





Pertussis Surveillance 2010-2014

Rhode Island Department of Health

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

Center for Acute Infectious Diseases Epidemiology

Summary: Pertussis in RI, 2010-2014



- In 2014 there were 108 cases of pertussis in Rhode Island. This is a decrease from 2013 (160) and 2012 (113).
- The highest rate is in people age 19 or younger, particularly those age 10-19 (63% of cases).
- There is not a large difference between the rates among males and females.
- Kent County had the highest rate of cases in both 2014 (25.9 cases per 100,000 people) and 2013 (23.9 cases per 100,000 people) .
- There is no seasonal trend for pertussis. Peaks in trend lines correspond to outbreaks that affected a common group of people, often school children, at the same time.

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

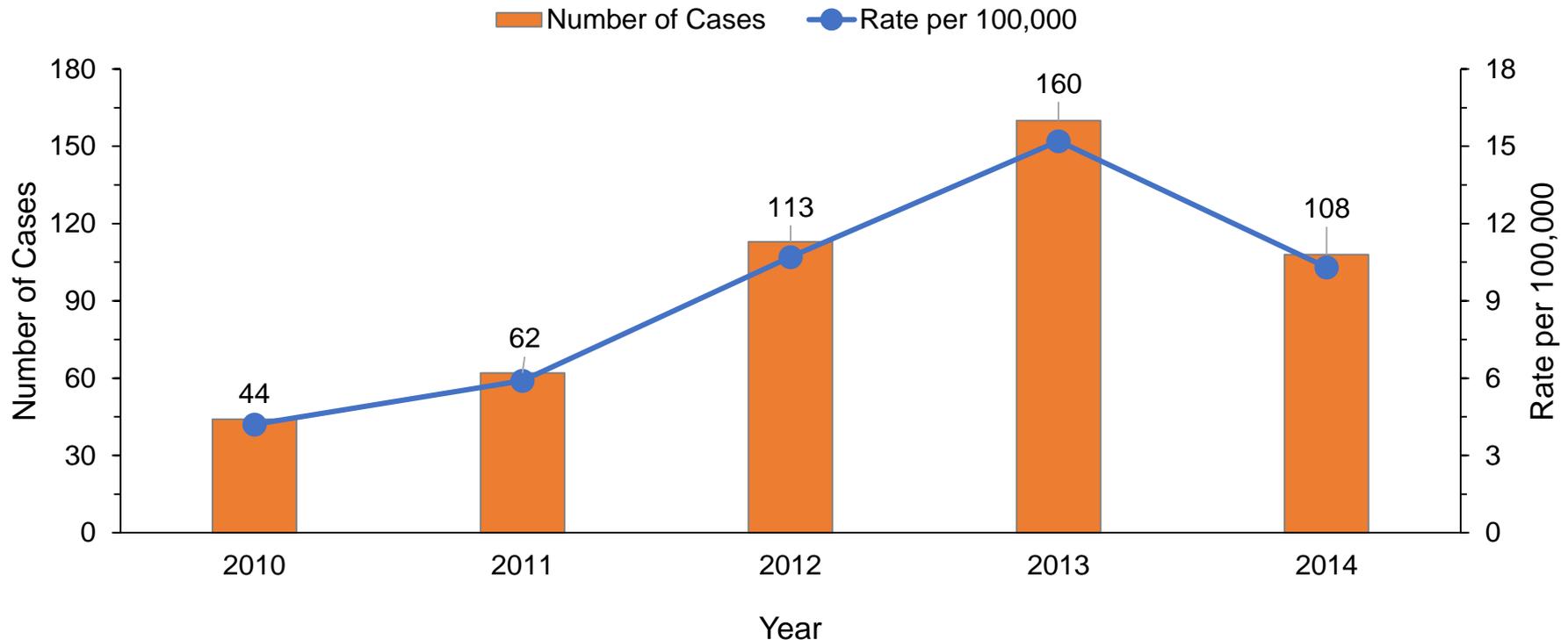


Figure 1: In 2014 there were 108 cases of pertussis with a rate of 10.3 cases per 100,000 people. This is the lowest number of cases since 2011. It is not unusual to see this type of pattern with pertussis, which has a cyclical trend and peaks every two to five years.

