

# 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 is unknown, various genetic, environmental, birth, and health factors have been linked to an increased risk for asthma.<sup>1,2,3</sup>

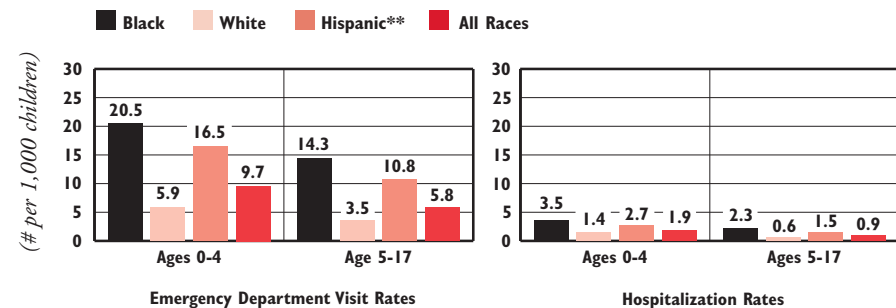
Nationally, asthma is one of the most common chronic conditions among children.<sup>4</sup> After peaking at 9.6% in 2009, asthma prevalence among U.S. children fell to 8.4% in 2017.<sup>5,6</sup> The highest rates of asthma are among males, children of Two or more races, and children living in poverty.<sup>7</sup> 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.<sup>8,9</sup>

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

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.<sup>12,13,14,15,16</sup>

Rhode Island middle and high school staff provide information and referrals about asthma. In 2016, 73% of middle and high schools reported providing health care referrals for students diagnosed with or suspected of having asthma, 53% percent of schools reported providing asthma education to students, 31% percent reported using an assessment tool to evaluate school policies, activities, and programs related to asthma, and 18% provided families with information on asthma.<sup>17</sup>

**Asthma\* Emergency Department and Hospitalization Rates, by Age and Race/Ethnicity, Rhode Island Children, 2013-2017**



Source: Rhode Island Department of Health, Hospital Discharge Database, 2013-2017; U.S. Census Bureau, Census 2010. \*Rates are for primary diagnosis of asthma. \*\*Hispanic children can be of any race.

- ◆ In Rhode Island between 2013 and 2017, Black children, Hispanic children, and children ages five to twelve 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.<sup>18</sup>
- ◆ In Rhode Island between 2013 and 2017, boys under age 18 had higher asthma emergency department visits (8.7 per 1,000 boys) and hospitalization (1.4 per 1,000 boys) rates than girls under age 18 (5.8 and 1.0 per 1,000 girls respectively).<sup>19</sup>
- ◆ Among all children who had an emergency department visit for a primary diagnosis of asthma in Rhode Island between 2013 and 2017, 68% 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 2% were unknown/other. Among hospital admissions during that time, 57% had RIte Care/Medicaid coverage, 38% had private health insurance, 4% were self-pay, and 1% were unknown/other.<sup>20</sup>

Table 24. Asthma Emergency Department Visits for Children Under Age 18, Rhode Island, 2013-2017

## Child Hospitalization Rates for Asthma

◆ In 2015, Rhode Island parents reported higher rates of current asthma prevalence of their children (9.8%) than the national average (8.5%). Rhode Island has the ninth highest self-reported child asthma prevalence among ranked states.<sup>21</sup>

◆ In Rhode Island between 2013 and 2017, there were 1,295 hospitalizations with primary asthma diagnosis of children under age 18, a rate of 1.2 per 1,000 children. The rate of primary asthma hospitalizations was more than twice as high in the four core cities (1.8 per 1,000 children) than in the remainder of the state (0.8 per 1,000 children).<sup>22</sup>

◆ Primary asthma hospitalization rates for children were highest in Providence (2.1 per 1,000 children), Central Falls (1.8), Pawtucket (1.7), Middletown (1.5), Barrington (1.5), East Providence (1.4), and Newport (1.3) between 2013 and 2017.<sup>23</sup>

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	105	4.6
Bristol	3,623	54	3.0
Burrillville	3,576	49	2.7
Central Falls	5,644	346	12.3
Charlestown	1,506	19	2.5 <sup>^</sup>
Coventry	7,770	176	4.5
Cranston	16,414	402	4.9
Cumberland	7,535	97	2.6
East Greenwich	3,436	40	2.3
East Providence	9,177	240	5.2
Exeter	1,334	23	3.4 <sup>^</sup>
Foster	986	6	*
Glocester	2,098	24	2.3 <sup>^</sup>
Hopkinton	1,845	23	2.5 <sup>^</sup>
Jamestown	1,043	12	2.3 <sup>^</sup>
Johnston	5,480	140	5.1
Lincoln	4,751	76	3.2
Little Compton	654	7	*
Middletown	3,652	115	6.3
Narragansett	2,269	41	3.6
New Shoreham	163	0	0.0
Newport	4,083	205	10.0
North Kingstown	6,322	89	2.8
North Providence	5,514	210	7.6
North Smithfield	2,456	37	3.0
Pawtucket	16,575	774	9.3
Portsmouth	3,996	55	2.8
Providence	41,634	2,779	13.3
Richmond	1,849	20	2.2 <sup>^</sup>
Scituate	2,272	20	1.8 <sup>^</sup>
Smithfield	3,625	36	2.0
South Kingstown	5,416	87	3.2
Tiverton	2,998	18	1.2
Warren	1,940	54	5.6
Warwick	15,825	367	4.6
West Greenwich	1,477	27	3.7 <sup>^</sup>
West Warwick	5,746	209	7.3
Westerly	4,787	117	4.9
Woonsocket	9,888	539	10.9
Four Core Cities	73,741	4,438	12.0
Remainder State	150,215	3,205	4.3
Rhode Island	223,956	7,643	6.8

### Source of Data for Table/Methodology

Rhode Island Department of Health, Hospital Discharge Database, 2013-2017.

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 2013-2017 rate of emergency department visits is the number of children according to the 2010 U.S. Census, multiplied by five.

<sup>^</sup> 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

- <sup>14</sup> *Asthma*. (2016). Washington, DC: Child Trends.
- <sup>2</sup> *The burden of asthma in Rhode Island*. (2014). Providence, RI: Rhode Island Department of Health, Asthma Control Program.
- <sup>3,8</sup> 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.
- <sup>5,7</sup> National Health Interview Survey. (2017). *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, 2017*. Retrieved January 7, 2019, from [www.cdc.gov/nchs/nhis](http://www.cdc.gov/nchs/nhis)
- <sup>6</sup> Centers for Disease Control and Prevention. (2012). National surveillance of asthma: United States, 2001-2010. *Vital and Health Statistics*, 3(35), 1-57.

(continued on page 181)