





Lyme Disease Surveillance 2014-2018

Rhode Island Department of Health

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

Center for Acute Infectious Disease Epidemiology



About Lyme Disease

- 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.
- Lyme disease is most commonly transmitted in upper Midwest and Northeast states, in wooded or grassy areas, and during warm months.

Data Overview, Lyme Disease



- In 2018, Rhode Island had 1,111 cases of Lyme disease, with an incidence rate of 105 cases per 100,000 people.
- In 2017, Rhode Island was the state with the fifth highest rate of Lyme disease in the country.
- Reported cases of Lyme were fairly stable from 2014-2016, however reported cases increased by approximately 20% in 2017 and remained at a similar level in 2018.
- Washington County consistently has the highest rate of Lyme disease in Rhode Island with a rate of 222 cases per 100,000 people in 2018.

Reported Cases of Lyme Disease, Rhode Island, 2014-2018

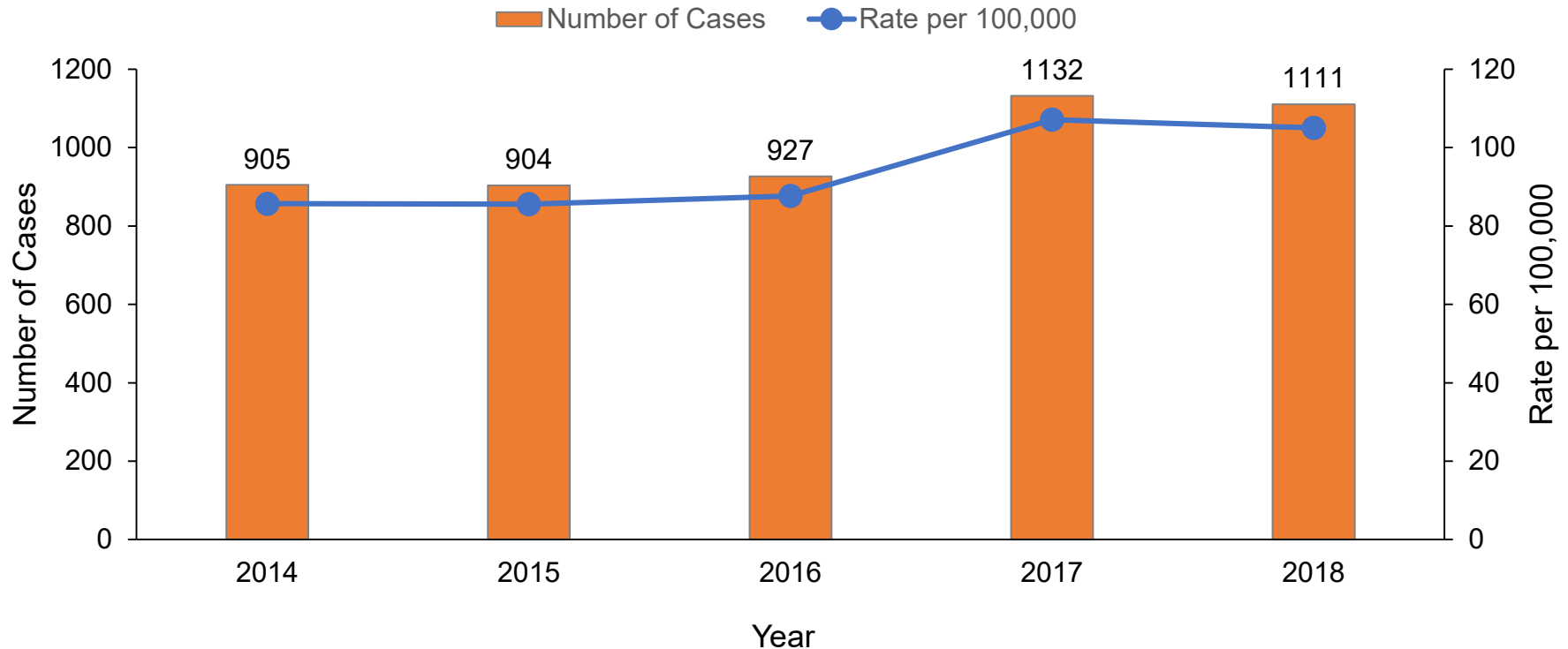


Figure 1: In 2018, there were 1,111 cases of Lyme disease reported in Rhode Island (rate of 105 cases per 100,000 people). This was similar to the number of cases reported in 2017, but approximately 20% higher than the number of cases reported annually from 2014-2016.

