





Invasive Group A Streptococcus Surveillance 2013-2017

Rhode Island Department of Health

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

Center for Acute Infectious Disease Epidemiology

About Invasive Group A Streptococcus



- Invasive Group A Streptococcus (GAS) includes infections in normally sterile sites such as blood, cerebrospinal fluid, or pleural fluid.
- Invasive GAS may manifest in several ways:
 - Pneumonia
 - Bacteremia
 - Necrotizing fasciitis
- These bacteria are spread through direct contact with an infected individual's nose or throat discharges or through contact with infected skin lesions.
- Infants and elderly persons have the highest incidence of invasive GAS infections.



Data Overview, Invasive Group A Streptococcus

- In 2017, there were 39 cases of invasive Group A Streptococcal disease in Rhode Island.
- The incidence rate was 3.7 cases per 100,000 people.
- Case counts and rates of disease have remained fairly constant from 2014-2017.

Reported Cases of Invasive Group A Streptococcus, Rhode Island, 2013-2017

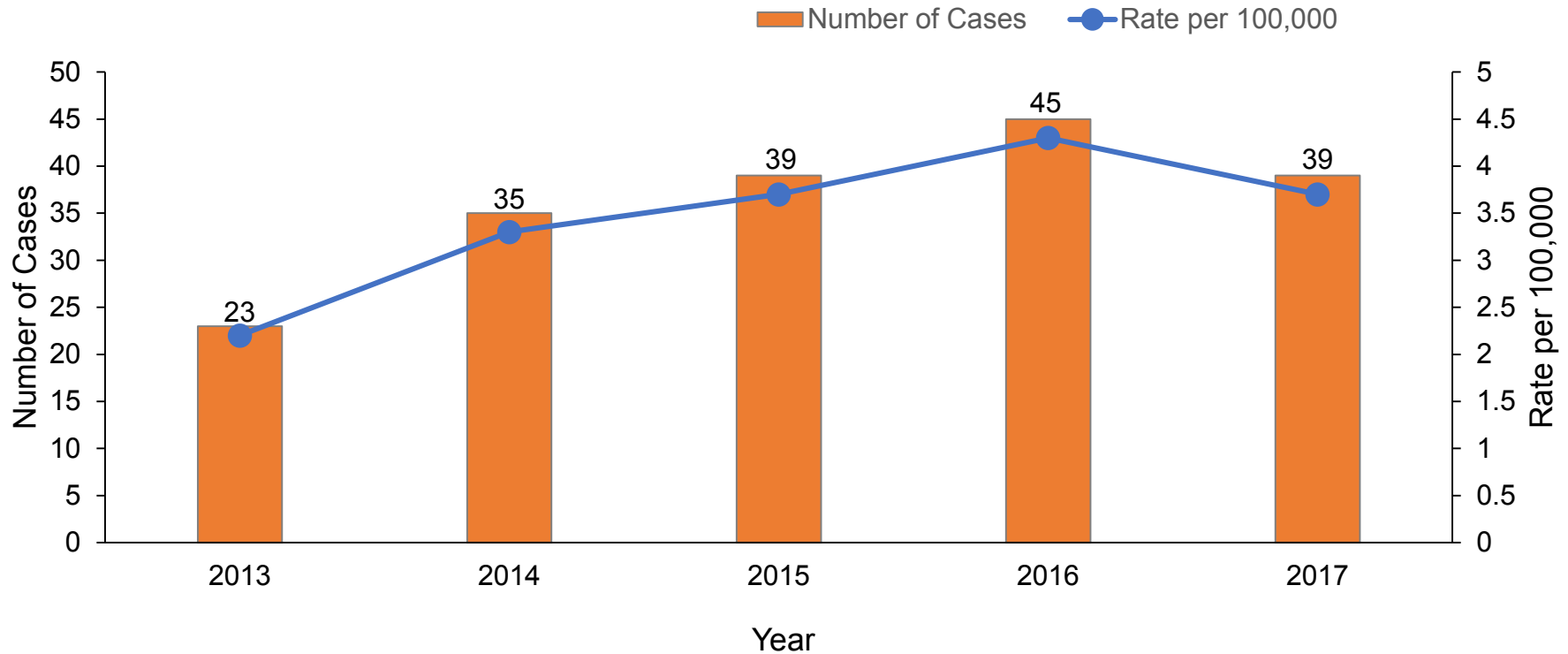


Figure 1: In 2017, there were 39 cases of invasive Group A Streptococcal disease in Rhode Island, with a rate of 3.7 cases per 100,000 population. This represents a small decrease in cases from the previous year, but over the past four years rates have remained fairly constant.

