RHODE ISLAND HEALTH

DEPARTMENT OF HEALTH

Invasive Group A Streptococcus Surveillance 2014-2018

Rhode Island Department of Health

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

Center for Acute Infectious Disease Epidemiology
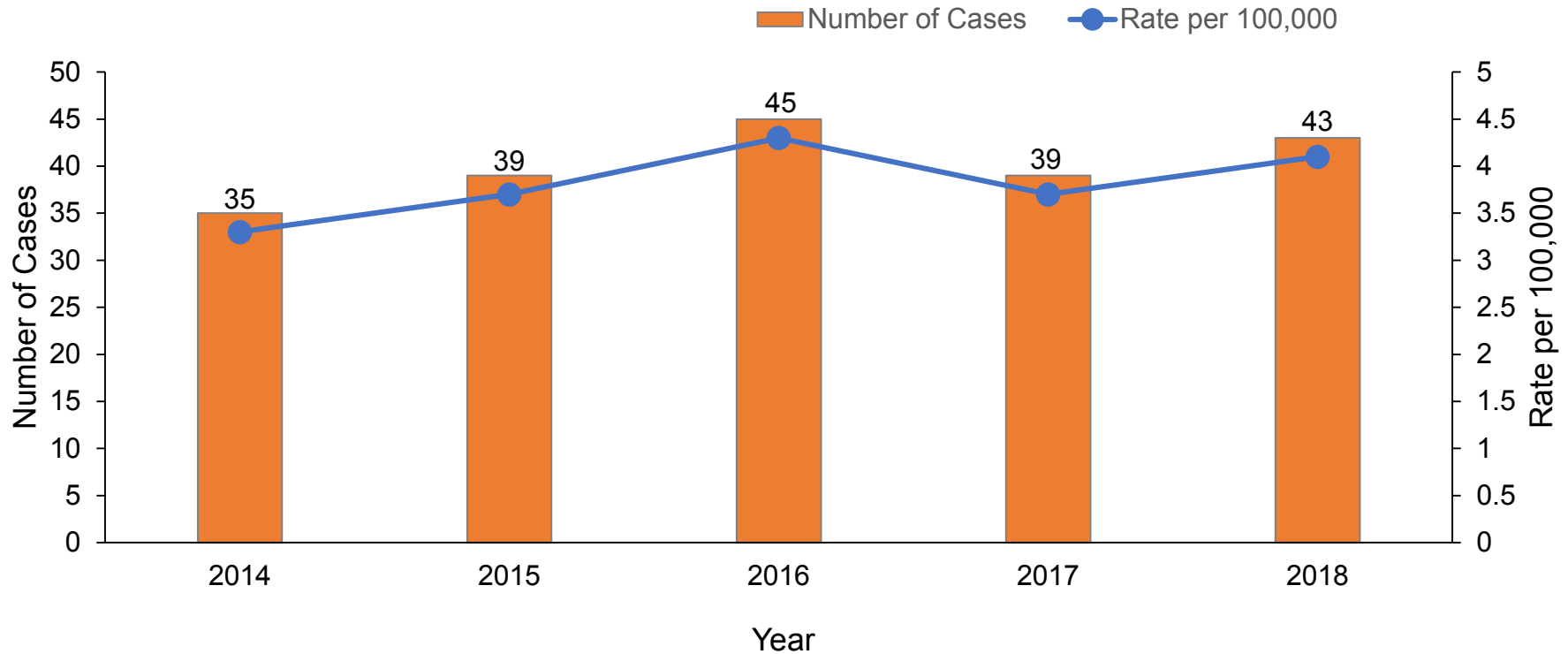
About Invasive Group A Streptococcus

- 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 2018, there were 43 cases of invasive Group A Streptococcal disease in Rhode Island.

- The incidence rate was 4.1 cases per 100,000 people.

