





# Babesiosis 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 Babesiosis

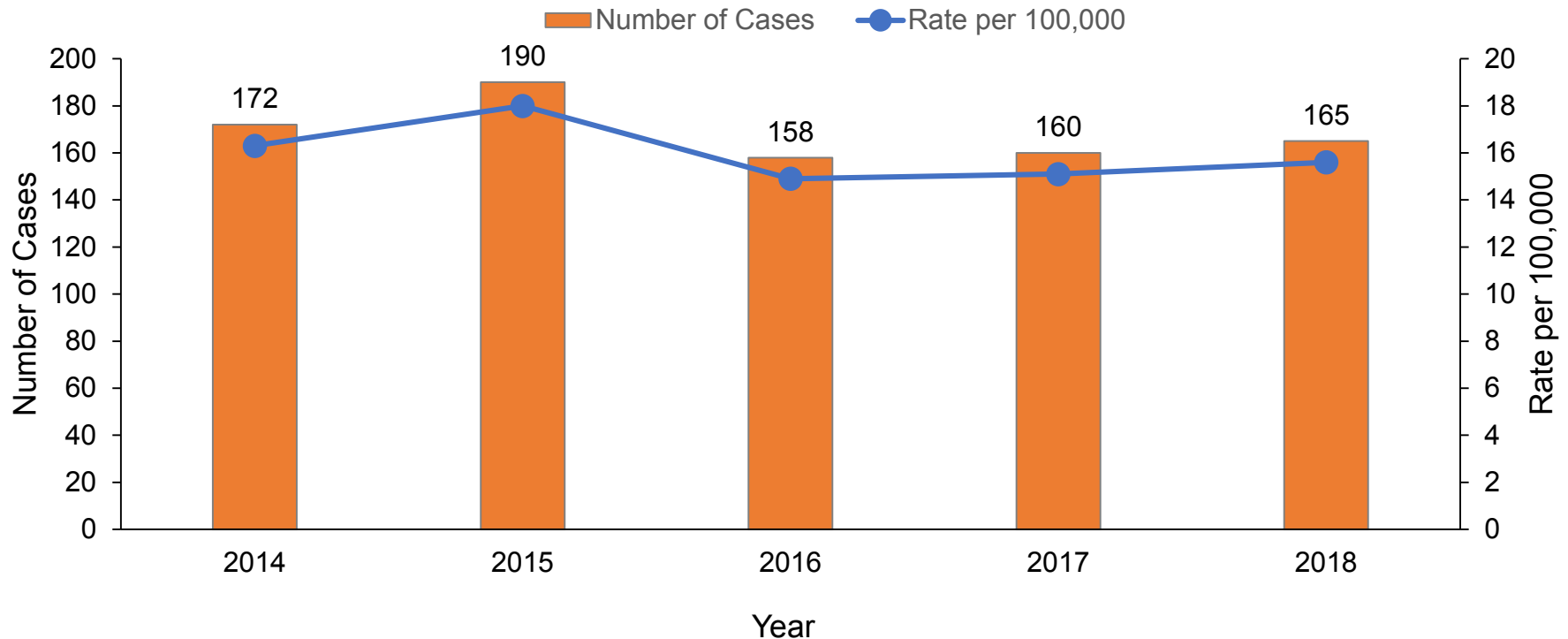
- Babesiosis is a tickborne, parasitic disease caused by protozoa. Symptoms range from subclinical to life-threatening and mimic malaria, appearing one to nine weeks after the bite of an infected deer tick.
- Many infected persons have no symptoms, others experience flu-like symptoms such as fever, chills, 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



