



# Impact of Vector-Borne Diseases and the Role of Mosquito Control in California

## THE MOSQUITO IS THE DEADLIEST CREATURE ON THE PLANET

- Mosquito-transmitted diseases contribute to the deaths of nearly one million people every year worldwide and sicken millions more.
- In the United States, mosquitoes routinely transmit more than half a dozen viruses, including West Nile (WNV) and St. Louis encephalitis viruses. Some newly established mosquito species in the United States are capable of transmitting several exotic viruses such as chikungunya, dengue, and Zika, which have been transmitted locally in several states and have had devastating effects worldwide.
- There are no human vaccines available for West Nile, St. Louis encephalitis, dengue, chikungunya, or Zika viruses, which are costly to treat and can have long-term health and financial consequences.

## WEST NILE VIRUS IS A SERIOUS THREAT

- Infected mosquitoes can spread West Nile virus – a disease which can cause debilitating cases of meningitis, encephalitis, and even death. There is no cure for West Nile virus.
- West Nile virus activity was detected in 34 counties in California in 2019 and there were 214 human disease cases reported, of which 143 (66.8%) were the more severe neuroinvasive form.
- Six West Nile virus-related fatalities from six counties were reported in 2019.
- Since 2003, more than 7,000 human WNV disease cases have been reported in California, including more than 300 deaths.

## ZIKA VIRUS IN CALIFORNIA

- No local transmission of Zika virus has occurred in California, but 745 cases of travel-related Zika virus infections have been reported since 2015, many in areas where invasive mosquitoes have been detected. Zika virus can cause miscarriage, stillbirth, and severe birth defects among pregnant women.
- Local transmission of Zika virus has only been reported in Florida and Texas, but it is essential that California enhances its detection and prevention capabilities to ensure that mosquito control agencies, as well as local and state health departments, are adequately prepared to respond to possible local transmission events in the future.

## MOSQUITO-BORNE DISEASES HAVE SIGNIFICANT ECONOMIC IMPACTS

- The economic costs to patients can be high, including costs for inpatient and outpatient medical care and rehabilitation, nursing homes, transportation, home health aides, childcare, and loss in productivity.
- The total mean cost of West Nile virus hospitalized cases and deaths reported to the U.S. Centers for Disease Control and Prevention for 1999–2012 was ~\$778 million.
- In 2005, an outbreak of West Nile virus disease occurred in Sacramento County. The total economic impact of the outbreak, including vector control response and patients' medical costs, was \$2.98 million.

- A study published in the PLOS Neglected Tropical Diseases Journal looking at the potential economic burden of Zika across six states estimated costs of more than \$1 billion dollars if 1% of the population were infected, which would have catastrophic implications to Medi-Cal.

**MOSQUITO CONTROL WORKS**

- In 2012, the West Nile virus outbreak in Texas focused attention on the importance of having established, efficient mosquito control programs to prevent widespread disease outbreaks. The unprecedented number of human cases (1,868) and deaths (89) reinforced that mosquito surveillance and control are an important use of funds to protect public health.
- Mosquito control agencies in California have protected people against mosquito-transmitted diseases and enhanced quality of life by controlling mosquitoes for more than 100 years. The introduction of invasive mosquitoes and the threat of mosquito-borne diseases such as West Nile virus, chikungunya, dengue, and Zika reinforce the need to support these public health agencies into the future.



Scan this QR code to learn more and see our digital story map



One Capitol Mall, Suite 800, Sacramento, CA 95814

**p** (916) 440-0826    **e** [mvcac@mvcac.org](mailto:mvcac@mvcac.org)    **w** [www.mvcac.org](http://www.mvcac.org)

