





Invasive Group A Streptococcus Surveillance 2011-2015

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 2015, there were 39 cases of invasive Group A Streptococcal disease in Rhode Island.
- The incidence rate was 3.7 cases per 100,000 people.
- This is the highest number of cases and incidence rate for invasive Group A Streptococcal disease in the past five years.
- In recent years, the rates of disease seem to be increasing over time.
- It is unclear why rates appear to be changing this way.

Reported Cases of Invasive Group A Streptococcus, Rhode Island, 2011-2015

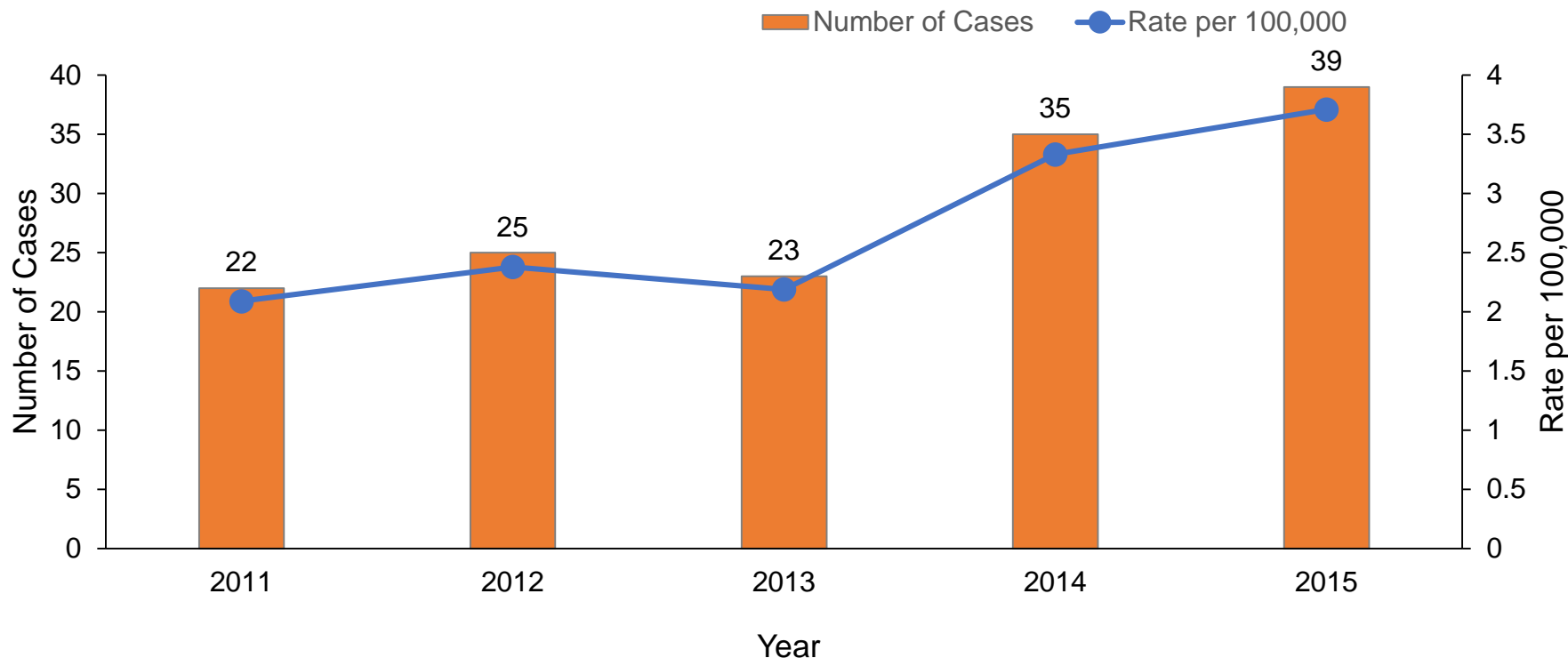


Figure 1: In 2015, there were 39 cases of invasive Group A Streptococcal disease in RI, with a rate of 3.7 cases per 100,000 population. This is the highest number of cases in the past five years. It is unclear why rates appear to be increasing over time.