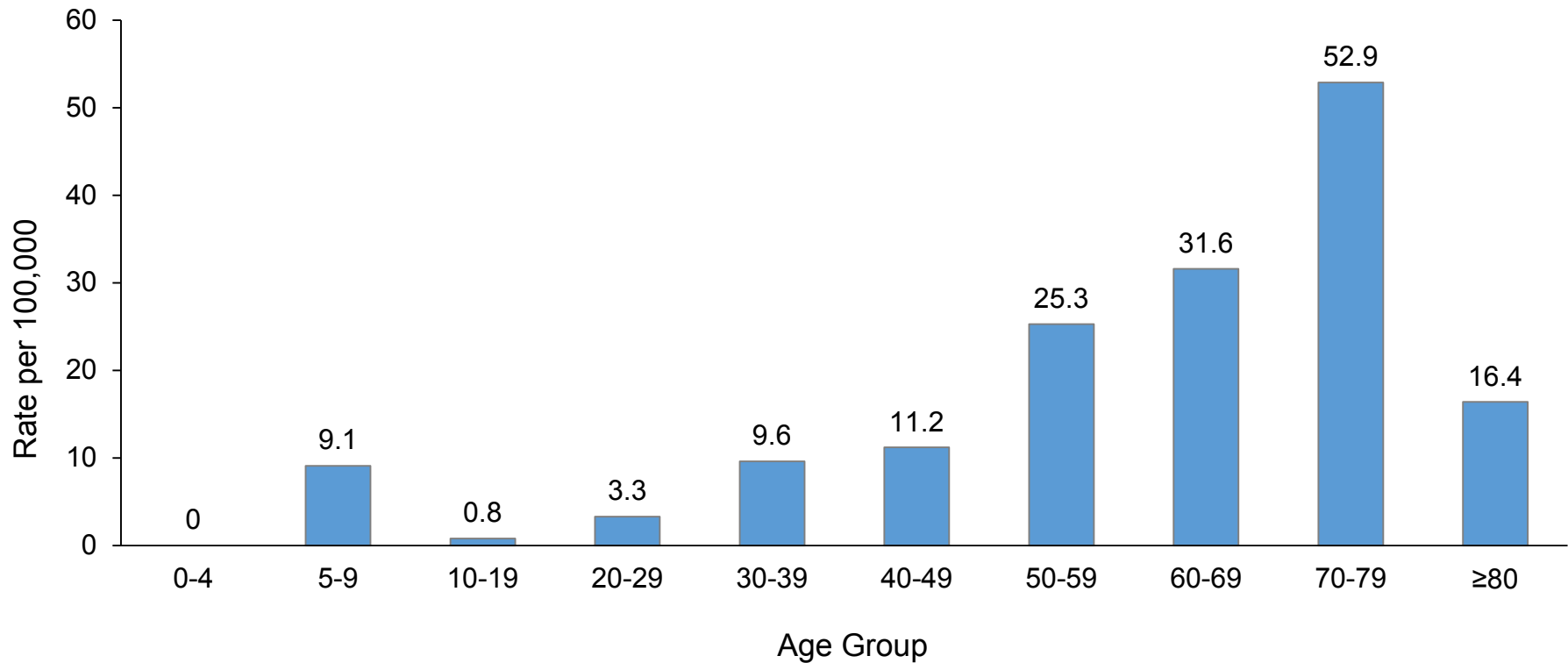
- In 2018, there were 165 cases of babesiosis in Rhode Island, with an incidence rate of 15.6 cases per 100,000 people.
- Babesiosis is most commonly reported in older adults, males, and residents of Washington County.
- Babesiosis in Rhode Island peaks in the summer months, with 82% of cases occurring between June and August in 2018.
- Babesiosis became nationally reportable in 2011. With more years of surveillance, an overall trend in disease distribution may become clearer. However, in recent years case counts have remained fairly consistent.