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

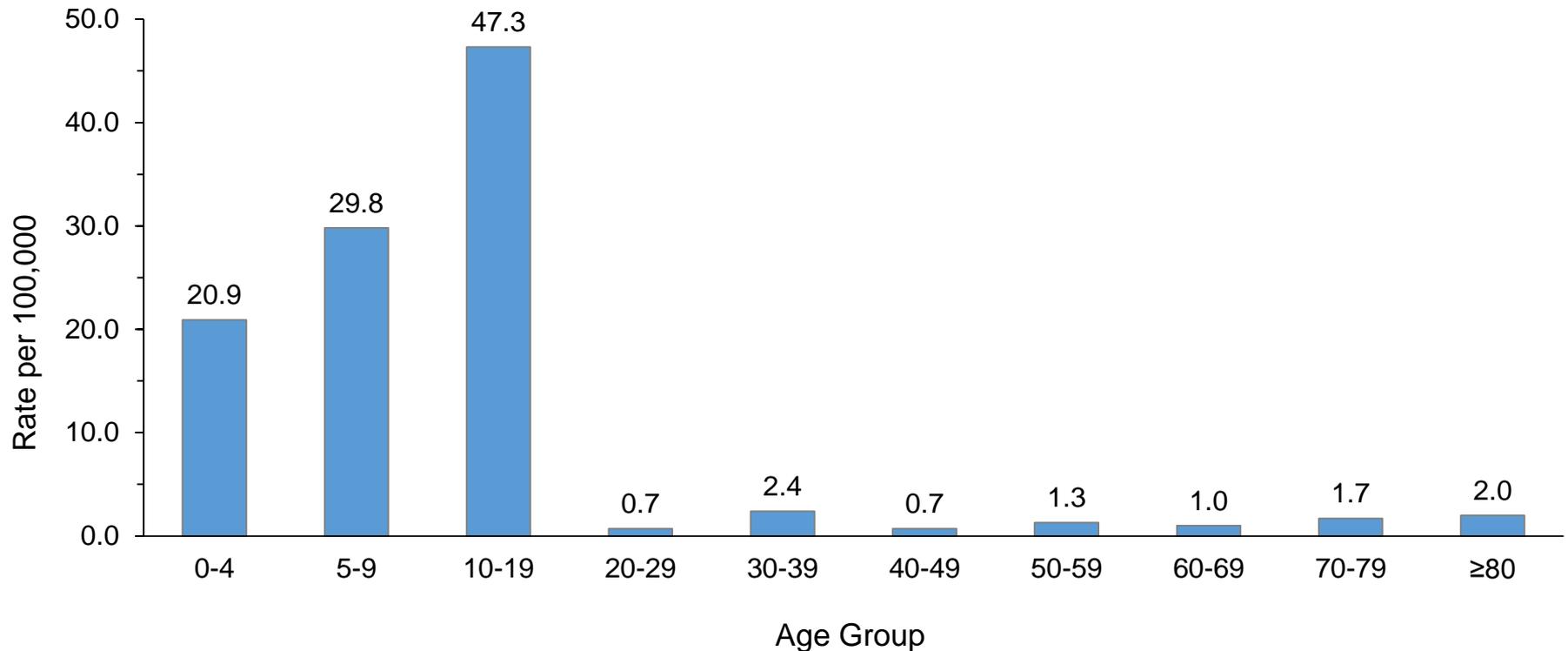


Figure 2: The highest rate of pertussis cases in Rhode Island is in adolescents ages 10-19, followed by children ages five to nine and children up to age four. This is similar to national trends in which pertussis most affects adolescents due to waning vaccine immunity.

