



ILLINOIS IS NOT IMMUNE FROM THE WORLDWIDE TREND OF INCREASING INCIDENCE OF VECTOR BORNE-DISEASES (VBDs).

- 1. Throughout the US, the threat of vector-borne disease is increasing. Illinois is at risk from emerging pathogens.**
 - The national incidence of VBDs (diseases transmitted by mosquitoes, ticks, midges and fleas) is rising due to climate change and globalization. Nationally, the number of VBD cases has tripled since 2004 (CDC, 2018).
 - West Nile virus was once an emerging pathogen in Illinois and is now endemic. New pathogens are expected to continue to emerge from distant corners of the globe.
 - Changing weather patterns due to global climate change will likely enhance mosquito and tick outbreaks and increase their frequency. Many arthropod-borne pathogens indigenous to Illinois may emerge under certain environmental conditions.
- 2. Mosquito- borne illness is a real and continuing threat to residents and visitors to Illinois.**
 - In 2018, more than 120 people were diagnosed with West Nile virus in the Chicago Metropolitan area (IDPH, 2018).
 - Illinois is in the top quintile (20%) for mosquito-borne illness nationally (CDC, 2018).
- 3. The number of illnesses from ticks in Illinois is likely to increase as the range of ticks and pathogens expands.**
 - Illinois is in the second quintile (40%) of states for tick-borne illness.
 - Tick-borne illness has doubled since 2004 (CDC, 2018).
 - Illinois residents have been diagnosed with tick-borne Lyme disease, Rocky Mountain Spotted Fever, Ehrlichiosis, Tularemia and for the first time in 2018, Heartland Virus.

COMMUNITIES THAT HAVE LET SUPPORT FOR VECTOR CONTROL DWINDLE HAVE BEEN FORCED TO ACT REACTIVELY WHICH IS MORE EXPENSIVE AND LESS EFFECTIVE THAN PROACTIVE PREVENTION.

- 1. The cost of human illness is greater than the cost of preventative vector control.**
 - Since its 1999 introduction, West Nile virus has cost the United States 778 million dollars in medical costs and productivity loss (Staples et al., 2014).
 - Lyme disease is estimated to cost the United States between \$2.8 billion and \$5 billion annually in lost productivity, medical costs and avoided outdoor activities (Berry et al., 2017).
- 2. Proper funding enables proactive mosquito control, reducing the need for costly emergency interventions.**



- In 2012, Dallas, Texas saw hundreds of human cases of West Nile virus and had to institute emergency aerial spraying for the first time in 50 years. Similar sized cities would have dozens of vector control workers, Dallas had just four employees at the start of the outbreak (Friedman, 2012).
- In 2016, Miami, Florida saw local transmission of Zika for the first time. The outbreak cost Miami-Dade County \$30 million to contain (Hanks, 2017). Miami had an annual budget of \$1.4 million and a vector control staff of only 17 people for 2.7 million residents (Staletovich, 2016). Since the Zika outbreak, Miami increased its annual mosquito control budget to \$13 million in 2018.
- Stable funding for vector control, via mosquito abatement districts or other public health agencies is a vital mechanism that provides consistent, proactive, vector control for Illinois (CDC, 2018).

3. The enjoyment of outdoor spaces, uninhibited from the fear of contracting a vector-borne disease, is valued by residents and visitors to Illinois.

- In one study, mosquitoes prevented 59.5% of residents from enjoying their yard and rated the importance of enjoying outdoor activities as high as neighborhood safety and neighborhood cleanliness (Halasa et al., 2014).
- During the 2016 Zika outbreak, up to 40% of tourists indicated the presence of the Zika virus would change their travel and vacation plans (Dineen, 2016).

ILLINOIS IS VERY IMPORTANT TO THE NATIONAL VECTOR CONTROL COMMUNITY.

1. Many vector related corporations employ thousands of Illinois residents and are vitally important for Illinois and vector control organizations around the nation.

- Illinois is home to corporations like Univar, Clarke, VDCI, Bayer, Valent, Central Life, etc. that are focused on research and development to advance vector control and disease prevention.

2. Illinois needs to support the best science for vector management and vector research, which is vital to meeting the challenges of the future.

- Illinois universities employ top scientific and research talent focused on management of vector-borne diseases, which provides important training for the next generation of public health entomologists.
- The number of students selecting medical entomology as a career is dwindling while a generation of scientists is retiring. Not enough people are being trained in public health vector control (Sifferlin, 2018).

3. The Illinois Mosquito and Vector Control Association (IMVCA) and its members are an untapped resource when considering legislation that may impact public health vector control.

- The IMVCA represents the interests of scientists, researchers, abatement districts, vector control corporations, and public health agencies in Illinois.



- IMVCA is a non-profit organization consisting of individuals who are interested in promoting the economic, environmental, and ecologically sound management of mosquitoes and other arthropod vectors and pests, in order to enhance human and animal health and well-being. Integrated Vector Management represents the best science available to reduce contact with infected vectors through a combination of chemical, biological, cultural, and physical techniques intimately linked to arthropod and pathogen surveillance and insecticide resistance monitoring.
- The IMVCA's mission is to provide leadership, information, and education concerning the suppression of mosquito and other vector transmitted diseases and the reduction of pest annoyance levels caused by mosquitoes and other arthropods of public health importance in Illinois.
- IMVCA has a website, a social media page (Facebook), and an online newsletter.



Solutions and desired support from our legislators

- Utilize the IMVCA as a multifaceted resource when considering legislation.
- Support stable funding for vector surveillance and control.
- Promote enhancing the State's core vector control competencies, particularly resistance monitoring to protect our remaining management tools.
- Develop new vector management guidelines that better balance public health vector control with other needs.
- Promote the hiring of vector control specialists by state agencies.

References

CDC Vital Signs, (May 1 2018). "Illnesses on the Rise from Mosquito Flea and Tick Bites."

Staples, J. E., Shankar, M. B., Sejvar, J. J., Meltzer, M. I., & Fischer, M. (2014). Initial and long-term costs of patients hospitalized with West Nile virus disease. *The American journal of tropical medicine and hygiene*, 90(3), 402-409.

Berry K., Bayham, J., Meyer, S.R., Fenichel, E.P. 2017. The Allocation of Time and Risk of Lyme: A Case of Ecosystem Service Income and Substitution Effects. *Environmental and Resource Economics*.

S Friedman. (September 17, 2012) "Missed Opportunities in Fight Against West Nile Virus." NBC Dallas-Fort Worth.

D Hanks, (May 02, 2017) "Miami-Dade hiring insect expert as Zika tab approaches \$30 million." *Miami Herald*

J Staletovich. (September 23, 2016) "How Miami-Dade got outgunned and overwhelmed in the war on Zika." *Miami Herald*

Halasa, Y. A., Shepard, D. S., Fonseca, D. M., Farajollahi, A., Healy, S., Gaugler, R., & Clark, G. G. (2014). Quantifying the impact of mosquitoes on quality of life and enjoyment of yard and porch activities in New Jersey. *PLoS One*, 9(3).

Dineen, C. (September, 8th 2016) "Zika begins to affect tourism industry, survey finds" *Orlando Sentinel*

Sifferlin, A. (February 14, 2018) "Fewer Scientists Are Studying Insects. Here's Why That's So Dangerous." *Time Magazine*.