Rate of Invasive Group A Streptococcus, Age Group, Rhode Island, 2017

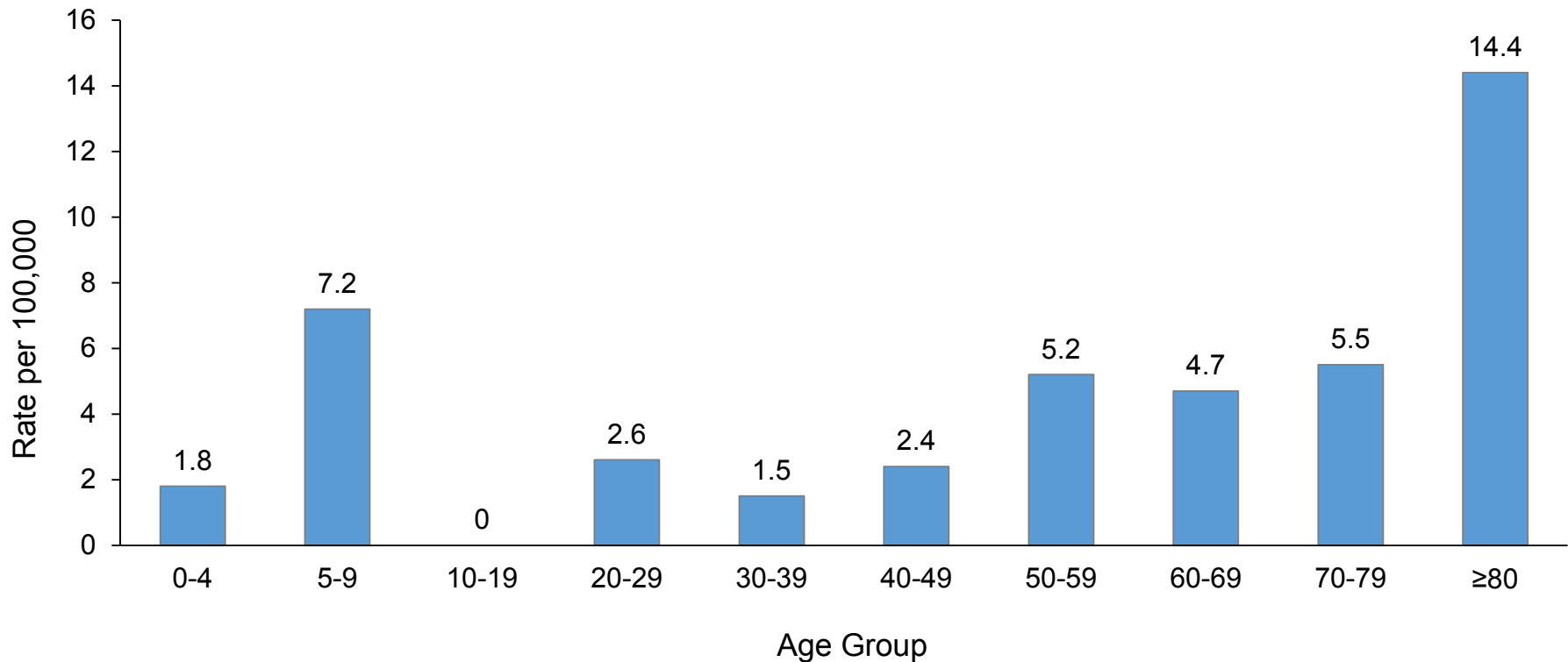


Figure 2: Invasive Group A Streptococcal disease disproportionately affects the elderly population as noted by the elevated rates for those 60 and older. In 2017, elderly persons aged 80 and older had the highest rate of invasive Group A Streptococcal infections with 14.4 cases per 100,000 population. Those 