

Asthma *in Connecticut*



John G. Rowland, Governor
Joxel Garcia, M.D., M.B.A., Commissioner



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STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

Joxel Garcia, M.D., M.B.A.
Commissioner



John G. Rowland
Governor

May 10, 2001

Dear Colleague:

The Connecticut Department of Public Health is committed to reducing asthma-associated morbidity and mortality and improving the quality of life for residents of Connecticut with asthma. As part of our ongoing efforts to achieve these goals, I am pleased to present you with the following report: *Asthma in Connecticut*.

Defining the impact of asthma on the people of Connecticut, identifying the populations that are most affected, and implementing the appropriate interventions for this disease is a major initiative of the department. Towards this end, the department modified its Behavior Risk Factor Surveillance (BRFSS) to obtain data to assess the prevalence of asthma in our state. In addition, other available data sets were analyzed to obtain additional information on asthma in Connecticut. Collaboration with the Children's Health Council resulted in asthma related data for those continuously enrolled in Medicaid Managed Care (Husky Part A).

Asthma in Connecticut is a good first step in identifying baseline data that will yield important insights into asthma in Connecticut. The department is committed to building on this foundation in order to achieve healthier outcomes for the people of Connecticut and it is my hope that this report will be used for public health planning and intervention by health professionals throughout the state.

I invite you to partner with the Department of Public Health to address this important health issue. Together, we can work to improve the health and well-being of all Connecticut residents.

Sincerely,

A handwritten signature in blue ink that reads "Joxel Garcia".

Joxel Garcia, M.D., M.B.A.
Commissioner

Acknowledgements

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Connecticut Department of Public Health: Asthma Initiative

The Department of Public Health (DPH) is committed to reducing asthma-associated morbidity and mortality and improving the quality of life for people with asthma in Connecticut. Managing asthma requires a comprehensive approach that includes: consistent and appropriate medical treatment; patient compliance with drug regimens; comprehensive provider, patient and family education; and, reduction of risk factors that exacerbate asthma. DPH has developed a program plan for pediatric asthma that is the foundation for a number of activities.

The Connecticut Department of Public Health Asthma Program is currently:

- Conducting asthma surveillance to identify at-risk populations, monitor trends of asthma rates, assist in program planning and evaluate program effectiveness;
- Conducting a survey of children in Medicaid managed care who utilize the emergency room for asthma care;
- Participating on regional, statewide and local asthma workgroups to coordinate and enhance asthma activities;
- Promoting the use of the National Institutes of Health—National Heart, Lung, Blood Institute’s Guidelines for the Diagnosis and Management of Asthma;
- Encouraging and supporting community-based programs that promote comprehensive asthma activities;
- Developing educational initiatives for professionals, patients and families of those with asthma;
- Exploring partnerships with existing programs to develop asthma educational programs and messages;
- Identifying resources and mechanisms to implement or expand environmental home assessments;
- Researching mechanisms for coordination of asthma management plans among those responsible for care coordination including primary care providers, school nurses, parents and patients.



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Key Findings

- An estimated 7.3% of Connecticut adults (180,000) reported asthma. The rate was substantially higher for women (9.1%) than for men (5.4%). (BRFSS)
- An estimated 10.4% of Connecticut children under the age of 18 were reported to have asthma (86,000). (BRFSS)
- No association was seen between the prevalence of asthma from the BRFSS and common measures of socioeconomic status such as income or educational attainment, or when comparing urban and non-urban regions of the state.
- Compared to adults without asthma, adults with asthma reported more days of poor physical and mental health in the past month. (BRFSS)
- Obese adults were much more likely than those who were not obese to report current asthma. (BRFSS)
- Hispanic and black children had slightly higher rates of asthma than white children. However, asthma rates among adults were similar for whites, blacks and Hispanics. (BRFSS)
- The estimated prevalence of asthma among children continuously enrolled in HUSKY Part A was 9.8%.
- Among children continuously enrolled in HUSKY Part A, Hispanic children were disproportionately affected by pediatric asthma.
- Twenty-five percent of the continuously enrolled children in HUSKY Part A with asthma used the emergency room for asthma care at least once during federal fiscal year 1998-1999.
- Statewide, asthma hospitalization rates were highest for very young children and for black and Hispanic children of any age.
- Hospitalization rates and emergency room visit rates for children with a principal diagnosis of asthma were disproportionately high in the five largest cities and low-income towns in general.
- Mortality rates are higher for blacks and Hispanics in Connecticut.
- Occupational asthma accounts for 33% of all occupational respiratory diseases and disorders reported in Connecticut.
- Occupational asthma is more common in the Service and Manufacturing industries.

