



Babesiosis Surveillance 2010-2014

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Summary: Babesiosis in RI, 2010-2014



- Babesiosis is a tickborne, parasitic disease caused by protozoa. Symptoms range from subclinical to lifethreatening and mimic malaria, appearing one to nine weeks after the bite of an infected deer tick.
- Babesiosis became nationally reportable in 2011. With more years of surveillance, an overall trend in disease distribution may become clearer.
- In 2014, there were 172 cases of babesiosis in Rhode Island, with an incidence rate of 16.3 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 85% of cases occurring between June and August.

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



Figure 1: In 2014, there were 172 cases of babesiosis in Rhode Island, with an incidence rate of 16.3 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.

Figure 2: Rate of Babesiosis by Age Group, RI, 2014





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.

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





Figure 3: In the last five years, babesiosis occurred at a higher rate among males than females, particularly in 2013 and 2014. In 2014, babesiosis was reported in males at nearly twice the rate than in females (21.4 cases per 100,000 in males; 11.6 cases per 100,000 in females).

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





Figure 4: Babesiosis consistently occurs at much higher rates in Washington County than in other Rhode Island counties. In 2014, Washington County had 97 cases of babesiosis, or 76.4 cases per 100,000 people. Much of Washington County is wooded and rural, an ideal habitat for ticks.

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





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 2014, there were 147 cases of babesiosis between June and August, 85% of Rhode Island's cases for the entire year.

Babesiosis Frequency and Rates by Year, RI, 2010-2014



Table 1. Frequency by Year							
2010 2011 2012 2013 2014							
Number of Cases	76	73	56	142	172		

Table 2. Rate by Year							
2010 2011 2012 2013 2014							
Rate per 100,000	7.2	6.9	5.3	13.5	16.3		

Babesiosis Frequency by Age Group and Year, RI, 2010-2014



Table 3. Frequency by Age Group and Year							
	2010	2011	2012	2013	2014		
0-4	0	<5	0	0	<5		
5-9	<5	<5	0	<5	<5		
10-19	<5	<5	<5	<5	10		
20-29	<5	<5	<5	<5	6		
30-39	5	<5	<5	5	7		
40-49	<5	16	6	12	12		
50-59	19	11	9	35	35		
60-69	25	16	13	36	41		
70-79	7	11	13	26	32		
≥80	10	11	7	20	27		
Total	76	73	56	142	172		

Babesiosis Rates by Age Group and Year, RI, 2010-2014



Table 4. Rate by Age Group and Year							
	2010	2011	2012	2013	2014		
0-4	0	1.7	0	0	1.7		
5-9	1.7	3.3	0	3.3	1.7		
10-19	2.8	0.7	2.8	2.1	7		
20-29	2	1.4	1.4	2	4.1		
30-39	4	1.6	1.6	4	5.6		
40-49	1.3	10.4	3.9	7.8	7.8		
50-59	12.5	7.3	5.9	23.1	23.1		
60-69	24.3	15.6	12.7	35	39.9		
70-79	12.1	19.1	22.5	45	55.4		
≥80	19.5	21.4	13.6	38.9	52.6		

Babesiosis Frequency and Rates by Sex and Year, RI, 2010-2014



Table 5. Frequency by Sex and Year									
	2010 2011 2012 2013 2014								
Female	27	25	18	53	63				
Male	46	39	38	89	109				
Unknown	<5	9	0	0	0				
Total	76	73	56	142	172				

Table 6. Rate by Sex and Year							
2010 2011 2012 2013 2014							
Female	5	4.6	3.3	9.7	11.6		
Male 9.1 7.7 7.5 17.5 21.4							

Babesiosis Frequency By County and Year, RI, 2010-2014



Table 7. Frequency by County and Year							
	2010	2011	2012	2013	2014		
Bristol	<5	0	<5	<5	5		
Kent	12	<5	10	11	23		
Newport	<5	<5	5	11	16		
Providence	13	17	9	20	31		
Washington	44	49	30	99	97		
Unknown	<5	0	0	0	0		
All	76	73	56	142	172		

Babesiosis Rates by County and Year, RI, 2010-2014



Table 8. Rate by County and Year									
	2010 2011 2012 2013 2014								
Bristol	4	0	4	2	10				
Kent	7.2	2.4	6	6.6	13.8				
Newport	4.8	3.6	6	13.3	19.3				
Providence 2.1 2.7 1.4 3.2									
Washington	34.7	38.6	23.6	78	76.4				

Babesiosis Frequency by Month and Year, RI, 2010-2014



Table 9. Frequency by Month and Year							
	2010	2011	2012	2013	2014		
Jan	<5	0	<5	0	0		
Feb	<5	0	<5	0	<5		
Mar	<5	0	<5	<5	<5		
Apr	<5	0	<5	<5	<5		
Мау	<5	<5	<5	<5	<5		
Jun	20	21	8	26	46		
Jul	25	28	27	66	66		
Aug	11	9	8	33	35		
Sep	5	<5	<5	<5	9		
Oct	<5	6	<5	<5	<5		
Νον	<5	<5	0	<5	<5		
Dec	<5	0	<5	<5	<5		
All	76	73	56	142	172		

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