Summer 2014

Florida Department of Health
Volusia County

Office of Disease Control and Health Protection

EPI-LOG

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Mosquito Vectors for Chikungunya and Dengue

By: Jim McNelly

Mosquito-borne disease has been in the news lately with the recent chikungunya outbreak in the Caribbean. Chikungunya, like Dengue is spread through the bite of a mosquito vector: *Aedes albopictus* or *Aedes aegypti*.

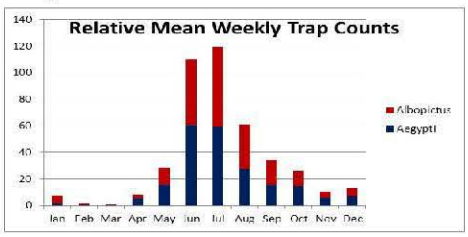
The Asian tiger mosquito, *Aedes albopictus*, became established in the United States in 1985 in Texas. By 1994 *Ae. albopictus* had spread to all 67 counties in the state. This mosquito is produced in both artificial, and man-made containers (e.g., tires, buckets, tarps), and natural containers such as bromeliads and tree holes. Prior to the establishment and spread of *Ae. albopictus* in Florida, the yellow fever mosquito *Aedes aegypti*, was common in man-made containers. In the mid -1990's the state's mosquito research and control communities had identified major declines in *Ae. aegypti* populations. More recently Volusia County and much of central Florida has experienced a resurgence of *Ae. aegypti*.

Aedes albopictus

Aedes aegypti

Both mosquitoes are common throughout the Volusia County Mosquito Control (VCMC) district, which can be roughly described as that part of the county east of I-95. Surveillance with traps that lure and capture female mosquitoes that are host seeking, or searching for a blood meal, indicates that there is a primary season for these two mosquito species.

The graph below, generated by 23 traps in Holly Hill, shows that our *Ae. albopictus*/*Ae. aegypti* season is primarily mid-May through mid-September. That said, we see low levels of activity throughout the entire year. Surveillance in 2013 also indicated that *Ae. aegypti* is more common in eastern Volusia County, with very low populations of this mosquito monitored at six different locations in the western side of the county.



This Issue:

Imported dengue, and now chikungunya virus, raises the importance of vigilance to man-made container mosquito production. Both mosquitoes are efficient at transmitting these viruses when the virus is present. Fancy terms such as "anthropophilic" and "peridomestic" are often used to describe the habitats and habits of these mosquitoes; simply put, they live in the containers that surround our homes, recreation centers and the workplace.

They are in bird baths and rain barrels, planters and kiddie pools, wheel barrows and trash cans. They are in the small pockets of water held in tarps covering boats, plastic trash bags and discarded potato chip bags. VCMC routinely disposes of hundreds of tires and makes larvicide (to kill mosquito larvae) applications to thousands of containers in cemeteries and salvage yards.

Between May and October, our *Ae. albopictus* and *Ae. aegypti* season, and all containers that hold water should be drained once per week – tip the container and drain the water. Or flush thoroughly! If required, re-fill and repeat the process the following week. When possible, dispose of the container in as part of the weekly trash/re-cycling process. And don't forget those bromeliads – flush them well, once per week. Early diagnosis and mosquito control are the necessary ingredients to prevent mosquito-borne disease from spreading throughout the county.

Jim McNelly is the Director of Volusia County Mosquito Control. They can be reached in New Smyrna Beach at 386-424-2920 or Daytona Beach at 386-239-6516. For more information visit: http://www.volusia.org/services/public-works/mosquito-control/

Disease	Florida 2014*	Volusia 2014*	Florida 2013	Volusia 2013
Dengue	48	1	163	2
Eastern Equine Encephalitis	1	0	2	0
Malaria	31	1	54	0
West Nile Virus	0	0	7	0
Chikungunya	124	1	N/A	N/A
*through 1 Aug 14				

Reportable Disease List Update

By: Paul Rehme

The state of Florida recently revised the Table of Reportable Diseases or Conditions to Be Reported, Rule 64D-3.029, Florida Administrative Code (FAC), effective June 4, 2014. Revisions in 2014 were made in part to comply with the Governor's rule reduction initiative to simplify and streamline language in all administrative rules. Additional changes were made to reflect current public health needs for disease reporting and to align with national public health priorities.

