

# Childhood Immunizations

## DEFINITION

*Childhood immunizations* is the percentage of children ages 19 months to 35 months who have received the entire 4:3:1:3:3:1:4 series of vaccinations as recommended by the Advisory Committee on Immunization Practices (ACIP). In 2017, the complete series included 4 doses of diphtheria, tetanus and pertussis (DTaP); 3 doses of polio; 1 dose of measles, mumps, rubella (MMR); 3-4 doses of Haemophilus influenzae type b (Hib); 3 doses of hepatitis B vaccines (Hep B); 1 dose of varicella (chickenpox); and 4 doses of pneumococcal conjugate vaccine (PCV).

## SIGNIFICANCE

Timely and complete immunization protects children against a number of infectious diseases that were once common and resulted in death or disability. Vaccines interact with the immune system to produce antibodies that protect the body if it is later exposed to disease. The benefits of immunization include improved quality of life and productivity, reduced health spending, and prevention of illness and death. Society benefits from high vaccination levels because disease outbreaks are minimized, and those who cannot be vaccinated for medical reasons are less likely to be exposed. Although many of the diseases against which children are vaccinated are rare,

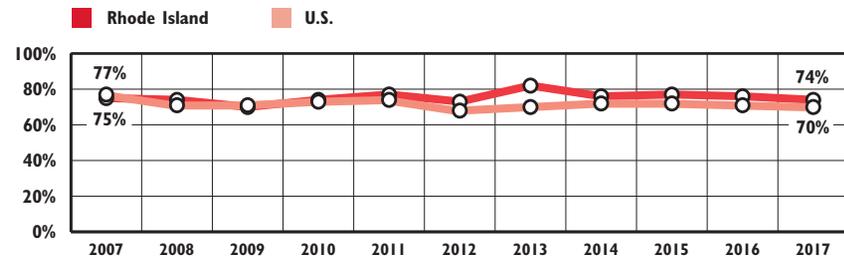
it is important to continue to immunize against them until the diseases are completely eradicated.<sup>1,2,3</sup>

The federal *Vaccines for Children* program is used to eliminate cost as a barrier to vaccination. It allows states to obtain vaccines at a discounted price. Local providers then administer the vaccines at no cost to eligible children under age 19, including those who are uninsured, underinsured, or Medicaid-eligible.<sup>4</sup> Due to the federal *Affordable Care Act (ACA)*, children and individuals enrolled in new health insurance plans now have access to recommended vaccines without deductibles or copays, when delivered by an in-network provider.<sup>5</sup>

The Rhode Island Department of Health obtains and distributes vaccines and works in partnership with local health care providers to maintain and share KIDSNET immunization data for children from birth through age 18.<sup>6</sup>

Rhode Island requires vaccination against the following diseases prior to entry into child care, preschool, Head Start, or Kindergarten: diphtheria, tetanus, and pertussis; Haemophilus influenzae type b; hepatitis A; hepatitis B; influenza; measles, mumps, and rubella; pneumococcal conjugate; polio; rotavirus; and varicella (chickenpox). Kindergarten entry requires all of these and additional doses of DTaP, MMR, polio, and varicella.<sup>7,8</sup>

**Fully Immunized Children\*, Ages 19 Months to 35 Months, Rhode Island and United States, 2007-2017**

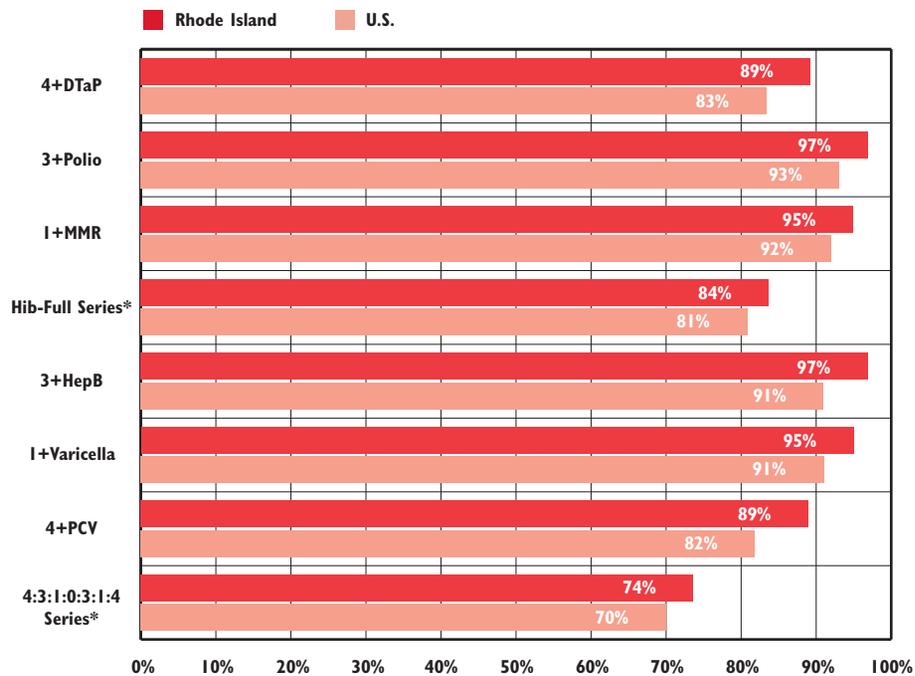


\*Fully immunized children received the 4:3:1:0:3:1:4 series in 2008 to 2010; and the 4:3:1:3:3:1:4 series from 2011-2017.

