

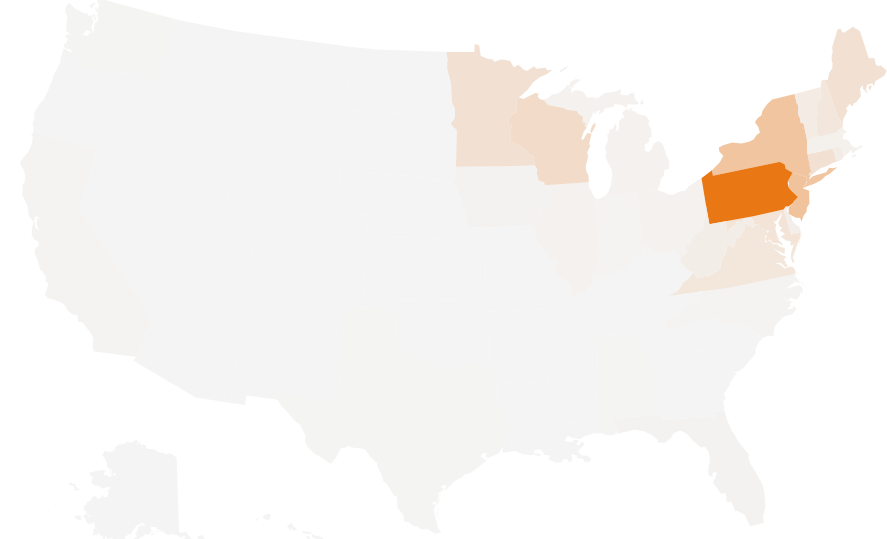
What's the deal with Lyme Disease?

Each year, there are roughly

30,000

new cases of Lyme Disease reported in the U.S.

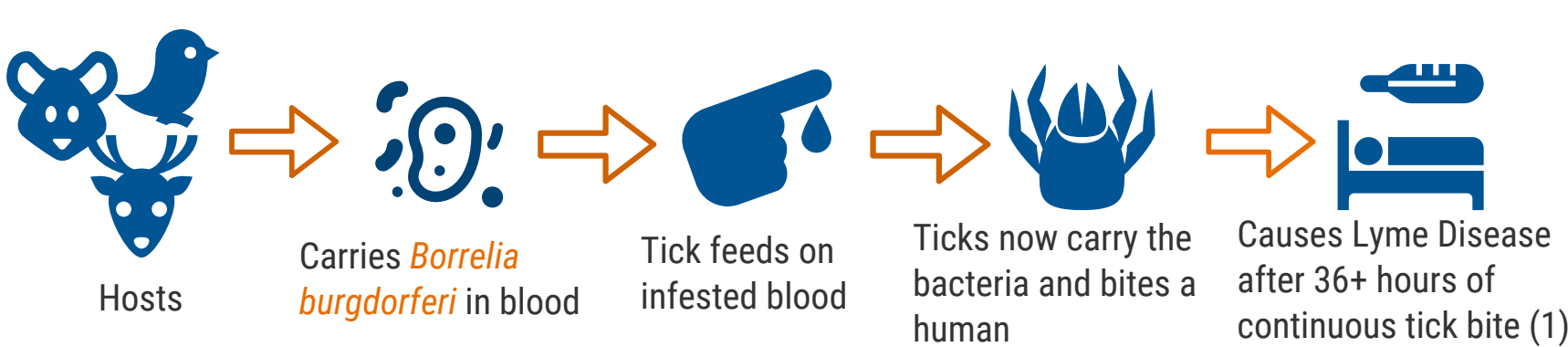
... but CDC estimates it is actually closer to **300,000** because many are unreported.



96 percent

of all the cases reported in the U.S. is within the 14 states located in the Northeast and upper Midwest (2).

This means new cases of Lyme Disease are **higher in number** than almost any other reportable infectious disease, including **HIV and AIDS** (1).