- Case counts and rates of disease have remained fairly constant from 2014-2018.
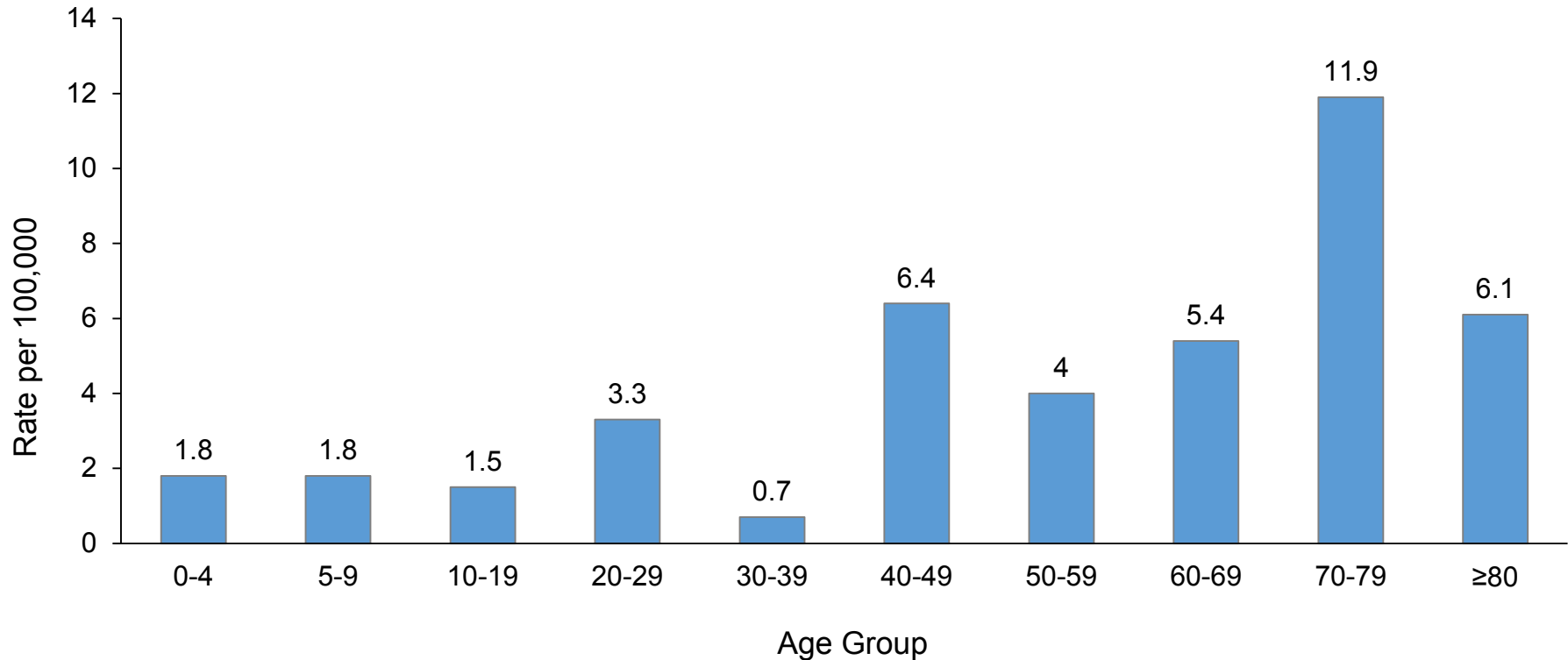
Reported Cases of Invasive Group A Streptococcus, Rhode Island, 2014-2018

Figure 1: In 2018, there were 43 cases of invasive Group A Streptococcal disease in Rhode Island, with a rate of 4.1 cases per 100,000 population. This represents a small increase in cases from the previous year, but over the past four years rates have remained fairly constant.
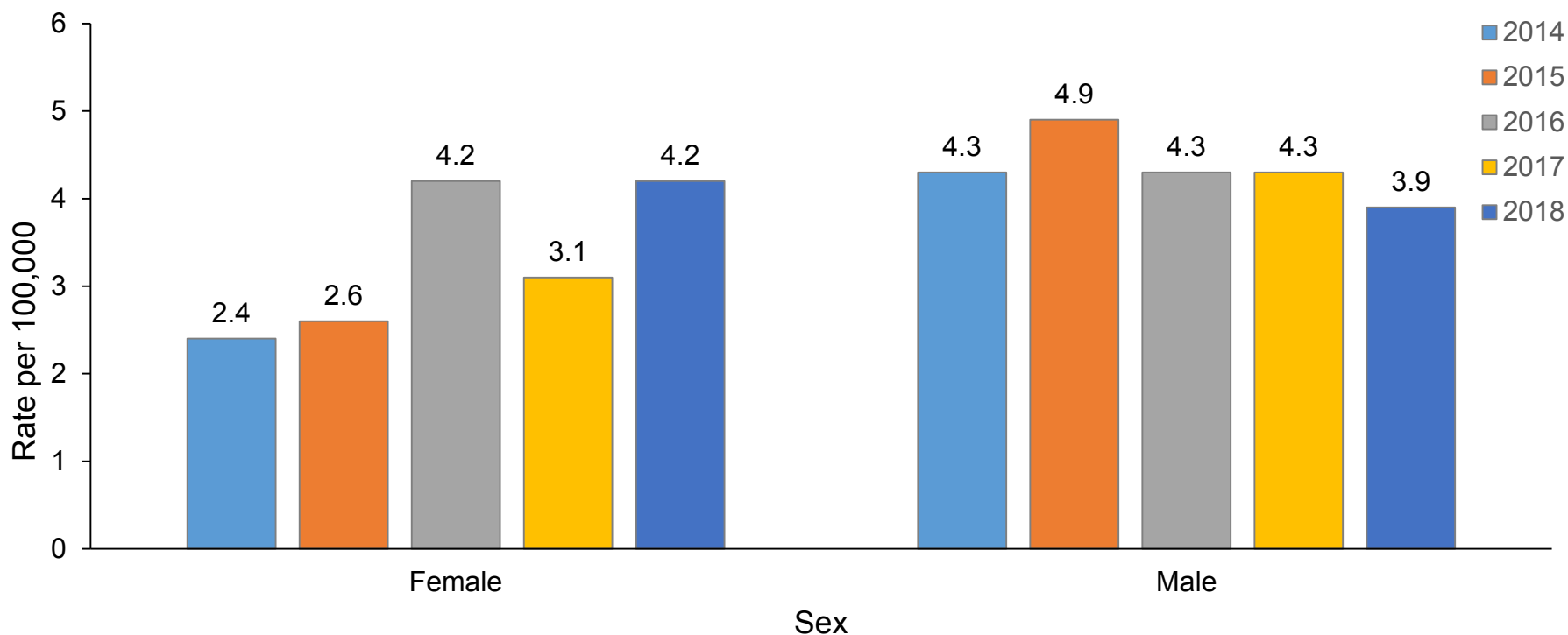
Rate of Invasive Group A Streptococcus, Age Group, Rhode Island, 2018

