



CHILDREN'S  
HEALTH  
COUNCIL

**Asthma and Asthma-Related Health Care for  
Children in HUSKY A: FFY 2002**

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## **Asthma Prevalence and Asthma-Related Health Care for Children in HUSKY A: FFY 2002**

Pediatric asthma is a significant chronic health problem for children in the United States. In recent years, over 5 percent of American children reportedly had an episode of asthma or an asthma attack in the previous 12 months.<sup>1</sup> Pediatric asthma disproportionately affects low-income and minority children, with a growing gap in asthma prevalence between Black and White children. Poor children and Black children are most likely to experience asthma-related morbidity and mortality.<sup>1, 2</sup> Pediatric asthma is an ambulatory-care sensitive condition, so access to high quality care is important for maintaining good health and normal activities of childhood.

This report on asthma prevalence and asthma-related health care is the Children's Health Council's fifth annual report on the scope of the problem among children enrolled in HUSKY A (Medicaid managed care).<sup>3, 4</sup> Results show that one in twelve children is affected and that African American and Hispanic children are less likely to get the care they need. This type of information about the scope of the problem and the care received by children in the Medicaid program is vitally important to the Connecticut Department of Social Services for program administration and the Connecticut Department Public Health for surveillance and program planning. The information can also be used by health plans and providers that participate in HUSKY A (Medicaid managed care), community-based organizations, child health advocates, and state health policy makers who care about children and children's health.

### **RESULTS**

#### ***Description of the Study Population***

In FFY 2002, there were 140,395 children under 21 who were continuously enrolled in HUSKY A (Table 1).

#### ***Prevalence of Pediatric Asthma***

In FFY 2002, there were 11,416 children under 21 who received care for which an asthma diagnosis was reported. The estimated prevalence of asthma based on this care was 8.1% (Table 2). This rate was significantly lower than the rate reported for the previous year (9.4%).

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<sup>1</sup> Akinbami LF, Schoendorf KC. Trends in childhood asthma: prevalence, health care utilization, and mortality. *Pediatrics* 2002; 100(2): 315-322.

<sup>2</sup> Akinbami LF, LaFleur BJ, Schoendorf KC. Racial and income disparities in childhood asthma in the United States. *Ambulatory Pediatrics*, 2002; 2(5): 382-387.

<sup>3</sup> The Children's Health Council was created by the Connecticut General Assembly in 1995 and charged with evaluating the impact of Medicaid managed care on children's health services under the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. The Children's Health Council monitors children's health services under a contract with the Connecticut Department of Social Services and with support from the Hartford Foundation for Public Giving. The Children's Health Council contracts with MAXIMUS, Inc. for data management and data analysis.

<sup>4</sup> The study methods are described in the Technical Notes that are attached to this report.

The prevalence of asthma among children with special health care needs (9.7%; 95% CI: 9.1%, 10.2%) was higher than the rate for other children in HUSKY A in FFY 2002 (8.0%; 95 % confidence interval: 7.8%, 8.1%).<sup>5</sup>

Compared with FFY 2001, rates were significantly lower for all but the very youngest children; African American, Hispanic, and White children; and children living in Bridgeport and Hartford (Table 3). Overall, the three-year average asthma prevalence was lower than the previous three-year period.

In FFY 2002, the adjusted odds of having had care with an asthma diagnosis were significantly increased for males compared to females and for all children in younger age groups compared to adolescents 15-19 (Table 4). Compared with White children, African American and Hispanic children were more likely to have been diagnosed with asthma. Bridgeport children were more likely and New Haven children less likely to have been diagnosed with asthma, compared with children living elsewhere in Connecticut. Compared with children enrolled in BlueCare (reference level), children enrolled in Community Health Network and Health Net were more likely to have received care for a diagnosis of asthma. Children in First Choice were less likely than children in BlueCare to have received care with this diagnosis.

### ***Asthma Prevalence Estimates by Data Source***

Depending on whether medical encounter data or pharmacy data or both were used, the estimate of asthma prevalence among children in HUSKY A was considerably different (Tables 5a and 5b). When pharmacy encounter records for searched for preferred primary therapies, 3,342 children who did not have encounter records for asthma-related care were found to have had prescriptions for asthma medications. When pharmacy encounter records for searched for any long-term control medications on a more inclusive list of drugs, 13,741 children who did not have asthma-related care were found to have had prescriptions for asthma medications. The prevalence estimate based on care plus prescriptions for primary preferred therapies (10.5%) and the estimate based on care plus prescriptions for any long-term control medications (17.9%) were considerably higher than the estimate based on encounter records for care alone (8.1%).

### ***Asthma-Related Health Care Utilization***

Asthma-related health care utilization is described in Table 6. The average number of visits was unchanged from previous years; however, the percentage of children seen more than once for outpatient or emergency care remained lower than in earlier years. The percentage of children with emergency care was unchanged; however, the percentage of children who had more than one emergency visit decreased significantly. Hospitalization rates did not change significantly from the previous year. In FFY 2002, African American and Hispanic children were more likely than White children to have had an emergency visit; African American children were also more likely than all other children to have had more than one emergency visit (Table 7). African

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<sup>5</sup> Among continuously enrolled children in HUSKY A who were in DCF custody (n=7,419), the prevalence was 7.1% (95% CI: 6.5 – 7.7%). Among children who received SSI benefits (n=4,089), the asthma prevalence was 14.5% (95% CI: 13.4 – 15.6%). Among children enrolled in Title V programs (n=156), the prevalence was 14.7 % (95% CI: 8.9 – 20.6 %). Some children received benefits in more than one program, so these groups are not mutually exclusive.

American and Hispanic children were more likely than white children to have been hospitalized for treatment of asthma.

The likelihood of having had an emergency visit or hospital admission for treatment of asthma is shown in Table 8. The adjusted odds of emergency care were higher for African American and Hispanic children with asthma, compared with White children with asthma; and for children living in New Haven, compared with children living outside the major urban centers in Connecticut. The adjusted odds of having had emergency care were lower for children 6 to 14 and children living in Bridgeport. Compared with children enrolled in BlueCare Family Plan (reference level), children enrolled in First Choice were more likely and children in Community Health Network were less likely to have had emergency care. Infants and young children with asthma were more likely than older adolescents to have been hospitalized. The adjusted odds of having been hospitalized were higher for African American and Hispanic children, compared to White children with asthma. Children with asthma were more likely to have been hospitalized if they were enrolled in First Choice, compared to children enrolled in BlueCare (reference level).

### ***Follow-up after Emergency Care or Hospitalization***

In the one-year period, 3,359 children (29.4% of those with asthma) made 4,709 emergency visits for treatment of asthma. The follow-up rate for care within two weeks of the visit fell from 20% in FFY 2001 to 16 percent in FFY 2002 (Table 9). The adjusted odds of having had follow-up care are shown in Table 10. Infants and very young children were more likely than older adolescents to have had an office or clinic visit within the first two weeks after having been seen for emergency care. Compared with White children, African American children with asthma were less likely to have had follow-up within 2 weeks of an emergency visit. The likelihood of having had follow-up was lower for children in First Choice, compared with children enrolled in BlueCare (reference level).

