





# **Varicella Surveillance 2012-2016**

Rhode Island Department of Health

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

Center for Acute Infectious Disease Epidemiology



# About Varicella

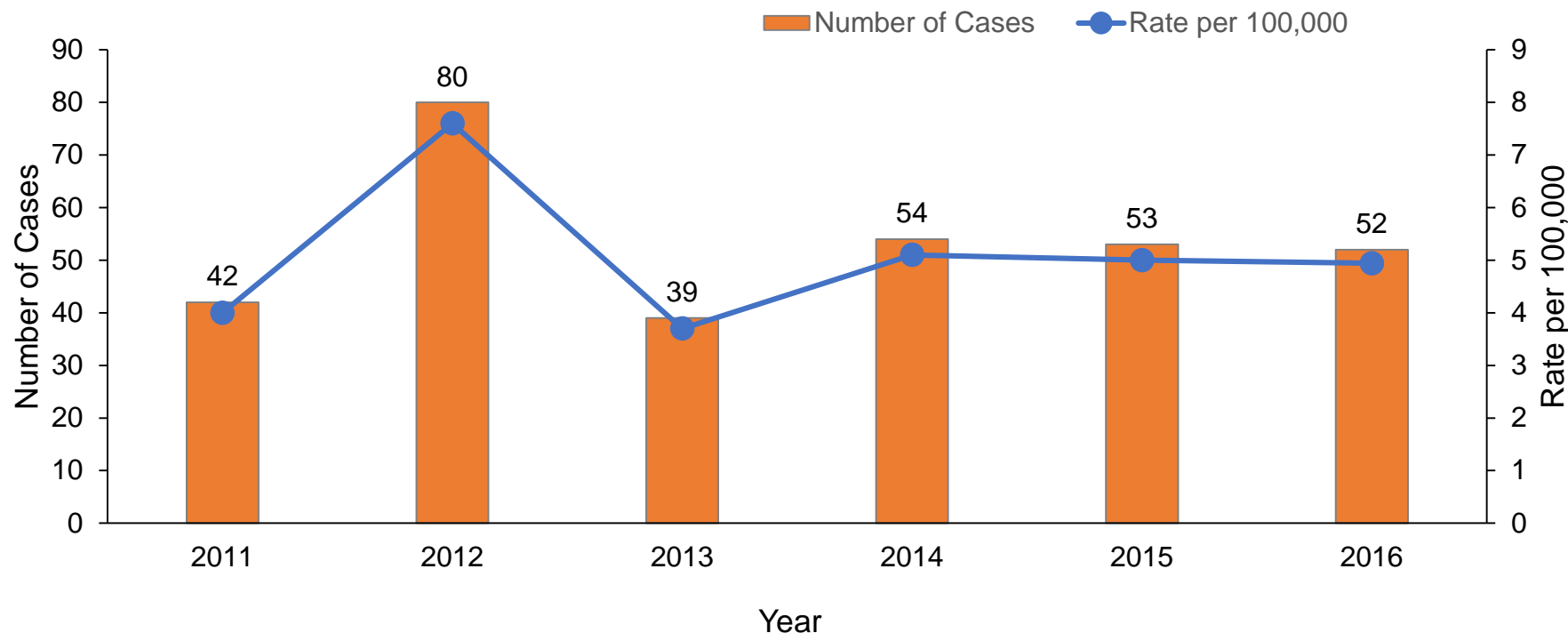
- Varicella (chickenpox) is a very contagious disease caused by the varicella-zoster virus.
- Symptoms include an itchy skin rash with blister-like lesions, covering the body. It may first appear on the face, chest, and back and then spread to other parts of the body. Most patients have a fever, which develops 1-2 days before the rash appears. People may also 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.
- 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.
- People at higher risk for complications from chickenpox include infants, pregnant women, and people with immunosuppressive conditions.