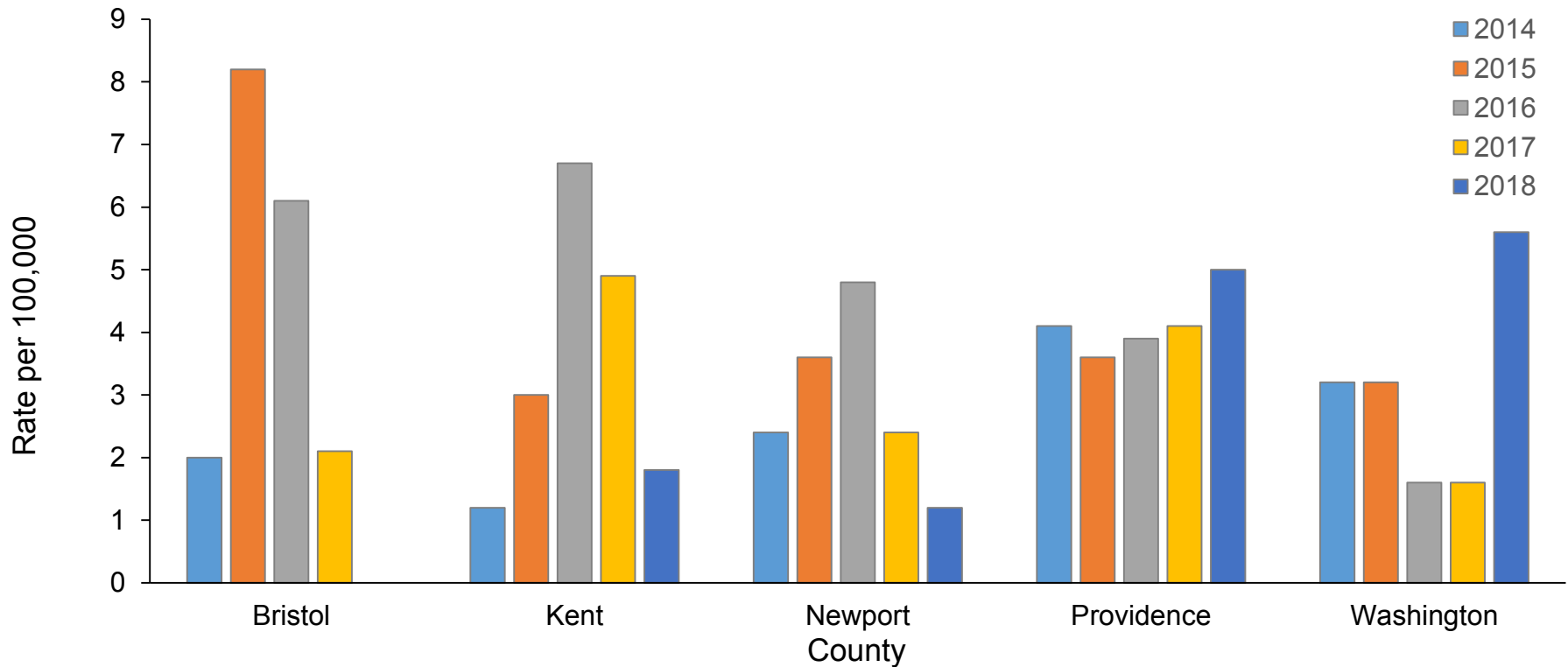**Figure 2:** Invasive Group A Streptococcal disease disproportionately affects the elderly population as noted by the elevated rates for those 70 and older. In 2018, elderly persons aged 70-79 and older had the highest rate of invasive Group A Streptococcal infections with 11.9 cases per 100,000 population. Those 80 and over have the highest five-year average rate at 12.1 cases per 100,000 people.

