



Things That Bite @ Camp

Prevention, Treatment &
Parent Communication
about Ticks, Mosquitos & Lice

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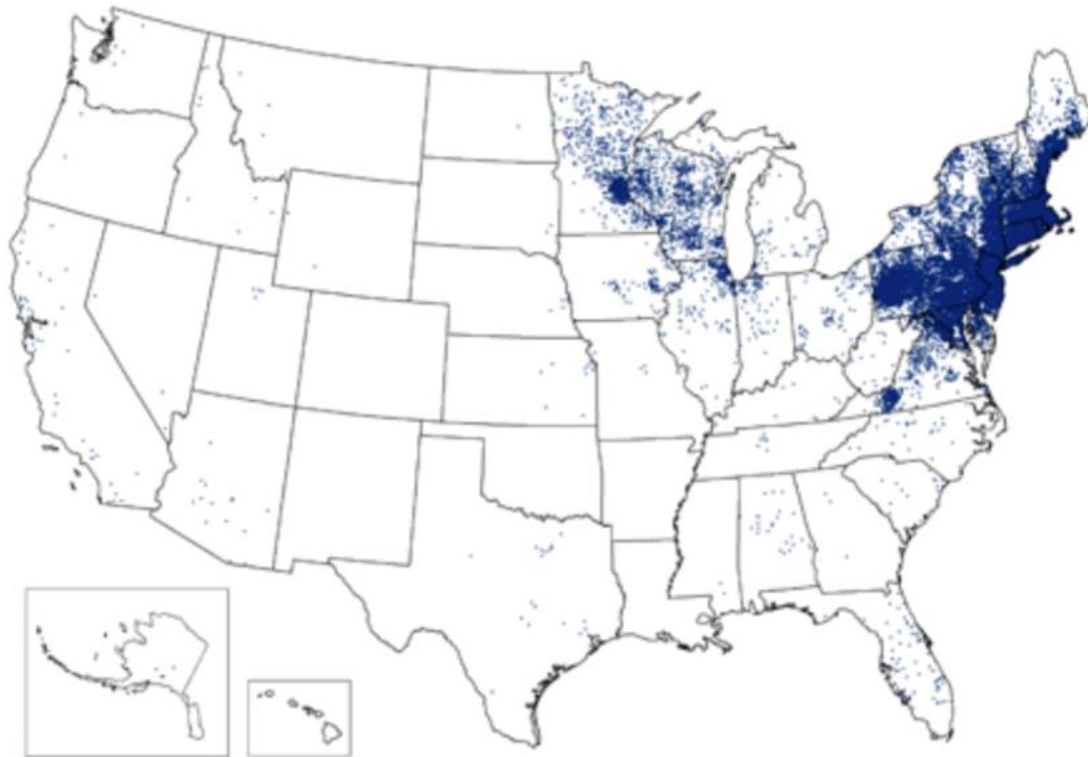
- Why discuss this?
- Tick Talk
- Mosquitos
- Lice
- Camp Considerations
- Dialogue and Questions

Why Talk About This?

- Common problems at camp.
- Thoughtful Policies and Procedures.
- Communication reassures parents & builds trust
- Educating your front line protects campers
- Some things go home with campers...

