

The Delaware Division of Public Health is sending this health advisory to make health care providers aware of higher-than-expected rates of Powassan virus in ticks throughout neighboring Pennsylvania counties. There are so far no confirmed cases in Delaware.

Summary

Powassan (POW) virus disease is a rare but serious arboviral illness transmitted by infected ticks. This health advisory provides health care providers with background information on POW virus disease, including transmission, clinical signs and symptoms, diagnosis, and prevention.

Background

POW virus is transmitted by the bite of an infected tick during any stage of its life cycle including the larval stage which is unlike most of the other tick-borne diseases. More than 180 cases have been documented in the United States, mostly in the northeast and Great Lakes regions (1,2). The deer tick (*Ixodes scapularis*), also known as the blacklegged tick, as well as the groundhog tick (*Ixodes cookei*), which are both found in Delaware and **active year-round**, are capable of being infected with, and transmitting POW virus. The deer/blacklegged tick is also the primary vector of Lyme disease and several other tickborne pathogens (2).

Most people infected with POW virus are asymptomatic. Illness, if it develops, appears one week to one month after the tick bite. Symptoms are typical of neuroinvasive arboviral disease and include but are not limited to fever, headache, vomiting, weakness, altered mental status, loss of coordination, speech difficulties, memory loss, encephalitis, and meningitis. Non-neuroinvasive POW virus disease has been documented and manifests as a febrile flu-like illness. Infection can be fatal in about 10% of neuroinvasive cases. **While tickborne diseases such as Lyme disease require an infected deer tick be attached for over 24 hours to transmit the disease, studies have shown significantly less time may be needed to transmit POW virus (1,2).**

There is no specific treatment for POW virus disease and supportive care is appropriate. The best way to prevent POW virus disease is to prevent tick bites. Effective strategies include avoiding tick habitats such as wooded and bushy areas with high grass; consistently using an effective insect repellent such as DEET when

outdoors; and treating outdoor gear and clothes with an insecticide such as permethrin (2). In addition, after spending time outdoors, make sure to shower or bathe along with a full-body tick check in order to remove questing ticks. Any attached ticks should also be removed immediately. Deer ticks may be very small (nymphs are the size of a poppy seed), so careful scrutiny is required (2).

Recommendations/Reporting

Health care providers should be aware of the following:

1. The Pennsylvania Department of Environmental Protection has confirmed higher-than-expected rates of POW virus in ticks located in multiple Pennsylvania counties during the 2021 surveillance season (2).
2. POW virus disease is a reportable disease in Delaware and suspected cases should be reported to the Division of Public Health Office of Infectious Disease Epidemiology (OIDE) via email at reportdisease@delaware.gov, by phone 1-888-295-5156, or fax 302-622-4149.
3. Health care providers should consider the diagnosis of POW virus disease in patients with meningitis, encephalitis, or other non-specific febrile illness occurring, especially if the patient has a history of tick exposure or bite and travel to an area with confirmed POW virus disease such as Clearfield, Centre, Wyoming, Bradford, and Schuylkill counties in Pennsylvania.
4. POW virus disease cannot be clinically distinguished from other arboviral diseases. The most common diagnostic approach is detection of POW virus-specific IgM antibodies (2).
5. Call DPH Office of Infectious Disease Epidemiology at 1-888-295-5156 for assistance with POW virus disease diagnostic testing.

Additional Information/Resources

Although Pennsylvania has experienced 10 cases of POW virus since 2011, Delaware has not had any occurrences of POW virus in humans since 20112.

References

1. [Hassett EM, Thangamani S. Ecology of Powassan virus in the United States. *Microorganisms*. 2021;9\(11\):2317. doi:10.3390/microorganisms9112317](#)

2. [Pennsylvania Department of Health: Powassan Virus Identified in Ticks. March 2022.](#)