

Lyme Disease Advisory Committee (LDAC)
Spring Meeting March 10, 2016
Minutes

Committee members in attendance

Barbara Barsocchini, California Lyme Disease Association (LymeDisease.org), (via phone)
Karen Chew, Lyme Disease Support Network
Vicki Kramer, PhD, California Department of Public Health (CDPH)
Robert Lane, PhD, University of California, Berkeley
James Miller, PhD, University of California, Los Angeles (via phone)
Chris Parlier, Lyme Disease Support Network, Committee Chair
Chindi Peavey, PhD, Mosquito and Vector Control Association of California (MVCAC)
Lisa Messner, Lyme Disease Support Network (via phone)

Committee members absent

Scott Morrow, MD, MPH, San Mateo County Health Department
Raphael Stricker, MD, California Medical Association

Other attendees

CDPH staff included:

Claudia Erickson, MS, CHES, Public Health Educator, Committee Coordinator
Anne Kjemtrup, DVM, MPVM, PhD, Epidemiologist
Kerry Padgett, PhD, Supervising Public Health Biologist
Melissa Yoshimizu, PhD, Senior Public Health Biologist

Various members of local vector control agencies and the general public joined the meeting.

1. Roll call and opening comments

The meeting was brought to order by Mr. Parlier, LDAC chair, at 10:00 a.m.

2. Committee member updates

Dr. Miller provided an update to the treatment approach for acute and chronic Lyme disease, funded by Lyme.org. The treatment is purported to enhance the immune response and improve patient outcomes. Dr. Miller also described a paper published by Dr. Gupta which proposes that *Borrelia burgdorferi* species and subspecies be placed in a new genus *Borrelia* gen. nov. This proposal is based on the genetic and proteomic differences between relapsing fever spirochetes and Lyme-like spirochetes, as well as the differences in the tick vectors (hard versus soft ticks), pathogenicity, and disease processes.

Dr. Peavey reported that her staff will start a project in San Mateo County with bait tubes for woodrats to achieve tick control. The woodrats go into the tubes and have pesticides brushed on their fur. They will evaluate whether the bait tubes lead to any population changes among ticks along trails.

Ms. Chew commented that she would like the committee to work on educating the medical community by increasing awareness of the existence of Lyme disease in California and to improve Lyme disease diagnosis and treatment.

Dr. Kramer mentioned that CDPH is considering switching the in-person spring LDAC meeting to a conference call meeting. This would eliminate travel costs and make it easier for committee members and the public to join the meeting. In addition, the fall LDAC conference call meetings have been successful with good participation and communication. LDAC members indicated they prefer to keep one in-person meeting per year.

Mr. Parlier had a recent meeting with area director and Congressman Kevin McCarthy where they discussed NIH funding for Lyme disease.

Dr. Lane will attend a meeting hosted by UCLA from April 7 to 10 in Lake Arrowhead on relapsing fever group spirochetes. A teleconference call with CDC has prompted a project to obtain contemporary isolates of *Rickettsia philipii* from *Dermacentor occidentalis* adult ticks to assess genetic diversity.

Ms. Barsocchini stated that grants from the California Lyme Disease Association were awarded to the University of New Haven, UC Irvine, UC Davis (Dr. Janet Foley), and a physician education program. The California Lyme Disease Association is also working on the MyLyme data, which, within 1.5 months of opening, had 3,500 survey participants. Data will ultimately be available to researchers and physicians once the program is completed.

3. CDPH progress report

A. Education update (Claudia Erickson)

Ms. Erickson presented updates on tick-borne disease public education items. Target populations include the general public, local agencies, occupational health programs, and the medical community. Social media posts are planned for the summer. The number of views of educational videos on YouTube continues to be tracked, and generally viewership has increased. The “Lyme Disease in California” brochure will no longer be printed, but is posted on the CDPH tick-borne disease webpage in English and Spanish. The newly printed brochure, Prevent Tick Bites - Prevent Disease, has been popular along with the updated Tick ID cards. Materials for occupational health were distributed via flash drives to Park Service offices, along with brochures, occupational health posters, and tick ID cards. Tick-borne disease information for the medical community was broken up into individual presentations and linked to disease-specific webpages for easier access. Current projects involve ensuring that all tick-borne disease prevention messaging is up to date and matches the CDC messaging regarding strategies for tick bite prevention.

B. Surveillance update (Melissa Yoshimizu)

Dr. Yoshimizu presented updates on Lyme disease surveillance and tick testing. She provided the number Lyme disease cases reported by year from 2005 through 2015; in 2015, 119 cases were reported (99 confirmed and 20 probable). The prevalence of *Borrelia* in adult ticks tested since

October 2015 is similar to the infection prevalence previously reported. To date, all nymphs collected have been negative for *B.burgdorferi* and *B. miyamotoi*. Current projects include continued collection of *Ixodes pacificus* nymphs, investigating some tick-borne disease cases, and continued enhancement of in-house tick testing capabilities.