Rate of Invasive Group A Streptococcus, Age Group, Rhode Island, 2015

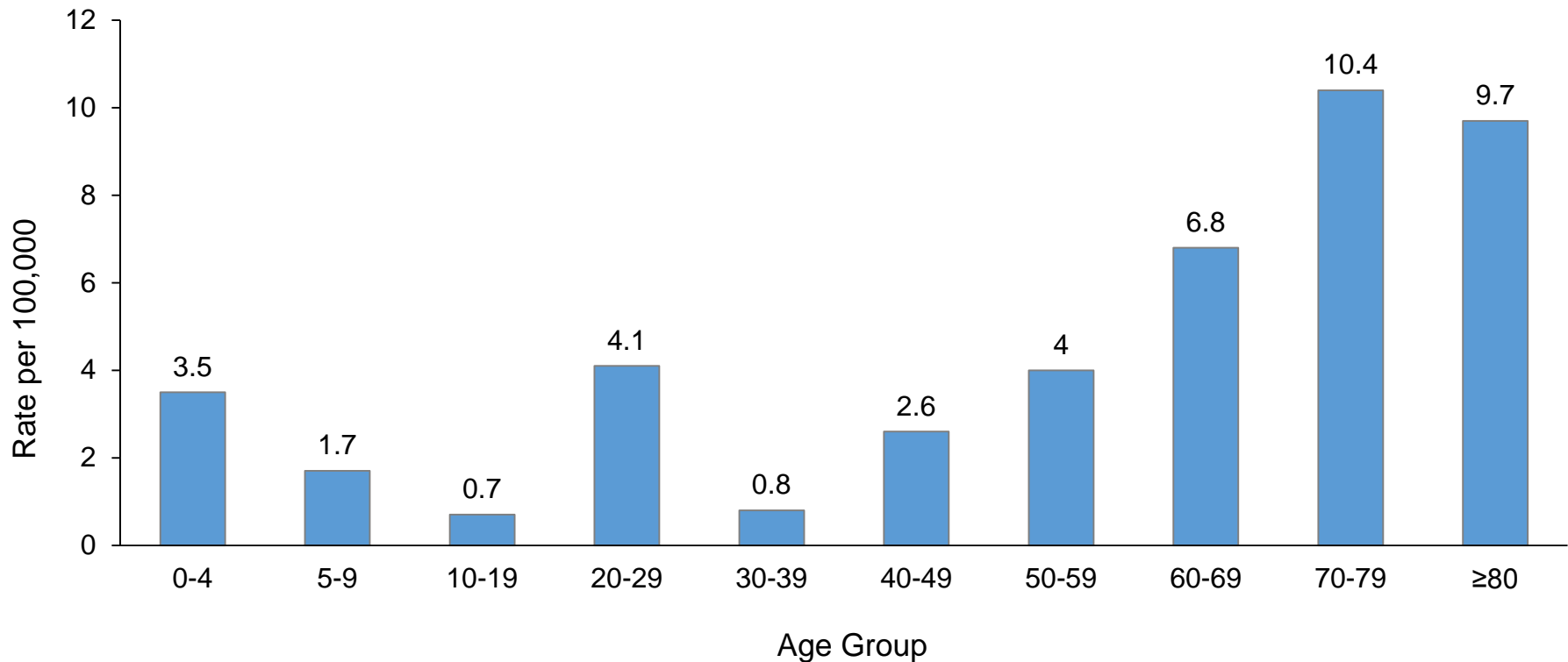


Figure 2: Invasive Group A Streptococcal disease disproportionately affects the elderly population as noted by the elevated rates for those 60 and older. In 2015, elderly persons aged 70-79 had the highest rate of invasive Group A Streptococcal infections with 10.4 cases per 100,000 population. Those 80 and over have the highest five-year average rate at 8.6 cases per 100,000 people.

