

Lee County Mosquito Control
District's Response to Suspected
Cases and Outbreaks of Mosquito-
borne Diseases.



Background

- Endemic Mosquito-borne Diseases in Florida
 - SLE, EEE, and WNV
- Imported Mosquito-borne Diseases
 - Malaria and Dengue
- New and Emerging Mosquito-borne Diseases
 - Chikungunya and Zika Virus

Preventative Measures

- Early detection
- Appropriate mosquito control response
- Education

Early Detection

- Active mosquito pool collections
 - CDC light traps
 - BG Sentinel traps



Early Detection

- PCR testing for viral RNA



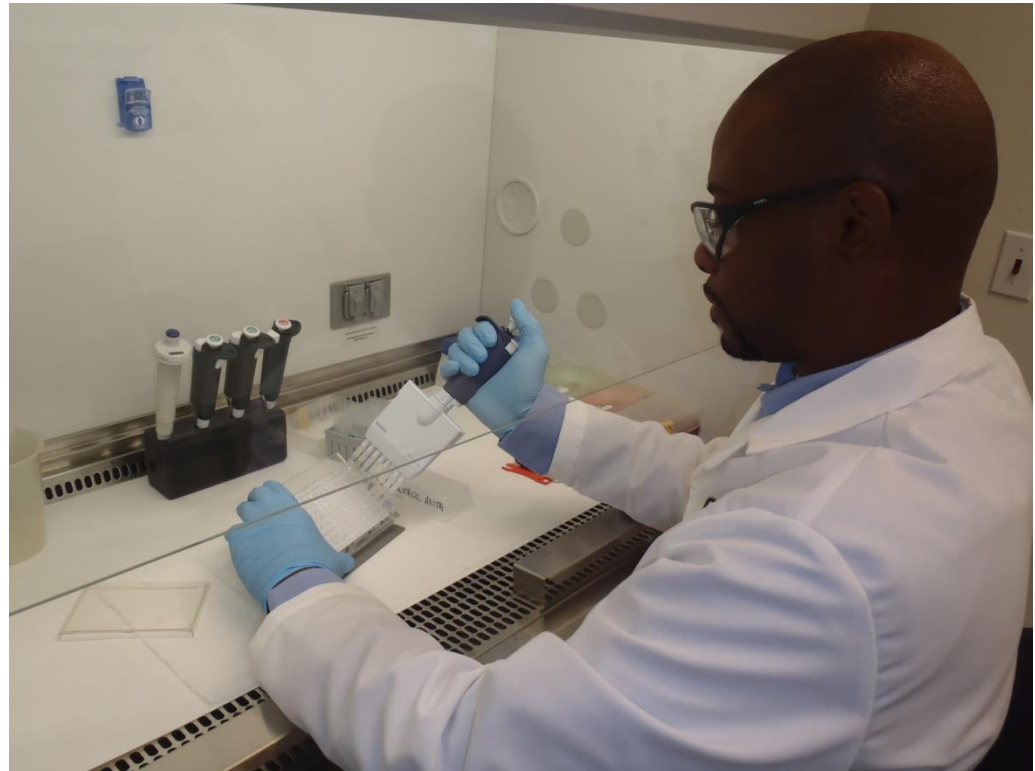
Early Detection

- Active sentinel chicken sample collections from 17 different sites.



