

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 (such as high levels of ozone), cigarette smoke, allergens, and exposure to cold air or sudden temperature change. While the exact cause is unknown, various genetic, environmental (such as long-term exposure to traffic pollution), birth, and health factors have been linked to an increased risk for asthma.^{1,2,3,4}

Nationally, asthma is one of the most common chronic conditions among children.⁵ After peaking at 9.6% in 2009, asthma prevalence among U.S. children fell to 7.5% in 2018. Rates of asthma are higher among males, Black children, children of Two or more races, children living in poverty, and children ages 12 to 17.^{6,7,8} 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, access to healthcare, and genetic factors.^{9,10}

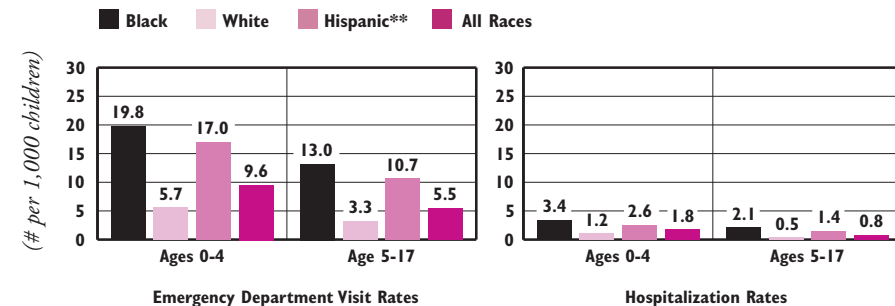
Compared with adults, children have much higher rates of emergency department visits for asthma, slightly higher hospitalization rates, and lower death rates.¹¹ Asthma is the third leading cause of hospitalization for children under age 18 and is a leading cause of school absenteeism.¹²

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 can improve health outcomes and reduce costly asthma hospitalizations if adhered to and supported by enhanced care and community-based interventions.^{13,14,15}

Rhode Island middle and high school staff provide information and referrals about asthma. In 2018, 69% of middle and high schools reported providing health care referrals for students diagnosed with or suspected of having asthma, 52% of schools reported providing asthma education to students, and 33% provided families with information on asthma.¹⁶



Asthma* Emergency Department and Hospitalization Rates, by Age and Race/Ethnicity, Rhode Island Children, 2014-2018



Source: Rhode Island Department of Health, Hospital Discharge Database, 2014-2018; U.S. Census Bureau, Census 2010. *Rates are for primary diagnosis of asthma. **Hispanic children can be of any race.

- ◆ In Rhode Island between 2014 and 2018, Black children and Hispanic 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.¹⁷
- ◆ In Rhode Island between 2014 and 2018, boys under age 18 had higher asthma emergency department visit (8.5 per 1,000 boys) and hospitalization (1.3 per 1,000 boys) rates than girls under age 18 (5.4 and 0.9 per 1,000 girls respectively).¹⁸
- ◆ Among all children who had an emergency department visit for a primary diagnosis of asthma in Rhode Island between 2014 and 2018, 69% had RIte Care/Medicaid coverage, 26% had private health insurance, 4% were self-pay (which could mean they were uninsured or that their insurance did not cover the cost of care), and 1% were unknown/other. Among hospital admissions during that time, 60% had RIte Care/Medicaid coverage, 35% had private health insurance, 4% were self-pay, and 1% were unknown/other.¹⁹

Table 24. Asthma Emergency Department Visits for Children Under Age 18, Rhode Island, 2014-2018

Child Hospitalization Rates for Asthma

◆ In 2017, Rhode Island parents reported higher rates of current asthma prevalence of their children (10.3%) than the national average (7.9%). Rhode Island has the fourth highest self-reported child asthma prevalence among ranked states.²⁰

◆ In Rhode Island between 2014 and 2018, there were 1,181 hospitalizations with primary asthma diagnosis of children under age 18, a rate of 1.1 per 1,000 children. The rate of primary asthma hospitalizations was more than twice as high in the four core cities (1.7 per 1,000 children) than in the remainder of the state (0.7 per 1,000 children).²¹

◆ Primary asthma hospitalization rates for children were highest in Providence (1.9 per 1,000 children), Central Falls (1.9), Pawtucket (1.6), Middletown (1.6), Barrington (1.4), and Newport (1.4) between 2014 and 2018.²²

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	103	4.5
Bristol	3,623	53	2.9
Burrillville	3,576	52	2.9
Central Falls	5,644	348	12.3
Charlestown	1,506	15	2.0 [^]
Coventry	7,770	175	4.5
Cranston	16,414	368	4.5
Cumberland	7,535	100	2.7
East Greenwich	3,436	39	2.3
East Providence	9,177	232	5.1
Exeter	1,334	23	3.4 [^]
Foster	986	8	*
Glocester	2,098	20	1.9 [^]
Hopkinton	1,845	25	2.7 [^]
Jamestown	1,043	14	2.7 [^]
Johnston	5,480	131	4.8
Lincoln	4,751	81	3.4
Little Compton	654	6	*
Middletown	3,652	109	6.0
Narragansett	2,269	32	2.8
New Shoreham	163	1	*
Newport	4,083	194	9.5
North Kingstown	6,322	84	2.7
North Providence	5,514	204	7.4
North Smithfield	2,456	33	2.7
Pawtucket	16,575	749	9.0
Portsmouth	3,996	56	2.8
Providence	41,634	2,642	12.7
Richmond	1,849	20	2.2 [^]
Scituate	2,272	15	1.3 [^]
Smithfield	3,625	39	2.2
South Kingstown	5,416	81	3.0
Tiverton	2,998	23	1.5 [^]
Warren	1,940	44	4.5
Warwick	15,825	361	4.6
West Greenwich	1,477	24	3.2 [^]
West Warwick	5,746	200	7.0
Westerly	4,787	100	4.2
Woonsocket	9,888	549	11.1
Four Core Cities	73,741	4,288	11.6
Remainder State	150,215	3,065	4.1
Rhode Island	223,956	7,353	6.6

Source of Data for Table/Methodology

Rhode Island Department of Health, Hospital Discharge Database, 2014-2018.

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 *Factbooks* prior to 2017.

The denominator used to compute the 2014-2018 rate of emergency department visits is the number of children according to the 2010 U.S. Census, multiplied by five.

[^] The data are statistically unstable and rates or percentages should be interpreted with caution.

* The data are statistically unreliable and rates are not reported and should not be calculated.

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

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

References

¹ *Asthma*. (2016). Washington, DC: Child Trends.

²⁰ 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.

³ Rice, M. B., et al. (2018). Lifetime air pollution exposure and asthma in a pediatric birth cohort. *Journal of Clinical Immunology* 141(5), 1932-1933.

⁴ Sheffield, P. E., Knowlton, K., Carr, J. L., & Kinney, P. L. (2011). Modeling of regional climate change effects on ground-level ozone and childhood asthma. *American Journal of Preventive Medicine* 41(3), 251-257.

^{5,12,15} Childhood Asthma Leadership Coalition. (2019). *Childhood asthma control saves lives: Opportunities for policymakers*. Retrieved February 24, 2020, from www.childhoodasthma.org

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