In the one-year period, 488 children (4.3%) were hospitalized 643 times for treatment of asthma. Just 46% of the hospitalizations were followed by the recommended follow-up within the first two weeks after discharge (Table 9). The adjusted odds of having had follow-up care after discharge are shown in Table 10. Very young children were more likely to have had an office or clinic visit within the first two weeks after discharge, compared with older adolescents. The likelihood of having had follow-up was considerably lower for children in First Choice, compared to children in BlueCare Family Plan. No differences associated with race/ethnicity were evident.

## **DISCUSSION**

As in previous years, the results of this study show that asthma prevalence among low-income children in HUSKY A runs higher than national estimates. There are also persistent and troubling differences in asthma prevalence and asthma-related care associated with race/ethnicity among these low income children.

Compared with White children, African American and Hispanic children in HUSKY A were:

- More likely to have been diagnosed with asthma;
- More likely to have had emergency care;
- More likely to have been hospitalized with asthma; and
- Less likely to have had follow-up after emergency visits for treatment of asthma.

Compared with national data, rates for ambulatory care, emergency care, and hospitalization of asthmatic children in HUSKY A suggest that morbidity is high among children in the program.<sup>6</sup> Children in HUSKY A had four times the ambulatory care rate reported in national data.<sup>7</sup> Despite more ambulatory care, children in HUSKY A had three times the emergency care rate reported in national data.<sup>8</sup> Children in HUSKY A were also hospitalized at a rate nearly twice that reported in national data.<sup>9</sup> These higher rates were evident in every age group and for Black and White children. While methodological differences may have contributed in part to differences between national and HUSKY A utilization estimates, the disparities associated with race and ethnicity that are evident among children in HUSKY A are consistent with findings based on national data.

The fact that emergency care and hospitalization rates for asthma, an ambulatory care-sensitive condition, remain high raises a question about the quality of care and follow-up for children in HUSKY A. Widely accepted guidelines for management of asthma call for follow-up within the first week after emergency care or hospitalization<sup>10</sup> In HUSKY A, few children who had emergency care for asthma were seen, even within the first two weeks of that visit. African American and Hispanic children were far less likely than White children to have been seen. Less than half the children whose asthma symptoms were severe enough to warrant hospitalization were seen within two weeks following discharge. These rates suggest a need for further study of access to care, continuity of care, and quality of primary and specialty care. The various approaches to care management that health plans use should be examined in terms of their effectiveness in helping families overcome barriers to care, such as problems with scheduling and keeping appointments; lack of understanding about the importance of follow-up visits, even with symptom-free children; and difficulties arranging for transportation, child care, and time off from work.<sup>11, 12</sup>

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<sup>6</sup> Akinbami LF, Schoendorf KC. Trends in childhood asthma: prevalence, health care utilization, and mortality. *Pediatrics* 2002; 100(2): 315-322.

<sup>7</sup> Ambulatory care: 340.7 visits per 1,000 children <20 in HUSKY A, compared with 80.5 visits per 1,000 children <18 in national data.

<sup>8</sup> Emergency care: 33.5 emergency visits per 1,000 children <20 in HUSKY A, compared with 11.4 visits per 1,000 children <18 in national data.

<sup>9</sup> Hospitalizations: 45.8 hospital discharges per 10,000 children <20 in HUSKY A, compared with 26.9 discharges per 10,000 children <18 in national data.

<sup>10</sup> National Heart, Lung, and Blood Institute. Guidelines for diagnosis and management of asthma. Bethesda, MD: NHLBI, 1997.

<sup>11</sup> Smith SR, Highstein GR, Jaffe DM, Fisher EB, Strunk RC. Parental impressions of the benefits (pros) and barriers (cons) of follow-up care after an acute emergency department visit for children with asthma. *Pediatrics*, 2002; 110(2): 323-330.

<sup>12</sup> Zorc JJ, Scarfone RJ, Li Y, Hong T, Harmelin M, Gurnstein, AJB. Scheduled follow-up after a pediatric emergency department visit for asthma: a randomized trial. *Pediatrics*, 2003; 111(3): 495-502.

While greater adherence to guidelines for asthma diagnosis and management will go a long way toward improving the health of asthmatic children in HUSKY A, broader health policy issues should also be addressed in order to reduce the burden of disease on low income and minority children in Connecticut. In order to promote asthma-friendly communities, a panel of nationally-recognized health policy experts proposed “a blueprint” for improving access to and quality of care, increasing knowledge about asthma, ensuring asthma-friendly schools and asthma-safe homes, encouraging innovation in asthma prevention and management; and reducing socioeconomic disparities in childhood asthma outcomes.<sup>13</sup> Recommendations from this panel provide a basis for policy development, collaboration, and action to address Connecticut-specific aspects of the problem:

- Develop and implement primary care performance measures for childhood asthma care;
- Teach all children with persistent asthma a specific set of self-management skills;
- Provide case-management to high-risk children;
- Extend continuous health insurance coverage to all uninsured children;
- Develop model benefit packages for essential childhood asthma services;
- Educate health care purchasers about asthma benefits;
- Establish public health grants to foster asthma-friendly communities and home environments;
- Promote asthma-friendly schools and school-based asthma programs;
- Launch a national asthma public education campaign;
- Develop a national asthma surveillance system; and
- Develop and implement a national agenda for asthma prevention research.

In Connecticut, these recommendations indicate a need for interagency partnerships and collaboration among a variety of stakeholders in order to improve access to care and reduce the burden of disease. The Connecticut Department of Public Health has taken the lead on some of these recommendations, including development of a systematic approach to surveillance and support for a systematic approach to facilitating communication between families, providers, and schools who care for children with asthma. Collaboration between the Department of Public Health and the Department of Social Services, the State Department of Education, and others is important for improving access to high quality care and care coordination, while also addressing the racial/ethnic and income disparities in health status and health care utilization. The Connecticut General Assembly has a role in ensuring that children have access to coverage for the care they need and that communities have access to the resources they need for fostering asthma-friendly homes and schools.

In these challenging economic times, low income families face difficult choices when weighing health care needs against other basic needs. Families with children in HUSKY A need to feel secure with the knowledge that high quality care and asthma-related health care services are readily available and accessible.

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<sup>13</sup> Lara M, et al. Improving childhood asthma outcomes in the United States: a blueprint for policy action. *Pediatrics*, 2002; 109(5) 919-929.