Early Detection

- ELISA testing for IgG antibody response



Appropriate Mosquito Control Response

- Aerial aduItciding
- Ground aduItciding



Appropriate Mosquito Control Response

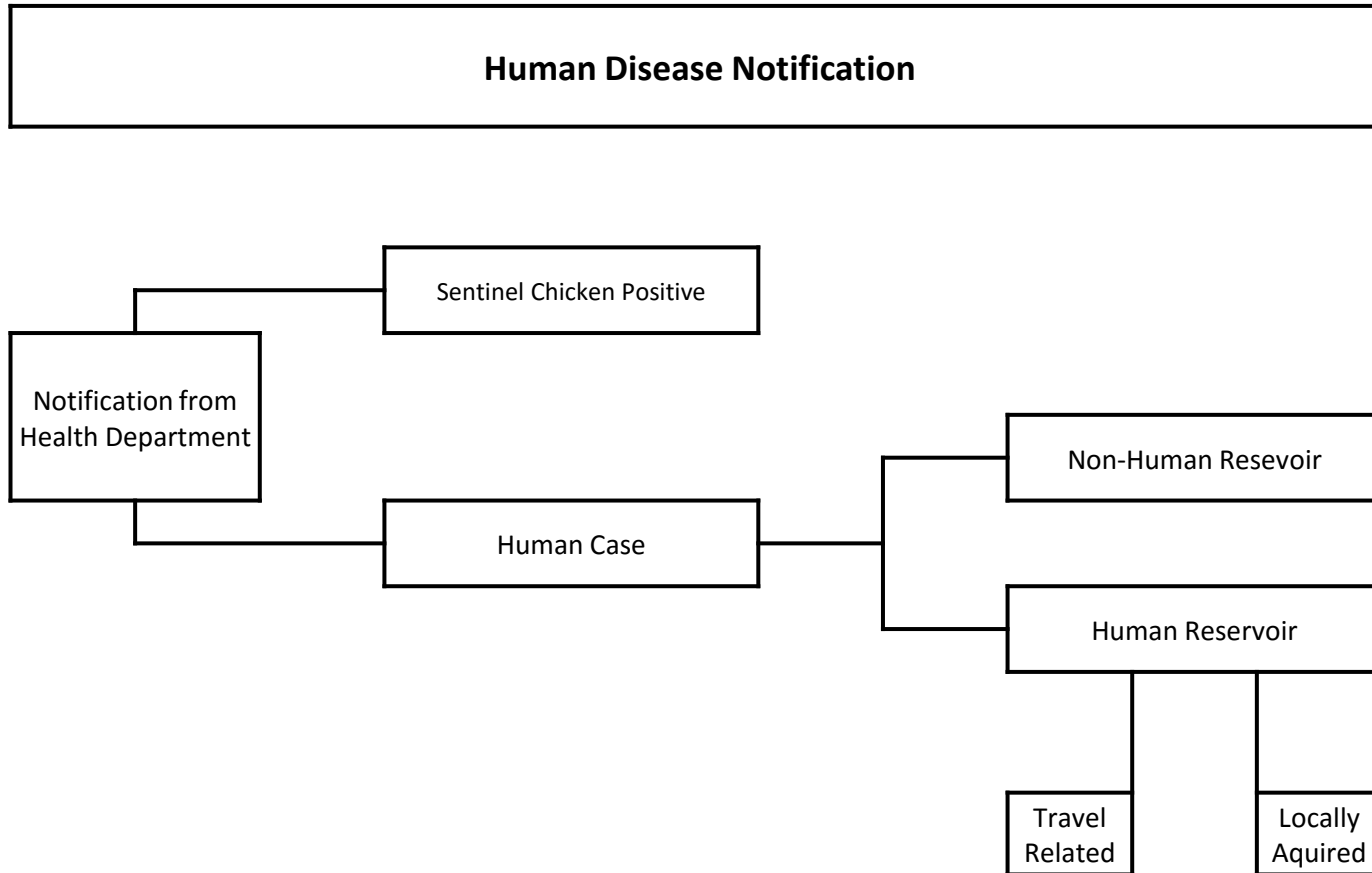
- Aerial larviciding



- Ground larviciding

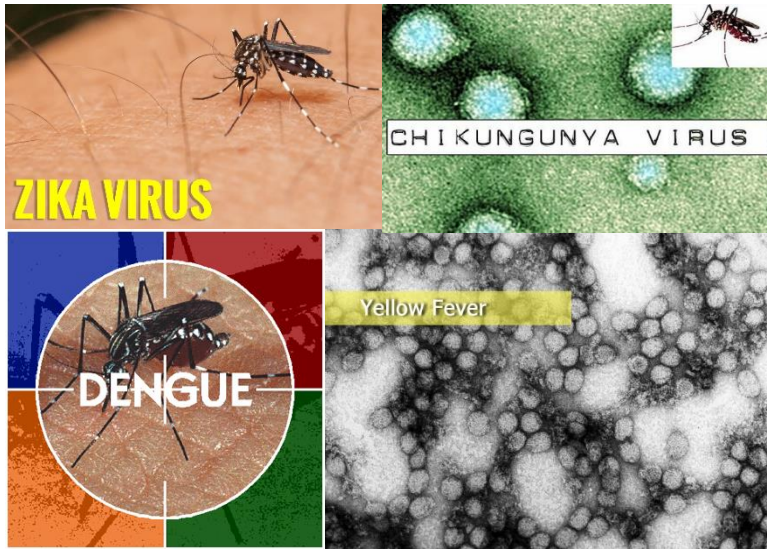


Human Disease Response



