2017 Lyme Disease Case Definition Implementation Webinar

December 14, 2016

3:00-4:00 pm Eastern Standard Time

CSTE

Council of State and Territorial Epidemiologists

Webinar Housekeeping

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- **Today's webinar is being recorded**
  - The webinar recording and presentation slides will be available in the webinar library on CSTE's website: http://www.cste.org/?page=WebinarLibrary

- **All lines have been muted**

- **There will be a question-and-answer session at the end of the webinar**
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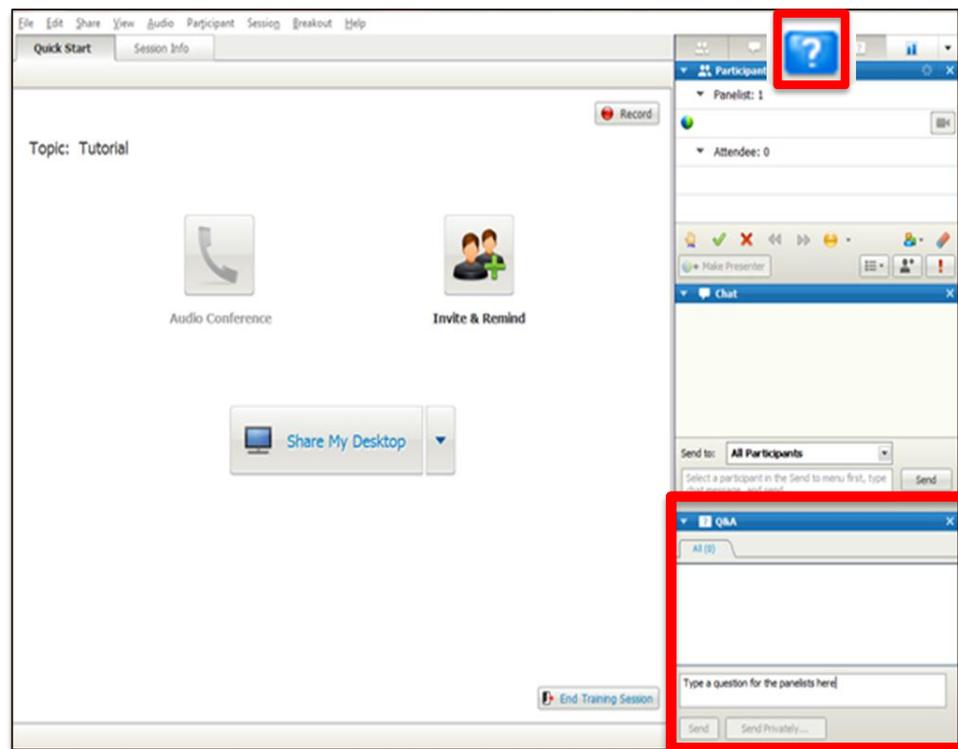
2017 Lyme disease case definition implementation

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Centers for Disease Control and Prevention

Division of Vector-Borne Diseases

Bacterial Diseases Branch

December 14, 2016

Outline

- Background and problem
- Changes to case definition effective 2017
  - Removal of "endemic county" language in exposure assessment
  - No longer require CSF testing for encephalomyelitis
  - Clarify two-tiered testing language
- Anticipated impact
  - Negligible in high-incidence areas
  - Variable in low-incidence areas
- Possible questions/concerns
- CDC resources for low-incidence areas

BACKGROUND AND PROBLEM

Lyme disease surveillance

- Background
  - Became nationally notifiable in 1991
  - Data have helped define demographics, distribution and understand trends
  - In emerging areas, surveillance has yielded actionable public health data

- Problems
  - In "high incidence" areas, risk is well-established
  - No immediate, discrete public health actions following case ID
  - Potential for high burden with conducting surveillance
  - Exposure assessment complicated and variable

Exposure assessment in prior case definitions

- Useful to distinguish high vs. low prior probability of infection

- Exposure = been in a county where Lyme disease is "endemic"

- Definition of endemic:
  - \>2 confirmed Lyme disease cases have been acquired, **or**
  - Known tick vector infected with *Borrelia burgdorferi*
  - No time period specified for either criteria