80 and over have the highest five-year average rate at 12.6 cases per 100,000 people.

Rate of Invasive Group A Streptococcus, Gender and Year, Rhode Island, 2013-2017

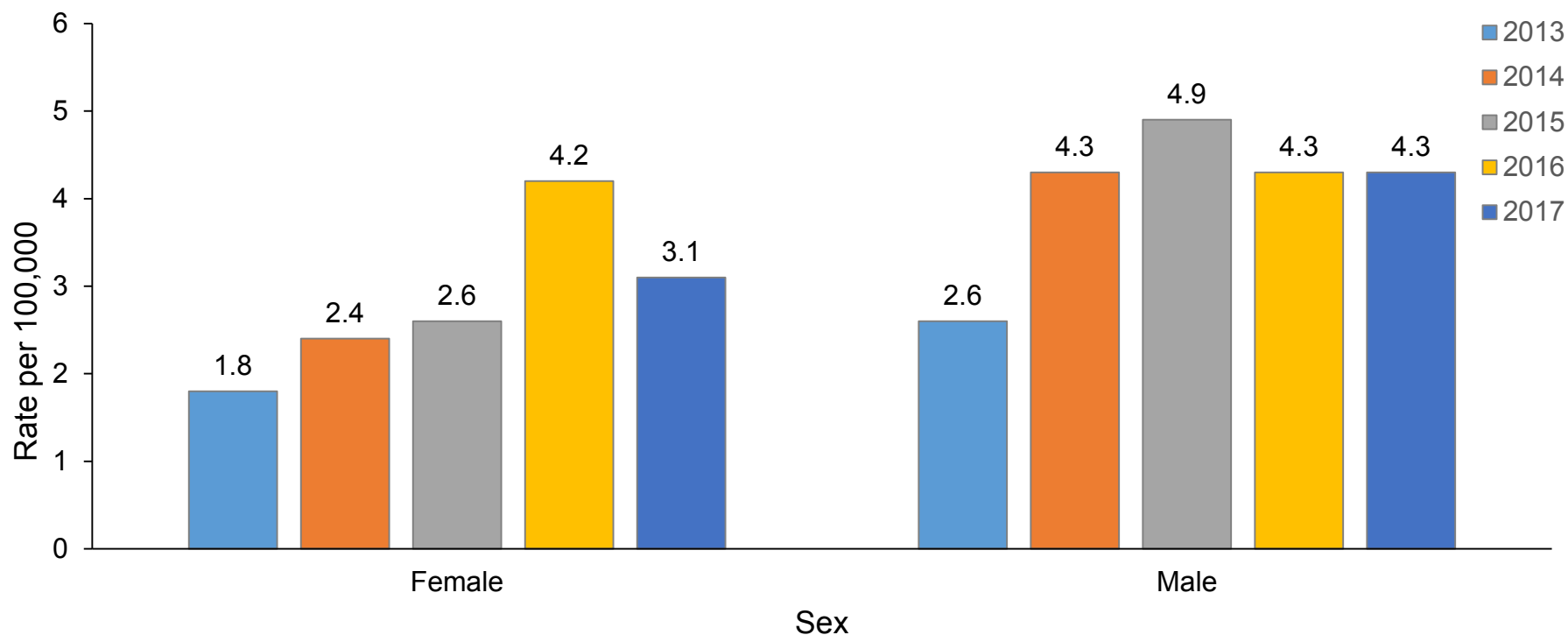


Figure 3: In Rhode Island, males generally have higher rates of invasive Group A Streptococcal disease than females. In 2017, there were 4.3 cases per 100,000 males as compared to 3.1 cases per 100,000 females.

