

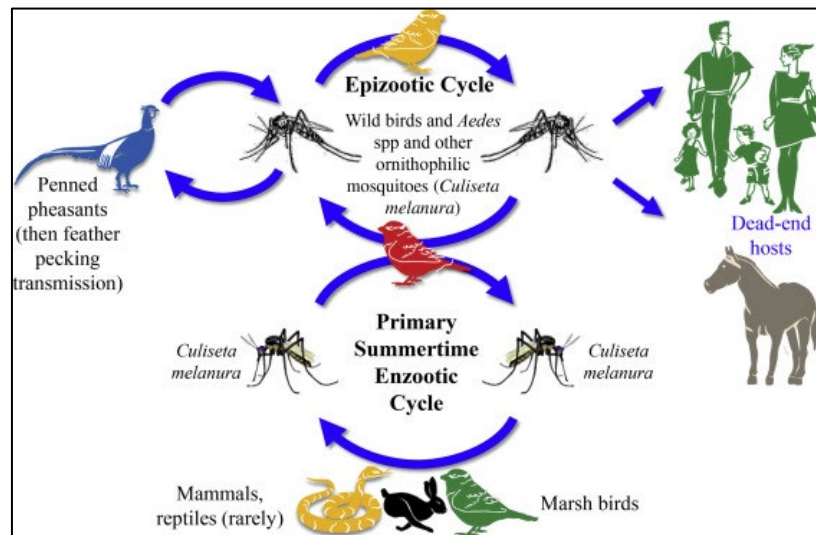
Report to the Boards of Health
Jennifer Morse, MD, MPH, FAAFP, Medical Director

Mid-Michigan District Health Department, Wednesday, September 23, 2026
Central Michigan District Health Department, Wednesday, September 23, 2026
District Health Department 10, Friday, September 25, 2026

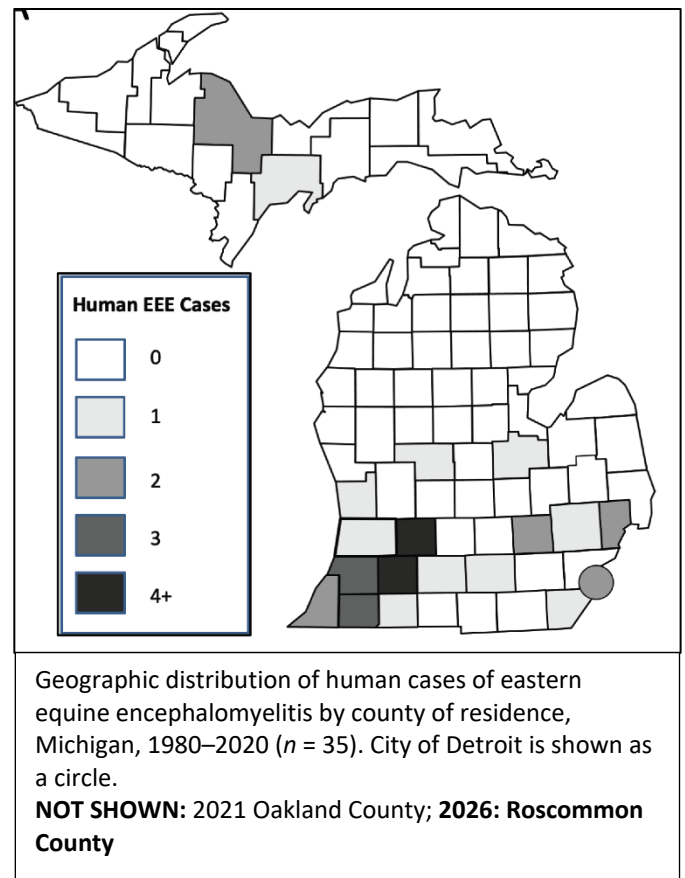
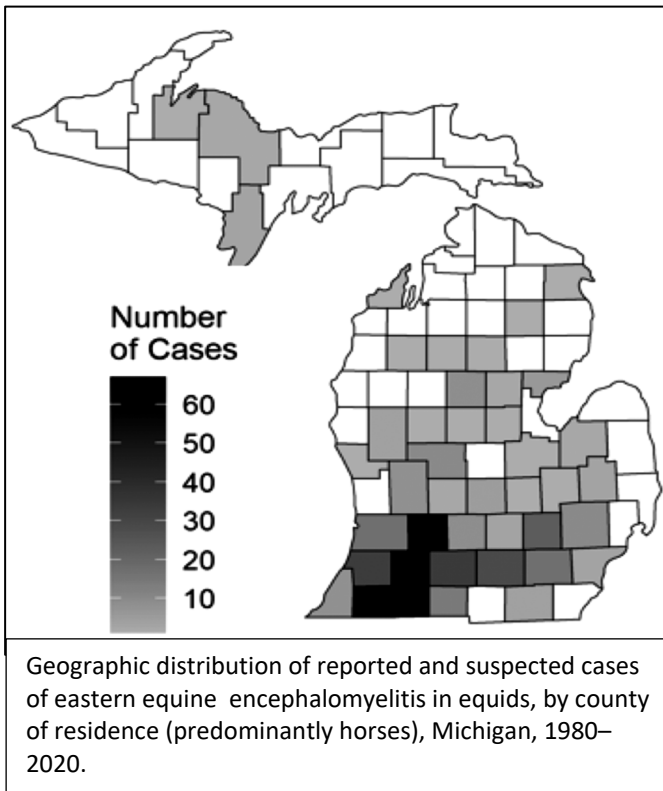


