

Health

Children's Health Insurance

DEFINITION

Children's health insurance is the percentage of children under age 19 who were covered by any kind of private or public health insurance, including Medicaid.

SIGNIFICANCE

Children who have health insurance coverage are healthier and have fewer preventable hospitalizations than those who are uninsured. Insured children are more likely to receive preventive medical and dental care, be screened for the achievement of developmental milestones, obtain needed timely treatment, have access to prescription medications, and miss fewer days of school.^{1,2} Children are more likely to be insured if their parents also have health insurance (especially continuous coverage).^{3,4}

Medicaid and the Children's Health Insurance Program (CHIP) provide low-income children with affordable, comprehensive health benefits, which have been shown to increase access to primary and preventive care for children and improve long-term health, education, and economic outcomes.^{5,6}

RIte Care/RIte Share, Rhode Island's Medicaid/CHIP managed care health insurance program, is available to children and families who qualify based on family income. RIte Care also serves

as the health care delivery system for specific groups of children who qualify for Medical Assistance based on a disability or because they are in foster care or receiving an adoption subsidy.

On December 31, 2016, 71% of RIte Care members who qualified based on family income were children under age 19. There were 54,331 low-income parents with RIte Care coverage on December 31, 2016.^{7,8} RIte Care managed care enrollment rose to a new high of 149,080 in December 2016 (up from 141,901 in December 2015).^{9,10}

Rhode Island children who are older children, living in urban communities, or are Black, Hispanic, or Native American are the most likely to be uninsured. In 2015, an estimated 3.4% of Rhode Island children were uninsured.^{11,12,13,14}

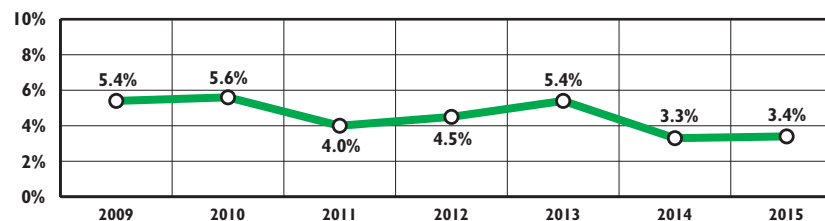
Children Without Health Insurance		
	2009	2015
RI	5.4%	3.4%
US	8.6%	4.8%
National Rank*		15th
New England Rank**		5th

*1st is best; 50th is worst

**1st is best; 6th is worst

Source: For 2015: U.S. Census Bureau, American Community Survey, 2015. Table R2702. For 2009: U.S. Census Bureau, American Community Survey, 2012. Table CP03.

Children Without Health Insurance, Rhode Island, 2009-2015



Source: U.S. Census Bureau, American Community Survey, 2013 & 2015. Table CP03. Data are for children under 18 years of age and are not comparable to Factbooks prior to 2015.

◆ In 2015, 3.4% of Rhode Island's children under age 18 were uninsured. Rhode Island ranks fifteenth best in the U.S., with 96.6% of children having health insurance. Just over half (58%) of Rhode Island children are covered by private health insurance, most of which is obtained through their parents' employers.^{15,16}

◆ Approximately 74% (6,532) of the estimated 8,809 uninsured children under age 18 in Rhode Island between 2011 and 2015 were eligible for RIte Care coverage based on their family incomes, but were not enrolled. An estimated 2,277 uninsured children lived in families with incomes above 261% of the federal poverty level (the income limit for RIte Care eligibility) and 57% (1,292) of them may have been eligible for financial assistance through HealthSource RI based on income.^{17,18}

◆ The RIte Share premium assistance program helps low-income families afford the cost of employer-sponsored coverage. As of December 31, 2016, 5,643 children and 2,395 parents (8,038 total) were enrolled in RIte Share.¹⁹

◆ Between 2014 and 2015, the estimated percentage of children covered exclusively by their parents' employer-sponsored health plan increased from 51% to 53% and the percentage of children insured exclusively by Medicaid/RIte Care decreased from 33% to 30%.²⁰

◆ Children and families in need of health insurance can enroll in coverage through HealthSource RI, Rhode Island's health insurance marketplace under the federal *Affordable Care Act*. As of October 2016, 1,877 children were enrolled in commercial coverage in the individual market of HealthSource RI, which is a 14% increase from 2015 (1,651).²¹

Table 15. Children Under Age 19 Receiving Medical Assistance, Rhode Island, December 31, 2016

CITY/TOWN	RITE CARE	SSI	KATIE BECKETT PROVISION	ADOPTION SUBSIDY	FOSTER CARE	TOTAL
Barrington	479	14	34	25	15	567
Bristol	1,048	31	17	44	12	1,152
Burrillville	1,399	62	24	84	28	1,597
Central Falls	4,974	275	4	39	38	5,330
Charlestown	419	11	10	13	10	463
Coventry	2,098	77	51	145	62	2,433
Cranston	6,936	240	77	199	116	7,568
Cumberland	1,774	87	50	65	34	2,010
East Greenwich	444	24	36	32	17	553
East Providence	3,914	168	44	114	78	4,318
Exeter	252	9	6	19	9	295
Foster	285	11	6	13	15	330
Glocester	359	17	6	41	36	459
Hopkinton	558	8	9	34	13	622
Jamestown	121	5	8	4	2	140
Johnston	2,246	97	41	68	38	2,490
Lincoln	1,036	29	24	53	23	1,165
Little Compton	145	4	4	2	1	156
Middletown	1,040	31	20	34	25	1,150
Narragansett	438	27	11	25	34	535
New Shoreham	64	0	2	0	0	66
Newport	2,134	118	4	43	39	2,338
North Kingstown	1,625	47	38	49	48	1,807
North Providence	2,391	89	25	66	54	2,625
North Smithfield	507	25	13	42	28	615
Pawtucket	11,717	547	38	163	165	12,630
Portsmouth	674	22	16	33	29	774
Providence	33,916	1,734	51	423	571	36,695
Richmond	281	8	4	5	8	306
Scituate	521	17	20	38	12	608
Smithfield	690	21	26	40	30	807
South Kingstown	1,242	49	33	57	27	1,408
Tiverton	895	28	13	28	16	980
Warren	784	31	10	32	33	890
Warwick	5,037	201	107	243	108	5,696
West Greenwich	233	1	11	22	5	272
West Warwick	3,002	144	16	82	55	3,299
Westerly	1,914	73	22	46	30	2,085
Woonsocket	7,086	526	29	155	104	7,900
Unknown Residence	605	53	1	55	51	765
Four Core Cities	57,693	3,082	122	780	878	62,555
Remainder of State	46,985	1,826	838	1,840	1,090	52,579
Rhode Island	105,283	4,961	961	2,675	2,019	115,899

Source of Data for Table/Methodology

Rhode Island Executive Office of Health and Human Services, MMIS Database, December 31, 2016.

The table includes children enrolled in RItE Care managed care, fee-for-service, and RItE Share as of December 31, 2016. Children with special health care needs who are covered through RItE Care or Medical Assistance are also included because they receive SSI, adoption subsidies, or qualify for the Katie Beckett provision.

Data for 2016 should be interpreted with caution. In September 2016, the state of Rhode Island instituted a new integrated eligibility determination system (Unified Health Infrastructure Project/UHIP), which may have affected data counts for RItE Care, Katie Beckett, and other Medicaid coverage through HealthSourceRI.

The RItE Care numbers include children who are also enrolled in RI Works. Prior to the 2015 Factbook, children enrolled in both RItE Care and RI Works were reported separately. Due to eligibility system changes and enrollment changes to RI Works and RItE Care, these data are no longer able to be reported.

The Providence numbers include some children in substitute care who live in other towns because the Medicaid database lists some foster children as Providence residents for administrative purposes.

Unknown residence: All children are Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

Beginning with the 2015 Factbook, the children without health insurance trend line is based on U.S. Census Bureau American Community Survey (ACS) data due to changes in survey protocol and methodology with the Current Population Survey (CPS). Trend data reported prior to 2015 Factbook are not comparable.

References

¹ *America's uninsured crisis: Consequences for health and health care.* (2009). Washington, DC: National Academies Press, Institute of Medicine.

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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

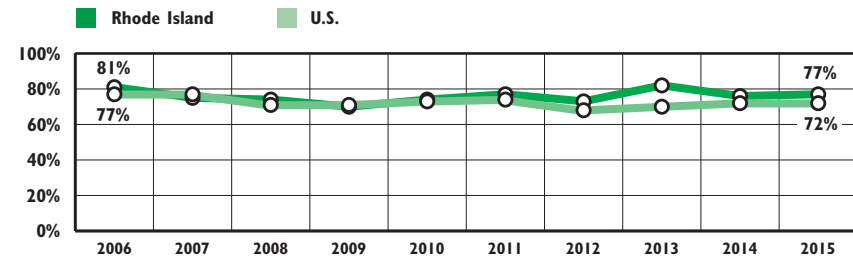
Timely and complete immunization protects children against a number of infectious diseases that were once common and resulted in death or disability. Vaccines interact with the immune system to produce antibodies that protect the body if it is later exposed to disease. The benefits of immunization include 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.^{1,2,3}

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.⁴ 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.⁵

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 18.⁶

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.^{7,8}

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

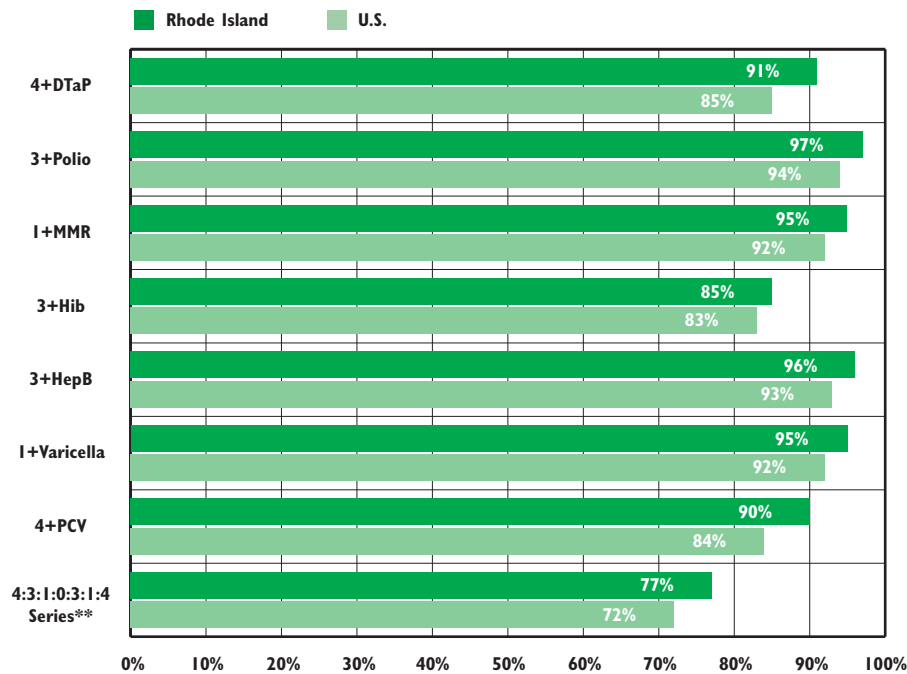


*Fully immunized children received the 4:3:1:3:3:1 series from 2006 to 2007; the 4:3:1:0:3:1:4 series in 2008 to 2010; and the 4:3:1:3:3:1:4 series in 2011-2015.

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.⁹
- ◆ 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.¹⁰
- ◆ Vaccine concerns have led some parents to request alternative vaccination schedules or to refuse some or all immunizations, which contribute to under-immunization.^{11,12} 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.¹³
- ◆ In Rhode Island, children may be exempt from receiving one or more vaccines for medical or religious reasons.¹⁴ 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.^{15,16}

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.^{17,18}

References

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

² *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%.¹⁹

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.²⁰

◆ 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.²¹

◆ 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.^{22,23}

◆ 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).²⁴

Access to Dental Care

DEFINITION

Access to dental care is the percentage of children under age 21 who were enrolled in RItE Care, RItE Share, or Medicaid fee-for-service on June 30 who had received dental services at any point during the previous State Fiscal Year.

SIGNIFICANCE

Dental caries (tooth decay) is a common chronic disease among children. Poor oral health has immediate and significant negative impacts on children's overall health, growth and development, school attendance, and academic achievement.^{1,2}

Insurance is a strong predictor of access to health and dental care. Nearly one in five (18%) uninsured children in the U.S. have unmet dental needs, compared with 5% of those with Medicaid and 3% of those with private health insurance.³ In 2014, 94% of children in Rhode Island had dental insurance that paid for routine dental care, up from 73% in 2001 and 62% in 1990.^{4,5}

Children living in poverty are more likely to have untreated tooth decay than higher-income children. Medicaid-eligible children are more than three times as likely to have untreated tooth decay as higher-income children. For children in low-income families, the efficacy and continuity of public dental insurance is a critical factor in access to dental care. In the U.S. and in Rhode

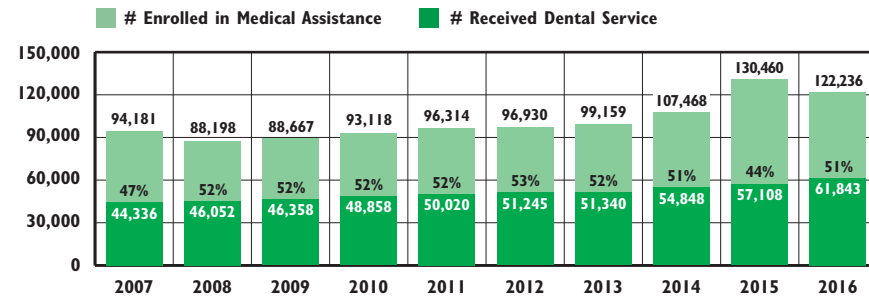
Island, children who have public health insurance coverage have greater access to dental and medical care than children who have no insurance.^{6,7,8}

Minority children have the highest rates of tooth decay and untreated dental problems. In Rhode Island and the U.S., non-Hispanic White children are more likely to have had a recent dental visit than non-Hispanic Black or Hispanic children.^{9,10,11}

Poor oral health during pregnancy has been shown to be a potential risk factor contributing to pregnancy complications and poor birth outcomes, including preterm birth and low birthweight infants.^{12,13} Although oral health care can be safely delivered during pregnancy, about half (53%) of Rhode Island women report having a dental visit during their pregnancy. Women with low incomes are less likely to see a dentist; 41% of women with RItE Care coverage and 42% of women participating in WIC reported a dental visit during their pregnancy.¹⁴

Children with special health care needs may have problems finding and accessing providers who are trained and equipped to address their special dental, medical, behavioral, and mobility needs. A dental home can provide comprehensive, continuously accessible, coordinated, and family-centered dental care for all children, especially those with special needs.^{15,16}

Children Enrolled in Medical Assistance* Programs Who Received Any Dental Service, Rhode Island, SFY 2007-2016



Source: Rhode Island Executive Office of Health and Human Services, State Fiscal Years (SFY) 2007-2016. *Medical Assistance includes RItE Care, RItE Share, and Medicaid fee-for-service. See Methodology Note for data limitations.

◆ **Fifty-one percent (61,843) of the children who were enrolled in RItE Care, RItE Share, or Medicaid fee-for-service on June 30, 2016 received a dental service during State Fiscal Year (SFY) 2016. The number of children receiving dental services has increased by 43% since 2006, when RItE Smiles launched.¹⁷ Rhode Island ranked 32nd in the nation for percent of children enrolled in Medicaid with a dental visit in 2015.¹⁸**

◆ **The federal Early and Periodic Screening, Diagnostic and Treatment (EPSDT) mandate requires that states provide comprehensive dental benefits to children with Medicaid coverage.¹⁹ States were asked to increase preventive dental services by 10% between Federal Fiscal Year (FFY) 2010 and 2015. With a baseline of 43% and a goal of 53%, 42% of children with Medicaid in Rhode Island received a preventive dental visit in FFY 2015.^{20,21}**

◆ **RItE Smiles, Rhode Island's managed care oral health program for children born on or after May 1, 2000, has been credited with improving access to dental care (both preventive and treatment services) for young children.^{22,23,24} As of December 31, 2016, there were 97,739 children enrolled in RItE Smiles. During SFY 2016, 83% of all Medicaid dental claims were for RItE Smiles members.^{25,26}**

◆ **The federal *Affordable Care Act (ACA)* made pediatric dental benefits mandatory offerings for plans sold in the individual and small group market.²⁷ As of October 2016 1,877 children under age 19 were enrolled in commercial coverage in the individual market of HealthSource RI (Rhode Island's state-based insurance marketplace). More than one-third (39%) obtained commercial dental coverage through HealthSource RI; 61% did not.²⁸**

Dental Provider Participation in Medicaid and RIte Smiles

- ◆ Nationally, children and adults with public insurance coverage face access problems because many private dentists do not accept Medicaid for payment. Dental providers cite low reimbursement rates, administrative requirements, and patient-related issues (e.g., missed appointments and poor treatment compliance) as reasons why they do not see more patients with Medicaid coverage. Additional access barriers for children and families with public insurance include difficulty with transportation, limited language proficiency, lack of oral health literacy, and negative provider experiences.^{29,30}
- ◆ Since RIte Smiles (Rhode Island's managed care oral health program) started in 2006, reimbursement rates have been raised for participating dental providers.³¹ The number of dentists accepting qualifying children increased from 27 before RIte Smiles began to 90 at the launch of RIte Smiles.³² In October 2016, there were 385 unduplicated dentists in 250 practice locations participating in RIte Smiles.³³
- ◆ General dentists and dental specialists who provide dental care to older children who do not qualify for enrollment in the RIte Smiles program continue to be reimbursed at the Medicaid fee-for-service reimbursement rate.³⁴ Medicaid reimbursement rates often lag behind fees charged by dental providers and private commercial rates, which reduces incentives for providers to treat children with Medicaid coverage. Rhode Island had the second lowest Medicaid fee-for-service reimbursement rate for pediatric dental services in the nation in 2013.³⁵

Consequences of Untreated Dental Disease

- ◆ Between 2011 and 2015, an average of 656 children under age 21 were treated for a primary dental-related condition in Rhode Island emergency departments annually. Of these children and youth, 21% were ages five and under, 16% were ages six to 11, 17% were ages 12 to 17, and 46% were age 18-21.³⁶
- ◆ Each year between 2011 and 2015 in Rhode Island, an average of 71 children under age 19 were hospitalized with a diagnosis that included an oral health condition. During this time period, an average of 19 children per year under age 19 were hospitalized with an oral health condition as the primary reason for the hospitalization.³⁷

Importance of Early Dental Visits for Very Young Children

- ◆ Clinical recommendations are that children first visit the dentist before age one.³⁸ However, only 1.8% of infants and one year old children in the U.S. have ever visited a dentist, compared with 89% who have seen a physician annually.³⁹ In Rhode Island, children under age six (63%) are less likely to have received a dental check-up or cleaning in past 12 months than children over age six (97% of 6-11 year olds and 93% of 12-17 year olds).⁴⁰
- ◆ There are too few dentists trained to treat very young children, and too few who treat children with special health care needs or those who have public insurance.⁴¹
- ◆ As of FFY 2015, 35% of Rhode Island children under age five with Medicaid coverage received any dental service, and 31% received a preventive dental service.⁴²
- ◆ In 2015, the Rhode Island General Assembly passed legislation to increase access to oral health care for children by allowing dental hygienists to perform approved services in public health settings, including for young children.⁴³
- ◆ Primary care providers can conduct oral health risk assessment, refer for dental care, and provide preventive services, all of which can improve oral health outcomes.⁴⁴
- ◆ In addition to covering dental visits for children before the age of one, Rhode Island is one of 49 state Medicaid programs that reimburse primary care medical providers for preventive oral health services for very young children, including risk assessment, anticipatory guidance, and fluoride varnish application.^{45,46}

References

Methodology Note: Data for 2016 should be interpreted with caution. In September 2016, the state of Rhode Island instituted a new integrated eligibility determination system (Unified Health Infrastructure Project/UHIP), which may have affected data counts for RIte Care, RIte Smiles, and other Medicaid coverage through HealthSourceRI.