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

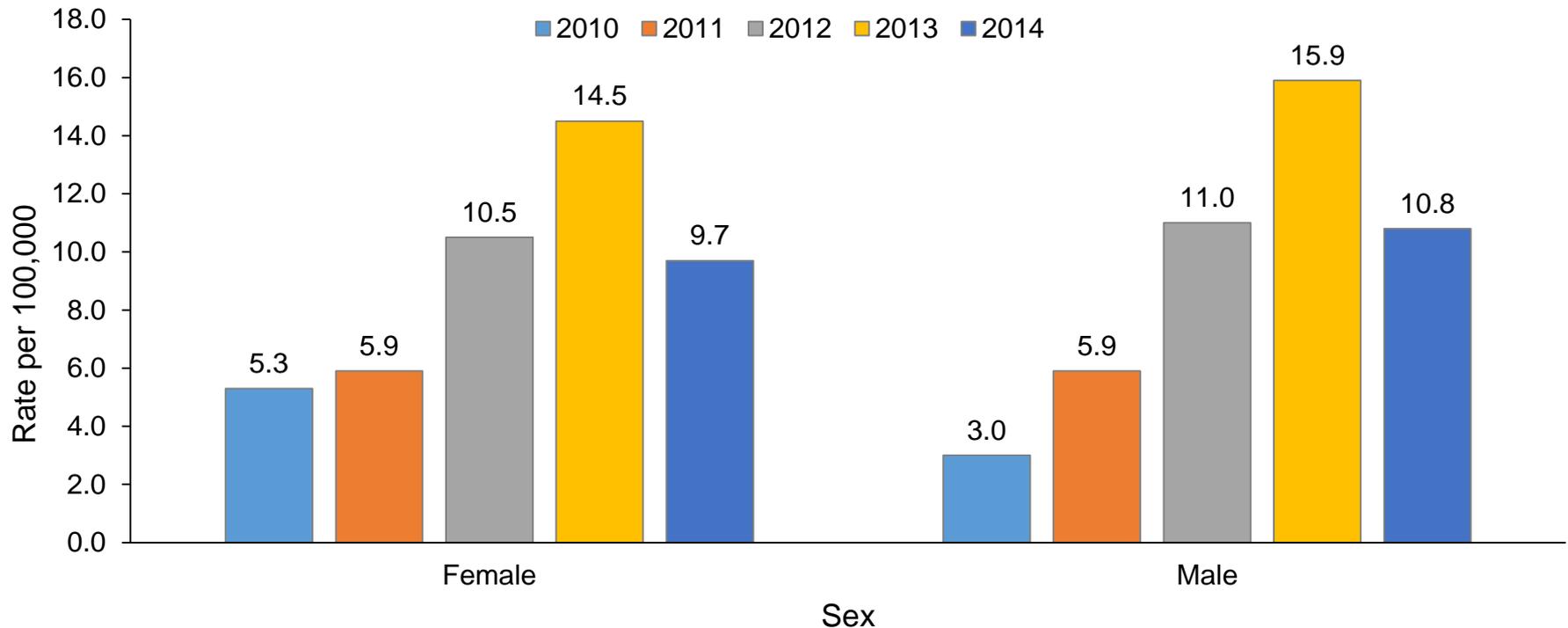


Figure 3: In 2014, males had a higher incidence rate than females (10.8 cases per 100,000 people versus 9.7 per 100,000 people). However, this difference is small when considering the number of cases for each sex (55 cases in males and 53 cases in females).