## **CONCLUSIONS**

- **One in twelve children in HUSKY A received care for asthma in FFY 2002, a rate that is less than in previous years.**
- **Consistent and persistent disparities in health status and health care associated with race/ethnicity are evident.**
- **Few children who received emergency care or were hospitalized for asthma treatment received timely ambulatory care follow-up that is recommended in treatment guidelines.**
- **Children enrolled in First Choice are most likely to have had emergency care or hospitalization and least likely to have had a follow-up visit after treatment for asthma.**

## TECHNICAL NOTES

### ***Study Population***

Using HUSKY A enrollment data, children under 21 who were continuously enrolled in HUSKY A (any health plan) between October 1, 2001, and September 30, 2002, were identified.<sup>14, 15</sup> Children with special health care needs, as defined in the 1997 Balanced Budget Act, were identified using HUSKY A enrollment data and with the cooperation of the Department of Public Health's Title V program.<sup>16</sup>

### ***Data***

HUSKY A encounter data for dates of service that fell within the study year were searched for outpatient, inpatient, and emergency care records accompanied by a primary or other diagnosis of asthma (ICD-9-CM code 493.0-493.9). Encounter records were also searched for visits for conditions related to asthma.<sup>17</sup>

### ***Measures of Prevalence***

The prevalence of asthma, that is physician-diagnosed asthma recorded on an encounter record, was estimated by comparing the number of children who received care for which an asthma diagnosis was reported to the total number of continuously enrolled children. Confidence intervals (CI) around the asthma prevalence estimates for all children and for subgroups by age, race/ethnicity, and residence were calculated in order to show differences between groups and over time. Since variability from year to year may be attributable at least in part to HUSKY

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<sup>14</sup> The Children's Health Council focuses its performance monitoring on the health and health care of children continuously enrolled during a specified reporting period for the following reasons: 1) Prevalence estimates or utilization rates for continuously enrolled children represent the actual health and health care received by a group of children who were "observed" during a uniform, uninterrupted period of coverage; 2) The program and participating health plans can be held accountable for care received or not delivered during a specified period in which the sample of children was enrolled; and 3) Descriptive measures and performance measures can be expressed in simple and consistent terms that convey the actual experience of children in the program, so that the results are useful for the policy deliberations. In FFY 2002, the number of continuously enrolled children <19 (140,395) was 59% of the total number ever enrolled between October 1, 2001 and September 30, 2002.

<sup>15</sup> Children were grouped by age as of the end of the reporting period (9/30/02). In reports for FFY 1998 and 1999, children were grouped by age at midpoint. This methodological change resulted in fewer children included in the age group <1 and may have affected the estimated prevalence for this age group.

<sup>16</sup> Connecticut mandates managed care enrollment for the following Medicaid recipients who are defined in the 1997 BBA as having special health care needs: children receiving Supplemental Social Security Income (SSI), children in foster care or adoption assistance programs, and children receiving benefits under Title V. Those with SSI can be identified with HUSKY A enrollment data (SSI indicator variable). Most but not all children in Department of Children and Families (DCF) custody can be readily identified with enrollment data (Medicaid coverage groups D01 and D02). Children who received services from the Title V programs in FFY 2001 were identified with the cooperation of the Children with Special Health Care Needs programs at the Connecticut Children's Medical Center and Yale-New Haven Hospital, under a study protocol approved by the DPH Human Investigations Committee.

<sup>17</sup> Asthma-related diagnoses: bronchitis (ICD-9-CM codes 466, 480), bronchiolitis (466.1, 487.1, 491.8), allergies (495.4-495.9, 995.3, 995.2, 995.1, 477.0-477.9), viral and bacterial pneumonia (480.0-487.9, 483, 481, 482.2, 482.3, 482.9, 483, 485, 486) and chronic obstructive pulmonary disease (491, 492, 496). Ali and Osberg (1998) used this diagnosis set to investigate differences in follow-up visits between African American and White Medicaid children hospitalized with asthma.



enrollment dynamics, differences in access to health care, and changes in data quality, the three-year average prevalence was calculated to generate a more stable estimate of disease prevalence. Using logistic regression, the odds of having had an asthma diagnosis were determined, after adjusting for age, gender, race/ethnicity, primary language, residence, and health plan.

The effect of using different data sources to estimate asthma prevalence was also investigated. Prevalence estimates for FFY 2002 based on encounter records for care were compared to estimates based on pharmacy data alone and on both types of encounter records. Two lists of medications, developed by the National Committee for Quality Assurance (NCQA) for health plan performance monitoring, were used.<sup>18</sup> The percentages of children whose families filled prescriptions for preferred primary therapies (2,139 medications) or any long-term control medications (3,166 medications, including the 2,139 preferred primary therapies) were determined.

### ***Measures of Utilization***

Asthma-related health care utilization was described in terms of number of visits for ambulatory care (average, range), percentage of children with more than one visit for asthma-related care, percentage of children with emergency visits, and percentage of children who were hospitalized. Confidence intervals around utilization rates were determined and used to detect differences in rates for FFY 2001, compared with utilization in the previous year. Using logistic regression, the odds of children with asthma having had an emergency visit or hospital stay were determined, after adjusting for age, gender, race/ethnicity, primary language, residence, and health plan.

### ***Measures of Quality of Care***

In 1991, an Expert Panel assembled by the National Heart, Lung, and Blood Institute (NHLBI) developed and disseminated “Guidelines for the Diagnosis and Management of Asthma.”<sup>19</sup> These recommendations advise providers to ensure that patients who have been seen for emergency care or hospitalized receive a follow-up appointment to assess continuing symptoms and need for further therapy.<sup>20</sup> This appointment with a primary care clinician or asthma specialist should be within 7 days of discharge from the emergency department or hospital admission.

In order to describe one aspect of the quality of care received by children with asthma, follow-up after emergency visits or hospitalizations was investigated. This approach to studying an “episode of care,” in this case, ambulatory care associated in time with acute care for an ambulatory care-sensitive condition, has been used to examine the quality of asthma care and for

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<sup>18</sup> National Committee for Quality Assurance. HEDIS 2001: Use of appropriate medications for people with asthma. Washington, DC: NCQA, 2001; 95-97. [www.ncqa.com](http://www.ncqa.com) A similar approach was used to estimate asthma prevalence in North Carolina and to investigate the effect of data source on prevalence estimates. See Buescher PA, Jones-Vessey K. Using Medicaid data to estimate state- and county-level prevalence of asthma among low-income children. *Maternal and Child Health Journal*, 1999; 3(4): 211-216.

<sup>19</sup> National Heart, Lung, and Blood Institute. Guidelines for diagnosis and management of asthma. Bethesda, MD: NHLBI, 1997.

<sup>20</sup> *Ibid.*, 117-119.

studying health plan performance.<sup>21, 22</sup> Encounter data were searched for records corresponding to any office or clinic visit and for office or clinic visits with a primary diagnosis of asthma or an asthma-related condition that occurred within 2 weeks and 4 weeks after the emergency care visit or hospital discharge.<sup>23</sup> The percentages of children who had an office or clinic visit within 2 weeks and 4 weeks after an emergency visit or discharge from the hospital were determined. Using logistic regression, the odds of children with emergency visits or hospital stays for asthma having had follow-up within two weeks of discharge were determined, after adjusting for age, gender, race/ethnicity, primary language, residence, and health plan. In addition, the percentages of children with repeat emergency visits or hospital admissions within 2 weeks and 4 weeks of the index episode were also determined.

