PENNSYLVANIA DEPARTMENT OF HEALTH
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Lyme Disease and Other Tickborne Diseases in Pennsylvania

DATE:	05/13/2022
TO:	Health Alert Network
FROM:	Denise A. Johnson, M.D., FACOG, FACHE, Acting Secretary of Health
SUBJECT:	**Lyme Disease and Other Tickborne Diseases in Pennsylvania**
DISTRIBUTION:	Statewide
LOCATION:	Statewide
STREET ADDRESS:	n/a
COUNTY:	n/a
MUNICIPALITY:	n/a
ZIP CODE:	n/a

This transmission is a "Health Advisory" provides important information for a specific incident or situation; may not require immediate action.

HOSPITALS**: PLEASE SHARE WITH ALL MEDICAL, PEDIATRIC, INFECTION CONTROL, NURSING AND LABORATORY STAFF IN YOUR HOSPITAL;** EMS COUNCILS: **PLEASE DISTRIBUTE AS APPROPRIATE;** FQHCs: **PLEASE DISTRIBUTE AS APPROPRIATE;** LOCAL HEALTH JURISDICTIONS**: PLEASE DISTRIBUTE AS APPROPRIATE; PROFESSIONAL ORGANIZATIONS**: PLEASE DISTRIBUTE TO YOUR MEMBERSHIP

Summary

- Tick bite-related emergency department visits have increased recently in Pennsylvania.
- Health care providers should have a heightened clinical suspicion for tickborne diseases in persons with clinically compatible symptoms.
- Rare tickborne diseases, including *B. miyamotoi* and Powassan virus, have been found in ticks in multiple Pennsylvania counties
- For questions, please call 1-877-PA-HEALTH (1-877-724-3258) or your local health department for more information.

The Pennsylvania Department of Health (PADOH) has identified recent sustained increases in tick bite-related emergency department visits in nearly all regions of the state. This trend is expected, as tick exposures in Pennsylvania generally increase during spring and summer months and serves as an important reminder that tickborne diseases occur annually in Pennsylvania. In addition, an increase in persons seeking care for Lyme disease (LD) is anticipated in the coming weeks as the peak period for LD is late May through early August. From April through September, health care providers should have a heightened clinical suspicion for tickborne diseases.

LD reporting in Pennsylvania is now entirely based on laboratory reports PADOH receives directly from lab-based reporting, not clinical reports. All other tickborne diseases, confirmed or suspected, should be reported to the PADOH web-based electronic disease surveillance system, PA-NEDSS: https://www.nedss.state.pa.us/nedss/default.aspx

PENNSYLVANIA TICK SURVEILLANCE DATA
Recent tick collections during 2020-2021 by the Pennsylvania Department of Environmental Protection (DEP) documented the presence of *Ixodes scapularis* (known commonly as the blacklegged tick or deer tick) infected with *Borrelia burgdorferi* (the bacterium that causes Lyme disease) in all 67 Pennsylvania counties.

EPIDEMIOLOGY OF TICKBORNE DISEASES IN PENNSYLVANIA

In Pennsylvania, LD is the most commonly reported tickborne disease and is usually seen during the months of May through September throughout the commonwealth. Pennsylvania ranked fifth nationally in LD incidence rate (70.3 per 100,000 persons) in 2019. In 2020, 65 of 67 counties in Pennsylvania reported LD, ranging from 0 cases in Juniata and Montour Counties to 310 cases in Chester County. Incidence ranged from 0 cases/100,000 persons in Juniata and Montour Counties to 269.8 cases/100,000 persons in Cameron County. It should be noted that LD was significantly underreported in 2020 due to the COVID-19 pandemic; therefore, case counts are likely significantly higher than reported and cases likely occurred in much higher numbers in all Pennsylvania counties.

Anaplasmosis, a bacterial disease transmitted by deer ticks, has been on the rise in the United States and Pennsylvania. Anaplasmosis cases have doubled nearly every year for the past five years and are now found in almost every county in Pennsylvania. DEP tick studies have found deer ticks infected with *Anaplasma phagocytophilum* in every Pennsylvania county.

Several other non-Lyme tickborne diseases are also reported annually in Pennsylvania, including babesiosis, ehrlichiosis, and spotted fever rickettsiosis. Additionally, human cases of Powassan virus disease, a tickborne arbovirus, were documented in 2011 and 2017-2020. Results from the DEP tick studies conducted during 2019-2021 found additional evidence of Powassan in multiple counties.