Significant changes for general communicable diseases reporting effective June 4, 2014:

1. Added neonatal abstinence syndrome.
2. Updated reporting instructions for arboviral infections, herpes B exposure, vibriosis, and spotted fever rickettsioses.
3. Removed:
   a. Encephalitis, other (non-arboviral)
   b. Endemic typhus fever (*Rickettsia typhi*)
   c. Invasive streptococcal disease, group A
   d. *Staphylococcus aureus*, community-associated mortality
   e. Toxoplasmosis
4. Separated health care provider and laboratory reporting requirements for human papillomavirus, *Haemophilus influenzae*, and *Streptococcus pneumonia*.
5. Updated viral hepatitis reporting requirements for laboratories.
6. Expanded antimicrobial resistance surveillance by requiring laboratories participating in electronic laboratory reporting to report susceptibilities.
7. Added reporting of all (positive and negative) influenza and respiratory syncytial virus (RSV) results for all laboratories participating in ELR.
8. Expanded required isolate submission to the Bureau of Public Health Laboratories (BPHL).

Note: Many but not all diseases require specimen or isolate submission to BPHL. More than 95 diseases and conditions are reportable in Florida; 51 of these require specimen or isolate submission to BPHL for further analysis or confirmation. Submission should occur at the time of identification and without specific request by the Florida Department of Health staff.

The complete revised reporting rule and the reporting guidelines can be found at:
http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/index.html

Medical Reserve Corps

By: Logan Bernstein

The Volusia County Medical Reserve Corps (MRC) is actively recruiting medical and non-medical volunteers to assist with disaster response and community health promotion. In Volusia County, the Medical Reserve Corps is coordinated by the Florida Department of Health (DOH) where both medical and non-medical volunteers are pre-trained, prepared, and ready to supplement local emergency and public health resources during a time of need. MRC volunteers are called upon to serve alongside public health and emergency services professionals in a variety of ways. MRC staff will work with you to place you in a service area that is best suited to your expertise and preference. Becoming a volunteer is simple, the requirements are: CH110 Application, background screening, completion of FEMA ICS 100 and 700 courses, and an orientation session. We offer a variety of specialty trainings and opportunities for involvement such as participation in DOH disaster exercises like a point of dispensing, outreach events, radiation response training, first aid stations at local races, etc. We would love to offer these opportunities to you if you choose to join our mission.

Volusia County
medical reserve corps

For more information, contact Logan Bernstein, MRC Coordinator at Logan.Bernstein@flhealth.gov or 386-274-0500 ext 7527

Volunteers Building Strong, Healthy, and Prepared Communities

Hurricane Preparedness

By: Melanie Black

The Atlantic Hurricane Season runs from June 1 to November 30. Advanced planning and preparation are steps you can take to help minimize risks that can be life-threatening and cause serious damage in coastal and inland areas due to flooding, storm surge, high winds and the possibility of tornados.

Knowing the difference between the threat levels and planning accordingly can save lives and protect property. A hurricane watch means that weather conditions are favorable and can threaten within 48 hours. During this time it is important to be monitoring the weather and messaging from county emergency management. A hurricane warning means conditions are expected within the specified area. It is important to take action and grab your emergency kit you have prepared in advance and head to safety immediately.

Developing and Emergency Preparedness Plan and assembling an emergency supply kit are a priority. When developing a family emergency preparedness plan consider the following:

* List each person your plan will cover
* List of supplies for up to five days and equipment for each person in your plan
* Make copies of financial, insurance and medical records and keep them with your plan
* List of emergency contact numbers and identification for each person covered in your plan
* Evacuation route should you need to leave your home
* List of emergency shelters in your county
* Be sure to include your pets in your emergency plan. They need to have basic supplies as well.
* Have emergency cash on hand

Resources for items to place in your kit along with emergency contact information can be found in English, Spanish and Creole at http://www.floridahealth.gov/ or http://www.floridahealth.gov/programs-and-services/emergency-preparedness-and-response/prepare-yourself/index.html . Remember, if there is an emergency in your area, be prepared to activate your emergency plan, locate your emergency supply kit, and follow local alerts.

