





Babesiosis Surveillance 2012-2016

Rhode Island Department of Health

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

Center for Acute Infectious Disease Epidemiology



About Babesiosis

- Babesiosis is a tickborne, parasitic disease caused by protozoa. Symptoms range from subclinical to life-threatening and mimic malaria, appearing one to nine weeks after the bite of an infected deer tick.
- Many infected persons have no symptoms, others experience flu-like symptoms such as fever, chills, sweats, headache, body aches, loss of appetite, nausea, or fatigue.
- Ticks that carry babesia are most commonly found and cause disease in the Northeast and upper Midwest states, in wooded or grassy areas, and during warm months when they are in their nymphal life stage.



Data Overview, Babesiosis

- In 2016, there were 158 cases of babesiosis in Rhode Island, with an incidence rate of 15.0 cases per 100,000 people.
- Babesiosis is most commonly reported in older adults, males, and residents of Washington County.
- Babesiosis in Rhode Island peaks in the summer months, with 82% of cases occurring between June and August in 2016.
- Babesiosis became nationally reportable in 2011. With more years of surveillance, an overall trend in disease distribution may become clearer.

Reported Cases of Babesiosis, Rhode Island, 2012-2016

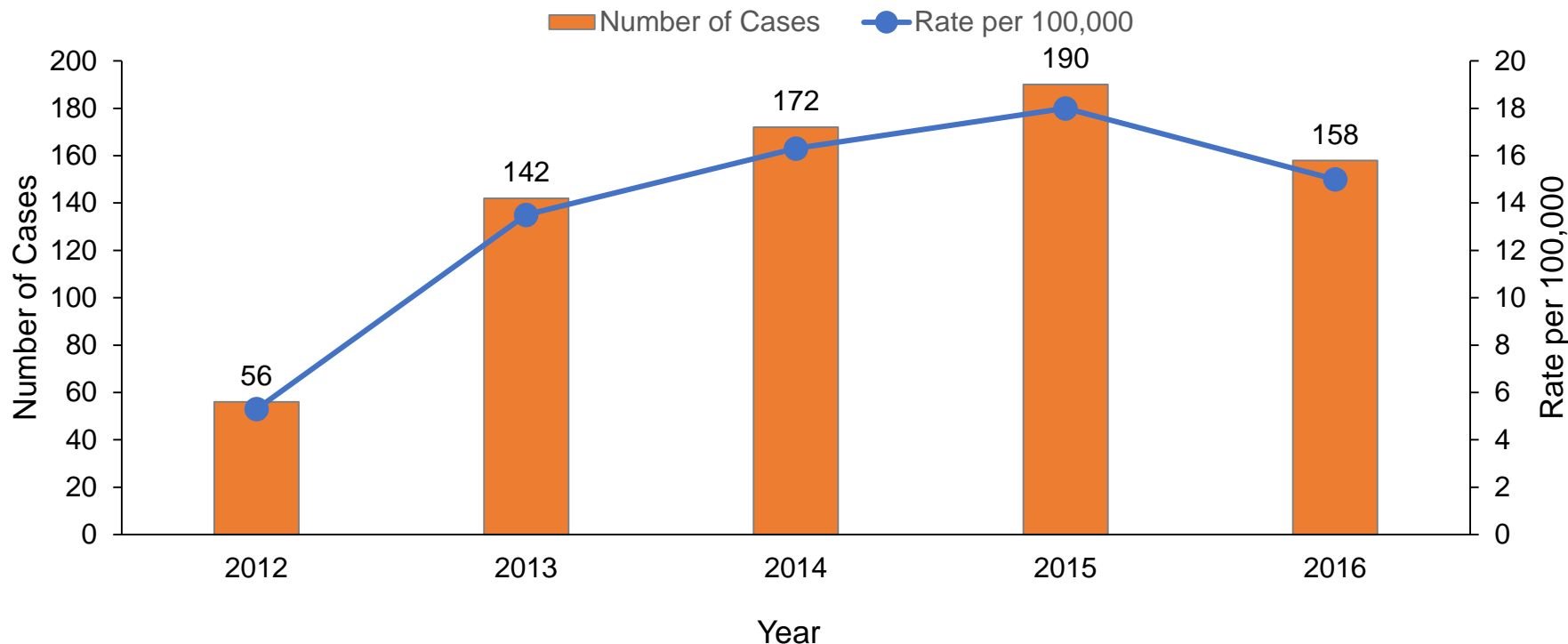


Figure 1: In 2016, there were 158 cases of babesiosis in Rhode Island, with an incidence rate of 15.0 cases per 100,000 people. The increase in Rhode Island's case count in 2013 mirrors the national trend of babesiosis. Babesiosis became nationally reportable in 2011, so it may have taken several years for reporting to become routine for healthcare providers. With more years of surveillance, an overall trend may become clearer.

