





Lyme Disease Surveillance 2010-2014

Rhode Island Department of Health

Division of Preparedness, Response, Infectious
Disease and Emergency Medical Services

Center for Acute Infectious Diseases Epidemiology

Summary: Lyme disease in RI, 2010-2014



- Lyme disease is a tickborne bacterial disease, causing symptoms such as fever, headache, fatigue, and a characteristic bullseye rash. Late symptoms can include arthritis, neurological problems, and heart disease. Lyme disease can be successfully treated with a course of antibiotics.
- In 2014, Rhode Island had 905 cases of Lyme disease, with an incidence rate of 86 cases per 100,000 people.
- In 2014, Rhode Island was the state with the fourth highest rate of Lyme disease in the country.
- In 2013, Rhode Island enhanced its Lyme disease surveillance system, so the dramatic increase in reported disease is due to increased surveillance rather than increased illness.
- Washington County consistently has the highest rate of Lyme disease in Rhode Island with a rate of 209 cases per 100,000 people in 2014.

Figure 1: Reported Cases of Lyme Disease by Year, RI, 2010-2014

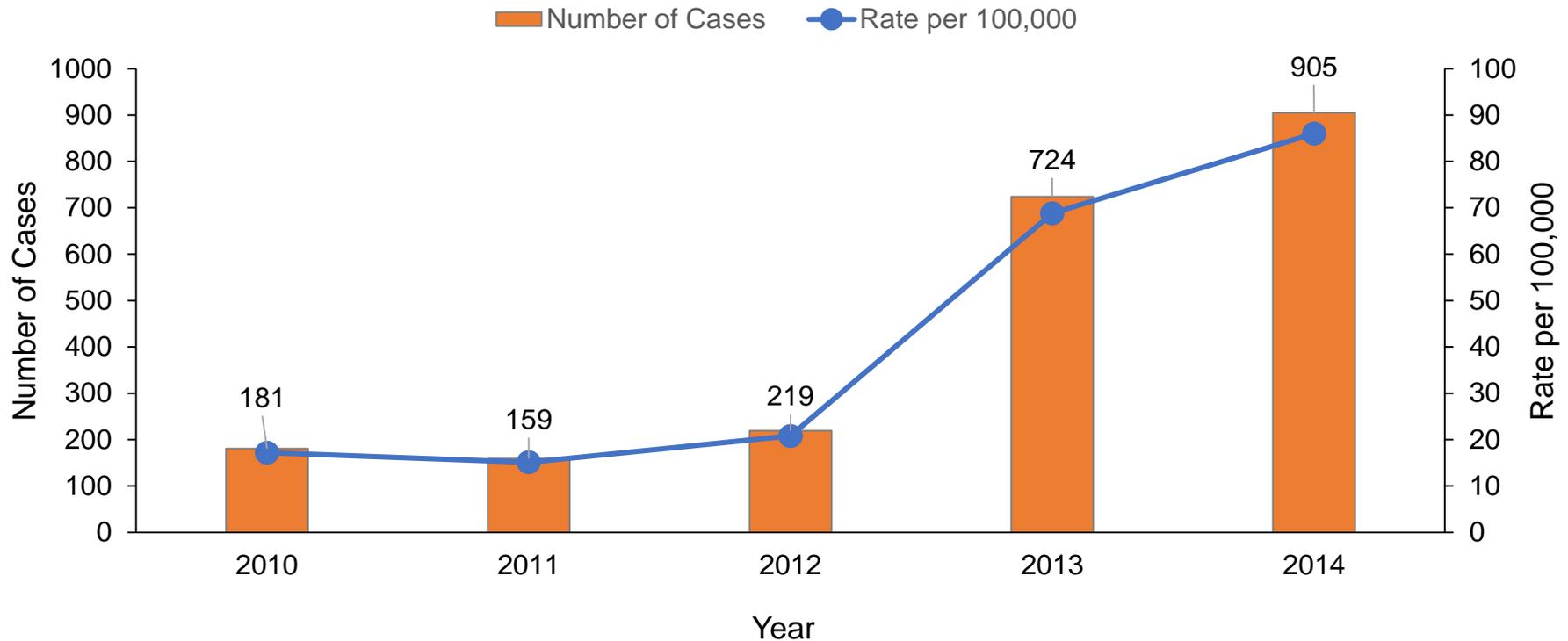


Figure 1: In 2014, there were 905 cases of Lyme disease in Rhode Island, with a rate of 86 cases per 100,000 people. In 2014, Rhode Island had the fourth highest incidence rate of Lyme disease in the country. The number of cases and rates of disease appear to increase a great deal in 2013; however, beginning in 2013, Lyme disease surveillance system was enhanced to incorporate active provider follow-up to obtain clinical information. The apparent increase in cases is attributable to these changes in surveillance, rather than a true increase in disease. Although underreporting of Lyme disease remains a problem, this enhanced surveillance system may reduce the discrepancy between reported cases and actual burden of disease in Rhode Island.