^{1,6,9,15,29,38,41} *The state of little teeth.* (2014). Chicago, IL: American Academy of Pediatric Dentistry.

² *Oral health in America: A report of the Surgeon General.* (2000). Rockville, MD: U.S. Department of Health and Human Services.

^{3,10} National Health Interview Survey. (2015). *Table C-11a: Age-adjusted percent distributions (with standard errors) of unmet dental need due to cost in the past 12 months and of length of time since last visit with a dentist or other dental health care professional for children aged 2-17 years, by selected characteristics: United States, 2015.* Retrieved February 14, 2017, from <http://www.cdc.gov/nchs/nhis/shs.htm>

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Children's Mental Health

DEFINITION

Children's mental health is the number of acute care hospitalizations of children under age 18 with a primary diagnosis of a mental disorder. Hospitalization is the most intensive type of treatment for mental disorders and represents only one type of treatment category on a broad continuum available to children with mental health problems in Rhode Island.

SIGNIFICANCE

Mental health in childhood and adolescence is defined as the achievement of expected developmental, cognitive, social, and emotional milestones and the ability to use effective coping skills. Mental health status influences children's health and behavior at home, in child care or school, and in the community. Mental health conditions can impair academic achievement, increase involvement with the juvenile justice and child welfare systems, result in high treatment costs, diminish family incomes, and increase the risk for suicide. Children with mental health issues are also likely to have other chronic health conditions.^{1,2,3,4}

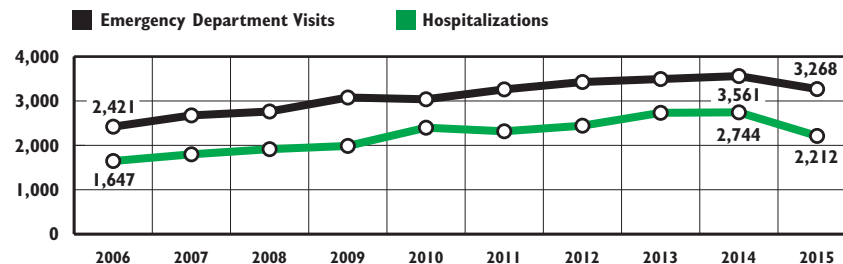
Behavioral health problems affect children of all backgrounds. Nationally, 10% of children under age five experience a significant mental health issue.⁵ In Rhode Island, one in five (19.0%) children ages six to 17 has a diagnosable mental health problem; one

in ten (9.8%) has significant functional impairment.⁶

Children most at risk for mental disorders are those with prenatal exposure to alcohol, tobacco and other drugs; children born with low birthweight; those suffering abuse and neglect; children exposed to toxic stress; children of parents with a mental health disorder and/or an inherited predisposition to a mental disorder; those involved with juvenile justice and child welfare systems; and children living in poverty.^{7,8,9}

Mental health treatment systems tend to be fragmented and crisis-driven with disproportionate spending on high-end care and often lack adequate investments in prevention and community-based services.^{10,11,12} In Rhode Island, an estimated 34% of Rhode Island children who needed mental health treatment or counseling in the past 12 months did not receive it.¹³ In Federal Fiscal Year 2016, 212 Rhode Island children and youth (down from 251 children in 2015) were boarded for an average of three days on medical floors at Hasbro Children's Hospital or Rhode Island Hospital awaiting a psychiatric inpatient admission. Also during that time, an average of six children per day were ready to leave the psychiatric hospital (down from the FFY 2015 average of eight kids per day), but were unable due to a lack of step-down availability or there being no other safe placement (including at home).^{14,15}

Emergency Visits and Hospitalizations, for Primary Diagnosis of Mental Disorder, Children Under Age 18, Rhode Island, 2006-2015*



Source: Rhode Island Department of Health, Hospital Discharge Database (HDD), 2006-2015. *Data are for emergency department visits and hospitalizations, not children. Children may visit emergency department or be hospitalized more than once. Trend line is comparable to Factbooks since 2012.

◆ In 2015, there were 3,268 emergency department visits and 2,212 hospitalizations of Rhode Island children under age 18 with a primary diagnosis of mental disorder at Bradley, Butler, Hasbro Children's Hospital, Memorial, and Newport Hospitals.¹⁶ While there were declines between 2014 and 2015, emergency department visits have increased 35% and hospitalizations have increased 34% since 2006.¹⁷

Type of Care for Primary Diagnosis of Mental Disorder by Select Subgroups, Children Under Age 18, Rhode Island, 2015

	EMERGENCY DEPARTMENT VISITS		HOSPITALIZATIONS	
	#	%	#	%
Female	1,657	51%	1,232	56%
Male	1,611	49%	980	44%
Age 6 and Under	146	4%	61	3%
Age 7-12	803	25%	529	24%
Age 13-17	2,319	71%	1,622	73%
Medicaid/RItE Care	1,957	60%	1,070	48%
Commercial Insurance	1,115	34%	1,097	50%
Black	315	10%	151	7%
White	2,120	65%	1,465	66%
Hispanic*	637	19%	374	17%
TOTAL	3,268		2,212	

Source: Rhode Island Department of Health, Hospital Discharge Database, 2015. Totals may not sum to 100% due to small categories not being reported. *Hispanic children can be of any race.

Psychiatric Hospitals

Children Under Age 19 Treated at Rhode Island Psychiatric Hospitals, October 1, 2015 – September 30, 2016 (FFY 2016)

	BRADLEY HOSPITAL GENERAL PSYCHIATRIC SERVICES		BRADLEY HOSPITAL DEVELOPMENTAL DISABILITIES PROGRAM		BUTLER HOSPITAL ADOLESCENT PSYCHIATRIC SERVICES	
	# TREATED	AVERAGE LENGTH OF STAY	# TREATED	AVERAGE LENGTH OF STAY	# TREATED	AVERAGE LENGTH OF STAY
Inpatient	960	16 days	121	28 days	486*	8 days
Residential	34	247 days	33	179 days	--	--
Partial Hospitalization	908	18 days	107	18 days	156	5 visits
Home-Based	0	0	17	20 visits	--	--
Outpatient	1,231**	**	**	**	44	NA

Source: Lifespan, 2015-2016 and Butler Hospital, 2015-2016. Programs can have overlapping enrollment. Number treated is based on the hospital census (i.e., the number of patients seen in any program during FFY 2016). The average length of stay is based on discharges. *An additional 57 youth were treated in adult programs. **Only total number treated with outpatient services by the Lifespan Physician Group is available for Bradley Hospital this year.

-- = Service not offered. NA = Data not available for this service.

◆ The two hospitals in Rhode Island that specialize in providing psychiatric care to children and youth are Bradley Hospital and Butler Hospital. Inpatient treatment at a psychiatric hospital is the most intensive type of behavioral health care. The most common diagnoses for young people treated at Butler or Bradley Hospitals in FFY 2016 in an inpatient setting were depressive disorders, anxiety disorders, adjustment disorders, bipolar disorders, and schizophrenia.^{18,19}

◆ Bradley Hospital has a Developmental Disabilities Program that offers highly specialized inpatient and residential services to children and adolescents who show signs of serious emotional and behavioral problems in addition to developmental disabilities. Lifespan School Solutions owns and operated six Bradley schools and ten community-based classrooms/public school partnerships for children with behavioral health problems and developmental disabilities, which together had an average daily enrollment of 386 students in FFY 2016.²⁰

Children with Medicaid and RIte Care with a Mental Health Diagnosis

◆ In State Fiscal Year (SFY) 2016, 22% (24,860) children under age 19 enrolled in Medicaid/RIte Care had a mental health diagnosis, including but not limited to anxiety, alcohol/drug dependence, or psychosis as well as depressive, mood, and personality disorders. Of those children with a mental health diagnosis, 24% were ages 6 and under, 38% were ages seven to 12, and 38% were ages 13 to 18. In addition, 40% were females and 60% were males.

◆ In SFY 2016, 983 children under age 19 enrolled in Medicaid/RIte Care were hospitalized due a mental health related condition (up from 595 in 2015) and 1,690 children had a mental health related emergency department visit (up from 1,269 in 2015). Ninety-six percent of those mental health-related emergency department visits for children under age 19 in SFY 2016 did not result in a hospitalization.²¹

Suicide Among Rhode Island Children and Youth

◆ Children and youth with mental health conditions are at increased risk for suicide.²² In 2015, 10.5% of Rhode Island high school students reported attempting suicide one or more times during the past year. Rhode Island had the eighth highest suicide attempt rate among ranked states in 2015.²³ In Rhode Island between 2010 and 2014 (the most recent year for which data are available), there were 873 emergency department visits and 442 hospitalizations of youth ages 13-19 due to suicide attempts. Twenty-four children under age 20 died due to suicide in Rhode Island between 2010-2014 (most recent data available).²⁴

Rhode Island's Community Mental Health Organizations

◆ The six Community Mental Health Organizations (CMHOs) in Rhode Island are the primary source of public mental health treatment services available in the state for children and adults. During 2016, 5,507 children under age 18 were treated at CMHOs, and 3,769 children were receiving treatment as of December 31, 2016.²⁵

References

¹ Centers for Disease Control and Prevention. (2013). Mental health surveillance among children: United States, 2005-2011. *Morbidity and Mortality Weekly Report*, 62(Supp.2):1-35.

²² Murphey, D., Barry, M., & Vaughn, B. (2013). *Adolescent health highlight: Mental health disorders*. (Publication No. 2013-1). Washington DC: Child Trends.

(continued on page 179)

Children with Special Needs

DEFINITION

Children with special needs are those who have a chronic disease or disability that requires educational services, health care, and/or related services of a type or amount beyond that required generally by children. Special needs can be physical, developmental, behavioral, or emotional. This indicator measures the number of children enrolled in Early Intervention, special education, Supplemental Security Income (SSI) and Medical Assistance for children with special health care needs.

SIGNIFICANCE

An estimated 20% of children in the U.S. and 21% of children in Rhode Island have at least one special health care need.¹ Children with special health care needs (CSHCN) can have impairments of varying degrees in physical, developmental, emotional, and/or behavioral functioning.² Parental reports of developmental screening for young children during health care visits in Rhode Island increased from 15% in 2007 to 32% in 2012.³ Nationally, 41% of CSHCN have two or more special health needs. Health conditions most commonly reported are Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder, asthma, learning disabilities, speech problems, developmental delay, behavioral problems, anxiety, and depression.⁴

Children with mild or severe disabling conditions have special needs related to physical health, mental health, education, family support, housing, child care, and recreation.⁵ Health-related needs are best met via a comprehensive, coordinated, continuous, accessible, and family-centered medical home.⁶

Rhode Island high school students with disabilities reported experiencing physical fights, being electronically bullied, and being bullied at school, as well as acute depression more than their non-disabled peers. They also reported higher rates of mental health problems, physical inactivity, poor grades, sexual activity, forced sexual intercourse, cigarette smoking, drinking, and using marijuana.^{7,8}

CSHCN may require medical services, equipment, assistive technology, or home modifications that may result in serious financial burdens on families.^{9,10} Having children with special needs significantly impacts parents' finances, employment, and family lives.^{11,12} In 2015, the Rhode Island General Assembly established Achieving a Better Life Experience (ABLE) tax-free saving accounts for people who become disabled before age 26, which cover a range of expenses, including health care, education, housing, transportation, and employment training.^{13,14,15}

Children Enrolled in Early Intervention

- ◆ States are required by the federal *Individuals with Disabilities Education Act (IDEA) Part C* to identify and provide appropriate Early Intervention services to all infants and toddlers under age three who have developmental delays or have a diagnosed physical or mental condition that is associated with a developmental delay.¹⁶
- ◆ In Rhode Island in 2016, nine certified Early Intervention (EI) provider agencies served 4,186 children. As of June 30, 2016, there were 2,022 children enrolled in EI (6% of all children under age three). Nearly two-thirds (62%) of those children receiving EI services were male and just over one-third (38%) were female. EI enrollment was not evenly distributed among children by age, with 32% less than one year old, 50% between ages one and two, and 19% between ages two and three during that time period.¹⁷

Children Enrolled in Special Education

- ◆ Under *IDEA Part B*, local school systems are responsible for identifying, evaluating, and serving students ages three to 21 who have disabilities that might require special education and related services.¹⁸
- ◆ As of June 30, 2016 in Rhode Island, there were 3,050 children ages three to five who received preschool special education services.¹⁹
- ◆ In Rhode Island as of June 30, 2016, 19,953 students in public schools ages six to 21 received special education services (14% of all students). Thirty-eight percent of students receiving special education services in Rhode Island had a learning disability.²⁰
- ◆ Early Intervention (EI) programs are required to provide transition services for children who are enrolled in EI and who may be eligible for special education services at age three. In 2016, 63% of the 952 children who reached age three while in EI were determined to be eligible for preschool special education, 20% were found not eligible, and 14% did not have eligibility determined when exiting EI. The remainder completed their service plan prior to reaching the maximum age for EI, moved out of state, withdrew, or were otherwise unreachable for follow-up.²¹

Medical Assistance for Children With Special Health Care Needs

- ◆ As of December 31, 2016, there were 4,961 Rhode Island children and youth under age 19 receiving Medical Assistance benefits through their enrollment in the federal Supplemental Security Income (SSI) program.^{22,23}
- ◆ In Rhode Island, the Katie Beckett eligibility provision provides Medical Assistance coverage to children under age 19 who have serious disabling conditions, in order to enable them to be cared for at home instead of in an institution.²⁴ As of December 31, 2016, there were 961* Rhode Island children enrolled through the Katie Beckett provision, a decline of 46% from the peak enrollment of 1,770 in 2007.^{25,26}
- ◆ Children with special health care needs have a variety of coverage options under Medicaid. Medicaid coverage also provides access to the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit, which requires that children receive all of the services they need, either as a direct benefit or wrap-around benefit to commercial coverage they might have.^{27,28}

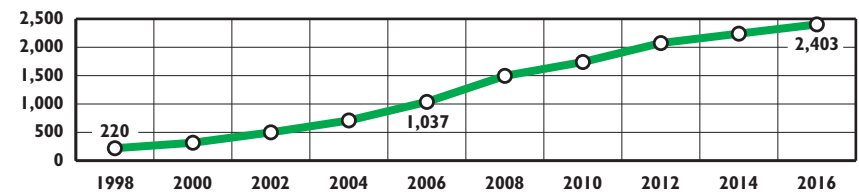
Children With Special Needs in the Child Welfare System

- ◆ Children and youth who are in the child welfare system are more likely to have special needs, including behavioral and emotional problems, developmental delays, and serious health problems than other children. They often enter the child welfare system in poor health and face difficulties accessing services while in care.^{29,30}
- ◆ As of December 31, 2016, 2,019* children in Rhode Island were enrolled in Medical Assistance through the child welfare system.³¹ Per provisions of the federal *Affordable Care Act (ACA)*, all youth who turned age 18 while in foster care are eligible for Medicaid coverage until they reach age 26 in the state in which they aged out of care.^{32,33} In Rhode Island, estimates show that 61%* of all eligible former foster youth were enrolled in Medicaid coverage as of December 31, 2016, up from 59% in 2015.³⁴
- ◆ Children who are adopted 2,675* through the Rhode Island Department of Children, Youth and Families and have special needs may qualify for Medical Assistance coverage. As of December 31, 2016, children were enrolled in Medical Assistance because of special needs adoptions.³⁵

Children With Autism Spectrum Disorder (ASD)

- ◆ Autism Spectrum Disorder (ASD) is a developmental disability that can cause significant social, communication, and behavioral challenges. Children diagnosed with ASD have a variety of symptoms and experience challenges and abilities that range widely in severity. Many children with ASD face challenges in social interaction, speech/language, and communication and demonstrate repetitive behaviors and routines.^{36,37}
- ◆ The national ASD prevalence (including mild to severe disorders) among children age eight is estimated to be 14.6 per 1,000 children age eight, or one out of every 68. ASD prevalence is significantly higher among non-Hispanic White children (15.5 per 1,000 children age eight) than non-Hispanic Black (13.2) children and Hispanic (10.1) children, and higher among boys (23.6, or one in 42 boys) than girls (5.3, or one in 189 girls).³⁸

Children Ages Three to 21 With Autism Spectrum Disorder (ASD), Rhode Island, December 1998 – June 2016



Source: Rhode Island Department of Education, Office of Student, Community and Academic Supports, December 1998-June 2016. All data prior to 2000 is a December point in time run, and all data starting in 2000 and beyond is a June point in time run. Numbers include parentally placed students.