### **Limitations**

Prevalence estimates in this report are based on secondary analyses of readily available, uniformly coded encounter data corresponding to care received by children with asthma; however, the methods used to generate these estimates most certainly affect and limit interpretation of the results. First, prevalence estimates were based on the health care experiences of continuously enrolled children. Any significant changes in enrollment, access to care and quality of care can affect prevalence estimates based on health services utilization. Second, neither severity of the disease nor adherence to treatment recommendations can be determined using administrative data alone. Care management is captured in this database. Third, the completeness and accuracy of the encounter data could not be assessed. What appear to be increases or decreases in prevalence and utilization over time may be due in part to changes in the quality of data submissions. Fourth, depending on the data source, prevalence estimates can vary significantly. Nevertheless, this approach to tracking asthma prevalence and asthma-related health care utilization among children at increased risk is a useful adjunct to other surveillance efforts and program performance monitoring.<sup>24</sup>

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<sup>21</sup> Vollmer WM, Osborne ML, Buist AS. Temporal trends in hospital-based episodes of asthma care in a health maintenance organization. *American Review of Respiratory Diseases*, 1999; 147: 347-353.

<sup>22</sup> Ali S, Osberg JS. Differences in follow-up visits between African American and White Medicaid children hospitalized with asthma. *Journal of Health Care for the Poor and Underserved*, 1998; 8 (1), 83-98.

<sup>23</sup> Asthma and asthma-related diagnoses: asthma (ICD-9-CM code 493), bronchitis (466, 480), bronchiolitis (466.1, 487.1, 491.8), allergies (495.4-495.9, 995.3, 995.2, 995.1, 477.0-477.9), viral and bacterial pneumonia (480.0-487.9, 483, 481, 482.2, 482.3, 482.9, 483, 485, 486) and chronic obstructive pulmonary disease (491, 492, 496).

<sup>24</sup> Pearce N, Beasley R, Burgess C, Crane J. *Asthma epidemiology: principles and methods*. New York: Oxford University Press; 1998.

**Table 1. Description of Children Continuously Enrolled in HUSKY A: FFY 2002**

	Total <sup>a</sup>		BlueCare		CHN		HealthNet		First Choice		Changed plans	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	140,395		54,348	38.7%	21,568	15.4%	48,038	34.2%	6,814	4.9%	9,627	6.9%
<b>Age</b>												
<1	694	0.5%	263	0.5%	106	0.5%	223	0.5%	27	0.4%	75	0.8%
1-5	42,576	30.3%	16,629	30.6%	6,367	29.5%	14,834	30.9%	1,821	26.7%	2,925	30.4%
6-14	70,648	50.3%	27,349	50.3%	10,927	50.7%	23,965	49.9%	3,605	52.9%	4,802	49.9%
15-20	26,477	18.9%	10,107	18.6%	4,168	19.3%	9,016	18.8%	1,361	20.0%	1,825	19.0%
<b>Total</b>	140,395		54,348		21,568		48,038		6,814		9,627	
<b>Gender</b>												
Female	70,098	49.9%	27,024	49.7%	10,921	50.6%	23,908	49.8%	3,422	50.2%	4,823	50.1%
Male	70,297	50.1%	27,324	50.3%	10,647	49.4%	24,130	50.2%	3,392	49.8%	4,804	49.9%
<b>Total</b>	140,395		54,348		21,568		48,038		6,814		9,627	
<b>Race/ethnicity</b>												
African-American	38,840	27.7%	14,532	26.7%	6,280	29.1%	11,754	24.5%	2,587	38.0%	3,687	38.3%
Hispanic	48,704	34.7%	20,173	37.1%	11,682	54.2%	11,577	24.1%	2,139	31.4%	3,133	32.5%
White	50,052	35.7%	18,644	34.3%	3,299	15.3%	23,467	48.9%	2,000	29.4%	2,642	27.4%
Other	2,799	2.0%	999	1.8%	307	1.4%	1,240	2.6%	88	1.3%	165	1.7%
<b>Total</b>	140,395		54,348		21,568		48,038		6,814		9,627	
<b>Language</b>												
English	129,727	92.4%	49,367	90.8%	18,799	87.2%	46,134	96.0%	6,477	95.1%	8,950	93.0%
Spanish	9,872	7.0%	4,654	8.6%	2,649	12.3%	1,647	3.4%	301	4.4%	621	6.5%
Other	796	0.6%	327	0.6%	120	0.6%	257	0.5%	36	0.5%	56	0.6%
<b>Total</b>	140,395		54,348		21,568		48,038		6,814		9,627	
<b>Residence</b>												
Bridgeport	14,921	10.6%	1,795	3.3%	3,264	15.1%	7,236	15.1%	1,965	28.8%	661	6.9%
Hartford	19,119	13.6%	13,342	24.5%	1,901	8.8%	3,072	6.4%	204	3.0%	600	6.2%
New Haven	14,774	10.5%	3,135	5.8%	5,614	26.0%	1,946	4.1%	888	13.0%	3,191	33.1%
Other	91,581	65.2%	36,076	66.4%	10,789	50.0%	35,784	74.5%	3,757	55.1%	5,175	53.8%
<b>Total</b>	140,395		54,348		21,568		48,038		6,814		9,627	

**Table 1. Description of Children Continuously Enrolled in HUSKY A: FFY 2002 (cont'd)**

Health Care Needs	Total		BlueCare		CHN		HealthNet		First Choice		Changed plans	
	N	%	N	%	N	%	N	%	N	%	N	%
No special needs	129,058	91.9%	49,918	91.8%	20,038	92.9%	44,261	92.1%	6,244	91.6%	8,597	89.3%
Special needs <sup>b</sup>	11,337	8.1%	4,430	8.2%	1,530	7.1%	3,777	7.9%	570	8.4%	1,030	10.7%
<b>Total</b>	<b>140,395</b>		<b>54,348</b>		<b>21,568</b>		<b>48,038</b>		<b>6,814</b>		<b>9,627</b>	

<sup>a</sup>Children 2-19 as of 9/30/02 who were continuously enrolled in HUSKY A between 10/1/01 and 9/30/02

<sup>b</sup>Children in foster care or adoption assistance, children receiving SSI, and children in Title V program. Children may receive benefits in more than one program.

