

Florida ArboVirus Response Plan, 2002
Arbovirus Interagency Working Group

1. Surveillance

Current surveillance activities for arboviruses are detailed in Chapter 3 of ***Surveillance and Control of Selected Arthropod-borne Diseases in Florida***. This document is available at: http://www.doh.state.fl.us/disease_ctrl/epi/vetvector/arbo99.pdf

The WN virus found in the United States caused morbidity and mortality in many bird species. In some species, especially crows, there has been substantial mortality due to WN infection to detect the presence of the virus in a geographic area. Thus, monitoring dead birds is considered a useful tool for WN virus surveillance. 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 in the appropriate condition for WN virus diagnostic testing, the carcass and a laboratory form will be submitted by Department of Health (DOH) Environmental Health, Department of Agriculture and Consumer Services (DACS), Fish and Wildlife Conservation Commission (FWCC), mosquito control staff, veterinarians or wildlife rehabilitators to the DOH Tampa laboratory to be necropsied and tested using polymerase chain reaction assay and/or virus isolation. This testing should take less than 2 weeks.

Local health and mosquito control agencies should use sentinel chicken flocks to assess local mosquito transmission of WN and other arboviruses. Local governments without mosquito control and/or sentinel chicken surveillance capabilities should work to establish programs in uncovered areas. Testing of sentinel chicken sera for virus and/or antibody will be conducted by the DOH Tampa laboratory and results reported to submitters and participating programs as quickly as possible.

Equine surveillance is also used to assess the impact of WN and EEE in the state. Veterinarians should send equine sera to the DACS laboratory for evaluation. Results should be available within 2 weeks.

At the DOH Laboratories, sera collected from sentinel chicken flocks, wild bird samples and clinical human cases are tested with 3 different serological assays according to the following algorithm: All specimens are screened using a hemagglutination inhibition (HI) assay to detect alphavirus (Eastern Equine Encephalomyelitis [EEE] virus), and/or flavivirus (St. Louis Encephalitis [SLE] virus or West Nile [WN] virus) antibodies. Sentinel chicken sera that are flavivirus positive are tested in a WN virus IgM ELISA assay. A repeat serum is tested on WN virus IgM negative chickens. WN virus IgM equivocal sera may be assayed by serum neutralization for confirmation of etiology. HI flavivirus antibody positive wild bird or mammalian sera are assayed by serum neutralization to confirm the etiological agent. HI alphavirus positive chickens are confirmed by HI testing of a second serum specimen,

In clinical human cases, an IgM ELISA assay is performed on HI antibody-positive sera to identify the agent (Dengue, EEE, SLE or WN) and IgM positive sera may be assayed by serum neutralization for confirmation of etiology.

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2. Notification and Public Information

On a weekly basis, the Bureau of Epidemiology (HSDE) will summarize the surveillance data and email the information to the Interagency representatives. HSDE will also provide this information to:

The DOH County Health Departments (CHDs)
Centers for Disease Control and Prevention

The interagency partners will distribute the information as follows:

- DACS Bureau of Entomology and Pest Control (BoEPC) will notify:
All organized Mosquito Control Districts
- DACS Division of Animal Industry (DAI) will notify:
Animal Industry Organizations
Veterinarians
- FWCC and Department of Environmental Protection (DEP) will notify:
Regional biologists
- The DOH Bureau of Laboratory will notify:
Sample submitter as results become available

The HSDE will be responsible for release of public information regarding recommended public precautions. Local organized mosquito control districts, with the assistance of BoEPC, will be responsible for release of public information regarding mosquito control activities. BoEPC will be responsible for release of public information regarding mosquito control activities in those regions of the state where there is no local organized mosquito control units. DAI will be responsible for release of public information regarding animal health issues.

For the purposes of coordinated local responses and possible intensification of integrated vector control, county health department (CHD) epidemiologists should share nonidentifying case locality and onset information of human arbovirus cases under investigation with local mosquito control districts. HSDE will notify the workgroup members by email of the county of residence of such suspect cases.

The interagency partners will strive to immediately share significant new information with each other and the other individuals and organizations listed in this section in order to assure the most rapid response possible to new developments.