Figure 2: Rate of Lyme Disease by Age Group, RI, 2014

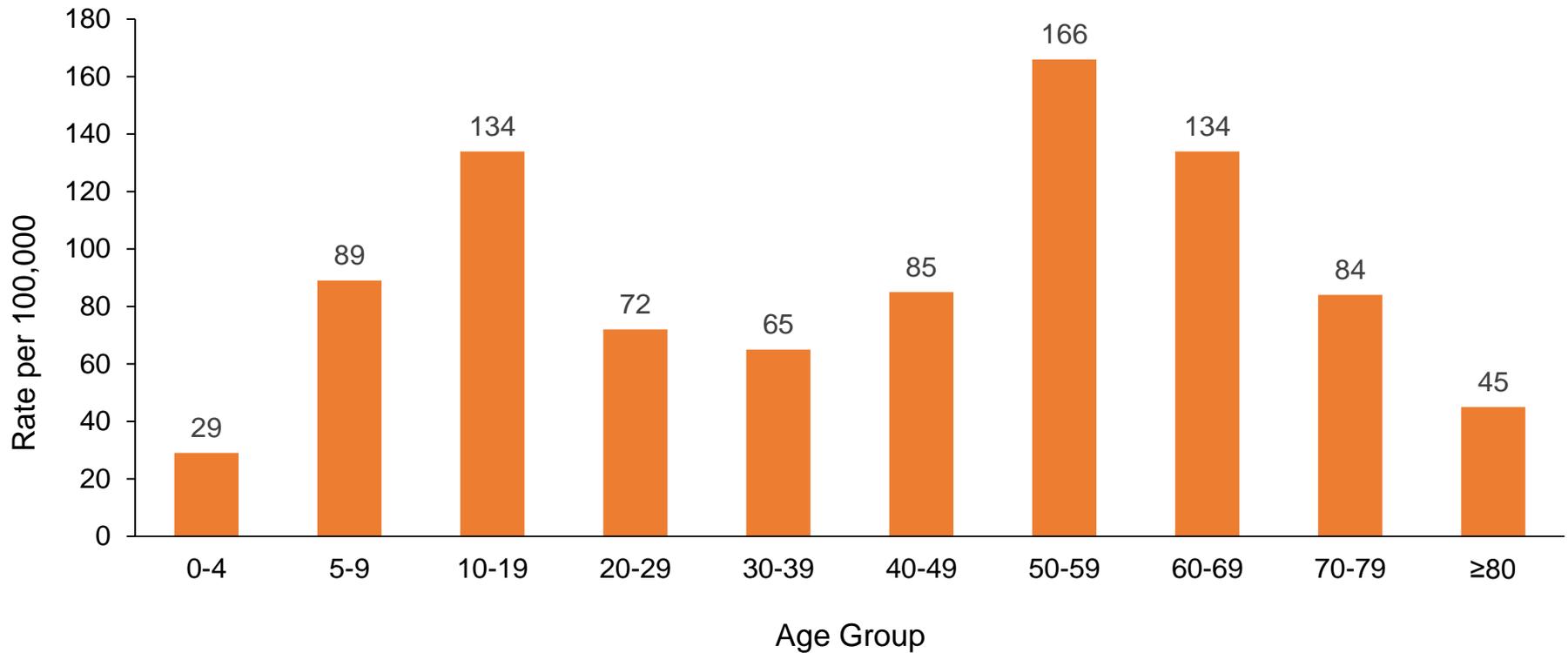


Figure 2: In 2014, adults ages 50-59 had the highest rate of Lyme disease in Rhode Island (166 cases per 100,000 people). People ages 60-69 and ages 10-19 had the next highest rates of Lyme disease (134 cases per 100,000 people.)

