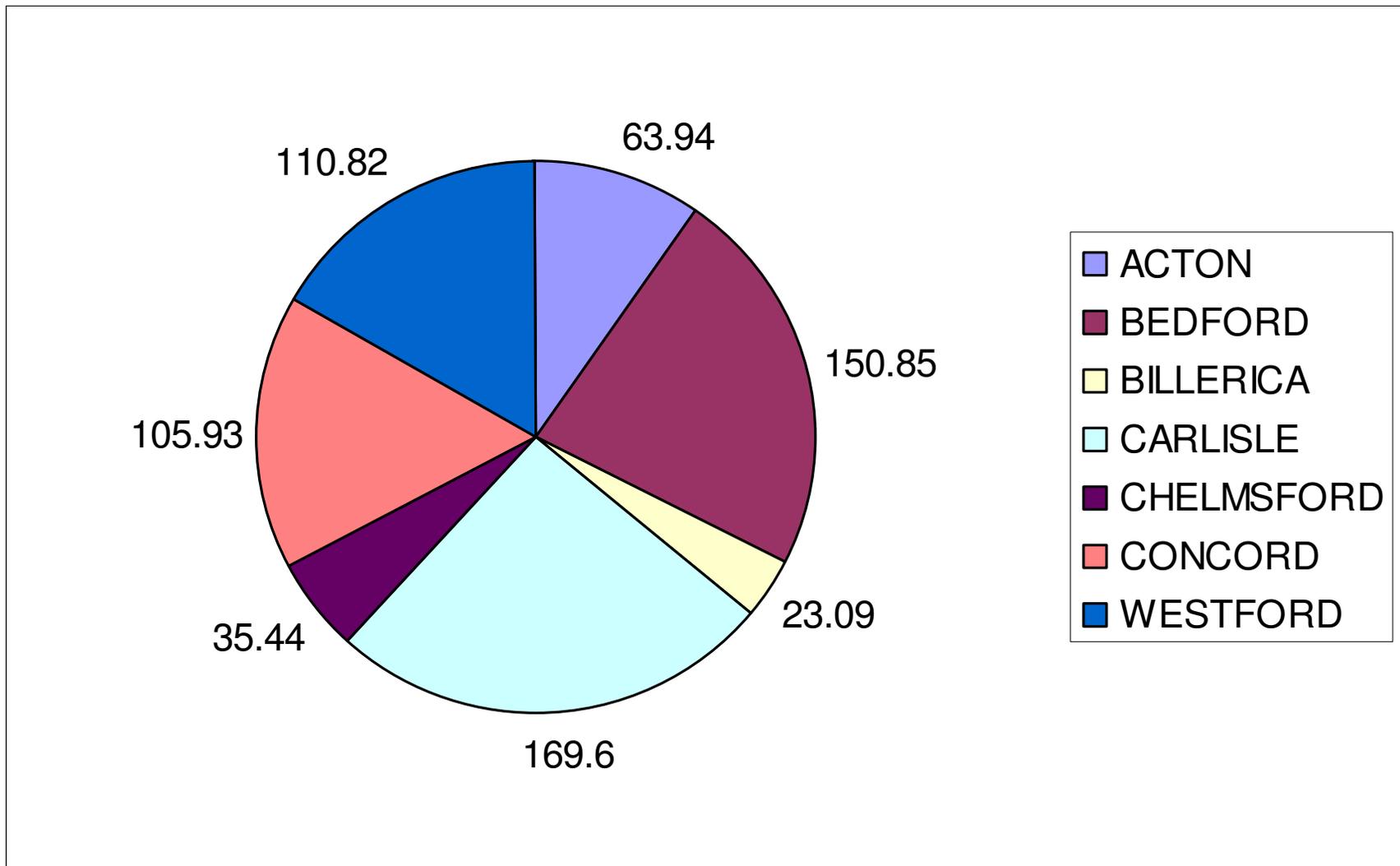


INCIDENCE RATE OF LYME DISEASE PER 100,000 PEOPLE



STAGES OF LYME DISEASE

- **Early Localized**

- Signs and symptoms usually occur within 3-32 days of exposure to infected ticks, and tend to be nonspecific
- Symptoms may include: fever, muscle aches, headache, swollen lymph glands, fatigue, mild neck stiffness, and joint pain
- A rash called erythema migrans (EM) occurs at the site of the tick bite in approximately 80% of the cases
- Typically EM rashes are circular and grow to a diameter of 5-15 cm, though the shape can be triangular, oval or irregular. **A “bulls-eye” presentation MAY NOT ALWAYS OCCUR.**

- **Early Disseminated**

- Without appropriate antibiotic treatment, the spirochete may begin affecting multiple organ systems within 3-5 weeks after the tick bite.
- A patient with a disseminated infection may have constitutional symptoms of fever and fatigue, there may be multiple EM lesions, diffuse redness of the skin, or hives.
- Muscles and joint aches are commonly reported

- **Late**

- In absence of effective treatment of early Lyme disease late manifestations of Lyme disease may become apparent week to even years after the initial infection.
- People may experience arthritis, commonly involving the large joints, such as the knees or the shoulders.
- The joint swelling and pain may be recurrent.

