

# 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.<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 2015.<sup>5,6</sup> The highest rates of asthma are among males, Black and American Indian/Alaska Native children, 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

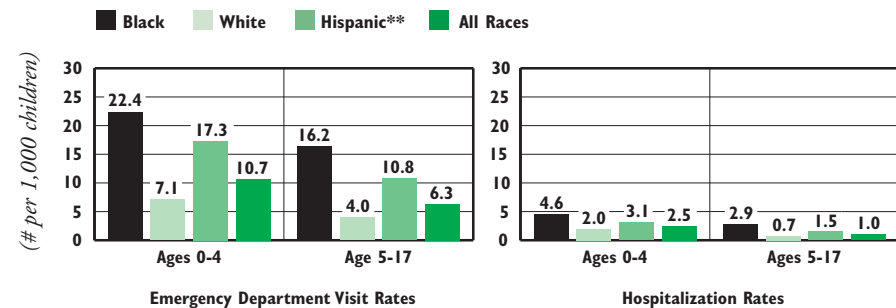
violence, lack of access to preventive medical care, and genetic factors.<sup>8,9</sup>

Compared with adults, children have higher rates for primary care and emergency department visits for asthma, similar hospitalization rates, and lower death rates.<sup>10</sup> Asthma remains the third-ranked 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, if adhered to and supported by enhanced care and community-based interventions, can improve health outcomes and reduce costly asthma hospitalizations.<sup>12,13,14,15,16</sup>

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%).<sup>17</sup>

**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.<sup>18</sup>
- ◆ 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).<sup>19</sup>
- ◆ 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.<sup>20</sup>
- ◆ 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.<sup>21</sup>

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 <sup>^</sup>   |
| Foster             | 986                                  | 9   | NA   |
| Glocester          | 2,098                                | 17  | 1.6 <sup>^</sup>   |
| Hopkinton          | 1,845                                | 41  | 4.4  |
| Jamestown          | 1,043                                | 15  | 2.9 <sup>^</sup>   |
| 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 <sup>^</sup>   |
| 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 <sup>^</sup>   |
| Warren             | 1,940                                | 51  | 5.3  |
| Warwick            | 15,825                               | 418   | 5.3  |
| West Greenwich     | 1,477                                | 24  | 3.2 <sup>^</sup>   |
| 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).<sup>22</sup>

◆ 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.<sup>23</sup>

### 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.

<sup>^</sup>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 <sup>^</sup> 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

<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>38</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>57</sup> 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)