Rate of Invasive Group A Streptococcus, Gender and Year, Rhode Island, 2011-2015

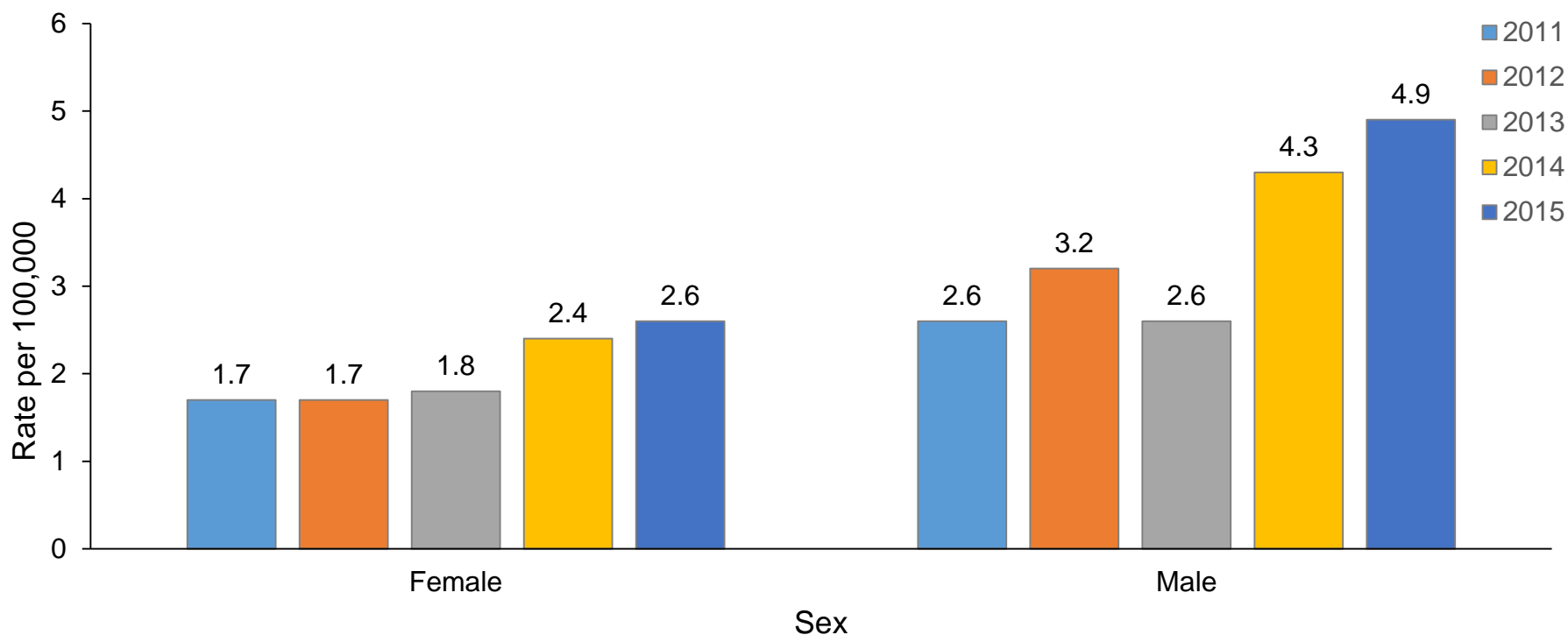


Figure 3: In Rhode Island, males have higher rates of invasive Group A Streptococcal disease than females. In 2015 the rate in males was 4.9 cases per 100,000 people and in females it was 2.6 cases per 100,000 people. It is unclear why males have higher rates than females.