Rate of Babesiosis, Age Group, Rhode Island, 2016

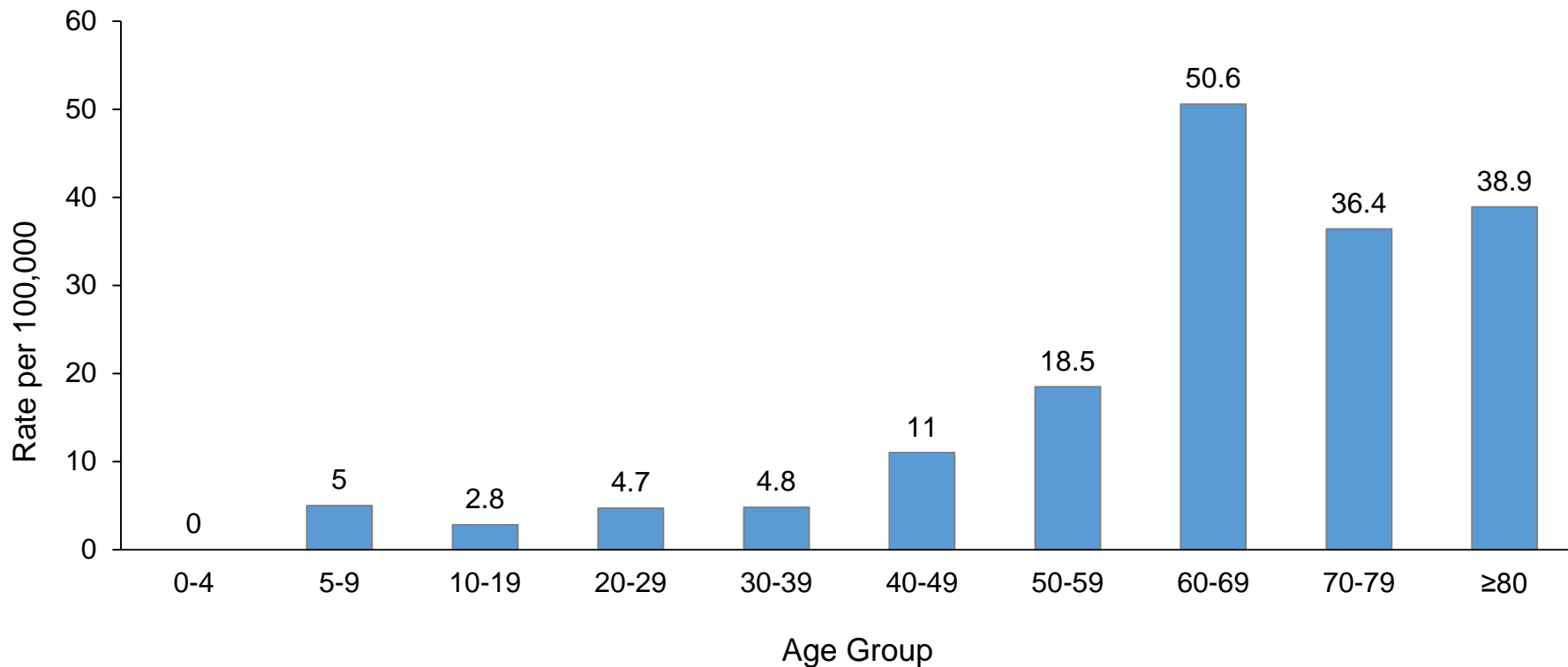


Figure 2: Babesiosis disproportionately affects older adults in Rhode Island. It is a disease that can have severe clinical outcomes for adults who have underlying health conditions, which makes it more likely that those individuals seek medical attention and are tested for babesiosis.