Rate of Invasive Group A Streptococcus, County and Year, Rhode Island, 2013-2017

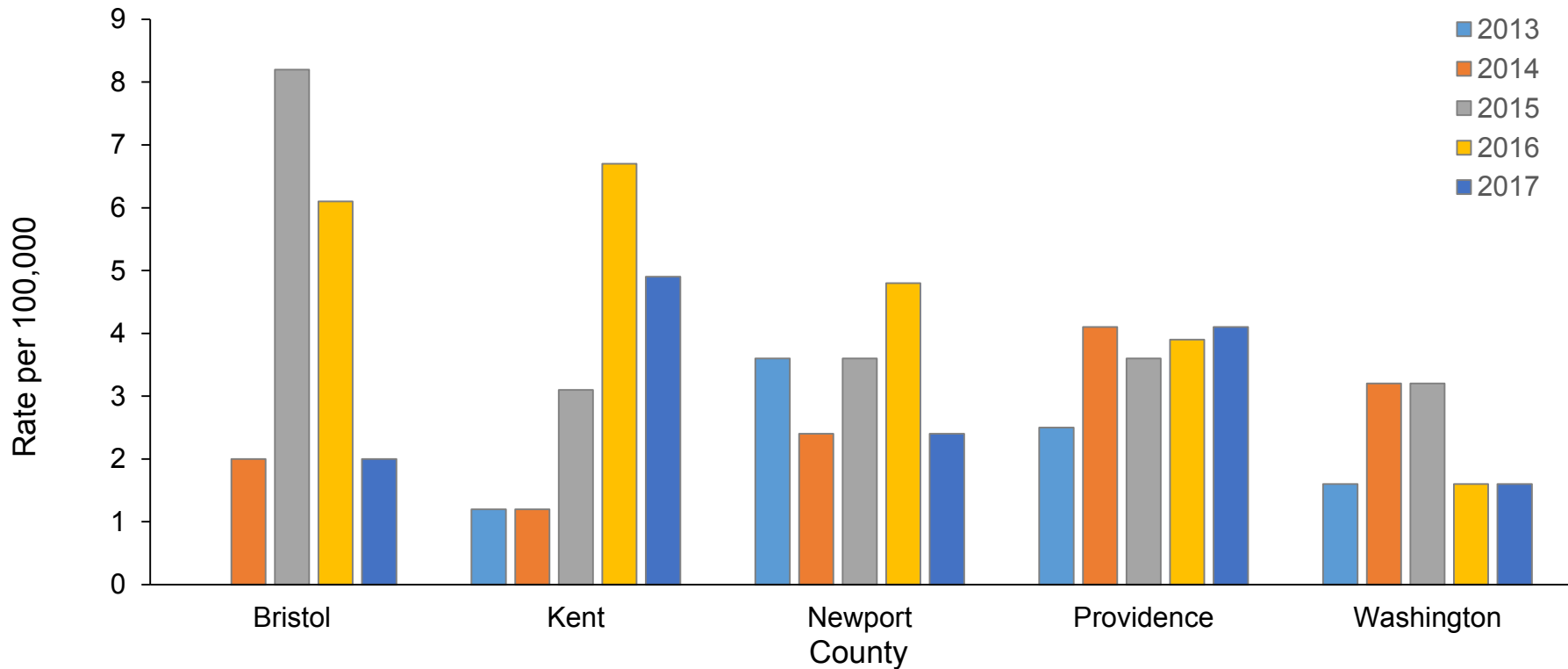


Figure 4: In 2017, Kent County had the highest rate of invasive Group A Streptococcus cases (4.9 cases per 100,000 people). Due to small case numbers, rates in counties fluctuate over time. The five-year average (2013-2017) rate was highest in Bristol County (3.7 cases per 100,000 people) and lowest in Washington County (2.2 cases per 100,000 people).