Source: Centers for Disease Control and Prevention, National Immunization Survey, 2007-2017.

- ◆ In 2017, 74% of Rhode Island's children ages 19 months to 35 months were fully immunized, above the national average of 70% and 14th best in U.S.<sup>9</sup>
- ◆ In 2017, the U.S. rate for fully immunized children ages 19 months to 35 months ranged from 63% for children living below the federal poverty level to 74% for children living at or above the federal poverty level. The 2017 U.S. rate was 72% for Asian, non-Hispanic children, 72% for White, non-Hispanic children, 70% for Hispanic children, and 67% for Black, non-Hispanic children.<sup>10</sup>
- ◆ Vaccine concerns have led some parents to request alternative vaccination schedules or to refuse some or all immunizations, which contribute to under-immunization.<sup>11,12</sup> Federal law requires that families be provided with information about each vaccine, including risks and benefits about the vaccine.<sup>13</sup>
- ◆ In Rhode Island, children may be exempt from receiving one or more vaccines for medical or religious reasons.<sup>14</sup> In the 2017-2018 school year, 1.1% (120) of kindergarten students had exemptions from vaccination requirements. Of these exemptions, 92% were for religious reasons and 8% were for medical reasons.<sup>15</sup> In the 2017-2018 school year, 4.4% (533) of 7th grade students had exemptions from vaccination requirements. Of these exemptions, 92% were for religious reasons and 8% were for medical reasons.<sup>16</sup>

## Vaccination Coverage Among Children, Ages 19 Months to 35 Months, Rhode Island and United States, 2017



Source: Rhode Island Department of Health analysis of data from the *National Immunization Survey-Children*, 2017.  
 \*Depending on the product type received, 3+ or 4+ doses of Hib vaccine is a full dose.

◆ In 2017, Rhode Island ranked first in the U.S. for children receiving the rotavirus vaccines; second for 3+Polio and 3+HepB vaccines; fourth for 1+ MMR; fifth for the 4+DTaP, 1+Varicella, 4+PCV vaccines; and eleventh for the 3+HepB vaccine.<sup>17</sup>

◆ In 2017, Rhode Island's rate of completion for the 4:3:1:0:3:1:4 (74.4%) did not reach the national *Healthy People 2020* target (80%), but a number of individual vaccine coverage rates in Rhode Island did. Polio, MMR, HepB, and varicella had coverage rates that met or surpassed the *Healthy People 2020* targets (90%) set for each type of vaccine for children ages 19 months to 35 months.<sup>18</sup>

### References

<sup>1</sup> Centers for Disease Control and Prevention. (2017). *Why are childhood vaccines so important?* Retrieved January 21, 2019, from [www.cdc.gov](http://www.cdc.gov)

<sup>2</sup> *Immunization*. (2015). Washington, DC: Child Trends. (continued on page 178)

## Immunizations for Elementary and Middle School Students

◆ The 2017-2018 *Rhode Island Department of Health Immunization Survey* analyzed student immunization status reports through a web-based survey of all kindergarten and 7th grade school nurse teachers. The immunization statuses of 98% of kindergarten students and more than 95% of 7th grade students were assessed. Of the immunizations needed for school entry, entering kindergarteners had coverage rates between 96% and 98%, while entering 7th grade students had rates between 74% and 99%.<sup>19,20</sup>

## Adolescent Immunization

◆ All Rhode Island seventh grade students are required to receive the human papillomavirus (HPV), tetanus, diphtheria, pertussis (Tdap), and meningococcal conjugate (MCV4) vaccines, as well as any needed catch-up doses, for entry into school.<sup>21</sup>

◆ According to the 2017 *National Immunization Survey-Teen*, Rhode Island adolescents ranked first in the U.S. for the 3+HPV vaccine for males (with 78% of adolescents vaccinated), second in the nation for the 3+HPV vaccine for females (77% vaccinated), third in the nation for the 1+MenACWY vaccine (94% vaccinated), and fifth in the nation for the 1+Tdap vaccine (95% vaccinated).<sup>22</sup>

◆ To ensure that all high school seniors are fully vaccinated before beginning college or work, the Rhode Island Office of Immunization runs the *Vaccinate Before You Graduate (VBYG)* program in high schools throughout the state. The program holds vaccination clinics throughout the year at each participating school. The immunizations are funded by the federal Vaccines for Children program, local insurers, and other federal grants and are offered at no cost to students.<sup>23,24</sup>

◆ During the 2017-2018 school year, 103 schools participated in VBYG. In total, 4,942 vaccine doses were administered to 2,245 students. Vaccines administered included influenza, HPV, MCV4, hepatitis A, hepatitis B, measles, mumps, and rubella, polio, tetanus, diphtheria, tetanus, diphtheria, pertussis, and varicella (chicken pox).<sup>25</sup>

◆ The School Located Vaccination (SLV) program administered 28,200 doses of the influenza vaccine to both children and adults at school-based clinics throughout Rhode Island from October to December 2018. The goal of SLV is to ensure all Rhode Island children receive their annual flu vaccination at no out-of-pocket cost.<sup>26</sup>