

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 Series of vaccinations as recommended by the Advisory Committee on Immunization Practices (ACIP). The Series includes 4 doses of diphtheria, tetanus and pertussis (DTaP); 3 doses of polio; 1 dose of measles, mumps, rubella (MMR); 3 doses of Haemophilus influenzae type b (Hib); 3 doses of hepatitis B vaccines; and 1 dose of varicella (chickenpox).

SIGNIFICANCE

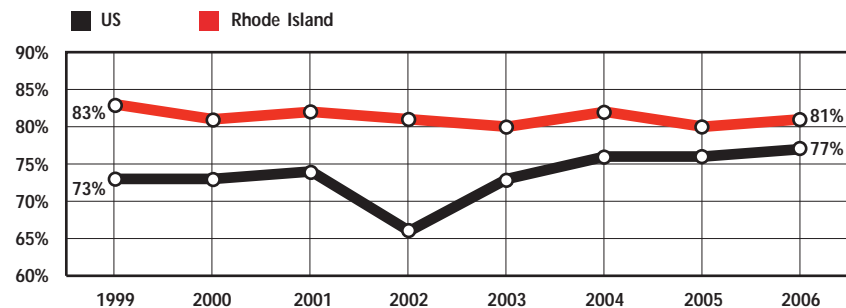
Adequate immunization protects children against a number of infectious diseases that were once common and resulted in death or disability.¹ Vaccines interact with the immune system to produce antibodies that protect the body if it is later exposed to disease.² Individuals benefit from immunization because it can improve quality of life and productivity, and prevent illness and death. Societal benefits include creation and maintenance of community immunity, prevention of disease outbreaks and reduction of health-related costs.^{3,4} Although many of the diseases children are vaccinated for are rare, it is important to continue to

immunize them until the diseases are completely eradicated.⁵

Vaccines are an extremely cost-effective tool in preventing disease.⁶ In order to eliminate cost as a barrier to vaccination, the federal Vaccines for Children program allows states to purchase vaccines at a discounted price. Providers then administer the vaccines at no cost to eligible children including those who are uninsured, underinsured or Medicaid eligible.⁷

Rhode Island purchases vaccines for all children and distributes them to healthcare providers. In order to ensure that vaccines reach all children, the Rhode Island Department of Health works in partnership with Rhode Island health plans to maintain and share Kids Net immunization data.^{8,9} In accordance with national recommendations, Rhode Island requires vaccination against the following diseases prior to entry into child care, Head Start or kindergarten: diphtheria, tetanus, and pertussis (DTaP); hepatitis B; Haemophilus influenzae type b (Hib); measles, mumps, rubella (MMR); polio (IPV); varicella (chickenpox) and pneumococcal disease.¹⁰

Fully Immunized Children*, Ages 19 Months to 35 Months, United States and Rhode Island, 1999-2006

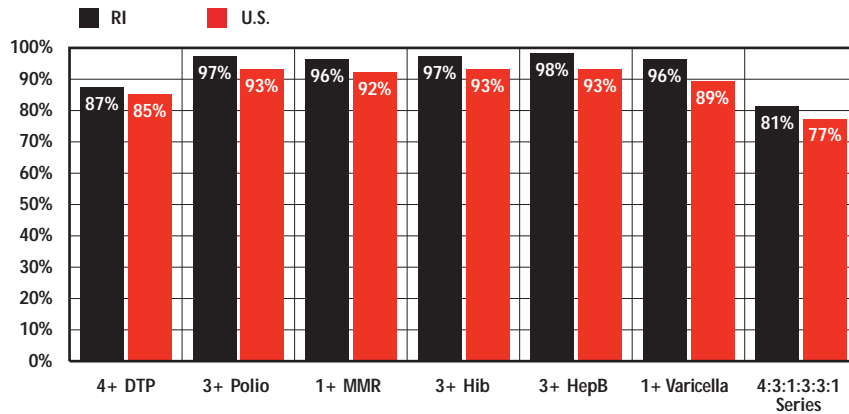


*Fully immunized children received the 4:3:1:3:3 series from 1999 to 2001 and the 4:3:1:3:3:1 series from 2002 to 2006.

Source: Centers for Disease Control and Prevention, National Immunization Survey, 1999-2006.

