

# 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 2015, 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; 1 dose of varicella (chickenpox); and 4 doses of pneumococcal conjugate vaccine (PCV).

## SIGNIFICANCE

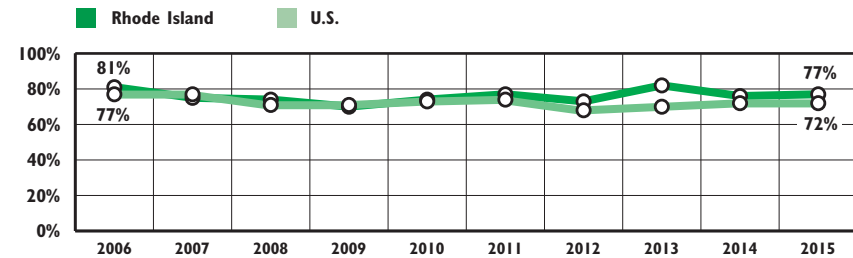
Timely and complete immunization protects children against a number of infectious diseases that were once common and resulted in death or disability. Vaccines interact with the immune system to produce antibodies that protect the body if it is later exposed to disease. The benefits of immunization include 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. 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>

Rhode Island obtains vaccines for all children and distributes them to health care providers. In order to ensure that vaccines reach all children, the Rhode Island Department of Health works in partnership with local health care providers to maintain and share KIDSNET immunization data for children from birth to 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 except hepatitis A, Haemophilus influenzae type b, influenza, pneumococcal conjugate, and rotavirus.<sup>7,8</sup>

**Fully Immunized Children\*, Ages 19 Months to 35 Months, Rhode Island and United States, 2006-2015**

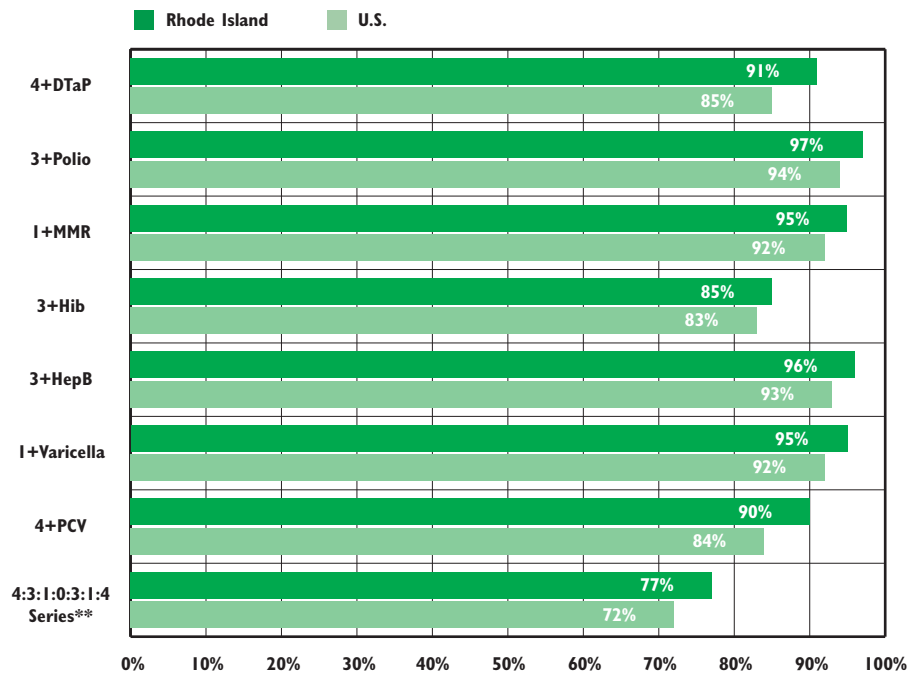


\*Fully immunized children received the 4:3:1:3:3:1 series from 2006 to 2007; the 4:3:1:0:3:1:4 series in 2008 to 2010; and the 4:3:1:3:3:1:4 series in 2011-2015.