Rate of Lyme Disease, Age Group, Rhode Island, 2018

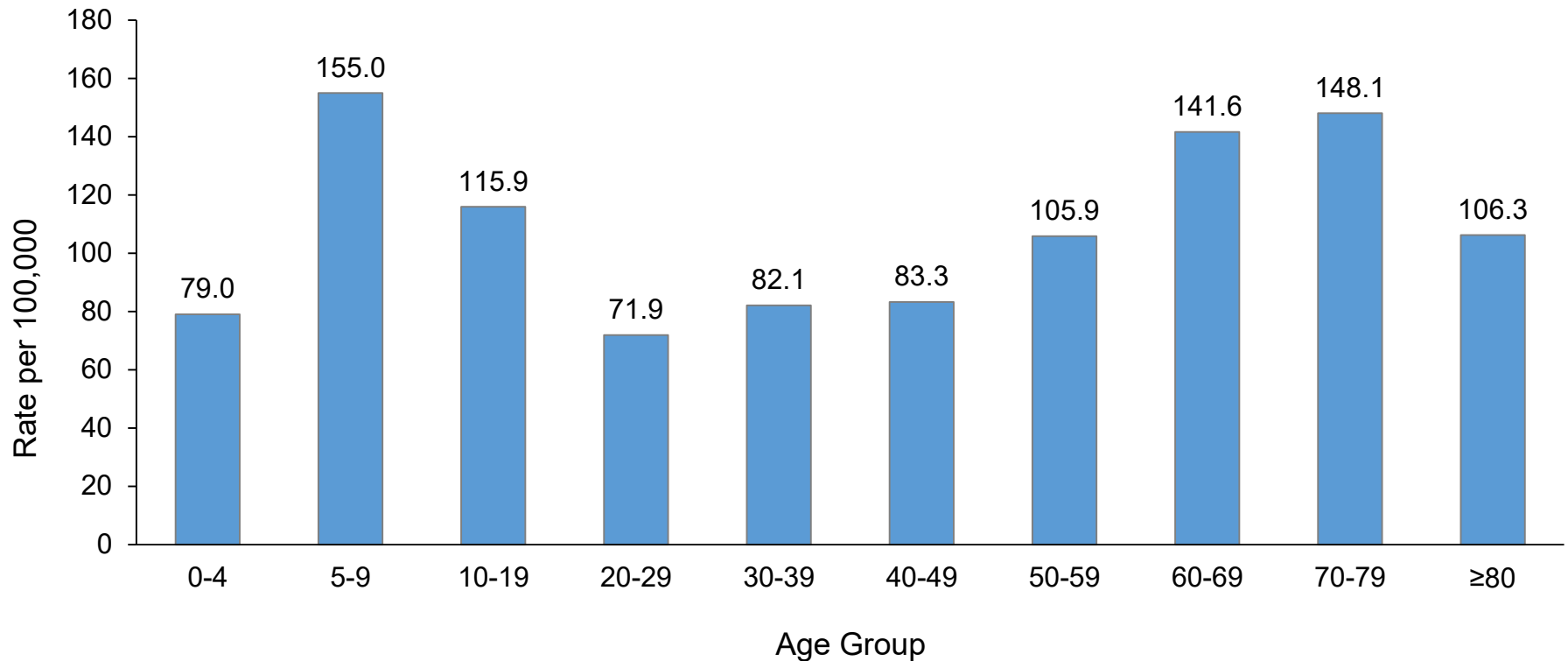


Figure 2: In 2018, children 5-9 years old experienced the highest rate of Lyme disease at 155.0 cases per 100,000 people. Adults 70-79 years old and 60-69 years old also had similarly high rates of Lyme disease at 148.1 cases per 100,000 people and 141.6 cases per 100,000 people, respectively.