- Lacked standardization, interpreted differently across states

- **EM w/ no laboratory evidence = confirmed in areas where the disease is very rare due to "endemic" definition**
  - Presence of southern tick-associated rash illness (STARI)
  - Low positive predictive value of an EM rash alone in these settings

Attempts to address multifactorial challenges

- CSTE Vector-borne diseases subcommittee worked collaboratively to find solutions

- Teleconferences held for approximately 3 years; >10 states involved in discussion

- Multiple options brought forward, but evident that a "one-size fits all" approach not feasible

- 2017 surveillance case definition addresses some, but not all concerns

CHANGES TO THE LYME DISEASE SURVEILLANCE CASE DEFINITION

Removal of "endemic county"

- States classified as high-incidence or low-incidence
  - High-incidence = average of ≥10 confirmed Lyme disease cases per 100,000 persons for the previous three reporting years
  - Low-incidence =average of <10 confirmed Lyme disease cases per 100,000 persons for the previous three reporting years
- No classification of counties, only states
- Uniform criteria less open to interpretation

More stringent criteria to confirm EM cases in low-incidence states as compared to high-incidence states

2017 Lyme disease surveillance case definition

Confirmed

- A case of EM with exposure in a high incidence state, **OR**
- A case of EM with laboratory evidence of infection and a known exposure in a low incidence state, **OR**
- Any case with at least one late manifestation that has laboratory evidence of infection

Probable

- Any other case of physician-diagnosed Lyme disease that has laboratory evidence of infection

Suspect

- A case of EM where there is no known exposure (no exposure in high incidence state in last 30 days) and no laboratory evidence of infection, **OR**
- A case with evidence of infection but no clinical information available

High-incidence states, effective 2017

- Connecticut
- Delaware
- Maine
- Maryland
- Massachusetts
- Minnesota
- New Hampshire

- New Jersey
- New York
- Pennsylvania
- Rhode Island
- Vermont
- Virginia
- Wisconsin

Infection characterized by EM rash acquired in these states DOES NOT require lab evidence to be confirmed for surveillance purposes

Laboratory Criteria

Remain *largely* unchanged from the 2008/2011 Lyme disease case definition

- A positive culture for *B. burgdorferi*

- A positive two-tier test
    - positive or equivocal (EIA) or (IFA) followed by a positive (IgM) or (IgG) western immunoblot (WB) for Lyme disease
    - IgM results only relevant in the first month of illness

- A positive single-tier IgG WB test for Lyme disease*

*Assumed to result from two-tier test

Laboratory Criteria

CSF testing no longer required for encephalomyelitis

- Not practical for surveillance, little impact expected

- Positive results on such tests should continue to be reported to authorities and investigated

- Persons with antibodies in CSF should also have sufficient antibodies in blood to yield positive serology

Laboratory Criteria

Criteria for immunoblot positivity spelled out in case definition text instead of referencing another document

- Clearly states that two-tier IgM results should be discarded for specimens collected >30 days post onset

- States kDa size ranges for the OspC band

- Reminds the reader that while a single-tier positive IgG immunoblot is sufficient lab evidence for surveillance, a two tier test is still recommended for clinical diagnosis

Case numbers as reported in MMWR

- Lyme disease case counts will no longer appear in the weekly MMWR tables
  - Reporting of case numbers is often delayed
  - Data are often updated and case classification is changed
  - Weekly data can be misconstrued by persons unfamiliar with surveillance practice

- As in past years:
  - Summary counts presented by CDC will only include confirmed and probable classifications
  - Case counts as agreed upon with state health officials will be presented in:
    - MMWR early release tables
    - MMWR annual Summary of Notifiable Diseases
    - CDC Lyme disease website: www.cdc.gov/Lyme

ANTICIPATED EFFECTS OF CASE DEFINITION CHANGE

Anticipated effects

High-incidence states

- Limited change in surveillance practice, if any

Low-incidence states

- *May* result in increased workload to ensure that necessary laboratory criteria accompanies EM cases
- Number of confirmed Lyme disease cases *may* decrease in areas that previously considered EM confirmatory without lab evidence

POSSIBLE QUESTIONS AND CONCERNS

How do I know which states are considered "high-incidence"?

