



What Emergency Managers Need to Know About Mosquito Borne Diseases

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Introduction

The purpose of this document is to provide Emergency Managers and other local officials with contact points and reference materials to help understand mosquito borne diseases.

Questions and Answers Important to the Emergency Manager

Q: If a county emergency manager gets a call about it what should he or she do or say?

A: Report and refer the call to the local Health Department and local Agriculture Extension Agent. Follow-up periodically with the individual, and local Health and Agriculture Departments to keep abreast of the status.

Q: Should the county EOC be activated if a mosquito borne virus is discovered in my county?

A: The decision to activate the county EOC will vary from county to county depending on the level of confirmed cases reported along with the recommendations of local medical and veterinarian officials.

Q: What agencies, in my county, should become involved with response to a mosquito borne virus?

A: In addition to the normal emergency response team members. the local Health Department, Agricultural Extension Agent, local medical community, local veterinarian community, law enforcement, and emergency medical services will play a lead role.

Q: What types of testing are available?

A: Testing of:
Dead birds
Horses (blood test)
Humans (blood testing)
Mosquitoes

Q: What should I do if I find a dead bird?

A: West Nile often announces its presence in a community by killing birds. Blue jays and crows appear most susceptible. If the bird is fresh and obviously has not been killed by something else, call your local health department. You can also report dead birds online at www.wld.fwc.state.fl.us/bird. Positive results will be reported, but negative results may not be. The state has tested more than 1,200 birds in the past month. About 30 have tested positive.

Q: How do I get mosquito spraying for my county?

A: Most Florida Counties have mosquito control programs. However, funding at the state and local level continues to be limited. The Department of Agriculture and Consumer Services can respond to questions and provide a list of contractors to assist with mosquito spraying – contact the Bureau of Entomology and Pest Control at 850-922-7011.

Q: I heard a West Nile vaccine for horses was recently approved and is being shipped to Florida counties where the virus has been found. Is there a vaccine for people?

A: There is no West Nile vaccine for humans and probably never will be. Vaccines are expensive and difficult to develop and grow, and the rate of serious infection appears too low to warrant one. Horses are at much greater risk of sickness or death.

Q: What about calls from horse owners that may want information about vaccines?

A; On August 1, 2001, USDA conditionally approved a West Nile Virus, killed vaccine, for use in horses. On Friday, August 3, Agriculture Commissioner Charles Bronson and Dr. Leroy Coffman, State Veterinarian granted permission to distribute the vaccine in Florida as it is made available by the manufacturer. Horse owners may order the vaccine through their private veterinary practitioner, as it becomes available in their practice and from the manufacturer. Priority orders are initially being directed to counties with currently confirmed positive West Nile cases: Jefferson, Madison, Leon, Taylor and Duval.

State Agency Roles and Contact Information

Florida Department of Agriculture and Consumer Affairs

Web-sites

<http://doacs.state.fl.us/%7Eai/ai/enceph.htm>

<http://doacs.state.fl.us/%7Eaes/westnile2001/WestNile.htm>

<http://doacs.state.fl.us/ai/aiindex.htm>

Division of Animal Industry

Responsibilities

The Division of Animal Industry is responsible for preventing, controlling and eradicating certain infectious or communicable diseases of livestock and other domestic animals.

Contact Information

407 South Calhoun Street
Room 335 Mayo Building
Tallahassee, Florida 32399-0800
850-410-0900

Dr. Lee Coffman	850-410-0910 (Work), 850-591-4303 (Cellular)
Dr. Ashby Green	850-591-5044
Dr. Bill Jeter	850-410-0942
Mr. Joe Kight	850-410-0920

Division of Agricultural Environmental Services

Responsibilities

The Division of Agricultural Environmental Services administers various state and federal regulatory programs concerning environmental and consumer protection issues, including mosquito spraying, and the use of pesticides.

Contact Information

Bureau of Entomology and Pest Control
1203 Governor's Square Boulevard
Suite 300
Tallahassee, Florida 32301
850-922-7011

Mr. Steve Dwinell	921-9088 (Work), 850-519-3040 (Cellular)
Mr. Wayne Gale	850-922-7011 (Work), 850-591-3037 (Cellular)

Florida Department of Health

Web-sites

www.doh.state.fl.us

http://www9.myflorida.com/disease_ctrl/epi/httopics/arbo/index.htm

Hotline – 888-880-5782

1-800-606-5810 To Report Pesticide Related Illness or Injury for Human Health Concerns and latest updates

Bureau of Epidemiology

Responsibilities

Manage efforts to prevent infectious and chronic diseases through surveillance, case work and outbreak investigation, training, and information dissemination

Contact Information

4052 Bald Cypress Way
Bin A-12
Tallahassee, Florida 32399-1720
850-245-4401

Ms. Robin Oliveri	850-245-4401
Dr. Carina Blackmore, DVM., PhD	904-791-1744 (Work), 877-631-5445 (Pager)
Dr. Steven Wiersma, MD	850-245-4411(Work), 877-653-0887 (Pager)
Ms. April Crowley, Public Information	850- 245-4112

Florida Fish and Wildlife Conservation Commission

Web-site

<http://www.wld.fwc.state.fl.us/bird/>

Responsibilities

Maintenance of the Wild Bird Mortality database in support of mosquito borne virus operations.