- ◆ In June 2016, there were 2,403 Rhode Island children ages three to 21 with ASD who received special education services.³⁹ The increase in number of children with ASD has been attributed, in part, to improved awareness and better screening and evaluation tools, as well as the broadening of the definition of ASD.^{40,41} Early and appropriate identification and sustained interventions by skilled professionals can result in improvements in the levels of independent functioning of children and youth with ASD and long-term life outcomes.^{42,43}

Methodology & References

*Data for 2016 should be interpreted with caution. In September 2016, the state of Rhode Island instituted a new integrated eligibility determination system (Unified Health Infrastructure Project/UHIP), which may have affected data counts for Rte Care, Rte Smiles, Katie Beckett, former foster youth, and special needs adoptions.

References are on page 179.

Infants Born at Risk

DEFINITION

Infants born at risk is the number of babies born in Rhode Island to Rhode Island women who were low-income, single, did not have a high school diploma, or were under age 20.

SIGNIFICANCE

The basic architecture of the human brain develops during the infant and toddler years. By age three, a child's brain has grown to 90% of its adult size and the foundation of many cognitive structures and systems are in place. Early experiences lay the foundation for future learning, and strong, positive relationships are the building blocks for healthy development. Babies who have positive, predictable relationships with parents and other caregivers have a sturdy foundation to achieve healthy growth and development, while babies who do not have a strong relationship with a nurturing caregiver often encounter challenges in future learning and development.^{1,2,3}

Infancy is a time of great opportunity and vulnerability. A child's development can be compromised by "toxic stress" caused by a variety of adverse childhood experiences and risk factors, including poverty, maternal depression, family chaos, exposure to violence, child maltreatment, parental substance abuse, and/or parental incarceration. These negative experiences in early childhood

place a child at increased risk for lower rates of school engagement, chronic disease, reduced quality of life in adulthood and reduced life expectancy.^{4,5,6}

Economic hardship in early childhood is associated with poor educational and health outcomes. Differences in development are evident by age two, with children born into low-income families lagging behind children born into higher income families. When economic insecurity is combined with other risk factors such as having a single parent, a parent with low education levels, and/or a teen parent, children are at markedly increased risk for poor outcomes.⁷ In the U.S., 45% of all infants and toddlers live in low-income families (below 200% of the federal poverty line), a significantly higher proportion than older children and adults. In fact, children under age three are more than twice as likely to live in poverty than adults age 65 or older.⁸

Family planning programs help individuals avoid unintended pregnancies which are associated with negative educational, health, and economic outcomes for women and children.^{9,10} In addition, evidence-based home visiting programs for vulnerable families beginning during pregnancy (or as early as possible) and continuing through infancy and toddlerhood help parents develop critical nurturing skills and improve outcomes for children.¹¹

Births by Key Risk Factors, Four Core Cities and Rhode Island, 2016

CITY/TOWN	BIRTHS	# TO LOW-INCOME MOTHERS	# TO SINGLE MOTHERS	# TO MOTHERS WITHOUT A HIGH SCHOOL DIPLOMA	# TO MOTHERS YOUNGER THAN 20
Central Falls	326	289	233	106	30
Pawtucket	941	650	555	162	52
Providence	2,309	1,768	1,415	473	162
Woonsocket	541	387	351	109	44
<i>Rhode Island</i>	<i>10,212</i>	<i>5,128</i>	<i>4,672</i>	<i>1,144</i>	<i>452</i>

Source: Rhode Island Department of Health, KIDSNET Database, 2016.

- ◆ The U.S. birth rate has been declining since 2007, reaching another historic low in 2015. The U.S. birth rate has also been declining for teens and for single women. Rhode Island had the fifth lowest birth rate in the U.S. in 2015, with 10.4 births per 1,000 women ages 15 to 44.¹²
- ◆ The total number of babies born in Rhode Island to Rhode Island women declined 15% between 2007 and 2016, from 12,010 to 10,212 births.¹³
- ◆ Between 2007 and 2016 in Rhode Island, the proportion of births to mothers without a high school diploma fell from 18% to 11% and births to teen mothers fell from 10% to 4% of all births. The proportion of births to single mothers decreased from 47% to 46% of all births during that time.¹⁴
- ◆ All babies born in Rhode Island are screened through the Rhode Island Department of Health's Newborn Risk Assessment Program. In 2016, there were 6,475 newborns (63%) who "screened positive," indicating the presence of one or more risk factors associated with poor developmental outcomes.¹⁵
- ◆ Of the 10,212 babies born in Rhode Island to Rhode Island women in 2016, nearly one-third (3,167) had a mother with a documented history of treatment for mental health conditions. Also, 568 had a mother with a documented history of substance abuse problems and 196 had a mother with documented involvement in the child welfare system (either as an adult or as a child).¹⁶

Table 16.

Infants Born at Risk, Rhode Island, 2016

CITY/TOWN	TOTAL # OF BIRTHS	# OF BIRTHS TO LOW-INCOME FAMILIES	# OF BIRTHS TO SINGLE MOTHERS	BIRTHS TO MOTHERS WITHOUT A HIGH SCHOOL DIPLOMA	# OF BIRTHS TO MOTHERS YOUNGER THAN AGE 20
Barrington	107	19	18	3	0
Bristol	130	40	42	6	*
Burrillville	110	38	44	8	6
Central Falls	326	289	233	106	30
Charlestown	56	22	20	3	*
Coventry	290	91	106	13	5
Cranston	797	334	314	40	15
Cumberland	338	76	87	12	6
East Greenwich	119	16	15	3	*
East Providence	466	174	197	31	17
Exeter	43	9	8	2	0
Foster	26	9	9	1	0
Glocester	58	18	16	0	0
Hopkinton	39	9	11	0	0
Jamestown	14	2	3	0	0
Johnston	253	109	105	9	6
Lincoln	183	67	61	8	6
Little Compton	13	4	3	0	0
Middletown	133	30	32	2	*
Narragansett	51	19	19	2	0
New Shoreham	14	10	3	1	0
Newport	240	99	93	24	5
North Kingstown	216	57	67	9	*
North Providence	289	121	113	14	13
North Smithfield	75	29	20	3	*
Pawtucket	941	650	555	162	52
Portsmouth	110	18	24	2	0
Providence	2,309	1,768	1,415	473	162
Richmond	40	9	13	2	*
Scituate	93	10	22	3	*
Smithfield	136	31	26	0	0
South Kingstown	160	43	43	5	*
Tiverton	74	26	26	5	*
Warren	66	28	32	5	5
Warwick	730	218	258	33	30
West Greenwich	42	12	11	1	*
West Warwick	338	152	170	34	16
Westerly	147	48	48	10	*
Woonsocket	541	387	351	109	44
Unknown	99	37	39	0	3
Four Core Cities	4,117	3,094	2,554	850	288
Remainder of State	5,996	1,997	2,079	294	161
Rhode Island	10,212	5,128	4,672	1,144	452

Source of Data for Table/Methodology

Rhode Island Department of Health, KIDSNET Database, 2016. Birth data from 2016 are provisional. Data include only births that occurred in Rhode Island to Rhode Island residents. This table shows the number of births with key risk factors that place a child at high risk for poor developmental outcomes. Births to low-income families are births to women with public health insurance (Medicaid/RiteCare) or no insurance. Of the 5,128 births to low-income women in 2016, 5,069 had Medicaid/Rite Care coverage and 59 had no insurance).

*Fewer than 5 births are in this category. Actual numbers are not shown because they are considered sensitive information by the Rhode Island Department of Health. These births are still counted in the four core cities, remainder of state, and state totals.

The definition for this indicator has changed. The number and percentage of births with all three specific risk factors (births to women under age 20, single, and without a high school diploma) and the percentage of all births with these risk factors is no longer being reported.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

- ¹ U.S. Department of Health and Human Services. (2011). *Supporting brain development in traumatized children and youth*. Washington, DC: Child Welfare Information Gateway.
- ² U.S. Department of Health and Human Services. (2009). *Understanding the effects of maltreatment on brain development*. Washington, DC: Child Welfare Information Gateway.
- ^{3A} *Early experiences matter: A guide to improved policies for infants and toddlers*. (2009). Washington, DC: Zero to Three National Center for Infants and Toddlers.
- ³ Shonkoff, J. P., Garner, A. S. & the Committee on Psychosocial Aspects of Child and Family Health; Committee on Early Childhood, Adoption, and Dependent Care; and Section on Developmental and Behavioral Pediatrics. (2011). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), e232-e246.

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Evidence-Based Family Home Visiting

DEFINITION

Evidence-based family home visiting is the number of families enrolled in evidence-based home visiting programs funded/coordinated by the Rhode Island Department of Health.

SIGNIFICANCE

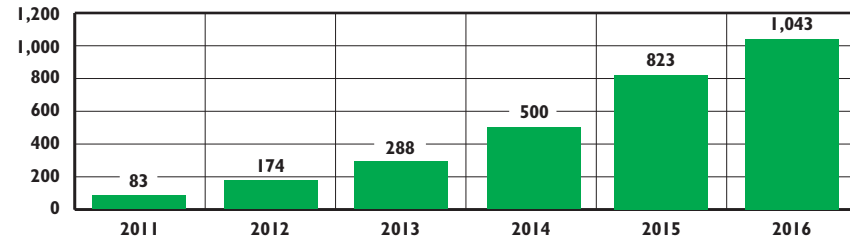
Parents are the most important individuals in a child's life, particularly during infancy and early childhood. Infants and toddlers who receive responsive, nurturing care and are provided with opportunities to learn have a strong foundation for success. When parents lack the knowledge or resources to meet the needs of their babies, the child's health, development, and learning trajectory are threatened.^{1,2}

Home visiting programs are designed to reach young children and their families at home. Each program is different, but all provide parenting education to foster healthy, safe, and stimulating environments for young children. Children in at-risk families who participate in high-quality home visiting programs have improved language, cognitive, and social-emotional development and are less likely to experience child abuse and neglect. Families who participate are more likely to provide an enriching home environment, use appropriate discipline strategies, and become more

economically secure through education and employment. Some home visiting programs can also improve maternal and child health, reducing long-term health care costs.^{3,4,5}

In 2010, federal legislation established the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program to expand and improve state-administered home visiting programs for at-risk families with young children. The majority of funding must be spent by states on approved models that meet rigorous evidentiary standards.⁶ As of September 2016, there are 19 home visiting models that have been identified as effective, evidence-based programs for families during the prenatal period and early childhood years, with evidence showing they produce statistically significant improvements in outcomes for children and families.⁷ Rhode Island uses MIECHV funding to support implementation of three of these evidence-based models: Healthy Families America, Nurse-Family Partnership, and Parents as Teachers.⁸ In order to achieve improved outcomes for children, evidence-based programs must follow national program guidelines, use professional staff trained in the model, be implemented in the appropriate timeframes, and be implemented with fidelity.⁹

Families Enrolled in Evidence-Based Family Home Visiting Coordinated by the Rhode Island Department of Health, Rhode Island, 2011-2016



Source: Children's Friend and Service, Nurse-Family Partnership enrollment in October 2011. Rhode Island Department of Health, enrollment in MIECHV-funded evidence-based home visiting programs, October 2012-2016. As of 2016, total enrolled includes families enrolled in three Parents as Teachers programs that had additional funding streams.

- ◆ As of October 2016, of the 1,043 families enrolled in evidence-based home visiting programs 12% had mothers under age 20, 29% had mothers ages 20 to 24, and 60% had mothers age 25 or older at enrollment.¹⁰ Twenty-one percent of the mothers had less education than a high school diploma or GED, 24% had a high school diploma or GED, 16% had some college or vocational training, 3% had a four-year college degree, and 36% had an unknown amount of education.¹¹ At the time of enrollment, 57% of the mothers were single (had never married), 21% were married or had a domestic partner, 3% were divorced or separated, and 20% had an unknown marital status.¹² Among the enrolled children, 17% were not born yet, 42% were under age one, 28% were age one, 10% were age two, 2% were age three, and <1% were age four.¹³
- ◆ Home-based Early Head Start is also recognized as an evidence-based home visiting program that improves child outcomes.¹⁴ As of October 2016 in Rhode Island, there were 357 children enrolled in home-based Early Head Start.¹⁵
- ◆ Early Intervention (EI) programs serve infants and toddlers with developmental delays and disabilities in Rhode Island and deliver nearly all (95%) services through home visits. As of June 2016, there were 2,022 children enrolled in EI in Rhode Island.¹⁶
- ◆ Rhode Island also operates First Connections, a statewide, short-term home visiting program designed to help families get connected to needed resources. In 2016, 3,792 children received at least one First Connections home visit (55% lived in one of the four core cities and 45% in the remainder of the state).¹⁷

Evidence-Based Family Home Visiting

Table 17.

Evidence-Based Family Home Visiting, Rhode Island, 2016

CITY/TOWN	COMMUNITY CONTEXT, 2016			# RECEIVED FIRST CONNECTIONS VISIT IN 2016	# FAMILIES ENROLLED IN EVIDENCE-BASED HOME VISITING PROGRAMS, OCTOBER 1, 2016			TOTAL
	TOTAL # OF BIRTHS	# OF BIRTHS WITH 1 OR MORE RISK FACTORS	# OF BIRTHS TO LOW-INCOME FAMILIES		HEALTHY FAMILIES AMERICA	NURSE-FAMILY PARTNERSHIP	PARENTS AS TEACHERS*	
Barrington	107	33	19	12	2	0	0	2
Bristol	130	75	40	35	1	1	1	3
Burrillville	110	63	38	20	4	0	0	4
Central Falls	326	280	289	210	40	9	15	64
Charlestown	56	36	22	20	4	0	1	5
Coventry	290	156	91	91	6	0	3	9
Cranston	797	456	334	249	30	3	22	55
Cumberland	338	144	76	64	1	3	3	7
East Greenwich	119	32	16	18	2	0	0	2
East Providence	466	277	174	101	15	2	11	28
Exeter	43	18	9	15	1	0	0	1
Foster	26	16	9	5	0	0	0	0
Glocester	58	29	18	9	0	0	0	0
Hopkinton	39	20	9	13	2	1	0	3
Jamestown	14	5	2	2	0	0	0	0
Johnston	253	146	109	66	2	4	1	7
Lincoln	183	91	67	44	4	2	5	11
Little Compton	13	6	4	4	0	0	0	0
Middletown	133	62	30	41	4	0	0	4
Narragansett	51	30	19	17	2	0	1	3
New Shoreham	14	7	10	1	0	0	0	0
Newport	240	139	99	73	14	3	0	17
North Kingstown	216	96	57	58	3	0	0	3
North Providence	289	161	121	99	1	2	0	3
North Smithfield	75	32	29	18	0	0	0	0
Pawtucket	941	721	650	460	75	29	42	146
Portsmouth	110	44	18	32	5	0	0	5
Providence	2,309	1,836	1,768	1,170	273	86	106	465
Richmond	40	27	9	24	0	0	0	0
Scituate	93	35	10	17	0	0	0	0
Smithfield	136	57	31	21	0	0	1	1
South Kingstown	160	70	43	68	7	0	1	8
Tiverton	74	38	26	19	3	1	0	4
Warren	66	41	28	13	4	0	3	7
Warwick	730	402	218	214	12	2	2	16
West Greenwich	42	16	12	11	3	0	1	4
West Warwick	338	210	152	135	14	1	4	19
Westerly	147	75	48	65	6	0	35	41
Woonsocket	541	432	387	258	53	9	34	96
Unknown Residence	99	61	37	0	0	0	0	0
Four Core Cities	4,117	3,269	3,094	2,098	441	133	197	771
Remainder of State	5,996	3,145	1,997	1,694	152	25	95	272
Rhode Island	10,212	6,475	5,128	3,792	593	158	292	1,043

Source of Data for Table/Methodology

The number of births, the percentage of births by risk factor, the number of families that received a First Connections visit, and the number of families enrolled in an evidence-based family home visiting program are from the Rhode Island Department of Health. Number of births with one or more risk factor is “risk positive” definition from the Developmental Risk Assessment. Births to low-income families are births to women with public health insurance (Medicaid/RiteCare) or no insurance.