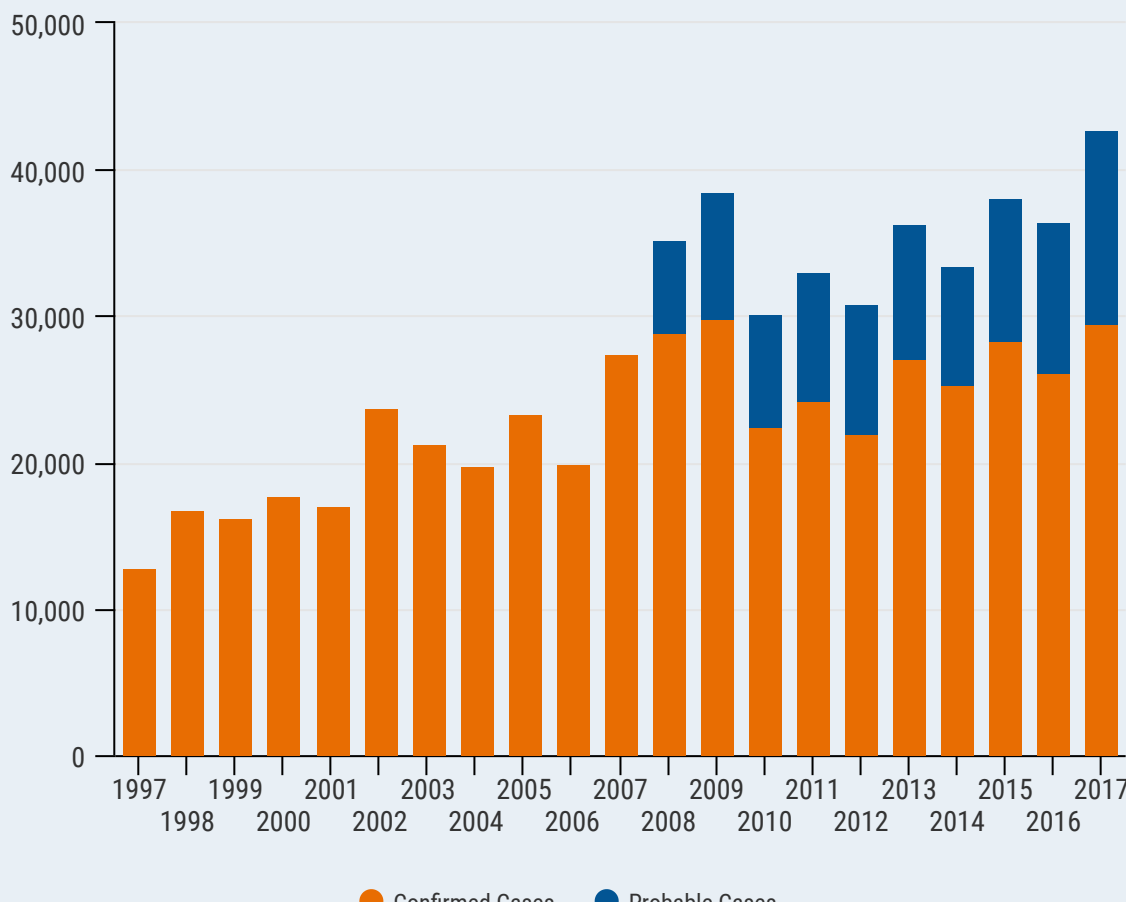
What are the general person, time, and place trends?

