



Department of Health and Human Services  
Maine Center for Disease Control and Prevention  
286 Water Street  
11 State House Station  
Augusta, Maine 04333-0011  
Tel: (207) 287-8016; Fax: (207) 287-9058  
TTY Users: Dial 711 (Maine Relay)

## Maine Health Alert Network (HAN) System

### PUBLIC HEALTH ADVISORY

**To:** Health Care Providers  
**From:** Dr. Siiri Bennett, State Epidemiologist  
**Subject:** Human Powassan Case  
**Date / Time:** Wednesday, July 24, 2019 at 11:15am  
**Pages:** 3  
**Priority:** High  
**Message ID:** 2019PHADV019

#### Abstract:

**Summary:** The purpose of this health advisory is to alert clinicians to the potential for human Powassan encephalitis disease activity in Maine and to consider testing for Powassan in patients presenting with unexplained encephalitis, meningitis or high fever ( $\geq 100.4^{\circ}\text{F}$  or  $38^{\circ}\text{C}$ ) during the summer and early fall.

Maine CDC was notified of a human case of Powassan encephalitis (POW) in a Maine resident who resides in southern Maine. The individual was symptomatic in late June and hospitalized. CDC Fort Collins confirmed the Powassan result in this individual.

Powassan virus is transmitted to humans through the bite of an infected *Ixodes* tick. Signs and symptoms can include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurologic problems may occur. Symptoms can begin anytime from one week to one month after the tick bite. There is no specific treatment, but people with severe Powassan virus illness often need to be hospitalized.

## Human Powassan Case

The purpose of this health advisory is to alert clinicians to the potential for human Powassan encephalitis disease activity in Maine and to consider testing for Powassan in patients presenting with unexplained encephalitis, meningitis or high fever ( $\geq 100.4^{\circ}\text{F}$  or  $38^{\circ}\text{C}$ ) during the summer and early fall.

Maine CDC was notified of a human case of Powassan encephalitis (POW) in a Maine resident who resides in southern Maine. The individual was symptomatic in late June and hospitalized. CDC Fort Collins confirmed the Powassan result in this individual.

Powassan virus is transmitted to humans through the bite of an infected *Ixodes* tick. Signs and symptoms can include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurologic problems may occur. Symptoms can begin anytime from one week to one month after the tick bite. There is no specific treatment, but people with severe Powassan virus illness often need to be hospitalized.

Powassan was first discovered in Powassan, Ontario in 1958. There are two type of Powassan virus in the United States. The first type, often called lineage 1 POW virus is associated with *Ixodes cookei* or the woodchuck tick. Lineage 2 POW, sometimes called Deer tick virus, is associated with *Ixodes scapularis* or the deer tick. Both can cause human disease. Powassan encephalitis is rare in the United States with an average of seven cases reported each year. Maine has identified 11 Powassan cases since 2000: 2 in 2000, 1 in 2001, 1 in 2004, 1 in 2013, 1 in 2015, 1 in 2016, and 3 in 2017, and 1 thus far in 2019.

### What to do after a tick bite:

- Remove the tick properly, ideally using tweezers or a tick spoon.
- Identify the tick and the engorgement level, or length in time of attachment. Tick identification is available for free through the Tick Lab at the University of Maine Cooperative Extension and more information can be found at [www.ticks.umaine.edu](http://www.ticks.umaine.edu).
- Clean the area around the bite and instruct the patient to watch for signs and symptoms for 30 days.
- Testing of the tick is not routinely recommended because even if the tick tests positive for a tickborne disease, that does not mean it was attached long enough to transmit the disease. Even if the tick tests negative that does not mean it was a patient's only tick exposure.
- Prophylaxis after a tick bite is **not** routinely recommended.

### Prevention:

Transmission time from tick bite to infection is shorter than for other tickborne diseases so the best way to prevent Powassan encephalitis is to prevent tick bites. Maine CDC recommends the No Ticks 4 ME approach:

1. Wear protective clothing
  - a. Wear light colored clothing to make ticks easier to see
  - b. Wear long sleeves and pants to reduce exposed skin for ticks to attach
2. Use an EPA approved repellent
  - a. Apply repellents to bare skin according to label instructions. Permethrin is a good option to treat clothing and gear and will remain protective through several washings
3. Use caution in tick infested areas
  - a. Avoid wooded and bushy areas with high grass and stay in the middle of trails whenever possible

4. Perform daily tick checks
  - a. Check for ticks immediately after exiting high risk areas. Bathe or shower (preferably within 2 hours after being outdoors) to wash off and find ticks on your body. Conduct a full-body tick check. Also examine clothing, gear, and pets.

**Testing:**

There is no commercial testing available for Powassan virus. Maine's Health and Environmental Testing Laboratory (HETL) can perform PCR testing on cerebrospinal fluid and whole blood (EDTA tube) and can assist in coordinating serologic testing on symptomatic individuals. A HETL requisition and Arboviral submission form are required for testing. When suspicion is high, IgM testing on serum may be forwarded to federal CDC for confirmation based on patient symptoms and requires a completed federal CDC DASH form.

**Reporting:**

Powassan disease is reportable in Maine. All suspect cases, and positive laboratory reports should be reported by phone to the 24/7 disease reporting and consultation line at 1-800-821-5821 or by fax to 1-800-293-7534

**Additional information:**

- Maine CDC Powassan webpage: [www.maine.gov/dhhs/powassan](http://www.maine.gov/dhhs/powassan)
- Federal CDC Powassan webpage: [www.cdc.gov/powassan](http://www.cdc.gov/powassan)
- HETL Laboratory Submission Sheet and requisition form: [www.maine.gov/dhhs/mecdc/public-health-systems/health-and-environmental-testing/micro/documents/wnv-sle-eee.pdf](http://www.maine.gov/dhhs/mecdc/public-health-systems/health-and-environmental-testing/micro/documents/wnv-sle-eee.pdf)
- CDC Dash form (via HETL): [www.cdc.gov/laboratory/specimen-submission/form.html](http://www.cdc.gov/laboratory/specimen-submission/form.html)
- Weekly arboviral reports will be posted throughout the season at: [www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/arboviral-surveillance.shtml](http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/arboviral-surveillance.shtml)
- Maine CDC disease reporting and consultation line: **1-800-821-5821** (available 24/7)