

Chikungunya / Dengue

Checklist for Local Health

Local Health Department (LHD) Action Plan Recommendations

(with emphasis on Chikungunya / Dengue Vector Control)

- I. **Emergency Communications** -- Make certain that emergency communications for the LHD are intact and functioning:
 - a. Double-check 24/7/365 on-call communications.
 - b. Double-check Health Alert Network communications.
 - c. Clinical cases of chikungunya should be reported within 24 hours as an “unusual condition or emerging infectious disease of public health importance.”

- II. **Recognize Potential Mosquito Breeding Sites** – During routine environmental field work and as time allows, monitor the distribution of sites capable of breeding *Aedes albopictus*, the ‘Asian tiger mosquito.’
 - a. *Aedes albopictus* deposit eggs along the inner edges of water-containing receptacles, both natural (tree holes) and artificial (tires, rain barrels, buckets, wading pools, concrete basins)
 - b. Although *Aedes albopictus* are found in many different habitats, these mosquitoes have a preference for urban habitats
 - c. Mosquito complaints from the public can be shared with the local health department and the Division of Infectious Epidemiology. Mosquito complaints can be very useful for identifying mosquito breeding sites.

- III. **Source Reduction** -- During routine environmental field work and as time allows, counsel local home and business owners about source reduction – the most effective long-term solution to mosquito control:
 - a. Discarded, unused and unmaintained artificial containers need to be eliminated
 - b. If artificial containers cannot be eliminated, water must not be allowed to accumulate in the container (through storage indoors, puncturing, or filling with a solid material)

- IV. **Mosquito Larval Control** -- If property owner is unwilling or unable to comply with ‘mosquito source reduction’ strategy, apply ‘mosquito larval control strategies.’ This is effective for short term (weeks) control.
 - a. If artificial containers cannot be eliminated, biological microbial insecticides (*Bacillus thuringiensis israelensis* (Bti), *Bacillus sphaericus* (Bs)) and chemical insecticides are available.
 - b. In West Virginia, chemical pesticide application is regulated by West Virginia Department of Agriculture.

Division of Infectious Disease Epidemiology

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- V. **Adult Mosquito Control** – Adult mosquito control (‘spraying for mosquitoes’) is the least effective method of control and is generally conducted only in emergency situations.
- Standard night-time applications will not be effective for *Aedes albopictus* since this species is a daytime biter. Ultra-low volume (ULV) adulticide application should be conducted at dusk and dawn, when *Aedes albopictus* are most actively flying.
 - When transmission is believed localized to a small area, ULV and insecticide barrier applications could prove effective. Adult *Aedes albopictus* congregate in heavily vegetated areas.
 - Additional information about mosquito integrated pest management is available at <http://www.dhhr.wv.gov/oeps/disease/Zoonosis/Mosquito/Pages/IPM.aspx>
 - West Virginia Department of Agriculture regulates chemical pesticides in our state: http://www.wvagriculture.org/Division_Webpages/READ-regulatory.htm
- VI. **Mosquito Surveillance** – If personnel and other resources are available, local health departments can also conduct mosquito surveillance within their jurisdictions to monitor populations of the Asian tiger mosquito (*Aedes albopictus*), using the following methods:
- Carbon dioxide emitting light traps and BG Sentinel traps with pheromone lures are effective in collecting adult *Aedes albopictus*.
 - Mosquito gravid traps will occasionally capture adult *Aedes albopictus* laying eggs.
 - Aedes albopictus* larvae can be collected using mosquito dippers.
 - Oviposition traps will collect eggs which can be reared to larvae for correct species identification
 - Additional information about mosquito surveillance in West Virginia, including mosquito surveillance equipment, is available at <http://www.dhhr.wv.gov/oeps/disease/Zoonosis/Mosquito/Documents/Mosquito-Surveillance-Plan.pdf>
- VII. **Consultation** – for questions, please contact the epidemiologist on-call at (304)-558-5358, extension 1 or (800)-423-1271, extension 1. Mosquito complaints and questions about mosquito surveillance and control can be fielded at this number.

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