Contact Information

Mr. Tim Breault 850-488-3831
Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Dr. George E. Wallace 850-265-3676
Bird Conservation Coordinator
3911 Highway 2321
Panama City, Florida 32409-7658

Florida Department of Community Affairs

Division of Emergency Management

Web-site

www.floridadisaster.org

http://www.dca.state.fl.us/bpr/EMTOOLS/FAD/foreign_animal_disease_outbreaks.htm

Responsibilities

Coordination of state resources and tactical planning in response to emergencies or disasters impacting the State of Florida.

Contact Information

Mr. Craig Fugate
Mr. Mike DeLorenzo
State Warning Point

850-413-9837 (Work)
850-410-1597 (Work)
850-413-9900 or 800-320-0519

What you should know about Human Arboviral Encephalitis

Florida Department of Health

Division of Disease Control

Bureau of Epidemiology

850/245 – 4401

What is Arboviral Encephalitis?

Encephalitis is a serious inflammation (swelling) of the brain. Arboviral encephalitis is caused by insect (mosquito) –borne viruses. In the United States, these diseases include St. Louis encephalitis (SLE), Eastern equine encephalitis (EEE), Western equine encephalitis, LaCrosse encephalitis, and, recently, West Nile (WN) virus encephalitis.

What are the symptoms of Arboviral Encephalitis?

Many people may not even know they are infected with an arbovirus. When symptoms do occur they may include fever, headache, fatigue, dizziness, weakness and confusion. WN may also cause rash or muscle weakness. People 50 and older tend to be more severely affected by SLE or WN. The most severe cases can lead to coma and death.

Are there vaccines for arboviruses?

At this time, there are no human vaccines against SLE, EEE, or WN in the United States.

How do we know that arboviruses are in an area and that people might become infected?

SLE, EEE, and WN viruses pass back and forth between birds and mosquitoes. Mosquito control agencies located throughout the state monitor mosquito populations. In many areas these agencies and county health departments also keep chicken flocks and monitor these chickens for evidence of exposure to arboviruses. Chickens make good sentinels because they do not get sick from these viruses or transmit them to people. Dead birds are an indicator that WN may be in the area. Please report dead birds on the internet site www.wld.fwc.state.fl.us/bird (or call your county health department or local Fish and Wildlife Conservation office).

Dead Birds may be an indicator of WN in your area. Please report dead birds on the Internet site www.wld.fwc.state.fl.us (or call your county Health Department or Fish and Wildlife Conservation Commission office)

What is done with this information?

State and county agencies monitor this information regularly. When mosquito populations are large and virus is detected, mosquito control activities are increased – press releases and public education activities are issued to increase awareness of personal protective measures.

What parts of Florida are most at risk?

Historically, SLE virus has been detected throughout the state, although outbreaks have tended to occur more in Central Florida from coast to coast. While EEE is detected sporadically across the state in horses and sentinel chickens, most human cases have occurred in the panhandle. WN virus has been detected in the northern part of the state.

What can you do to prevent infection?

- Prevention is the key. The best way to reduce the risk of infection is to avoid getting mosquito bites.
- Avoid outdoor activities when mosquitoes are most active, especially during dusk and dawn hours.
- When outdoors, cover up by wearing shoes, socks, long pants and long sleeved shirts, and use mosquito repellent containing permethrin or DEET, on exposed skin according to the manufacturer's directions. *Note: read the manufacturer's directions for use as printed on the product. DEET (N, N-diethyl-m-toluamide) in higher concentrations than 30% provides no additional protection.*

What can you do to reduce mosquitoes around your home?

- Remove or empty standing water in old tires, tin cans, buckets, drums, bottles or any containers. Be sure to check clogged gutters and flat roofs that may have poor drainage. Make sure cisterns, cesspools, septic tanks, fire barrels and trash containers are covered tightly with a lid or with 16-mesh screen.
- Empty plastic wading pools at least once a week and keep indoors when not in use.
- Change the water in bird baths and plant pots or drip trays at least once each week.
- Store boats covered or upside down, or remove rainwater weekly.
- Level the ground around your home so water can run off and not collect in low spots. Fill in holes or depressions near your home that may accumulate water.
- Fill in tree holes and hollow stumps that hold water.
- If you have an ornamental water garden, stock it with mosquito-eating fish (e.g., minnows, "mosquito fish," goldfish or guppies).
- Repair screening on windows, doors, porches, and patios.
- Some mosquito control methods are not very effective. Bug zappers are not effective in controlling biting mosquitoes. Various birds and bats will eat mosquitoes, but there is little scientific evidence that this reduces mosquitoes around homes.

West Nile Virus Surveillance in Florida

Because of the West Nile (WN) virus zoonotic nature, with the capability of infecting many birds and mammals, including humans, several surveillance systems are used to detect WN virus activity in Florida.

