





Invasive Pneumococcal Disease Surveillance 2010-2014

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Summary: Invasive Pneumococcal Disease in RI, 2010-2014



- Invasive Pneumococcal Disease (IPD) is an infection caused by *Streptococcus pneumoniae* bacteria, sometimes referred to as pneumococcus. Invasive disease is confirmed by isolation from a normally sterile site, such as blood, cerebral spinal fluid, pericardial fluid, pleural fluid, peritoneal fluid, or joint fluid.
- In 2014, there were 73 reported cases of IPD in Rhode Island. This is a small decrease from 2013 (76) and the same as 2012.
- The highest incidence rate is in people age 80 or older (31.2 per 100,000 people in 2014).
- Males and females are almost equally affected (rate of 6.8 cases per 100,000 and 7.1 cases per 100,000 for females and males respectively).
- Newport County had the highest rate of cases in both 2014 and 2013 (12.1 per 100,000 people both years).
- There is a slight seasonal trend in IPD, with cases often peaking in the winter and fewer cases occurring in the summer.

Figure 1: Reported Cases of Invasive Pneumococcal Disease by Year, RI, 2010-2014

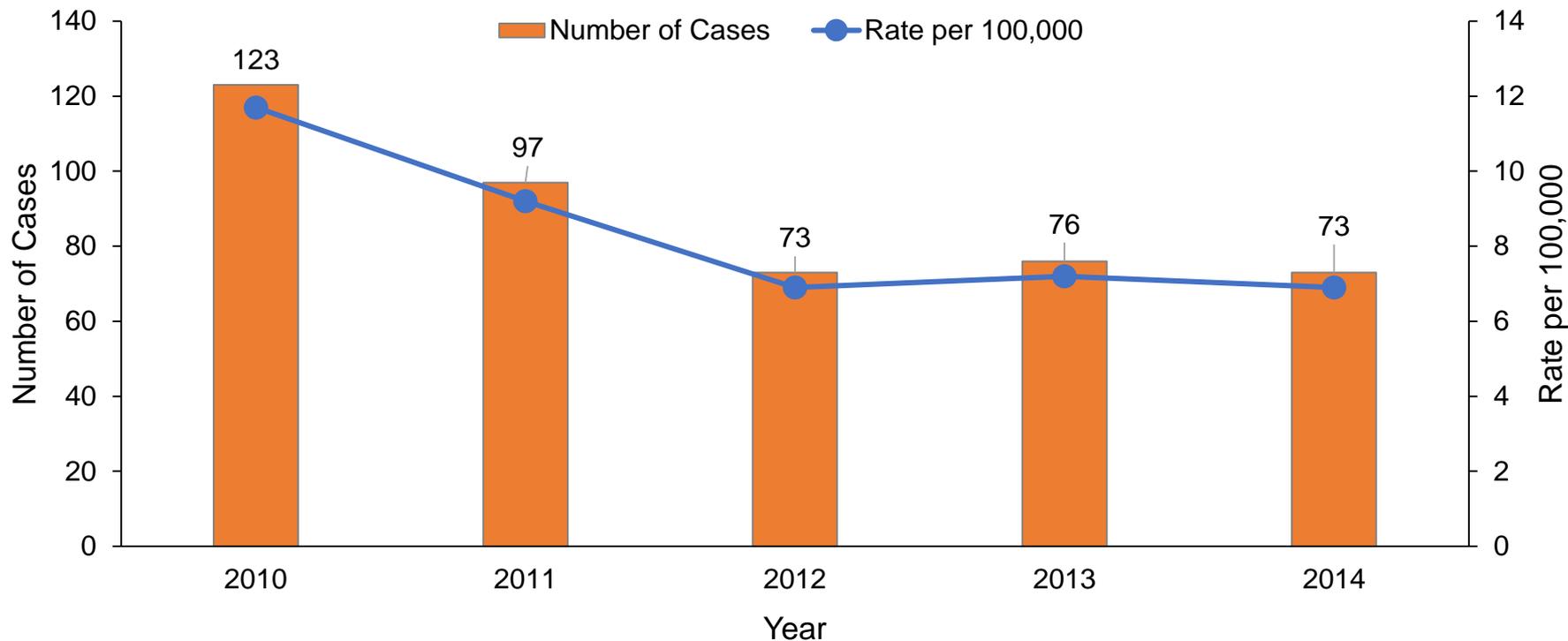


Figure 1: In 2014, there were 73 cases of Invasive Pneumococcal Disease (IPD) in Rhode Island with a rate of 6.9 cases per 100,000 people. This is a small decrease from 2013 (rate of 7.2 per 100,000 people) and identical to the rate in 2012.

