Ticks and Tick-borne Disease in New York State

Jennifer L. White, MPH
Deputy Director, Vector-borne Disease Unit
New York State Department of Health
Arthropod-borne Diseases
Arthropod-borne Diseases

- Diseases transmitted by mosquitoes, ticks, fleas, and other insects
- Found worldwide
- A total of 642,602 cases of arthropod-borne disease were reported in the U.S. and its territories from 2004 through 2016*

Tick-borne Diseases

- Number of reported tickborne disease cases more than doubled from 2004-2016
- 7 new pathogens were discovered or recognized in the U.S. as being able to infect people

*CDC Vital Signs: Trends in Reported Vectorborne Disease Cases — United States and Territories, 2004–2016 May 4, 2018 / 67(17);496–501*
Tick-borne Diseases

• Why are case numbers increasing?
  • Expansion of areas where ticks are found
  • More pathogens
  • More people at risk (i.e., travelers)
  • Weather, environment, and climate
Tick-borne Diseases in NYS
Tick Talk

~30 species of ticks are found in NYS
10 species commonly bite humans
4 species can potentially transmit diseases (in New York)

Deer tick
*Ixodes scapularis*

American Dog tick
*Dermacentor variabilis*

Lone Star tick
*Amblyomma americanum*

Woodchuck tick
*Ixodes cookei*
Tick-borne Disease Transmission

- **American Dog tick:** Rocky Mountain spotted fever
- **Lone Star tick:** Human Monocytic Ehrlichiosis (HME)
- **Deer (black-legged) tick:** Lyme disease & Babesiosis, Human Granulocytic Anaplasmosis (HGA), Deer Tick Virus (Powassan)
- **Woodchuck tick:** (Groundhog tick) Powassan (Encephalitis) Virus
Statewide Tick-borne Pathogen Surveillance Initiative

NYSDOH has conducted *Ixodes scapularis* monitoring across NY since 2008
- Standardized dragging and flagging surveys
- Some locations sampled annually, some rotationally (every 2-5 years)
- Every county sampled from 2008-2016
- Up to 50 ticks per life-stage tested per location
- Nearly 70,500 individual ticks tested 2008-2016

Results shared with LHDs, other State agencies, medical providers, veterinarians, and general public
2017 By The Numbers

- Locations Sampled: 302
- Counties Sampled: 55 (of 62)
- I. scapularis ticks collected: 24,916
- Total I. scapularis tested by qPCR quadplex: 8,267
- Total I. scapularis tested for POW/DTV: 16,649
Active Tick Surveillance– Results

Health Data NY
https://healthdata.ny.gov/
Health Data NY

- Dataset provides the results from collecting and testing black-legged (deer) ticks
- Used to educate people that there is a risk of coming in contact with ticks and tick-borne diseases
- Data only provide tick infections at a precise location and at one point in time. Both measures, tick population density and percentage, can vary greatly within a very small area and within a county
- Data should not be used to broadly predict disease risk for a county
Education and Outreach - Highlights

• On-line media campaigns
  • ‘How to safely remove a tick’ video
  • Video series on NYSDOH
• Distribution of educational materials
  • Warning signs for public lands
  • ‘How to safely remove a tick’/ ID tri-fold cards
• Collaboration with NYS Education Department
  • Development and distribution of a ‘Tick and Tick-borne Disease Education in Schools Toolkit’
Prevention Messaging

• Dress appropriately for outdoor activities
• Frequent tick checks; shower after coming indoors
• Consider using repellents
  • DEET, picaridin, or IR3535
  • Use only what and how much you need for your situation
• Prompt and proper removal of attached ticks
  • Fine-tipped tweezers!!
  • https://www.youtube.com/watch?v=oGrK4ZKUfhQ
Contact Information

Vector-borne Disease Unit
Bureau of Communicable Disease Control
NYSDOH
518.473.4439
bcdc@health.ny.gov