




## NH DHHS Tickborne Disease Activities

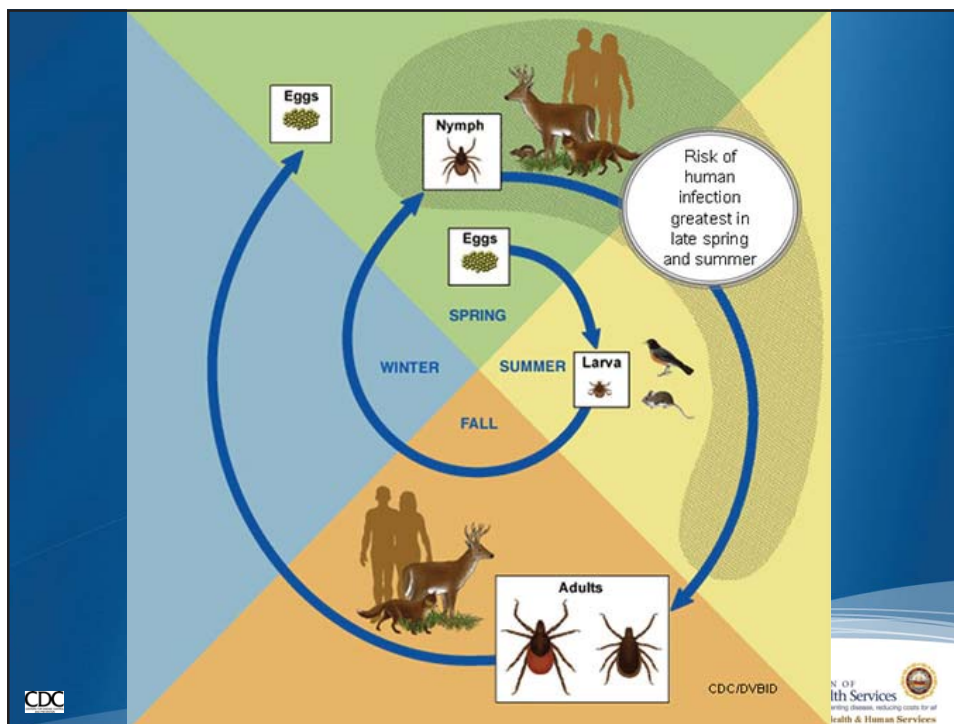
- Human case surveillance
- Tick surveillance as funding allows
- Distribution of surveillance data
  - Maps, Data Reports, Incidence by County
- Healthcare provider clinical messaging
  - Annual health alert message with clinical, diagnosis, and treatment information
- Public education and prevention messaging
  - NH DHHS website
  - Annual Press Release
  - Availability of public health staff to respond to public inquiries by phone or email



## Ticks in NH

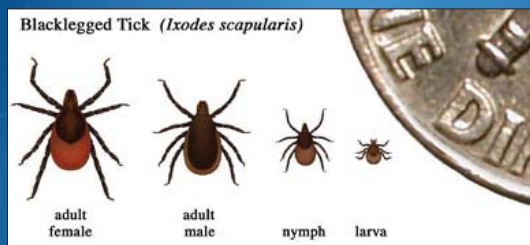
- Common human-biting species in NH
  - American dog tick: *Dermacentor variabilis* 
  - **Blacklegged tick (deer tick): *Ixodes scapularis*** 
- Other ticks
  - Winter tick: generally does not bite humans, looks similar to dog tick
  - Lone star tick: may be moving north to NH eventually 





## Lyme Disease Biology

- *Borrelia burgdorferi*
  - Spirochete - motile, corkscrew shaped bacteria
- Transmitted by the bite of an infected deer tick
- Ticks need to be attached for 24-36 hours before the bacterium can be transmitted
  - Nymphs very small and can go unnoticed



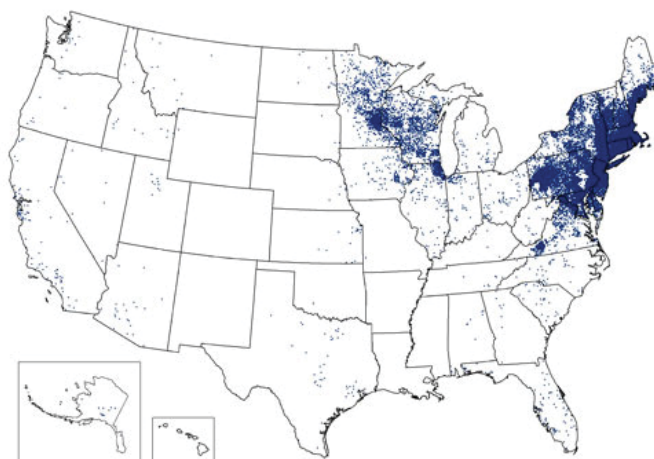
## Symptoms of Lyme Disease

- **Early localized disease**
  - Incubation : 3 to 32 days
  - Early localized disease
    - within 1 month of infection
    - Slowly expanding skin lesion (80%): erythema migrans rash
    - Usually accompanied by influenza-like illness: headache, arthralgias, myalgias, fever, lymphadenopathy.
- **Early disseminated disease**
  - Weeks to months after initial infection and can involve skin, joints, heart, CNS
  - Neurologic disease in 15 % of untreated patients
  - Cardiac disease in 5% of untreated patients
    - Recent publication on Lyme carditis deaths
  - Musculoskeletal involvement in 60% of untreated patients
- **Late disseminated disease**
  - Months to years after initial infection
  - Lyme arthritis – 60% (untreated)
  - Neuroborreliosis – 5% (untreated)



## Distribution of Lyme Disease

Reported Cases of Lyme Disease -- United States, 2013



1 dot placed randomly within county of residence for each confirmed case

cdc.gov