Table 2. Children with Asthma: FFY 2002

	Total <sup>a</sup>		BlueCare		CHN		HealthNet		First Choice		Changed plans	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	11,416	8.1%	4,120	7.6%	2,105	9.8%	4,044	8.4%	417	6.1%	730	7.6%
<b>Age</b>												
<1	67	9.7%	27	10.3%	13	12.3%	22	9.9%	0	0.0%	5	6.7%
1-5	4,183	9.8%	1,635	9.8%	628	9.9%	1,497	10.1%	142	7.8%	281	9.6%
6-14	5,575	7.9%	1,938	7.1%	1,148	10.5%	1,942	8.1%	219	6.1%	328	6.8%
15-20	1,591	6.0%	520	5.1%	316	7.6%	583	6.5%	56	4.1%	116	6.4%
<b>Total</b>	11,416		4,120		2,105		4,044		417		730	
<b>Gender</b>												
Female	4,947	7.1%	1,746	6.5%	930	8.5%	1,772	7.4%	176	5.1%	323	6.7%
Male	6,469	9.2%	2,374	8.7%	1,175	11.0%	2,272	9.4%	241	7.1%	407	8.5%
<b>Total</b>	11,416		4,120		2,105		4,044		417		730	
<b>Race/ethnicity</b>												
African-American	3,021	7.8%	1,089	7.5%	530	8.4%	1,002	8.5%	153	5.9%	247	6.7%
Hispanic	4,765	9.8%	1,754	8.7%	1,345	11.5%	1,220	10.5%	167	7.8%	279	8.9%
White	3,452	6.9%	1,212	6.5%	216	6.5%	1,738	7.4%	93	4.7%	193	7.3%
Other	178	6.4%	65	6.5%	14	4.6%	84	6.8%	4	4.5%	11	6.7%
<b>Total</b>	11,416		4,120		2,105		4,044		417		730	
<b>Language</b>												
English	10,346	8.0%	3,672	7.4%	1,787	9.5%	3,844	8.3%	386	6.0%	657	7.3%
Spanish	1,009	10.2%	421	9.0%	310	11.7%	178	10.8%	29	9.6%	71	11.4%
Other	61	7.7%	27	8.3%	8	6.7%	22	8.6%	2	5.6%	2	3.6%
<b>Total</b>	11,416	8.1%	4,120	7.6%	2,105	9.8%	4,044	8.4%	417	6.1%	730	7.6%
<b>Residence</b>												
Bridgeport	1,596	10.7%	132	7.4%	464	14.2%	746	10.3%	167	8.5%	87	13.2%
Hartford	1,585	8.3%	1,142	8.6%	127	6.7%	269	8.8%	8	3.9%	39	6.5%
New Haven	1,111	7.5%	212	6.8%	549	9.8%	137	7.0%	28	3.2%	185	5.8%
Other	7,124	7.8%	2,634	7.3%	965	8.9%	2,892	8.1%	214	5.7%	419	8.1%
<b>Total</b>	11,416		4,120		2,105		4,044		417		730	

**Table 2. Children with Asthma: FFY 2002 (cont'd)**

	Total <sup>a</sup>		BlueCare		CHN		HealthNet		First Choice		Changed plans	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Health Care Needs</b>												
<b>No special needs</b>	10,320	8.0%	3,713	7.4%	1,906	9.5%	3,696	8.4%	377	6.0%	628	7.3%
<b>Special needs<sup>b</sup></b>	1,096	9.7%	407	9.2%	199	13.0%	348	9.2%	40	7.0%	102	9.9%
<b>Total</b>	11,416	8.1%	4,120	7.6%	2,105	9.8%	4,044	8.4%	417	6.1%	730	7.6%

<sup>a</sup>Children 2-19 as of 9/30/02 who were continuously enrolled in HUSKY A between 10/1/01 and 9/30/02

<sup>b</sup>Children in foster care or adoption assistance, children receiving SSI, and children in Title V program. Children may receive benefits in more than one program.

Table 3. Estimated Prevalence of Asthma in Children Enrolled in HUSKY A: FFY 1998-2002

	FFY 1998	FFY 1999	FFY 2000	FFY 2001	FFY 2002	3-Year Average <sup>a</sup>	
						FFY 1999-2001	FFY 2000-02
<b>Total children</b>	114,597	126,286	131,207	130,998	140,395	129,497	134,200
<b>Children with asthma diagnosis</b>	10,134	12,317	11,586	12,365	11,416	12,089	11,789
<b>Prevalence of asthma</b>	8.8% (8.7 - 9.0%)	9.8% (9.6 - 9.9%)	8.8% (8.7 - 9.0%)	9.4% (9.3 - 9.6%)	8.1% (8.0% - 8.3%)	9.3% (9.2% - 9.5%)	8.8% (8.6 - 8.9%)
<b>By age:<sup>b</sup></b>							
<b>&lt;1</b>	11.7% (10.5 - 12.9%)	14.8% (13.7 - 15.9%)	7.9% (5.6 - 10.2%)	9.2% (6.9 - 11.5%)	9.7% (7.4 - 11.9%)	12.5% (10.9 - 14.1%)	9.0% (6.7 - 11.3%)
<b>1-5</b>	10.3% (10.0 - 10.6%)	11.7% (11.4 - 12.0%)	10.8% (10.5 - 11.1%)	11.5% (11.2 - 11.8%)	9.8% (9.5 - 10.1%)	11.3% (11.0 - 11.7%)	10.7% (10.4 - 11.0%)
<b>6-14</b>	8.4% (8.2 - 8.6%)	9.0% (8.8 - 9.2%)	8.5% (8.3 - 8.7%)	9.0% (8.8 - 9.2%)	7.9% (7.7 - 8.1%)	8.8% (8.6 - 9.0%)	8.4% (8.2 - 8.7%)
<b>15-20</b>	6.8% (6.4 - 7.2%)	7.4% (7.0 - 7.8%)	6.6% (6.3 - 6.9%)	7.2% (6.9 - 7.5%)	6.0% (5.7 - 6.3%)	7.1% (6.7 - 7.4%)	6.6% (6.3 - 6.9%)
<b>By gender:</b>							
<b>Male</b>	10.0% (9.7 - 10.2%)	11.0% (10.8 - 11.3%)	9.9% (9.7 - 10.2%)	10.5% (10.3 - 10.8%)	9.2% (9.0 - 9.4%)	10.5% (10.3 - 10.7%)	9.9% (9.6 - 10.1%)
<b>Female</b>	7.7% (7.5 - 7.9%)	8.5% (8.3 - 8.7%)	7.7% (7.5 - 7.9%)	8.3% (8.1 - 8.6%)	7.1% (6.9 - 7.2%)	8.2% (8.0 - 8.4%)	7.7% (7.5 - 7.9%)

Table 3. Estimated Prevalence of Asthma in Children Enrolled in HUSKY A: FFY 1998-2002 (cont'd)