Eastern Equine Encephalitis and Mosquitoes

Eastern equine encephalitis, or EEE, is a virus that is maintained in birds and is spread by mosquitoes. One type of mosquito, *Culiseta melanura*, spreads the disease from bird to bird. Other types of mosquitos (in the families of *Aedes*, *Coquillettidia*, and *Culex*) spread the disease from birds to humans, other mammals, and rarely reptiles. Horses and people get infected but do not make enough virus to spread the virus to mosquitos, so they are called “dead end hosts”. Horses often die very quickly from EEE, so they are often an early warning EEE is in the area.



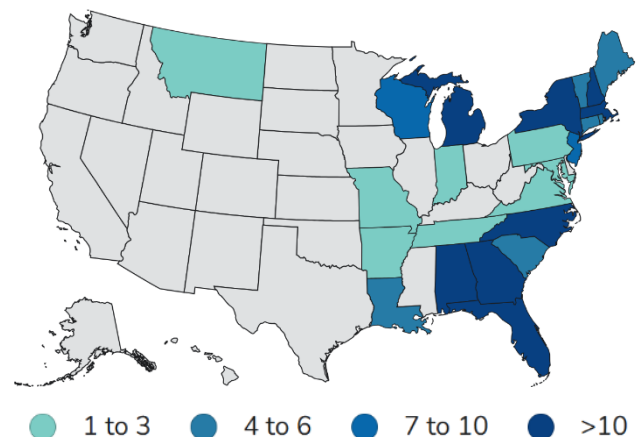
In Michigan, EEE usually happens in and near glacially formed wetlands (freshwater swamps, bogs, and fens) that are ideal breeding grounds for *Culiseta melanura*. Historically, almost all cases of EEE were in pockets of southwest and southeast Lower Michigan with these types of wetlands. But the area affected by EEE seems to be expanding. In 2020, EEE occurred in the Upper Peninsula for the first time, including a human case and infected wildlife (a bald eagle, ruffed grouse) far outside the traditional risk zone.



EEE is rare, but when it infects horses and people it can be very serious. Most people that get infected with EEE have no illness, but of those that do, about one-third die, and many survivors are left with lasting brain damage. In horses, 9 out of 10 effected will die.