Reported Cases of Invasive Group A Streptococcus, Month and Year, Rhode Island, 2013-2017

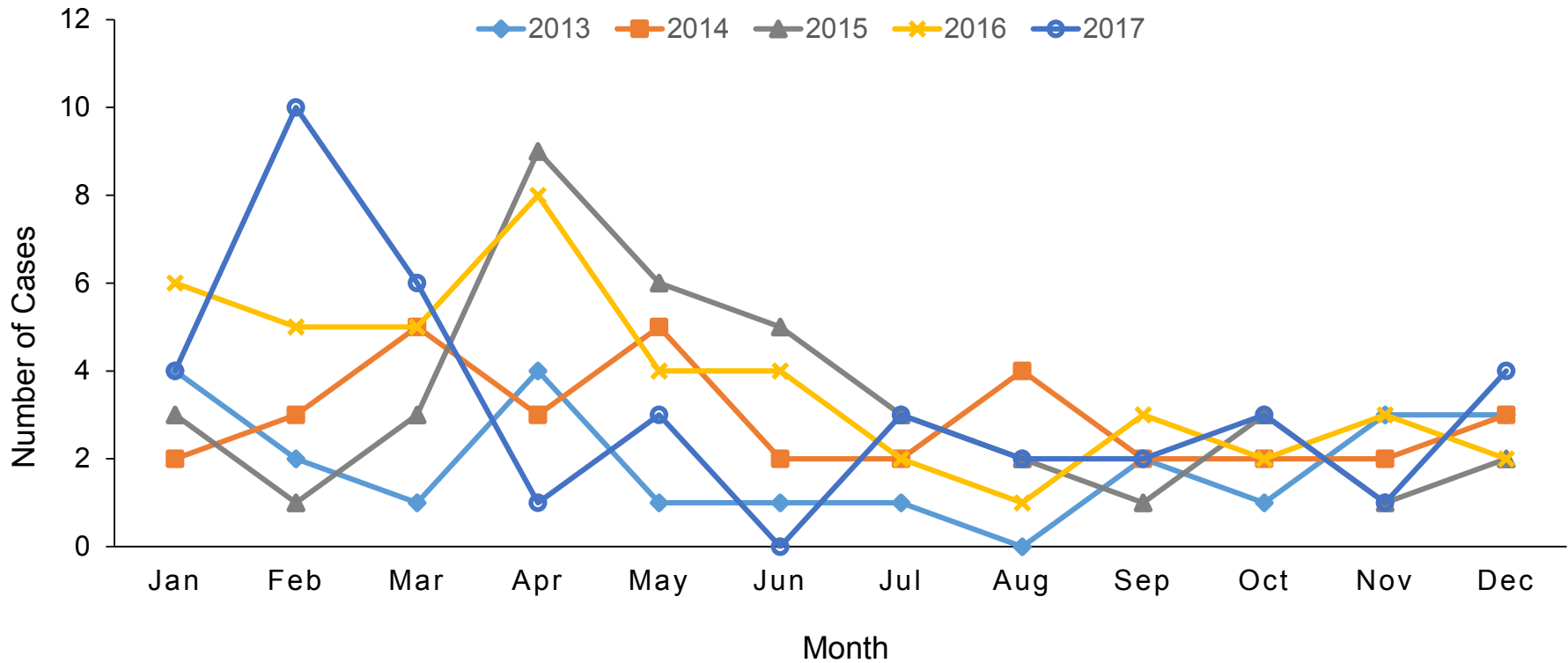


Figure 5: Invasive Group A Streptococcal disease occurs year-round in Rhode Island, with no clear trend in seasonality. The February 2017 spike in cases was investigated, but no cause or relationship among cases could be determined.