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Introduction

Asthma is a chronic disease characterized by intermittent reversible airway obstruction. The obstruction is a result of chronic inflammation and hyperresponsiveness to a variety of stimuli. Asthma often begins in childhood. Between 50 and 80 % of children with asthma develop symptoms before 5 years of age. Asthma affects approximately 15 million people in the U.S.; five million are children under the age of 18. Asthma symptoms can vary, and in children symptoms may be similar to those of other childhood illnesses. Because of this, asthma may be overdiagnosed or underdiagnosed in children. Symptoms that may be present include periods of breathlessness or rapid breathing, wheezing, coughing and chest tightness. These periods are called attacks or exacerbations and may occur following a variety of environmental exposures or other stressors. Sometimes these attacks are life threatening.

The triggers of asthma are better understood than the specific cause(s) of asthma. Familial, infectious, allergenic, environmental, socioeconomic and psychosocial factors all may interact and play a part in the development of asthma. The exact role of each is not well understood.

The number of people with asthma has more than doubled in the last 18 years. However, people with asthma can lead normal, productive lives with effective asthma management. Asthma that is not controlled has a significant impact on the person with asthma, their family, caregivers, and others. Asthma is a leading cause of missed days from school and can result in missed days of work, visits to the hospital, interrupted sleep, limited physical activity and the disruption of family and caregiver routines. Children living in poverty and/or inner cities have higher rates of hospitalizations and mortality from asthma.

To evaluate the burden of asthma, particularly among children in Connecticut, the Connecticut Department of Public Health has initiated several asthma surveillance activities using existing data sources or surveys. The Behavioral Risk Factor Surveillance System, a random digit telephone survey, was revised to include questions about asthma. This survey of self-reported asthma provides an estimate of the statewide prevalence of asthma. Asthma surveillance has also included data from Medicaid encounters, hospital discharge and emergency room visits, vital records and occupational disease reports.

About the Data

Five sources of data were used in this report: the Behavioral Risk Factor Surveillance System (BRFSS), Medicaid managed care encounter data, Hospital Discharge and Emergency Room data, the Occupational Disease Surveillance System and Vital Records.

All data were analyzed and reported as calendar year except for the Medicaid managed care encounter data, which were analyzed by federal fiscal year. In analyses done by race/ethnicity, white and black include only non-Hispanic, and Hispanic includes all races. Thus, race/ethnicity categories are mutually exclusive.

Much of the data contained in this report is expressed as a rate. A rate is the number of health events (e.g. deaths) in a population or subgroup divided by the number of people in that population or subgroup within a given time period. All of the hospitalization and emergency room rates are reported per 10,000 population and are based on the 1990 Census. The hospitalizations and emergency room visits are based on number of visits not individuals. Mortality rates are reported per 100,000 population.

Prevalence estimates, also reported as prevalence rates, are presented. Prevalence is the number of people with a disease at a given point in time. Prevalence rates were estimated from the BRFSS and Medicaid managed care encounter data.

