

Tick-borne Disease Work Group 2023

May 17th, 2023

Meeting location: 12580 West Creek Parkway, Richmond, VA 23238

Meeting time: 11AM-3PM

Meeting participants:

In-person: Vanessa Wigand, Virginia Department of Education
Matthew Allen, Virginia Hospital and Healthcare Association
Holly Gaff, Old Dominion University
Wayne Hynes, Old Dominion University
Josh Bernick, Virginia Department of Health
Jim Broyhill, Virginia Department of Health
Lori Flammia, Virginia Department of Health
David Gaines, Virginia Department of Health
Julia Murphy, Virginia Department of Health
Eleanor Field, Virginia Department of Health
Monte Skall, National Capital Lyme Disease Association
Sammy Zambon, Virginia Department of Conservation and Recreation
Chris Haskins, Virginia Farm Bureau
Katelyn Jordan, Virginia Farm Bureau
Greg Skall, National Capital Lyme Disease Association
Maria Circosta, Virginia Council of Nurse Practitioners

Virtual: Robyn Nadolny, Defense Centers for Public Health (joining from Baltimore, MD)
Matthew Shockey, Virginia Department of Agriculture and Consumer Services (joining from Richmond, VA)
Linda Grace, Virginia Veterinary Medical Association (joining from Pembroke, VA)
John Tracey, Virginia Department of Wildlife Resources (joining from Medford, WI)
Kathy Hosig, Virginia Cooperative Extension (joining from Blacksburg, VA)

Welcome and Introductions

Julia Murphy, State Public Health Veterinarian with the Virginia Department of Health (VDH), introduced herself and welcomed attendees. She then asked all meeting participants introduced themselves to the group with both name and affiliation.

Report timeline and enrolled bill language review

Julia Murphy reported to the group that the timeline for the final report submission to the VDH senior leadership is September 1, 2023. A review of the language:

The language of HB2008, which was enacted by the 2023 General Assembly on March 21, 2023, and major aspects of tick-borne disease that the work group has been tasked with addressing in its report were reviewed, namely:

- (i) increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases,
- (ii) educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases,
- (iii) improving public health surveillance and data collection related to tick-borne diseases, and
- (iv) developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth.

Meeting format and future meetings

Julia proposes that of the remaining 3 meetings, 2 be virtual. Katelyn Jordan inquired if the meetings should be recorded, and it was decided that they would be.

Proposed meeting dates:

June 9th from 1-5PM, virtually. Zoom was decided as the platform to be used.

July 13th 11-3 in-person (location TBD).

August 14th 11-3 virtually.

This meeting policy was adopted unanimously by voice vote. It was noted that if you cannot attend, you can send a representative/alternate from your group. Jim Broyhill with the Virginia Department of Health noted that he can no longer attend the June 9th, and since he was scheduled to give a presentation during that meeting, asked to shift meeting topics. It was agreed that the June 9 meeting would instead focus on increasing public health awareness of tick-borne diseases and strategies for preventing tick-borne diseases, then the July meeting would discuss public health surveillance. The final meeting would discuss education for public and providers.

Previous Meeting's Minutes

Revised minutes were sent to correct affiliations. Sammy sent in a minor correction about the spelling of his last name, Julia will correct this. The meetings, the agenda, and the minutes are posted on the Virginia Regulatory Town Hall site for anyone to review. If there is going to be more than 10 business days between when the minutes would be approved a draft copy would be made available online. The minutes from the meeting held May 8, 2023 were approved unanimously by voice vote.

Presentations

Ticks and Tickborne Pathogen Ecology - Dr. Holly Gaff, Old Dominion University (ODU)

Dr. Gaff provided a review of Ixodid tick life history, discussing how they are long-lived and can be influenced by many facets of the environment (e.g., weather, predator/prey cycles for host availability, sea-level rise and climate change effects, habitat, etc.)

It is very difficult to generalize tick ecology. What is needed: hyper-local data, multiple levels of data (habitat, hosts, ticks). There is a conversation about how it is difficult to extrapolate data to the western side of Virginia, and about turkey populations and ticks. A review of tick control methods is presented (e.g., bait boxes, TickBot, fungal spray).

