Objectives:

- Provide an overview of tick-borne disease in Dutchess County.
- Discuss prevention strategies:
  - Personal protection strategies
  - Property management strategies

Part One: Tick-Borne Disease in Dutchess County
Q & A

Q: What is tick-borne disease?
A: A tick-borne disease is any illness you can get from the bite of a tick.

Q: Why are we so concerned about tick-borne disease in Dutchess County?
A: Because we have a lot of it!

Geographic distribution of Lyme disease

Source: https://www.cdc.gov/lyme/stats/maps.html

Lyme disease is not the only disease people get from ticks in Dutchess County

<table>
<thead>
<tr>
<th>Diagnosed Commonly</th>
<th>Diagnosed Infrequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lyme Disease*</td>
<td>Ehrlichiosis</td>
</tr>
<tr>
<td>503 cases 2015</td>
<td>11 cases in 2015</td>
</tr>
<tr>
<td>Anaplasmosis</td>
<td>Powassan Virus Encephalitis</td>
</tr>
<tr>
<td>78 cases in 2015</td>
<td>Rocky Mountain Spotted Fever</td>
</tr>
<tr>
<td>Babesiosis</td>
<td>1 case in 2015</td>
</tr>
<tr>
<td>75 cases in 2015</td>
<td>Borrelia miyamotoi**</td>
</tr>
<tr>
<td></td>
<td>Tick paralysis</td>
</tr>
<tr>
<td></td>
<td>Tularemia</td>
</tr>
</tbody>
</table>

* By far the most frequent tick-borne disease occurring in Dutchess County. Case numbers are estimated from 20% sample of positive lab tests plus

** newly recognized pathogen
Black Legged Tick (Deer Tick)

- Most common tick in Dutchess County
- Carrier of:
  - Lyme disease
  - Anaplasmosis
  - Babesiosis
  - Powassan Virus
  - *Borrelia miyamotoi*

Life Stages of the Black Legged Tick

- Larva
- Nymph
- Male Adult
- Female Adult
American Dog Tick

- Second most common tick found in Dutchess County
- Carrier of:
  - Rocky Mountain Spotted Fever
  - Tularemia

Lone Star Tick

- Less common in the northeastern United States
- Carrier of:
  - Ehrlichiosis
  - Tularemia

Part Two: Personal Protection Strategies
Prevention Strategies

- Know the high risk season.
- Avoid the places ticks live (when possible).
- Wear protective clothing.
- Use repellents.
- Check for ticks frequently.
- Remove attached ticks quickly and correctly.
- Recognize disease early.

When is the high risk season?

- Most cases of tick-borne disease occur during the late spring and early summer.
- Risk is greatest in June and July, and lowest from December through March.

Avoid the Places Ticks Live?

- Know the high risk places.
- Walk in lower risk places when possible.
- Don’t give up outdoor activities, make sensible choices!
Where do ticks live?

In order, most ticks to least ticks
1. Woods
2. Border between woods and yard
3. Brush piles
4. Tall grass
5. Gardens
6. Mowed grass

Where are the ticks?

Ticks stay close to the ground:
• In leaf litter
• On fallen logs or stumps
• On low bushes
• They don’t fall from the trees!

Where should you walk?
Protective Clothing

- Wear light colored clothing
- Tuck pants into socks

Is this outfit practical? What is the next best option?

Wear clothes treated with Permethrin

- Buy pretreated clothing
- Treat existing clothes and gear
- Lasts through numerous washings
- Biggest bang for your buck: wear treated shoes and socks.

Use insect repellent

- Repellents reduce the risk of tick bites.
- The CDC recommends:
  “Use repellents that contain 20 to 30% DEET on exposed skin and clothing for protection that lasts up to several hours. Always follow product instructions. Parents should apply this product to their children, avoiding hands, eyes, and mouth.”
- CDC recommended alternatives to DEET include products containing the active ingredients picaridin or IR3535.
Choosing an Insect Repellent

- Use an EPA registered product for assurance of safety and efficacy
  - EPA approved products have to display registration # on label
- Look for the graphic
- Use the EPA web tool to find a repellent that fits your needs:
  http://www2.epa.gov/insect-repellents/find-insect-repellent-right-you

What about natural botanical repellents?