Prevalence Estimates Using the Behavioral Risk Factor Surveillance System

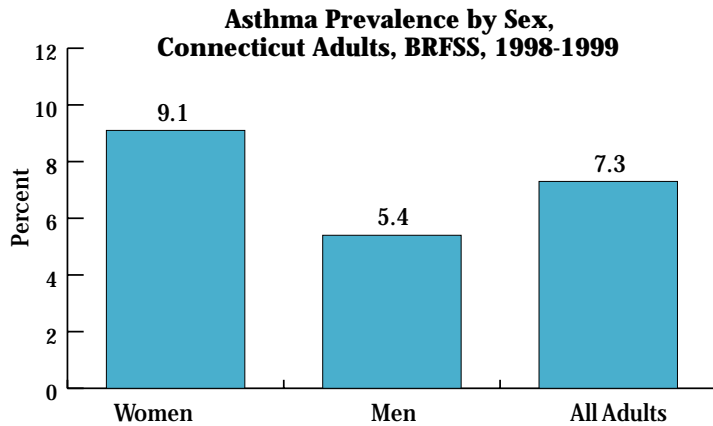
The Behavioral Risk Factor Surveillance System (BRFSS) is a statewide telephone survey coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. Interviews of randomly selected, non-institutionalized adults ages 18 and older are conducted on a monthly basis and combined by calendar year and adjusted to be representative of the adult population in Connecticut. To estimate the asthma prevalence in Connecticut, the DPH included state specific asthma questions on the surveys in 1998 and 1999. In a departure from the usual procedure, these questions obtained information about all members of the household, not just the selected respondent. Adult rates were based on current asthma, while rates for children were for those ever told by a doctor they had asthma.

There were 3,129 interviews conducted in 1998, and 3,517 in 1999, to yield a total sample size of 6,646. The data for the two years were combined and analyzed as if the survey had been a continuous two-year survey, and results may not match the averages of the two separate years. Prevalence estimates (also referred to as prevalence rates) were determined with PC SAS. Standard errors (Appendix, Table 1) were determined with SUDAAN (SURvey DATA ANALYSIS, Research Triangle Institute) which takes into account the complex sample design of the BRFSS. Results that were based on the household, or children in the household, were adjusted to represent all households, rather than all adults in the state. To compute asthma prevalence rates for children, households with an unknown number of children were considered to have no children. Rates were then computed by dividing the adjusted sum of children with asthma by the adjusted sum of all children of that race or age. Methodological constraints precluded testing for statistical significance of the data for children. For analyses of data on adult respondents, those with missing values were excluded from the analysis for that variable.

While the BRFSS results are from a representative population of adults in the state, there are certain limitations of the data. Persons without phones and those that refuse to respond to telephone surveys are not represented. Any time a sample is taken from a population, sampling error is introduced, and other errors may result from omissions and inaccurate reporting. The sample size is adequate for the state as a whole, and for certain sub-populations, but cannot be expected to provide estimates at a town level at this time.

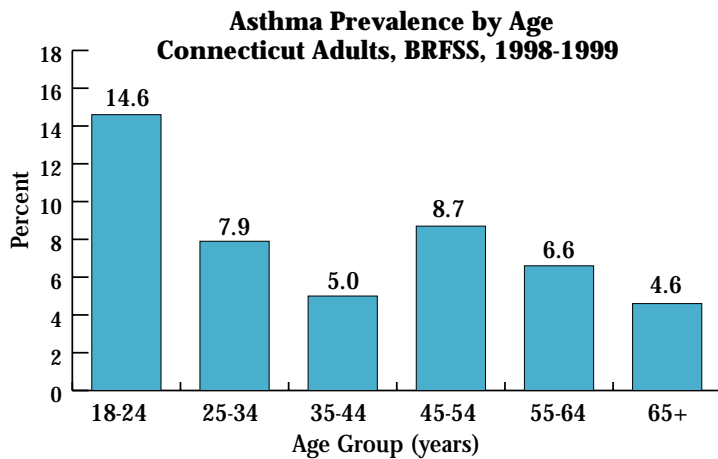
Asthma Prevalence Estimates Among Adults, BRFSS