*The city/town table includes families enrolled in MIECHV-funded and three additional Parents as Teachers programs that had other funding streams. There are other Parents as Teachers programs in Rhode Island.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket

References

- ^{1,3} DiLauro, E. & Schreiber, L. (2012). *Reaching families where they live: Supporting parents and child development through home visiting*. Washington, DC: Zero to Three.
- ^{2,6} *States and the new federal home visiting initiative: An assessment from the starting line*. (2011). Washington, DC: The Pew Charitable Trusts.
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- ⁵ *Home visiting family support programs: Benefits of the Maternal, Infant, and Early Childhood Home Visiting Program*. (2015). Washington, DC: The Pew Charitable Trusts.
- ^{8,10,11,12,13,14,17} Rhode Island Department of Health, 2016.
- ⁹ Howard, K. S. & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The Future of Children*, 19(2), 119-146.
- ¹⁵ Rhode Island Early Head Start program reports to Rhode Island KIDS COUNT, October 2016.
- ¹⁶ Rhode Island Executive Office of Health and Human Services, Center for Child and Family Health, June 30, 2016.

Women with Delayed Prenatal Care

DEFINITION

Women with delayed prenatal care is the percentage of women beginning prenatal care in the second or third trimester of pregnancy. Data are reported by place of mother's residence, not place of infant's birth.

SIGNIFICANCE

Early prenatal care is an important way to identify and treat health problems as well as influence health behaviors that can compromise fetal development, infant health, and maternal health. Women receiving late or no prenatal care are at increased risk of poor birth outcomes such as having babies who are low birthweight or who die within the first year of life.¹

Effective prenatal care screens for and intervenes with a range of maternal needs including nutrition, social support, mental health, smoking cessation, substance use, domestic violence, and unmet needs for food and shelter.^{2,3,4} A prenatal visit is the first step in establishing an infant's medical home and can provide valuable links to other health services.^{5,6}

Timely initiation of prenatal care is especially important for women who face multiple risks for poor birth outcomes, as is ensuring access to preconception health care services

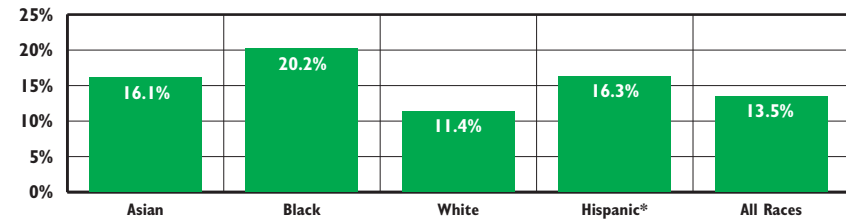
before pregnancy. Effective monitoring and treatment of chronic disease, education on preventive health practices, implementing and enhancing Medicaid policies to improve health insurance coverage, and ensuring access to culturally and linguistically competent health providers can improve prenatal care for women of child-bearing age.⁷

Barriers to prenatal care include not knowing one is pregnant, not being able to get an appointment or start care when desired, lack of transportation or child care, inability to get time off work, and/or financial constraints, including lack of insurance and/or money to pay for care.

Rhode Island women with delayed or no prenatal care were more likely to report their pregnancy was unintended than women who initiated care in the first trimester.⁸ Between 2009 and 2011, 22.0% of Rhode Island mothers who had an unintended pregnancy had delayed or no prenatal care, compared with 7.9% of mothers who had an intended pregnancy.⁹

In Rhode Island between 2011 and 2015, 13.5% of women who gave birth did not begin care until the second or third trimester. Pregnant adolescents in Rhode Island are the most likely to delay prenatal care.¹⁰

Women With Delayed Prenatal Care by Race/Ethnicity, Rhode Island, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Database, 2011-2015. *Hispanic may be included in any racial category. *See note regarding new methodology for calculations, starting with this Factbook. Data for births in 2015 are provisional.

◆ **Between 2011-2015 in Rhode Island, Black women (20.2%), Hispanic women (16.3%), and Asian women (16.1%), were more likely to receive delayed prenatal care than White women (11.4%).¹¹**

◆ **Between 2011-2015 in Rhode Island, women with a high school degree or less were more likely to receive delayed prenatal care than their peers (18.0% compared to 10.0%), and the rate of delayed prenatal care among pregnant women in the four core cities was 17.4%.¹²**

Insurance Coverage Improves Access to Prenatal Care

◆ **In the U.S. and Rhode Island, women with commercial insurance have the highest rates of timely prenatal care. Rhode Island women who are most likely to initiate care in the first trimester are also older, married, and have higher levels of education.^{13,14}**

◆ **Between 2011-2015, pregnant women with health coverage through RIte Care (Rhode Island's Medicaid managed care health program) were much less likely (18.2%) to receive delayed prenatal care than women who were uninsured (31.9%). Pregnant women with private insurance coverage were the least likely to receive delayed prenatal care (8.9%) during this time period.¹⁵**

◆ **RIte Care has had a positive impact on health care services for its members. RIte Care health plans rank above the 90th percentile in member access to timely prenatal care when compared to other Medicaid health plans in the nation.¹⁶**

Women with Delayed Prenatal Care

Table 18. Delayed Prenatal Care, Rhode Island, 2011-2015

CITY/TOWN	# BIRTHS	# DELAYED CARE	% DELAYED CARE
Barrington	513	45	8.8%
Bristol	730	81	11.1%
Burrillville	648	77	11.9%
Central Falls	1,575	269	17.1%
Charlestown	249	15	NA
Coventry	1,448	160	11.0%
Cranston	3,916	454	11.6%
Cumberland	1,625	161	9.9%
East Greenwich	573	66	11.5%
East Providence	2,372	279	11.8%
Exeter	244	27	NA
Foster	172	22	NA
Glocester	344	41	NA
Hopkinton	306	27	NA
Jamestown	128	9	NA
Johnston	1,323	155	11.7%
Lincoln	952	100	10.5%
Little Compton	77	9	NA
Middletown	851	90	10.6%
Narragansett	346	25	NA
New Shoreham	53	6	NA
Newport	1,283	144	11.2%
North Kingstown	1,042	92	8.8%
North Providence	1,635	204	12.5%
North Smithfield	420	43	NA
Pawtucket	4,930	819	16.6%
Portsmouth	570	45	7.9%
Providence	12,724	2,248	17.7%
Richmond	319	18	NA
Scituate	359	46	NA
Smithfield	620	62	10.0%
South Kingstown	874	71	8.1%
Tiverton	525	53	10.1%
Warren	454	68	NA
Warwick	3,844	417	10.8%
West Greenwich	231	23	NA
West Warwick	1,754	253	14.4%
Westerly	927	55	5.9%
Woonsocket	2,908	510	17.5%
Unknown	104	8	NA
Four Core Cities	22,137	3,846	17.4%
Remainder of State	31,727	3,443	10.9%
Rhode Island	53,968	7,297	13.5%

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 birth data do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to Rhode Island residents from 2011-2015.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

Due to birth certificate changes that began in 2015 (the last year in the 2011-2015 five-year average), comparisons with previous years should be made with caution. Delayed prenatal care is now a calculated variable that is based on the number of visits over 90 days (3 months). "No prenatal care" is not broken out.

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- ^{10,11,12,15} Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015.
- ¹³ *Child health USA 2014.* (2015). Rockville, MD: U.S. Department of Health and Human Services
- ¹⁶ *Monitoring quality and access through the Performance Goal Program.* (2016). Cranston, RI: Rhode Island Executive Office of Health and Human Services.

Preterm Births

DEFINITION

Preterm births is the percentage of births occurring before the 37th week of pregnancy. The data are reported by place of mother's residence, not place of infant's birth.

SIGNIFICANCE

Preterm birth is a major determinant of infant mortality and morbidity in the U.S. Infants born before 37 weeks gestation are at higher risk than full-term infants for neurodevelopmental, respiratory, gastrointestinal, immune system, central nervous system, hearing, dental, and vision problems. Children who were born preterm may experience physical disabilities, learning difficulties, and behavioral problems later in life.^{1,2,3}

While the specific causes of spontaneous preterm births are largely unknown, research indicates that there are a number of inter-related risk factors involved. The three leading risk factors are a history of preterm birth, current multifetal pregnancy, and uterine and/or cervical abnormalities. Other risk factors include health conditions, weight, maternal depression, late or no prenatal care, stress, domestic violence, and maternal use of tobacco, alcohol, and other drugs.^{4,5}

Even "late preterm" infants (34-36 weeks gestation) can experience immediate and long-term complications. Infants born very preterm (<32 weeks

gestation) are at highest risk for death and enduring health problems, high hospitalization costs during their first year, and increased health care-related costs later in life.^{6,7} Preventive interventions can improve outcomes for very preterm infants and their caregivers.^{8,9}

The U.S. preterm birth rate rose slightly between 2014 and 2015, from 9.57% to 9.63%. This is the first rise since steady declines between 2007 and 2014. The preterm birth rate also increased among Non-Hispanic Black infants and Hispanic infants between 2014 and 2015, while it remained stable for non-Hispanic White infants. Non-Hispanic Black women continue to have the highest preterm birth rate in the U.S. (13.4% in 2015).^{10,11}

Preterm birth is a major contributor to infant mortality in the U.S., particularly among non-Hispanic Black, Cuban, American/Alaska Native, and Puerto Rican infants.¹²

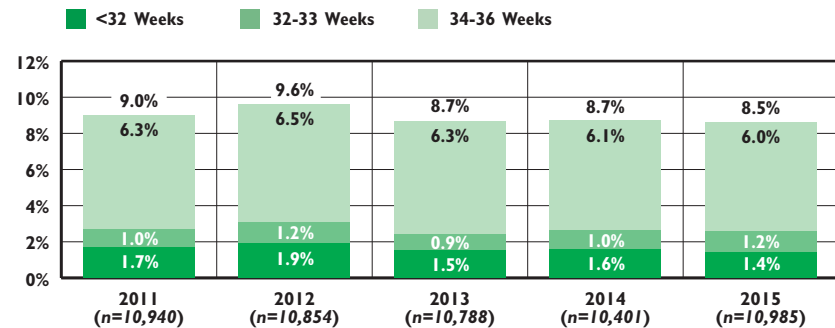
Preterm Births		
	2007	2015
RI	10.8%	8.6%
US	10.4%	9.6%
National Rank*		13th
New England Rank**		5th

*1st is best; 50th is worst

**1st is best; 6th is worst

Sources: For 2015: Martin, J. A., et al. (2017). Births: Final data for 2015. *NVSR*, 66(1), 1-69. For 2007: Martin, J. A., et al. (2015). Measuring gestational age in vital statistics data: Transitioning to the obstetric estimate. *NVSR*, 64(5), 1-19.

Preterm Births by Gestational Age*, Rhode Island, 2011-2015



Source: RI Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Percentages by gestational age may not sum to total percentage of preterm births due to rounding. *See note regarding new methodology for calculating preterm births, starting with the 2016 Factbook. Data for births in 2015 are provisional.

- ◆ The single-year preterm birth rate in Rhode Island decreased from 2014 to 2015 (8.7% to 8.5%). Between 2011 and 2015, 70.1% of all preterm births in Rhode Island were late preterm births (34-36 weeks gestation) and 18.0% of all preterm births were very preterm (<32 weeks gestation).¹³
- ◆ Multiple births are more likely to be born preterm. In Rhode Island between 2011 and 2015, 55.2% of multiple births were preterm, compared with 7.2% of singleton births.¹⁴
- ◆ Between 2011 and 2015, 11.1% of births of Black infants in Rhode Island were preterm, compared with 8.4% of Asian and 8.4% of White infants. During this same time period, 9.4% of births to Hispanic women in Rhode Island were preterm.¹⁵
- ◆ The rate of preterm births varies by age. In Rhode Island between 2011 and 2015, 9.4% of births among teen girls under age 20, 8.5% of births among women ages 20 to 34, and 10.5% of births among women age 35 and older were preterm.¹⁶
- ◆ Among women with private health insurance coverage in Rhode Island between 2011 and 2015, 8.3% of births were preterm, compared with 9.4% of those with public insurance coverage and 16.7% of births to women with no health insurance.¹⁷
- ◆ In Rhode Island between 2011 and 2015, 9.4% of births to women with a high school degree or less were preterm, compared with 8.1% of those with higher education levels.¹⁸

Table 19. Preterm Births, Rhode Island, 2011-2015

CITY/TOWN	# BIRTHS	# PRETERM BIRTHS	% PRETERM BIRTHS
Barrington	513	32	6.2%
Bristol	730	54	7.4%
Burrillville	648	57	8.8%
Central Falls	1,575	146	9.3%
Charlestown	249	19	NA
Coventry	1,448	110	7.6%
Cranston	3,916	378	9.7%
Cumberland	1,625	122	7.5%
East Greenwich	573	53	9.2%
East Providence	2,372	186	7.8%
Exeter	244	12	NA
Foster	172	19	NA
Glocester	344	33	NA
Hopkinton	306	25	NA
Jamestown	128	7	NA
Johnston	1,323	97	7.3%
Lincoln	952	90	9.5%
Little Compton	77	11	NA
Middletown	851	65	7.6%
Narragansett	346	22	NA
New Shoreham	53	3	NA
Newport	1,283	109	8.5%
North Kingstown	1,042	73	7.0%
North Providence	1,635	157	9.6%
North Smithfield	420	36	NA
Pawtucket	4,930	492	10.0%
Portsmouth	570	43	7.5%
Providence	12,724	1,266	9.9%
Richmond	319	29	NA
Scituate	359	35	NA
Smithfield	620	38	6.1%
South Kingstown	874	60	6.9%
Tiverton	525	48	9.1%
Warren	454	44	NA
Warwick	3,844	317	8.2%
West Greenwich	231	15	NA
West Warwick	1,754	151	8.6%
Westerly	927	60	6.5%
Woonsocket	2,908	284	9.8%
Unknown	104	7	NA
Four Core Cities	22,137	2,188	9.9%
Remainder of State	31,727	2,610	8.2%
Rhode Island	53,968	4,805	8.9%

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 data do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to Rhode Island residents from 2011-2015.

*Beginning in 2015, the federal Centers for Disease Control and Prevention and the Rhode Island Department of Health transitioned to a new standard for estimating the gestational age of the newborn. The new measure – the obstetric estimate of gestation at delivery (OE) – replaces the measure based on the date of the last normal menses (LMP).

The 2011-2015 five year preterm birth percentage and the single year average are measured by OE. Because of this change, preterm birth data reported prior to the 2016 Factbook are not comparable. National preterm birth data use the OE measurement as of the 2007 data year at the time of publication of this Factbook

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

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Low Birthweight Infants

DEFINITION

Low birthweight infants is the percentage of infants born weighing less than 2,500 grams (5 pounds, 8 ounces). The data are reported by place of mother's residence, not place of infant's birth.

SIGNIFICANCE

An infant's birthweight is a key indicator of newborn health. Infants born weighing less than 5 pounds, 8 ounces are at greater risk for physical and developmental problems than infants of normal weights. Factors that influence infant birthweight include maternal smoking, poverty, periodontal health, level of educational attainment, violence, stress, prenatal nutrition, and environmental hazards.^{1,2,3}

Low birthweight often is a result of a premature birth but also can occur after a full-term pregnancy. In 2015 in the U.S., 58.1% of all preterm infants (under 37 weeks gestation) were born at low birthweight, while 2.8% of full-term infants (37 to 41 weeks gestation) were born at low birthweight.⁴

Cigarette smoking during pregnancy is a leading cause of low birthweight.^{5,6} In Rhode Island, 7.4% of babies born between 2011 and 2015 had mothers who smoked during their pregnancy. During that time, Rhode Island smokers (12.9%) were nearly twice as likely to deliver a low birthweight infant as women who did not smoke (6.8%).⁷

Children born at low birthweight face greater risks of physical and developmental health problems and death than those born at normal birthweight. Children born at very low birthweight (less than 1,500 grams or 3.3 pounds) are more than 100 times more likely to die within the first year of life than infants of normal birthweight. Those who survive are at significantly higher risk of severe problems, including physical and sensory difficulties, developmental delays, and cognitive impairments. Low birthweight babies are also at greater risk for long-term cognitive problems and school difficulties than their peers.^{8,9,10}

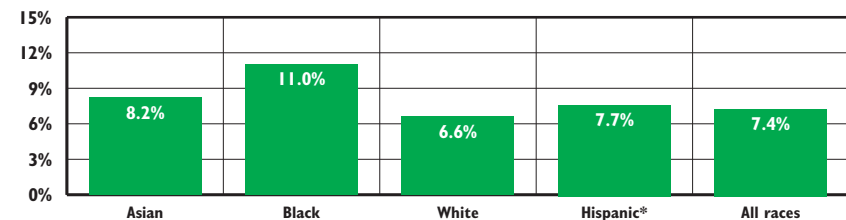
In the U.S. in 2015, 8.1% of infants were born at low birthweight, which was a 16% increase from 7.0% in 1990. Rhode Island's low birthweight rate increased from 6.2% in 1990 to 7.6% in 2015, a 23% increase.^{11,12} The *Healthy People 2020* national target is 7.8%.¹³

Low Birthweight Infants		
	2005	2015
RI	7.8%	7.6%
US	8.2%	8.1%
National Rank*	20th	
New England Rank**	5th	

*1st is best; 50th is worst
 **1st is best; 6th is worst

Source: For 2015: Martin, J. A., et al. (2017). Births: Final data for 2015. *NVSR*, 66(1), 1-69. For 2005: Martin, J. A., et al. (2007). Births: Final data for 2005. *NVSR*, 56(6), 1-104.

Low Birthweight Infants by Race/Ethnicity, Rhode Island, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. *Hispanic infants can be of any race. Data for births in 2015 are provisional.

