



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 are the cause of death in hundreds of thousands of people every year worldwide and sicken millions more.
- In the United States, mosquitoes routinely transmit half a dozen viruses, including West Nile and St. Louis encephalitis. Newly established mosquito species in the United States are capable of transmitting a number of 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 vaccines for West Nile, St. Louis encephalitis, 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 spread West Nile virus – 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 41 counties in California in 2018 and there were 215 human disease cases reported, of which 153 were the more severe neuroinvasive form.
- Over the last 10 years, more than 4,000 human disease cases were reported including 211 deaths.

ZIKA VIRUS IN CALIFORNIA

- No local transmission of Zika virus has occurred in California, but 708 cases of travel-related Zika virus infections have been confirmed here since 2015, many in areas where invasive mosquitoes have been detected. Zika virus can cause miscarriage, stillbirth, and severe birth defects.
- Local transmission of Zika virus has been reported in Florida and Texas and it is essential that California enhances its detection and prevention capabilities to ensure that mosquito control agencies are adequately prepared to respond to local transmission here.

MOSQUITO-BORNE DISEASES HAVE SIGNIFICANT ECONOMIC IMPACTS

- The economic costs to patients can be high, including costs for inpatient and outpatient medical care, nursing homes, transportation, home health aides, childcare, and loss in productivity.
- 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 a 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 outbreaks of disease. The unprecedented number of human cases (1,868) and deaths (89) reinforced the importance of mosquito surveillance and control as a cost-effective use of funds to protect public health.
- In many parts of California, residents have voted to form local mosquito control programs or agencies and allocate necessary funding. As a result, 85% of California's population are within the boundaries of a mosquito control program.
- Mosquito control agencies in California have protected people against mosquito-transmitted diseases and enhanced quality of life by controlling nuisance mosquitoes for over 100 years. The introduction of invasive mosquitoes and 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.