Lyme Disease in US

Reported Cases of Lyme Disease -- United States, 2014

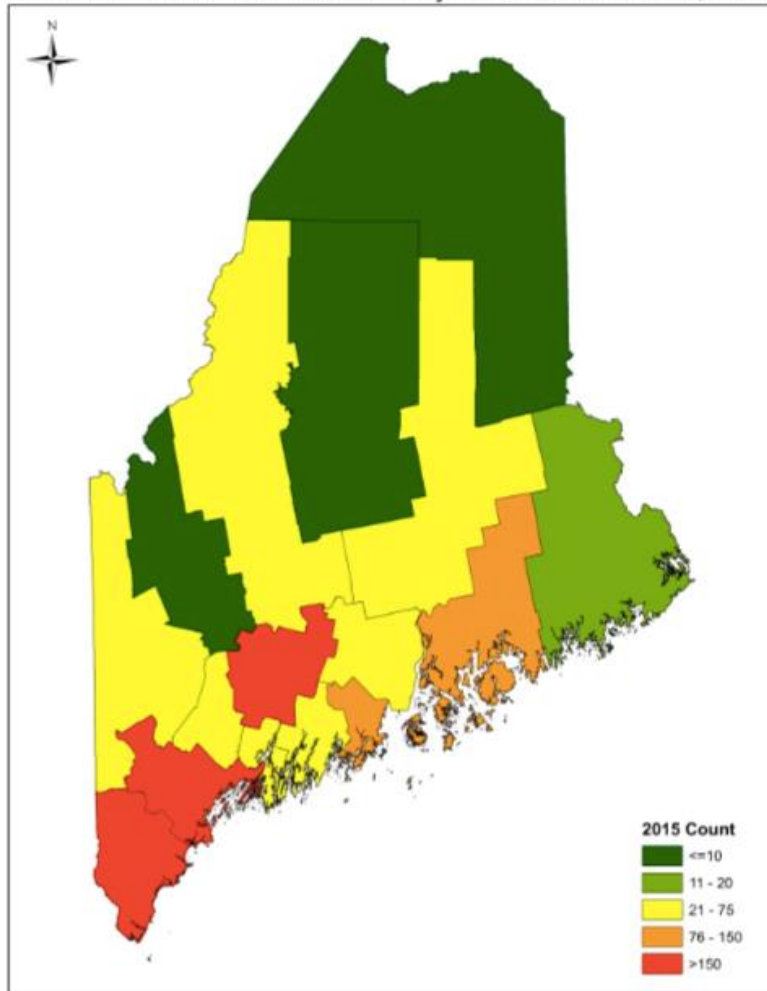


1 dot placed randomly within county of residence for each confirmed case

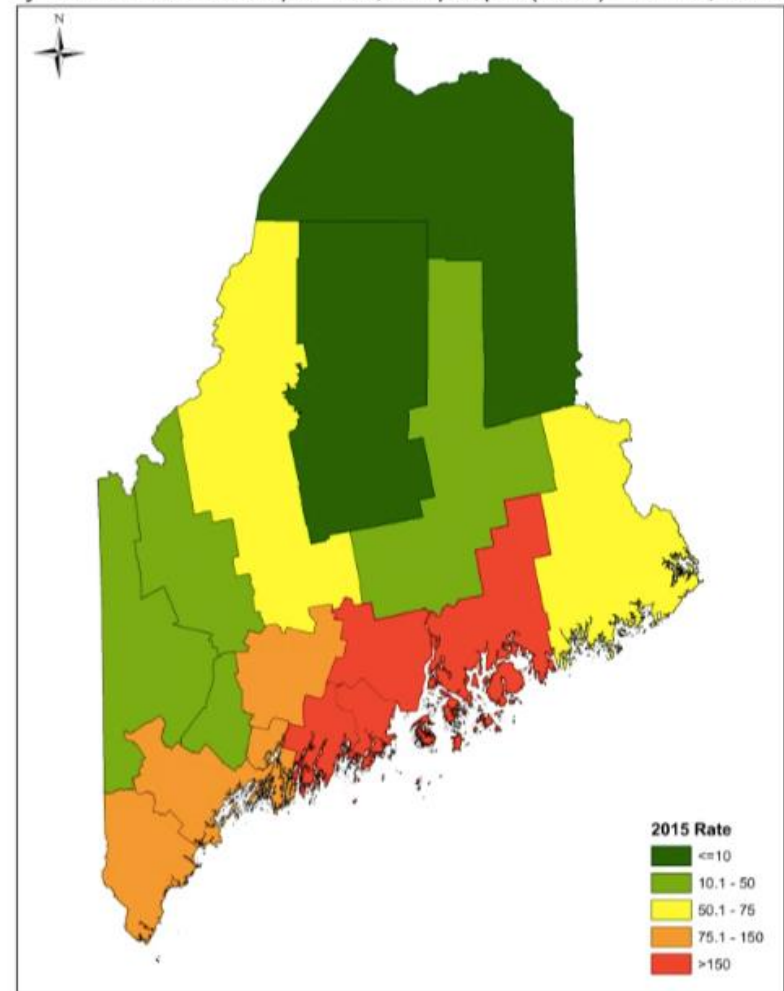
Source: federal CDC (http://www.cdc.gov/lyme/resources/reportedcasesoflymedisease_2014.pdf)