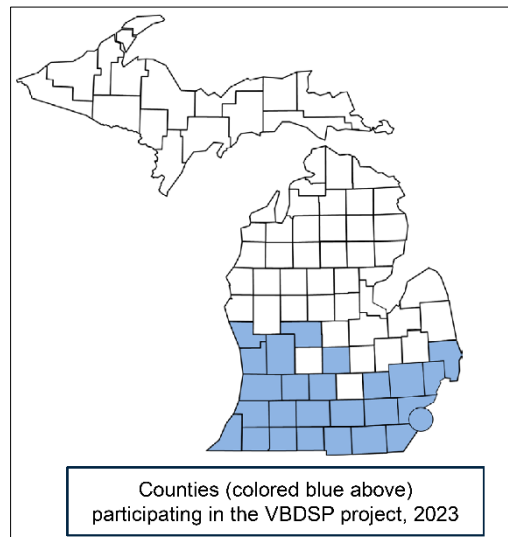
Even though EEE primarily occurs in the Atlantic and Gulf Coast states, Michigan has one of the highest EEE case counts in the country and is the only state in 2026 to have a human case so far. From 2003 to 2025, Michigan had a total of 22 human cases of EEE disease, the third highest state in the country.

Top 10 EEE State Case Count Totals, 2003-2025	
MA	45
FL	24
MI	22
NH	17
GA	14
NC	14
AL	11
NY	11
NJ	10
WI	7



In Michigan, outbreaks seem to come in multi-year waves. The worst stretch on record was 2019–2020 with 14 human cases and 8 deaths combined, plus dozens of horses, deer, and other animal cases. That prompted the state's first aerial mosquito-spraying campaign since 1980.

MDHHS now funds the Vector-Borne Disease Surveillance and Prevention Project (VBDSPP) through 21 local health departments covering 25 counties and Detroit. This project aims to build a public health surveillance system capable of identifying populations of mosquitoes that can transmit concerning illnesses such as EEE as well as blacklegged ticks that can transmit Lyme disease and other germs. The local health departments participating in the VBDSPP project can tailor their efforts to meet the needs of the community they serve. Health department staff trap and identify mosquitoes, then send specimens to the MDHHS Bureau of Laboratories for virus testing. Four counties, Saginaw, Bay, Midland, and Tuscola, also run millage-funded countywide programs. Since the passage of public act 272/273 of 2020, townships can levy their own mosquito abatement millage or special assessment. Not all counties that have been affected by EEE have mosquito surveillance programming at this time.



Recommendations:

1. Support mosquito surveillance activities and funding as a form of disease prevention, as well as response planning in the event of EEE increases.
2. Encourage vaccination of horses against EEE.
3. Report sick or oddly behaving wildlife to the DNR as they may be an early warning signal before human cases are confirmed. Use the DNR's Eyes in the Field Web application <https://www2.dnr.state.mi.us/ors/Home>.
4. Find more information at www.mi.eee and www.cdc.eee.

Sources

- Mary Grace Stobierski, Kimberly Signs, Emily Dinh, Thomas M Cooley, Julie Melotti, Michele Schallow, Jon S Patterson, Steven R Bolin, Edward D Walker, Eastern Equine Encephalomyelitis in Michigan: Historical Review of Equine, Human, and Wildlife Involvement, Epidemiology, Vector Associations, and Factors Contributing to Endemicity, Journal of Medical Entomology, Volume 59, Issue 1, January 2022, Pages 27–40, <https://doi.org/10.1093/jme/tjab153>
- CDC. Data and Maps for Eastern Equine Encephalitis. <https://www.cdc.gov/eastern-equine-encephalitis/data-maps/historic-data.html>
- MacLachlan, N. J., Dubovi, E. J., Barthold, S. W., Swayne, D. E., & Winton, J. R. (Eds.). (2017). Fenner's veterinary virology (5th ed.). Academic Press
- MDHHS Emerging & Zoonotic Infectious Disease Section (EZID), 2024. Michigan Emerging and Zoonotic Disease SURVEILLANCE SUMMARY 2023. https://www.michigan.gov/emergingdiseases/-/media/Project/Websites/emergingdiseases/EZID_Annual_Surveillance_Summary.pdf?rev=beed8df505004c28a8c8205511bd40dd