Rate of Lyme Disease, Gender and Year, Rhode Island, 2014-2018

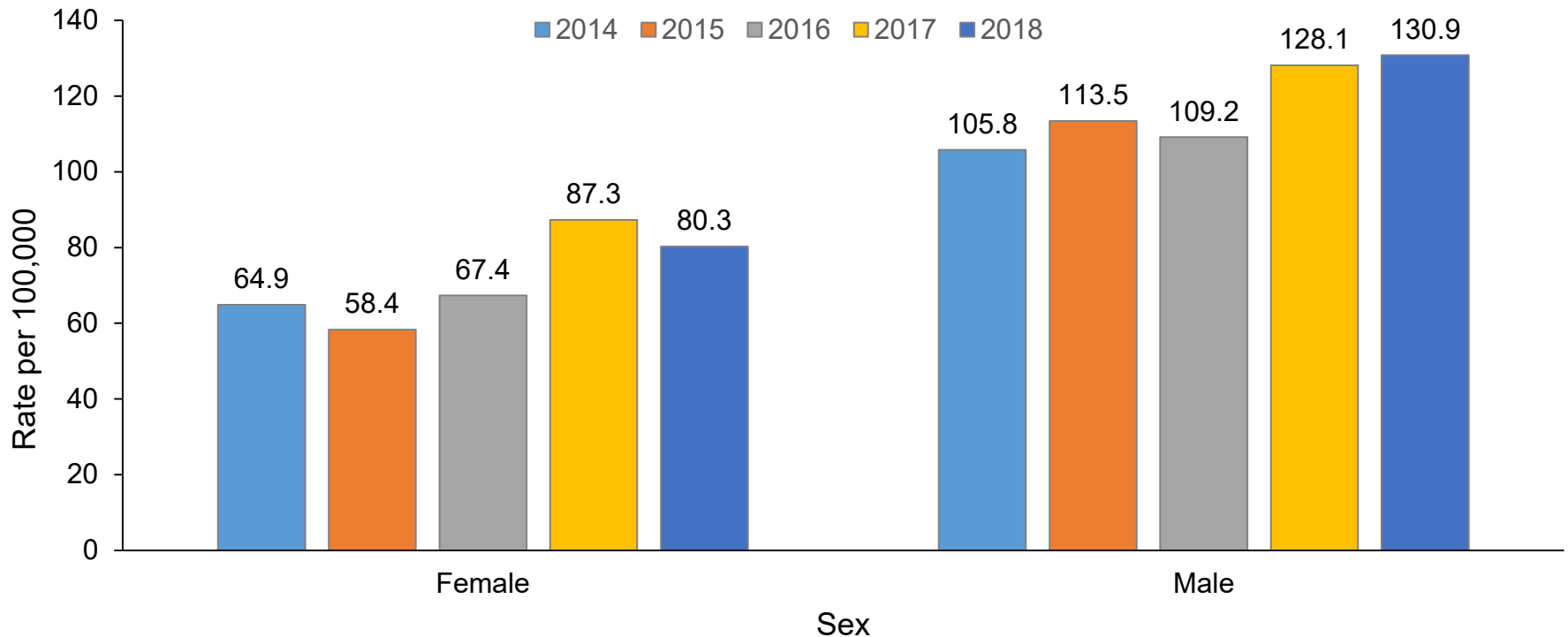


Figure 3: In 2018, the observed rate of Lyme disease among males (130.9) cases per 100,000 people) was 1.6 times higher than the rate among females (80.3 cases per 100,000 people). From 2014 to 2018, Lyme disease was consistently observed at higher rates among males, which is consistent with disparities observed in national level data.