Lyme Disease in Maine

Confirmed and Probable Cases of Lyme Disease - Maine, 2015*



Lyme Disease Cases per 100,000 people (Rate) - Maine, 2015*



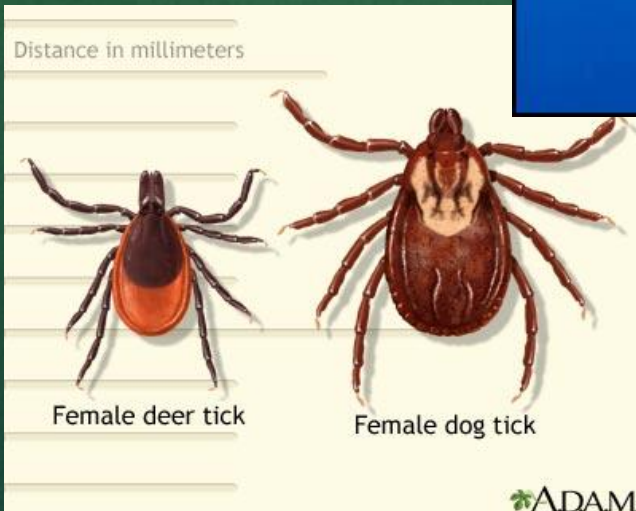
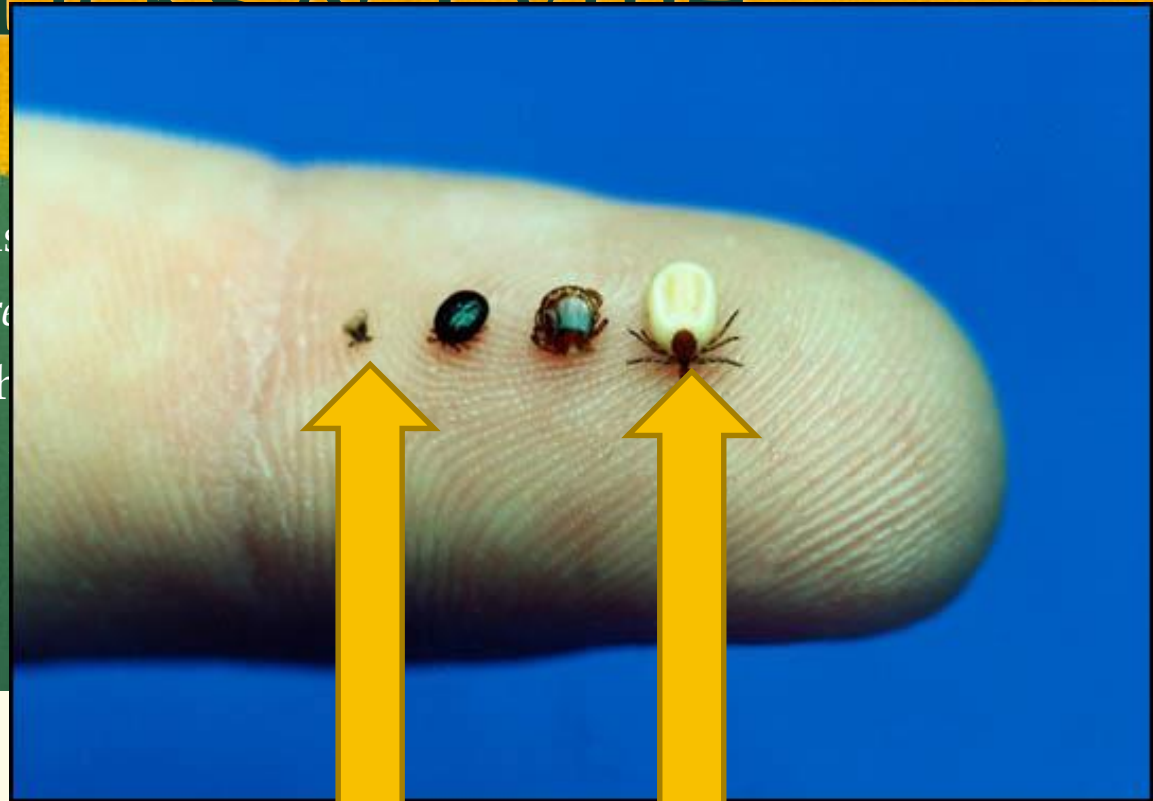
* 2015 data are preliminary as of 01/15/2016