Rate of Babesiosis, Gender and Year, Rhode Island, 2012-2016

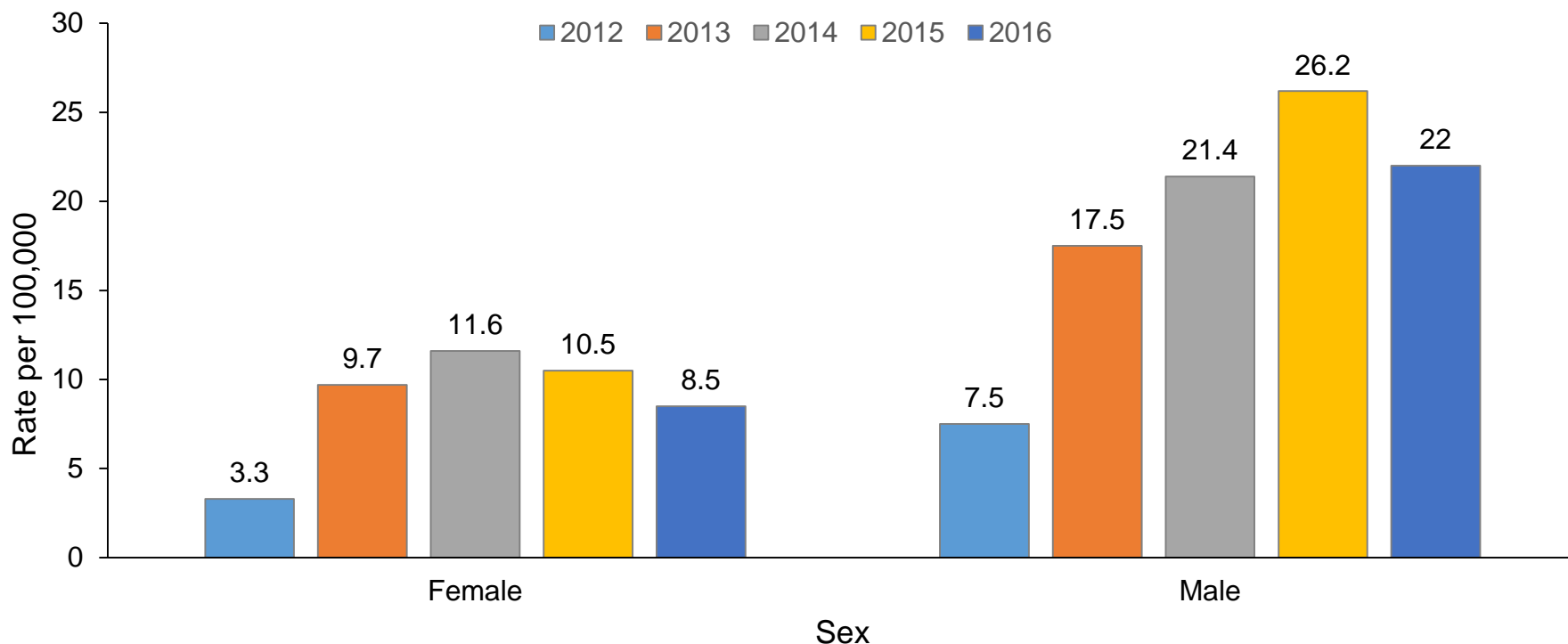


Figure 3: In the last five years, babesiosis occurred at a higher rate among males than females. In 2016, babesiosis was reported in males at more than twice the rate than in females (22.0 cases per 100,000 in males vs 8.5 cases per 100,000 in females).