# Data Overview, Varicella

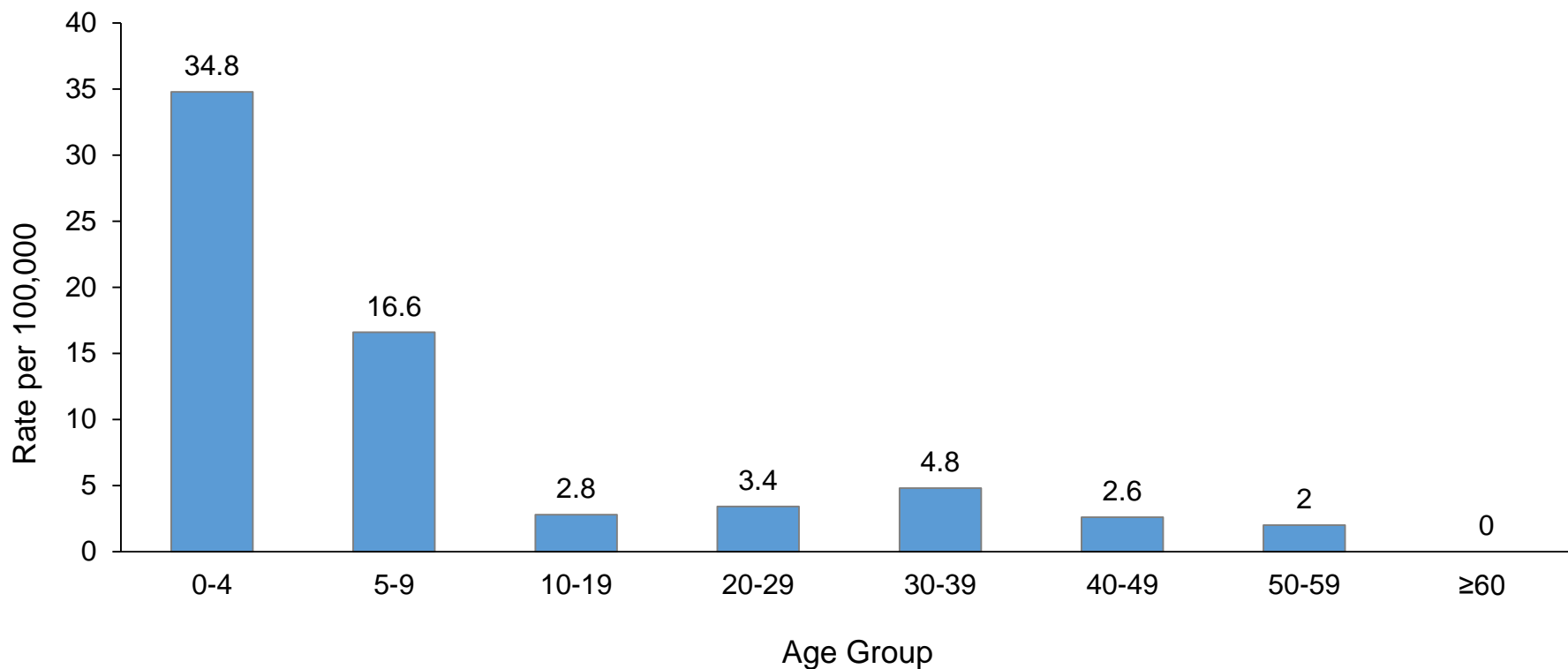
- In 2016, there were 52 cases of varicella reported in Rhode Island, with a rate of 4.9 cases per 100,000 population. This rate is almost identical to 2015 and 2014.
- Rates of varicella have remained relatively stable over the last several years, with the exception of 2012, when there was an extended outbreak at a childcare center.
- Children 4 years of age and under had the highest rates of varicella in Rhode Island in 2016: 34.8 cases per 100,000 population.
- In May and August 2016, there were two unrelated outbreaks of varicella in two separate correctional facilities in Rhode Island. A total of eight individuals became ill with varicella.