Figure 2: Rate of Invasive Pneumococcal Disease by Age Group, RI, 2014

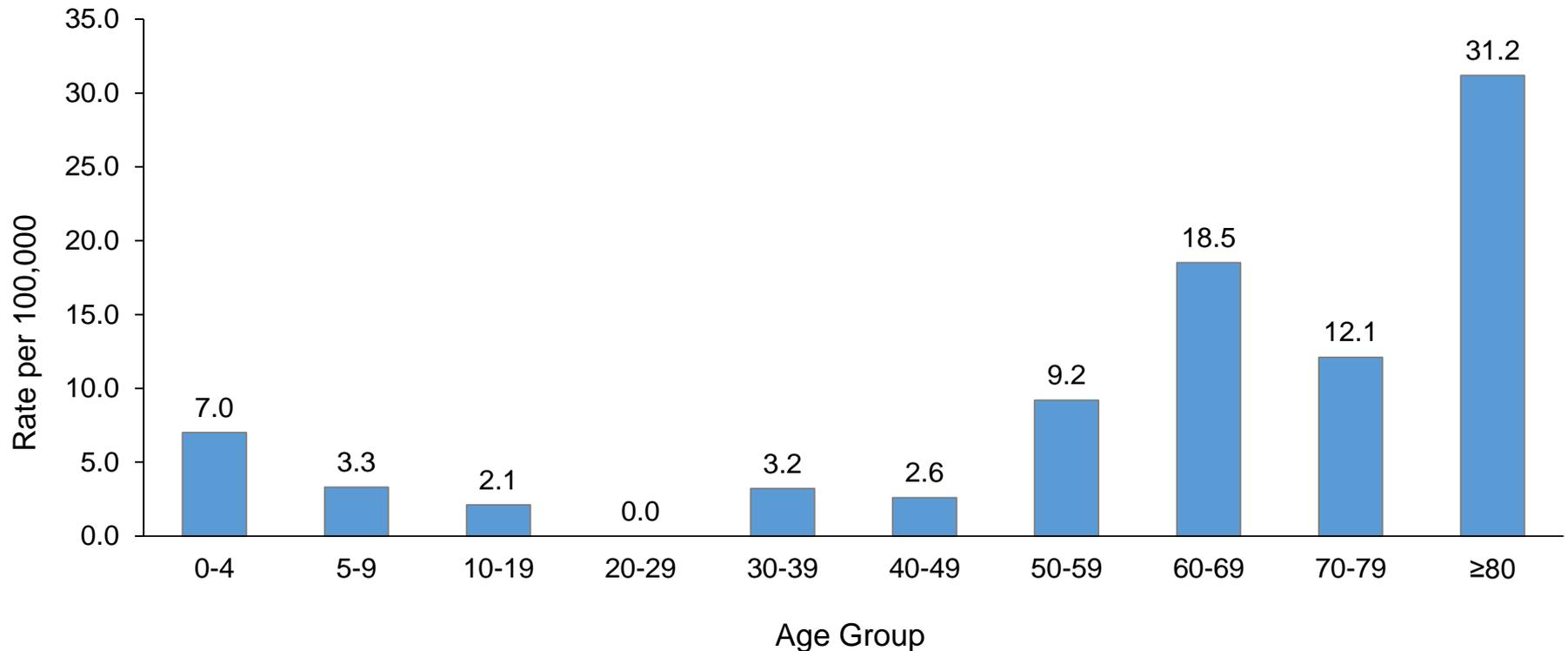


Figure 2: People age 80 and older had the highest rate of cases in 2014 (31.2 cases per 100,000 people). Due to high pneumococcal vaccination coverage rates in Rhode Island, children have relatively low incidence rates. Though a pneumococcal vaccine exists for people age 65 and older, coverage information is not widely available.