Figure 3: Rate of Lyme Disease by Sex and Year, RI, 2010-2014

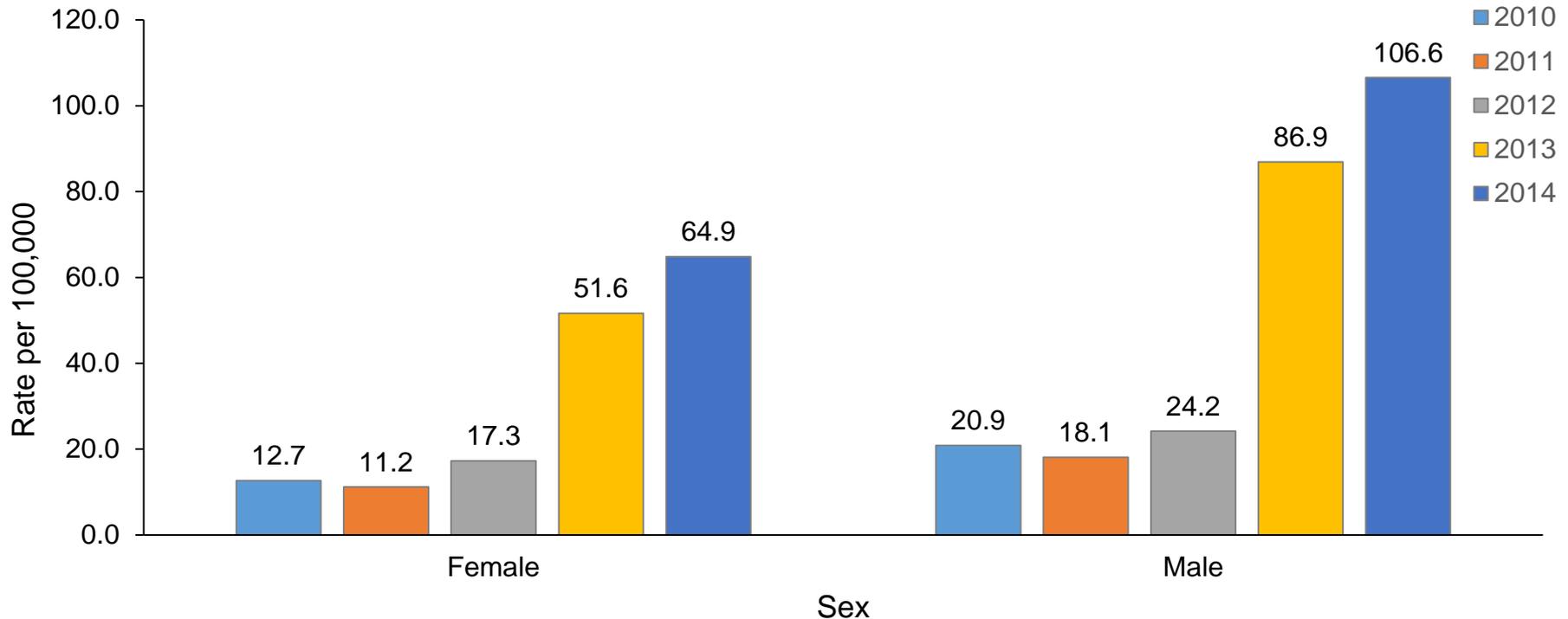


Figure 3: In 2014, there were 353 cases of Lyme disease in females, and 542 cases in males (64.9 and 106.6 cases per 100,000 people, respectively). Between 2010 and 2014, males had consistently higher counts and rates of Lyme disease than females did. This disparity is consistent with 10-year trends of Lyme disease data at the national level.