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

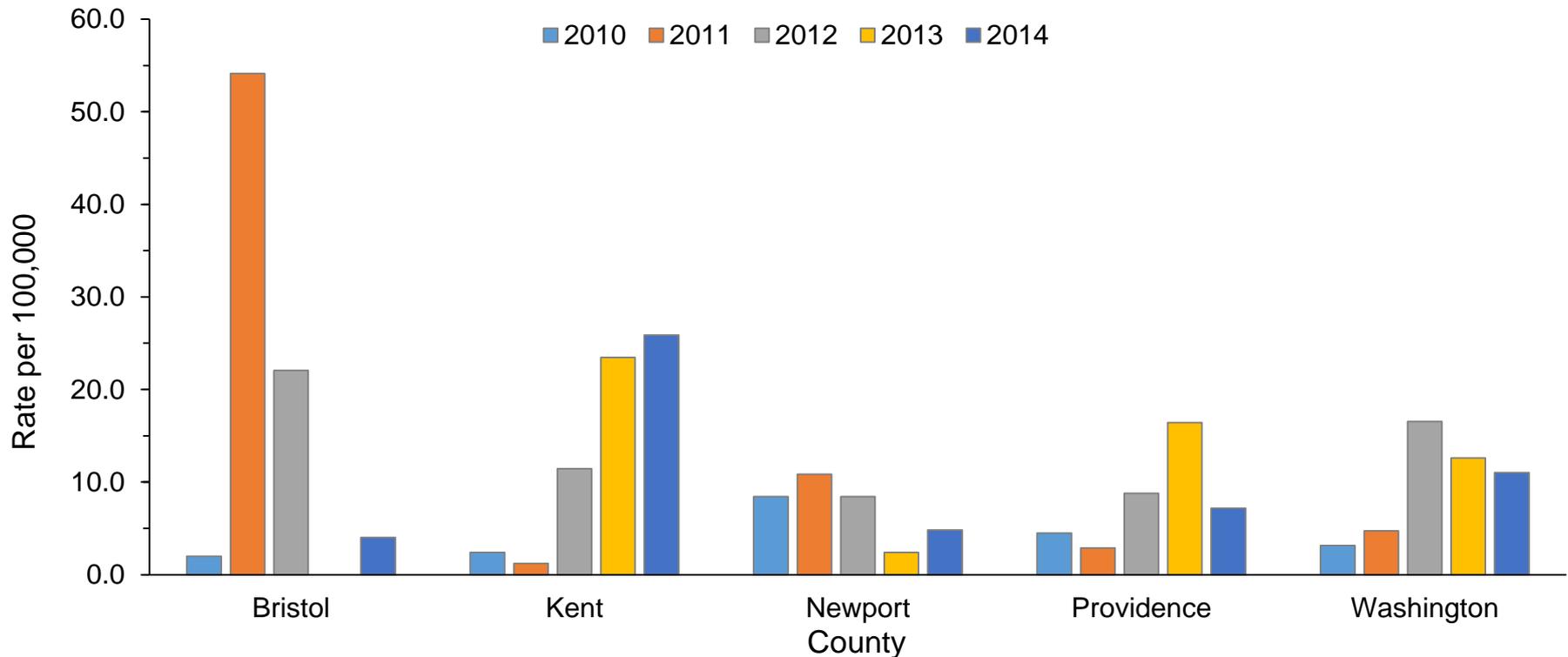


Figure 4: In 2014, the highest rate of pertussis cases was in Kent County with 25.9 cases per 100,000 people. The notably high rate of pertussis during 2011 in Bristol County (54.1 cases per 100,000 people) was due to an outbreak linked to an elementary school.