Rate of Lyme Disease, County and Year, Rhode Island, 2014-2018

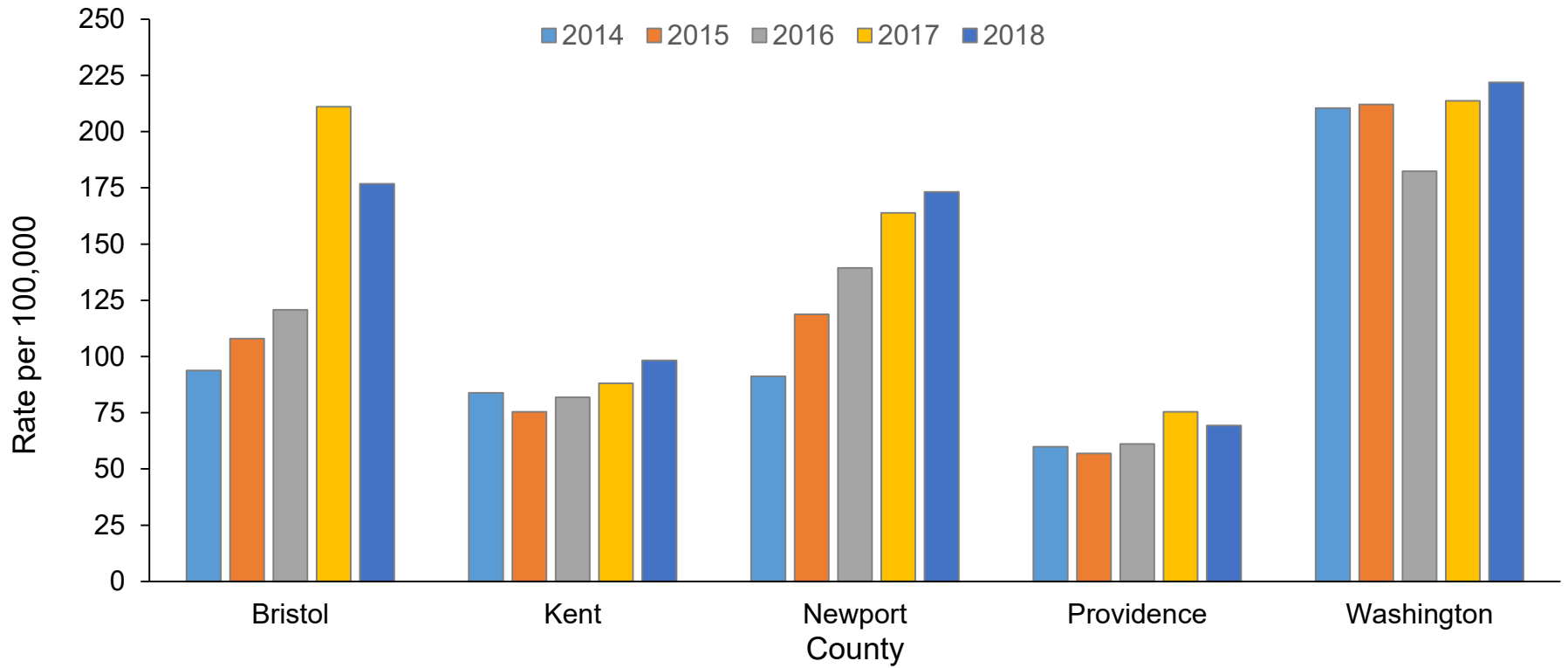


Figure 4: Lyme disease is clustered geographically within Rhode Island. Washington County consistently has the majority of disease burden, with a rate of 221.9 cases per 100,000 people reported in 2018. The second highest rate of Lyme disease in 2018 was observed in Bristol County (176.8 cases per 100,000 people), followed by Newport County (173.3 cases per 100,000 people).