- ◆ There are racial and ethnic disparities in rates of low birthweight.¹⁴ In Rhode Island between 2011 and 2015, 11.0% of Black infants, 8.2% of Asian infants, and 7.7% of Hispanic infants were born at low birthweight, compared to 6.6% of White infants.¹⁵
- ◆ Factors that persist throughout a woman's life, such as increased stress, insufficient health care, and/or lack of social supports, have been shown to increase the likelihood of delivering a low birthweight baby, particularly among Black women and other racial and ethnic minorities.^{16,17}
- ◆ Between 2011 and 2015 in Rhode Island, 8.9% of births among women under age 20 were low birthweight compared to 7.4% of those over age 20; 8.6% of infants born to women living in the four core cities were low birthweight compared to 6.6% in the remainder of the state; and 8.3% of infants born to women with a high school degree or less were low birthweight, compared to 6.3% of those born to women with higher education levels.¹⁸
- ◆ Among women with private health insurance coverage in Rhode Island between 2011 and 2015, 6.5% of births were low birthweight, compared with 8.3% of those with public insurance (RIte Care or Medicaid) and 13.0% of births to women with no insurance.¹⁹
- ◆ Rhode Island women who deliver a low birthweight infant are more likely to report smoking while pregnant, delayed or no prenatal care, a depression diagnosis, and intimate partner violence than those with a normal weight baby, as well as health issues during their pregnancy such as high blood pressure, hypertension, preeclampsia, or toxemia.²⁰
- ◆ Between 2011 and 2015 in Rhode Island, 1.5% of all live births were born at very low birthweight (less than 1,500 grams).²¹

Table 20. Low Birthweight Infants, Rhode Island, 2011-2015

CITY/TOWN	# BIRTHS	# LOW BIRTHWEIGHT	% LOW BIRTHWEIGHT
Barrington	513	22	4.3%
Bristol	730	43	5.9%
Burrillville	648	42	6.5%
Central Falls	1,575	123	7.8%
Charlestown	249	8	NA
Coventry	1,448	93	6.4%
Cranston	3,916	312	8.0%
Cumberland	1,625	92	5.7%
East Greenwich	573	46	8.0%
East Providence	2,372	157	6.6%
Exeter	244	10	NA
Foster	172	12	NA
Glocester	344	19	NA
Hopkinton	306	15	NA
Jamestown	128	5	NA
Johnston	1,323	88	6.7%
Lincoln	952	69	7.2%
Little Compton	77	5	NA
Middletown	851	49	5.8%
Narragansett	346	21	NA
New Shoreham	53	4	NA
Newport	1,283	94	7.3%
North Kingstown	1,042	68	6.5%
North Providence	1,635	127	7.8%
North Smithfield	420	33	NA
Pawtucket	4,930	443	9.0%
Portsmouth	570	37	6.5%
Providence	12,724	1101	8.7%
Richmond	319	21	NA
Scituate	359	21	NA
Smithfield	620	31	5.0%
South Kingstown	874	50	5.7%
Tiverton	525	27	5.1%
Warren	454	37	NA
Warwick	3,844	242	6.3%
West Greenwich	231	13	NA
West Warwick	1,754	134	7.6%
Westerly	927	55	5.9%
Woonsocket	2,908	245	8.4%
Unknown	104	4	NA
Four Core Cities	22,137	1,912	8.6%
Remainder of State	31,727	2,102	6.6%
Rhode Island	53,968	4,018	7.4%

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 birth data do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to Rhode Island residents between 2011 and 2015.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Births were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

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Infant Mortality

DEFINITION

Infant mortality is the number of deaths of infants under one year of age per 1,000 live births. The data are reported by place of mother's residence, not place of infant's birth.

SIGNIFICANCE

Infant mortality rates are associated with maternal health, quality of and access to medical care, socioeconomic conditions, and public health practices.¹ Communities with high poverty and disadvantaged social conditions tend to have higher infant mortality rates than more advantaged neighborhoods.²

The five main causes of infant death in the U.S. — congenital malformations, low birthweight, maternal complications, sudden infant death syndrome (SIDS), and unintentional injuries — account for 57% of all infant deaths.³ Congenital malformations are the leading cause of infant death in the U.S. for all groups, except for non-Hispanic Black and Puerto Rican women, for whom low birthweight was the leading cause. These two ethnic groups also experienced high rates of infant deaths due to preterm-related causes. In both the U.S. and Rhode Island, non-Hispanic Black women had twice the infant mortality rate of non-Hispanic White women.⁴

The U.S. infant mortality rate declined from 26.0 deaths per 1,000 live births in 1960 to a low of 5.9 deaths per 1,000 live births in 2015, due to improvements in healthier behaviors, medical advances, improved access to care, and economic growth.^{5,6,7,8} Relative to other industrialized countries, the U.S. has made slower progress at reducing infant mortality due in part to a relatively high number of preterm births resulting in infant mortality.^{9,10}

The overall infant mortality rate in Rhode Island between 2011 and 2015 was 5.9 deaths per 1,000 live births. The infant mortality rate was 7.6 per 1,000 live births in the four core cities, compared with 4.5 per 1,000 live births in the remainder of the state. Mothers with a high school degree or less had a higher infant mortality rate (5.8 per 1,000 live births) than mothers with higher educational attainment (4.8 per 1,000 live births) between 2011-2015.¹¹

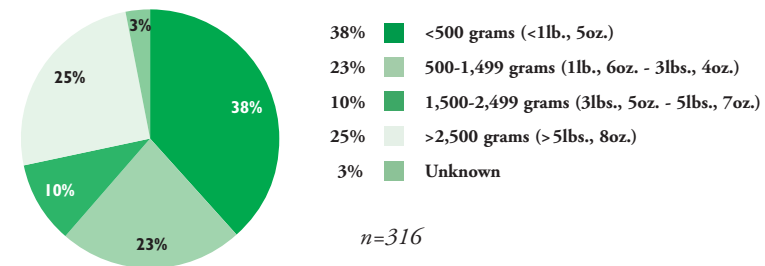
Infant Mortality Rate (rate per 1,000 live births)		
	2005	2015
RI	6.5	5.6
US	6.9	5.9
National Rank*		18th
New England Rank**		4th

*1st is best; 50th is worst

**1st is best; 6th is worst

Source: The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org

Infant Mortality by Birthweight, Rhode Island, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional. Totals may not sum to 100% due to rounding.

- ◆ Between 2011 and 2015, 316 infants died in Rhode Island before their first birthday, a rate of 5.9 per 1,000 live births. This is an improvement from the 2010-2014 infant mortality rate of 6.2 per 1,000 live births (when there were 338 infant deaths). Between 2011 and 2015, 72% of infants who died during this time period were low birthweight, 25% were born at normal weights, and 3% had unknown birthweights.¹²
- ◆ Preterm birth is the leading cause of infant death in Rhode Island.¹³ Between 2011 and 2015, 70% (222) of all infant deaths were preterm (occurring before the 37th week).¹⁴
- ◆ Of the 316 infant deaths between 2011 and 2015 in Rhode Island, 76% (239) occurred in the neonatal period (during the first 27 days of life).¹⁵ Generally, infant deaths in the neonatal period are related to short gestation and low birthweight (less than 2,500 grams), malformations at birth, and/or conditions occurring in the perinatal period.¹⁶
- ◆ Between 2011 and 2015, 24% (77) of the 316 infant deaths in Rhode Island occurred in the post-neonatal period (between 28 days and one year after delivery).¹⁷
- ◆ Racial and ethnic disparities exist in infant mortality. In Rhode Island between 2011 and 2015, the Black infant mortality rate was 9.5 deaths per 1,000 live births, the Asian infant mortality rate was 5.9 per 1,000 live births, and the White infant mortality rate was 4.4 per 1,000 live births. The Hispanic infant mortality rate was 5.8 per 1,000 live births, compared with 5.2 deaths per 1,000 live births among non-Hispanics in Rhode Island.¹⁸

Reducing Infant Mortality

◆ Comprehensive state initiatives to reduce infant mortality should include the following seven broad strategies: improve health promotion efforts; ensure quality of care for all women and infants; improve maternal risk screening for all women of reproductive age; enhance service integration for women and infants; improve access to health care of women before, during and after pregnancy; develop data systems to understand and inform efforts; and promote social equity.¹⁹

◆ Infant mortality is a result of a variety of factors and interventions to prevent infant mortality should occur at multiple levels, including individual education and counseling, ongoing evidence-based clinical interventions, long-lasting health promoting actions, creating health-promoting environments, and socioeconomic interventions to eliminate disparities.²⁰

◆ Participation in enhanced prenatal and postnatal care programs, such as evidence-based family home visiting programs, have been shown to reduce the risk of infant death.²¹ As of October 2016, there were 1,043 families enrolled in one of the evidence-based family home visiting programs coordinated by the Rhode Island Department of Health.²²

Table 21. Infant Mortality by City/Town, Rhode Island, 2011-2015

CITY/TOWN	# OF BIRTHS	# OF INFANT DEATHS	RATE PER 1,000 LIVE BIRTHS
Barrington	513	0	NA
Bristol	730	1	NA
Burrillville	648	3	NA
Central Falls	1,575	9	NA
Charlestown	249	2	NA
Coventry	1,448	6	NA
Cranston	3,916	19	4.9
Cumberland	1,625	10	NA
East Greenwich	573	6	NA
East Providence	2,372	11	NA
Exeter	244	0	NA
Foster	172	1	NA
Glocester	344	2	NA
Hopkinton	306	0	NA
Jamestown	128	0	NA
Johnston	1,323	9	NA
Lincoln	952	6	NA
Little Compton	77	0	NA
Middletown	851	2	NA
Narragansett	346	0	NA
New Shoreham	53	0	NA
Newport	1,283	9	NA
North Kingstown	1,042	2	NA
North Providence	1,635	8	NA
North Smithfield	420	2	NA
Pawtucket	4,930	43	8.7
Portsmouth	570	5	NA
Providence	12,724	97	7.6
Richmond	319	6	NA
Scituate	359	0	NA
Smithfield	620	0	NA
South Kingstown	874	1	NA
Tiverton	525	1	NA
Warren	454	2	NA
Warwick	3,844	19	4.9
West Greenwich	231	0	NA
West Warwick	1,754	6	NA
Westerly	927	4	NA
Woonsocket	2,908	20	6.9
Unknown	104	4	NA
Four Core Cities	22,137	169	7.6
Remainder of State	31,727	143	4.5
Total	53,968	316	5.9

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 birth data do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to residents between 2011 and 2015.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Deaths were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

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- ⁶ The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org
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(continued on page 180)

Breastfeeding

DEFINITION

Breastfeeding is the percentage of newborn infants who are exclusively breastfed at the time of hospital discharge.

SIGNIFICANCE

Breastfeeding is widely recognized as the ideal method of feeding and nurturing infants and a critical component in achieving optimal infant and child health, growth, and development.^{1,2} National health experts recommend exclusive breastfeeding for six months after birth, continuous breastfeeding for at least 12 months after birth, and thereafter as long as mutually desired by mother and child.³

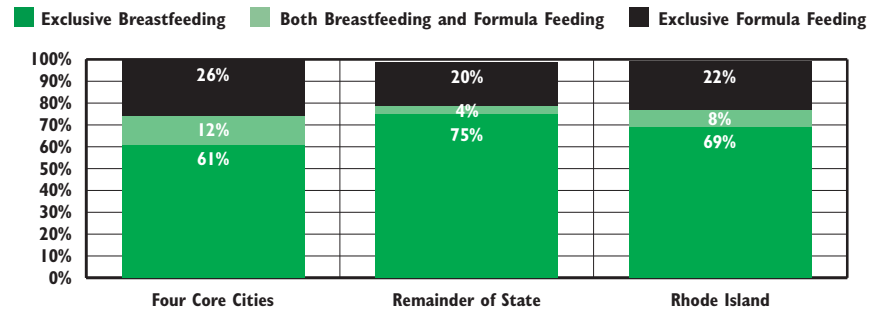
Breastfeeding decreases infant mortality and morbidity. Infant benefits include optimal nutrition and reduced risk for sudden infant death syndrome, infectious disease, and chronic conditions such as childhood obesity, type 1 and 2 diabetes, and otitis media. Breastfeeding benefits mothers by creating a strong bond with infants and decreasing risk for postpartum depression, type 2 diabetes, hypertension, and breast and ovarian cancer. Breastfeeding provides significant social and economic benefits, including reduced cost to the family, reduced health care costs, and reduced employee absenteeism.^{4,5,6}

Breastfeeding can be effectively promoted by hospital and other birth facility policies and practices that take place before, during, and after labor and delivery, including access to professional lactation consultants, and involvement in mother-to-mother lactation support networks.⁷ In 2015, Women & Infants Hospital became the second-largest hospital in the U.S. to achieve the “Baby-Friendly” designation, which recognizes breastfeeding support and promotion by birth facilities. Rhode Island ranks best in the U.S. in the percentage of babies born at Baby-Friendly hospitals.⁸

Breastfeeding rates generally increase with maternal age, higher educational attainment, and higher income levels.⁹ Whether the pregnancy was intended or not also affects breastfeeding. In Rhode Island between 2009-2011, 17% of babies from intended pregnancies were not breastfed at all, compared with 22% of babies from unintended pregnancies.¹⁰

Healthy People 2020 sets target breastfeeding rates of 81.9% of infants ever having been breastfed, 60.6% at six months of age, and 34.1% at one year of age.¹¹ National rates were 81.1% ever breastfed, 51.8% at six months, and 30.7% at 12 months.¹² Rhode Island exceeds national rates in all three, reporting 81.8% of infants ever having been breastfed, 56.0% at six months, and 36.7% at one year of age.

Breastfeeding and Formula Feeding, Rhode Island, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Newborn Developmental Risk Screening Program, 2011-2015. Breastfeeding and formula feeding are defined as intended feeding method at hospital discharge. Totals may not sum to 100% because data on feeding methods were not available for all births.

- ◆ Between 2011 and 2015, 69% of new mothers in Rhode Island indicated that they intended to exclusively breastfeed when discharged from the hospital, 22% intended to exclusively formula feed, and 8% intended to use a combination of both.¹³ Nearly nine out of ten (87%) new mothers in Rhode Island who were surveyed about three months after giving birth between 2012-2014 reported ever having breastfed. Forty-six percent reported continued breastfeeding at the time of the survey.¹⁴
- ◆ Rhode Island is one of 45 states with legislation that provides mothers with the explicit right to breastfeed in public places.¹⁵ Since 2015, Rhode Island law prohibits job discrimination based on pregnancy, childbirth, and related medical conditions and requires employers to make reasonable accommodations for workers for conditions related to pregnancy and childbirth, including breastfeeding.¹⁶
- ◆ In 2014, Rhode Island became the first state in the U.S. to establish licensure for International Board Certified Lactation Consultants (IBCLCs). State-certified and trained lactation consultants provide comprehensive lactation support and counseling for pregnant and postpartum women. In 2015, Rhode Island had 55 IBCLCs.^{17,18}
- ◆ Rhode Island is one of four states that have established paid family leave programs, which can support breastfeeding initiation and duration. U.S. mothers who have 12 or more weeks of paid maternity leave are nearly three times more likely to initiate breastfeeding and twice as likely to breastfeed for six months when compared to mothers with no paid leave.¹⁹

Table 22.

Breastfeeding, Rhode Island, 2011-2015

CITY/TOWN	NUMBER OF BIRTHS SCREENED	NUMBER BREAST AND FORMULA FEEDING	NUMBER EXCLUSIVELY BREASTFEEDING	PERCENT WITH ANY BREASTFEEDING	PERCENT EXCLUSIVELY BREASTFEEDING
Barrington	503	9	454	92%	90%
Bristol	697	39	517	80%	74%
Burrillville	602	13	448	77%	74%
Central Falls	1,545	262	893	75%	58%
Charlestown	239	6	194	84%	81%
Coventry	1,429	40	1,053	76%	74%
Cranston	3,843	265	2,753	79%	72%
Cumberland	1,511	62	1,172	82%	78%
East Greenwich	567	10	471	85%	83%
East Providence	2,316	126	1,634	76%	71%
Exeter	241	14	197	88%	82%
Foster	164	7	133	85%	81%
Glocester	333	12	253	80%	76%
Hopkinton	311	4	266	87%	86%
Jamestown	125	0	119	95%	95%
Johnston	1,303	66	896	74%	69%
Lincoln	920	35	697	80%	76%
Little Compton	61	1	49	82%	80%
Middletown	805	28	655	85%	81%
Narragansett	339	16	279	87%	82%
New Shoreham	51	3	46	96%	90%
Newport	1,194	72	871	79%	73%
North Kingstown	1,037	32	830	83%	80%
North Providence	1,606	82	1,141	76%	71%
North Smithfield	386	9	319	85%	83%
Pawtucket	4,723	556	2,961	74%	63%
Portsmouth	518	6	438	86%	85%
Providence	12,463	1,672	7,555	74%	61%
Richmond	285	10	241	88%	85%
Scituate	360	12	276	80%	77%
Smithfield	604	15	470	80%	78%
South Kingstown	885	46	709	85%	80%
Tiverton	344	9	274	82%	80%
Warren	430	13	324	78%	75%
Warwick	3,777	183	2,731	77%	72%
West Greenwich	225	6	174	80%	77%
West Warwick	1,722	87	1,109	69%	64%
Westerly	823	31	654	83%	79%
Woonsocket	2,726	202	1,622	67%	60%
Four Core Cities	21,457	2,692	13,031	73%	61%
Remainder of State	30,556	1,369	22,847	79%	75%
Rhode Island	52,013	4,061	35,878	77%	69%

Sources of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Newborn Developmental Risk Screening Program Database and Maternal and Child Health Database, 2011-2015.

Breastfeeding is defined as “breastfeeding as intended feeding method at hospital discharge.” “Percent With Any Breastfeeding” includes infants fed breast milk in combination with formula and those exclusively breastfed.

The number of births screened may differ from the total number of births reported elsewhere in the Factbook as not all documented births received a screening. Births to Rhode Island women that occurred outside Rhode Island are not included.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

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- ⁸ Women & Infants Hospital. (2015). *Women & Infants achieves baby-friendly designation* [Press release]. Retrieved from www.womenandinfants.org
- ¹⁰ *Issue brief: Unintended pregnancy among women in Rhode Island, 2009-2011*. (2015). Providence, RI: Rhode Island Department of Health.