Volusia County Disease Activity*	2nd Quarter 2014	2nd Quarter 2013	YTD 2014 (30 Jun)	Full Year 2013
Vaccine Preventable				
Mumps	1	0	1	1
Pertussis	4	2	4	18
Varicella	2	2	5	15
CNS Diseases and Bacteremias				
Creutzfeldt-Jakob disease (CJD)	0	0	0	2
Haemophilus influenzae (invasive)	1	2	4	6
Meningitis (bacterial, cryptococcal, mycotic)	1	0	1	2
Meningococcal disease	0	1	0	2
Staphylococcus aureus (GISA/VISA)	0	0	0	0
Streptococcus pneumoniae (invasive disease)	7	10	27	39
Drug resistant	4	5	12	19
Drug susceptible	3	5	15	20
Enteric Infections				
Campylobacteriosis	18	23	31	75
Cryptosporidiosis	4	4	9	10
Cyclosporiasis	0	0	0	1
Escherichia coli, shiga-toxin producing (STEC)	4	1	10	11
Giardiasis	5	5	8	22
Listeriosis	0	0	0	0
Salmonellosis	29	24	43	178
Shigellosis	7	2	7	3
Typhoid Fever	0	0	0	0
Viral Hepatitis				
Hepatitis A	0	0	0	2
Hepatitis B, acute	0	3	2	7
Hepatitis B, chronic	24	21	46	70
Hepatitis C, acute	0	4	0	12
Hepatitis C, chronic	194	179	367	848
Hepatitis E	0	0	0	0
Hepatitis +HBsAg in pregnant women	2	5	3	6
Vector Borne, Zoonoses				
Dengue Fever	0	0	0	2
Ehrlichiosis/Anaplasmosis	1	0	1	2
Lyme disease	1	0	3	7
Malaria	0	0	1	0
Monkey bite	0	0	0	0
Q Fever, acute	0	0	0	0
Rabies, animal	2	0	2	5
Rabies (possible exposure)	40	47	62	178
Rocky Mountain spotted fever	0	0	0	2
West Nile virus, neuroinvasive	0	0	0	0
HIV/AIDS†				
HIV	27	29	58	113
AIDS	15	20	28	71
STDs†				
Chlamydia	408	466	776	1729
Gonorrhea	119	219	210	576
Syphilis				
Infectious (Primary and Secondary)	6	4	10	29
Early latent (Infection for <1 year)	5	6	6	14
Late latent (Tertiary)	8	9	10	23
Latent, unknown duration	8	0	8	9
Others				
Brucellosis	1	0	1	0
Carbon monoxide poisoning	14	0	19	10
Ciguatera Fish Poisoning	1	0	1	0
Hansen's Disease (leprosy)	0	0	0	0
Hemolytic Uremic Syndrome	0	0	0	2
Influenza due to novel or pandemic strains	0	0	0	0
Influenza-associated pediatric mortality	0	0	0	0
Lead poisoning	0	0	0	5
Legionellosis	2	1	3	6
Pesticide related illness or injury	0	0	0	3
Tuberculosis			5	13
Vibriosis	0	1	0	3

*Includes reported confirmed/probable cases. Data is provisional and subject to change.
† Numbers are for Area 12 (Volusia/Flagler)

Water-borne Diseases

By: David Parfitt, MPH

According to the World Health Organization (WHO), water-related illnesses cover a broad spectrum of health concerns from micro-organisms and chemicals in our water supply to disease carrying vectors such as mosquitoes as well as drowning and other water related injuries. Given the increase in rainfall, as well as the extremely humid and hot conditions of summer in Florida, surveillance and prevention for water-related illnesses is of highest concern.