Rate of Babesiosis, County and Year, Rhode Island, 2012-2016

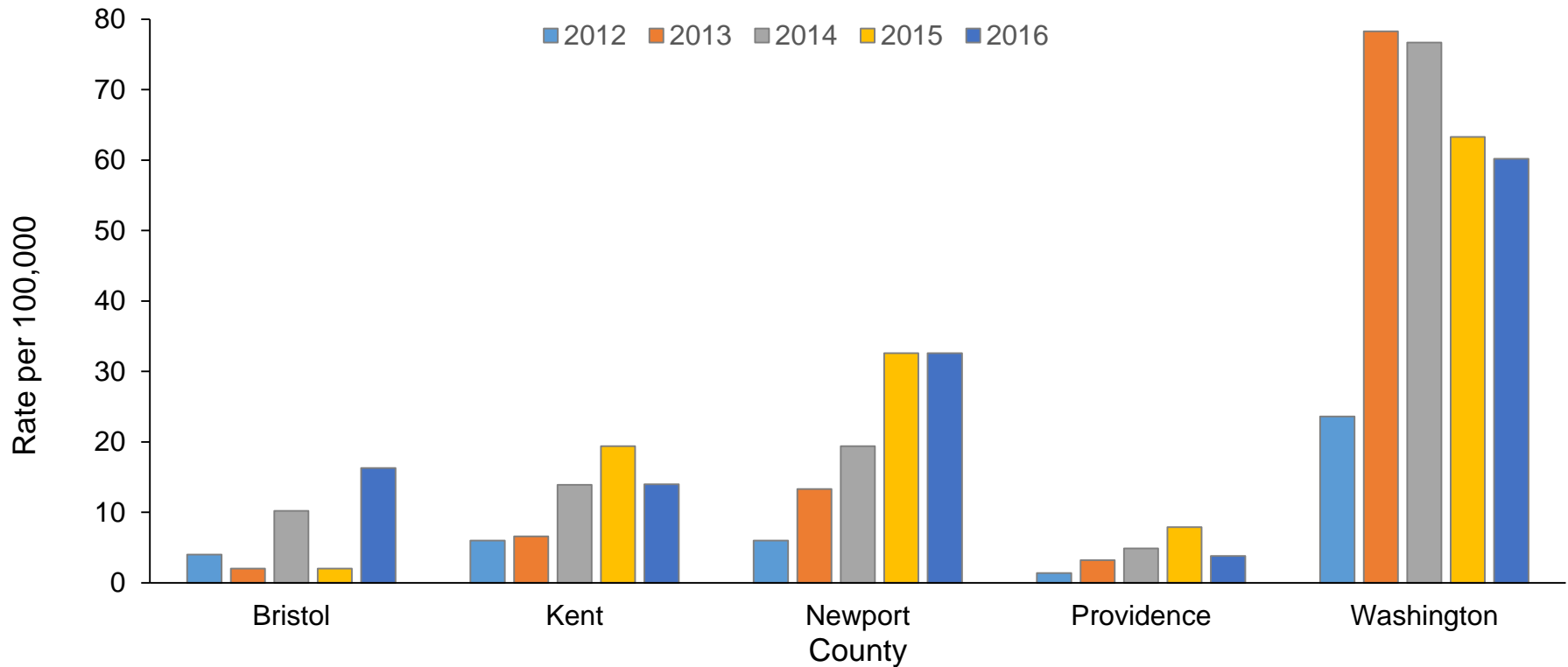


Figure 4: Babesiosis consistently occurs at much higher rates in Washington County than in other Rhode Island counties. In 2016, Washington County had 76 cases of babesiosis, or 60.2 cases per 100,000 people. Much of Washington County is wooded and rural, an ideal habitat for ticks.