(continued on page 180)

Children with Lead Poisoning

DEFINITION

Children with lead poisoning is the percentage of three-year-old children with a confirmed elevated blood lead level (EBLL, ≥ 5 $\mu\text{g}/\text{dL}$) at any time prior to December 31, 2016.^{1,2} These data are for children eligible to enter kindergarten in the fall of 2018 (i.e., children born between September 1, 2012 and August 31, 2013).

SIGNIFICANCE

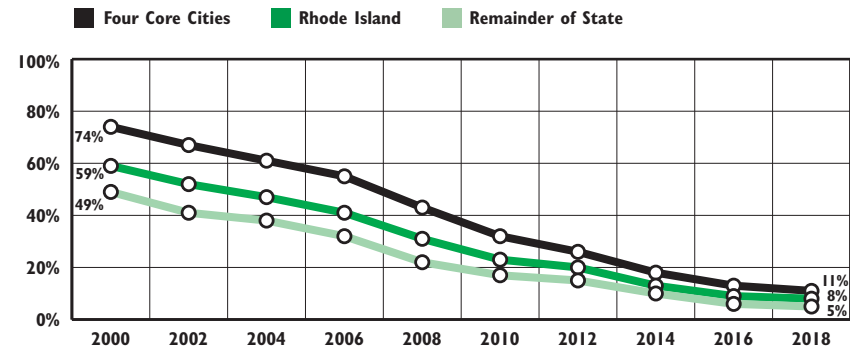
Lead poisoning is a preventable childhood disease. Infants, toddlers, and preschool-age children are most susceptible to the toxic effects of lead because they absorb lead more readily than adults and have inherent vulnerability due to developing central nervous systems.³ Lead exposure, even at very low levels, can cause irreversible damage including reduced fetal and postnatal growth, decreased hearing, delayed puberty, kidney damage, increased risk for behavioral problems, decreased cognitive abilities, and lower academic performance. Though rare, severe poisoning can result in seizures, comas, and even death.^{4,5} The societal costs of childhood lead poisoning include the loss of future earnings due to decreased cognition, and increased medical, special education, and juvenile justice costs.^{6,7,8}

The Centers for Disease Control and Prevention (CDC) is focused on primary prevention of lead exposure in response to research findings indicating there is no safe blood lead level in children. In an effort to better alert health officials and family members to the dangers of any lead exposure in children, in 2012 the CDC lowered the threshold for which a child is deemed to have an elevated blood lead level from 10 $\mu\text{g}/\text{dL}$ to 5 $\mu\text{g}/\text{dL}$. This new lower reference value allows parents and health officials to take corrective actions sooner.^{9,10}

Although the percentage of children with elevated blood lead levels is declining nationally and locally, low-income and minority children remain the most likely to be lead poisoned.^{11,12,13} In Rhode Island, children living in the four core cities (where most poor and minority children reside) are at increased risk for lead exposure because the housing stock tends to be older.¹⁴

In 2016, 1,201 (4.9%) of the 24,738 Rhode Island children under age six who were screened had confirmed elevated blood lead levels of ≥ 5 $\mu\text{g}/\text{dL}$. Children living in the four core cities (7.0%) were more than twice as likely as children in the remainder of the states (3.2%) to have confirmed elevated blood lead levels ≥ 5 $\mu\text{g}/\text{dL}$.¹⁵

Children Entering Kindergarten with History of Elevated* Blood Lead Level Screening (≥ 5 $\mu\text{g}/\text{dL}$), Rhode Island, Four Core Cities, and Remainder of State, 2000-2018



Source: Rhode Island Department of Health, Healthy Homes and Childhood Lead Poisoning Prevention Program, Children entering kindergarten between 2000 and 2018. *Elevated blood lead level of ≥ 5 $\mu\text{g}/\text{dL}$.

◆ The number of children with elevated blood lead levels has been steadily declining in all areas of Rhode Island over the past two decades. Compared to the remainder of the state, children living in the four core cities are at an increased risk for lead exposure.¹⁶

Lead Exposure and Academic Performance

◆ Exposure to lead has been shown to negatively impact academic performance in early childhood.¹⁷ Rhode Island children with a history of lead exposure, even at low levels, have been shown to have decreased reading readiness at kindergarten entry and diminished reading and math proficiency in the third grade. The most significant declines in academic performance occurred among children with the highest blood lead levels and those living in the four core cities. Children with lead exposure are also at increased risk for absenteeism, grade repetition, and special education services.^{18,19}

◆ In an effort to better inform school administrators about the prevalence of lead exposure, the Rhode Island Department of Health and the Rhode Island Department of Education provide detailed reports to superintendents and heads of private schools on rates of lead exposure and immunization among students within their respective districts. Information regarding screenings, regulations, associated risks, and parent communication are also included.^{20,21}

Table 23. Lead Poisoning in Children Entering Kindergarten in the Fall of 2018, Rhode Island

CITY/TOWN	NUMBER TESTED FOR LEAD POISONING	CONFIRMED WITH BLOOD LEAD LEVEL ≥ 5 $\mu\text{g/dL}$	
		NUMBER	PERCENT
Barrington	146	10	6.8%
Bristol	163	9	5.5%
Burrillville	132	9	6.8%
Central Falls	342	35	10.2%
Charlestown	40	3	7.5%
Coventry	277	8	2.9%
Cranston	770	45	5.8%
Cumberland	315	7	2.2%
East Greenwich	154	6	3.9%
East Providence	479	52	10.9%
Exeter	43	0	0.0%
Foster	29	2	6.9%
Glocester	63	1	1.6%
Hopkinton	67	4	6.0%
Jamestown	33	1	3.0%
Johnston	255	11	4.3%
Lincoln	185	5	2.7%
Little Compton	15	2	13.3%
Middletown	196	1	0.5%
Narragansett	58	2	3.4%
New Shoreham	13	6	46.2%
Newport	282	17	6.0%
North Kingstown	215	4	1.9%
North Providence	276	15	5.4%
North Smithfield	84	2	2.4%
Pawtucket	916	82	9.0%
Portsmouth	133	4	3.0%
Providence	2,627	348	13.2%
Richmond	35	1	2.9%
Scituate	67	3	4.5%
Smithfield	124	1	0.8%
South Kingstown	206	11	5.3%
Tiverton	118	5	4.2%
Warren	87	2	2.3%
Warwick	723	24	3.3%
West Greenwich	38	0	0.0%
West Warwick	336	14	4.2%
Westerly	160	12	7.5%
Woonsocket	565	44	7.8%
Unknown Residence	2	NA	NA
Four Core Cities	4,450	509	11.4%
Remainder of State	6,317	299	4.7%
Rhode Island	10,769	808	7.5%

Significantly Lead Poisoned Children Under Age Six

◆ Starting in 2015, a child is considered to be “significantly lead poisoned” if she or he has a single venous blood test result of ≥ 15 $\mu\text{g/dL}$. The number of children under age six who were significantly lead poisoned has decreased by 78% over the past 12 years, from 349 in 2005 to 76 in 2016.²²

◆ Starting in 2015, an environmental inspection of a child’s home is offered when a single venous test is ≥ 15 $\mu\text{g/dL}$ (versus ≥ 20 $\mu\text{g/dL}$ previously). The Rhode Island Department of Health sends certified lead inspectors to determine whether lead hazards are present and works with owners to make the property lead-safe. In 2016, 67 environmental inspections were offered, of which 42 were performed, 12 were refused, seven were pending, and six the child moved.²³

Lead Poisoning Screening for Children Age Three

◆ All Rhode Island children must have at least two blood lead screening tests by age three and annual screening through age six. Lead screening is a mandated covered health insurance benefit in Rhode Island. In 2016, 76% of Rhode Island three-year-olds with an active status in KIDSNET received a blood lead test, 56% received two blood tests, and 24% were never tested.^{24,25,26}

Source of Data for Table/Methodology

Rhode Island Department of Health, Healthy Homes and Childhood Lead Poisoning Prevention Program.

Data reported in this year’s Factbook is not comparable to editions prior to 2012, due to a change in definition and data improvements within the Healthy Homes and Childhood Lead Poisoning Prevention Program.

Data for children entering kindergarten in the fall of 2018 reflect the number of Rhode Island children eligible to enter school in the fall of 2018 (i.e., born between 9/1/12 and 8/31/13).

Children confirmed positive for lead poisoning (blood lead level ≥ 5 $\mu\text{g/dL}$) are counted if they screened positive with a venous test and/or had a confirmed capillary test at any time in their lives prior to the end of December 2016. The Rhode Island Healthy Homes and Childhood Lead Poisoning Prevention Program recommends that children under age six with a capillary blood lead level of ≥ 5 $\mu\text{g/dL}$ receive a confirmatory venous test.

The denominator for percent confirmed is the number of children entering kindergarten in the fall of 2018 who were tested for lead poisoning. Data include both venous and confirmed capillary tests.

Of the 820 children entering kindergarten in 2018 who had an initial blood lead screen of ≥ 5 $\mu\text{g/dL}$, two did not receive a confirmatory second test. Their lead poisoning status is unknown.

Caution should be used with small numbers in numerators and denominators.

Unknown: Children were Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

See Methodology Section for more information.

References

¹¹⁰ Centers for Disease Control and Prevention. (n.d.). *Blood lead levels in children*. Retrieved February 20, 2017, from www.cdc.gov

²²⁴ Rhode Island Department of Health. (2016). *Childhood lead poisoning prevention program referral intervention process*. Retrieved February 20, 2017, from www.health.ri.gov

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Children with Asthma

DEFINITION

Children with asthma is the rate of emergency department visits where asthma was the primary diagnosis per 1,000 children under age 18. Data are reported by place of child's residence at the time of the emergency department visit.

SIGNIFICANCE

Asthma is a chronic respiratory disease that causes treatable episodes of coughing, wheezing, shortness of breath, and chest tightness, which can be life threatening. Asthma attacks can be triggered by respiratory infections, air pollutants, cigarette smoke, allergens, and exposure to cold air or sudden temperature change. While the exact cause of asthma is unknown, various genetic, environmental, birth, and health status factors have been linked to an increased risk for asthma.^{1,2,3}

Nationally, asthma is one of the most common chronic conditions among children.⁴ After peaking at 9.6% in 2009, asthma prevalence among U.S. children fell to 8.4% in 2015.^{5,6} The highest rates of asthma are among males, Black and American Indian/Alaska Native children, and children living in poverty.⁷ Racial and ethnic differences in asthma prevalence are believed to be correlated with poverty, exposure to indoor and outdoor air pollution, stress, acute exposure to

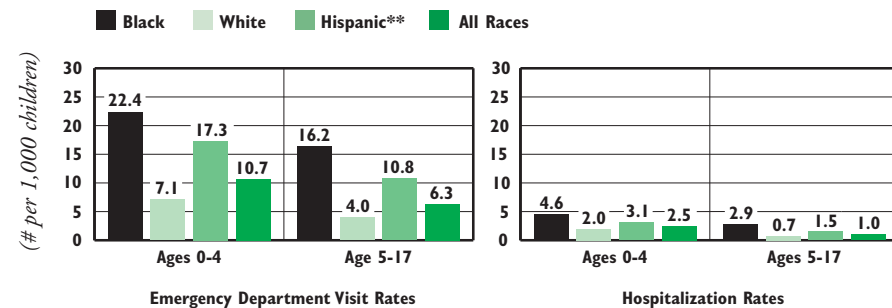
violence, lack of access to preventive medical care, and genetic factors.^{8,9}

Compared with adults, children have higher rates for primary care and emergency department visits for asthma, similar hospitalization rates, and lower death rates.¹⁰ Asthma remains the third-ranked cause of hospitalization for children under age 15, and one of the leading causes of school absenteeism.¹¹

Proper asthma management requires continued assessment and monitoring, patient education, environmental control, and appropriate medication. Health care providers should work with the child and family to create an asthma action plan, which provides instruction on how to avoid asthma triggers and how to use medications properly. An asthma action plan, if adhered to and supported by enhanced care and community-based interventions, can improve health outcomes and reduce costly asthma hospitalizations.^{12,13,14,15,16}

Rhode Island middle and high school staff provide information and referrals about asthma, including health care referrals for students diagnosed with or suspected of having asthma (73% reported doing so in 2016), providing asthma education to students (53%), using an assessment tool to evaluate school policies, activities, and programs related to asthma (31%), and providing families with information on asthma (18%).¹⁷

Asthma* Emergency Department and Hospitalization Rates, by Age and Race/Ethnicity, Rhode Island Children, 2011-2015



Source: Rhode Island Department of Health, Hospital Discharge Database, 2011-2015; U.S. Census Bureau, Census 2010. *Rates are for primary diagnosis of asthma. **Hispanic children can be of any race. *See note regarding new methodology for calculations, starting with this Factbook.

- ◆ In Rhode Island between 2011 and 2015, Black children, Hispanic children, and children under age five were the most likely to visit the emergency department or be hospitalized as a result of asthma. Children of all ages were more likely to visit the emergency department than to be hospitalized for asthma.¹⁸
- ◆ In Rhode Island between 2011 and 2015, boys under age 18 had higher asthma emergency department (8.9 per 1,000 boys) and hospitalization (1.7 per 1,000 boys) rates than girls under age 18 (5.9 and 1.1 per 1,000 girls respectively).¹⁹
- ◆ Among all children who had an emergency department visit for a primary diagnosis of asthma in Rhode Island between 2011 and 2015, 58% had RIte Care/Medicaid coverage, 26% had private health insurance, 6% were self-pay (which could mean they were uninsured or that their insurance did not cover the cost of care), and 10% were unknown. Among hospital admissions during that time, 48% had RIte Care/Medicaid coverage, 40% had private health insurance, 6% were self-pay, and 6% were unknown.²⁰
- ◆ In 2014, Rhode Island parents reported higher rates of current asthma prevalence of their children (11%) than the national average (9%). Rhode Island has the seventh highest self-reported child asthma prevalence among ranked states.²¹

Table 24. Asthma Emergency Department Visits for Children Under Age 18, Rhode Island, 2011-2015

CITY/TOWN	ESTIMATED # OF CHILDREN UNDER AGE 18	# OF CHILD EMERGENCY DEPT. VISITS WITH PRIMARY ASTHMA DIAGNOSIS	RATE OF CHILD EMERGENCY DEPT. VISITS WITH PRIMARY ASTHMA DIAGNOSIS, PER 1,000 CHILDREN
Barrington	4,597	81	3.5
Bristol	3,623	50	2.8
Burrillville	3,576	53	3.0
Central Falls	5,644	339	12.0
Charlestown	1,506	37	4.9
Coventry	7,770	150	3.9
Cranston	16,414	532	6.5
Cumberland	7,535	124	3.3
East Greenwich	3,436	36	2.1
East Providence	9,177	252	5.5
Exeter	1,334	25	3.7 [^]
Foster	986	9	NA
Glocester	2,098	17	1.6 [^]
Hopkinton	1,845	41	4.4
Jamestown	1,043	15	2.9 [^]
Johnston	5,480	166	6.1
Lincoln	4,751	101	4.3
Little Compton	654	7	NA
Middletown	3,652	124	6.8
Narragansett	2,269	46	4.1
New Shoreham	163	1	NA
Newport	4,083	221	10.8
North Kingstown	6,322	118	3.7
North Providence	5,514	187	6.8
North Smithfield	2,456	40	3.3
Pawtucket	16,575	792	9.6
Portsmouth	3,996	72	3.6
Providence	41,634	2,971	14.3
Richmond	1,849	22	2.4 [^]
Scituate	2,272	30	2.6
Smithfield	3,625	37	2.0
South Kingstown	5,416	105	3.9
Tiverton	2,998	19	1.3 [^]
Warren	1,940	51	5.3
Warwick	15,825	418	5.3
West Greenwich	1,477	24	3.2 [^]
West Warwick	5,746	249	8.7
Westerly	4,787	165	6.9
Woonsocket	9,888	579	11.7
Unknown	0	2	NA
Four Core Cities	73,741	4,681	12.7
Remainder of State	150,215	3,625	4.8
Rhode Island	223,956	8,308	7.4

Child Hospitalizations for Asthma, Rhode Island

◆ In Rhode Island between 2011 and 2015, there were 1,579 hospitalizations with primary asthma diagnosis of children under age 18, a rate of 1.4 per 1,000 children. The rate of primary asthma hospitalizations was twice as high in the four core cities (2.1 per 1,000 children) than in the remainder of the state (1.1 per 1,000 children).²²

◆ Primary asthma hospitalization rates for children were highest in Providence (2.5 per 1,000 children), East Providence (2.2), Johnston (1.9), Central Falls (1.8), Barrington (1.5), North Providence (1.4), Pawtucket (1.4), and Woonsocket (1.4) between 2011 and 2015.²³

Source of Data for Table/Methodology

Rhode Island Department of Health, Hospital Discharge Database, 2011-2015.

The Rhode Island Department of Health defines emergency department visits with primary asthma diagnosis as those resulting in a home discharge or another facility, but not admitted to the hospital as an inpatient. As such, data are not comparable to previous Factbooks.

The denominator used to compute the 2011-2015 rate of asthma emergency department visits is the number of children according to the 2010 U.S. Census, multiplied by five.