- Natural doesn't equal safe, and man-made doesn't equal unsafe.
- If a product is not EPA registered, it has not had to undergo any testing for effectiveness.

  Will this stuff work????

Natural alternatives

- Plant derived active ingredients are in some products registered by EPA for tick bite prevention, but they give a short duration of protection:
  - Oil of Lemon Eucalyptus – 6 hours
  - 2-undecanone – 2 hours
  - Citronella- 1 hour
When you come indoors

- Clothes dryer
  - 30 minutes on high heat
- Shower
  - Within 2 hours
- Tick Checks

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Tick Checks

The sooner you remove a tick, the less likely it is to transmit disease.

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Checking For Ticks

- Should be done daily, especially after outdoor activity
- Check your entire body
- Have someone else check those areas that are hard to see
- Use a full length mirror
- Use touch and sight
- Take your time!
**Do not** use these methods to remove an attached tick

- Vasoline
- Fingers
- Kerosene, Lighter fluid
- Fire
- Other chemicals

**Proper Tick Removal**

- Use fine-tipped tweezers
- Grab the tick as close to the skin as possible
- Pull straight out (firmly)
- Clean the area with alcohol after removal
- Record date and location of tick bite.
- If rash or flu-like symptoms appear contact your health care provider immediately.

**Recognize early signs of disease**

- Rash
- Fatigue
- Chills
- Fever
- Headache
- Muscle and joint aches
- Swollen lymph nodes
BULL'S EYE! (Sometimes)

Other

Lyme disease

Rashes

Multiple rashes from a single bite.
Dogs and horses are also commonly diagnosed with tick-borne diseases.

- Remember to do tick checks on household pets too! Pets can bring ticks into the house.
- Use a long acting tick-control product recommended by your veterinarian. For example, the Seresto collar provides 8 months of flea and tick protection.

Part Three: Property Management Strategies

- Removal of brush and leaf litter
- Push back wooded area boundaries as far from home as possible
- Gravel or wood chip barrier zone creation where lawn meets woods*
- Deer exclusion fencing
- Keep insectivorous birds such as chickens or guinea hens*
- Use of spray pesticide to lawn and/or wood/lawn boundary areas
- Host targeted pesticide
  - TCS Tick boxes
Create a “Tick Safe Zone”

- Keep the yard mowed short.
- Remove brush and leaf litter from the yard.
- Push back wooded area boundaries as far from home as possible.
- Gravel or wood chip barrier zone creation where lawn meets woods?
- Deer exclusion fencing?

What about keeping birds like guinea fowl or chickens?

- Sorry, keeping birds that eat ticks has not been shown to be effective.
  - These birds eat adult ticks, but not the nymphs.
  - Bird feed may attract rodents that carry nymphs and lead to MORE nymphs in the yard.

What about using pesticide?

- Commercial application of pyrethroid pesticide to the lawn/woods boundary area is effective at reducing nymphs on lawns.
- But….
  - There are environmental issues
    - Kills non-target insects
    - Toxicity to other animals
  - It’s expensive
Another Option: Select TCS tick control System

- Bait boxes are placed around the perimeter of woods/yard boundary.
- Rodents enter the box to eat the bait.
- When rodents exit the box, they rub against a wick treated with a pesticide.
- Pesticide: fipronil, the same ingredient used in "Frontline," a top-spot flea and tick preventative commonly used on dogs and cats.
- Ticks on rodents are killed and future ticks are repelled.
- Has been shown to reduce ticks in yards and reduce infected ticks in yards.

More Resources:
- Tick Disease Information Line: 845-486-3407
- http://dutchessny.gov/CountyGov/Departments/DBCH/27126.htm
- www.cdc.gov
- www.stopticks.org
- A new "app" from the CDC: http://www.cdc.gov/mobile/applications/mobileframework/tickborne-diseases.html