

# Children with Asthma

## DEFINITION

*Children with asthma* is the rate of hospitalizations with a primary diagnosis of asthma per 1,000 children under age 18. Data are reported by place of child's residence at the time of hospitalization.

## SIGNIFICANCE

Asthma is a chronic respiratory disease that causes reversible episodes of coughing, wheezing, shortness of breath and chest tightness, which can be life threatening.<sup>1,2</sup> Attacks can be triggered by respiratory infections, cigarette smoke, exercise, weather conditions, stress and allergies to pollen, mold, dust, cockroaches and animal dander.<sup>3</sup> Childhood asthma in the U.S. increased between 1980 and 2000. The current prevalence has remained relatively stable since 2001 but is at historically high levels. Ambulatory care use for asthma continues to grow. Emergency department visits and hospitalization rates for asthma have stabilized at high levels, while deaths due to asthma have decreased recently.<sup>4</sup>

Nationally, asthma is the most common chronic condition in children, the third-ranked cause of hospitalization for children under age 15 and one of the leading causes of school absences.<sup>5,6</sup> In 2008, nearly 14% of children under age 18 in the U.S. had ever been diagnosed with asthma and 9.5%

reported currently having asthma.<sup>7</sup>

Nationally, Black children have higher rates of asthma prevalence than Hispanic and non-Hispanic White children, and children living in poverty have higher rates of asthma than children in higher-income families.<sup>8</sup> Racial and ethnic differences in asthma prevalence are believed to be correlated with poverty, exposure to indoor and outdoor air pollution, stress, lack of access to preventive medical care and genetic factors.<sup>9</sup>

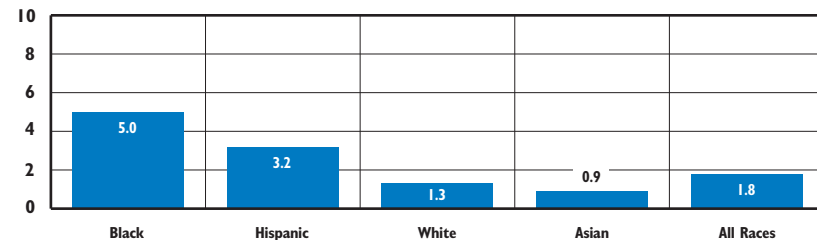
Proper asthma management requires assessment and monitoring, patient education, environmental control and medication.<sup>10</sup> A primary care provider acting in partnership with the family as a child's medical home can provide the connections to specialty and support services needed to help manage asthma.<sup>11</sup>

## Children Hospitalized with Primary Diagnosis of Asthma, Core Cities and Rhode Island, 2004-2008

City/Town	Number of Children Hospitalized	Rate per 1,000 Children
Central Falls	74	2.7
Newport	43	1.7
Pawtucket	235	2.6
Providence	678	3.0
West Warwick	58	1.7
Woonsocket	105	1.9
Rhode Island	2,268	1.8

Source: Rhode Island Department of Health, Hospital Discharge Database, 2004-2008.

## Asthma Hospitalizations With Primary Diagnosis of Asthma, by Race/Ethnicity, per 1,000 Children Under Age 18, Rhode Island, 2004-2008



◆ In Rhode Island between 2004 and 2008, the hospitalization rate for primary diagnosis of asthma for Black children was almost four times the rate for non-Hispanic White children. Hispanic children were hospitalized for asthma almost two and a half times as often as White children.

Source: Rhode Island Department of Health, Hospital Discharge Database, 2004-2008; U.S. Census Bureau, Census 2000.

## Health Care Costs for Childhood Asthma in Rhode Island

◆ It is estimated that 17% (39,000) of all children in Rhode Island have ever been diagnosed with asthma and 11% (27,000) currently have asthma. The asthma prevalence among Rhode Island children increased 2% between 2005 and 2007.<sup>12</sup>

◆ In the U.S. and in Rhode Island, health care use (including hospitalizations and emergency room use) for asthma is highest among young children.<sup>13,14</sup>

◆ The average length of a hospitalization stay for a child with asthma in Rhode Island is two days, with an average charge of \$7,840. In Rhode Island, children under age five have the highest number of asthma hospitalizations and the highest charges compared with all other children. Total hospital charges for children under age five are nearly six times greater than those for adolescents 12 to 17 years of age.<sup>15</sup>

◆ In Rhode Island in 2007, there were 1,856 emergency room visits by children due to a primary diagnosis of asthma, with an average charge of \$1,823 per visit. Children under age five accounted for 46% of all emergency room visits and their average charge per visit was \$2,013.<sup>16</sup>

Table 23.