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

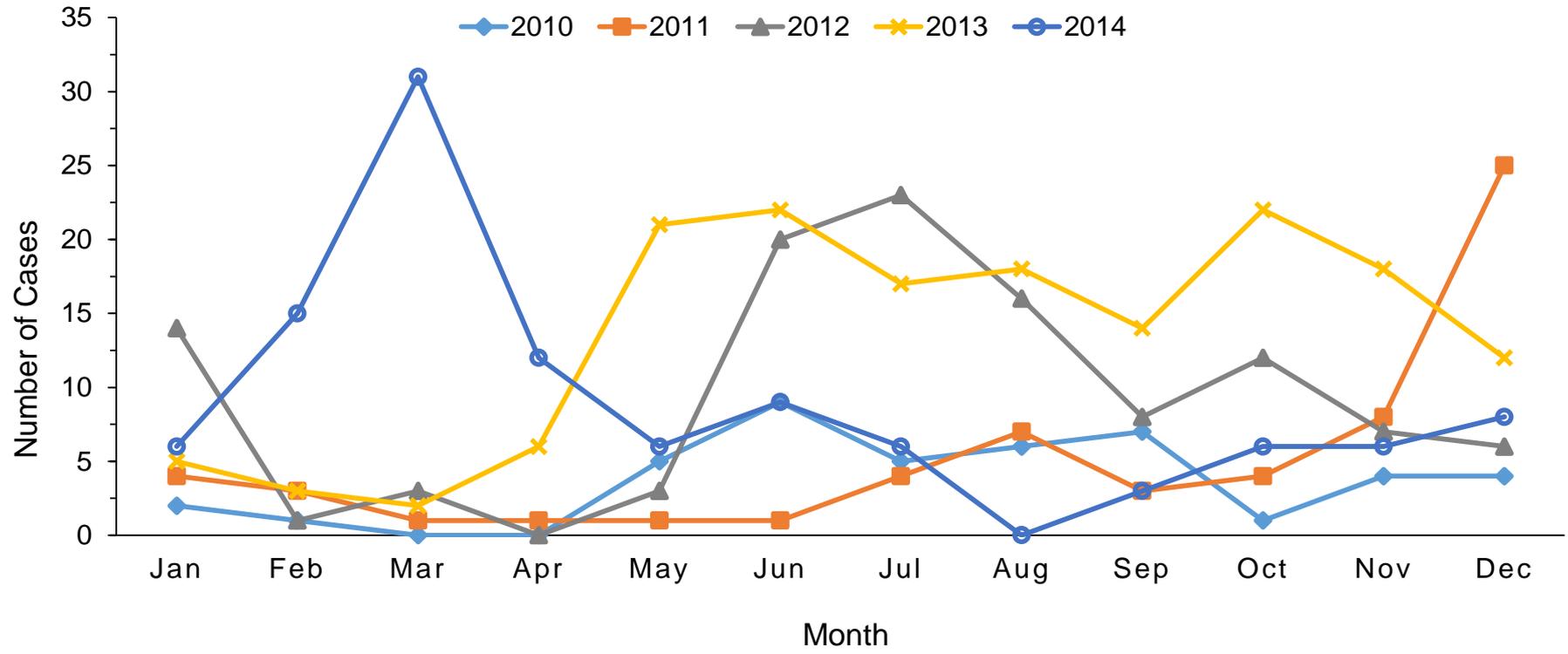


Figure 5: There is no seasonal trend for pertussis cases in Rhode Island. The peak in March 2014 (31 cases) was linked to several outbreaks in schools across the state.

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



Table 1. Frequency by Year

	2010	2011	2012	2013	2014
Number of Cases	44	62	113	160	108

Table 2. Rate by Year

	2010	2011	2012	2013	2014
Rate per 100,000	4.2	5.9	10.7	15.2	10.3

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



Table 3. Frequency by Age Group and Year

	2010	2011	2012	2013	2014
0-4	17	15	23	30	12
5-9	3	12	28	39	18
10-19	10	21	47	73	68
20-39	9	6	7	7	<5
≥40	5	8	8	11	6
Total	44	62	113	160	108

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



Table 4. Rate by Age Group and Year

	2010	2011	2012	2013	2014
0-4	29.6	26.1	40.0	52.2	20.9
5-9	5.0	19.9	46.3	64.5	29.8
10-19	7.0	14.6	32.7	50.7	47.3
20-29	4.1	2.7	2.7	3.4	0.7
30-39	2.4	1.6	2.4	1.6	2.4
40-49	2.6	2.6	3.9	4.5	0.7
50-59	0.7	0.7	0.7	0.7	1.3
60-69	0.0	2.9	0.0	2.0	1.0
70-79	0.0	0.0	0.0	1.7	1.7
≥80	0.0	0.0	2.0	0.0	2.0

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



Table 5. Frequency by Sex and Year

	2010	2011	2012	2013	2014
Female	29	32	57	79	53
Male	15	30	56	81	55
Total	44	62	113	160	108

Table 6. Rate by Sex and Year

	2010	2011	2012	2013	2014
Female	5.3	5.9	10.5	14.5	9.7
Male	3.0	5.9	11.0	15.9	10.8

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



Table 7. Frequency by County and Year

	2010	2011	2012	2013	2014
Bristol	<5	27	11	0	<5
Kent	<5	<5	19	39	43
Newport	7	9	7	<5	<5
Providence	28	18	55	103	45
Washington	<5	6	21	16	14
Total	44	62	113	160	108

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



Table 8. Rate by County and Year

	2010	2011	2012	2013	2014
Bristol	2.0	54.1	22.1	0.0	4.0
Kent	2.4	1.2	11.4	23.5	25.9
Newport	8.4	10.9	8.4	2.4	4.8
Providence	4.5	2.9	8.8	16.4	7.2
Washington	3.2	4.7	16.5	12.6	11.0

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



Table 9. Frequency by Month and Year

	2010	2011	2012	2013	2014
Jan	2	4	14	5	6
Feb	1	3	1	3	15
Mar	0	1	3	2	31
Apr	0	1	0	6	12
May	5	1	3	21	6
Jun	9	1	20	22	9
Jul	5	4	23	17	6
Aug	6	7	16	18	0
Sep	7	3	8	14	3
Oct	1	4	12	22	6
Nov	4	8	7	18	6
Dec	4	25	6	12	8
Total	44	62	113	160	108



Notes on Data

- Case counts include patients classified as confirmed and as 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.