Demographics of Lyme

- In the 1990s, Lyme in south coastal Maine, principally in York County.
- Disease incidence remains high in the southern and the Mid-Coast areas
- Lyme disease starting to increase in the northern and western counties as well, making the problem statewide.
- Kennebec, Knox, Somerset, Waldo, and Washington counties rates increased from 2014 to 2015.
- Seven counties have rates of Lyme disease higher than the State rate (Hancock, Kennebec, Knox, Lincoln, Sagadahoc, Waldo, and York).

Ticks & Lyme

- Lyme disease is caused by
 - the bacteria *Borrelia burgdorferi*
 - a person through a bite
 - an infected deer
- Runs in company



Normal size

Engorged

Lyme Symptoms

- Symptoms of Lyme disease
 - Fever, chills, headache, fatigue, muscle and joint aches, and swollen lymph nodes
 - Erythema migrans (EM) rash:
 - Occurs in approximately 70 to 80 percent of infected persons
 - Begins at the site of a tick bite after a delay of 3 to 30 days (average is about 7 days)
 - Expands gradually, is rarely itchy or painful
 - Sometimes clears as it enlarges-> target or “bull's-eye” appearance
 - May appear on any area of the body



Centers for Disease Control and Prevention, <http://phil.cdc.gov/phil/>



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Missing Lyme Can Be A Problem

- Later Signs and Symptoms (days to months)
 - Neurological (headaches, CNS inflammation, Facial Palsy)
 - Severe joint pain and swelling (knees and other large joints)
 - Intermittent pain in tendons, muscles, joints, and bones
 - Heart palpitations or an irregular heart beat (Lyme carditis)
 - Problems with short-term memory

Lyme is Preventable & Treatable

- Prophylaxis
 - Controversial
 - Doxycycline 200mg x1 adults
 - Doxycycline 4mg/kg (max 200mg) for kids >8yo
 - <8yo, no available prophylaxis
- Treatment
 - Lyme is a *clinical diagnosis*.
 - Treatment can be:
 - Amoxicillin 50mg/kg divided TID x 14-21 days
 - Cefuroxime axetil 30mg/kg divided BID x 14-21 days
 - Doxycycline 100mg BID for 14-21days

A word about diagnosis

- Antibody tests are often negative early in Lyme
- Two-step assay for specific antibodies
 - IgM need 2 of 3 kilodaltons
 - IgG need 5 of 10 kilodaltons
- Basically this means, our tests are not perfect, there are a lot of false positives so:
- Lyme is a Clinical Diagnosis

Lyme Prevention

- Avoid High Risk Areas
- Wear light colored clothes tight at ankles & wrists
- Tick Checks
 - Regular
 - In Daylight
- DEET



Removing ticks

- Classically used tweezers, pulling head (which is usually buried) very slowly- 30 seconds usually
- Wash with soap
- Don't squeeze or irritate the tick
- If a camper has a tick removed, make sure your staff know to tell you.



