
RHODE ISLAND
DEPARTMENT OF HEALTH

Varicella (Chickenpox) 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 Varicella

- Varicella (Chickenpox) is a very contagious disease caused by the varicella-zoster virus.
- Symptoms include an itchy skin rash with blister-like lesions, covering the body. It may first appear on the face, chest, and back and then spread to other parts of the body. Most patients have a fever, which develops 1-2 days before the rash appears. People may also experience fatigue, loss of appetite, and headache.
- Varicella infection typically lasts 5-7 days and will resolve without treatment.
- Transmission is airborne, spread by breathing and talking.

About Varicella

- Some people who have been vaccinated against chickenpox can still get the disease. However, the symptoms are usually milder with fewer red spots or blisters and mild or no fever.

- Most cases of varicella in Rhode Island occur among vaccinated individuals.

- People at higher risk for complications from chickenpox include infants, pregnant women, and people with weakened immune systems.

Data Overview, Varicella

- In 2017 there were 74 cases of varicella reported in RI, with a rate of 7.0 cases per 100,000 population.
- Rates of varicella have remained relatively stable over the last several years, but the case count increased by approximately 20 cases between 2016 and 2017.
- Children four years of age and under had the highest rates of varicella in RI in 2017: 43.8 cases per 100,000 population.
- The majority (74%) of childhood cases in 2017 occurred in children who were up-to-date on vaccine.