# Reported Cases of Varicella, Rhode Island, 2012-2016



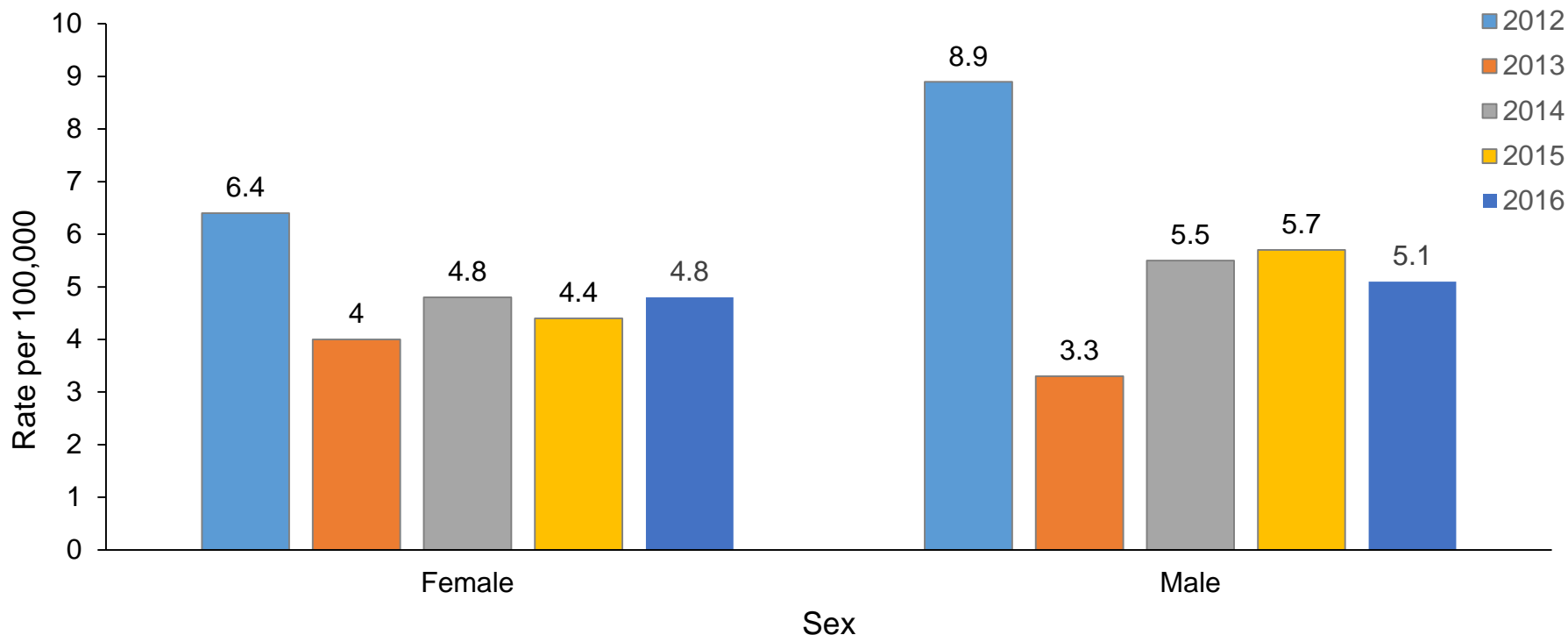
**Figure 1.** In 2016, there were 52 cases of reported varicella in Rhode Island with a rate of 4.9 cases per 100,000 population. This rate is almost identical to 2014 and 2015. Across the country, varicella is becoming more prevalent with breakthrough disease despite vaccination. The most recent national data is available for 2013, during which the rate was 4.6 cases per 100,000.