Figure 1



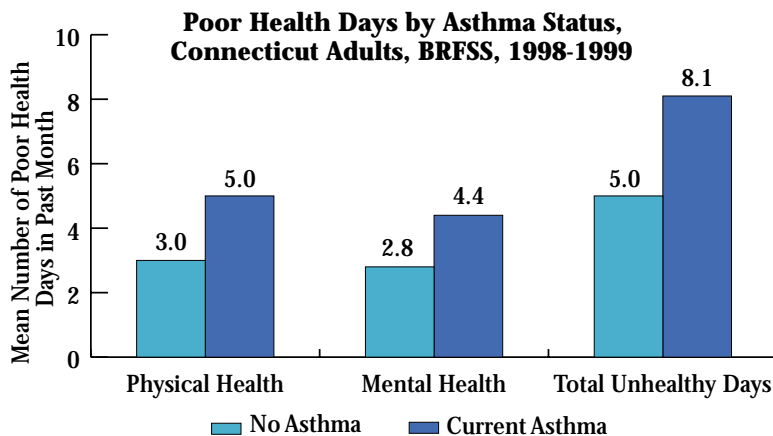
The prevalence of asthma among adults in 1998-1999 was 7.3%. The prevalence rate was significantly higher for women (9.1%) when compared to men (5.4%) (Appendix, Table 1).

Figure 2



Asthma rates for adults were highest for young adults, although the difference was not statistically significant. Half of all adults with asthma reported they were first told of their asthma when they were children (Appendix, Table 1).

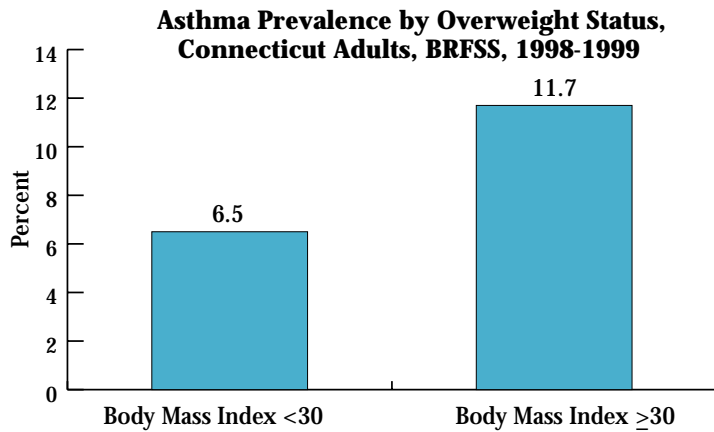
Figure 3



Compared to adults without asthma, adults with asthma reported more days in the past month when their physical and mental health was poor. People with asthma reported an average of 3.1 more unhealthy days (which include both physical and mental health) in the previous month. These data provide a simple measure of the burden of disease.

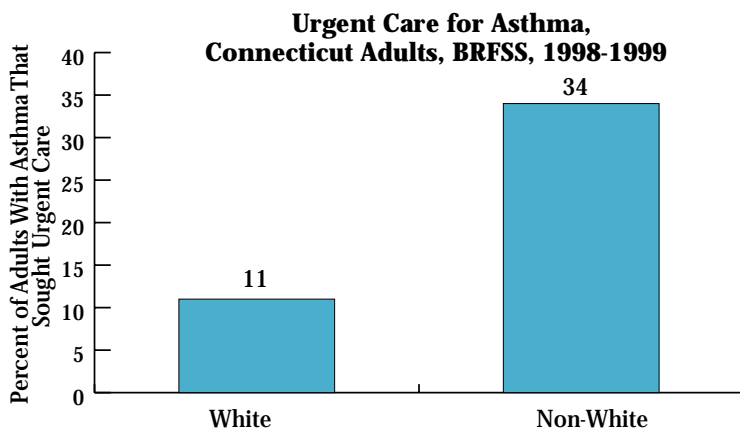
Asthma Prevalence Estimates Among Adults, BRFSS

Figure 4



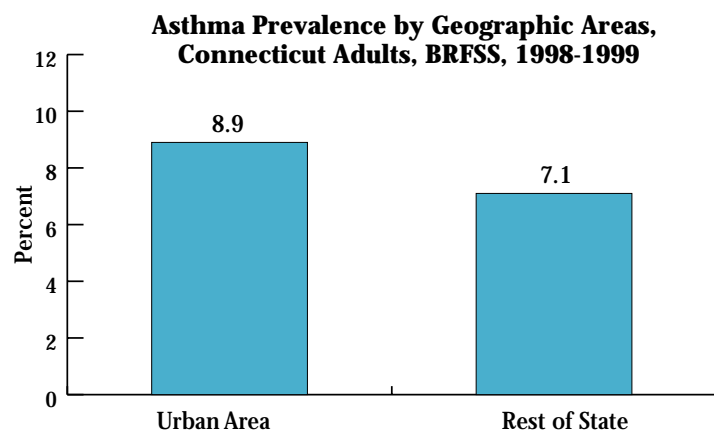
Obese adults, those with a Body Mass Index greater than or equal to 30, were much more likely than those who were not obese to report asthma. Asthma prevalence rates were not higher for adult smokers or the physically inactive (not shown).