Reported Cases of Varicella, Rhode Island, 2013-2017

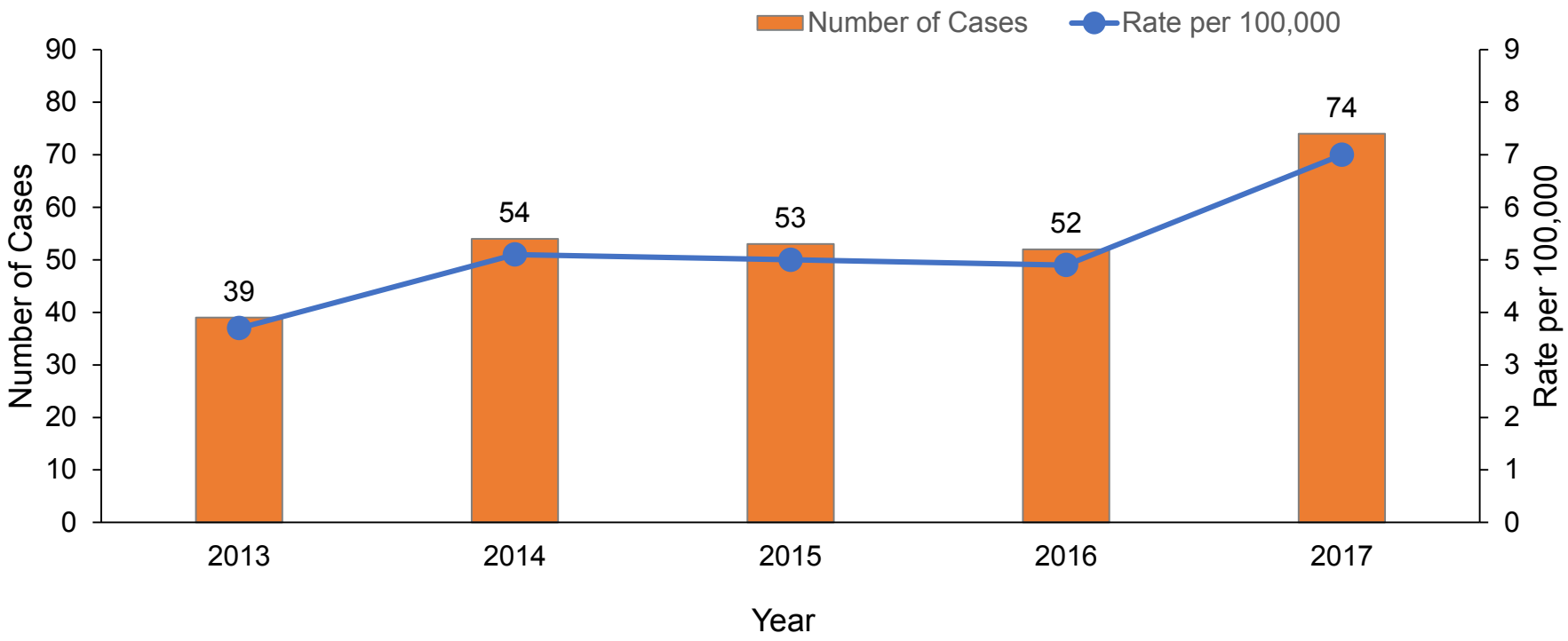

Figure 1. In 2017, there were 74 cases of reported varicella in RI with a rate of 7.0 cases per 100,000 population. This represents an increase by more than 20 cases over 2016. Across the country, breakthrough varicella disease is becoming more prevalent despite vaccination.