	FFY 1998	FFY 1999	FFY 2000	FFY 2001	FFY 2002	3-Year Average <sup>a</sup>	
						FFY 1999-2001	FFY 2000-02
<b>By race/ethnicity:</b>							
<b>Black/African-American</b>	8.1% (7.8 – 8.4%)	8.9% (8.6 – 9.2%)	7.9% (7.6 – 8.2%)	8.7% (8.4 – 9.0%)	7.8% <b>(7.5 – 8.0%)</b>	8.2% (7.9 – 8.4%)	8.1% (7.9 – 8.4%)
<b>Hispanic/Latino</b>	11.1% (10.8 – 11.4%)	12.2% (11.9 – 12.5%)	11.0% (10.7 – 11.3%)	11.5% (11.2 – 11.8%)	9.8% <b>(9.5 – 10.0%)</b>	11.6% (11.3 – 11.9%)	10.8% <b>(10.5 – 11.1%)</b>
<b>White</b>	7.2% (7.0 – 7.5%)	8.2% (7.9 – 8.5%)	7.5% (7.3 – 7.7%)	8.0% (7.7 – 8.3%)	6.9% <b>(6.7 – 7.1%)</b>	7.9% (7.6 – 8.1%)	7.4% (7.2 – 7.7%)
<b>Other racial/ethnic groups</b>	6.0% (4.7 – 7.3%)	5.9% (4.8 – 7.0%)	6.3% (5.2 – 7.4%)	7.3% (6.2 – 8.4%)	6.4% (5.4 – 7.3%)	6.6% (5.4 – 7.7%)	6.6% (5.6 – 7.7%)
<b>By residence:</b>							
<b>Bridgeport</b>	9.8% (9.3 – 10.3%)	11.2% (10.7 – 11.7%)	10.4% (9.9 – 10.9%)	12.8% (12.3 – 13.3%)	10.7% <b>(10.2 – 11.2%)</b>	11.5% (10.9 – 12.0%)	11.3% (10.8 – 11.8%)
<b>Hartford</b>	8.9% (8.6 – 9.4%)	11.8% (11.4 – 12.2%)	10.3% (9.9 – 10.7%)	10.5% (10.1 – 10.9%)	9.3% <b>(7.9 – 8.7%)</b>	10.9% (10.4 – 11.3%)	9.7% <b>(9.3 – 10.1%)</b>
<b>New Haven</b>	8.4% (7.9 – 8.9%)	9.1% (8.6 – 9.6%)	7.8% (7.4 – 8.2%)	7.9% (7.5 – 8.3%)	7.5% (7.1 – 7.9%)	8.3% (7.8 – 8.7%)	7.7% (7.3 – 8.2%)
<b>Other towns</b>	8.7% (8.5 – 8.9%)	9.0% (8.9 – 9.3%)	8.4% (8.2 – 8.6%)	8.9% (8.7 – 9.1%)	7.8% (7.6 – 8.0%)	8.8% (8.6 – 9.0%)	8.3% <b>(8.1 – 8.5%)</b>

**Note:** 95% confidence intervals shown. FFY 2002 and for FFY 2000-02 prevalence estimates that are significantly higher or lower than the estimate for the previous time period are shown in bold.

<sup>a</sup> Crude average number or percentage with asthma diagnoses for health care received during each of the one-year periods. It is likely that some children were counted in more than one reporting period.

<sup>b</sup> For children enrolled in FFY98 and FFY99, age was determined at the midpoint of the reporting period. Thereafter, age was determined at the end of the reporting period, so there were fewer children under 1 who were continuously enrolled for the entire period. The change in estimated prevalence for this age group is probably attributable to this methodological change.



**Table 4. Adjusted Odds of Having Had Care with Asthma Diagnosis**

		Had care with asthma diagnosis <sup>a</sup>
		OR (95% confidence interval)
<b>Gender:</b>	<b>Male</b>	<b>1.32 (1.27, 1.37)***</b>
	<b>Female</b>	1.00
<b>Age:</b>	<b>&lt;1</b>	<b>1.68 (1.30, 2.17)***</b>
	<b>1-5</b>	<b>1.70 (1.60, 1.81)***</b>
	<b>6-14</b>	<b>1.32 (1.25, 1.40)***</b>
	<b>15-19</b>	1.00
<b>Race/ethnicity:</b>	<b>African American</b>	<b>1.14 (1.07, 1.20)***</b>
	<b>Hispanic</b>	<b>1.41 (1.34, 1.49)***</b>
	<b>Other groups</b>	0.88 (0.75, 1.03)
	<b>White</b>	1.00
<b>Primary language:</b>	<b>Not English</b>	1.05 (0.98, 1.13)
	<b>English</b>	1.00
<b>Residence:</b>	<b>Bridgeport</b>	<b>1.29 (1.21, 1.37)***</b>
	<b>Hartford</b>	0.98 (0.92, 1.04)
	<b>New Haven</b>	<b>0.89 (0.83, 0.96)**</b>
	<b>Other towns</b>	1.00
<b>Health plans:</b>	<b>BlueCare Family Plan</b>	1.00
	<b>Community Health Network</b>	<b>1.23 (1.16, 1.31)***</b>
	<b>Health Net</b>	<b>1.14 (1.08, 1.19)***</b>
	<b>First Choice</b>	<b>0.76 (0.68, 0.84)***</b>
	<b>Changed plans</b>	1.01 (0.93, 1.10)
<b>Health care need</b>	<b>No special needs</b>	1.00
	<b>Special health care needs<sup>b</sup></b>	<b>1.30 (1.22, 1.39)***</b>

<sup>a</sup> Had diagnosis of asthma on encounter record for office or clinic visit, emergency care or hospitalization

<sup>b</sup> Children in foster care or adoption assistance, children receiving SSI, or children in Title V program.

*Note: Reference levels for each variable were selected arbitrarily.*

\*p<.05 \*\* p<.01 \*\*\*p<.001

**Table 5a. Effect of Data Source on Identification of Children with Asthma: Care and preferred primary therapies<sup>a</sup>**

Encounter record with asthma diagnosis?	Encounter record for prescription ? (preferred therapies)		TOTAL
	YES	NO	
YES	5,738	5,678	11,416
NO	3,342	---	3,342
<b>TOTAL</b>	9,080	5,678	14,758

<sup>a</sup> Encounter records for an asthma dispensing event for at least one preferred primary therapy on a list developed by the National Committee on Quality Assurance for monitoring health plan performance (n= 2,139 medications).

**Note:** Estimated prevalence based on encounter records for care and prescriptions for preferred primary therapies=10.5% .

**Table 5b. Effect of Data Source on Identification of Children with Asthma: Care and any long-term control medication <sup>a</sup>**

Encounter record with asthma diagnosis?	Encounter record for prescription? (any long term control medication)		TOTAL
	YES	NO	
YES	10,092	1,342	11,416
NO	13,741	---	13,741
<b>TOTAL</b>	23,833	1,342	25,157

<sup>a</sup> Encounter records for an asthma dispensing event for at least one long-term control medication on a list developed by the National Committee on Quality Assurance for monitoring health plan performance (3,166 medications, including 2,139 preferred primary therapies).