# Reported Cases of Babesiosis, Rhode Island, 2014-2018



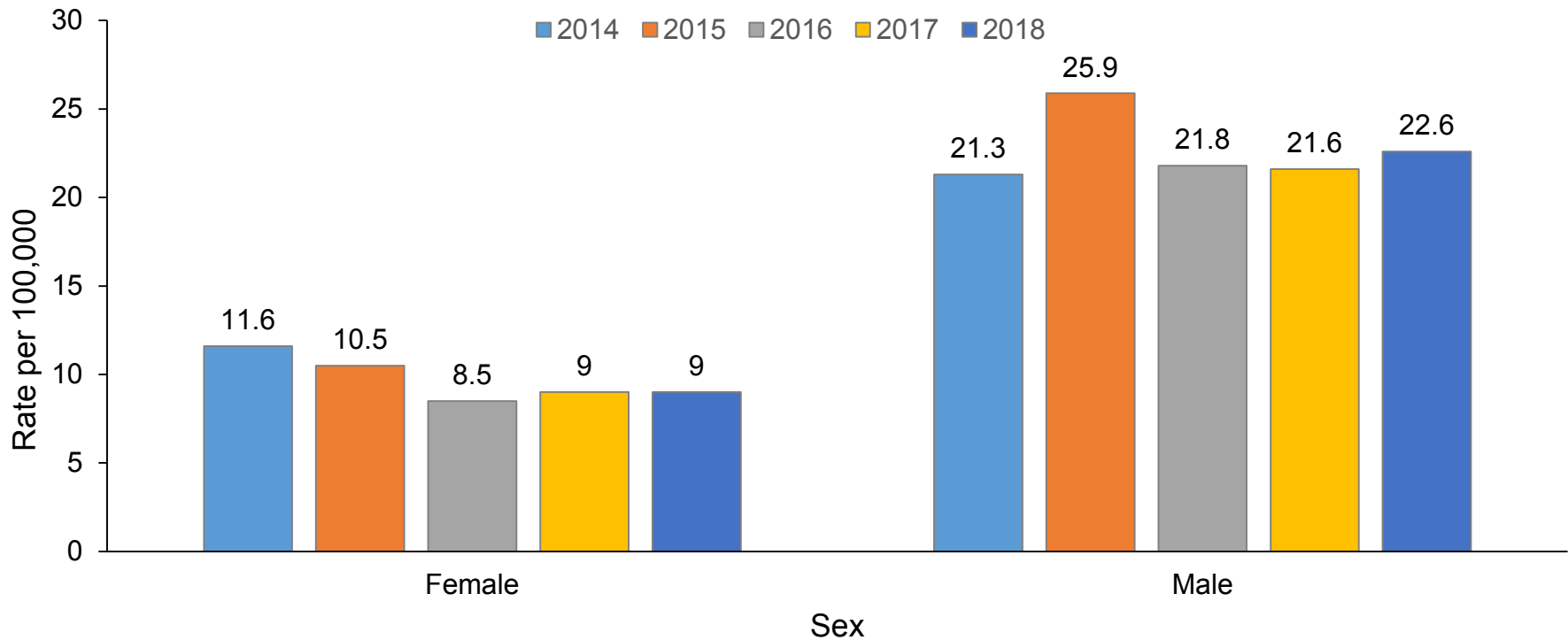
**Figure 1:** In 2018, there were 165 cases of babesiosis in Rhode Island, with an incidence rate of 15.6 cases per 100,000 people. Babesiosis became nationally reportable in 2011, so it may have taken several years for reporting to become routine for healthcare providers. In the past five years, babesiosis case counts have stabilized.

# Rate of Babesiosis, Age Group, Rhode Island, 2018



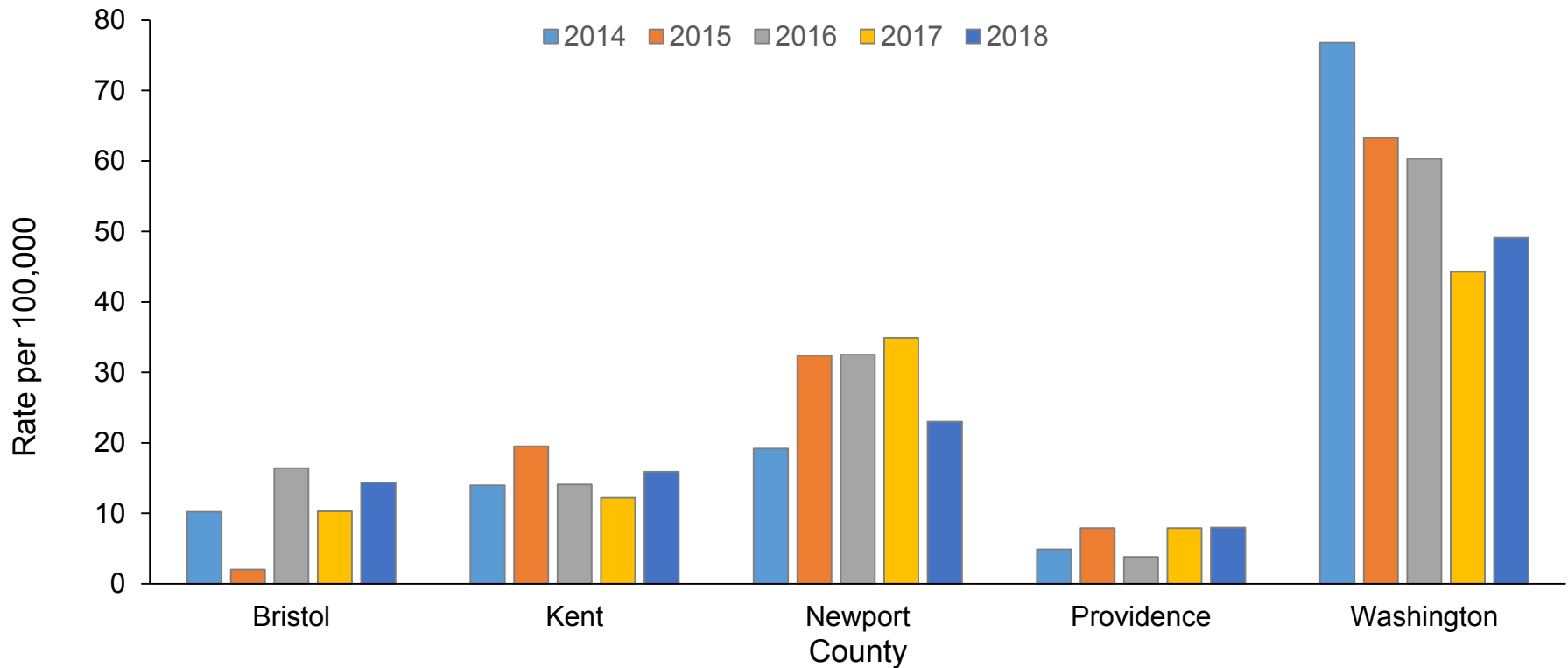
**Figure 2:** Babesiosis disproportionately affects older adults in Rhode Island. It is a disease that can have severe clinical outcomes for adults who have underlying health conditions, which makes it more likely that those individuals seek medical attention and are tested for babesiosis.