Rate of Invasive Group A Streptococcus, Gender and Year, Rhode Island, 2014-2018

Figure 3: In Rhode Island, males generally have higher rates of invasive Group A Streptococcal disease than females. However, in 2018, females had higher rates of disease with 4.2 cases per 100,000 as compared to 3.9 cases per 100,000 for males. Rates among males have remained fairly constant over time while rates among females seem to have increased.

Rate of Invasive Group A Streptococcus, County and Year, Rhode Island, 2014-2018

Figure 4: In 2018, Washington County had the highest rate of invasive Group A Streptococcus cases (5.6 cases per 100,000 people). Due to small case numbers, rates in counties fluctuate over time. The five-year average (2014-2018) rate was highest in Providence County (4.1 cases per 100,000 people) and lowest in Newport County (2.8 cases per 100,000 people).

Reported Cases of Invasive Group A Streptococcus, Month and Year, Rhode Island, 2014-2018
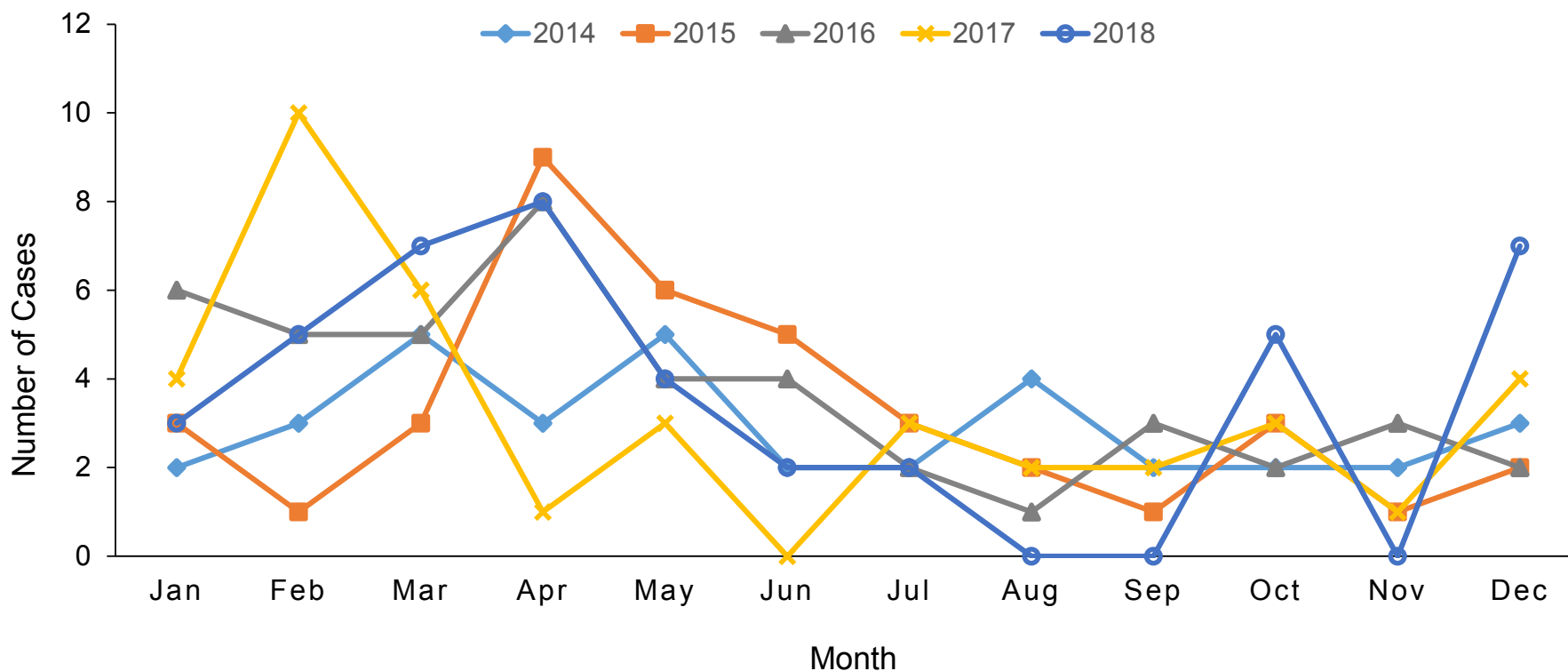
Figure 5: Invasive Group A Streptococcal disease occurs year-round in Rhode Island, with most cases occurring in the winter and early spring months.