Figure 4: Rate of Lyme Disease by County and Year, RI, 2010-2014

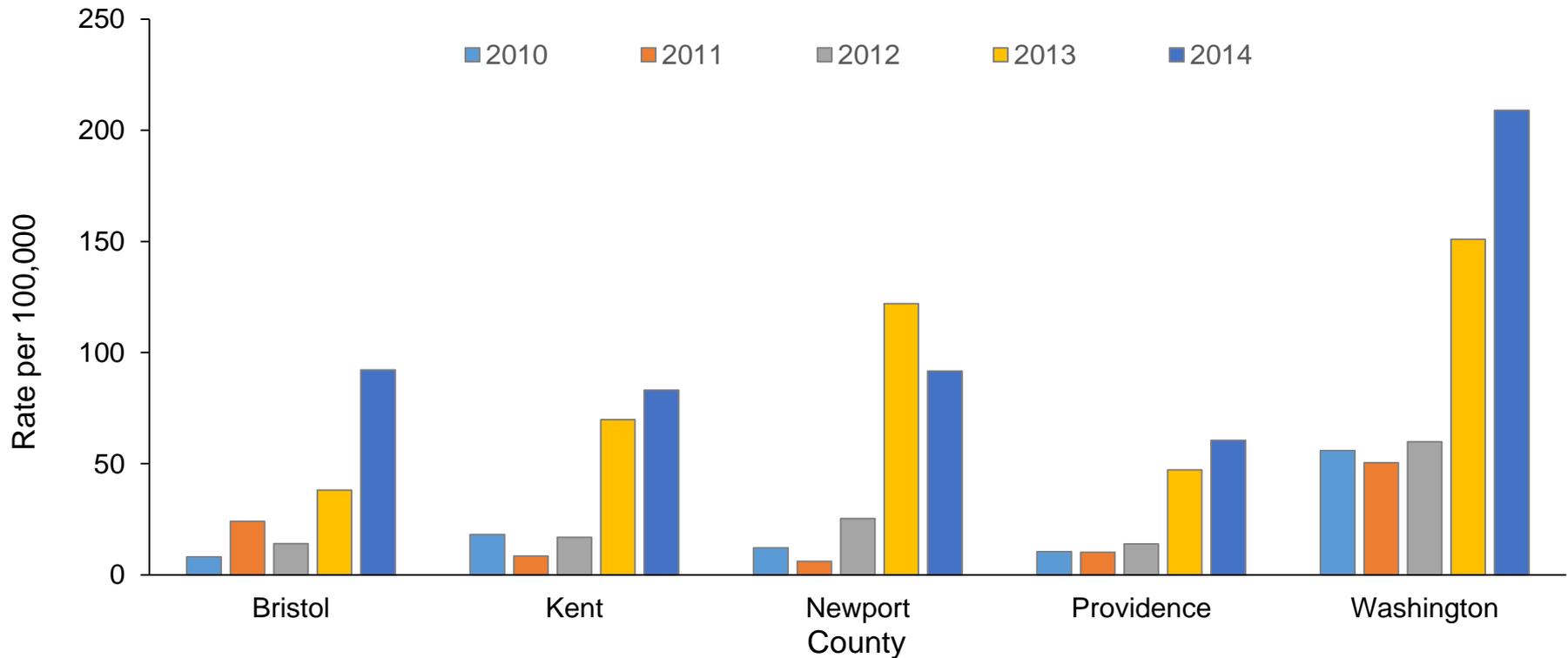


Figure 4: Lyme disease is clustered geographically within Rhode Island. Washington County consistently has the majority of disease burden, with rates of 209 cases per 100,000 people in 2014, more than twice the rate of the next-highest counties (Bristol and Newport, each with 92 cases per 100,000 people).