Reported Cases of Lyme Disease, Month and Year, Rhode Island, 2014-2018

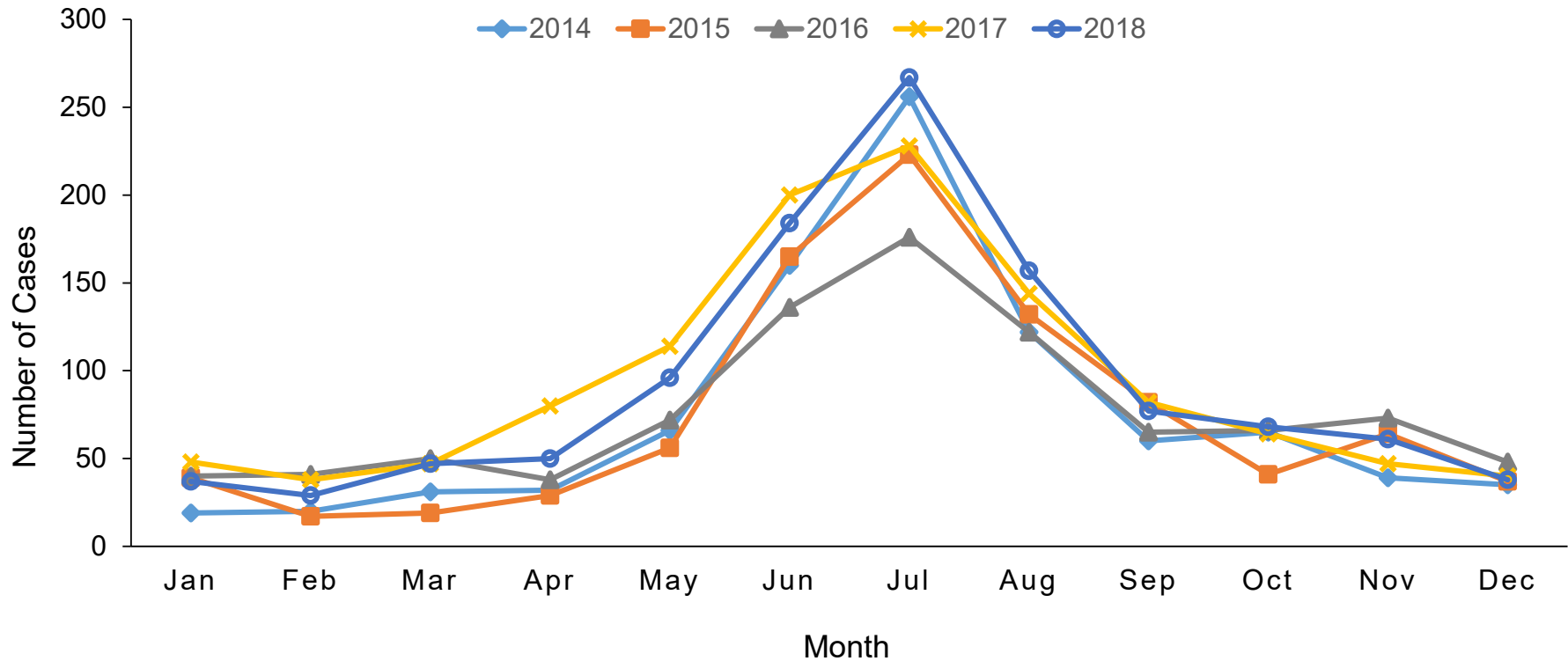


Figure 5: Lyme disease can occur at any point in the year, but peaks between June and August, with the most cases in July. Nationally, cases of Lyme disease peak in these months as well. In New England, these are the months when people spend the most time outdoors. In 2018, 608 cases of Lyme disease were observed between June and August, over half (54.7%) of Rhode Island’s cases for the entire year.

Lyme Disease Frequency and Rates by Year, Rhode Island, 2014-2018



Table 1. Frequency by Year

	2014	2015	2016	2017	2018
Number of Cases	905	904	927	1132	1111

Table 2. Rate by Year

	2014	2015	2016	2017	2018
Rate per 100,000	85.7	85.6	87.7	107.2	105.1

Lyme Disease Frequency, Age Group and Year, Rhode Island, 2014-2018



Table 3. Frequency by Age Group and Year

	2014	2015	2016	2017	2018
0-4	29	40	40	30	43
5-9	89	81	86	95	85
10-19	134	129	148	148	151
20-29	72	79	102	115	110
30-39	65	70	86	99	111
40-49	85	92	90	110	104
50-59	166	142	126	193	159
60-69	134	161	129	184	184
70-79	84	83	79	100	112
≥80	45	27	41	58	52
Unknown	2	0	0	0	0
Total	905	904	927	1132	1111

Lyme Disease Rates, Age Group and Year, Rhode Island, 2014-2018



Table 4. Rate by Age Group and Year

	2014	2015	2016	2017	2018
0-4	52.8	72.9	73.1	55.1	79.0
5-9	153.9	142.5	153.3	171.1	155.0
10-19	99.0	96.2	111.2	112.5	115.9
20-29	46.5	50.9	65.6	74.5	71.9
30-39	51.4	54.7	66.0	74.9	82.1
40-49	61.5	68.6	69.1	86.5	83.3
50-59	105.7	90.8	81.4	126.4	105.9
60-69	114.1	132.3	102.6	144.4	141.6
70-79	131.7	126.6	117.0	138.6	148.1
≥80	89.6	54.7	83.7	118.6	106.3