Human Disease Notification

Human Case



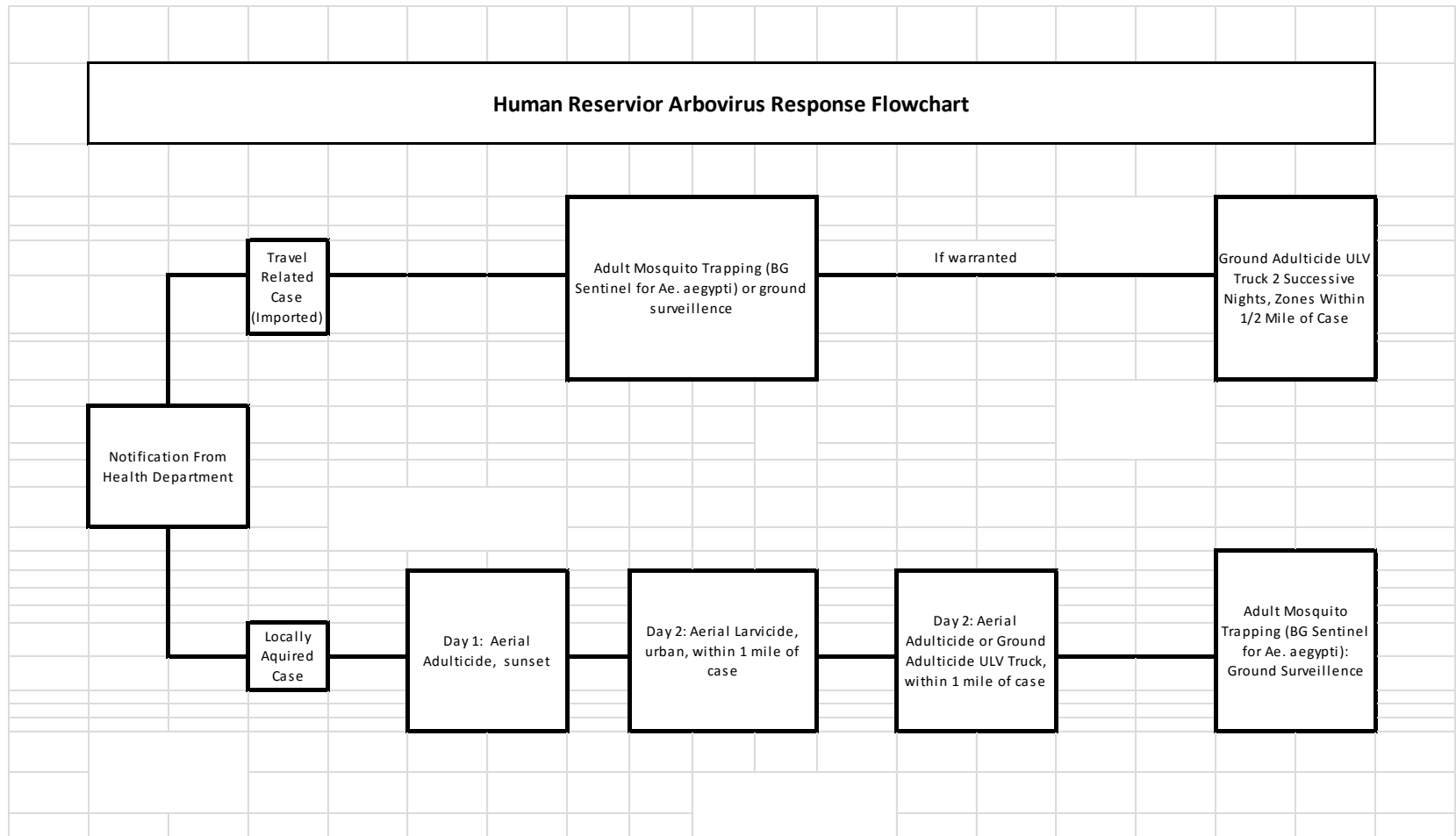
Sentinel Chicken Positive



Human Disease Notification

- Human Case
 - Receive alert from local Health Department
 - Rapid control response upon notification
 - Check area for vector mosquitoes
 - Treat area with adulticide
- Human Reservoir and Non-Human Reservoir

