Public Tick IPM Working Group  
May 13th, 2015  
Send corrections to cnelson@ipminstitute.org

The Working Group meets via conference call on the second Wednesday of each month at 1:00PM CT (2:00PM EST). The next conference call will take place June 10th.

1. Roll  
   • Jill Auerbach, Hudson Valley Lyme Disease Association  
   • Tom Green, IPM Institute of North America, Inc.  
   • Tom Mather, University of Rhode Island  
   • Chris Przybyszewski, US BIOLOGIC  
   • Kirby Stafford, Connecticut Agricultural Experiment Station  
   • Chloe Nelson, IPM Institute of North America, Inc.

2. Agenda  
   • Publications and tick related news (3)  
   • September 2015 SOVE participation proposal

3. Publications and tick related news  
   a. NPR Interview with Dr. Stephen Rich: “New Research Efforts to Target Tick-borne Illnesses”  
      http://capeandislands.org/post/new-research-efforts-target-tick-borne-illnesses  
      i. A great overview of the problems of Lyme disease, transmission, geographic expansion, host animals, research, resources, answers caller questions and discusses summer 2015 testing of the TickBot to eradicate Deer ticks.  
      ii. TickBot information, created by Holly Gaff and students at Old Dominion University: The TickBot transmits CO₂ to attract Lonestar ticks onto a permethrin coated denim cloth that it drags along. Once the ticks have climbed onto the denim, the permethrin kills them. James Squires’ website with an overview, videos and publications:  
         http://www4.vmi.edu/faculty/squirejc/research/Tick_Rover/tick_rover.htm  
         Publication for 2015:  
      Discussion:  
      - The TickBot had a near 100% success rate with Lonestar ticks, Dr. Stephen Rich will be testing the TickBot for its effectiveness on Deer ticks this summer (2015).  
      - Can be used to target specifically yards and park areas. This has less impact on non-target organisms and gives ticks the woods, but not yards or where children will play.  
      - It will be interesting to see Dr. Rich’s findings with Deer ticks since they are less attracted to CO₂ as Lonestar ticks.  
      - How cost-prohibitive will this be for homeowners? If it’s too high people won’t use it. It may be good for trails and public areas.  
   b. “U.S. public’s experience with ticks and tick-borne diseases: Results from national HealthStyles surveys”  
Abstract: Surveillance data indicate that tick-borne diseases (TBDs) are a substantial public health problem in the United States, yet information on the frequency of tick exposure and TBD awareness and prevention practices among the general population is limited. The objective of this study was to gain a more complete understanding of the U.S. public's experience with TBDs using data from annual, nationally representative HealthStyles surveys. There were 4728 respondents in 2009, 4050 in 2011, and 3503 in 2012. Twenty-one percent of respondents reported that a household member found a tick on his or her body during the previous year; of these, 10.1% reported consultation with a health care provider as a result. Overall, 63.7% of respondents reported that Lyme disease (LD) occurs in the area where they live, including 49.4% of respondents from the West South Central and 51.1% from the Mountain regions where LD does not occur. Conversely, in the New England and Mid-Atlantic regions where LD, anaplasmosis, and babesiosis are common, 13.9% and 20.8% of respondents, respectively, reported either that no TBDs occur in their area or that they had not heard of any of these diseases. The majority of respondents (51.2%) reported that they did not routinely take any personal prevention steps against tick bites during warm weather. Results from these surveys indicate that exposure to ticks is common and awareness of LD is widespread. Nevertheless, use of TBD prevention measures is relatively infrequent among the U.S. public, highlighting the need to better understand barriers to use of prevention measures.

Discussion:
- The point here is that tick borne diseases are a significant health problem. Awareness of disease risks are around 50% of the general public, but even when aware of risks, most are not taking the advised precautions (e.g., tick checks, treated clothing, etc.).
- We need to continue spreading awareness and find new ways to spread information on prevention measures. If they could retrieve information via national surveys, are there publications or other more general sources that we could distribute information through?
- We need something on a broad scale that our government at all levels will get behind: vaccine, research funding and more.
- There’s a lot of information from multiple venues, but what we’re trying to deal with is behavior changes in prevention measures that we want people to take. The people most likely to participate in prevention measures are those who have already been “burned” by ticks in one way or another.
- There are great resources that already exist like TickEncounter, we should all act to spread the information wherever possible while finding larger scale opportunities to act on.
- The key issue is that primary exposure risk for people is residential, but ticks are everywhere. Most of the solutions only affect a small scale. Trying to do something that will impact a tick population on a big scale is really difficult.
- US BIOLOGIC’s vaccine has the potential for a broader impact in the wild.

Recent-onset dilated cardiomyopathy associated with *Borrelia burgdorferi* infection*


Abstract:
Background—Several recent small studies have suggested a causal link between Lyme disease and dilated cardiomyopathy (DCM) by demonstrating the presence of the *Borrelia burgdorferi* (Bb) genome in the myocardium of patients with recent-onset DCM. The aim of this study was to further investigate the effect of targeted antibiotic treatment of Bb-related recent-onset DCM in a larger cohort of patients.
Patients and methods- We performed endomyocardial biopsy (EMB) in 110 individuals (53 ± 11 years, 34 women) with recent-onset unexplained DCM, and detected the Bb genome in 22 (20%) subjects. Bb-positive patients were subsequently treated with intravenous ceftriaxone for 21 days in addition to conventional heart failure medication.

Results- At the 1-year follow-up, a significant improvement in left ventricular (LV) ejection fraction (26 ± 6 vs. 44 ± 12%; p < 0.01) and a decrease in LV end-diastolic (69 ± 7 vs. 63 ± 11 mm; p < 0.01) and end-systolic (61 ± 9 vs. 52 ± 4 mm; p < 0.01) diameters were documented. Moreover, a significant improvement in heart failure symptoms (NYHA class 3.4 ± 0.6 vs. 1.5 ± 0.7; p < 0.01) was also observed.

Conclusion- Targeted antibiotic treatment of Bb-related recent-onset DCM in addition to conventional heart failure therapy is associated with favorable cardiac remodeling and improvement of heart failure symptoms.

Discussion: 
- There are different strains of the bacteria that have different affinities for different tissue types. There should be some way to determine what strain has infected somebody and what impacts that has. This requires research funding.
- With more research there will likely be more causal relationships. Illnesses brought up by this study are addressing the risk of death caused by Lyme disease.
- We need to do something about protecting people and stopping the incidence of disease. It’s easier to prevent that treat people in many cases.

4. September 2015 SOVE participation proposal
a. Our group has been invited to participate in the 2015 SOVE conference September 27-October 1st in Albuquerque, New Mexico.

b. Commitment: 4-5 speakers to present on Tick IPM at one day of the conference as a connected Tick IPM Symposium.

c. With fall quickly approaching we need to commit or decline ASAP. Symposium segments have typically been ~2 hours long. This would be a great opportunity to include Tick IPM.

Discussion:
- Kirby had a post-doc present previously which went well. He will consider participating with research oriented information.
- Chloe will put together an outline of a business case to circulate that we did similarly for School IPM that could serve as a presentation outline for the Symposium. Look for this outline and strongly consider participating in the conference!
- If there isn’t a real solid business case together, we could use the Symposium as an opportunity to create that. We can move from there to create a legislative day around tick borne diseases.
- Jill will send Chloe her presentation and information with numbers.

5. Additional Discussion