**Note:** Estimated prevalence based on encounter records for care and prescriptions for long-term control medications=17.9%.

**Table 6. Asthma-Related Health Care Received By Children With Asthma Diagnoses: FFY 1998-2002**

	FFY 1998	FFY 1999	FFY 2000	FFY 2001	FFY 2002
<b>Outpatient and emergency care:<sup>a</sup></b>					
<b>Number of visits: average (range)</b>	4.5 (1 – 308)	4.7 (1 - 302)	4.4 (1 – 84)	4.6 (1 – 40)	4.1 (1 – 34)
<b>Children with more than one visit</b>	67.8% (66.9 – 68.7%)	70.7% (69.9 – 71.5%)	67.7% (66.8 – 68.6%)	47.7% (46.9 – 48.6%)	48.1% (47.2 – 49.0%)
<b>Hospital-based care:<sup>b</sup></b>					
<b>Children with any emergency visits</b>	17.7% (17.0 – 18.4%)	25.3% (24.5 – 26.1%)	25.3% (24.5 – 26.1%)	28.0% (27.2 – 28.8%)	29.0% (28.2 – 29.8%)
<b>More than one ER visit</b>	17.1% (15.3 – 18.9%)	22.6% (21.2 – 24.1%)	20.3% (18.9 – 21.8%)	29.3% (27.8 – 30.9%)	<b>26.0%</b> <b>(24.5 – 27.5%)</b>
<b>Three or more ER visits</b>	4.7% (3.7 – 5.7%)	6.7% (5.8 – 7.6%)	5.9% (5.0 – 6.8%)	9.1% (8.1 – 10.1%)	7.6% (6.7 – 8.5%)
<b>Children ever hospitalized</b>	3.9% (3.5 – 4.3%)	4.9% (4.5 – 5.3%)	4.7% (4.3 – 5.1%)	4.7% (4.3 – 5.0%)	4.3% (3.9 – 4.7%)
<b>Hospitalized more than once</b>	10.4% (7.3 – 13.5%)	21.9% (18.5 – 25.3%)	12.2% (9.4 – 15.0%)	10.4% (7.8 – 13.0%)	13.5% (10.4 – 16.7%)

*Note: 95% confidence intervals for prevalence estimates are shown. Utilization in FFY 2002 that was significantly higher or lower than the previous year is shown in bold.*

<sup>a</sup> Encounter records with asthma diagnosis and outpatient or emergency procedure codes (CPT-4 codes 99201-5, 99211-15, 99241-5, 99354-7, 99381-6, 99391-6, 99401-4, 99411-2, 99050, 99052, 99054, 99058; hospital revenue codes 092, 093, 094, 450, 456, 459; clinic codes 510, 515, 516, 3000Y).

<sup>b</sup> Encounter records with asthma diagnosis for emergency care (hospital revenue codes 450, 456, 459; urgent clinic code 516) and hospitalization (hospital revenue codes 100, 111, 112, 113, 120, 121, 122, 123, 200, 202, 203, 210; CPT-4 code 99433).

**Table 7. Asthma-Related Health Care For Children With Asthma Diagnoses in FFY 2002:  
Comparison by race/ethnicity**

	All Children	African American	Hispanic	White	Other children
<b>Ambulatory care:<sup>a</sup> Ave. number visits (range)</b>	4.2 (1 – 34)	4.2 (1 – 22)	4.3 (1 – 34)	4.1 (1 – 22)	4.0 (1 – 9)
<b>Percent with more than one visit</b>	48.1% (47.2 – 49.0%)	48.5% (46.7 – 50.3%)	49.4% (48.0 – 50.9%)	46.0% (44.2% – 47.6%)	50.0% (42.4 – 57.6%)
<b>Hospital-based care:<sup>b</sup> Percent with <u>any</u> emergency visits</b>	29.4% (28.6 – 30.3%)	34.7% (33.0 – 36.4%)	30.6% (29.3 – 32.0%)	23.5% (22.0 – 24.9%)	23.0% (16.6 – 29.5%)
<b>More than one ER visit</b>	26.0% (24.5 – 27.5%)	30.9% (28.1 – 33.8%)	23.6% (21.4 – 25.8%)	23.2% (20.2 – 26.2%)	39.0% (22.9 – 55.2%)
<b>Percent <u>ever</u> hospitalized</b>	4.3% (3.9 – 4.7%)	5.6% (4.7 – 6.4%)	4.4% (3.8 – 5.0%)	3.0% (2.4 – 3.6%)	4.5% (1.2 – 7.8%)
<b>Hospitalized more than once</b>	13.5% (10.4 – 16.7%)	15.5% (9.7 – 21.2%)	15.8% (10.6 – 21.0%)	6.8% (1.5 – 12.1%)	0.0%

*Note: 95% confidence intervals for prevalence estimates are shown. Significant differences associated with race/ethnicity are shown in bold.*

<sup>a</sup> Encounter records with asthma diagnosis and outpatient or emergency procedure codes (CPT-4 codes 99201-5, 99211-15, 99241-5, 99354-7, 99381-6, 99391-6, 99401-4, 99411-2, 99050, 99052, 99054, 99058; hospital revenue codes 092, 093, 094, 450, 456, 459; clinic codes 510, 515, 516, 3000Y).

<sup>b</sup> Encounter records with asthma diagnosis for emergency care (hospital revenue codes 450, 456, 459; urgent clinic code 516) and hospitalization (hospital revenue codes 100, 111, 112, 113, 120, 121, 122, 123, 200, 202, 203, 210; CPT-4 code 99433).

**Table 8. Odds of Emergency Care or Hospitalization for Treatment of Asthma**

		Among children with asthma :	
		Emergency care OR (95% confidence interval)	Hospitalized OR (95% confidence interval)
<b>Gender:</b>			
	Male	1.00	1.00
	Female	0.93 (0.86, 1.01)	0.99 (0.82, 1.19)
<b>Age:</b>			
	<1	0.81 (0.62, 1.06)	<b>5.29 (2.12, 13.15)***</b>
	1-5	0.87 (0.77, 0.97)	<b>2.94 (2.05, 4.23)***</b>
	6-14	<b>0.62 (0.56, 0.70)***</b>	<b>1.64 (1.14, 2.37)**</b>
	15-19	1.00	1.00
<b>Race/ethnicity:</b>			
	African American	<b>1.68 (1.50, 1.88)***</b>	<b>1.62 (1.23, 2.12)**</b>
	Hispanic	<b>1.49 (1.34, 1.66)***</b>	<b>1.39 (1.06, 1.83)*</b>
	Other groups	0.80 (0.57, 1.12)	1.48 (0.71, 3.10)
	White	1.00	1.00
<b>Primary language:</b>			
	Not English	1.04 (0.90, 1.19)	1.19 (0.87, 1.62)
	English	1.00	1.00
<b>Residence:</b>			
	Bridgeport	<b>0.70 (0.62, 0.80)***</b>	<b>0.53 (0.37, 0.77)**</b>
	Hartford	1.08 (0.95, 1.21)	1.30 (0.99, 1.71)
	New Haven	<b>1.76 (1.54, 2.00)***</b>	<b>2.36 (1.80, 3.09)***</b>
	Other towns	1.00	1.00
<b>Health plans:</b>			
	BlueCare Family Plan	1.00	1.00
	Community Health Network	<b>0.82 (0.73, 0.93)*</b>	0.82 (0.61, 1.11)
	Health Net	1.01 (0.92, 1.12)	1.02 (0.81, 1.30)
	First Choice	<b>2.00 (1.65, 2.43)***</b>	<b>1.76 (1.11, 1.79)*</b>
	Changed plans	<b>1.45 (1.26, 1.68)***</b>	<b>1.73 (1.25, 2.40)**</b>
<b>Health care needs</b>			
	No special needs	1.00	1.00
	Special health care needs <sup>b</sup>	0.94 (0.82, 1.08)	<b>1.44 (1.10, 1.90)**</b>