# Rate of Varicella, Age Group, Rhode Island, 2016



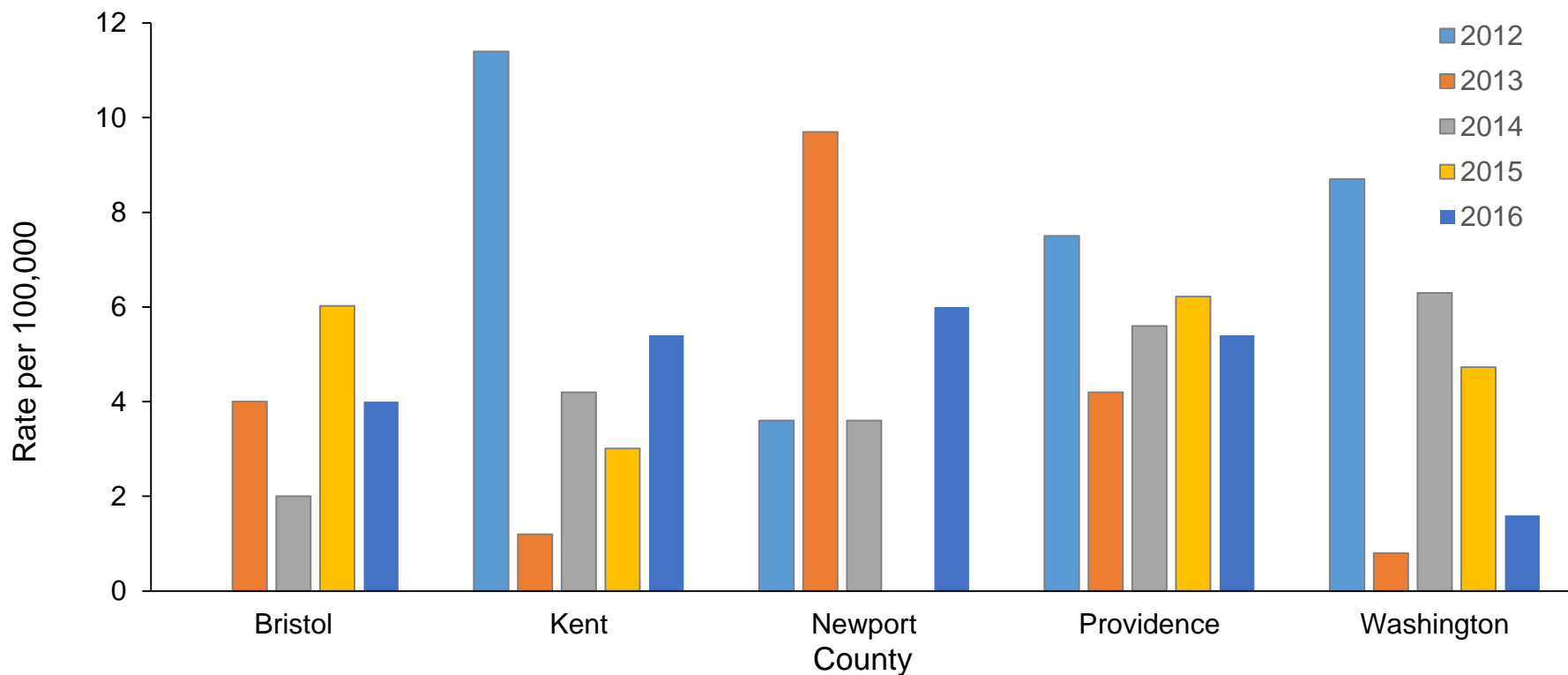
**Figure 2:** Varicella affects children the most, with rates highest among those 4 years of age and under (34.8 cases per 100,000 population in 2016). Two doses of varicella-containing vaccine are recommended for children, with the first dose between 12-15 months of age and a second dose between 4-6 years of age.

# Rate of Varicella, Sex and Year, Rhode Island, 2012-2016



**Figure 3:** In most of the last 5 years, males have had a slightly higher rate of varicella than females. In 2016, males had a rate of 5.1 cases per 100,000 population, and females had a rate of 4.8 cases per 100,000 population.