Reported and Probable cases by year, United States, 1997-2017

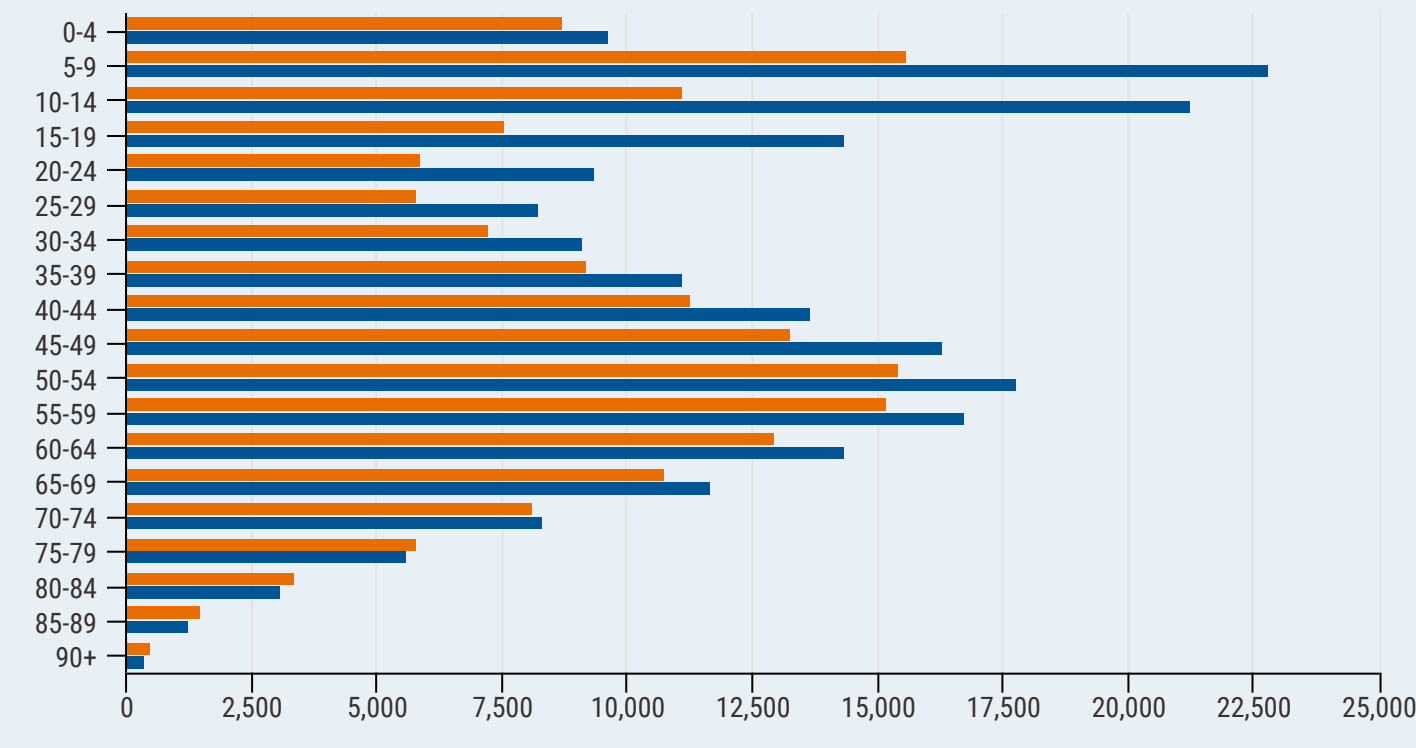
- Case numbers have been growing steadily for 25 years now.

- Average incident rates for the 14 "high incidence" states have lowered over the years from graph 3.

