

**July 9, 2018**

## **USA to join with MCHD in expanding surveillance efforts for mosquito-borne diseases**

MOBILE, Alabama — For more than a quarter of a century, Vector Control at the Mobile County Health Department (MCHD) has managed a sentinel chicken program that has been used for mosquito-borne infectious disease surveillance. Under this program, blood is collected from two hens per week at 13 different locations throughout the county.

The samples are sent to the Florida Department of Health Laboratory in Tampa to be screened for evidence of Eastern Equine Encephalitis virus, Saint Louis Encephalitis virus and West Nile virus. While the sentinel chicken program has proven effective, it excludes many of today's important pathogens including Dengue, Zika and Chikungunya viruses that are transmitted by the urban vector *Aedes aegypti* and the Asian tiger mosquito *Aedes albopictus*, both of which have been found in Mobile County.

Vector Control also has mosquito traps set up across Mobile County. The traps are used with reports from inspectors and complaints from the public to track the local mosquito population. There are more than 50 species of mosquitoes in Mobile County.

Under a new collaboration, those collections from the traps will now be brought to researchers at the University of South Alabama on a weekly basis. Dr. John McCreadie, an entomologist within the Biology Department at USA, will identify and sort the mosquitoes into pools. Dr. Jonathan Rayner, a virologist within the Department of Microbiology and Immunology and Director of the Laboratory of Infectious Diseases, will screen the pools for viruses including Dengue, Zika and Chikungunya using high-throughput molecular methods.

“MCHD is excited about its collaboration with USA,” said Kelly Warren, the Director of Prevention & Wellness at MCHD. “In its desire to be ever more vigilant in the prevention of mosquitoes and mosquito-borne illness, this relationship will strengthen the surveillance significantly.

“By knowing exactly what is circulating in our mosquito population we can better target treatments. Additionally, this arrangement will help to further the science around vector-borne diseases in our part of the country.”

Under this new program and utilizing these methods, the presence and prevalence of mosquito-borne viruses in the community will be determined much sooner and more reliably as compared to the sentinel chicken program, which requires an additional round of amplification in the host. This advanced warning will not only assist MCHD in determining the need to ramp up mosquito control efforts, but will also assist clinicians in diagnosing potential human infections.

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“We are very excited for this opportunity to work with the Mobile County Health Department to extend the mosquito-borne infectious disease surveillance efforts and aide in protecting individuals within the county from infection with these viruses,” said Dr. Rayner.

“It is our hope to extend these efforts to other counties within the State of Alabama as well as neighboring states who are at a similar risk for the introduction and spread of these important pathogens.”

Both Zika and Chikungunya have been introduced into the United States with localized spread observed in the states of Florida and Texas, respectively.

Implementation of this program complements current collaborations between the Department of Biology in the College of Arts and Sciences plus the Department of Microbiology and Immunology in the College of Medicine to screen ticks in Alabama for infectious diseases, which is funded through a grant from the State of Alabama.

These efforts are particularly important in light of a recent report from the Centers for Disease Control and Prevention indicating that insect-borne infectious diseases in the United States have tripled between 2004 and 2016; and calling for increased surveillance at the state level.