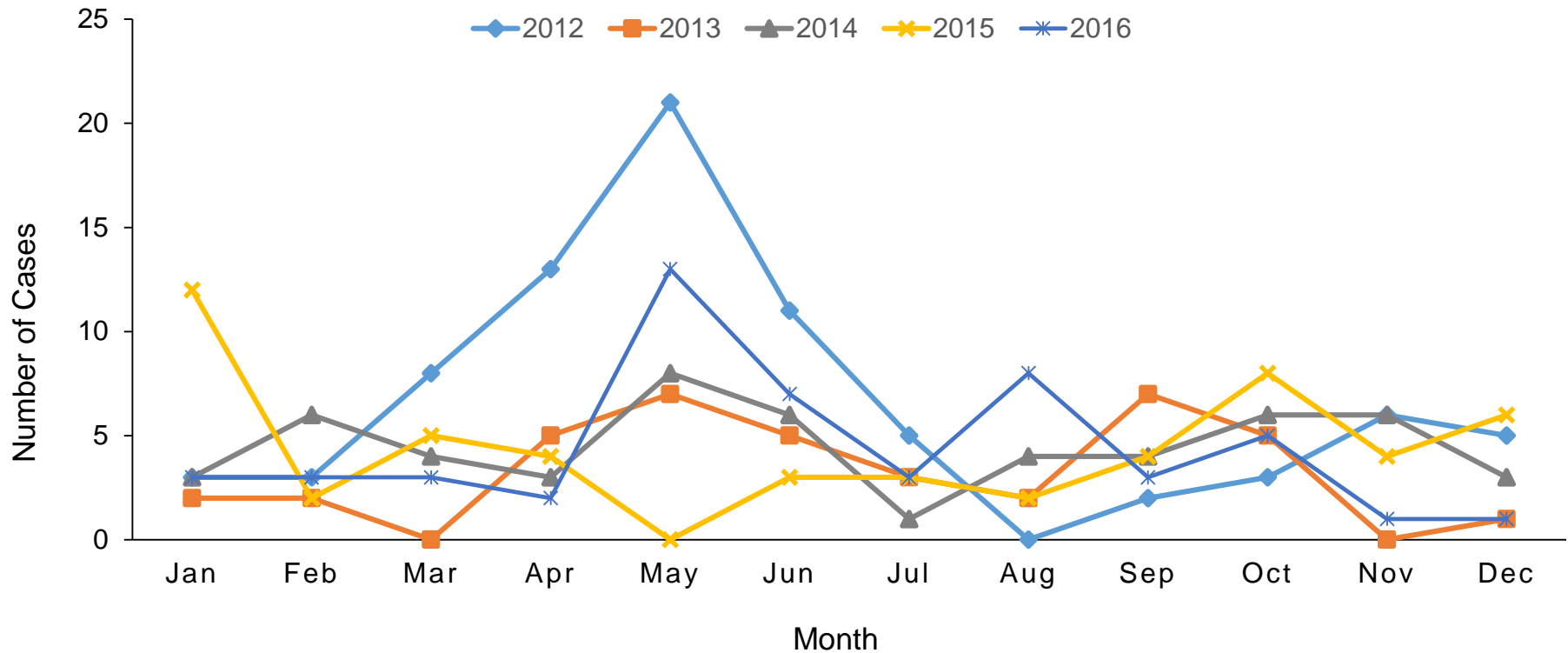
# Rate of Varicella, County and Year, Rhode Island, 2012-2016



**Figure 4:** In 2016, the highest rate of varicella cases occurred in Newport County (six cases per 100,000 population), followed closely by Bristol and Providence counties (5.4 cases per 100,000 population). Varicella rates vary among counties over the years with no clear trend. The high rate in Kent County in 2012 was due to an outbreak at a child care center.



# Reported Cases of Varicella, Month and Year, Rhode Island, 2012-2016



**Figure 5:** Varicella occurs throughout the year in Rhode Island, with no clear seasonal trend. In May of 2016, there was an outbreak in a prison in Rhode Island, which accounted for five of the reported cases of varicella in that month. The sharp peak in April through June of 2012 was due to an extended outbreak in a childcare center.