Rate of Varicella, Age Group, Rhode Island, 2017

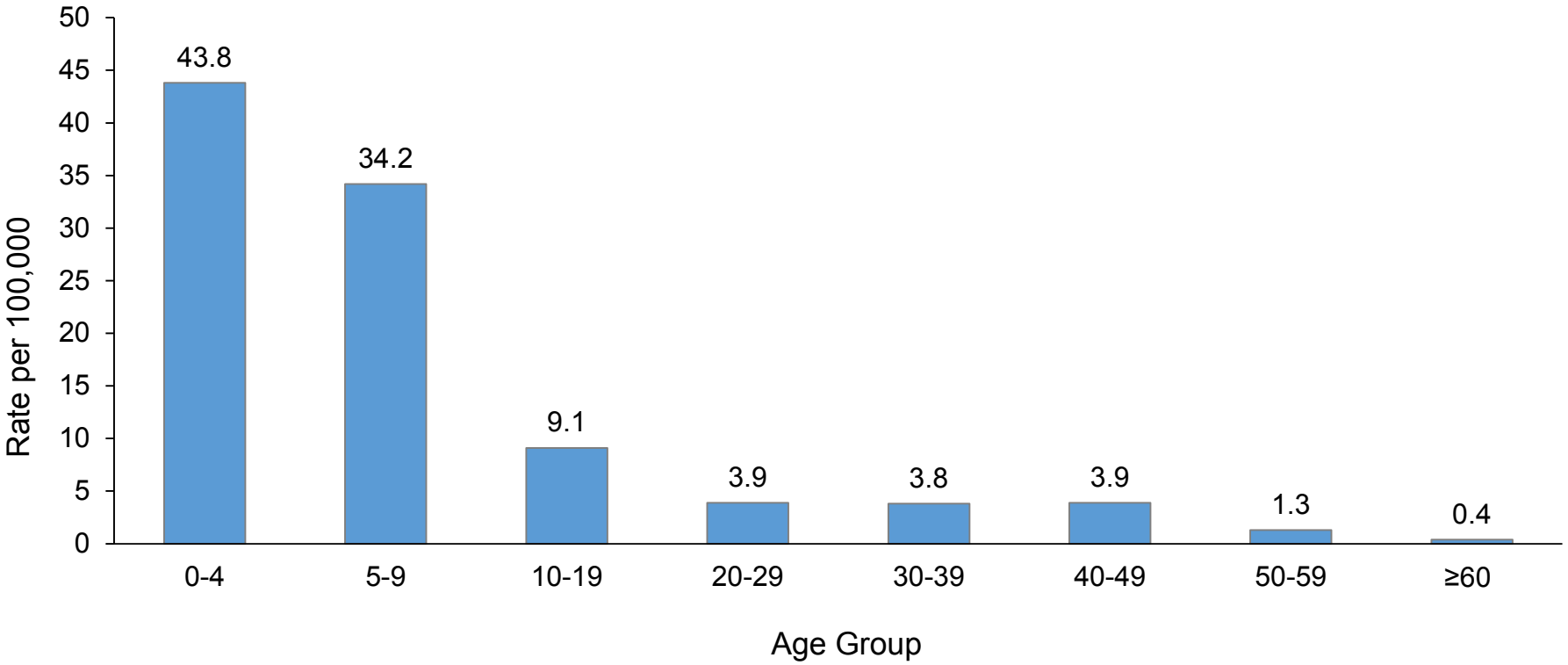

Figure 2: Varicella affects children the most, with rates highest among those 4 years of age and under (43.8 cases per 100,000 population in 2017). The rate of varicella in Rhode Island remains high through childhood, decreasing with age. Two doses of varicella-containing vaccine are recommended for children, with the first dose between 12-15 months of age and a second dose between 4-6 years of age.

Rate of Varicella, Sex and Year, Rhode Island, 2013-2017

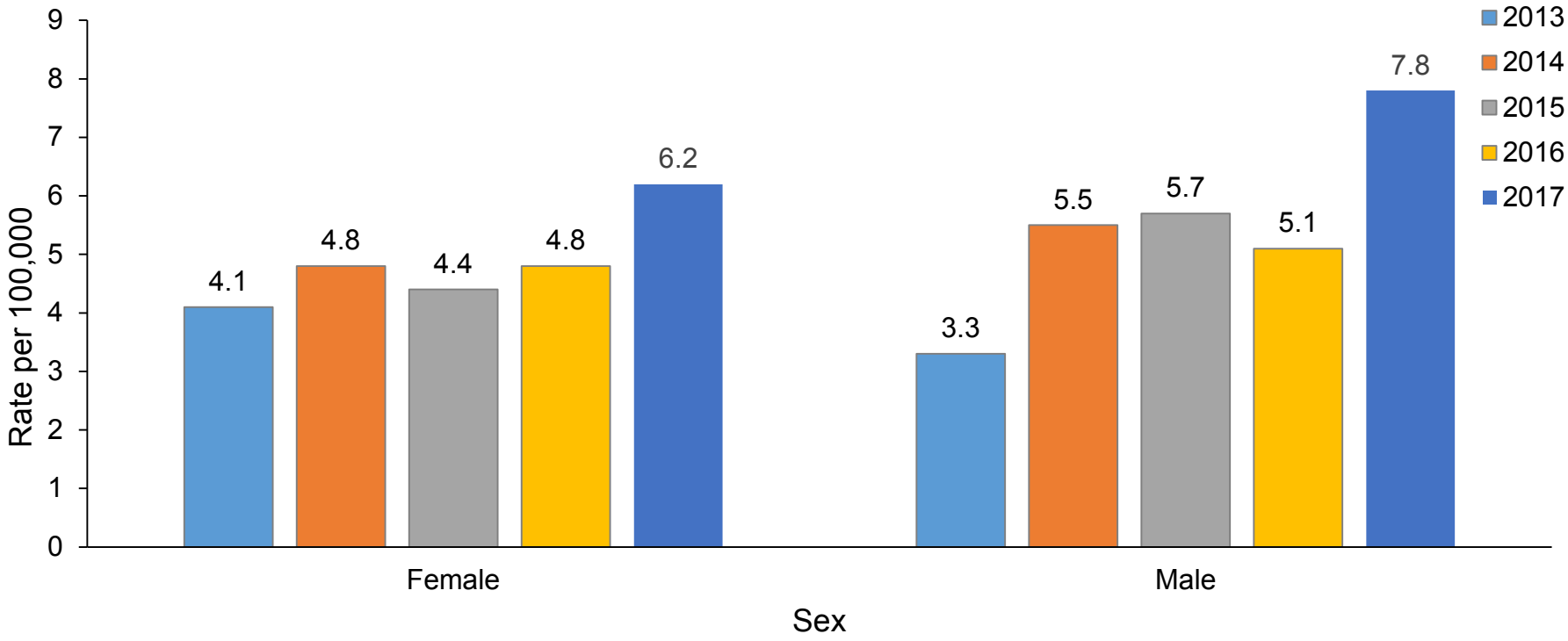

Figure 3: In most of the last 5 years, males have had a slightly higher rate of varicella than females. In 2017, males had a rate of 7.8 cases per 100,000 population, and females had a rate of 6.2 cases per 100,000 population.