Rate of Invasive Group A Streptococcus, County and Year, Rhode Island, 2011-2015

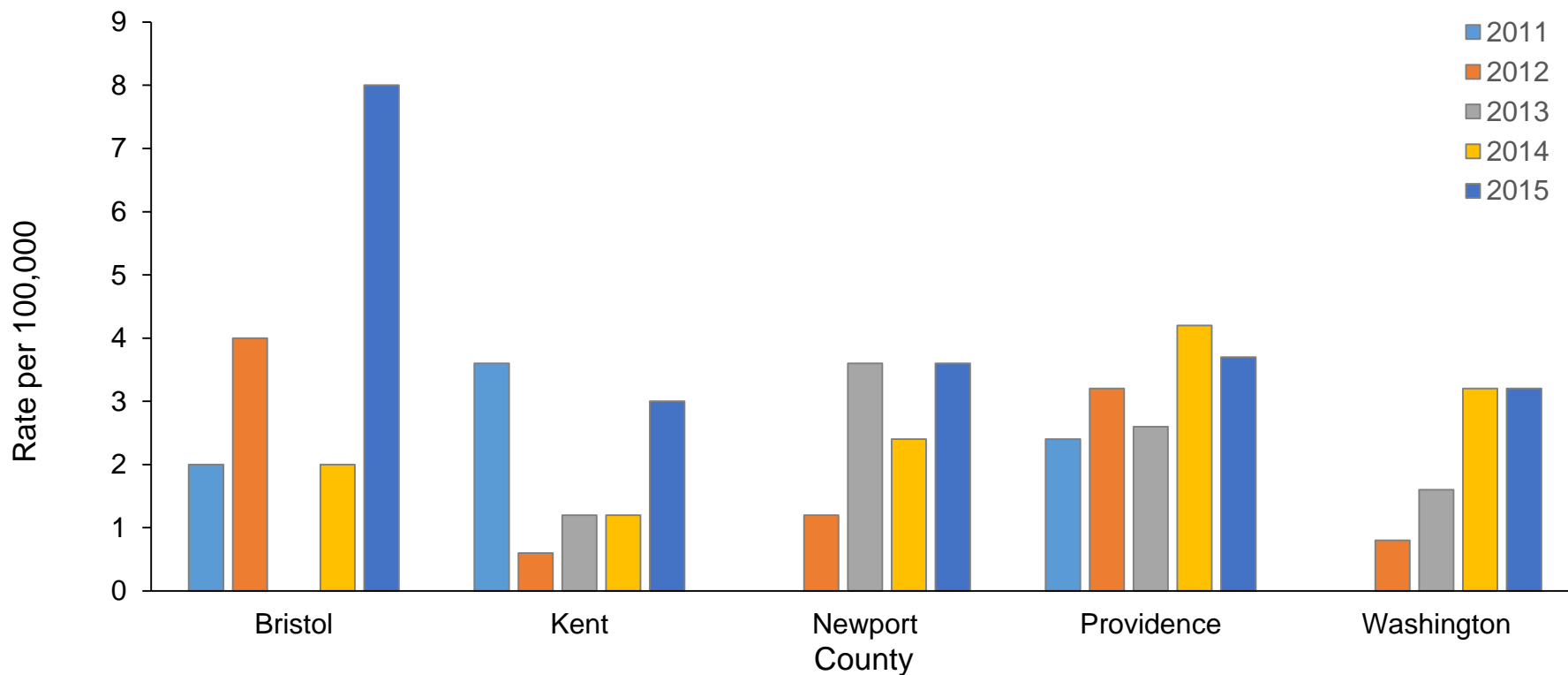


Figure 4: In 2015, Bristol County had the highest rate of invasive Group A Streptococcus cases (8.0 cases per 100,000 people). Due to small case numbers, rates in counties fluctuate over time. The five-year average (2011-2015) rate was highest in Bristol and Providence counties (3.2 cases per 100,000 people) and lowest in Washington County (1.7 cases per 100,000 people).

Reported Cases of Invasive Group A Streptococcus, Month and Year, Rhode Island, 2011-2015