3. Vector Control Measures

After confirmation of a human or equine case of arboviral disease, the Working Group will assist local organized mosquito control districts to assess the need for additional vector control measures. Primary control of mosquito vectors is the responsibility of the organized Mosquito

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Control Districts in their areas of jurisdiction. Areas without organized vector control programs may request assistance in vector control through one of the following mechanisms:

- request for assistance from County Commissioners or local government authority from an organized mosquito control program with provision for cost compensation for the program by the requesting authority.
- request for assistance from County Commissioners or local government authority from the DACS BEPC with provision for compensation for the program by the requesting authority.
- request for assistance from County Commissioners or local government authority from the DACS BEPC without provision for cost compensation. In the event of such a request, the Commissioner of Agriculture will determine if this assistance is authorized.

4. Personal Protection Measures

As detailed in Chapter 4 of ***Surveillance and Control of Selected Arthropod-borne Diseases in Florida***, personal protective measures are important control measures for reducing human risk due to arthropod-borne diseases. The HSDE will disseminate information on personal protection and work with other agencies to provide this information to the general public.

5. Incremental Coordinated Response

The number of WN virus detections in Florida bird populations, sentinel chickens, and humans is unpredictable, since this virus is new to the Florida ecosystem. The responses to the detection of a WN, EEE or SLE virus positive are based on the information that will allow appropriate risk assessment of transmission to humans, such as: 1) the number of animals detected with the virus in a region, 2) the time period during which the positives were observed, 3) the methods used to make the detections, 4) the season, 5) the abundance of suspected mosquito vectors, 6) the abundance of WN infected vectors, and 7) the mosquito transmission rate. Public interest can be expected to be very high, with concern on the part of public health, mosquito control and the public increasing as the numbers of detections increases, particularly if there are human cases.

The participating Arbovirus Response Plan agencies will provide the following activities based on the potential for human infection in a particular region of the state each year:

Response Level 1: Initial detection of arbovirus nucleic acid or antibody in sentinel flocks, wild or domestic birds, mammal or mosquitoes in a particular region of the state:

- Consider participating in weekly teleconference calls conducted by the HSDE
- Maintain surveillance activities that may already be in place in that region or coordinate additional surveillance, i.e., consideration of sentinel chicken flock surveillance to monitor mosquito transmission

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- Maintain vector control activities that are already in place in that region
- Solicit dead bird submissions for testing from the public and appropriate local agencies in the region if already not underway
- Consider local advisory to provide public information on personal protective measures
- Provide information to physicians and hospitals on symptomology and appropriate specimen submission

Response Level 2: Wide-spread Detections in sentinel flocks, wild or domestic birds, mammals or mosquitoes

- As above, with consideration of DOH-declared medical alert in affected area.
- Increase levels of surveillance activities – heighten state and local efforts to collect wild birds, vector mosquitoes, and place more sentinel chickens, if possible
- DACS will consider the need to issue a mosquito declaration in those counties needing additional mosquito control measures based on the State Health Officer's declaration of a threat to the public health or if a threat to animal health exists. This includes consideration of requesting external resources for use in aerial adulticiding activities. This would be based on a local assessment of vector mosquitoes in the region and the effectiveness of aerial adulticiding in reducing suspect vector populations.

Response Level 3: Detection of 1 or more human cases with Florida-acquired WN virus

- As above, with consideration of DOH-declared medical alert in affected area if not already issued.
- Aerial adulticiding would be considered based on the likely impact on the suspect vectors. This would include requests for assistance using from other agencies with aerial adulticiding capability as appropriate.

Response Level 4: Detection of widespread distribution of human cases in conjunction with a weather-related disaster (e.g., hurricane or flooding event).

- As above, with:
- A declaration of Medical Alert if not already issued.
- Implementation of Emergency Operations Center (EOC) Level 2 for Emergency Support Function (ESF) 8 and ESF 17 to coordinate response activities, attachment of representatives of agencies participating in WN virus Coordination Group to these ESFs for duration of Level 2 activation
- Coordination of requests for vector control assistance through EOC
- Coordination of public information dissemination through EOC

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