TESTING TICKS

- Tests performed on ticks are not perfect
- Even with a negative result, people should still monitor for symptoms and should seek medical advice if symptoms occur.
- If someone has been infected by a tick bite, symptoms may begin to occur even before the results of tick testing are available.
- If any symptoms develop, people should not wait for tick testing results before seeking medical advice.
- A positive test indicates that the tick was infected but not that the tick was successful in spreading the infection to the person bitten. The longer the tick is attached, the greater the chance that it will spread infection.

ENVIRONMENTAL MEASURES TO PREVENT TICK BITES

- Keep grass cut short.
- Remove leaf litter and brush from around the yard.
- Prune low lying bushes to let in more sunlight.
- Keep woodpiles and bird feeders off the ground and away from the home.
- Keep the plants around stone walls cut short.
- Use a three-foot wide woodchip, mulch, or gravel barrier where the lawn meets the woods, and remind children not to cross that barrier.
- Ask a landscaper or local nursery about plants to use in the yard that do not attract deer.
- Use deer fencing (for yards 15 acres or more).

PERSONAL MEASURES TO PREVENT TICK BITES

- Check oneself for ticks once a day. Favorite places ticks like to go on the body include areas between the toes, back of the knees, groin, armpits, neck, along the hairline, and behind the ears.
- Promptly remove an attached tick using fine-point tweezers. The tick should not be squeezed or twisted, but grasped close to the skin and pulled straight out using steady pressure.
- Wear long-sleeved, light-colored shirts and long pants tucked into socks.
- Use repellents containing DEET, and choose a product that will provide sufficient protection for the amount of time spent outdoors.

DEET

- DEET is considered safe when used according to the manufacturer's directions. The efficacy of DEET levels off at a concentration of 30%, which is the highest concentration recommended for children and adults.
- DEET products should not be used on children <2 months of age. Mosquito netting may be used to cover infant carriers or to protect other areas for children <2 months of age.
- Avoid using DEET products that combine the repellent with a sunscreen. Sunscreens may need to be reapplied too often, resulting in an over application of DEET.

DEET cont.

- Apply DEET on exposed skin, using only as much as needed.
- Do not use DEET on the hands of young children, and avoid applying repellent to areas around the eyes and mouth.
- Do not use DEET over cuts, wounds, or irritated skin.
- Wash treated skin with soap and water after returning indoors, and wash treated clothing.
- Avoid spraying DEET products in enclosed areas.

PERMETHRIN

- Permethrin-containing products will kill mosquitoes and ticks on contact.
- Permethrin products are not designed to be applied to the skin.
- Clothing should be treated and allowed to dry in a well-ventilated area prior to wearing. Once the fabric is dry, very little of the permethrin gets onto the skin.

DIAGNOSIS OF LYME DISEASE

- A diagnosis of Lyme Disease is made by health care providers and may be based solely on clinical symptoms (such as a patient presenting with an EM rash).
- Laboratory tests are available to assist physicians in making a diagnosis.

WHAT YOU SHOULD KNOW

- The highest risk of exposure in Massachusetts occurs during the spring and early summer for nymphs (About the size of a poppy seed) and late summer into fall for adult ticks (About the size of a sesame seed).
- Most cases occur between April and October, when the risk of contact with nymphal ticks is greatest.

- Whenever an attached tick is removed from one's body, one should monitor one's health for the appearance of rash, fever, or flu-like symptoms, and should immediately seek the advice of a health care provider if any symptoms occur, especially if the tick was attached for more than 24 hours.

WHY SHOULD YOU SAVE THE TICK AFTER ITS REMOVAL

- If the person who was bitten goes on to develop signs and symptoms such as fever, flu-like symptoms or a rash, it may be helpful for the physician to know the type of tick.
- Depending on the circumstances of the bite (i.e., when a person was bitten, the type of tick, how long it was attached), a physician may choose to treat the person who was bitten

HOW TICKS SHOULD BE KEPT

- The tick may be kept either securely sealed within a small plastic bag or attached, with clear tape, to a piece of paper. For individuals who do not wish to keep the tick, it can be either drowned in rubbing alcohol or flushed down the toilet.