



MEMORANDUM

DATE: June 12, 2019

TO: Healthcare Providers in Ohio

FROM: Sietske de Fijter, MS *SdF*
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Chief, Bureau of Infectious Diseases

SUBJECT: Annual Update on Diagnosis and Surveillance for Tickborne Diseases

Lyme disease and other tickborne illnesses continue to increase and cause significant morbidity in Ohio. The Ohio Department of Health (ODH) is working to improve surveillance and bring awareness and education in an effort to prevent cases. We are requesting assistance from healthcare providers to improve the detection of human cases. Please consider Lyme disease and other tickborne diseases in the differential diagnosis for patients that present with appropriate symptoms.

Actions for Ohio Clinicians

1. For information, statistics and prevention resources about tickborne diseases in Ohio, see and/or direct patients to the ODH tickborne disease website: www.odh.ohio.gov/tick
2. Consider tickborne diseases as a differential when evaluating patients with febrile illness, with or without a rash. See <https://www.cdc.gov/ticks/symptoms.html> for more information about symptoms of tickborne disease. The attached figure shows various forms of erythema migrans (EM) rash associated with Lyme disease.
3. Familiarize yourself with the laboratory tests available to diagnose tickborne illness:

Lyme disease

- Use a two-tier approach to test for *Borrelia burgdorferi* infection using an enzyme immunoassay (EIA) or indirect immunofluorescence antibody (IFA).
- All specimens positive or equivocal by EIA or IFA should be reflexed for a Western immunoblot. Specimens negative by EIA or IFA need not be tested further.
- **Note:** An EM rash without laboratory confirmation is not considered sufficient criteria to report as a case to the Centers for Disease Control and Prevention.

Anaplasmosis, ehrlichiosis and spotted fever group rickettsiosis

- IFA testing of at least two serum samples collected 2-4 weeks apart during acute and convalescent phases of illness -OR
- PCR amplification of DNA extracted from whole blood specimens collected during the acute state of illness

- Serologic sensitivity is poor early in the course of infection. If serology is negative in patients with possible early infection, repeat serology 3 to 4 weeks later which may demonstrate seroconversion.

Babesiosis

- A positive Babesia IFA result for immunoglobulin M (IgM) is insufficient for diagnosis in the absence of a positive IFA result for IgG (or total Ig). If the IgM result is positive but the IgG result is negative, a follow-up blood specimen drawn at least one week after the first should be tested. If the IgG result remains negative in the second specimen, the IgM result likely was a false positive.

4. Promptly report suspected cases of tick-borne infections to your [local health department](#).

Treatment for Tickborne Illness

Regardless of the ultimate cause of infection, if anaplasmosis, ehrlichiosis, Lyme disease or spotted fever group rickettsiosis is suspected, patients of all ages, including children, should be treated promptly and appropriately with doxycycline. Anaplasmosis, ehrlichiosis and spotted fever group rickettsioses are potentially fatal. Since laboratory confirmation of infection may take weeks, therapy should not be delayed pending diagnosis. Babesiosis is usually treated with a combination of two prescription medications: Atovaquone PLUS azithromycin; OR Clindamycin PLUS quinine. Additional information on treatment of tickborne diseases can be found at www.cdc.gov/ticks.

Additional Information

More detailed information about Lyme disease and other tick-borne diseases in Ohio, as well as information on personal protection, disease prevention and educational materials can be found on the ODH tickborne disease website: www.odh.ohio.gov/tick. Please contact your [local health department](#) or the ODH Zoonotic Disease Program at 614-752-1029 if you have questions or would like to order educational materials. Thank you for your consideration to improving tick-borne disease surveillance in Ohio.

Erythema Migrans Can Take Many Forms



A. Classic Lyme disease rash, circular red rash with central clearing that slowly expands. **B.** Red expanding rash with central crust. **C.** Multiple rashes early disseminated Lyme disease, multiple red lesions with dusky centers. **D.** Red, oval-shaped plaque on trunk. **E.** Expanding, circular red rash with central clearing that slowly expands. **F.** Bluish hue without central clearing. **G.** Red-blue lesion with central clearing on back of knee.