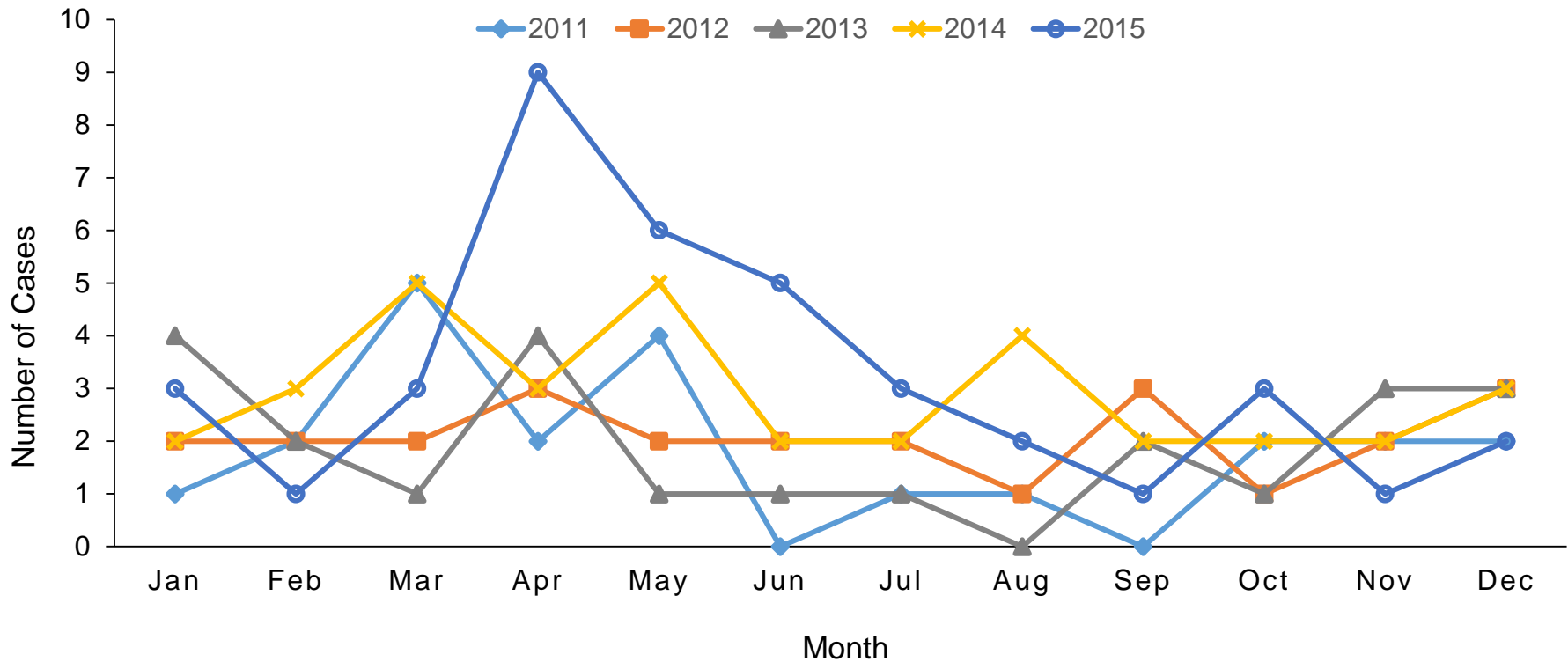


Figure 5: Invasive Group A Streptococcal disease occurs year-round in Rhode Island, with no clear trend in seasonality. There is no known reason for the apparent peak in April 2015.

Invasive Group A Streptococcus Frequency and Rates by Year, Rhode Island, 2011-2015



Table 1. Frequency by Year

	2011	2012	2013	2014	2015
Number of Cases	22	25	23	35	39

Table 2. Rate by Year

	2011	2012	2013	2014	2015
Rate per 100,000	2.1	2.4	2.2	3.3	3.7

Invasive Group A Streptococcus Frequency, Age Group and Year, Rhode Island, 2011-2015



Table 3. Frequency by Age Group and Year

	2011	2012	2013	2014	2015
0-4	0	0	1	1	2
5-9	1	2	0	3	1
10-19	0	4	0	1	1
20-29	1	3	2	3	6
30-39	2	1	1	1	1
40-49	1	5	4	2	4
50-59	8	1	4	9	6
60-69	5	1	3	5	7
70-79	4	2	4	3	6
≥80	0	6	4	7	5
Total	22	25	23	35	39

Invasive Group A Streptococcus Rates, Age Group and Year, Rhode Island, 2011-2015



Table 4. Rate by Age Group and Year

	2011	2012	2013	2014	2015
0-4	0.0	0.0	1.7	1.7	3.5
5-9	1.7	3.3	0.0	5.0	1.7
10-19	0.0	2.8	0.0	0.7	0.7
20-29	0.7	2.0	1.4	2.0	4.1
30-39	1.6	0.8	0.8	0.8	0.8
40-49	0.7	3.2	2.6	1.3	2.6
50-59	5.3	0.7	2.6	5.9	4.0
60-69	4.9	1.0	2.9	4.9	6.8
70-79	6.9	3.5	6.9	5.2	10.4
≥80	0.0	11.7	7.8	13.6	9.7

Invasive Group A Streptococcus Frequency and Rates, Gender and Year, Rhode Island, 2011-2015



Table 5. Frequency by Sex and Year

	2011	2012	2013	2014	2015
Female	9	9	10	13	14
Male	13	16	13	22	25
Total	22	25	23	35	39

Table 6. Rate by Sex and Year

	2011	2012	2013	2014	2015
Female	1.7	1.7	1.8	2.4	2.6
Male	2.6	3.2	2.6	4.3	4.9

Invasive Group A Streptococcus Frequency, County and Year, Rhode Island, 2011-2015



Table 7. Frequency by County and Year

	2011	2012	2013	2014	2015
Bristol	1	2	0	1	4
Kent	6	1	2	2	5
Newport	0	1	3	2	3
Providence	15	20	16	26	23
Washington	0	1	2	4	4
All	22	25	23	35	39

Invasive Group A Streptococcus Rates by County and Year, Rhode Island, 2011-2015



Table 8. Rate by County and Year

	2011	2012	2013	2014	2015
Bristol	2.0	4.0	0.0	2.0	8.0
Kent	3.6	0.6	1.2	1.2	3.0
Newport	0.0	1.2	3.6	2.4	3.6
Providence	2.4	3.2	2.6	4.2	3.7
Washington	0.0	0.8	1.6	3.2	3.2

Invasive Group A Streptococcus Frequency, Month and Year, Rhode Island, 2011-2015



Table 9. Frequency by Month and Year

	2011	2012	2013	2014	2015
Jan	1	2	4	2	3
Feb	2	2	2	3	1
Mar	5	2	1	5	3
Apr	2	3	4	3	9
May	4	2	1	5	6
Jun	0	2	1	2	5
Jul	1	2	1	2	3
Aug	1	1	0	4	2
Sep	0	3	2	2	1
Oct	2	1	1	2	3
Nov	2	2	3	2	1
Dec	2	3	3	3	2
All	22	25	23	35	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. The population denominator is based on 2010 US Census Population.