The virus variant found in the United States has caused severe illness in many bird species. In some species, especially American crows, there has been associated high bird mortality. Thus, as has been shown elsewhere in the United States, monitoring dead birds has proven to be a useful tool for WN virus detection and surveillance in our state. Bird mortality sightings from various agencies and the public are to be reported to <http://wld.fwc.state.fl.us/bird/>. If the dead bird carcass is suitable for WN virus diagnostic testing (fresh, collected within 24 h of death), Department of Health (DOH) Tampa Branch Laboratory will perform PCR, and virus isolation testing free of charge. For further information regarding specimen submission, please refer to your local health department. This testing may take 2 to 4 weeks.

Other birds, including chickens, do not usually develop WN fever. Because many of the mosquito species infected with the WN virus readily feed on birds, another way we follow the spread of the WN virus in Florida is through our sentinel chicken surveillance program. Through this program, **32** chicken flocks are maintained throughout the state, and tested weekly for antibodies to West Nile and other arboviruses.

To monitor the risk for WN infections in the mammalian population in general and horses in particular, the Florida Department of Agriculture and Consumer Services regularly test 15 sentinel horse herds across the state for WN virus antibodies. The DOH coordinates encephalitis testing of human specimens. Physicians and other health care providers are strongly encouraged to submit sera and cerebrospinal fluid (CSF) from clinical human cases to the DOH laboratories (web site). Appropriate human testing is free of charge.

To view the current surveillance findings or for further information regarding our WN virus surveillance program, please visit our website at http://www.doh.state.fl.us/disease_ctrl/epi/htopics/arbo/index.htm. You can also reach us by telephone at (850) 245-4401

Other Questions and Answers

Q: I heard about West Nile when it first occurred in New York in 1999, but I heard of no other human cases until it arrived in Florida. What's so special about Florida?

A: That's unclear. However, Madison County, where the two residents have been hospitalized, is prime mosquito breeding ground and appears to provide the virus with an ideal environment.

Q: Was West Nile to blame for the deaths this summer of dozens of doves in St. Petersburg?

A: No. Those birds died from a disease called trichomoniasis, caused by a naturally occurring protozoan with the scientific name *Trichomonas gallinae*.

Q: Should I be concerned for my safety or the safety of my family?

A: It is not usually dangerous, and in most people appears to produce no noticeable symptoms. Others will suffer flu-like symptoms for three to six days. Rarely, it causes encephalitis, a brain infection that can be fatal or cause permanent neurological disability. The elderly are most at risk for developing symptoms or complications. So are very young children or people whose immune systems are weakened by other diseases, such as AIDS or HIV. West Nile is an opportunistic infection and is not especially hardy. It is not as tough nor as deadly as eastern equine encephalitis or St. Louis encephalitis, which are found most summers in Florida. EEE, which killed a 9-year-old boy from the Panama City area two weeks ago, kills one to five people in the the state each year.

Q: Can I catch it from another person?

A: No.

Q: Is my cat or dog at risk?

A: Probably not. According to one published report, the virus was found in a dog in Botswana in 1982. There are no published reports involving cats. The virus was found in a dead cat in New York during the 1999 epidemic, but it's not known if the virus was to blame for its death. Tests of dogs and cats during that epidemic showed low infection rates.

Q: What are the symptoms in horses?

A. Signs of the disease in horses include fever, impaired vision, irregular gait, reduced reflexes, inability to swallow, occasional convulsions and death. The disease is most commonly detected in horses in Florida from April to August. Previously unvaccinated horses should be given two initial injections of vaccine about 3 to 4 weeks apart. After initial vaccination, all horses should be vaccinated three times yearly. The Fort Dodge vaccine label recommends that the horse requires 2 initial vaccine doses then annual revaccination using one dose.

Other Informational Sources

Federal Resources

Centers for Disease Control

<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

U.S. Geological Services

<http://cindi.usgs.gov/hazard/wildlife.html>

[USGS West Nile Virus Page](#)

[USGS National Wildlife Health Center, Madison, Wisconsin](#)

[USGS National Biological Information Infrastructure West Nile Virus Page](#)

U.S.D.A.

<http://www.aphis.usda.gov/oa/wnv/>

EPA

Pesticides and Mosquito Control—Environmental Protection Agency (EPA)

<http://www.epa.gov/pesticides/factsheets/skeeters.htm>

Florida

University of Florida

<http://fme1.ifas.ufl.edu/online/wmile/wmilemain3.htm>

Florida Mosquito Control Association

<http://www.floridamosquito.org/>

Georgia

- [Georgia Vector-borne Diseases Page](#)

<http://www.ph.dhr.state.ga.us/epi/vbd.shtml>

- [DeKalb County Board of Health](#)

<http://www.dekalbhealth.net/>

- [DeKalb County Mosquitoes and West Nile Home Page](#)

New York

- West Nile Virus—New York State Department of Health

<http://www.health.state.ny.us/nysdoh/westnile/index.htm>

- West Nile Virus—Cornell University

<http://www.cfe.cornell.edu/erap/wnv/>

- West Nile Virus National Surveillance Maps

<http://www.nationalatlas.gov/virusmap.html>