# Varicella Frequency and Rates by Year, Rhode Island, 2012-2016



**Table 1. Frequency by Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Number of Cases</b>	80	39	54	53	52

**Table 2. Rate by Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Rate per 100,000</b>	7.6	3.7	5.1	5.0	4.9

# Varicella Frequency, Age Group and Year, Rhode Island, 2012-2016



**Table 3. Frequency by Age Group and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>0-4</b>	24	10	16	18	20
<b>5-9</b>	26	19	15	12	10
<b>10-19</b>	20	5	13	11	4
<b>20-29</b>	0	3	3	5	5
<b>30-39</b>	3	1	0	1	6
<b>40-49</b>	7	0	3	2	4
<b>50-59</b>	0	1	3	2	3
<b>≥60</b>	0	0	1	2	0
<b>Total</b>	<b>80</b>	<b>39</b>	<b>54</b>	<b>53</b>	<b>52</b>

# Varicella Rates, Age Group and Year, Rhode Island, 2012-2016



**Table 4. Rate by Age Group and Year**

<b>Age Group</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>0-4</b>	41.8	17.4	27.9	31.3	34.8
<b>5-9</b>	43.0	31.4	24.8	19.9	16.6
<b>10-19</b>	13.9	3.5	9.0	7.7	2.8
<b>20-29</b>	0.0	2.0	2.0	3.4	3.4
<b>30-39</b>	2.4	0.8	0.0	0.8	4.8
<b>40-49</b>	4.5	0.0	1.9	1.3	2.6
<b>50-59</b>	0.0	0.7	2.0	1.3	2.0
<b>≥60</b>	0.0	0.0	0.5	1.9	0.0

# Varicella Frequency and Rates, Sex and Year, Rhode Island, 2012-2016



**Table 5. Frequency by Sex and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Female</b>	35	22	26	24	26
<b>Male</b>	45	17	28	29	26
<b>Total</b>	<b>80</b>	<b>39</b>	<b>54</b>	<b>53</b>	<b>52</b>

**Table 6. Rate by Sex and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Female</b>	6.4	4.0	4.8	4.4	4.8
<b>Male</b>	8.9	3.3	5.5	5.7	5.1

# Varicella Frequency, County and Year, Rhode Island, 2012-2016



**Table 7. Frequency by County and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Bristol</b>	0	2	1	3	2
<b>Kent</b>	19	2	7	5	9
<b>Newport</b>	3	8	3	0	5
<b>Providence</b>	47	26	35	39	34
<b>Washington</b>	11	1	8	6	2
<b>Total</b>	<b>80</b>	<b>39</b>	<b>54</b>	<b>53</b>	<b>52</b>

# Varicella Rates by County and Year, Rhode Island, 2012-2016



**Table 8. Rate by County and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Bristol</b>	0.0	4.0	2.0	6.0	4.0
<b>Kent</b>	11.4	1.2	4.2	3.0	5.4
<b>Newport</b>	3.6	9.7	3.6	0.0	6.0
<b>Providence</b>	7.5	4.2	5.6	6.2	5.4
<b>Washington</b>	8.7	0.8	6.3	4.7	1.6

# Varicella Frequency, Month and Year, Rhode Island, 2012-2016



**Table 9. Frequency by Month and Year**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Jan</b>	3	2	3	12	3
<b>Feb</b>	3	2	6	2	3
<b>Mar</b>	8	0	4	5	3
<b>Apr</b>	13	5	3	4	2
<b>May</b>	21	7	8	0	13
<b>Jun</b>	11	5	6	3	7
<b>Jul</b>	5	3	1	3	3
<b>Aug</b>	0	2	4	2	8
<b>Sep</b>	2	7	4	4	3
<b>Oct</b>	3	5	6	8	5
<b>Nov</b>	6	0	6	4	1
<b>Dec</b>	5	1	3	6	1
<b>Total</b>	<b>80</b>	<b>39</b>	<b>54</b>	<b>53</b>	<b>52</b>





# 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.



# References

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