Tick-Borne Disease is a Growing Problem

Seventeen tick-borne diseases are found in the US including seven diseases affecting humans reportable to the Centers for Disease Control and Prevention. Health risks to humans, livestock and companion animals varies depending on the tick species and pathogens vectored. Known tick populations continue to spread geographically, attributed to:

- ecological changes and shifts in land use patterns;
- increasing deer populations;
- changes in host availability; and
- improved identification and surveillance of ticks.

Lyme Disease

The most common tick-borne disease is Lyme disease. The graphic above shows how Lyme disease vectors, the blacklegged tick, *Ixodes scapularis*, and the western blacklegged tick, *I. pacificus*, have spread across the United States. CDC estimated 380,690 new cases of Lyme disease in 2015.

Lyme disease facts:

- There is no reliable test for Lyme disease.
- In 2015 Lyme disease was the most commonly reported vector-borne disease.
- The number of counties with a high incidence of Lyme disease increased by >320% in the Northeast and 250% in the Midwest between 1993 and 2012.
- Lyme research receives roughly $80 per new case from the NIH compared to $5,087 per new case for West Nile virus and $86,154 per new case for Hepatitis C.

Tick Life Cycle

Most tick life cycles include four stages: egg, six-legged larva, eight-legged nymph and adult. Each life stage varies in size and color for each tick species. Ticks need a blood meal at every life stage after hatching to survive and grow. Ticks can feed on mammals, birds, reptiles, and amphibians. Most ticks prefer a different host animal at each life stage. Ticks are most active in the spring, summer and fall, however, the adults of some species are active in the winter.

Tick Identification

Tick life stages and engorged ticks can look very different from pictures commonly used in outreach materials. TickSpotters (tickencounter.org/tickspotters) is a popular national crowd-sourced tick survey that accepts tick pictures via an online form. More than just a survey though, TickSpotters is also a fast, free portal to a tick expert; submissions with a picture receive a response in 24-36 hours confirming the type of tick, how long it may have been feeding, likely disease risk based on geographic location, species, and duration, along with information on resources for tick testing and best next actions for prevention. Multiple University-based and commercial laboratories, such as TickReport and Tickology, test ticks for disease pathogens. Some state and county offices also test ticks.

Proper Tick Removal

- Use pointy tweezers to remove a tick and avoid crushing or twisting the body.
- Grab tick with tweezers as close to the skin as possible; pull straight up with a smooth steady motion.
- Clean bite site, hands and tweezers with antiseptic.
- Save tick in airtight container or ziplock bag for identification and possible testing.

Tick-borne Disease Symptoms

Many tick-borne diseases share symptoms. The most common symptoms of tick-related illnesses are:

- Fever/chills
- Severe headache
- Muscle and joint pain
- Nausea
- Cognitive defects
- Sleep disturbances
- Rash

Working Group Goal

The goal of the Public Tick IPM Working Group is to organize and expand the network working to reduce the risk of exposure to infected ticks by collaborating on tick Integrated Pest Management (IPM) activities, exchanging knowledge and sharing resources effectively.

Working Group Priorities

Stakeholder priorities can be used by funders to shape requests for applications and be cited by those seeking funding as evidence of need. Priorities are also used by regulators and policy makers to inform decision making.

Priorities identified in 2017:

1. Educate Policy Makers about tick-borne disease and public policy options including a national strategy for reducing tick-borne diseases.
2. Improve community education on tick ecology, prevention and management by building partnerships with diverse stakeholders about IPM strategies for managing tick-borne diseases and maintaining a safe and healthy environment.
3. Increase designated tick-borne diseases funding for research and state and county public health departments for education and surveillance.
4. Develop and promote adoption of Integrated Tick Management (ITM) strategies to reduce risk of exposure to ticks and pathogens and minimize risks associated with the use of acaricides; partner with industry to integrate data-driven ITM solutions.
5. Coordinate with the Federal Tick-Borne Disease IPM Workgroup to complement activities and facilitate collaborative initiatives within the working group, especially among academic, government and non-government organizations.

Get Involved

We are a multi-stakeholder organization with 88 members from states across the country. The majority of our members are located in the Northeast and Northcentral regions. Members include representatives from land-grant universities, advertising, mosquito control districts, school boards, public health and other public agencies, professional organizations including agriculture, forestry, landscaping, parks and recreation, veterinary health and pest management professionals.

To join the Working Group or learn more, contact Frank Laufenberg at flaufenberg@ipminstitute.org

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Resources

- Public Tick IPM Working Group
  [https://tickipmwg.wordpress.com](https://tickipmwg.wordpress.com)
- TickEncounter Resource Center
- Mainely Ticks
- CDC Tickborne Diseases of the U.S.
  [http://www.cdc.gov/ticks/diseases/](http://www.cdc.gov/ticks/diseases/)
- Tick Testing Information
  [http://coloradoticks.org/testing-your-tick/](http://coloradoticks.org/testing-your-tick/)
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