living with breast cancer, 4.4% of men 40 years of age and older have been diagnosed with prostate cancer, and the average number of years since receiving the first cancer diagnosis was 12 years.

A comprehensive data report with detailed data tables is available at the Florida Department of Health, Bureau of Epidemiology's website http://www.doh.state.fl.us/disease_ctrl/epi/brfss/reports.htm.

These data are used to:

- determine priority health issues and identify populations at highest risk for illness, disability, and death;
- plan and evaluate prevention programs;
- educate the community and policy makers about disease prevention; and
- support community policies that promote health and prevent disease.

If any assistance is needed with more detailed interpretation, please contact the Bureau of Epidemiology, Chronic Disease Epidemiology Section at (850) 245-4401.

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Update: Destination Florida — Contacts to Tuberculosis Related to International Air Travel

Jimmy Keller, D.H.Sc., Kathy McLaughlin, Sevim Ahmedov, M.P.A., and Jim Cobb

Air travel provides opportunities for infectious diseases to spread rapidly between countries and continents. There may be a risk of transmission during the flight, notably with airborne and droplet-borne respiratory infections.[1] During the summer of 2007, the Bureau of Tuberculosis and Refugee Health participated in activities related to an infectious case of tuberculosis (TB) and international air travel. That contact investigation received high level international attention and sparked an investigation by the U.S. House of Representatives, Committee on Homeland Security.[2] The Florida Department of Health investigated over 30 airline contacts to the index case.

That investigation was not the first of its kind. Other contact investigations were conducted and some have been reported in the literature.[3 4 5 6 7 8 9] Martinez et al[1] provided some amplification of the 2006 World Health Organization recommendations about airline travel in light of experience gained and the evolving epidemiological situation, after several incidents involving multiple drug resistant (MDR) and extensively drug resistant (XDR) TB in airline passengers. Evaluation of the data from four previous investigations suggests that transmission of *Mycobacterium tuberculosis* did occur.[4 5 7 8] One investigation concluded there was a low probability that TB transmission had occurred during the flights.[6] For one report, the investigators reported inconclusive evidence about the hypothesis that *Mycobacterium tuberculosis* was transmitted on the flights.[4] For the most recent investigation, the investigators suggested that the process of investigating passenger contacts of a TB-infected individual traveling by air is complicated and usually unsuccessful without dedicated resources and availability of high-quality contact information from airlines.[3]

Since the 2007 TB incident mentioned above, new tools have been provided for TB prevention and control activities related to airline travel. In June 2007, federal agencies developed a public health "Do Not Board" (DNB) list that enables domestic and international public health officials to request that people with communicable diseases who meet specific criteria and pose a serious threat to the public be restricted from boarding commercial aircraft departing from or arriving in the U.S. The Centers for Disease Control and Prevention (CDC) and the U.S. Department of Homeland Security (DHS) manage the public health DNB list. CDC published data about their experience with the DNB list.[10]

Another tool, Epi-X, is not new but was expanded for use by the CDC Division of Global Migration and Quarantine. Since June 2007, the Florida TB Program has been using Epi-X to receive notifications of contacts to infectious TB cases for airline flights that are equal to or greater than eight hours duration. The following table summarizes Epi-X notification and investigation activity in Florida for June 2007 through December 2008:

Epi-X Referrals*	**2007**	**2008**
Referrals Received	70	167
Contacts Located	46	95
Contacts Not Located	23	46
Evaluation Completed	38	79
Evaluation Pending	1	26
Treatment Recommended	4	14
Treatment Not Recommended	34	60
Florida Counties Involved	16	23

*Data source: Bureau of TB and Refugee Health ICCR database as of 3/6/2009.

These data highlight another important part of the county health departments' contribution to the global effort of TB prevention. While many of the people notified of their exposure to TB reside in Florida, several were international visitors to Florida. Fortunately, for the world and Florida, county health department staff have been successful at locating and evaluating contacts exposed to infectious TB.

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Florida Year-to-Date Mosquito-Borne Disease Summary Through April 10, 2009

Elizabeth Radke, M.P.H., Kristina Weis, Ph.D., Danielle Stanek, D.V.M., Carina Blackmore, D.V.M., Ph.D.

During the period from January 1 through April 10, 2009, the following arboviral activity was recorded in Florida:

Eastern equine encephalitis virus (EEEV) Activity
Positive samples were obtained from five equines, seven sentinel chickens, and seven live wild birds in eleven counties.

West Nile virus (WNV), St. Louis encephalitis virus (SLEV) Activity
None

Highlands J virus (HJV) Activity
Positive samples were obtained from three sentinel chickens in one county.

California encephalitis group viruses (CEV). Activity
None

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

Dengue Virus (DENV)
Eleven cases were reported from six counties: Alachua (1), Brevard (3), Broward (2), Lee (1), and Orange (2). Countries of origin included Puerto Rico (3), Panama (2), Dominican Republic (1), Bolivia (2), Honduras (1), Suriname (1), and Santo Domingo (1).