**Asthma Hospitalizations for Children Under Age 18, Rhode Island, 2004-2008**

CITY/TOWN	ESTIMATED # OF CHILDREN UNDER AGE 18*	# OF CHILD HOSPITALIZATIONS WITH ANY ASTHMA DIAGNOSIS	RATE OF CHILD ASTHMA HOSPITALIZATIONS WITH ANY ASTHMA DIAGNOSIS, PER 1,000 CHILDREN	# OF CHILD HOSPITALIZATIONS WITH PRIMARY ASTHMA DIAGNOSIS	RATE OF CHILD HOSPITALIZATIONS WITH PRIMARY ASTHMA DIAGNOSIS, PER 1,000 CHILDREN
Barrington	23,725	41	1.7	23	1.0
Bristol	21,995	73	3.3	37	1.7
Burrillville	20,215	52	2.6	26	1.3
Central Falls	27,655	175	6.3	74	2.7
Charlestown	8,560	16	1.9	6	0.7
Coventry	41,945	115	2.7	56	1.3
Cranston	85,490	272	3.2	131	1.5
Cumberland	38,450	91	2.4	29	0.8
East Greenwich	17,820	37	2.1	15	0.8
East Providence	52,730	256	4.9	136	2.6
Exeter	7,945	15	1.9	1	0.1
Foster	5,525	7	1.3	1	0.2
Glocester	13,320	30	2.3	7	0.5
Hopkinton	10,055	28	2.8	12	1.2
Jamestown	6,190	10	1.6	5	0.8
Johnston	29,530	58	2.0	29	1.0
Lincoln	25,785	65	2.5	25	1.0
Little Compton	3,900	9	2.3	2	0.5
Middletown	21,640	62	2.9	29	1.3
Narragansett	14,165	21	1.5	3	0.2
New Shoreham	925	1	1.1	0	0.0
Newport	25,995	103	4.0	43	1.7
North Kingstown	34,240	82	2.4	25	0.7
North Providence	29,680	102	3.4	61	2.1
North Smithfield	11,895	32	2.7	10	0.8
Pawtucket	90,755	489	5.4	235	2.6
Portsmouth	21,645	60	2.8	31	1.4
Providence	226,385	1,442	6.4	678	3.0
Richmond	10,070	14	1.4	6	0.6
Scituate	13,175	27	2.0	13	1.0
Smithfield	20,095	45	2.2	18	0.9
South Kingstown	31,420	39	1.2	19	0.6
Tiverton	16,835	19	1.1	10	0.6
Warren	12,270	37	3.0	19	1.5
Warwick	93,900	296	3.2	130	1.4
West Greenwich	7,220	14	1.9	0	0.0
West Warwick	33,160	124	3.7	58	1.7
Westerly	27,030	74	2.7	21	0.8
Woonsocket	55,775	275	4.9	105	1.9
Unknown	NA	279	NA	139	NA
Core Cities	459,725	2,608	5.7	1,193	2.6
Remainder of State	779,385	2,100	2.7	936	1.2
Rhode Island	1,239,110	4,987	4.0	2,268	1.8

**Source of Data for Table/Methodology**

Rhode Island Department of Health, Hospital Discharge Database, 2004-2008. The Centers for Disease Control and Prevention requests that states report asthma hospitalization data only where asthma is the primary diagnosis. Due to this change, data in this indicator now include data on primary diagnosis of asthma as well as data on any asthma hospitalization (for comparison with previous Factbooks).

Core cities are Central Falls, Newport, Pawtucket, Providence, West Warwick and Woonsocket.

\*The denominator used to compute the 2004-2008 rate is the number of children under age 18 according to the 2000 U.S. Census, multiplied by five.

**References**

<sup>1,3,5</sup> American Lung Association. (2007). *Asthma and children fact sheet*. Retrieved December 8, 2008 from www.lungusa.org

<sup>2,6,12,14,15,16</sup> Pearlman, D. N., Sutton, N., Everage, N. J., & Goldman, D. (2009). *The burden of asthma in Rhode Island*. Providence, RI: Rhode Island Department of Health, Division of Community, Family Health and Equity, Asthma Control Program.

<sup>4</sup> Akinbami, L. (2006). *The state of childhood asthma, United States, 1980-2005*. (Advance Data from Vital and Health Statistics; No. 381). Hyattsville, MD: Centers for Disease Control and Prevention, National Center for Health Statistics.

<sup>7,8</sup> Bloom B., Cohen R. A. & Freeman G. (2009). Summary health statistics for U.S. children: National Health Interview Survey, 2008. *Vital Health Statistics, 10(244)*. Hyattsville, MD: National Center for Health Statistics.

<sup>9</sup> American Lung Association. (2007). *State of lung disease in diverse communities: 2007*. Retrieved December 8, 2008 from www.lungusa.org

<sup>10</sup> American Lung Association. (2009). *A national asthma public policy agenda*. Washington, DC: American Lung Association.

<sup>11</sup> American Academy of Pediatrics. (2002, Reaffirmed 2008). Policy Statement: The Medical Home. *Pediatrics, 110(1)*, 184-186.

<sup>13</sup> Stranges, E., Merrill, C. T. & Steiner, C. A. (2008). *Hospital stays related to asthma for children, 2006*. HCUP Statistical Brief #58. Rockville, MD: Agency for Healthcare Research and Quality.