Rate of Varicella, County and Year, Rhode Island, 2013-2017

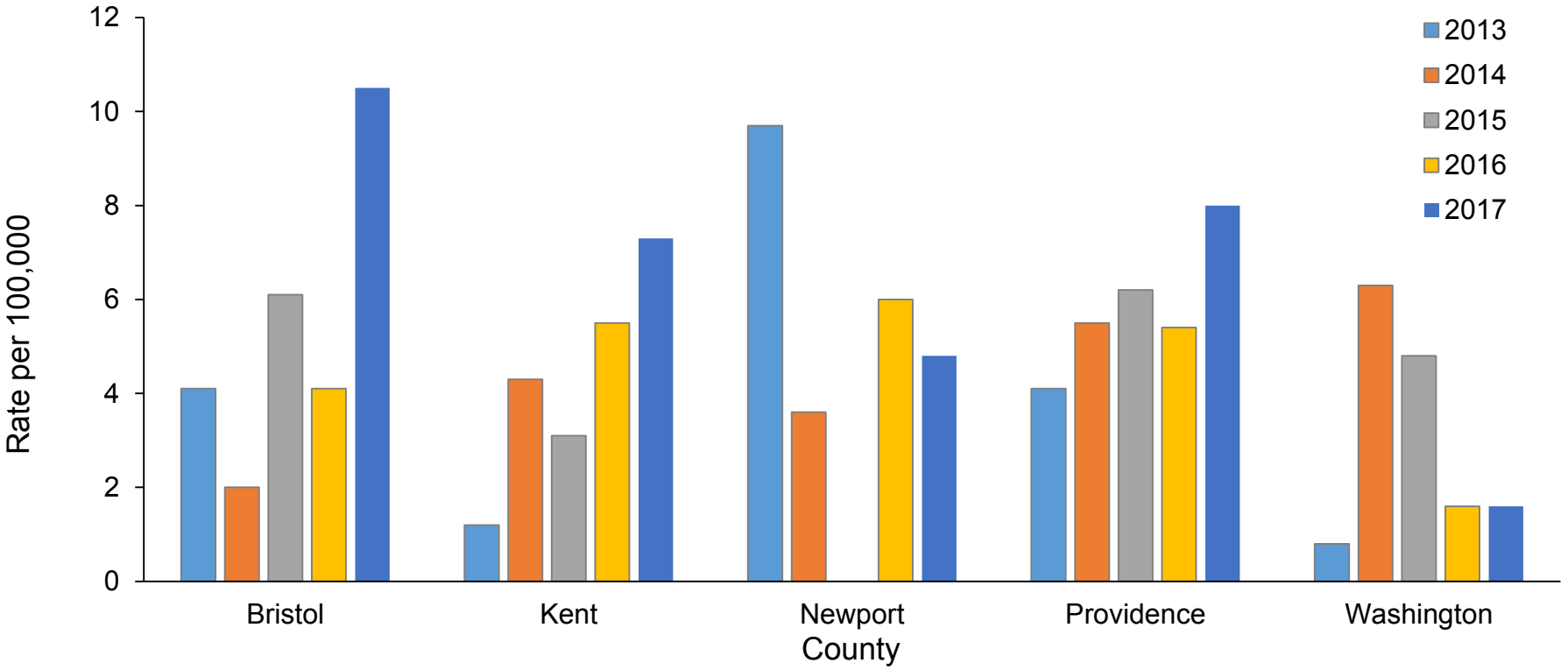

Figure 4: In 2017, the highest rate of varicella cases occurred in Bristol County (10.5 cases per 100,000 population), followed closely by Providence and Kent Counties (8 and 7.3 cases per 100,000 population, respectively). Varicella rates vary among counties over the years with no clear trend.