Human Reservoir Response



Human Reservoir Response

- Human Reservoir
 - Locally acquired and Travel related

Human Reservoir Response

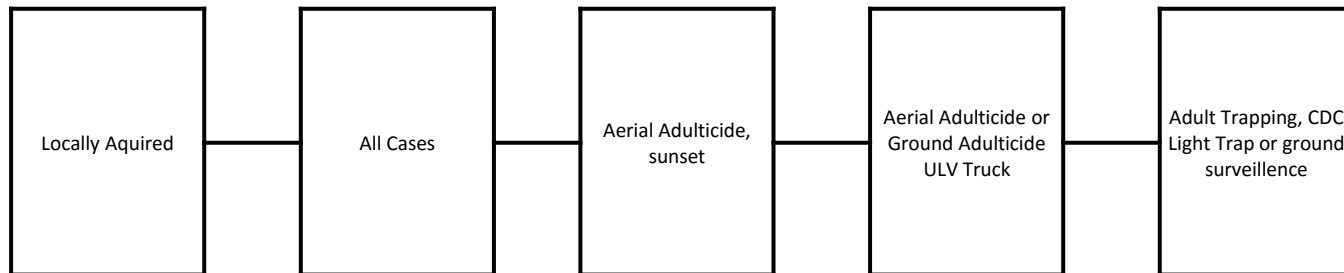
- Locally acquired cases
 - Trap and visual inspection of the area
 - Day 1: Aerial treatment with adulticide at sunset
 - Day 2: Aerial larvicide urban area within 1 mile of the case
 - Aerial adulticide or ground adulticide with ULV trucks within 1 mile of case
 - Back-check area for adult mosquito with BG Sentinel traps for *Ae. aegypti*
 - PCR testing on vector mosquito from traps

Human Reservoir Response

- Travel Related or Imported Case
 - Ground surveillance or adult mosquito trapping with BG Sentinel traps for *Ae. Aegypti*
 - If warranted, area treated by ground adulticide ULV truck 2 successive nights within ½ mile of the case
- Depends on the viral transmission cycle
 - Human to mosquito to human
 - Malaria, Dengue, Chikangunya, and Zika
 - Trap and inspect for vector mosquitoes
 - Ground adulticide treatment