# Rate of Babesiosis, Gender and Year, Rhode Island, 2014-2018



**Figure 3:** In the last five years, babesiosis occurred at a higher rate among males than females. In 2018, babesiosis was reported in males at more than twice the rate than in females (22.6 cases per 100,000 in males vs. 9.0 cases per 100,000 in females).

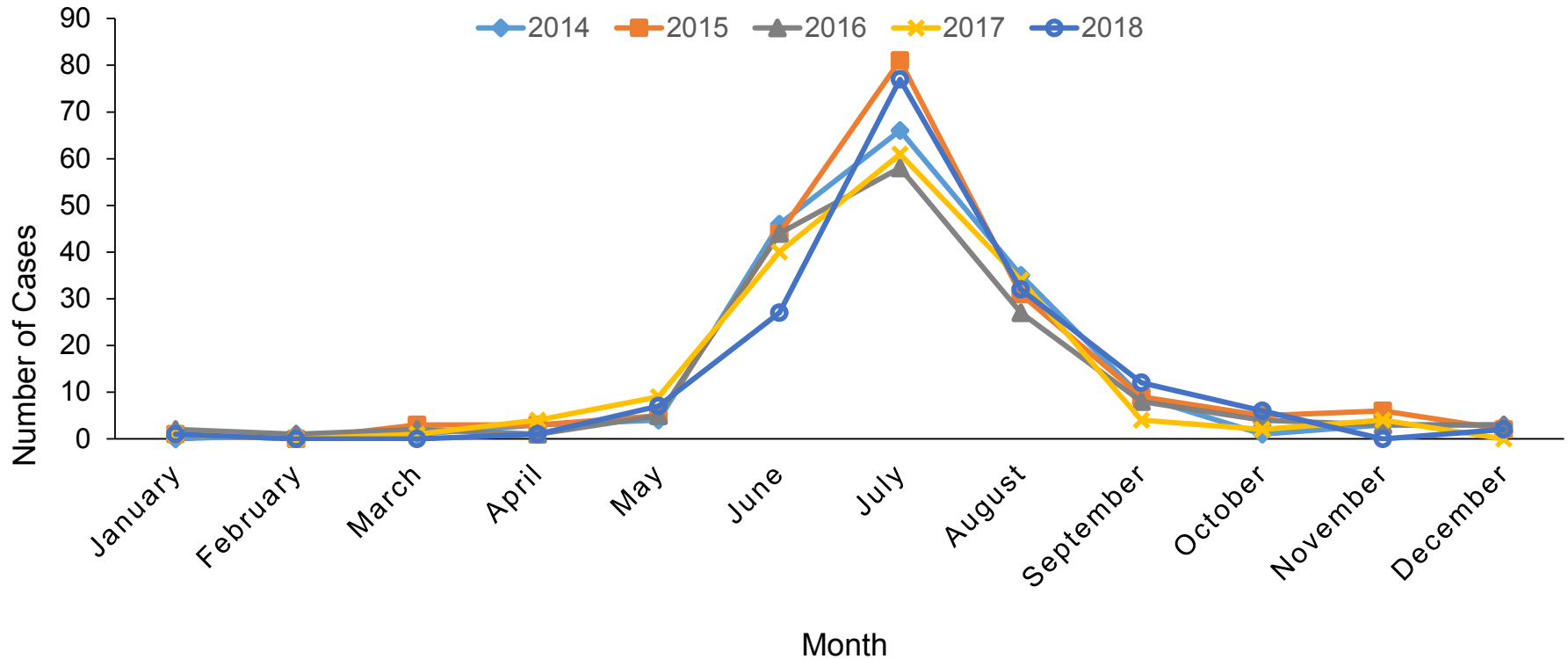
# Rate of Babesiosis, County and Year, Rhode Island, 2014-2018



**Figure 4:** Babesiosis consistently occurs at much higher rates in Washington County than in other Rhode Island counties. In 2018, Washington County had 62 cases of babesiosis, or 49.1 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, 2014-2018



**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 2018, there were 136 cases of babesiosis between June and August, 82% of Rhode Island’s cases for the entire year. Notably, fewer cases occurred in June as compared to previous years.