Reported Cases of Babesiosis, Month and Year, Rhode Island, 2012-2016

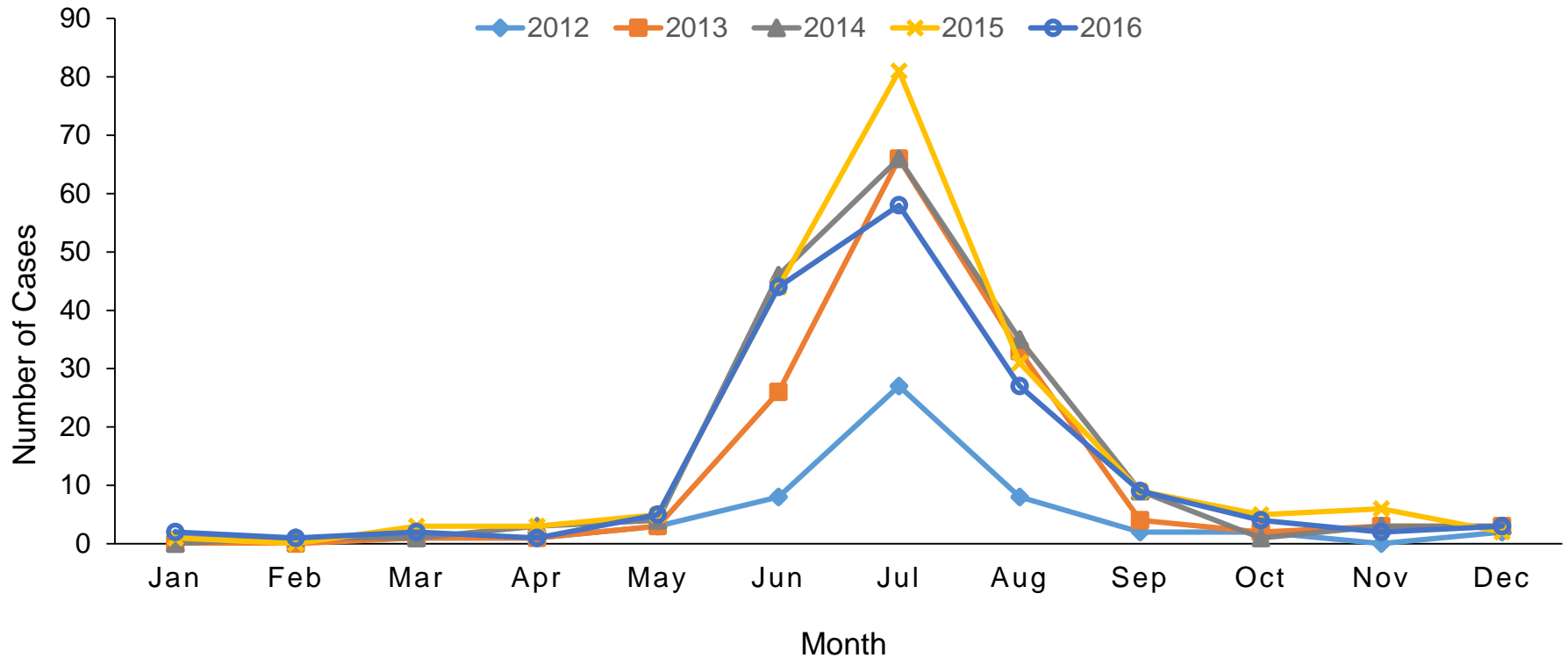


Figure 5: Babesiosis can occur at any point in the year, but peaks between June and August, with the most cases in July. Nationally, cases of babesiosis peak in these months as well. In New England, these are the months when people spend the most time outdoors. In 2016, there were 129 cases of babesiosis between June and August, 82% of Rhode Island’s cases for the entire year.