4. Overview of tick control strategies in rural areas of California (Kerry Padgett)

Dr. Padgett presented information regarding the various tick control strategies used in California and other parts of the United States. Most of the tick control research has been done in the eastern United States where the ecology of Lyme disease is different than in California. The following tick control strategies were discussed:

- Landscape management
- Controlled burning
- Deer exclusion (host exclusion)
- Area-wide acaricide treatments
- The Tick Bot: a novel approach using a modified remote control car that pulls a cloth treated with acaricide.
- Biological control; including the use of potential agents such as nematodes, fungi, bacteria, and viruses.
- Host-targeted tick control; including targeting deer and reservoir rodents.
- Doxycycline hyclate; product provided to rodents through bait.

Californians are exposed to Lyme disease in more rural, non-peridomestic settings during recreational activities as compared to other Lyme-endemic areas of the United States. Wildlife areas and parks may not be amenable to certain tick control techniques. Rodent-focused application might be more appropriate in rural areas where people are exposed to ticks around the home. There are various resources for tick control strategies in California, including the applicable sections of the Tick Management Handbook from Connecticut and the UC Davis Integrative Pest Management publication on Lyme disease, which was recently updated.

5. A brief review of tick control projects conducted by San Mateo County Mosquito and Vector Control District (Chindi Peavey)

Dr. Peavey described how the vector control district consistently uses integrated pest management to target pests. In one experiment, there was a 90% decrease in tick collection numbers for seven weeks after a permethrin treatment along trails. The advantage of the area-wide insecticide treatment is the long residual. The drawbacks are that you need a permit, work is labor intensive and has high costs, and there are potential impacts on non-target species.

In another recent project, an 85% reduction in tick numbers was observed over a 90-day period after a private pest control company applied a product containing Imidacloprid and β -cyfluthrin to a large outdoor area, but untreated areas also showed a reduction in tick numbers. Lastly, a project examining mowing was presented. No relationship was found between the height of grass and tick abundance. Tick numbers seemed to be most impacted by seasonality, rather than mowing. In all the studies, *D. occidentalis* collection data were analyzed due to greater numbers of this tick species. In the future, it will be important to evaluate whether mowing impacts *I. pacificus*. In a new project, they are evaluating whether an oil-based pyrethroid can be used in

bait tubes to control ticks on rodents.

6. Public education (Claudia Erickson, MS, CHES)

Ms. Erickson facilitated a committee brainstorming session on an educational poster for the public, titled “Keep Ticks Off.” The committee and members of the public were asked to provide their input.

Committee and public comments:

- Add information on brushing off crawling ticks before they attach
- Specify that you should shower within 2 hours of returning from tick habitat.
- Add hat to image of protective clothing
- Add brand name to repellent image for better product recognition
- Add “active ingredient” when describing that you should buy repellents with DEET
- Make the word “repellent” bold so that consumers know what word to use in a store
- Perhaps use the language “bug repellent”
- State that people should avoid “wood,” “brushy areas,” “logs”
- State that you should perform tick checks in the hair and on the scalp
- Clarify the section regarding possible ways to dispose of a tick

7. General public comment period

- A member of the public commented that she prefers the “Repel, Remove, Shower” order for the “Keep Ticks Off” flyer. At the top of Repel she suggested adding “avoid contact with vegetation and wood.” She noted that the Bay Area Lyme Foundation is offering free tick testing. She suggested initiating a campaign for target populations in the state regarding the CDPH online and downloadable materials, and greater public education through, for instance, billboards and public service announcements.
- A member of the public asked Dr. Peavey to elaborate on whether tick control is safe for the environment, and asked if the Tick Bot concept is safe.
 - Dr. Peavey responded that tick control materials are safe when used as directed by the label and have been registered by the EPA. Pesticides are tested on animals at doses far higher than human exposure levels.
- A member of the public asked whether there are environmental concerns associated with long- term pesticide applications for tick control.
 - Dr. Peavey responded that if used in select locations, such as along trails, the environmental impact is minimal.
- A member of the public asked whether California would spray along trails, as people report being bitten frequently along trails.
 - Dr. Peavey responded that this is unlikely. If there are particular trails that are heavily used and have high tick prevalence, then select spraying may be possible if the park management is amenable.
- A member of the public commented that she is grateful that everyone is here to address Lyme disease. The Bay Area Lyme Foundation is working to find a highly specific and sensitive diagnostic test for different stages of Lyme infection. They are also hoping to find effective therapeutics. They promote education, and appreciate that CDPH is

already providing excellent educational materials. LDF works with outdoor education groups and 4th graders in California. They are trying to get educational materials to instructors so that every child in California will know Lyme disease is here and how to prevent infection. They also have an interest in educating adults.

- A member of the public noted that she has created a Lyme disease support group in Los Angeles County. She mentioned various family members with Lyme disease and one particular family member's struggle with insurance and the cost of medication. She applauded everyone's efforts in advocacy.

Meeting adjourned at 1:15 p.m.