Figure 5: Reported Cases of Lyme Disease by Month and Year, RI, 2010-2014

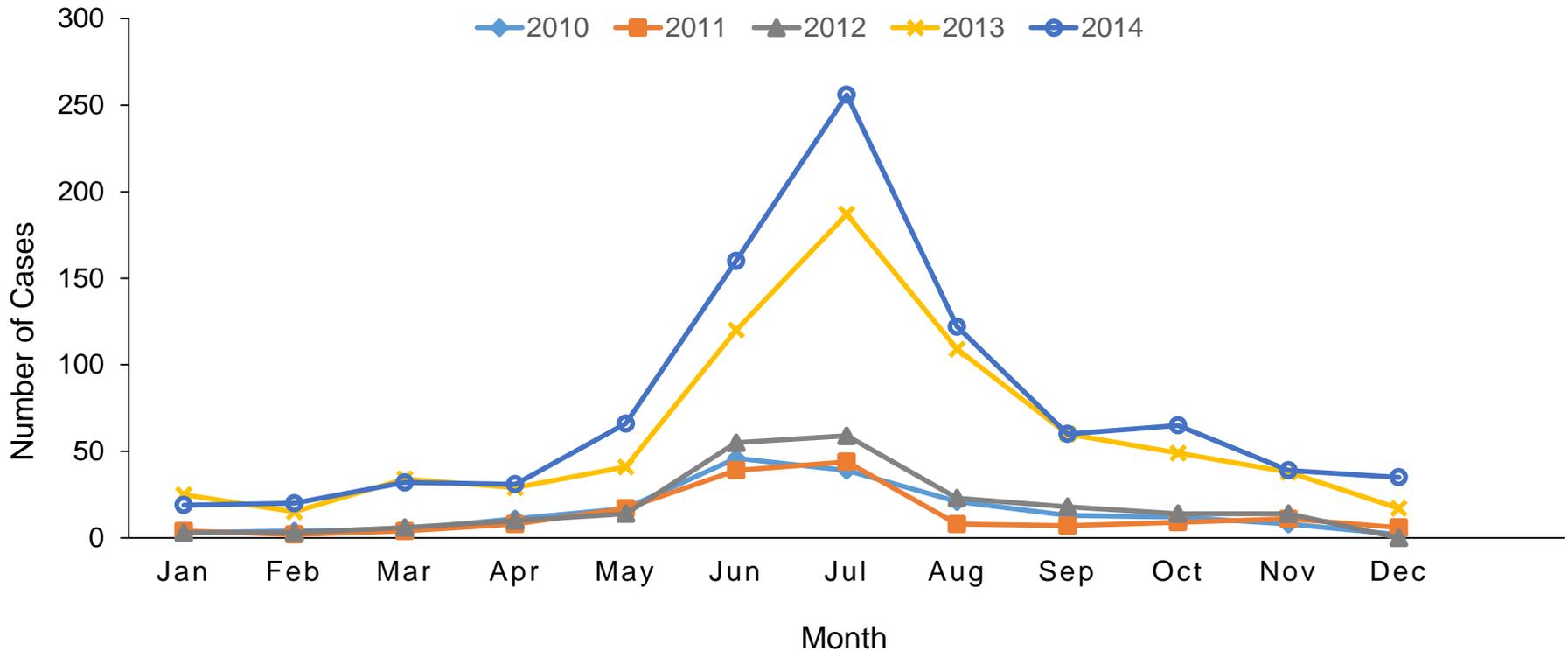


Figure 5: Lyme disease can occur at any point in the year, but peaks between June and August, with the most cases in July. Nationally, cases of Lyme disease peak in these months as well. In New England, these are the months when people spend the most time outdoors. In 2014, there were 538 cases of Lyme disease between June and August, 59% of Rhode Island’s cases for the entire year.

Lyme Disease Frequency and Rates by Year, RI, 2010-2014



Table 1. Frequency by Year

	2010	2011	2012	2013	2014
Number of Cases	181	159	219	724	905

Table 2. Rate by Year

	2010	2011	2012	2013	2014
Rate per 100,000	17.2	15.1	20.8	68.8	86.0

Lyme Disease Frequency by Age Group and Year, RI, 2010-2014



Table 3. Frequency by Age Group and Year

	2010	2011	2012	2013	2014
0-4	10	8	12	28	29
5-9	13	24	22	77	89
10-19	27	15	31	104	134
20-29	18	13	19	64	72
30-39	14	10	15	49	65
40-49	21	21	24	90	85
50-59	31	27	40	127	166
60-69	27	28	29	92	134
70-79	15	5	18	57	84
≥80	<5	8	9	36	45
Unknown	<5	0	0	0	<5
Total	181	159	219	724	905

Lyme Disease Rates by Age Group and Year, RI, 2010-2014



Table 4. Rate by Age Group and Year

	2010	2011	2012	2013	2014
0-4	17.4	13.9	20.9	48.7	50.5
5-9	21.5	39.7	36.4	127.0	147.0
10-19	18.8	10.4	21.6	72.3	93.1
20-29	12.2	8.8	12.8	43.3	48.7
30-39	11.2	8.0	12.0	39.2	52.0
40-49	13.6	13.6	15.5	58.3	55.0
50-59	20.4	17.8	26.4	83.7	109.0
60-69	26.3	27.3	28.2	89.5	130.0
70-79	26.0	8.7	31.2	98.8	146.0
≥80	7.8	15.6	17.5	70.1	87.6

