NACCHO
National Association of County & City Health Officials
The National Connection for Local Public Health

07-10

STATEMENT OF POLICY

Mosquito Control

Policy

The National Association of County and City Health Officials (NACCHO) recognizes the need for successful, coordinated mosquito management programs at the local level and supports the provision of funds and research to create, integrate, and coordinate local mosquito control plans with existing district and state plans.[1] These plans should incorporate the vector management framework outlined by the World Health Organization (WHO),[2] integrate "One Health" approaches to address environmental sources of emerging infectious diseases,[3] and build on the work of the Mosquito Control Collaborative to disseminate recommendations for addressing funding and research needs for local mosquito control programs.[1]

Recognizing that mosquito control activities tend to be decentralized and localized,[4] NACCHO calls for sustained funding for mosquito control programs, policies, and education efforts from the local, state, and federal level. NACCHO urges Congress, as well as state and local governing and administrative bodies to fully fund and maintain sustained funding to provide technical assistance, education, and research for local health departments and mosquito control agencies to do the following:

- Improve their capability and capacity to predict and avoid new mosquito-borne diseases.
- Support emergency management actions for mosquito-borne disease outbreaks.[5]
- Address resident, businesses, and citizen's behavior and practices relating to mosquitoes.
- Implement integrated mosquito management programs designed to benefit or cause minimal harm to people, domestic animals, wildlife, and the environment.[2]
- Support the development and application of policies to address social injustices that contribute to the disproportionate burden of vector-borne or collateral disease on affected populations.[6]

NACCHO and its members will continue to work with partners such as public works, mosquito control districts, natural resources, and other agencies[7] to further enhance the effectiveness of mosquito and vector control activities. NACCHO also has broader, related recommendations for Vector-Borne Disease as well as Climate Change, which contributes to the global change in mosquito distribution and the corresponding spread of mosquito-borne diseases;[8,9,10,11]

Justification

Mosquito-borne diseases affect millions of people worldwide each year and will be an ongoing challenge in the United States for the foreseeable future. West Nile Virus (WNV), introduced to the United States in 1999, has since become an endemic health problem, afflicting citizens on a yearly basis; the disease is currently circulating in all 48 contiguous United States, with 96% of

counties reporting evidence of transmission in humans, mosquitoes, birds, horses, and other mammals.[12] Some of the same mosquito species that transmit endemic diseases (WNV and several encephalitic diseases) are also able to transmit diseases that are less common in the continental United States including dengue, malaria and Chikungunya virus to humans, and a variety of diseases to wildlife and domestic animals. Eastern Equine Encephalitis Virus (EEEV) is also endemic in the United States, which can result in a rare but serious neuroinvasive disease. While not common—usually fewer than 10 cases are reported each year—the mortality rate is incredibly high at around 33%.[13]

To combat mosquitoes and the public health hazards they present, many states and localities have established mosquito control programs. These programs can include gathering surveillance data for medical and environmental networks to detect possible outbreaks and managing prevention, public education, and vector control.[14,15,16] A 2012 survey of all 50 state health departments and 30 large city and county health departments assessed the changes in funding for essential personnel and collective capacity for mosquito-borne disease surveillance since 2004.[17] Citing budget cuts, respondents indicated a 41% reduction in staff for surveillance, a 58% reduction in mosquito trapping activities, and a 68% decrease in mosquito testing. Then in 2017 the Mosquito Surveillance and Control assessment, which was sent to all vector control organizations in the U.S. as identified by the Centers for Disease Control and Prevention (CDC), the American Mosquito Control Association (AMCA), and NACCHO identified that the overwhelming majority of vector control programs are in need of improvement.[4] Of the vector control programs designated as needing improvement, more than half lack competency in performing routine surveillance and species identification and 98% lack the capability or capacity to perform pesticide resistance testing. Sustainable funding for vector control staff training, surveillance activities, and supplies for mosquito control will be necessary to address these gaps in meeting core competencies.

Zika virus is a mosquito-borne disease transmitted by the *Aedes* mosquitoes, mainly *Ae. aegypti*; the same mosquito transmits dengue, chikungunya, and yellow fever. On Jan. 22, 2016, the Centers for Disease Control and Prevention (CDC) activated its Incident Management System and, working through the Emergency Operations Center,[18] centralized its response to the outbreaks of Zika virus occurring in the Americas. On Feb. 8, 2016, the CDC elevated its response efforts to a Level 1 activation, the highest response level at the agency. The WHO has declared a public health emergency as a result of the Zika virus, which has spread to more than 60 countries and territories since it was first confirmed in Brazil in May 2015.[19] The increasing prevalence and changing distribution of mosquito-borne diseases, as demonstrated by the Zika virus, can be partially attributed to climate change and increasing immigration and global travel.[9] The expanding presence of *Aedes* mosquitoes in the United States could sustain local transmission of Zika virus, along with other diseases, under the right circumstances.

WNV, EEE, Chikungunya and Zika virus are examples of endemic and emerging mosquito-borne diseases that pose threats to the public's health, but they are not the only ones. Changes to the environment (both built and natural), increased globalization, and other shifts make current mosquito control challenges ongoing and new threats and circumstances inevitable. One-off funding for the latest public health threat without sustained infrastructure and support has resulted in a vector control system that needs improvement, as well as gaps in mosquito control,

which have direct ramifications for human health. Therefore, local health departments and mosquito control agencies have a pressing need for funding and support for mosquito-borne disease surveillance programs, vector control policies, and legislation to enhance the development of integrated mosquito management programs throughout the United States and aid in the overall protection of public health.

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Record of Action

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