[^]The Rhode Island Department of Health recently implemented a new reporting policy for rates with small numbers. Rates with a relative standard error (RSE) between 20 and <30% are considered unstable. They are indicated by the [^] notation and need to be interpreted with caution. Rates with RSEs 30% or higher are considered unreliable and were suppressed from the report.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Unknown: Children were Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

- ¹⁴ *Asthma*. (2016). Washington, DC: Child Trends.
- ² *The burden of asthma in Rhode Island*. (2014). Providence, RI: Rhode Island Department of Health, Asthma Control Program.
- ³⁸ Ekerholm, S., Pearlman, D. N., Robinson, D., Sutton, N., & Goldman, D. (2012). *Measuring up: A health surveillance update on Rhode Island children with asthma*. Providence, RI: Rhode Island Department of Health, Division of Community, Family Health and Equity, Asthma Control Program.
- ⁵⁷ National Health Interview Survey. (2015). *Table C-1a. Age-adjusted percentages (with standard errors) of ever having asthma and still having asthma for children under age 18 years, by selected characteristics: United States, 2015*. Retrieved March 13, 2017, from www.cdc.gov

(continued on page 180)

Housing and Health

DEFINITION

Housing and health is the percentage of children under age 18 who live in low-income families that reside in older housing, defined as housing built before 1980. Low-income families are those with incomes less than 200% of the federal poverty level.

SIGNIFICANCE

Homes that are dry, clean, pest free, safe, contaminant free, well-ventilated, well-maintained, and thermally-controlled can provide a healthy environment for children and residents.¹ Safe, affordable, and stable housing maintains the health and well-being of families and children, supporting mental and emotional health as well as physical safety.² Healthy housing also protects families from weather, environmental hazards, and injury and provides a safe place for children to eat, sleep, play, and grow.³

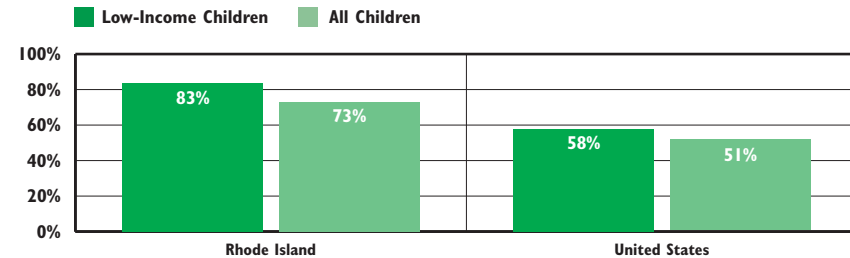
Unhealthy housing can cause or intensify many health conditions. Studies have connected poor quality construction, utility deficiencies, water intrusion, lead paint, radon, and pests to respiratory illnesses, asthma, unintentional injuries, lead poisoning, and cancer. Children under age 14, low-income children, and minority children under age five are at increased risk for fall injuries due to unsafe sleep and home environments, including aging and deteriorating housing.^{4,5,6}

Poor quality housing is also a strong predictor of emotional and behavioral problems in low-income children and youth as well as academic achievement. Adolescents living in poorer quality homes have lower reading and math proficiency than their peers.⁷

The quality and stability of children's homes can have long-term effects on children. Lack of adequate and affordable housing puts safe, healthy, well-maintained homes out of reach for many families. Families may be forced to move frequently in search of better, more affordable housing, or to raise their children in overcrowded and unsafe environments that can interfere with their growth, development, health, and academic performance. Overcrowded housing is associated with mental health concerns, stress, sleep problems, injury, and exposure to disease, while multiple moves are associated with behavioral and mental health concerns, academic difficulties, and substance use.⁸

Adopting a comprehensive "healthy homes" approach that addresses multiple housing deficiencies simultaneously can help prevent housing-related injuries and illnesses, reduce health costs, and improve children's quality of life. Because the causes of many health conditions related to the home environment are interconnected, it can be cost-effective to address multiple hazards simultaneously.^{9,10}

Children Living in Older Housing*, 2011-2015, Rhode Island and the United States



Source: Population Reference Bureau analysis of 2011-2015 American Community Survey (ACS) Public Use Microsample (PUMS) data. *Older housing is defined as built before 1980. The ACS reports housing year built by decade, so this is the best available approximation for housing built before 1978 when interior lead paint was banned. Factbooks prior to 2016 are not comparable due to the discontinuation of 3-year ACS data.

◆ **Between 2011 and 2015, Rhode Island had the highest percentage of low-income children (83%) and the second highest percentage of children of all incomes (73%) living in older housing in the U.S., after New York.¹¹**

◆ **Lead Poisoning:** Children living in homes built before 1978 are at risk for lead poisoning. Even at low levels, lead exposure can negatively affect a child's health, development, and brain.¹² In 2016, 1,201 (4.9%) of Rhode Island children under age six had a confirmed blood lead level of ≥ 5 $\mu\text{g}/\text{dL}$.¹³

◆ **Asthma:** Asthma is a common chronic condition in children and is a leading cause of school absences and hospitalization for children under age 15 in the U.S.¹⁴ Between 2011 and 2015, there were 4,439 emergency department visits of Rhode Island children ages six and under (10.9 per 1,000) for which asthma was the primary diagnosis.¹⁵

◆ **Unintentional Injuries:** Falls are the leading cause of non-fatal unintentional injuries among children in the U.S.¹⁶ In 2015, housing-related falls resulted in 2,109 emergency room visits by Rhode Island children age six and under.¹⁷

◆ **Weatherization Assistance Program:** The program helps eligible households reduce heating bills by providing whole-house energy efficiency and safety services. In 2016, 1,093 Rhode Island children under age 18 benefited from 1,631 completed weatherization projects administered by seven Community Action Program agencies.^{18,19}

Table 25.

Housing and Health, Rhode Island

CITY/TOWN	# OF CHILDREN AGES 6 AND UNDER 2010	CHILDREN WITH LEAD POISONING 2016		PRIMARY ASTHMA ED VISITS 2011-2015		# FALL ED VISITS 2015	WEATHERIZATION PROJECTS 2016	% HOUSING STOCK PRE-1980
		#	%	#	RATE PER 1,000			
Barrington	1,213	9	1.9%	39	6.4	47	19	83%
Bristol	1,316	13	3.4%	30	4.6	31	27	70%
Burrillville	1,186	7	2.2%	23	3.9^	15	28	69%
Central Falls	2,374	53	6.5%	188	15.8	61	25	88%
Charlestown	493	1	1.6%	14	5.7	7	14	54%
Coventry	2,508	9	1.6%	85	6.8	52	58	67%
Cranston	5,814	72	4.3%	275	9.5	113	197	79%
Cumberland	2,603	17	2.5%	57	4.4	51	25	65%
East Greenwich	930	4	1.4%	16	3.4^	18	9	66%
East Providence	3,545	62	5.1%	134	7.6	91	94	84%
Exeter	390	1	1.2%	9	NA	4	11	42%
Foster	315	1	1.3%	4	NA	9	5	67%
Glocester	633	3	2.1%	5	NA	13	20	67%
Hopkinton	618	4	3.4%	16	5.2^	8	12	58%
Jamestown	287	1	2.2%	10	NA	7	5	65%
Johnston	1,930	15	2.8%	77	8.0	44	66	65%
Lincoln	1,490	9	2.2%	45	6.0	33	24	73%
Little Compton	188	3	6.8%	3	NA	0	6	71%
Middletown	1,331	11	2.6%	57	8.6	57	12	69%
Narragansett	739	3	2.9%	20	5.4^	12	21	59%
New Shoreham	57	4	20.0%	1	NA	1	0	56%
Newport	1,792	25	4.8%	145	16.2	75	7	84%
North Kingstown	1,965	8	1.7%	54	5.5	37	34	69%
North Providence	2,040	20	2.8%	104	10.2	68	65	73%
North Smithfield	752	3	1.5%	17	4.5^	18	15	67%
Pawtucket	6,835	124	6.1%	431	12.6	183	179	89%
Portsmouth	1,206	8	2.7%	33	5.5	39	12	62%
Providence	16,934	530	8.0%	1,693	20.0	538	310	84%
Richmond	635	5	6.6%	12	3.8^	7	3	46%
Scituate	608	4	2.3%	8	NA	12	11	66%
Smithfield	1,076	1	<1%	18	3.3^	16	17	61%
South Kingstown	1,707	14	3.8%	53	6.2	30	20	57%
Tiverton	1,006	9	2.6%	12	2.4^	6	38	63%
Warren	727	17	6.1%	21	5.8^	20	16	80%
Warwick	5,561	46	3.1%	202	7.3	160	100	81%
West Greenwich	446	0	0.0%	9	NA	11	9	32%
West Warwick	2,351	27	4.2%	136	11.6	73	31	75%
Westerly	1,735	11	2.9%	77	8.9	34	36	64%
Woonsocket	4,212	47	3.9%	306	14.5	108	50	89%
<i>Four Core Cities</i>	<i>30,355</i>	<i>754</i>	<i>7.0%</i>	<i>2,618</i>	<i>17.2</i>	<i>890</i>	<i>564</i>	<i>86%</i>
<i>Remainder of State</i>	<i>51,193</i>	<i>447</i>	<i>3.2%</i>	<i>1,821</i>	<i>7.1</i>	<i>1,219</i>	<i>1,067</i>	<i>71%</i>
<i>Rhode Island</i>	<i>81,548</i>	<i>1,201</i>	<i>4.9%</i>	<i>4,439</i>	<i>10.9</i>	<i>2,109</i>	<i>1,631</i>	<i>75%</i>

Source of Data for Table/Methodology

Children Age Six and Under: U.S. Census Bureau, Census 2010. Table PCT12.

Children with Lead Poisoning: Rhode Island Department of Health, Healthy Homes and Childhood Lead Poisoning Prevention Program, 2016. The numerator is the number of Rhode Island children with a confirmed blood lead level ≥ 5 $\mu\text{g}/\text{dL}$ in calendar year 2016. The denominator is the number of children who were tested in calendar year 2016. Data are for children under age six.

Primary Asthma ED Visits: Rhode Island Department of Health, Hospital Discharge Database, 2011-2015. The Rhode Island Department of Health defines emergency department (ED) visits for children with a primary asthma diagnosis as those resulting in a home discharge or another facility, but not admitted to the hospital as an inpatient. Rates marked by the ^ notation are statistically unstable. For details, see Children with Asthma indicator. Data are for children age six and under.

Number of Housing-Related Falls ED Visits: Rhode Island Department of Health, Center for Health Data and Analysis, 2015. Data are for Rhode Island resident children ages six and under.

Weatherization Projects: Rhode Island Department of Human Services, Weatherization Assistance Program data, 2016. Weatherization projects are defined as those receiving a final inspection by end of calendar year 2016. In September 2016, the state of Rhode Island instituted a new integrated eligibility determination system (Unified Health Infrastructure Project/UHIP), which included the Weatherization Assistance Program. Comparisons to previous years should be made with caution.

Housing Stock Pre-1980: Population Reference Bureau analysis of 2011-2015 American Community Survey (ACS) data. Table B25034. Older housing is defined as built before 1980. The ACS reports housing year built by decade, so this is the best available approximation for housing built before 1978 when interior lead paint was banned.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References are on page 181.

Obesity

DEFINITION

Obesity is the percentage of high school students who report having a body mass index (BMI) at or above the 95th percentile for gender and age. Adolescents with a BMI at or above the 95th percentile are considered to be obese. Children and youth with a BMI between the 85th and 95th percentiles are considered to be overweight or at risk for obesity.¹

SIGNIFICANCE

Children and adolescents who are overweight or obese are at immediate and/or long-term risk of many health problems, including type 2 diabetes, cardiovascular disease, asthma, joint pain, sleep apnea, and other acute and chronic health problems. Over time, these conditions may contribute to a shorter lifespan. They may also experience social and psychological problems, including depression, bullying, and social marginalization. Obese children and youth are also more likely to repeat a grade, be absent from school, and have reduced academic performance than their peers.^{2,3,4,5}

Over the past four decades, the prevalence of childhood obesity in America has more than tripled, and 17% of U.S. children ages 2-19 were obese and 16% were overweight in 2013-2014.⁶ No single factor is driving the increased prevalence of childhood obesity; rather it

is the result of complex interactions among many factors, including excess calorie consumption, genes, metabolism, behavior, environment, and culture.⁷ Low consumption of healthy foods, high consumption of sugar-sweetened beverages and energy dense foods, low levels of physical activity, and high levels of screen time are all associated with obesity.⁸

The health risks of being overweight and obese can start early and can be long-lasting.^{9,10,11} Maternal weight, smoking, and stress during pregnancy increases a baby's risk for being overweight later in childhood.¹² Overweight kindergartners are four times as likely as their healthy-weight peers to become obese by eighth grade, two-thirds of obese fifth graders remain obese in tenth grade, and teenagers who are obese have a greater than 70% risk of being obese as adults.^{13,14,15} Prevention and intervention for at risk, overweight, and obese children should occur early and at all ages.¹⁶

Reducing overweight and obesity will require a comprehensive, multi-system approach. Policy strategies to reduce obesity include improving access to nutritional and affordable foods and beverages, ensuring healthy food in schools, increasing options for physical activity before, during, and after school as well as with early learning programs, and improving access to safe and walkable neighborhoods and recreational areas.¹⁷

Obesity and Overweight Among Rhode Island High School Students, 2005-2015



Source: *Youth Risk Behavior Survey*, Rhode Island, 2005-2015. BMI calculated using self-reported student response.

◆ Rhode Island's overall high school obesity and overweight prevalence has not significantly improved or worsened since 2005. In Rhode Island in 2015, 12% of high school students self-reported as obese and 15% self-reported being overweight. Rhode Island ranks seventh best for the prevalence of obesity and ninth best for the prevalence of overweight among ranked states in 2015. In Rhode Island, Hispanic students (19%), males (16%), and Black, non-Hispanic students (15%) were more likely to report being obese than their peers.^{18,19}

◆ In October 2016, the BMI values of 10,498 electronic medical health records of children under age 18 residing in Providence who are active patients of a Provide Community Health Center site were examined. The analysis found 26% of Providence children were obese (up from 24% in 2015) and 20% were overweight (same as the prior year). In 2016, obesity varied by age; 24% of children ages two to five, 30% of children ages six to 11, and 25% of children ages 12 to 17 were obese. Among Hispanic children, who accounted for 78% of all patients served, 27% were obese.²⁰

Nutrition and Eating Habits

◆ Rhode Island's strengthened nutritional standards, which were aligned with federal standards in 2016, have resulted in declines in the availability of unhealthy food and drinks. Between 2006 and 2016 among Rhode Island middle and high schools, chocolate candy (down 92%), salty snacks not low in fat (down 81%), the availability of soda or fruit drinks that are not 100% juice (down 80%), sport drinks (down 78%), and 2% or whole milk (down 68%) declined, as did the number of schools allowing the sales of snack foods and beverages in general (down 24%).^{21,22}

Promoting Increased Physical Activity

- ◆ **Recess** is an important component in optimizing a child’s social, emotional, physical, and cognitive development.²³ In 2016, legislation passed requiring at least 20 consecutive minutes of free-play recess daily for Rhode Island public school children in kindergarten through grade six.²⁴ Prior to this legislation, only 10 public school districts required 20 minutes or more of daily recess.²⁵
- ◆ **Physical Education (PE)** curriculum and instruction are designed to develop age-appropriate motor skills, knowledge and behaviors of active living.²⁶ In Rhode Island, students are required to receive an average of 20 minutes per day of health and PE instruction.²⁷ Nationally, the daily recommended amount of PE alone is 30 minutes in elementary school and 45 minutes in middle and high school.²⁸
- ◆ **Regular physical activity**, including school-based, has been shown to have physical, cognitive and academic benefits, including improved grades and test scores.^{29,30} In Rhode Island in 2015, 27% of middle school students and 20% of high school students reported being physically active every day for at least 60 minutes, which is the recommended amount.^{31,32} Rhode Island rates are the second (middle school) and third lowest (high school) among ranked states in 2015.³³

Sedentary Behavior and Physical Activity, Rhode Island Middle School and High School Students by Race and Ethnicity, 2015

	MIDDLE SCHOOL			HIGH SCHOOL		
	BLACK*	WHITE*	HISPANIC	BLACK*	WHITE*	HISPANIC
2 or Fewer Days of Physical Education Weekly	40%	54%	43%	49%	34%	53%
3 or Fewer Days of Physical Activity** Weekly	38%	26%	50%	52%	41%	60%
3 or More Hours of TV on School Days	47%	24%	36%	34%	19%	29%
3 or More Hours of Computer*** Time/Video Games on School Days	60%	45%	51%	39%	39%	47%

Source: 2015 Rhode Island Youth Risk Behavior Survey, Rhode Island Department of Health. *Non-Hispanic. **Defined as at least 60 minutes per day. ***Non-school related. Hispanic can be of any race. For gender and overall results, see the 2016 Factbook.

Obesity in Young Children in Rhode Island

Children Enrolled in Head Start

◆ **Head Start** is a federally-funded comprehensive early childhood program for low-income preschool children and their families.³⁴ In Rhode Island during the 2015-2016 school year, 2,695 children aged three to five were enrolled in a Head Start program. Of those enrolled, 19% were obese, and 26% were overweight.³⁵ Comparable national data show that 16% of children enrolled in Head Start were obese and 13% were overweight during that time.³⁶

Children Participating in WIC

◆ **The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)** is a federally funded preventive program that provides eligible participants with nutritious food, nutrition education, and access to health care and social services.³⁷ In Rhode Island in 2016, 12,428 children aged two to four were enrolled in WIC, 18% of whom were obese and 15% were overweight.³⁸

◆ Since 2011, there has been a 21% decline in the number of Rhode Island children ages two to four participating in WIC who are obese. This decline is partially attributed to new federally-mandated food standards as well as availability and use of nutrition education and assessments.^{39,40}

◆ **WIC** also tracks the number of children under age five who are at risk for being obese, which is defined as having a biological parent who is obese (i.e., have a BMI over 30). In 2016, 24% of infants (1,674) and 19% of children aged one to four (3,723) enrolled in WIC in Rhode Island were deemed at risk for being obese.⁴¹

References

¹ Centers for Disease Control and Prevention. (2015). *About child and teen BMI*. Retrieved February 27, 2017, from www.cdc.gov

^{2,10} *Overweight children and youth*. (2014). Washington, DC: Child Trends.