- ◆ Rhode Island's rate of fully immunized children ages 19 months to 35 months (81%) was higher than the national average (77%) in 2006.¹¹
- ◆ In the U.S. in 2006, the 4:3:1:3:3:1 vaccination rate among children ages 19 months to 35 months was 78% for White children, 74% for Black children, 77% for Hispanic children and 76% for Asian children.¹²
- ◆ Poverty remains a risk factor for under-immunizations. In the U.S. in 2006, children living at or above the federal poverty level had a 78% immunization rate while children living below the poverty level had a 74% immunization rate.^{13,14}
- ◆ Concerns about vaccine safety contribute to the number of children who are under-immunized in the U.S.¹⁵ As required by the National Childhood Vaccine Injury Act, families should be provided with informational materials about vaccines and given the opportunity to clarify issues or concerns with their healthcare provider.^{16,17}

Vaccination Coverage Among Children, Ages 19 Months to 35 Months, United States and Rhode Island, 2006



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

- ◆ In 2006, Rhode Island had the highest vaccination rates in the nation for 2 of the 6 vaccines in the 4:3:1:3:3:1 Series. Rhode Island ranks 7th in the nation for the completion of the full Series, up from 10th in 2005.^{18,19}
- ◆ In 2006, 170 Rhode Island children were exempt from receiving one or more vaccines for medical, religious or personal reasons.²⁰
- ◆ Since the end of 2005, a significant emphasis has been placed on infants receiving their first dose of the hepatitis B vaccine before hospital discharge. In 2006, the Rhode Island hepatitis B vaccination rate reached a 10-year peak of 91%. The Centers for Disease Control and Prevention recently named Rhode Island as the state with the most improved rate of infants receiving the hepatitis B immunization.²¹
- ◆ The Advisory Committee on Immunization Practices (ACIP) periodically reviews the national immunization schedule to update its recommendations, and include newly licensed vaccines and changes in vaccine formulation to ensure that immunization practices remain effective. In 2007, ACIP recommended the influenza vaccine for all children ages 6 months to 59 months. The ACIP also recommended that females ages 11 to 12 receive the human papillomavirus vaccine (HPV) in 3 doses.²²

School Immunization

- ◆ Starting in the 2006-2007 school year, the Rhode Island Immunization Program replaced the Rhode Island School Immunization Survey with immunization data collected directly from student health records. The 2006-2007 Rhode Island School Children Immunization Assessment included an analysis of 2,602 randomly-selected student records in kindergarten and seventh grade across 125 randomly selected schools. Immunization completion rates averaged 97% for kindergarteners and 92% for children in 7th grade. The rates reflect children's immunization status as of the date they entered kindergarten or 7th grade.²³
- ◆ To ensure that all high school seniors are fully vaccinated before beginning college or work, the Rhode Island Immunization Program runs Vaccinate Before You Graduate (VBYG) in high schools throughout the state. The program informs parents and students of the importance of immunization and holds vaccination clinics throughout the year at each participating school. The immunizations are funded by the state's Vaccines for Children program and are offered at no cost to students.²⁴
- ◆ During the 2006-2007 school year, 64 schools participated in VBYG. Of the 1,700 students enrolled in the program, 99% received one or more immunizations and 96% completed all immunizations for which they were enrolled. The shots administered included hepatitis B, MMR, Meningitis, Polio, Influenza, and others.²⁵

References

- ¹⁴ Centers for Disease Control and Prevention. (n.d.). *The importance of childhood immunizations*. Retrieved January 21, 2008 from www.cdc.gov
- ² *Epidemiology and prevention of vaccine-preventable diseases, 10th ed.* (2007). Atkinson, W., Hamborsky, J., McIntyre, L. & Wolfe, S. (Eds.). Washington, DC: Public Health Foundation.
- ³¹⁷ Kroger, A. T., Atkinson, W. L., Marcuse, E. K. & Pickering, L. K. (2006). General recommendations on immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*, 55(RR-15), 1-48.
- ⁵ Centers for Disease Control and Prevention. (n.d.). *Why immunize? For parents*. Retrieved January 21, 2008 from www.cdc.gov
- ⁶ Zhou, F., Santoli, J., Messonnier, M. L., Yusuf, H. R., Shefer, A., Chu, S. Y., Rodewald, L. & Harpaz, R. (2005). Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. *Archives of Pediatrics & Adolescent Medicine*, 159(12), 1136-1144.
- ⁷ Centers for Disease Control and Prevention. (2008). *Vaccines for Children Program*. Retrieved January 21, 2008 from www.cdc.gov
- ⁸ Rhode Island Department of Health, Immunization Program. (n.d.). *About Kidsnet*. (n.d.). Retrieved January 21, 2008 from www.health.state.ri.us
- ⁹ Rhode Island Department of Health. (2006). *KIDSNET Data Book, 1997-2004*. Providence, RI: Rhode Island Department of Health.

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