DEET

- DEET with reapplication every 1 to 2 hours for maximum effectiveness.
- Serious neurologic complications in children resulting from the frequent and excessive application of DEET-containing repellents have been reported.
 - They are rare, and the risk is low when these compounds are used according to product label instructions.
- DEET should be applied sparingly, according to product label instructions, only to exposed skin, and not to a child's face, hands, or skin that is irritated or abraded.
- After the child returns indoors, treated skin should be washed with soap and water.
- Concentrations of DEET greater than 30% usually are not necessary.
- Permethrin (a synthetic pyrethroid) is available in a repellent spray for application to clothing only and is particularly effective because it kills ticks on contact.



Mosquitos

West Nile, Eastern Equine and Secondary Infections

Mosquitos

- Maine is home to roughly 40 species of mosquitos, and less than half of those species bite humans.
- Only female mosquitoes bite, and they're capable of biting more than once.
- Mosquitoes breed in standing water, while black flies — Maine's other notorious pest — breed in flowing water.

West Nile Virus & Eastern Equine Encephalitis Virus

- West Nile Symptoms
 - Most people (70-80%) do not develop any symptoms.
 - Febrile illness in some people. Also headache, body aches, joint pains, vomiting, diarrhea, or rash.
 - Severe symptoms in a <1% people encephalitis or meningitis
- EEEV Symptoms
 - Severe cases of EEEV infection begin with the sudden onset of headache, high fever, chills, and vomiting.
 - The illness may then progress into disorientation, seizures, and coma.
 - Approximately a third of patients who develop EEE die, and many of those who survive have mild to severe brain damage.

Pickers & Infections

- “Skeeter Syndrome” - large local reactions
- Pickers
 - Cut Nails Short
 - Cover with BandAids
- Infections
 - Usually secondary infections from skin flora
 - Topical triple antibiotic works often
 - Impetigo requires an Rx called Mupirocen
 - Sometime oral antibiotics are required for diffuse infections.

Mosquito Prevention

- Repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection.
- Wear long sleeves and pants from dusk through dawn when many mosquitoes are most active.
- Install or repair screens on windows and doors.
- Empty standing water from containers such as flowerpots, gutters, buckets, pool covers, pet water dishes, discarded tires, and birdbaths.



Lice

Screening, Staff Education, Treatment, Parental Communication

We All Know Lice

- Head lice live about 28 days.
- They can lay up to 10 eggs a day.
- It takes 12 days for newly hatched eggs to reach adulthood.
- This cycle can repeat itself every 3 weeks if head lice are left untreated.

There are Many Ways to Treat Lice

- **Pediculicides**
 - *Permethrine 1%*
 - *Malathion 0.5%*
 - *Benzyl Alcohol 5%*
 - *Lindane 1%*
- **Scabacides**
 - *Permethrine 5%*
 - *Crotamiton 10%*
- **Desiccation**
- **Oral Agents Used Off-Label for Lice**
 - *Ivermectin*
 - *Sulfamethoxazole-Trimethoprim*
- **“Natural” Products**
- **Occlusive Agents**
- **Manual Removal**

How a Pediatrician @ Camp Winnebago Treats...

- The Nuvo® Method for Head Lice Using Cetaphil® Cleanser
www.nuvoforheadlice.com
- Combines occlusion, desiccation and manual removal
 - NOT a **Pediculicide**
- Begin screening again at day 7 though 10 days after treatment.
- Can retreat every week until lice free.

How a Camp Pediatrician Keeps Lice From Spreading

- Screen all campers upon entry to camp (residential)
- Screen lice-free kids in cabins (or returning from trips) with lice-infected kiddos every day.
- Cabins with lice should be laundered and campers not allowed to sit on beds or heads together.