^{3,11} Centers for Disease Control and Prevention. (2016). *Childhood obesity causes and consequences*. Retrieved February 27, 2017, from www.cdc.gov

^{4,17} *Accelerating progress in obesity prevention: Solving the weight of the nation*. (2012). Washington, DC: Institute of Medicine of the National Academies.

⁵ Halfon, N., Larson, K., & Slusser, W. (2013). Associations between obesity and comorbid mental health, developmental, and physical health conditions in a nationally representative sample of US children aged 10 to 17. *Academic Pediatrics*, 13(1), 6-13.

(continued on page 181)

Births to Teens

DEFINITION

Births to teens is the number of births to teen girls ages 15 to 19 per 1,000 teen girls. Data are reported by the mother's place of residence, not the place of the infant's birth.

SIGNIFICANCE

Teen pregnancy and parenting threaten the development of teen parents as well as their children. Teen mothers, particularly younger teen mothers, have difficulty finishing high school and continuing on to college. Only 38% of mothers who give birth before age 18 have a high school diploma by age 22, compared with 89% of young women who had not given birth as a teen. Less than 2% of teen mothers who give birth before age 18 finish college by age 30.¹

Two-thirds of families headed by teen mothers live in poverty. About one-quarter of teen mothers have a second child within 24 months of the first baby, creating even greater challenges for the mothers to finish school, find and keep a job, and escape poverty.² Teen girls in foster care are more than twice as likely as their peers to get pregnant by age 19.³

Children of teen parents are at increased risk for low birthweight, preterm delivery, infant mortality, child maltreatment, and placement in foster care.^{4,5} They score lower on standardized

tests, are more likely to repeat a grade, and are less likely to complete high school compared with children of older mothers. Sons of teen mothers are twice as likely to spend time in prison and daughters of teen mothers are three times more likely to become teen mothers themselves.^{6,7}

Despite improvements in recent years, the U.S. teen birth rate remains higher than many other developed countries.⁸ After peaking in 1991, the U.S. teen birth rate reached an historic low in 2015, with decreases among all racial and ethnic backgrounds. Rhode Island's teen birth rate mirrors national trends, peaking in 1993 and reaching an historic low in 2015.^{9,10} Nationally and in Rhode Island, fewer teens are having sex and those that are sexually active are more likely to use contraception.^{11,12}

In 2015 in Rhode Island, 539 babies were born to mothers under age 20, accounting for 5% of all babies born.¹³

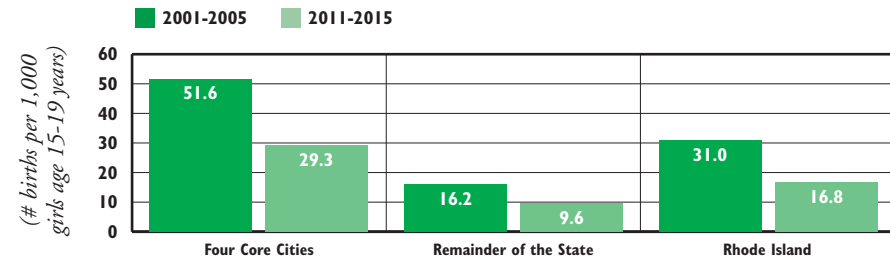
Teen Birth Rates (rate per 1,000 girls ages 15-19)		
	1991	2015
RI	44.7	14.3
US	61.8	22.3
National Rank*		7 th
New England Rank**		5 th

*1st is best; 50th is worst

**1st is best; 6th is worst

Sources: For 2015: Martin, J. A., et al. (2017). Births: Final data for 2015. *NVSR*, 66(1), 1-69. For 1991: Ventura, S. J., et al. (2014). National and state patterns of teen births in the United States. *NVSR*, 63(4), 1-33.

Teen Birth Rates, Rhode Island, Five-Year Averages Comparisons: 2001-2005, 2011-2015



Source: Rhode Island Department of Health, Center for Health Data and Analysis, 2001-2015. Data for births in 2015 are provisional.

- ◆ The statewide five-year average teen birth rate declined 46% between 2001-2005 and 2011-2015, from 31.0 births per 1,000 teen girls to 16.8. The teen birth rate in the four core cities also declined by 43% during that time.¹⁴
- ◆ In 2015, the birth rate for U.S. teens (22.3 births per 1,000 teen girls) and Rhode Island teens (14.3 births per 1,000 teen girls) were the lowest ever recorded.^{15,16}
- ◆ Despite declines among all racial and ethnic groups, disparities still exist in teen birth rates.¹⁷ In Rhode Island between 2011 and 2015, the teen birth rates for Hispanic (42.6) and Black (30.2) teens were higher than the rates of their White (10.5) and Asian (9.6) peers.¹⁸

Repeat Births to Teens, Rhode Island, 2011-2015

AGE	TOTAL NUMBER OF BIRTHS	NUMBER OF REPEAT BIRTHS	PERCENT REPEAT BIRTHS
15-17	916	48	5.2%
18-19	2,431	446	18.3%
TOTAL 15-19	3,347	494	14.6%

Source: Rhode Island Department of Health, Center for Health Data and Analysis, 2011-2015.

- ◆ Nationally, 17% of all births to teens ages 15-19 in 2013 were repeat births. Since 1991, repeat teen births have declined 23% nationwide.¹⁹ To continue to reduce repeat teen births, pregnant and parenting teens should be connected with evidence-based family home visiting programs that address a broad range of needs and routinely offer effective postpartum contraception.²⁰

Teen Birth Rates by Age and Location

◆ In Rhode Island between 2011 and 2015, the rate of births to teens ages 15-17 in the core cities (19.4 per 1,000) was more than four times higher than the remainder of state (4.3 per 1,000). The birth rate for teens ages 15-17 in Central Falls was 30.5, compared to Woonsocket at 21.3, Providence at 19.9, Pawtucket at 13.4, and the state rate of 8.9.²¹

◆ The rate of births to Rhode Island teens ages 18-19 was more than twice as high in the core cities (37.0 per 1,000) than the remainder of state (16.7 per 1,000) between 2011 and 2015. The birth rate for teens ages 18-19 in Central Falls was 116.6, compared to Woonsocket at 90.4, Pawtucket at 53.5, Providence at 26.9, and the state rate of 25.3.²²

◆ Health care providers can play a key role in reducing teen births by integrating comprehensive reproductive health counseling to all women and men of reproductive age, to help reduce unintended pregnancies.²³

Table 26. Births to Teens, Ages 15-19, Rhode Island, 2011-2015

CITY/TOWN	# OF BIRTHS TO GIRLS AGES 15-17	# OF BIRTHS TO GIRLS AGES 18-19	# OF BIRTHS TO GIRLS AGES 15-19	BIRTH RATE PER 1,000 GIRLS AGES 15-19
Barrington	1	3	4	NA
Bristol	7	18	25	4.5
Burrillville	5	25	30	12.5
Central Falls	67	169	236	64.7
Charlestown	4	18	22	19.2
Coventry	12	42	54	9.4
Cranston	41	116	157	12.4
Cumberland	10	21	31	5.8
East Greenwich	0	10	10	4.1
East Providence	26	71	97	14.5
Exeter	6	13	19	13.5
Foster	2	5	7	9.1
Glocester	3	8	11	6.4
Hopkinton	5	7	12	9.9
Jamestown	0	1	1	NA
Johnston	11	43	54	13.3
Lincoln	5	21	26	7.4
Little Compton	0	1	1	NA
Middletown	11	21	32	14.4
Narragansett	2	4	6	2.3
New Shoreham	0	1	1	NA
Newport	21	53	74	14.4
North Kingstown	9	27	36	8.1
North Providence	16	55	71	16.0
North Smithfield	5	8	13	7.0
Pawtucket	96	242	338	29.0
Portsmouth	7	6	13	4.3
Providence	364	871	1,235	24.4
Richmond	2	10	12	11.2
Scituate	1	8	9	5.2
Smithfield	3	10	13	2.5
South Kingstown	2	28	30	2.1
Tiverton	5	8	13	6.0
Warren	4	15	19	14.0
Warwick	37	86	123	11.0
West Greenwich	2	8	10	9.0
West Warwick	32	109	141	36.5
Westerly	11	40	51	16.6
Woonsocket	81	226	307	48.7
Unknown	0	3	3	NA
Four Core Cities	608	1,508	2,116	29.3
Remainder of State	308	920	1,228	9.6
Rhode Island	916	2,431	3,347	16.8

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2011-2015. Data for births in 2015 are provisional and 2014 birth data do not include births among Rhode Island residents that occurred out of state.

The denominators for girls ages 15-19 are from the Census 2010 Summary File 1, which are then multiplied by five.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

In the 2012 Factbook, the denominators for the city/town table were updated with population data from Census 2010. Factbooks prior to 2012 used population data from Census 2000. Changes in rates are affected by the updated population data.

Factbooks published before 2007 reported only births to girls ages 15-17. The definition of teen childbearing was expanded to include teens ages 15-19 to align with reports from the U.S. Centers for Disease Control and Prevention's National Center for Health Statistics.

Unknown: Births were Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

References

¹ 2016 public policy agenda. (2016). Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy.

² Teen pregnancy, poverty, and income disparity. (2010). Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy.

³⁵ Teen childbearing and child welfare. (2013). Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy.

⁴¹¹ Teen births. (2016). Washington, DC: Child Trends.

⁶ Unplanned pregnancies and future opportunities. (2016). Washington, DC: National Conference of State Legislatures.

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Alcohol, Drug, and Tobacco Use

DEFINITION

Alcohol, drug, and tobacco use is the percentage of middle school and high school students who report having used alcohol, illegal drugs, or tobacco products.

SIGNIFICANCE

The use and/or abuse of substances such as alcohol, tobacco, and other drugs by youth poses health and safety risks to them, their families, their schools, and their communities.^{1,2} Rhode Island ranks among the states with the highest percentages of adolescents reporting use of alcohol and many types of illicit drugs.³

Key risk periods for alcohol, tobacco, and other drug abuse occur during major life transitions, including the shifts to middle school and high school, when young people experience new academic, social, and emotional challenges. Adolescents are especially vulnerable to developing substance abuse disorders because their brains are still developing; the prefrontal cortex, responsible for decision-making and risk-assessment, is not mature until the mid-20s.^{4,5}

Pathways for becoming a substance user involve the relationship between risk and protective factors, which vary in their effect on different people. Risk factors are associated with increased drug use and include early aggressive behavior, poor school achievement, peer

and parental substance abuse, chaotic home environment, and poverty. Protective factors lessen the risk of drug use, and include a strong parent-child bond, healthy school environment, academic competence, and neighborhood pride.^{6,7} For over three decades, Hispanic and Black high school seniors in the U.S. have generally had lower rates of substance use than their White peers, but recently these differences have narrowed due to an increased use of marijuana.^{8,9}

Prevention and reduction in teen substance abuse can be achieved by enacting policies that support prevention, screening, early intervention, treatment, and recovery. Policy examples include preventing underage substance use and sales to minors, improving school climate and academic achievement, enacting sentencing reform, and sustaining adequate funding for multi-sector youth development, treatment, and recovery services.¹⁰

In Rhode Island in 2013-2014, 3% of youth ages 12-17 needed but did not receive specialty treatment for their alcohol use problem, which is the 15th highest rate among all states. Four percent of Rhode Island youth ages 12-17 needed but did not receive any specialty treatment for their illicit drug use. Rhode Island has the seventh highest percentage among all states on this measure.¹¹

Tobacco Use Among Rhode Island Youth

- ◆ **Cigarettes:** Cigarette use has reached record low levels among U.S. middle and high school students.¹² In 2015, 7% of Rhode Island middle school students reported ever trying cigarette smoking (down from 16% in 2007) and 1% reported smoking cigarettes in the past 30 days. Rhode Island has the lowest current cigarette use rate for both middle and high school students (5%) in the nation among ranked states in 2015.^{13,14}
- ◆ **Electronic Vapor Products:** Among U.S. adolescents in 2016, e-cigarettes use was higher than use of traditional tobacco cigarettes or any other tobacco product.¹⁵ In Rhode Island in 2015, 16% of middle school students reported ever using an electronic vapor product and 8% reported current use in the past 30 days. Hispanic students (12%), eighth graders (10%), and males (8%) reported the highest use. In 2015, 41% of Rhode Island high school students reported ever using an electronic vapor product and 19% reported use in the past 30 days. Rhode Island had the third lowest middle school rate and sixth lowest high school rate for current vapor use among ranked states in 2015.^{16,17}
- ◆ **Hookah:** The prevalence of smoking tobacco using a hookah has declined nationally for the past two years and most use is occasional.¹⁸ In 2015, 12% of Rhode Island high school students reported using a hookah in the past 30 days. Rates of current use were highest among Hispanic students (16%), seniors (15%), and females (13%).¹⁹
- ◆ **Cigars:** Use of small cigars (cigarillos) among U.S. adolescents has declined significantly since 2010.²⁰ In Rhode Island in 2015, 1% of middle school students and 8% of high school students reported smoking cigars in the past 30 days. Current cigar use was highest among high school seniors (13%) and males (12%), and Hispanic (9%), Black non-Hispanic (8%), and White non-Hispanic (8%) students. Rhode Island had the lowest middle school rate and seventh lowest high school rate for current cigar use among ranked states in 2015.^{21,22}
- ◆ **Smokeless Tobacco:** After rising in the mid-2000s, use of smokeless tobacco by U.S. adolescents has been in decline since 2010.²³ In 2015, 1% of Rhode Island middle school and 5% of Rhode Island high school students reported current use of smokeless tobacco, with high school males (8%), seniors (8%), and Black, Non-Hispanic (7%) youth reporting the highest levels of use. In 2015, Rhode Island had the lowest middle school rate and fifth lowest high school rate for use of smokeless tobacco among ranked states.^{24,25}

Ever Tried Substance, Rhode Island Middle School Students by Select Subgroups, 2015

	ALCOHOL USE*	ELECTRONIC VAPOR PRODUCT USE*	CIGARETTE USE*	MARIJUANA USE*	PRESCRIPTION DRUG MISUSE***
Female	19%	14%	8%	7%	4%
Male	14%	17%	7%	7%	4%
Black	20%	21%	9%	9%	6%
White	14%	11%	7%	5%	3%
All other races	15%	15%	8%	7%	4%
Multiple races	NA	21%	6%	17%	8%
Hispanic	21%	24%	7%	8%	3%
6th Grade	9%	9%	5%	2%	2%
7th Grade	18%	17%	8%	7%	5%
8th Grade	22%	20%	9%	11%	4%
<i>ALL STUDENTS</i>	<i>16%</i>	<i>16%</i>	<i>7%</i>	<i>7%</i>	<i>4%</i>

Source: 2015 Rhode Island Youth Risk Behavior Survey, Rhode Island Department of Health, Center for Health Data and Analysis. *Use is defined as students who answered yes to 'ever using' each substance. **Prescription drug misuse is defined as those without a doctor's prescription. NA is not available due to small sample size.

- ◆ Among Rhode Island middle school students in 2015, 16% reported ever drinking alcohol, 16% reported ever trying electronic vapor products, 7% reported ever smoking a cigarette, 7% reported ever trying marijuana, and 4% reported ever misusing prescription drugs.²⁶
- ◆ In Rhode Island in 2015, 26% of high school students reported current (i.e., in the past 30 days) alcohol consumption, 24% reported current marijuana use, 19% reported current electronic vapor product use, 13% reported current binge drinking, 6% reported current prescription drug misuse, and 5% reported current cigarette use.²⁷
- ◆ In 2015, a majority of Rhode Island middle school students reported that they have never taken a prescription drug without a doctor's prescription (96%), smoked a cigarette (93%), used marijuana (93%), used an electronic vapor product (84%), nor consumed alcohol (84%).²⁸

Family and Community Risk Factors

- ◆ Having parents or friends who use tobacco, alcohol, and other drugs, as well as living in communities in which there is drug dealing and use are risk factors for teen substance use.²⁹ In Rhode Island in 2015, 34% of middle school students and 32% of high school students reported living with someone who smokes cigarettes. One in five (22%) Rhode Island high school students under age 18 who used an electronic vapor product during the past 30 days reported buying it in a store, despite laws prohibiting such purchases. One in ten (10%) high school students who had ever taken a prescription drug without a doctor's prescription reported buying it at school.³⁰

Babies Born with Exposure to Substances

- ◆ Babies born with exposure to opioids (pain medication) face immediate and long-term negative outcomes. Neonatal Abstinence Syndrome (NAS) refers to the withdrawal and negative effects experienced by newborns born to mothers who use opioids and other drugs during pregnancy.³¹
- ◆ In Rhode Island in 2015, 114 babies were diagnosed with NAS, a rate of 103.8 per 10,000 births; up from 97 babies (92.0 per 10,000 births) in 2014 and nearly triple the rate of 37.2 in 2006. Eighty-seven percent of babies born with NAS between 2011 and 2015 in Rhode Island were born to White mothers, 84% had Medicaid coverage, and 36% lived in the four core cities.³²
- ◆ Mothers' smoking during pregnancy is associated with adverse outcomes for children, including preterm births, low birthweight, and infant mortality.³³ Nationally, one in ten women who gave birth in 2014 smoked during the three months before they became pregnant and nearly one-quarter of those women quit smoking before pregnancy.³⁴
- ◆ In Rhode Island between 2011 and 2015, 7% (4,007) of all births were to women who smoked during their pregnancy. During that time, Rhode Island mothers who smoked had higher percentages of low birthweight (12.9%) and preterm births (12.1%) compared to mothers who did not smoke (6.8% and 8.5% respectively).³⁵

References

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