Invasive Group A Streptococcus Frequency and Rates by Year, Rhode Island, 2014-2018

Table 1. Frequency by Year					
	2014	**2015**	**2016**	**2017**	**2018**
Number of Cases	35	39	45	39	43

Table 2. Rate by Year					
	2014	**2015**	**2016**	**2017**	**2018**
Rate per 100,000	3.3	3.7	4.3	3.7	4.1

Invasive Group A Streptococcus Frequency, Age Group and Year, Rhode Island, 2014-2018

Table 3. Frequency by Age Group and Year					
	2014	**2015**	**2016**	**2017**	**2018**
0-4	1	2	4	1	1
5-9	3	1	0	4	1
10-19	1	1	2	0	2
20-29	3	6	3	4	5
30-39	1	1	8	2	1
40-49	2	4	7	3	8
50-59	9	6	3	8	6
60-69	5	7	7	6	7
70-79	3	6	3	4	9
≥80	7	5	8	7	3
Total	35	39	45	39	43

Invasive Group A Streptococcus Rates, Age Group and Year, Rhode Island, 2014-2018

Table 4. Rate by Age Group and Year					
	2014	**2015**	**2016**	**2017**	**2018**
0-4	1.8	3.7	7.3	1.8	1.8
5-9	5.2	1.8	0.0	7.2	1.8
10-19	0.7	0.8	1.5	0.0	1.5
20-29	1.9	3.9	1.9	2.6	3.3
30-39	0.8	0.8	6.1	1.5	0.7
40-49	1.5	3.0	5.4	2.4	6.4
50-59	5.7	3.8	1.9	5.2	4.0
60-69	4.3	5.8	5.6	4.7	5.4
70-79	4.7	9.2	4.4	5.5	11.9
≥80	13.9	10.1	16.3	14.3	6.1

Invasive Group A Streptococcus Frequency and Rates, Gender and Year, Rhode Island, 2014-2018

Table 5. Frequency by Sex and Year					
	2014	**2015**	**2016**	**2017**	**2018**
Female	13	14	23	17	23
Male	22	25	22	22	20
Total	35	39	45	39	43

Table 6. Rate by Sex and Year					
	2014	**2015**	**2016**	**2017**	**2018**
Female	2.4	2.6	4.2	3.1	4.2
Male	4.3	4.9	4.3	4.3	3.9

Invasive Group A Streptococcus Frequency, County and Year, Rhode Island, 2014-2018

Table 7. Frequency by County and Year					
	2014	**2015**	**2016**	**2017**	**2018**
Bristol	1	4	3	1	0
Kent	2	5	11	8	3
Newport	2	3	4	2	1
Providence	26	23	25	26	32
Washington	4	4	2	2	7
All	35	39	45	39	43

Invasive Group A Streptococcus Rates by County and Year, Rhode Island, 2014-2018

Table 8. Rate by County and Year					
	2014	**2015**	**2016**	**2017**	**2018**
Bristol	2.0	8.2	6.1	2.0	0.0
Kent	1.2	3.1	6.7	4.9	1.8
Newport	2.4	3.6	4.8	2.4	1.2
Providence	4.1	3.6	3.9	4.1	5.0
Washington	3.2	3.2	1.6	1.6	5.6

Invasive Group A Streptococcus Frequency, Month and Year, Rhode Island, 2014-2018

Table 9. Frequency by Month and Year

	2014	2015	2016	2017	2018
Jan	2	3	6	4	3
Feb	3	1	5	10	5
Mar	5	3	5	6	7
Apr	3	9	8	1	8
May	5	6	4	3	4
Jun	2	5	4	0	2
Jul	2	3	2	3	2
Aug	4	2	1	2	0
Sep	2	1	3	2	0
Oct	2	3	2	3	5
Nov	2	1	3	1	0
Dec	3	2	2	4	7
All	35	39	45	39	43

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/groupastrep/index.html