Updates in Tick Surveillance in North Carolina

Dr. Alexis M. Barbarin
North Carolina Mosquito and Vector Control Association
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DHHS Vector-borne staff

Michael Doyle, MS
State PH Entomologist

Ronna Chan, PhD
Zika Pregnancy Registry

Carl Williams, DVM
State Public Health Veterinarian

Alexis M. Barbarin, PhD
State PH Entomologist

Teresa Fisher, RN, BSN
Vector-borne Nurse Consultant
Confirmed and Probable Communicable Diseases reported in 2017*

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*Note: this data is preliminary and does not include STDs.
Confirmed and Probable Vector-borne diseases reported in 2017*

- Mosquito-borne (80)
- Zika (15)
- Tick-borne (896)

*Note 2017 data are preliminary
Confirmed and Probable Tick borne diseases reported in 2017*

- Anaplasmosis (10)
- Ehrlichiosis (72)
- Lyme Disease (293)
- Spotted Fever Group Rickettsiosis (521)

*Note 2017 data are preliminary
## Tick borne illness Event Investigation Details

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total Events Created for Investigation</th>
<th>Events created by Electronic Lab Report (ELR)</th>
<th>% of Total Events created by ELR</th>
<th>% of Total Events Resulting in C/P Case Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaplasmosis</td>
<td>39</td>
<td>17</td>
<td>44%</td>
<td>(4/6) 26%</td>
</tr>
<tr>
<td>Ehrlichiosis</td>
<td>250</td>
<td>172</td>
<td>69%</td>
<td>(8/64) 29%</td>
</tr>
<tr>
<td>Lyme Disease</td>
<td>1617</td>
<td>1391</td>
<td>86%</td>
<td>(69/224) 18%</td>
</tr>
<tr>
<td>Spotted Fever Group Rickettsiosis</td>
<td>2568</td>
<td>1904</td>
<td>74%</td>
<td>(6/515) 20%</td>
</tr>
</tbody>
</table>
Preliminary Tickborne Human Surveillance Data for 2017
Anaplasmosis and Ehrlichiosis disease burden in North Carolina is minor.

*Note 2017 data are preliminary*
Rickettsiosis accounts for the majority of tick-borne disease burden in North Carolina.

*Note 2017 data are preliminary*
Lyme disease and North Carolina

- Caused by *Borrelia burgdorferi*
- Vectored by *Ixodes scapularis* ticks
- Symptoms: erythema migrans rash, fever, headache, myalgia, arthralgia, swollen joints.

*Note 2017 data are preliminary*
Incidence of Confirmed and Probable Cases of Lyme in North Carolina (2017)*

* Note 2017 data are preliminary
**Tick Borne Illness in 2017**

- **RMSF**
  - Confirmed: 6
  - Probable: 515

- **Lyme Disease**
  - Confirmed: 69
  - Probable: 224

*Note 2017 data are preliminary*
Ticks Collected in North Carolina have been positively identified as being infected with B. burgdorferi

- UNC-G collected ticks in the following counties:
  - Alexander
  - Forsyth
  - Guilford
  - Iredell
  - Patrick -VA
  - Rockingham
  - Stokes
  - Surry
  - Yadkin

<table>
<thead>
<tr>
<th>Flagging Results</th>
<th>Deer (host) Collected Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick County (VA) – B. burgdorderi detected</td>
<td>Forsyth County – B. burgdorderi detected</td>
</tr>
<tr>
<td>Rockingham County – B. burgdorderi detected</td>
<td>Rockingham County – B. burgdorderi detected</td>
</tr>
<tr>
<td>Stokes County – B. burgdorderi detected</td>
<td>Stokes County – B. burgdorderi detected</td>
</tr>
<tr>
<td></td>
<td>Yadkin County – B. burgdorderi detected</td>
</tr>
</tbody>
</table>

- Ticks also tested positive for
  - *A. phagocytophilum*: Rockingham, Stokes, Forsyth, and Patrick (VA) Counties
  - *Borrelia miyamotoi*: Patrick (VA) and Rockingham Counties
  - No Babesia was found

*Note, this data is the property of UNC-G, therefore numbers have been removed.*
Future Directions

- CDC ELC funding ~$5,300 for tick surveillance
- Contract with UNC-G – Began November 15, 2017
- Tick Surveillance plan
  - Five counties – Ashe, Allegheny, Surry, Wilkes, Yadkin
  - Send to CDC for testing
Future Directions continued…

- Passive Tick Surveillance Program (Summer 2018)
  - Collection vials and prepaid labels sent to veterinarians and environmental health departments across the state
  - Will send in ticks to be identified by entomologists
  - Goal: Describe the diversity and distribution of ticks across North Carolina
North Carolina Division of Public Health, Communicable Disease Branch presents...