Babesiosis Frequency and Rates by Year, Rhode Island, 2012-2016



Table 1. Frequency by Year

	2012	2013	2014	2015	2016
Number of Cases	56	142	172	190	158

Table 2. Rate by Year

	2012	2013	2014	2015	2016
Rate per 100,000	5.3	13.5	16.3	18.0	15.0

Babesiosis Frequency, Age Group and Year, Rhode Island, 2012-2016



Table 3. Frequency by Age Group and Year

	2012	2013	2014	2015	2016
0-4	0	0	1	1	0
5-9	0	2	1	1	3
10-19	4	3	10	3	4
20-29	2	3	6	8	7
30-39	2	5	7	5	6
40-49	6	12	12	19	17
50-59	9	35	35	46	28
60-69	13	36	41	45	52
70-79	13	26	32	39	21
≥80	7	20	27	23	20
Total	56	142	172	190	158

Babesiosis Rates, Age Group and Year, Rhode Island, 2012-2016



Table 4. Rate by Age Group and Year

	2012	2013	2014	2015	2016
0-4	0.0	0.0	1.7	1.7	0.0
5-9	0.0	3.3	1.7	1.7	5.0
10-19	2.8	2.1	7.0	2.1	2.8
20-29	1.4	2.0	4.1	5.4	4.7
30-39	1.6	4.0	5.6	4.0	4.8
40-49	3.9	7.8	7.8	12.3	11.0
50-59	5.9	23.1	23.1	30.3	18.5
60-69	12.7	35.0	39.9	43.8	50.6
70-79	22.5	45.0	55.4	67.6	36.4
≥80	13.6	38.9	52.6	44.8	38.9

Babesiosis Frequency and Rates, Sex and Year, Rhode Island, 2012-2016



Table 5. Frequency by Sex and Year

	2012	2013	2014	2015	2016
Female	18	53	63	57	46
Male	38	89	109	133	112
Total	56	142	172	190	158

Table 6. Rate by Sex and Year

	2012	2013	2014	2015	2016
Female	3.3	9.7	11.6	10.5	8.5
Male	7.5	17.5	21.4	26.2	22.0

Babesiosis Frequency, County and Year, Rhode Island, 2012-2016



Table 7. Frequency by County and Year

	2012	2013	2014	2015	2016
Bristol	2	1	5	1	8
Kent	10	11	23	32	23
Newport	5	11	16	27	27
Providence	9	20	31	50	24
Washington	30	99	97	80	76
All	56	142	172	190	158

Babesiosis Rates by County and Year, Rhode Island, 2012-2016



Table 8. Rate by County and Year

	2012	2013	2014	2015	2016
Bristol	4.0	2.0	10.2	2.0	16.3
Kent	6.0	6.7	13.9	19.4	14.0
Newport	6.0	13.3	19.4	32.6	32.6
Providence	1.4	3.2	4.9	7.9	3.8
Washington	23.6	78.3	76.7	63.3	60.2

Babesiosis Frequency, Month and Year, Rhode Island, 2012-2016



Table 9. Frequency by Month and Year

	2012	2013	2014	2015	2016
Jan	1	0	0	1	2
Feb	1	0	1	0	1
Mar	1	1	1	3	2
Apr	1	1	3	3	1
May	3	3	4	5	5
Jun	8	26	46	44	44
Jul	27	66	66	81	58
Aug	8	33	35	31	27
Sep	2	4	9	9	9
Oct	2	2	1	5	4
Nov	0	3	3	6	2
Dec	2	3	3	2	3
All	56	142	172	190	158



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. The population denominator is based on 2010 US Census Population.



References

- <https://www.cdc.gov/parasites/babesiosis/>