Critters & Camping

- Staff Education/Communication
- Health Center Readiness
- Health Center Screening Before Campers Leave
- Parental Communication
 - Before camp
 - With infected campers
 - After camp

Staff Education & Communication

- Staff Education
 - TICKS
 - How to Look and What to Look for
 - Teaching self care to campers
 - Making Tick Checks part of the daily routine
 - During daylight
 - MOSQUITOS
 - How and when to apply/remove DEET
 - LICE
 - A kid never scratches their head.
 - Modify head to head contact.
- Communication
 - Between staff and health center
 - Between staff and Senior Staff

Health Center Readiness

- Screening all campers upon arrival, asking specifically if they have had lice.
- If you have a MD available, consider stocking:
 - Mupirocen
 - Doxycycline 50mg tabs
- Screen Prior to Going Home, thoroughly

Health Center Screening & Management

- Weekly Rounds of Cabins
- When tick is brought in on a camper make a list and follow up at 5, 10, 15 days.
- A rash that doesn't go away could be lyme.
- Bunks of infected kids should be screened daily until lice free.



Parental Communication

Before, During and After Camp

Parental Communication Before Camp

- Set Expectations
- Tell parents about your camp's procedures for identification and treatment
- Consider policies for campers who arrive with lice
- Encourage parents to share health information including kids who are pickers!

Parental Communication During Camp

- When Campers are Exposed:
 - Consider Parental Communication about screening
- When Campers are Diagnosed:
 - The triangle of communication between parent, physician and camp director.
 - Physician Communication
 - Consider a form for communication when campers are evaluated out of camp
 - Communication of Treatment Plan
 - Second Opinions

Parental Communication After Camp

- Communication to parents after camp is essential for your credibility and camper's health
- Describing diagnoses seen at camp and what you've done to send their kids home healthy
- Educate on signs and symptoms and incubation period
- Surveillance is in parental hands!
- Sample Parental Communication

There are a few important health and wellness items to know as your son returns home. Prior to leaving camp, each boy will receive a full screen from our camp RNs and Dr. Blaisdell to ensure there is no active wellness or medical problems requiring attention. Please monitor your son closely as illnesses can develop after your son leaves camp.

In particular, it is important to know the symptoms of **Lyme Disease** and of lice as we did have cases of both at camp this summer. Our staff works with campers to perform a tick check every morning, yet despite this prevention Lyme disease can still occur. Please be aware if your son develops a rash (especially growing 'Bulls eye' rashes), fevers, swollen glands or general malaise. If you notice any of these symptoms please seek medical care.

The most common symptom of **lice** is head itching or a rash around the nape of the neck. Each camper was screened for lice *at least twice* in the last two weeks of camp. If your son was a Falcon or Eagle, he was checked *at least 4 times* in the last two weeks of camp. We ask that for the following 2 weeks after camp you check your son's hair often.

I have connected with you if your son had evidence of lice. Our treatment for them, if they did not get a haircut, was to shampoo the boys using Cetaphil face cream that suffocates the lice. We then follow that up with blow drying their hair and carefully picking out any nits. We do this regularly until we find no more evidence of lice. It is laborious and we feel a better alternative to using chemical treatments that have been shown to be carcinogenic. Also, please know that for the last week, all campers have been using a natural shampoo that lice do not like thus mitigating the chance of them spreading.

Lastly, there were cases of **Strep Throat** at camp early in the second session. While we have not had any cases for over 2 weeks, please have any sore throats and fevers evaluated if they should occur. Please do not hesitate to reach out about concerns or questions about our prevention and treatment plans for these and other illnesses.

As you know, it is a chore to keep a large community healthy and I believe our staff did a great job in this regard. I hope you will feel comfortable letting me know if you feel there are other ways for us to do even better.

Again, many thanks for all your help and support.

The background features a stylized landscape with green mountain peaks at the top and bottom. The central area is a bright yellow-orange gradient with a subtle, grainy texture. The title is centered in a dark green, serif font.

Dialogue and Questions