Figure 3: Rate of Invasive Pneumococcal Disease by Sex and Year, RI, 2010-2014

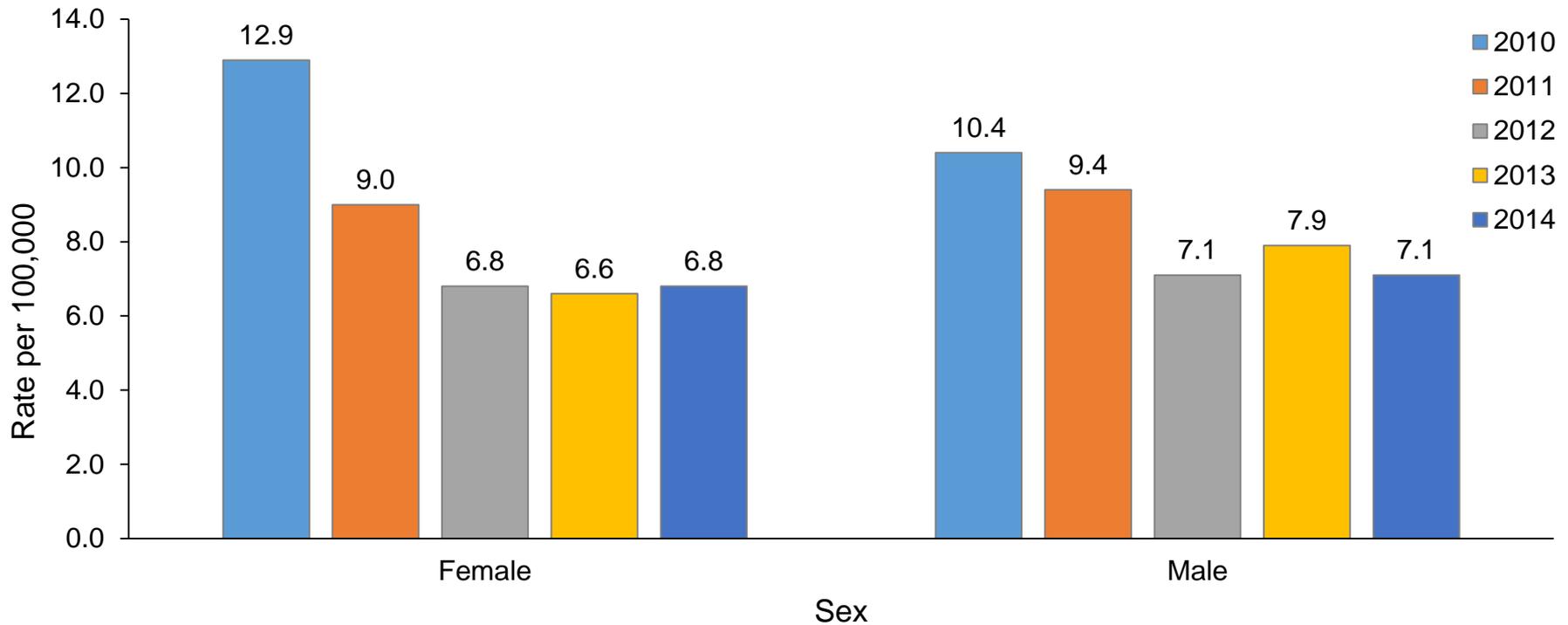


Figure 3: Males had higher rates of IPD than females did in all years except 2010. In 2014, the rate for males was 7.1 cases per 100,000 people and the rate for females was 6.8 cases per 100,000 people.

Figure 4: Rate of Invasive Pneumococcal Disease by County and Year, RI, 2010-2014