Malaria
Twenty-one cases were reported from seven counties: Broward (10), Dade (5), Lee (1), Palm Beach (1), Pinellas (2), Polk (1), and Seminole (1). Countries of origin included Haiti (14), Nigeria (3), Africa (1), Honduras (1), Mexico (1), and Thailand (1).

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, 123 reports representing a total of 326 dead birds (30 crows, 3 jays, 14 raptors, and 279 others) were received from 40 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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Florida Influenza Surveillance Report

Kateesha McConnell, M.P.H.

Influenza surveillance in Florida consists of seven surveillance components: 1) Florida Sentinel Provider Influenza Surveillance Network (FSPISN); 2) Florida Pneumonia and Influenza Mortality Surveillance System; 3) State laboratory viral surveillance; 4) County influenza activity levels; 5) Notifiable Disease Reports; 6) Influenza or influenza-like illness (ILI) outbreaks; and 7) Syndromic surveillance.

For the most up-to-date information regarding influenza surveillance and the progress of influenza season 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.

Overall, influenza activity across the state is waning. During weeks ten through thirteen of 2009 (03/08/09-04/04/09), statewide influenza activity was reported as widespread (week 10), regional (week 11, 12) and local (week 13) using the national CDC influenza activity criteria. The average proportion of patient visits for ILI as reported by the FSPISN during weeks ten through thirteen was 2.69%, which is below the state threshold for moderate activity of 2.98%. Influenza activity across the nation also decreased during this same time period. So far this season, there have been seven reported ILI outbreaks investigated in Florida. Three deaths of children are being evaluated as influenza-associated deaths. Nationally, most of the viruses characterized this season are related to the strains found in the 2008-09 vaccine. In Florida, laboratory testing has shown a shift in the proportion of positive influenza A and B isolates or specimens. Earlier this season Florida saw a larger proportion of influenza B, whereas now the total proportion of the isolates is more evenly split between influenza A and B. This pattern is somewhat different than our usual pattern in Florida. Traditionally, Influenza A activity is seen earlier in the influenza season and influenza B activity increases later in the influenza season with the peak influenza B activity seen in the February to March timeframe. Influenza A is typically associated with more severe illness and the ability to cause more outbreaks than influenza B.

Florida Bureau of Laboratories in Jacksonville and Tampa tested a total of 562 specimens for influenza viruses since September 28, 2008. Three hundred (53%) of the specimens tested positive for influenza. Of the 300 specimens, 144 were influenza A and 156 were influenza B isolates.

During week thirteen, no counties reported widespread activity and three counties reported localized activity. Twenty-two counties reported sporadic activity and twenty-five counties reported no activity. Seventeen counties did not report.

Influenza is on the decline; however, it is still present in the community. Remember to protect yourself and your family from the flu. Practice good respiratory etiquette by covering your cough and washing your hands after coughing or blowing your nose. Help prevent the spread of flu by staying home from social gatherings, work, or school when you are sick.

Thank you to all of our surveillance partners for their continuous surveillance efforts in monitoring influenza activity in the state.

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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)

Upcoming Topics:

- April 28 – "Reported Cases of *Vibrio* Illness in Florida, 1998-2007" presented by Kristina Weis, Ph.D.
- May 26 – "BRFSS Survey Bias and Response Rates" presented by Youjie Huang, M.D., Dr.PH., M.P.H. and Tammie Johnson, Dr.PH., M.P.H.
- June 30 – "A Clinical Dilemma of Rabies - A Disease Since Antiquity" presented by Tony Stidham, M.P.H., D.H.Sc.

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, March 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	0.2	1	1	0
Mumps	1	1	1	1	6	11
Pertussis	52	10	17.2	20	105	31
Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0.4	1	0	0
Varicella	199	219	N/A	N/A	448	574
B. CNS Diseases & Bacteremias						
Creutzfeldt-Jakob Disease	2	2	2	2.5	6	5
H. Influenzae (invasive)	29	8	12	4	71	36
in those ≤5	5	10	6.4	6	9	24
Listeriosis	0	8	3	3	1	11
Meningitis (bacterial, cryptococcal, mycotic)	30	13	10.4	11	57	46
Meningococcal Disease	13	8	11.4	12	24	20
Staphylococcus aureus (VISA, VRSA)	2	0	0	0	2	0
Streptococcal Disease, Group A, Invasive	34	20	23.6	25	87	79
Streptococcus pneumoniae (invasive disease)						
Drug resistant	121	70	87	81	325	239
Drug susceptible	95	58	72.4	71	269	233
C. Enteric Infections						
Campylobacteriosis	64	77	77	77	218	248
Cholera	0	0	0	0	0	0
Cryptosporidiosis	17	28	22.2	23	65	80
Cyclospora	0	3	1.2	1	9	9
Escherichia coli, Shiga-toxin producing (STEC)**	10	5	5.2	2	36	13
Giardiasis	177	91	91.2	91	451	254
Hemolytic Uremic Syndrome	1	0	1.4	1	1	0
Salmonellosis	235	229	215.4	227	753	865
Shigellosis	25	65	109.6	67	107	243
Typhoid Fever	0	0	0.8	1	2	4
D. Viral Hepatitis						
Hepatitis A	21	13	18.2	19	58	41
Hepatitis B, Acute	41	26	38.4	42	97	86
Hepatitis C, Acute	6	2	4.4	3	8	14
Hepatitis +HBsAg in pregnant women	73	53	52.8	53	175	161
Hepatitis D, E, G	0	0	0	0	2	0