- Three-year average incidence column has been added to state incidence tables at CDC's Lyme disease page

- List of high-incidence states will be kept on the "Case Definition and Report Forms" page

- CDC will update this information following the publication of early release tables each year

I am concerned that we are going to "lose" cases...

- EM cases without exposure in a high incidence area and without lab evidence can still be captured by the suspect case definition

- CDC continues to encourage states to use the suspect case classification in their own materials and statistics to reflect burden

- This change should not impact your understanding of the epidemiology of Lyme disease in your state but will improve specificity and comparability nationwide

In my state, where Lyme disease is present in some areas but not others, we use the words "endemic county" in our educational efforts with providers.

Now what do we do since that language has been removed?

Keep using the term for educational efforts if it seems appropriate

Low-incidence state case investigation scenarios

- Resident of AL has documented EM rash
  - <u>No</u> two-tier test result
  - Reported: 2 days spent in MA over the past 30 days
  - Classification = Confirmed (travel associated)

- Resident of UT has documented EM rash
  - <u>EIA positive, immunoblot negative</u> test result
  - Reported: no days spent outside of UT over the past 30 days
  - Classification = Suspect

- Resident of MI has documented EM rash
  - <u>Positive</u> two-tier IgM test result
  - Reported: no days spent outside of MI over the past 30 days
  - Classification = Confirmed

Low-incidence and "emerging" states face unique problems – what other resources can CDC provide?

- **Assistance with investigation of case clusters**

- **Reference testing for diagnostic specimens**

- **Tick testing for health departments to support surveillance**

- **Consultation**

Additional questions?

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
Visit: www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

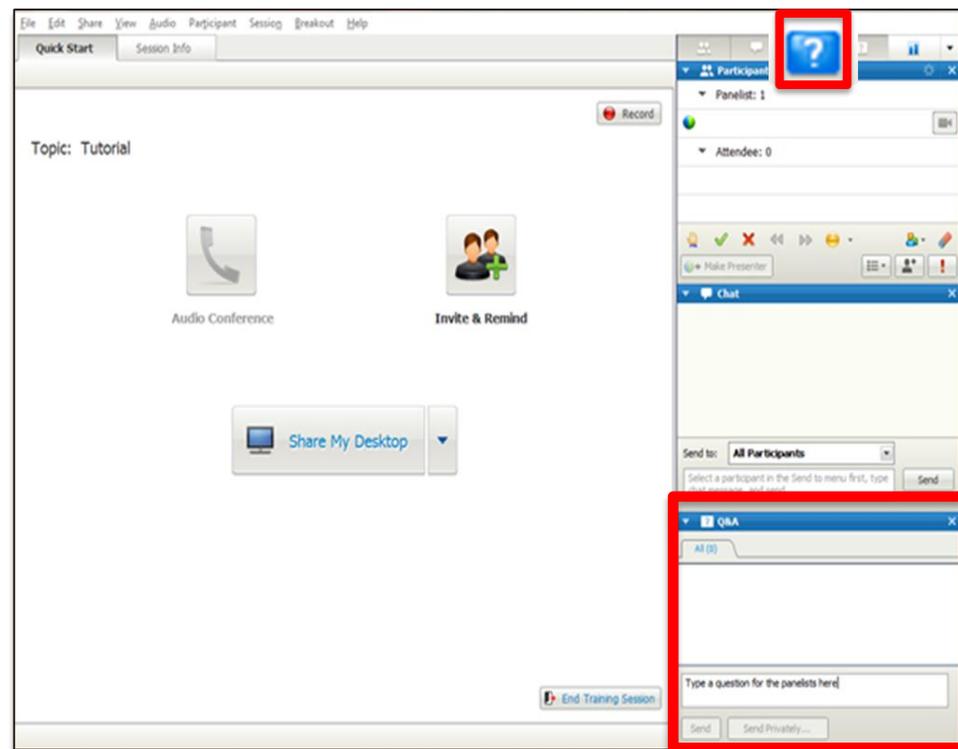National Center for Emerging and Zoonotic Infectious Diseases
Division of Vector-Borne Diseases

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