Lyme Disease Case Ascertainment Guide (revised February 1, 2011)

Legend: Clinical | Lab | Epi

Scenario 1

Physician-diagnosed EM[1] at least 5 cm in diameter

AND

(+) EIA or IFA[2] - AND - (+) IgM WB[3] - AND - ≤4 weeks from onset date

OR

(+) IgG WB

OR

(+) "Exposure"[4]

→ **Confirmed**

Scenario 2

1 or more "late manifestations[5]" of Lyme disease:

- ***Musculoskeletal***: recurrent, brief attacks of joint swelling, followed by chronic arthritis
- ***Nervous system***: meningitis, cranial neuritis, facial palsy, radiculoneuritis.
- ***Cardiovascular***: 2nd - 3rd grade atrioventricular conduction defects that resolve in days to wks

AND

(+) EIA or IFA[2] - AND - (+) IgM WB[3] - AND - ≤4 weeks from onset date

OR

(+) IgG WB

→ **Confirmed**

Scenario 3

"Physician-diagnosed" Lyme disease lacking clinical criteria of a confirmed case

AND

(+) EIA or IFA[2] - AND - (+) IgM WB[3] AND <4 weeks from onset date

OR

(+) IgG WB

→ **Probable**

Scenario 4

Physician-diagnosed EM[1] at least 5 cm in diameter

AND

NO "Exposure"[4]

AND

NO lab data

→ **Suspected**

Scenario 5

(+) EIA or IFA[2] - AND - (+) IgM WB[3]

OR

(+) IgG WB

AND

NO clinical data

→ **Suspected**

Case definition notes:

[1]**EM**: Erythema migrans (also known as a "bull's eye rash"), an initial skin lesion that occurs in 60-80% of patients. EM begins as a red macule that gradually expands to form a large round lesion in days to weeks, with central clearing. Must be physician-diagnosed, and must be ≥5 cm in diameter for surveillance purposes. Persons with EM will also typically exhibit symptoms such as headache, fever, and fatigue.

[2]**EIA or IFA**: Enzyme immunoassay, or indirect fluorescent assay, is a screening test that is to be used as the first step in CDC's recommendation for two-tier testing for Lyme specimens.

[3]**WB**: Western blot, a confirmatory test that is used as the second step in CDC's recommendations for two-tier testing for Lyme specimens. For IgM western blot, a positive or equivocal EIA result must be documented. IgM specimens must also be collected ≤4 weeks from onset date to be properly interpreted, as IgM results have a high risk of being false positive beyond this point. For IgG western blot, a documented EIA result is not required for surveillance purposes.

**Additional note regarding confirmatory laboratory results…although rarely performed, the following are also considered confirmatory:

- A positive culture for B. burgdorferi
- A CSF antibody positive for B. burgdorferi by EIA or IFA, where the titer is higher in CSF than in serum

[4]**Exposure**: CDC defines exposure as *"having been (≤30 days before onset of EM) in wooded, brushy, or grassy areas…in a county in which Lyme disease is endemic. A history of tick bite is not required."*

Additionally, CDC defines endemicity as *"A county in which…at least 2 confirmed cases have been acquired in the county or in which established populations of a known tick vector are infected with B. burgdorferi."*

Endemic counties in West Virginia are currently defined as: **Berkeley, Jefferson, and Morgan Counties**

[5]**Late manifestations**: late manifestations of Lyme disease include the criteria listed in the diagram; it is important to note that these are only valid if no alternate explanation for the condition is found. Additionally, the **following conditions ALONE are not considered to be sufficient** for classification as a late manifestation of Lyme disease:

Musculoskeletal: Chronic progressive arthritis not preceded by brief attacks, chronic symmetrical polyarthritis, arthralgia, myalgia, or fibromyalgia syndromes.

Nervous system: Headache, fatigue, paresthesia, or stiff neck.

Cardiovascular: Palpitations, bradycardia, bundle branch block, or myocarditis.