Although not yet identified in Pennsylvania, cases of Heartland and Bourbon viruses have been identified following Lone Star tick bites in the United States. Lone Star ticks are established in some areas of Pennsylvania.

Additionally, the DEP tick studies conducted in 2020-2021 found about 1.3% of adult *I. scapularis* ticks in Pennsylvania are infected with *Borrelia miyamotoi*. *B. miyamotoi* was found in ticks in 39 Pennsylvania counties. *B. miyamotoi* disease should also be considered in persons presenting with symptoms of tickborne diseases (TBDs). More information on *B. miyamotoi* disease can be found here: https://www.cdc.gov/relapsing-fever/miyamotoi/index.html

DIAGNOSIS AND TREATMENT OF TICKBORNE DISEASES

The CDC has produced a reference manual for health care providers that provides comprehensive information on tick identification, disease distribution, clinical signs and symptoms, laboratory testing, and treatment for the tickborne diseases that are endemic to North America. This manual is freely available at: https://www.cdc.gov/lyme/resources/TickborneDiseases.pdf

LABORATORY INFORMATION

The BOL has capacity for LD testing for all uninsured or underinsured PA residents. Other requests will be considered case by case. Since Lyme is endemic, DOH wants to ensure all the commonwealth residents have access to this important testing. Specimens from patients suspected with LD infection may be submitted to the BOL for screening and confirmatory testing of LD. A healthcare provider's order and BOL Lyme Disease testing form (BOL Micro Specimen Submission Form.pdf (pa.gov) must accompany the serum sample. For access to the specimen collection guidance document, contact the BOL at 484-870-6416 or ldettinger@pa.gov. BOL employs a two-step serological process consistent with what CDC recommendations. This process tests blood for evidence of antibodies against the LD bacteria. Both steps can be done using the same serum sample.

Suggested Reporting Language, Interpretation and Guidance Regarding Lyme Disease Serologic Test Results (aphl.org)

TICK BITE PREVENTION AND TICK REMOVAL

Individuals with exposure to wooded and brushy areas with high grass and leaf litter are at greatest risk of tick exposure. It is important to remind patients to reduce the likelihood of a tick bite by:

- walking in the center of trails and avoiding areas with high grass and leaf litter;
- using EPA approved insect repellents on exposed skin and over clothing;
- using products that contain 0.5% permethrin on shoes, clothing, and gear;
- wearing light-colored clothing, which will make it easier to see crawling ticks;
- conducting full-body tick checks (including pets) after spending time in tick habitat;
- bathing or showering within 2 hours after coming indoors; and
- placing clothing worn outdoors in the dryer on high heat for 10 minutes to kill ticks.

If an attached tick is found, it should be promptly removed using fine-tipped tweezers. The tick should be grasped as close to the skin's surface as possible and pulled upward with steady, even pressure. CDC's directions for tick removal can be found here: https://www.cdc.gov/lyme/removal/index.html.

It is common for individuals who remove a tick to want it tested. However, testing of individual ticks is discouraged because of the following reasons:

- If the tick tests positive for disease-causing organisms, that does not necessarily mean that the bitten individual has been infected.
- If the bitten individual has been infected, they are likely to develop symptoms before results of the tick test are available. Patients with symptoms should not wait for tick testing results before beginning appropriate treatment.
- Negative results can lead to false assurance. For example, the individual may have been unknowingly bitten by a different tick that was infected.

Patients should be treated based only on symptoms and their own laboratory testing results and not based on tick testing results.

LYME AND OTHER TICKBORNE DISEASES WEBINAR

The Pennsylvania DOH has released a Lyme and Other Tickborne Diseases webinar on TRAIN PA. Continuing educations credits (CME, CEU) are available upon completion of the webinar. If you do not already have a Train username and password, you must register for TRAIN PA and register for the course.

https://www.train.org/main/course/1087944/

For questions, please call your local health department or the Pennsylvania Department of Health at 1-877-PA HEALTH (1-877-724-3258).

Categories of Health Alert messages:
Health Alert: conveys the highest level of importance; warrants immediate action or attention.
Health Advisory: provides important information for a specific incident or situation; may not require immediate action.
Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action.

This information is current as of May 13, 2022, but may be modified in the future.