Reported Cases of Varicella, Month and Year, Rhode Island, 2013-2017

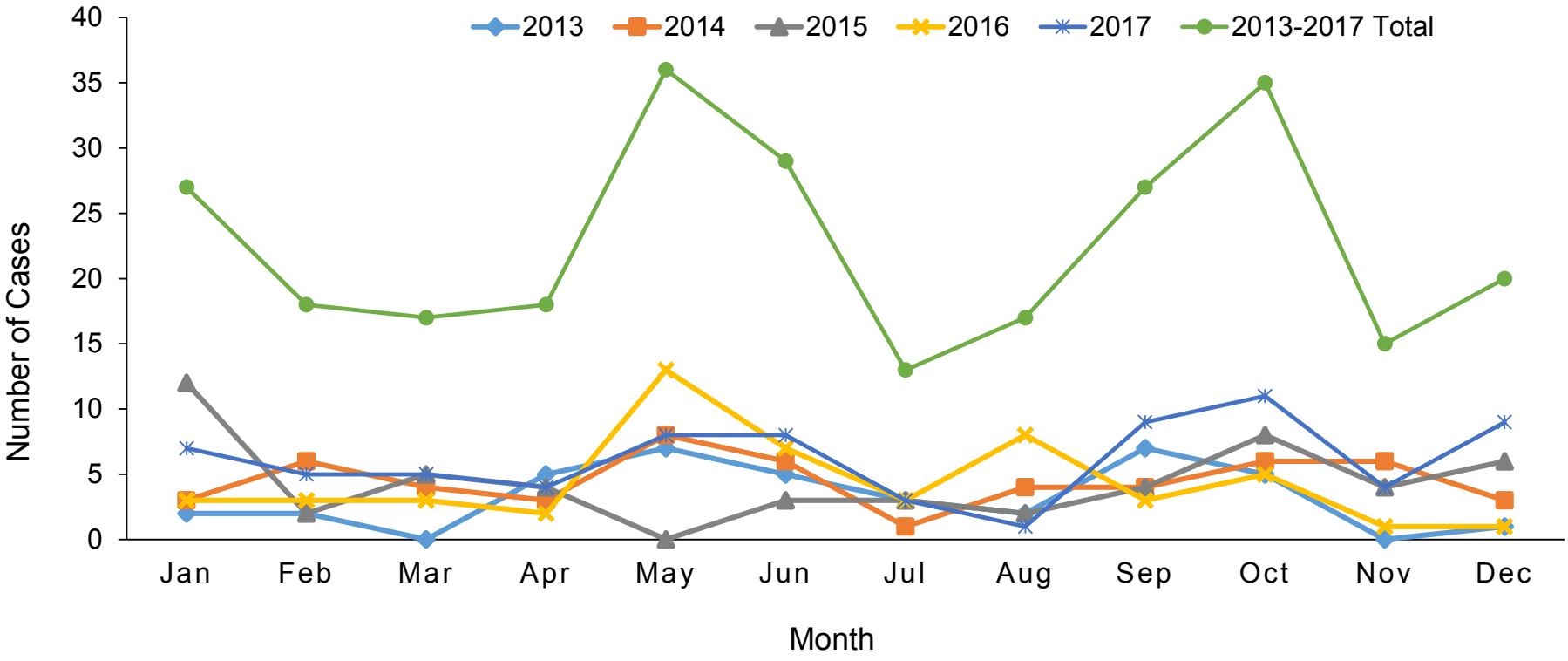

Figure 5: Varicella occurs throughout the year in Rhode Island, but appears to have spikes in May/June and September/October. In May of 2016, there was an outbreak in a prison in Rhode Island, which accounted for 5 of the reported cases of varicella in that month. The dip in the summer months may be associated with school being out of session.

