The National Environmental Health Association (NEHA) represents more than 7,000 governmental, private, academic, and uniformed services sector environmental health professionals in the U.S., its territories, and internationally. NEHA is the profession's strongest advocate for excellence in the practice of environmental health as it delivers on its mission to build, sustain, and empower an effective environmental health workforce.

## Policy Statement on Mosquito Control

*Adopted: November 2021*
*Policy Sunset: November 2026*

NEHA recognizes the association between the health of humans, animals, and the environment. NEHA advocates for federal, state, territorial, local, and tribal policies, regulations, research, and the requisite resources to enhance the abilities of environmental health professionals to reduce the risk of mosquito-borne diseases and protect public health. As such, NEHA also advocates incorporating the vector management framework outlined by the Centers for Disease Control and Prevention (CDC), American Mosquito Control Association, and World Health Organization while also integrating a One Health approach. One Health is a transdisciplinary, collaborative effort across all government levels with the goal of achieving optimal health outcomes including addressing environmental sources of current and emerging diseases and their connections between humans, animals, and the environment (Centers for Disease Control and Prevention

Mosquito and Vector Control Association [NWMVCA], 2017; World Health Organization [WHO], 2012).

- Support continued research in areas of mosquito repellents and genetics for mosquito control.
- Improve state, local, territorial, and tribal infrastructure and capacity to predict, prevent, and suppress mosquito-borne disease outbreaks (Association of State and Territorial Health Officials [ASTHO], 2005; WHO, 2017).
- Expand social mobilization and community empowerment by educating the public about local agency capabilities and personal preventive behaviors and practices (U.S. Environmental Protection Agency [U.S. EPA], 2021a).
- Advocate for policies that address climate change, which can contribute to distribution changes in mosquito populations and the resulting spread of mosquito-borne diseases (ASTHO, 2015a; Githeko et al., 2000; Gubler et al., 2001; Molaei et al., 2019).
- Continue to improve mosquito treatment formulations and application practices with the goal of reducing treatment failures due to insecticide resistance as well as minimizing risk to the environment and nontarget species.
- Develop policies across all government levels addressing social injustices that might contribute to a disproportionate burden of mosquito-borne or collateral disease on vulnerable populations (U.S. EPA, 2021b).
- NEHA and its members will continue to work with relevant stakeholders to further enhance the effectiveness of mosquito control programs and those that conduct them.

normally consist of a combination of four basic interventions: 1) removal of mosquito habitats, 2) structural barriers, 3) control at the larval stage, and 4) control at the adult stage (U.S. EPA, 2020). Risk assessment (e.g., surveillance) is the first necessary step for any integrated pest management program. Background information on the identification (e.g., systematics and taxonomy), distribution (e.g., spatial and temporal), behavior (e.g., potential for causing damage in particular), and developmental biology of pests defines the problem and suggests strategies for its control (Beard & Strickman, 2014). Effective programs include gathering surveillance data to monitor changes in mosquito species distribution and abundance over time, as well as predict possible outbreak situations. The standard for these programs is to follow integrated vector management (IVM). IVM is defined as a synergistic, ecosystem-based strategy that focuses on long-term suppression of vectors (e.g., mosquitoes) or their ability to cause disease or damage through a combination of techniques, including biological control, trapping, habitat manipulation, and chemical control (American Mosquito Control Association, 2017; CDC, 2021b; NWMVCA, 2017; U.S. Department of Health and Human Services, 2013; van den Berg et al., 2012). In many areas, environmental health professionals are responsible for conducting these mosquito surveillance, control, and disease prevention programs.

The National Association of County and City Health Officials (2016), in collaboration with CDC, released a report evaluating vector control capacity across key jurisdictions in 2016 with a focus on core competencies. The report found that only 21% of local vector control respondents (39/190) were “fully capable” and 68% of local vector control organizations (129/190) were ranked as “needs improvement” due to minimal resistance testing. In a different study, the Council of State and Territorial Epidemiologists (2014) identified a decrease in mosquito-borne virus surveillance since 2004 where respondents indicated a 41% reduction in staff for surveillance, a 58% decrease in mosquito trapping activities, and a 68% decrease in mosquito testing due to budget cuts. In 2019, the U.S. Congress passed the much-needed SMASH (Strengthening Mosquito Abatement for Safety and Health) and Kay Hagan TICK (Ticks: Identify, Control, and Knockout) Acts to help reduce the risk of mosquito and other vectorborne diseases in the U.S. These acts awarded grants to support the establishment of Regional Centers of Excellence in Tick and Vector-Borne Diseases and funded CDC to form cooperative agreements with state, local, and tribal health departments to address mosquito control and other vectorborne diseases.

While the SMASH Act has improved the effort to control mosquitoes and reduce mosquito-borne disease risk in the U.S., there continues to be a lack of sufficient sustained and organized funding for mosquito control programs. This deficiency continues to result in state, territorial, tribal, and local jurisdictions having to develop independent funding systems to maintain effective risk-based programs. This trend has led to nationally inconsistent and socioeconomically biased programs as only some jurisdictions can implement fees and specific tax revenues to supplement

Research continues to indicate the growing incidence and changing geographical distribution of mosquito-borne diseases can be partially attributed to climate change, transglobal migration, and international travel (Githeko et al., 2000; Gubler et al., 2001; WHO, 2021). These indications are particularly significant in the case of the expanding habitat of *Aedes* mosquitoes in the U.S. This expansion is likely to lead to increases in local transmission of Zika virus, dengue, chikungunya, and other diseases (Becker, 2008; CDC, 2020a; Tjaden et al., 2018). Therefore,

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