Non-Human Reservoir Response

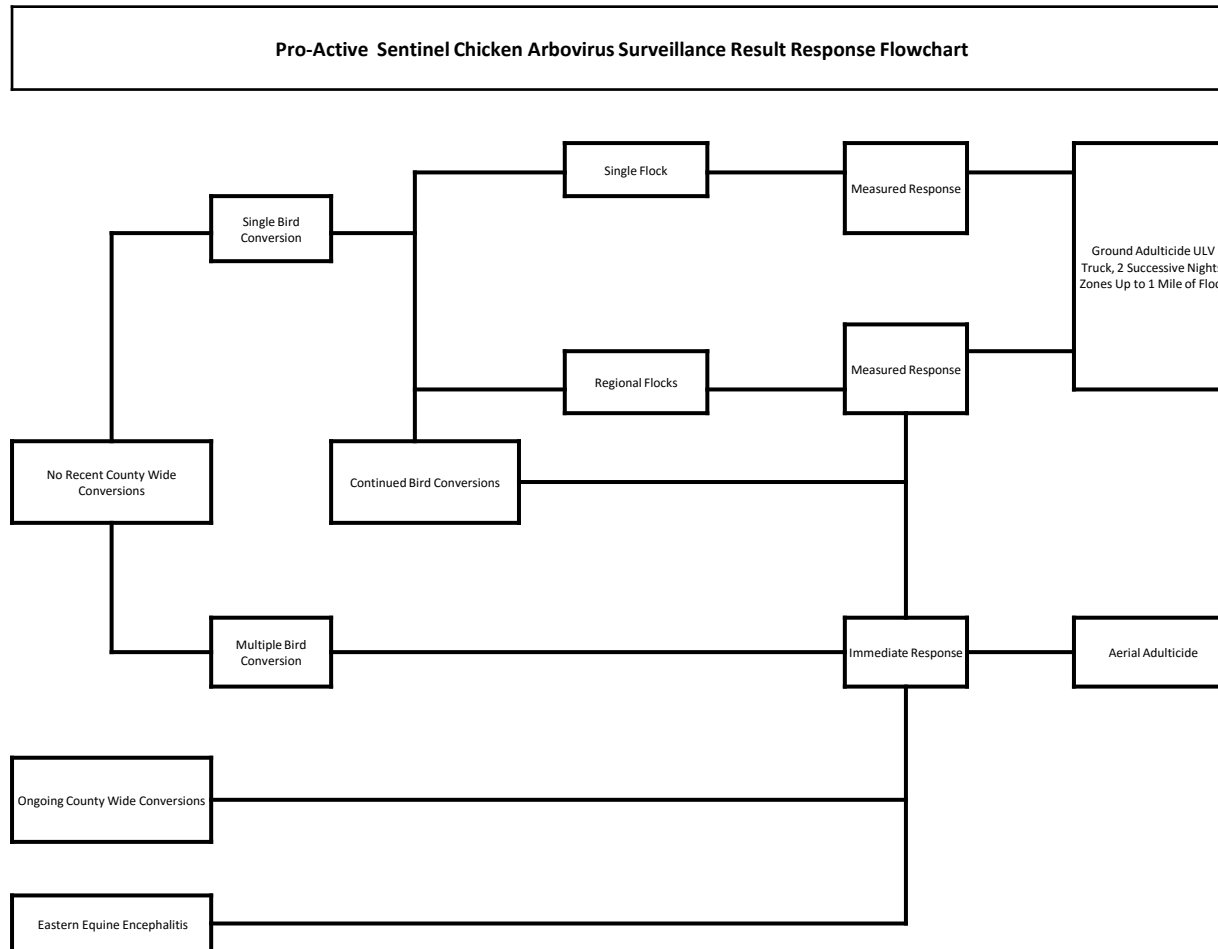
Non-Human Reservoir Arbovirus Response Flowchart



Non-Human Reservoir Response

- All Locally Acquired Cases
 - Treated with adulticide at sunset
 - Aerial adulticide or ground adulticide by ULV truck
 - Ground surveillance or adult trapping with CDC light traps

Sentinel Chicken Result Response



Active Sentinel Chicken Surveillance Response

- Chicken serum samples collected from sites county-wide
- Sample duplicates are sent to Florida Department of Health for testing
- District samples tested using ELISA for virus immune response.
- Test for WNV, SLEV, and EEEV
- Positive samples are reported to the state laboratory.

Active Sentinel Chicken Surveillance

Response cont.

- Information passed on to larvicide and adulticide crew
- Area is treated with adulticide by ULV truck two nights in a row to get as many vectors as possible.
- Area larvicide by ditch truck
- Positive sites are back-checked by collecting chicken serum samples for retesting.

Active Mosquito Surveillance and Response

- Target vector mosquitoes are collected from CDC light traps and BG traps throughout the county.
- Pooled mosquitoes are tested using PCR
 - Test for WNV, SLEV, EEEV, DENV 1-4, CHIKV, and ZIKA Virus (testing capability under development)
- Positive samples are reported and sent to the Florida Department of Health Laboratory for confirmation.

Active Mosquito Surveillance and Response cont.

- Positive areas are treated by aerial adulticide
- Area back-check trapping for vector(s)

Education Response

- Keep the public Informed
 - Local government
 - Town Hall Meetings
 - Pamphlets at libraries, daycares and places where people gather
- Website
 - Update daily
 - Area of website dedicated to issue
- Media
 - Press releases
 - Public service announcements

Acknowledgement

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Thank You!!!
Any Questions?

