

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 four doses of diphtheria, tetanus and pertussis (DTaP); three doses of polio; one dose of measles, mumps, rubella (MMR); three doses of Haemophilus influenzae type b (Hib); three doses of hepatitis B vaccines; and one dose of varicella (chickenpox).

SIGNIFICANCE

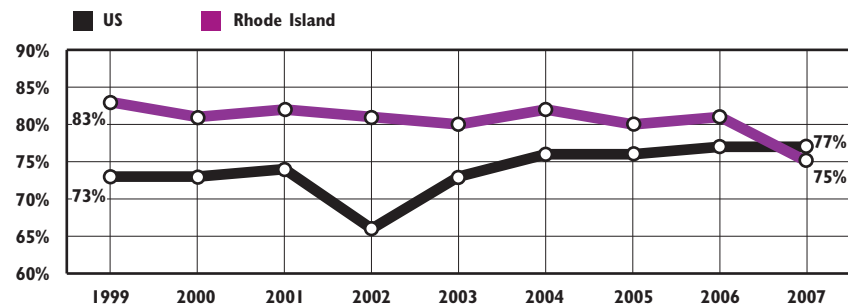
Adequate immunization protects children against a number of infectious diseases that were once common and resulted in death or disability.¹ Vaccines interact with the immune system to produce antibodies that protect the body if it is later exposed to disease.² Individuals benefit from immunization because 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 against which children are

vaccinated 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 health care providers. In order to ensure that vaccines reach all children, the Rhode Island Department of Health works in partnership with Rhode Island health care providers to maintain and share KIDSNET immunization data for children from birth to age 18.^{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, 1999-2007

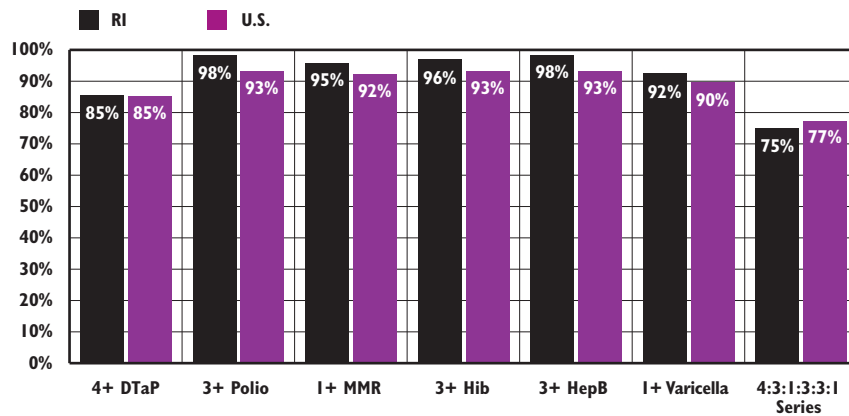


*Fully immunized children received the 4:3:1:3:3 series from 1999 to 2001 and the 4:3:1:3:3:1 series from 2002 to 2007.

Source: Centers for Disease Control and Prevention, National Immunization Survey, 1999-2007.

- ◆ Rhode Island's rate of fully immunized children ages 19 months to 35 months (75%) was lower than the national average (77%) in 2007, the first time Rhode Island's rate has been below the U.S. rate in a decade.¹¹
- ◆ In the U.S. in 2007, the 4:3:1:3:3:1 vaccination rate among children ages 19 months to 35 months was 79% for Asian children, 78% for White children, 78% for Hispanic children, and 75% for Black children.¹²
- ◆ Poverty remains a risk factor for under-immunizations. In the U.S. in 2007, children living at or above the federal poverty level had a 78% immunization rate while children living below the poverty level had a 75% vaccination rate.¹³
- ◆ Concerns about vaccine safety have resulted in some parents refusing to have their children immunized, contributing to the number of children who are under-immunized in the U.S.^{14,15} 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 health care provider.^{16,17}

Vaccination Coverage among Children, Ages 19 Months to 35 Months, United States and Rhode Island, 2007



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

- ◆ In 2007, Rhode Island had the highest vaccination rate in the nation for one of the six vaccines in the 4:3:1:3:3:1 Series (polio). Rhode Island ranks 38th in the nation for the completion of the full Series, down from 7th in 2006.^{18,19}
- ◆ In 2007, 175 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 ten-year peak of 91%, which resulted in the Centers for Disease Control and Prevention naming Rhode Island as the state with the most improved rate of infants who received the birth dose of the hepatitis B vaccine.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 2009, ACIP recommends an annual influenza vaccine for all children ages six months to 18 years.²²

School Immunization

- ◆ The 2007-2008 Rhode Island School Children Immunization Assessment (comprised of data collected directly from student health records) included an analysis of 2,917 randomly-selected records from students in kindergarten and 7th grade across 125 randomly selected schools. Immunization completion rates averaged 97% for kindergarteners and 89% 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 2007-2008 school year, 69 schools participated in VBYG. Of the 1,505 students enrolled in the program, 97% received one or more immunizations and 76% completed all immunizations for which they were enrolled. The shots administered included hepatitis B, MMR, Tdap, meningococcal, varicella (chicken pox), polio, influenza, and the human papillomavirus vaccine.²⁵

References

- ¹⁴ Centers for Disease Control and Prevention. (n.d.). *The importance of childhood immunizations*. Retrieved January 15, 2009 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 15, 2009 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 15, 2009 from www.cdc.gov
- ⁸ Rhode Island Department of Health. (n.d.). *About Kidsnet*. Retrieved January 15, 2009 from www.health.ri.gov
- ⁹ *KIDSNET data book, 1997-2004*. (2006). Providence, RI: Rhode Island Department of Health.

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