In accordance with the Reportable Diseases/Conditions in Florida Practitioner List the following four water-borne illnesses have the potential for significant seasonal statewide/local impact that include; cryptosporidiosis, vibriosis, legionellosis and primary amebic meningoencephalitis (PAM). Since the beginning of the year increased cases of cryptosporidiosis have been reported to the state with recent outbreaks in recreational swimming facilities. Typical numbers of vibriosis (*Vibrio vulnificus*) and legionellosis cases are occurring seasonally both statewide and locally. The state has had one case of PAM in central Florida with a confirmed lab detection of *Naegleria fowleri*, the amoeba responsible for the often fatal brain infection. Local health officials determined the exposure occurred outside the country.

Cryptosporidiosis is a fecal-oral diarrheal illness caused by a highly resistant microscopic parasite, *Cryptospridium*, spread most commonly through the ingestion of both recreational and drinking water. The parasite is found in the intestines of both infected animals or humans and spread via fecal contamination. Common symptoms of cryptosporidiosis include nausea, vomiting, fever and stomach pain beginning roughly 7 days after infection. Those most at risk for crypto include children in day care settings, international travelers, those who drink untreated water and swimmers accidently ingesting contaminated water. Treatment is mostly symptomatic given that those with healthy immune systems will likely recover on their own. Prevention of disease spread includes frequent hand washing, the avoidance of swimming for 2 weeks after diarrhea has ended and exclusion of children from day care until symptoms have resolved.

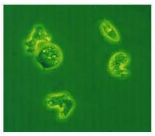
Here in Florida, vibriosis (specifically the species *Vibrio vulnificus*) is a disease caused by naturally occurring bacteria found in saltwater environments (typically in slow moving warmer brackish water) such as in estuaries and other similar water sources. Infection can occur either by an exposure to the bacteria in an open wound or through the consumption of inadequately prepared and contaminated seafood. Medical providers should consider testing for vibriosis in patients experiencing stomach illness, a fever or shock after the consumption of raw seafood or a severe and progressing wound infection following saltwater exposure. Antibiotics treatment should be administered promptly for suspect vibrio infection with potential fatal outcomes for patients with underlying conditions including those who are immune compromised. Prevention includes avoiding raw seafood, eating shellfish immediately after cooking and preparing, wearing protective gloves while handling seafood and staying clear of salt water environments with an open wound.

Legionella is a type of bacteria found naturally in our environment that grows best in warmer waters such as hot water tanks, decorative fountains and hot tubs. Infection occurs when an individual inhales water droplets containing the bacteria. Symptoms of legionellosis include shortness of breath, muscle aches and a cough beginning roughly 2- 14 days post exposure. Often following a lung infection, a urinary antigen test is used detect the *Legionella* bacteria in a suspected patient. Antibiotics are used to treat this disease while no vaccines are currently available. Water systems should be regularly cleaned and maintained. Individuals at high risk for infection may choose to avoid such environments.

Naegleria fowleri is the free-living amoeba responsible for PAM. This organism is often found in both freshwater sources (especially in lakes of the southern-tier states) as well as in the soil. Infection is most often the the result of water, containing the amoeba, entering the nasal passages then the brain resulting in encephalitis. Initial symptoms of PAM are similar to bacterial meningitis and start usually 5 days after infection. These symptoms can include nausea, fever and headache. As the disease progresses symptoms can include stiff neck, seizures and possibly hallucinations. This disease is most often fatal usually within a week of symptom onset. Prevention includes limiting the amount of water that enters your nose especially in warm freshwater sources when diving. Swimmers should also limit jumping in the water or submerging their head completely. Infections have also been caused by sinus irrigation with contaminated tap water. *Naegleria fowleri* has been found in poorly treated swimming pool water, although this is extremely rare.

For further information on local water-related illnesses please contact the Florida Department of Health in Volusia County at 386- 274-0651.

References:
Centers for Disease Control and Prevention
Florida Department of Health
World Health Organization
Reportable Diseases/Conditions in Florida Practitioner List 06/04/2014



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