Cases of Varicella in Children by Vaccination Status, 2017

- In 2017, there were 58 cases of varicella in children aged 0-20 years (78% of cases)
  - Of these cases,
    - 9 (16%) were too young for vaccination (<1 year old)
    - 43 cases **(74%),** aged 1-20, were **up-to-date** on vaccine
    - 6 cases **(10%),** aged 1-20, were **not up-to-date**
      - 3 cases had religious exemptions or parental refusal
      - 3 cases had received 1 vaccine
- **The majority of varicella cases in RI occur in children who are properly vaccinated.**

Varicella Frequency and Rates by Year, Rhode Island, 2013-2017

Table 1. Frequency by Year					
	2013	**2014**	**2015**	**2016**	**2017**
Number of Cases	39	54	53	52	74

Table 2. Rate by Year					
	2013	**2014**	**2015**	**2016**	**2017**
Rate per 100,000	3.7	5.1	5.0	4.9	7.0

Varicella Frequency, Age Group and Year, Rhode Island, 2013-2017

Table 3. Frequency by Age Group and Year					
	2013	**2014**	**2015**	**2016**	**2017**
0-4	10	16	18	20	24
5-9	19	15	12	10	19
10-19	5	13	11	4	12
20-29	3	3	5	5	6
30-39	1	0	1	6	5
40-49	0	3	2	4	5
50-59	1	3	2	3	2
≥60	0	1	2	0	1
Total	**39**	**54**	**53**	**52**	**74**

Varicella Rates, Age Group and Year, Rhode Island, 2013-2017

Table 4. Rate by Age Group and Year					
Age Group	**2013**	**2014**	**2015**	**2016**	**2017**
0-4	18.2	29.2	32.9	36.6	43.8
5-9	32.3	26	21.2	17.8	34.2
10-19	3.7	9.6	8.2	3	9.1
20-29	2	2	3.2	3.2	3.9
30-39	0.8	0	0.8	4.6	3.8
40-49	0	2.2	1.5	3.1	3.9
50-59	0.6	1.9	1.3	1.9	1.3
≥60	0	0.4	0.8	0	0.4

Varicella Frequency and Rates, Sex and Year, Rhode Island, 2013-2017

Table 5. Frequency by Sex and Year						
	2013	**2014**	**2015**	**2016**	**2017**	**Total 2013-2017**
Female	22	26	24	26	34	**132**
Male	17	28	29	26	40	**140**
Total	**39**	**54**	**53**	**52**	**74**	**272**

Table 6. Rate by Sex and Year					
	2013	**2014**	**2015**	**2016**	**2017**
Female	4.1	4.8	4.4	4.8	6.2
Male	3.3	5.5	5.7	5.1	7.8

Varicella Frequency, County and Year, Rhode Island, 2013-2017

Table 7. Frequency by County and Year					
	2013	**2014**	**2015**	**2016**	**2017**
Bristol	2	1	3	2	5
Kent	2	7	5	9	12
Newport	8	3	0	5	4
Providence	26	35	39	34	51
Washington	1	8	6	2	2
Total	**39**	**54**	**53**	**52**	**74**

Varicella Rates by County and Year, Rhode Island, 2013-2017

Table 8. Rate by County and Year					
	2013	**2014**	**2015**	**2016**	**2017**
Bristol	4.1	2.0	6.1	4.1	10.5
Kent	1.2	4.3	3.1	5.5	7.3
Newport	9.7	3.6	0.0	6.0	4.8
Providence	4.1	5.5	6.2	5.4	8.0
Washington	0.8	6.3	4.8	1.6	1.6

Varicella Frequency, Month and Year, Rhode Island, 2013-2017

Table 9. Frequency by Month and Year						
	2013	**2014**	**2015**	**2016**	**2017**	**2013-2017 Total**
Jan	2	3	12	3	7	**27**
Feb	2	6	2	3	5	**18**
Mar	0	4	5	3	5	**17**
Apr	5	3	4	2	4	**18**
May	7	8	0	13	8	**36**
Jun	5	6	3	7	8	**29**
Jul	3	1	3	3	3	**13**
Aug	2	4	2	8	1	**17**
Sep	7	4	4	3	9	**27**
Oct	5	6	8	5	11	**35**
Nov	0	6	4	1	4	**15**
Dec	1	3	6	1	9	**20**
Total	**39**	**54**	**53**	**52**	**74**	**272**

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.

References

- https://www.cdc.gov/chickenpox/index.html
- http://www.health.ri.gov/diseases/vaccinepreventable/?parm=19