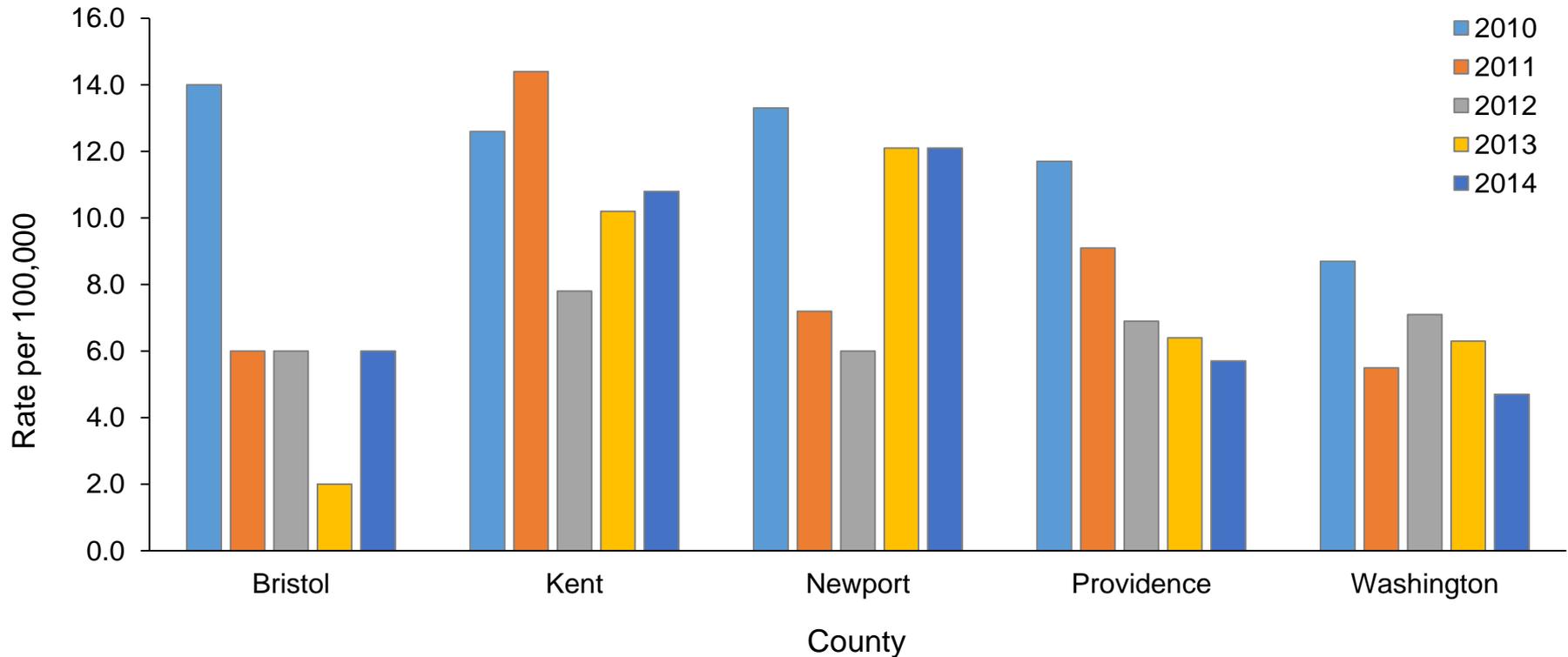


Figure 4: For the second consecutive year, Newport County had the highest rate of IPD (12.1 cases per 100,000 people). In 2014, Washington County had the lowest rate of cases (4.7 per 100,000 people).

Figure 5: Reported Cases of Invasive Pneumococcal Disease by Month and Year, RI, 2010-2014