Invasive Group A Streptococcus Frequency and Rates by Year, Rhode Island, 2013-2017



Table 1. Frequency by Year

	2013	2014	2015	2016	2017
Number of Cases	23	35	39	45	39

Table 2. Rate by Year

	2013	2014	2015	2016	2017
Rate per 100,000	2.2	3.3	3.7	4.3	3.7

Invasive Group A Streptococcus Frequency, Age Group and Year, Rhode Island, 2013-2017



Table 3. Frequency by Age Group and Year

	2013	2014	2015	2016	2017
0-4	1	1	2	4	1
5-9	0	3	1	0	4
10-19	0	1	1	2	0
20-29	2	3	6	3	4
30-39	1	1	1	8	2
40-49	4	2	4	7	3
50-59	4	9	6	3	8
60-69	3	5	7	7	6
70-79	4	3	6	3	4
≥80	4	7	5	8	7
Total	23	35	39	45	39

Invasive Group A Streptococcus Rates, Age Group and Year, Rhode Island, 2013-2017



Table 4. Rate by Age Group and Year

	2013	2014	2015	2016	2017
0-4	1.8	1.8	3.7	7.3	1.8
5-9	0.0	5.2	1.8	0.0	7.2
10-19	0.0	0.7	0.8	1.5	0.0
20-29	1.3	2.0	3.9	1.9	2.6
30-39	0.8	0.8	0.8	6.1	1.5
40-49	2.8	1.5	3.0	5.4	2.4
50-59	2.6	5.7	3.8	1.9	5.2
60-69	2.6	4.3	5.8	5.6	4.7
70-79	6.5	4.7	9.2	4.4	5.5
≥80	7.9	14.0	10.1	16.4	14.4

Invasive Group A Streptococcus Frequency and Rates, Gender and Year, Rhode Island, 2013-2017



Table 5. Frequency by Sex and Year

	2013	2014	2015	2016	2017
Female	10	13	14	23	17
Male	13	22	25	22	22
Total	23	35	39	45	39

Table 6. Rate by Sex and Year

	2013	2014	2015	2016	2017
Female	1.8	2.4	2.6	4.2	3.1
Male	2.6	4.3	4.9	4.3	4.3

Invasive Group A Streptococcus Frequency, County and Year, Rhode Island, 2013-2017



Table 7. Frequency by County and Year

	2013	2014	2015	2016	2017
Bristol	0	1	4	3	1
Kent	2	2	5	11	8
Newport	3	2	3	4	2
Providence	16	26	23	25	26
Washington	2	4	4	2	2
All	23	35	39	45	39

Invasive Group A Streptococcus Rates by County and Year, Rhode Island, 2013-2017



Table 8. Rate by County and Year

	2013	2014	2015	2016	2017
Bristol	0.0	2.0	8.2	6.1	2.0
Kent	1.2	1.2	3.1	6.7	4.9
Newport	3.6	2.4	3.6	4.8	2.4
Providence	2.5	4.1	3.6	3.9	4.1
Washington	1.6	3.2	3.2	1.6	1.6

Invasive Group A Streptococcus Frequency, Month and Year, Rhode Island, 2013-2017



Table 9. Frequency by Month and Year

	2013	2014	2015	2016	2017
Jan	4	2	3	6	4
Feb	2	3	1	5	10
Mar	1	5	3	5	6
Apr	4	3	9	8	1
May	1	5	6	4	3
Jun	1	2	5	4	0
Jul	1	2	3	2	3
Aug	0	4	2	1	2
Sep	2	2	1	3	2
Oct	1	2	3	2	3
Nov	3	2	1	3	1
Dec	3	3	2	2	4
All	23	35	39	45	39



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, 2017, U.S. Census Bureau.