Source: Centers for Disease Control and Prevention, *National Immunization Survey*, 2006-2015.

- ◆ In 2015, Rhode Island's rate of children ages 19 months to 35 months that were fully immunized (77%) was above the national average of 72% and 6th best in U.S.<sup>9</sup>
- ◆ In 2015, the U.S. rate for fully immunized children ages 19 months to 35 months ranged from 69% for children living below the federal poverty level to 75% for children living at or above the federal poverty level. The 2015 U.S. rate was 78% for Asian, non-Hispanic children, 73% for White, non-Hispanic children, 72% for Hispanic children, and 69% 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 and given the opportunity to clarify issues or concerns with their health care provider.<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 2015-2016 school year, 1.13% (126) of kindergarten students and 4.48% (562) of 7th grade students received exemptions from vaccination requirements. Of the 688 exemptions, 92% were for religious reasons and 8% were for medical reasons. Religious exemptions for 7th graders increased from 0.5% (60) in the 2014-2015 school year to 4.2% (529) in the 2015-2016 school year, mainly due to the addition of HPV vaccine to the 7th grade immunization requirements. Despite the increase in exemptions, the Rhode Island HPV vaccination rate for young adolescents is the best among 50 states and DC.<sup>15,16</sup>

## Vaccination Coverage Among Children, Ages 19 Months to 35 Months, Rhode Island and United States, 2015



Source: Rhode Island Department of Health analysis of data from the *National Immunization Survey-Children*, 2015.  
 \*\*Depending on the product type received, 3+ or 4+ doses of Hib vaccine is a full dose.

◆ In 2015, Rhode Island ranked first in the U.S. for the rotavirus vaccines; third in the U.S. for the 4+DTaP, 3+Polio and 3+HepB vaccines; fourth in the U.S. for the 4+PCV vaccine; and fifth in the U.S. for 1+VAR vaccine.

◆ In 2015, Rhode Island's rate of completion for the 4:3:1:0:3:1:4 (77%) 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, 4+DTaP, 4+PCV, 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>17,18</sup>

### References

<sup>1</sup> Centers for Disease Control and Prevention. (2014). *Why are childhood vaccines so important?* Retrieved February 2, 2017, from www.cdc.gov

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

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## Immunizations for Elementary and Middle School Students

◆ The 2015-2016 *Rhode Island School Immunization Assessment* analyzed student immunization status reports through a web-based survey of all kindergarten and 7th grade school nurse teachers. The immunization statuses of 99% of kindergarten students and 99% of 7th grade students were reported. 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</sup>

## Adolescent Immunization

◆ All Rhode Island adolescent students are required to receive the human papillomavirus (HPV), tetanus, diphtheria, pertussis (Tdap), and meningococcal conjugate (MCV) vaccines for entry into school as well as any needed catch-up doses.<sup>20</sup>

◆ According to the 2015 *National Immunization Survey-Teen*, Rhode Island adolescents ranked first in the U.S. for the 1+Tdap vaccine, 1+MCV vaccine, and the 1+HPV and 3+HPV vaccines for males and females. In 2015, 98% Rhode Island adolescents had received the 1+MCV vaccine, 97% had received the 2+MMR vaccine, 97% had received the 1+Tdap vaccine, 96% had received the 2+VAR vaccine, 95% had received the 3+HepB vaccine, and 68% of females and 58% of males had received the 3+HPV vaccine.<sup>21</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 middle and 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>22,23</sup>

◆ During the 2015-2016 school year, 103 schools participated in VBYG. In total, 4,996 vaccine doses were administered to 2,451 students. Vaccines administered included influenza, HPV, MCV4, hepatitis A (HepA), hepatitis B (HepB), measles, mumps, and rubella (MMR), polio (IPV), tetanus, diphtheria (TD), tetanus, diphtheria, pertussis (Tdap), and varicella (chicken pox).<sup>24</sup>