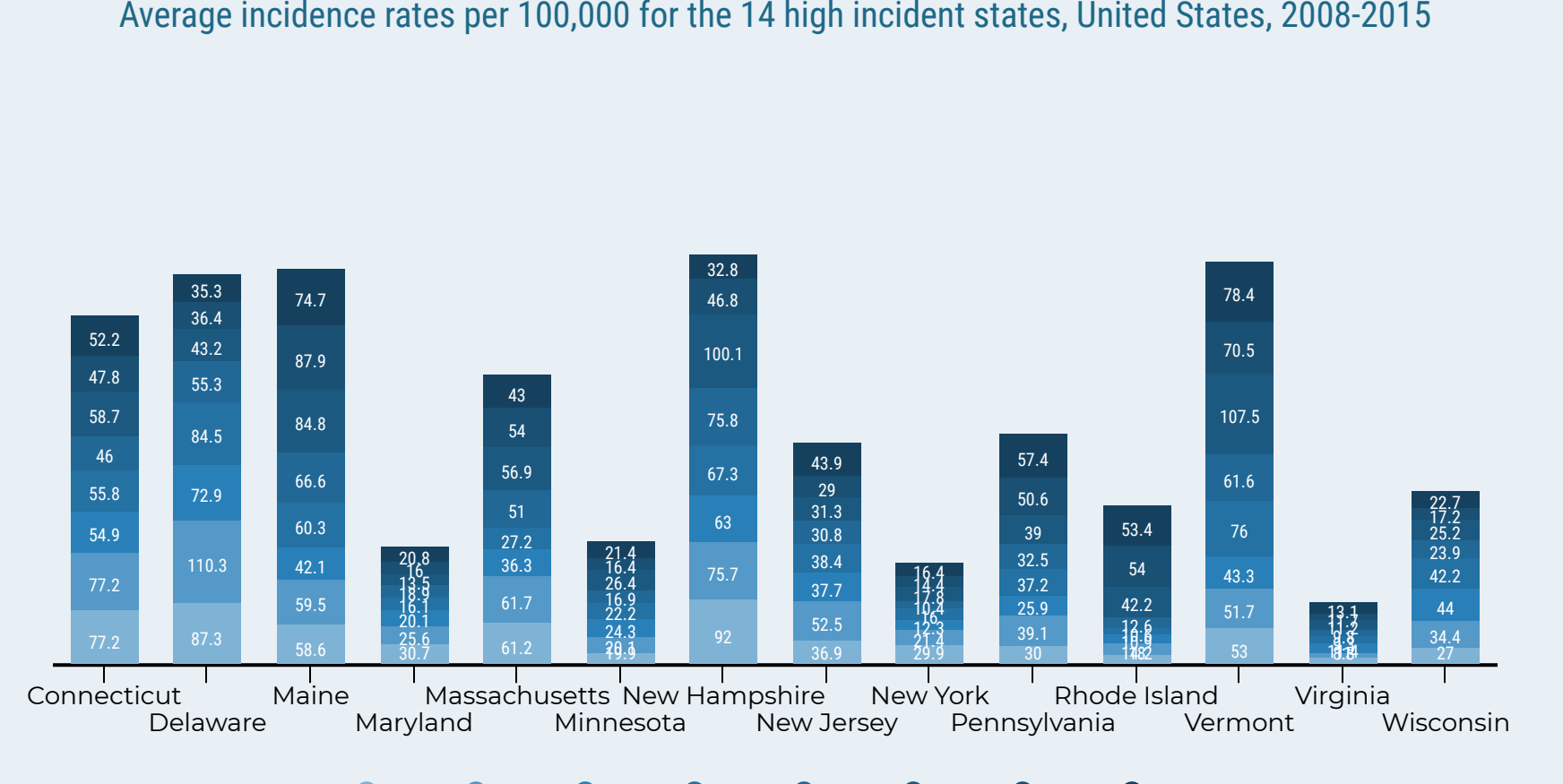
- The risk for children contracting the disease is the highest amongst all age groups, especially for males.



Confirmed cases by age and sex, United States, 2001-2017



Average incidence rates per 100,000 for the 14 high incident states, United States, 2008-2015



*All data on graphs obtained from (4) & (6).

What is the official case definition?

- CDC officially defines Lyme Disease as "A systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities (3)."

What are the most common symptoms?

According to the official case definition of 2017 established by the CDC, - Skin Lesions : 60-80% get a bulls-eye shaped rash (3)

Some of the rare but possible symptoms:

- Joint pain/inflammation
- Facial palsy (loss of muscle control on one's face),
- Shortness of breath
- Inflammation of the brain or spinal cord
- Problems with short-term memory (10).

What is the mortality and morbidity rate?

- All of the 50 states combined gives an average mortality rate of 12.196 per 100,000 (4).

- The morbidity rate is not published.

- Through 1999 to 2003, 96,608 cases of Lyme Disease were reported to CDC and only 23 of them were related to death.

- A study revealed that only 1 of all the deaths actually fit all the criteria of Lyme Disease (4).

What are the economic, social, and psychological burdens of the disease?

Economic & Social:

- U.S. Welfare system: \$712 million to \$1.3 billion annually; average of \$3,000 spent per patient (9).

- \$2.8 billion to \$5 billion are lost annually in the Northeastern region because people are making less trips outside

- 1 billion trips are never taken because of the fear of contracting Lyme Disease (7).

Psychological:

- Neuroborreliosis -> when bacteria invades the cell of the nervous system.

Can cause:

- Nerve palsy
- Extreme mood swings
- Memory difficulties,
- Anxiety
- Depression (8).

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