

Environmental and Educational Response to Chikungunya Cases

The mosquito vectors for chikungunya virus (CHIKV) are *Aedes aegypti* and *Ae. albopictus*. Both species are relatively common in urban environments and densely populated neighborhoods throughout Texas. Due to the complexities in evaluating the different virus strains circulating globally, the varying abundance of their vectors in localized areas of Texas, and the risk of transmission from viremic patients, consultation between environmental health agencies, vector control personnel, public health investigators, and medical entomologists is highly recommended prior to intervention.

To prevent the establishment of local transmission of CHIKV in Texas, the Texas Department of State Health Services (DSHS), in consultation with the Centers for Disease Control and Prevention recommends the following actions, as time and resources allow, when a person **known or suspected** of having a CHIKV infection is present in Texas:

Vector Control

- Determine where the person has had the opportunity to sustain mosquito bites in Texas during the first 7 days following the onset of illness
- Conduct a site visit(s)
 - identify and eliminate mosquito breeding habitat to the extent possible
 - apply larvicidal products as appropriate
 - apply adulticide products as appropriate
 - manual delivery around buildings is more effective for the control for the CHIKV vectors than delivery by vehicle

Mosquito Surveillance and Testing

Unlike testing of mosquitoes for West Nile virus (WNV) or Saint Louis encephalitis virus (SLEV), mosquito test data is not predictive of human risk for contracting either dengue or CHIKV. The transmission cycles of WNV and SLEV involves amplification of the virus in a bird reservoir prior to an increase in risk of human infection. This is not the case with CHIKV, where its cycle in the western hemisphere involves only humans and mosquitoes. By the time CHIKV becomes evident in collected mosquitoes, human cases are likely being reported to public health authorities. In addition, testing of mosquitoes for CHIKV is expected to have a very low yield, even during a major outbreak.

Despite these limitations, mosquito surveillance for *Aedes* can yield information useful to public health programs and vector control programs, e.g. the presence and location of *Aedes* and their abundance. Adult vector mosquito abundance is a key factor contributing to the risk of virus transmission. *Aedes aegypti* or *Ae. albopictus* mosquitoes submitted to the DSHS Arbovirus Laboratory will be tested for the presence of the CHIKV. While unlikely, identification of CHIKV in Texas mosquitoes would be very significant.

Standard mosquito collection traps such as light and gravid traps can capture both *Ae. aegypti* and *Ae. albopictus*, but a far higher yield of these CHIKV vectors can be achieved using traps such as those employing an attractant that is more specific for *Aedes*.

Please see the guidance for submitting mosquito specimens to DSHS at the following link:

www.dshs.state.tx.us/lab/arboFieldSurveillance.shtm

Education

Before and during periods of risk, it is strongly recommended that every community be made aware of measures residents can take to reduce their risk of arboviral infection, including CHIKV. Among these measures are:

- Use air conditioning and maintain windows and door screens in good repair
- Use mosquito repellent on exposed skin – day or night when mosquitoes are active
- Wear long-sleeved shirts and long pants
- Wear permethrin-treated clothing
- Empty standing water from outdoor containers

More detailed information for travelers on protection against mosquitoes and other arthropods that vector human disease can be found at:

<http://wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/protection-against-mosquitoes-ticks-other-arthropods>