<sup>a</sup> Children with diagnosis of asthma on encounter record for office or clinic visit, emergency care, or hospitalization (n=12,365).

<sup>b</sup> Children in foster care or adoption assistance, children receiving SSI, and children in Title V program.

**Note:** Reference levels for each variable were selected arbitrarily. \*p<.05 \*\* p<.01 \*\*\*p<.001

**Table 9. Asthma Care Following Emergency Care and Hospitalization: FFY 2002**

	<b>Total</b>	<b>BlueCare</b>	<b>CHN</b>	<b>Health Net</b>	<b>First Choice</b>	<b>Changed plans</b>
<b>Children with ER visit<sup>a</sup></b>	3,359	1,169	566	1,048	190	386
<b>Had office or clinic visit for asthmal/ related condition<sup>b</sup></b>						
<b>Within 2 weeks</b>	15.7%	18.4%	16.6%	17.1%	7.9%	6.7%
<b>Within 4 weeks (cumulative)</b>	35.5%	38.55	33.7%	39.9%	21.2%	24.4%
<b>Had office or clinic visit for <u>any</u> diagnosis</b>						
<b>Within 2 weeks</b>	19.2%	22.6%	20.3%	20.1%	9.5%	9.6%
<b>Within 4 weeks (cumulative)</b>	45.0%	48.6%	45.5%	49.3%	25.3%	31.6%
<b>Children who were hospitalized<sup>c</sup></b>	488	180	81	143	24	60
<b>Had office or clinic visit for asthma or related condition<sup>c</sup></b>						
<b>Within 2 weeks</b>	46.1%	51.1%	55.6%	50.3%	25.0%	16.7%
<b>Within 4 weeks (cumulative)</b>	52.0%	56.1%	63.0%	55.2%	29.2%	26.7%
<b>Had office or clinic visit for <u>any</u> diagnosis</b>						
<b>Within 2 weeks</b>	63.5%	68.9%	72.8%	72.0%	29.2%	28.3%
<b>Within 4 weeks (cumulative)</b>	71.7%	77.2%	77.8%	79.7%	37.5%	41.7%

<sup>a</sup>First visit for each child who had emergency care for asthma; 873 children had at least one additional ER visit with an asthma diagnosis.

<sup>b</sup> Office or clinic visit for primary or other diagnosis of asthma or related upper respiratory condition (bronchitis, bronchiolitis, allergies, viral or bacterial pneumonia, chronic obstructive pulmonary disease. Some children may have had home visits that were not captured with this approach.

<sup>c</sup> First hospitalization for each child who was ever hospitalized for asthma; 66 children were hospitalized more than once for treatment of asthma.

**Table 10. Adjusted Odds of Having Had Follow-up<sup>a</sup> after Emergency Care or Hospitalization for Asthma: FFY 2002**

		Had follow-up within 2 weeks after emergency care for asthma <sup>b</sup> OR (95% confidence interval)	Had follow-up within 2 weeks after hospitalization for asthma <sup>c</sup> OR (95% confidence interval)
<b>Gender:</b>			
	Male	1.00	1.00
	Female	1.02 (0.88, 1.19)	0.90 (0.59, 1.39)
<b>Age:</b>			
	<1	<b>7.00 (4.21, 11.62)***</b>	-----
	1-5	<b>2.48 (1.98, 3.12)***</b>	<b>2.49 (1.13, 5.46)*</b>
	6-14	<b>1.81 (1.44, 2.28)***</b>	1.63 (0.74, 3.61)
	15-19	1.00	1.00
<b>Race/ethnicity:</b>			
	African American	<b>0.63 (0.52, 0.78)***</b>	0.71 (0.39, 1.30)
	Hispanic	<b>0.72 (0.59, 0.88)**</b>	0.62 (0.34, 1.13)
	Other groups	0.88 (0.46, 1.70)	0.36 (0.07, 1.81)
	White	1.00	1.00
<b>Primary language:</b>			
	Not English	0.93 (0.71, 1.20)	1.56 (0.76, 3.20)
	English	1.00	1.00
<b>Residence:</b>			
	Bridgeport	1.03 (0.80, 1.31)	1.08 (0.46, 2.54)
	Hartford	0.94 (0.76, 1.17)	1.61 (0.87, 2.98)
	New Haven	0.78 (0.61, 0.99)	0.58 (0.33, 1.03)
	Other towns	1.00	1.00
<b>Health plans:</b>			
	BlueCare Family Plan	1.00	1.00
	Community Health Network	0.90 (0.71, 1.11)	1.74 (0.90, 3.35)
	Health Net	1.03 (0.86, 1.24)	1.32 (0.78, 2.23)
	First Choice	<b>0.45 (0.31, 0.66)***</b>	<b>0.23 (0.08, 0.67)**</b>
	Changed plans	<b>0.57 (0.43, 0.75)***</b>	<b>0.25 (0.12, 0.52)***</b>
<b>Health care needs</b>			
	No special needs	1.00	1.00
	Special health care needs <sup>d</sup>	<b>1.33 (1.04, 1.72)*</b>	1.02 (0.56, 1.86)

<sup>a</sup> Office or clinic visit for primary or other diagnosis of asthma or related upper respiratory condition (bronchitis, bronchiolitis, allergies, viral or bacterial pneumonia, chronic obstructive pulmonary disease. Some children may have had home visits that were not captured with this approach.

<sup>b</sup> First visit for each child who had emergency care for asthma; 873 children had at least one additional ER visit.

<sup>c</sup> First hospitalization for each child who was ever hospitalized for asthma; 66 children were hospitalized more than once.

<sup>d</sup> Children in foster care or adoption assistance, children receiving SSI, and children in Title V program.

**Note:** Reference levels for each variable were selected arbitrarily.

\*p<.05 \*\* p<.01 \*\*\*p<.001