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2009 is provisional, data for 2008 will be 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, March 1-31, 2009

Disease Category	Month 2009	Month 2008	Month Mean†	Month Median¶	Cumulative (YTD) 2009	Cumulative (YTD) 2008
F. Vector Borne, Zoonoses						
Dengue	0	4	1.4	2	9	14
Eastern Equine Encephalitits††	0	0	0	0	0	0
Ehrlichiosis/Anaplasmosis	1		0.2	1	2	0
Leptospirosis	0	0	0	0	0	0
Lyme Disease	2	5	3	4	18	9
Malaria	9	1	3.8	3	24	14
Plague	0	0	0	0	0	0
Psittacosis	0	1	0.2	1	0	1
Q Fever (acute and chronic)	1	0	0.2	1	1	0
Rabies, Animal	16	11	14.6	18	44	32
Rabies (possible exposure)	144	112	102.4	99	372	300
Rocky Mountain Spotted Fever	0	0	1.6	2	1	1
St. Louis Encephalitis††	0	0	0	0	0	0
Toxoplasmosis	0	0	0.6	1.5	1	1
Trichinellosis	0	0	0	0	0	0
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	0.8	4	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	0	0	0.4	1	1	1
Glanders	0	0	0	0	0	0
Hansen's Disease (Leprosy)	0	0	0	0	1	3
Hantavirus Infection	0	0	0	0	0	0
Legionella	19	13	12.8	13	40	39
Melioidosis	0	0	0	0	0	0
Vibriosis	4	8	5.6	6	11	13

* Confirmed and probable cases based on date of report as reported in Merlin
Incidence data for 2009 is provisional, data for 2008 will be 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 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.

This Month on EpiCom

Christie Luce

EpiCom is located within the Florida Department of Health's Emergency Notification System (FDENS). The Bureau of Epidemiology encourages *Epi Update* readers not only to register on the EpiCom system by emailing the Florida Department of Health Emergency Notification System Helpdesk at FDENS-help@doh.state.fl.us, but to sign up for features such as automatic notification of certain events. Users are invited to contribute appropriate public health observations related to any suspicious or unusual occurrences or circumstances through the system. EpiCom is the primary method of communication between the Bureau of Epidemiology and other state medical agencies during emergency situations. Following are selected recent postings:

- Meningococcemia in a 13-year-old, Alachua County
- Upper respiratory illness outbreak at a long term care facility, Brevard County
- Cluster of serogroup W-135 isolates, South Florida
- Scombroid investigation update
- Malaria, Palm Beach County
- Norovirus outbreak at a skilled nursing facility, Hillsborough County
- Possible cluster of *Mycoplasma pneumoniae* infections in an elementary school, Miami-Dade
- Update - toxic gas exposure in inmates and staff at a local correctional facility, Miami-Dade
- Gastrointestinal illness outbreak in an assisted living facility, Broward County
- Gastrointestinal illness outbreak in a skilled nursing facility, Highlands County
- Nationwide recall of pistachios because of possible health risk – *Salmonella*
- Pertussis in an infant, Hillsborough County
- *Neisseria meningitidis* infection in a day care employee, Broward and Miami-Dade counties
- Rabid bobcat attacks two, Citrus County
- Cluster of GI illness identified through ESSENCE, Duval County
- Suspected scabies outbreak in an elementary school, Hillsborough County
- GI illness outbreak at an assisted living facility, Lake County
- GI illness outbreak at a skilled nursing facility, Broward County
- Respiratory illness cluster in a classroom, Hillsborough County
- Enterohemorrhagic *E. coli* infection with renal failure in farmer raising livestock, Alachua County
- Norovirus outbreak in an assisted living facility, Okaloosa County
- Investigation of *Salmonella* cluster, Collier County
- Gastrointestinal illness at a shelter/rehabilitation facility, Broward County
- Probable imported Dengue case, Sarasota County
- Foodborne illness outbreak at a local college, Pinellas County
- Norovirus outbreak in a nursing facility, Volusia County
- Lymphocytic choriomeningitis virus (LCMV) investigation, Palm Beach County

For physicians and other healthcare providers who want more information on diagnosis and treatment of foodborne illness: *Recommendations and Reports April 16, 2004 / Vol. 53 / No. RR-4: Diagnosis and Management of Foodborne Illnesses A Primer for Physicians and Other Health Care Professionals* at http://www.cdc.gov/mmwr/PDF/rr/rr5304.pdf

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