Lyme Disease Frequency and Rates by Sex and Year, RI, 2010-2014



Table 5. Frequency by Sex and Year

	2010	2011	2012	2013	2014
Female	69	61	94	281	353
Male	106	92	123	442	542
Unknown	6	6	<5	<5	10
Total	181	159	219	724	905

Table 6. Rate by Sex and Year

	2010	2011	2012	2013	2014
Female	12.7	11.2	17.3	51.6	64.9
Male	20.9	18.1	24.2	86.9	107.0

Lyme Disease Frequency By County and Year, RI, 2010-2014



Table 7. Frequency by County and Year

	2010	2011	2012	2013	2014
Bristol	<5	12	7	19	46
Kent	30	14	28	116	138
Newport	10	5	21	101	76
Providence	65	64	87	296	379
Washington	71	64	76	192	266
Unknown	<5	0	0	0	0
All	181	159	219	724	905

Lyme Disease Rates by County and Year, RI, 2010-2014



Table 8. Rate by County and Year

	2010	2011	2012	2013	2014
Bristol	8.0	24.1	14.0	38.1	92.2
Kent	18.1	8.4	16.9	69.8	83.1
Newport	12.1	6.0	25.3	122.0	91.7
Providence	10.4	10.2	13.9	47.2	60.5
Washington	55.9	50.4	59.9	151.0	209.0

Lyme Disease Frequency By City and Year, RI, 2010-2014



Table 9. Frequency by City and Year

	2010	2011	2012	2013	2014
Barrington	<5	6	<5	8	13
Bristol	<5	5	0	7	22
Burrillville	<5	<5	<5	34	45
Central Falls	0	<5	0	<5	<5
Charlestown	5	<5	<5	17	26
Coventry	8	<5	9	38	43
Cranston	<5	<5	6	17	27
Cumberland	7	6	11	33	37
East Greenwich	6	<5	5	18	23
East Providence	<5	<5	6	15	20
Exeter	<5	<5	6	8	22
Foster	<5	6	13	33	27
Glocester	9	<5	11	14	20
Hopkinton	<5	0	<5	13	30
Jamestown	<5	<5	<5	12	14
Johnston	5	<5	<5	12	20
Lincoln	<5	7	<5	18	23

Lyme Disease Frequency By City and Year Continued, RI, 2010-2014



Table 9. Frequency by City and Year

	2010	2011	2012	2013	2014
Little Compton	<5	0	<5	20	10
Middletown	0	0	<5	8	7
Narragansett	<5	<5	7	15	30
New Shoreham	29	30	16	31	<5
Newport	<5	0	<5	13	13
North Kingstown	7	<5	10	30	44
North Providence	<5	0	<5	6	6
North Smithfield	0	6	<5	27	25
Pawtucket	<5	<5	0	7	12
Portsmouth	0	<5	<5	25	16
Providence	8	7	<5	25	44
Richmond	<5	<5	<5	6	10
Scituate	11	7	10	34	37
Smithfield	<5	<5	5	7	15
South Kingstown	17	16	21	47	60

Lyme Disease Frequency By City and Year Continued, RI, 2010-2014



Table 9. Frequency by City and Year

	2010	2011	2012	2013	2014
Tiverton	5	<5	8	23	16
Warren	<5	<5	5	<5	11
Warwick	9	7	5	29	32
West Greenwich	<5	<5	6	21	19
West Warwick	5	<5	<5	10	21
Westerly	<5	6	10	25	42
Woonsocket	<5	<5	7	12	18
Total	181	159	219	724	905

Lyme Disease Frequency by Month and Year, RI, 2010-2014



Table 10. Frequency by Month and Year

	2010	2011	2012	2013	2014
Jan	<5	<5	<5	25	19
Feb	<5	<5	<5	15	20
Mar	5	<5	6	34	32
Apr	11	8	10	29	31
May	17	17	14	41	66
Jun	46	39	55	120	160
Jul	39	44	59	187	256
Aug	21	8	23	109	122
Sep	13	7	18	60	60
Oct	12	9	14	49	65
Nov	8	11	14	38	39
Dec	<5	6	0	17	35
All	181	159	219	724	905



Notes on Data

- Case counts include patients classified as confirmed and as probable cases.
- “Event Date” (used to classify cases by month and year) is generated based on the availability of data in the following order:
 1. Illness onset date
 2. Specimen collection date
 3. Date of report to public health agency
- Rate is calculated per 100,000 people. The population denominator is based on US 2010 Census Population.