# Babesiosis Frequency and Rates by Year, Rhode Island, 2014-2018



**Table 1. Frequency by Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Number of Cases</b>	172	190	158	160	165

**Table 2. Rate by Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Rate per 100,000</b>	16.3	18.0	14.9	15.1	15.6

# Babesiosis Frequency, Age Group and Year, Rhode Island, 2014-2018



**Table 3. Frequency by Age Group and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>0-4</b>	1	1	0	0	0
<b>5-9</b>	1	1	3	3	5
<b>10-19</b>	10	3	4	8	1
<b>20-29</b>	6	8	7	4	5
<b>30-39</b>	7	5	6	7	13
<b>40-49</b>	12	19	17	10	14
<b>50-59</b>	35	46	28	37	38
<b>60-69</b>	41	45	52	36	41
<b>70-79</b>	32	39	21	39	40
<b>≥80</b>	27	23	20	16	8
<b>Total</b>	172	190	158	160	165

# Babesiosis Rates, Age Group and Year, Rhode Island, 2014-2018



**Table 4. Rate by Age Group and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>0-4</b>	1.8	1.8	0.0	0.0	0.0
<b>5-9</b>	1.7	1.8	5.4	5.4	9.1
<b>10-19</b>	7.4	2.2	3.0	6.1	0.8
<b>20-29</b>	3.9	5.2	4.5	2.6	3.3
<b>30-39</b>	5.5	3.9	4.6	5.3	9.6
<b>40-49</b>	8.7	14.2	13.1	7.9	11.2
<b>50-59</b>	22.3	29.4	18.1	24.2	25.3
<b>60-69</b>	34.9	37.0	41.4	28.3	31.6
<b>70-79</b>	50.2	59.5	31.1	54.0	52.9
<b>≥80</b>	53.8	46.6	40.8	32.7	16.4

# Babesiosis Frequency and Rates, Sex and Year, Rhode Island, 2014-2018



**Table 5. Frequency by Sex and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Female</b>	63	57	46	49	49
<b>Male</b>	109	133	112	111	116
<b>Total</b>	172	190	158	160	165

**Table 6. Rate by Sex and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Female</b>	11.6	10.5	8.5	9.0	9.0
<b>Male</b>	21.3	25.9	21.8	21.6	22.6

# Babesiosis Frequency, County and Year, Rhode Island, 2014-2018



**Table 7. Frequency by County and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Bristol</b>	5	1	8	5	7
<b>Kent</b>	23	32	23	20	26
<b>Newport</b>	16	27	27	29	19
<b>Providence</b>	31	50	24	50	51
<b>Washington</b>	97	80	76	56	62
<b>All</b>	172	190	158	161	165

# Babesiosis Rates by County and Year, Rhode Island, 2014-2018



**Table 8. Rate by County and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Bristol</b>	10.2	2.0	16.4	10.3	14.4
<b>Kent</b>	14.0	19.5	14.1	12.2	15.9
<b>Newport</b>	19.2	32.4	32.5	34.9	23.0
<b>Providence</b>	4.9	7.9	3.8	7.9	8.0
<b>Washington</b>	76.8	63.3	60.3	44.3	49.1

# Babesiosis Frequency, Month and Year, Rhode Island, 2014-2018



**Table 9. Frequency by Month and Year**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Jan</b>	0	1	2	1	1
<b>Feb</b>	1	0	1	0	0
<b>Mar</b>	1	3	2	1	0
<b>Apr</b>	3	3	1	4	1
<b>May</b>	4	5	5	9	7
<b>Jun</b>	46	44	44	40	27
<b>Jul</b>	66	81	58	61	77
<b>Aug</b>	35	31	27	34	32
<b>Sep</b>	9	9	8	4	12
<b>Oct</b>	1	5	4	2	6
<b>Nov</b>	3	6	3	4	0
<b>Dec</b>	3	2	3	0	2
<b>All</b>	172	190	158	160	165





# 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 2018 Population Estimates data from the US Census.



# References

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