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PUBLIC HEALTH ADVISORY

To: Health Care Providers
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Subject: **2020 Lyme and Other Tickborne Disease Information**
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2020 Lyme and Other Tickborne Disease Information

Lyme disease is the most common vectorborne disease in Maine. Ticks are already active, and we expect the number of Lyme disease cases to increase as the weather continues to get warmer. **May is Lyme Disease Awareness Month in Maine** and we want to encourage Mainers to use the "Tick Tock" strategies to stay tick free.

Background:

Lyme disease is a bacterial infection that is carried by the deer tick (*Ixodes scapularis*). Cases increased over the last decade in Maine and occur in all 16 counties. For the first time, providers reported over 2,000 cases of Lyme disease statewide in 2019. Lyme disease is most common among school age children and mature adults over the age of 65. Most infections occur during the summer months, and as the weather continues to warm up, more ticks will be out in the open increasing the risk for tickborne diseases. Providers are already reporting cases in 2020, and the number will rise as we enter the summer months. Many individuals and families are spending more time outdoors during the COVID-19 pandemic. This may put them at increased risk of exposure to tickborne pathogens.

Deer ticks can also carry the bacterium that causes anaplasmosis and the parasites that cause babesiosis. Both anaplasmosis and babesiosis are also increasing in Maine, and individuals bitten by the deer tick can acquire more than one infection.

Symptoms:

The most common early symptom of Lyme disease is an expanding red rash (*erythema migrans*) that occurs 3-30 days after being bitten. Fever, joint and muscle pains may also occur. Untreated infections can lead to clinical findings in skeletal, cardiac, and nervous systems. Disseminated manifestations of disease include: arthritis characterized by recurrent, brief attacks of joint swelling; lymphocytic meningitis; cranial neuritis (such as Bell's palsy); encephalitis; and second- or third-degree

atrioventricular block. Lyme disease is treatable, and most patients recover after receiving appropriate therapy.

What to do after a tick bite:

- Remove the tick properly, ideally using tweezers or a tick spoon.
- Clean the area around the bite.
- Instruct the patient to watch for signs and symptoms for 30 days.
- Identify the tick and the engorgement level, or the amount of time the tick was attached.
- Testing of the tick is not routinely recommended for clinical purposes because even if the tick tests positive for Lyme, 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 exposure.

Prophylaxis:

- Prophylaxis after a tick bite is **not** routinely recommended, but can be considered under specific circumstances including:
    - Tick is identified as an engorged deer tick that was attached for at least 24 hours.
    - Exposure occurred in an area where there is a high rate of infected ticks. Areas south of Bangor have the highest rate of infected ticks in the state. There are limited data from the more northern counties on the rate of infection among ticks.
    - Prophylaxis can be started within 72 hours of tick removal. **Even if prophylaxis is used, Maine CDC recommends monitoring for symptoms for 30 days.**
- There are no data showing if prophylaxis is effective in preventing anaplasmosis, and a single dose of doxycycline will not have an effect on babesiosis. Therefore, **even if prophylaxis is used, Maine CDC recommends monitoring for symptoms for 30 days.**

Tick identification and testing:

- Tick identification and testing is available through the Tick Lab at the University of Maine Cooperative Extension. More information can be found at ticks.umaine.edu.
- Tick identification is available for free.
- Tick testing is available for $15 with a three-day turnaround time. This service is only available to Maine residents.
    - Deer ticks are tested for Lyme disease, anaplasmosis, and babesiosis.
    - American dog ticks, lone star ticks, and other related tick species are tested for Rocky Mountain spotted fever, ehrlichiosis, and tularemia.
- While testing ticks for clinical purposes is not recommended, data from tick testing is very helpful for surveillance purposes and determining tick infection rates in the state.
- However, clinical decisions should not be made based off the results of this service.

If Providers suspect Lyme disease:

- Preferred laboratory testing is a two-tier method, with an EIA or IFA test followed by either a Western Blot for both IgG and IgM.
    - Federal CDC issued updated recommendations for serologic diagnosis of Lyme Disease in August 2019 recommending that when cleared by FDA for this purpose, serologic assays that utilize EIA rather than western immunoblot assay in a two-test format are acceptable alternatives for laboratory diagnosis of Lyme disease. More information is available at http://dx.doi.org/10.15585/mmwr.mm6832a4.
- IgM is only considered reliable in the first month after exposure.
- IDSA guidelines for assessment, treatment, and prevention of Lyme disease are available at http://cid.oxfordjournals.org/content/43/9/1089.full.

- Consider testing for other tickborne diseases as well if warranted.

What to report:

Lyme disease is a reportable condition in the state of Maine. Report all diagnosed *erythema migrans* rashes and all positive lab diagnoses. Cases can be reported by fax at 1-800-293-7534 or by phone at 1-800-821-5821.

Other tickborne diseases:

Other diseases that can be transmitted by deer ticks in Maine include anaplasmosis, babesiosis, *Borrelia miyamotoi*, and Powassan. Symptoms of anaplasmosis include: fever, headache, malaise and body aches. Symptoms of babesiosis include: extreme fatigue, aches, fever, chills, sweating, dark urine, and possibly anemia. Symptoms of *B. miyamotoi* include: fever, chills, headache, body and joint pain, and fatigue. Symptoms of Powassan include: fever, headache, vomiting, weakness, confusion, loss of coordination, speech difficulties, seizures, and encephalitis and meningitis. Preferred testing for anaplasmosis, babesiosis, *B. miyamotoi*, and Powassan is by PCR. Testing for Powassan and Deer Tick Virus can be performed at Maine's Health and Environmental Testing Laboratory (HETL). Many reference and commercial laboratories offer testing for anaplasmosis, babesiosis, ehrlichiosis, and *B. miyamotoi.*

In 2019, providers reported 685 cases of anaplasmosis, 138 cases of babesiosis, 13 cases of *B. miyamotoi*, and two cases of Powassan. Current case count data can be found on the Maine Tracking Network Near Real-Time dashboard.

Anaplasmosis, babesiosis, ehrlichiosis, Powassan, and Rocky Mountain spotted fever are all reportable in Maine; however, ehrlichiosis and Rocky Mountain spotted fever are uncommon in the state. *Borrelia miyamotoi* is currently reportable under the unusual illnesses of infectious causes category.

A Physician's Reference Guide is available and describes the most common tickborne diseases in Maine. This guide can be found on our website at: www.maine.gov/dhhs/vectorborne under Resources. Paper copies can be requested through disease.reporting@maine.gov.

Additional information:

- Lyme disease: www.maine.gov/lyme.
- Other tickborne diseases: www.maine.gov/dhhs/vectorborne.
- Frequently asked questions: www.maine.gov/dhhs/tickfaq.
- To order Lyme educational materials: www.maine.gov/dhhs/order.
- HETL requisition: www.mainepublichealth.gov/lab.
- Maine Tracking Network tickborne disease data: data.mainepublichealth.gov/tracking.
    - Visit the "Data Portal" for data tables, maps, charts, and near real-time reports of Lyme disease, anaplasmosis, babesiosis, and tick exposures in Maine emergency departments.
- UMaine Cooperative Extension Tick Lab data: extension.umaine.edu/ticks/maine-tick-data.
    - Includes data tables, maps, reports, and real-time updates.
- Maine CDC Disease Reporting and Consultation Line: **1-800-821-5821**.