Lyme Disease Frequency and Rates, Gender and Year, Rhode Island, 2014-2018



Table 5. Frequency by Sex and Year

	2014	2015	2016	2017	2018
Female	353	317	366	474	436
Male	542	582	561	658	673
Unknown	10	5	0	0	2
Total	905	904	927	1132	1111

Table 6. Rate by Sex and Year

	2014	2015	2016	2017	2018
Female	64.9	58.4	67.4	87.3	80.3
Male	105.8	113.5	109.2	128.1	130.9

Lyme Disease Frequency, County and Year, Rhode Island, 2014-2018



Table 7. Frequency by County and Year

	2014	2015	2016	2017	2018
Bristol	46	53	59	103	86
Kent	138	124	134	144	161
Newport	76	99	116	136	143
Providence	379	360	388	479	441
Washington	266	268	230	270	280
All	905	904	927	1132	1111

Lyme Disease Rates by County and Year, Rhode Island, 2014-2018



Table 8. Rate by County and Year

	2014	2015	2016	2017	2018
Bristol	93.7	108.0	120.8	211.1	176.8
Kent	83.9	75.4	81.9	88.1	98.3
Newport	91.2	118.8	139.4	163.8	173.3
Providence	59.9	56.9	61.1	75.5	69.3
Washington	210.5	212.1	182.4	213.7	221.9

Lyme Disease Frequency, City and Year, Rhode Island, 2014-2018



Table 9. Frequency by City and Year

	2014	2015	2016	2017	2018
Barrington	13	14	18	26	15
Bristol	22	22	33	53	39
Burrillville	45	43	28	49	53
Central Falls	3	2	8	11	8
Charlestown	26	21	13	17	28
Coventry	43	48	46	46	50
Cranston	27	29	29	31	30
Cumberland	37	33	41	51	34
East Greenwich	23	23	20	19	22
East Providence	20	24	33	31	35
Exeter	22	12	15	14	14
Foster	27	22	25	23	30
Glocester	20	22	19	28	18
Hopkinton	30	27	24	27	34
Jamestown	14	13	15	17	13
Johnston	20	12	13	21	19
Lincoln	23	23	28	31	23

Lyme Disease Frequency, City and Year Continued, Rhode Island, 2014-2018



Table 9. Frequency by City and Year

	2014	2015	2016	2017	2018
Little Compton	10	12	18	20	21
Middletown	7	11	13	22	19
Narragansett	30	21	22	21	25
New Shoreham	2	11	4	3	7
Newport	13	8	10	16	22
North Kingstown	44	53	38	43	55
North Providence	6	11	7	15	13
North Smithfield	25	12	22	23	19
Pawtucket	12	12	19	25	26
Portsmouth	16	15	24	29	24
Providence	44	37	42	59	54
Richmond	10	9	16	12	9
Scituate	37	40	35	34	37
Smithfield	15	20	16	16	13
South Kingstown	60	72	52	78	69

Lyme Disease Frequency, City and Year Continued, Rhode Island, 2014-2018



Table 9. Frequency by City and Year

	2014	2015	2016	2017	2018
Tiverton	16	40	36	32	44
Warren	11	17	8	24	32
Warwick	32	34	47	50	49
West Greenwich	19	9	3	12	14
West Warwick	21	10	18	17	26
Westerly	42	42	46	55	39
Woonsocket	18	18	23	31	29
Total	905	904	927	1132	1111