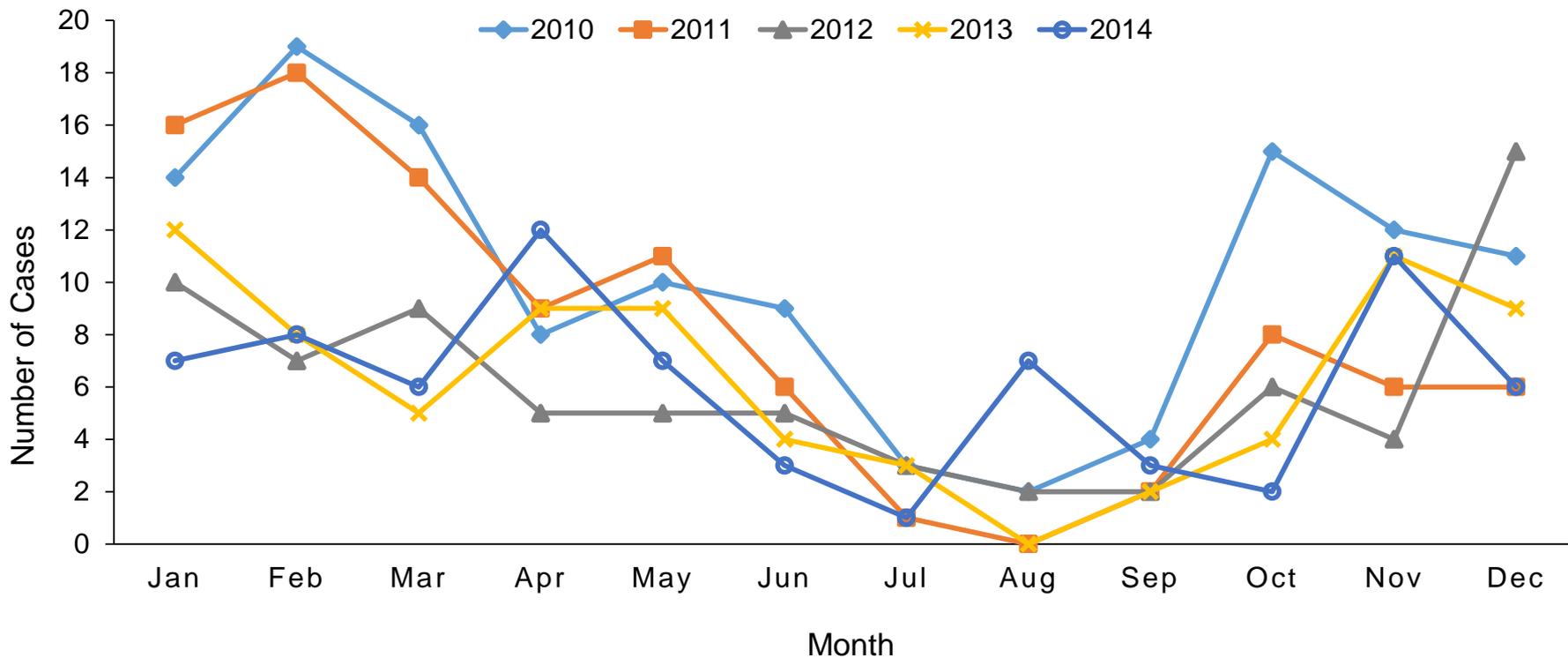


Figure 5: In the past five years, the highest number of cases occur in January and February, and the fewest cases occur in July and August. However, in 2014, there were seven cases in August, though no relationship among the cases was found.

Invasive Pneumococcal Disease Frequency and Rates by Year, RI, 2010-2014



Table 1. Frequency by Year

	2010	2011	2012	2013	2014
Number of Cases	123	97	73	76	73

Table 2. Rate by Year

	2010	2011	2012	2013	2014
Rate per 100,000	11.7	9.2	6.9	7.2	6.9

Invasive Pneumococcal Disease Frequency by Age Group and Year, RI, 2010-2014



Table 3. Frequency by Age Group and Year

	2010	2011	2012	2013	2014
0-4	8	5	<5	0	<5
5-9	<5	<5	<5	<5	<5
10-19	<5	<5	<5	<5	<5
20-29	<5	<5	<5	<5	0
30-39	6	<5	6	5	<5
40-49	15	14	12	7	<5
50-59	20	21	13	15	14
60-69	23	23	12	11	19
70-79	15	7	8	19	7
≥80	27	17	15	16	16
Total	123	97	73	76	73

Invasive Pneumococcal Disease Rates by Age Group and Year, RI, 2010-2014



Table 4. Rate by Age Group and Year

	2010	2011	2012	2013	2014
0-4	13.9	8.7	1.7	0.0	7.0
5-9	1.7	3.3	1.7	1.7	3.3
10-19	2.8	1.4	0.7	0.7	2.1
20-29	2.7	2.0	2.7	0.7	0.0
30-39	4.8	2.4	4.8	4.0	3.2
40-49	9.7	9.1	7.8	4.5	2.6
50-59	13.2	13.8	8.6	9.9	9.2
60-69	22.4	22.4	11.7	10.7	18.5
70-79	26.0	12.1	13.9	32.9	12.1
≥80	52.6	33.1	29.2	31.2	31.2

Invasive Pneumococcal Disease Frequency and Rates by Sex and Year, RI, 2010-2014



Table 5. Frequency by Sex and Year

	2010	2011	2012	2013	2014
Female	70	49	37	36	37
Male	53	48	36	40	36
Total	123	97	73	76	73

Table 6. Rate by Sex and Year

	2010	2011	2012	2013	2014
Female	12.9	9.0	6.8	6.6	6.8
Male	10.4	9.4	7.1	7.9	7.1

Invasive Pneumococcal Disease Frequency By County and Year, RI, 2010-2014



Table 7. Frequency by County and Year

	2010	2011	2012	2013	2014
Bristol	7	<5	<5	<5	<5
Kent	21	24	13	17	18
Newport	11	6	5	10	10
Providence	73	57	43	40	36
Washington	11	7	9	8	6
Total	123	97	73	76	73

Invasive Pneumococcal Disease Rates by County and Year, RI, 2010-2014



Table 8. Rate by County and Year

	2010	2011	2012	2013	2014
Bristol	14.0	6.0	6.0	2.0	6.0
Kent	12.6	14.4	7.8	10.2	10.8
Newport	13.3	7.2	6.0	12.1	12.1
Providence	11.7	9.1	6.9	6.4	5.7
Washington	8.7	5.5	7.1	6.3	4.7

Invasive Pneumococcal Disease Frequency by Month and Year, RI, 2010-2014



Table 9. Frequency by Month and Year

	2010	2011	2012	2013	2014
Jan	14	16	10	12	7
Feb	19	18	7	8	8
Mar	16	14	9	5	6
Apr	8	9	5	9	12
May	10	11	5	9	7
Jun	9	6	5	4	3
Jul	3	1	3	3	1
Aug	2	0	2	0	7
Sep	4	2	2	2	3
Oct	15	8	6	4	2
Nov	12	6	4	11	11
Dec	11	6	15	9	6
Total	123	97	73	76	73



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.
- In order to preserve confidentiality, data with one to five cases has been suppressed and is shown in tables as <5.