There was discussion, comment and questions about the following topics as part of Dr. Gaff's presentation:

- Permethrin sensitivity across species and lone star ticks' particular sensitivity.
- Flagging and CO2 canister use for tick collection and the effectiveness of these methods (with it being noted that host-seeking behavior varies across tick species and there are different reasons to collect ticks in different ways).
- Use of ticks that come off deer to test for pathogens (and the research from University of Massachusetts finding that deer clear *Borrelia* bacteria) with Dr. Gaff noting that she does not use engorged female ticks for testing (only males).
- There is discussion about how this research may affect humans and the complexity of immune responses.
- There is discussion about carrying capacity and how the density of ticks is highly variable. Dr. Gaff offers that ODU has an interactive tick course, link will be sent out.

Ticks and Their Pathogens in Virginia – Dr. Wayne Hynes, Old Dominion University

Dr. Hynes reviewed the major ticks found in Virginia, the pathogens they carry, and tick testing efforts at ODU.

There was discussion, comment and questions about the following topics as part of Dr. Hynes' presentation:

- *Ixodes affinis* and if it can transmit *Babesia* and that *Babesia* has been detected in *Ixodes affinis* but it is unclear if the parasites are transmitted.
- How to differentiate between *Ixodes affinis* and *Ixodes scapularis*.
 - Further comments on this topic included:
 - Dr. Gaff highlighted that ODU just published a morphological key and there is also a molecular method.
 - *Ixodes* can bite cats which is important for veterinarians.
 - Preferred animal host species guesses are passerine birds and small mammals. Adults ticks can be found on foxes, coyotes, cats & dogs, bobcats, white-tailed deer.
 - What positive value ticks provide in the environment with Dr. Gaff explaining that an engorged tick provides a source of protein for predators.

Additional presentation added to the agenda

Introduction to MilTICK & Virginia Tick Surveillance – Robyn Nadolny, Defense Centers for Public Health

Dr. Nadolny provided a quick presentation on tick testing available to Department of Defense personnel and findings of these surveillance efforts.

There was discussion, comment and questions about the following topics as part of Dr. Nadolny's presentation:

- Pathogen testing in fully engorged ticks with Dr. Nadolny explaining the process for tick testing, saying that engorged females can be tested but the process is slightly different.
- Looking at the proportion of blacklegged ticks that bite people comparing the north to south regions of the state.
- Human case reporting at military clinics and how this tick data differs from tick data collected from other sources.

Ticks and Tick-borne Disease in Virginia - David Gaines, Virginia Department of Health

Dr. Gaines discussed the ticks of public health importance in Virginia and their associated pathogens. He discussed series or unique cases of tick-borne disease in Virginia such as *Ehrlichia ewingii*, Heartland virus, and the difficulty in confirming Rocky Mountain Spotted Fever cases. He also discussed the geographic clustering of tick-borne disease around human populations.

Addressing the effectiveness of control

Julia asks the group: Have you found anything to be particularly effective for us to highlight in our report? That could empower homeowners to reduce the number of ticks around their property and the likelihood that they would encounter them?

Discussion, comment and questions about this question included:

- Personal protective behavior is likely the most effective route, and that this is hard to encourage without an individual having some prior exposure to ticks/tick-borne disease.
- Linda Grace offered that Connecticut has a tick management handbook about things people can do on their property and will share with the group.
- Signage at trailheads can be a useful strategy and how educational material availability and including communities and partner agencies/groups in tick activities will be key.
- The need for more public-friendly facing data, better surveillance across years and across the Commonwealth, and better data sharing.
- The need to refocus the group on the subject of today's meeting and the importance of remembering that a major way to understand tick borne disease risk is to have consistent and robust tick surveillance.

Final points

Julia is working on a shared cloud space/channel where people can access these presentations. Submitted items can be part of the report's appendix. As requested, a previous example of a report was sent out to members of this group.

Public Comment

No public comment was provided.

The meeting was adjourned at 3:08PM.