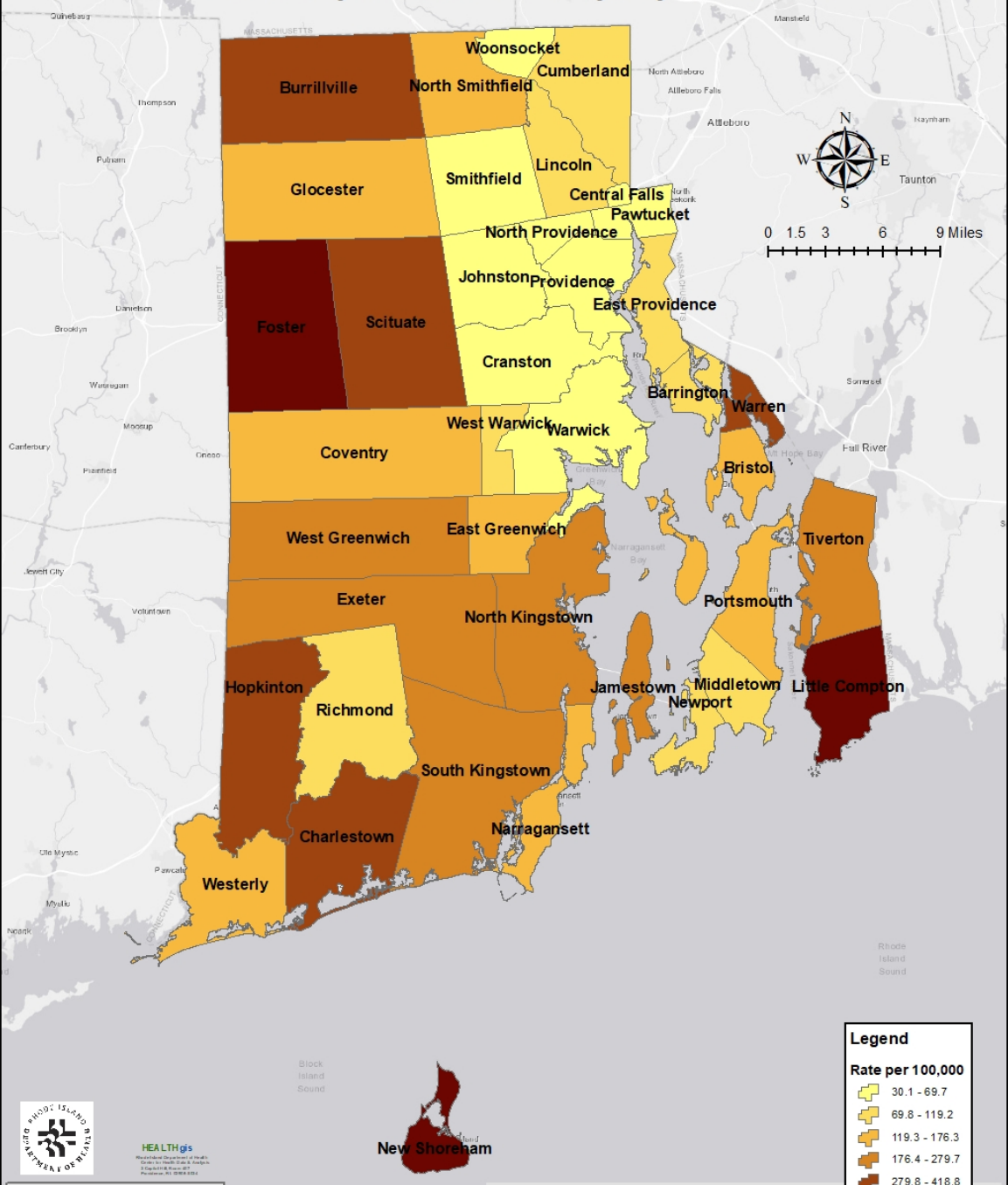
Lyme Disease Frequency, Month and Year, Rhode Island, 2014-2018



Table 9. Frequency by Month and Year

	2014	2015	2016	2017	2018
Jan	19	39	40	48	37
Feb	20	17	41	38	29
Mar	31	19	50	47	47
Apr	32	29	38	80	50
May	66	56	72	114	96
Jun	160	165	136	200	184
Jul	256	223	176	228	267
Aug	122	132	122	144	157
Sep	60	82	65	82	77
Oct	65	41	66	64	68
Nov	39	64	73	47	61
Dec	35	37	48	40	38
All	905	904	927	1132	1111

Rates of Lyme Disease in RI by City/Town, 2018



Legend	
Rate per 100,000	
	30.1 - 69.7
	69.8 - 119.2
	119.3 - 176.3
	176.4 - 279.7
	279.8 - 418.8
	418.9 - 677.0



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Data Sources:
 Rhode Island Geographic Information Systems - RIGIS
 Rhode Island Department of Health





Notes on Data

- Case counts include patients classified as confirmed and 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 population.
- Population denominators are based on the Annual Estimates of the Resident Population: April 1, 2010-July 1, 2018, U.S. Census Bureau.



References

- <https://www.cdc.gov/lyme/stats/index.html>
- <https://www.cdc.gov/lyme/stats/tables.html>
- <https://www.cdc.gov/lyme/index.html>