Figure 5



Adults with asthma did not report more difficulty accessing health care or lower rates of health insurance when compared to adults without asthma. However, non-white adults (included all racial/ethnic groups other than non-Hispanic whites) compared to non-Hispanic whites were approximately 3 times more likely to report receiving asthma treatment in an emergency room or urgent care center. The asthma rates for these two groups were similar.

Figure 6

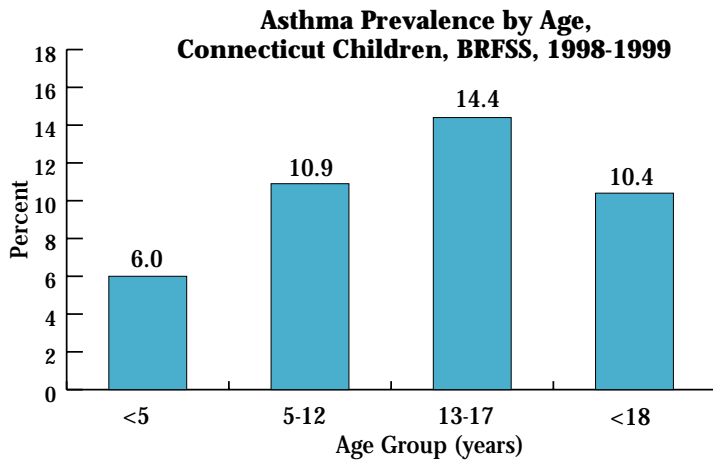


Adult asthma prevalence was similar in the urban areas when compared to the rest of the state. The urban area comprised the cities of Hartford, New Haven, Waterbury and Bridgeport.

Prevalence was also similar for high and low-income households and for other measures of socioeconomic status (not shown).

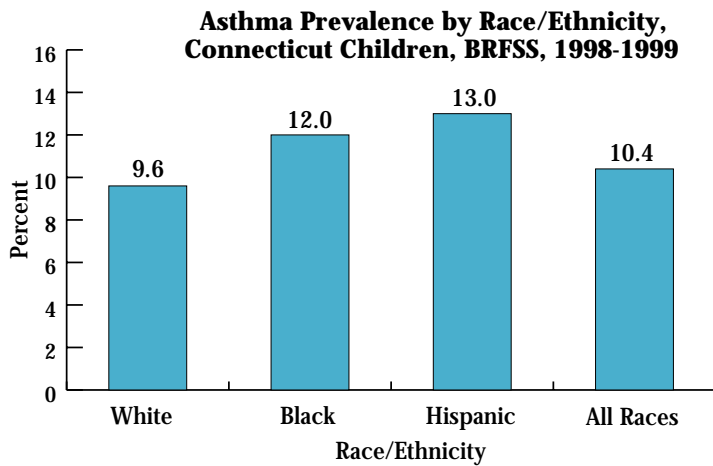
Asthma Prevalence Estimates Among Children, BRFSS

Figure 7



To compute the asthma prevalence rates for children, information was obtained from adults about the number of children in the household in each age group, and the ages of children with asthma. The overall asthma prevalence rate for children was 10.4%, representing 86,000 children. Asthma prevalence among children increased with age to 14.4% for teens. This rate was similar to the rate for 18-24 year old adults of 14.6% (Figure 2). Respondents were twice as likely to report a child with asthma in the household if they had asthma themselves.

Figure 8



Asthma prevalence rates were slightly higher for black and Hispanic children than for non-Hispanic white children. These small differences may not be statistically significant. Similar racial/ethnic differences in adult prevalence were not statistically significant (Appendix, Table 1).

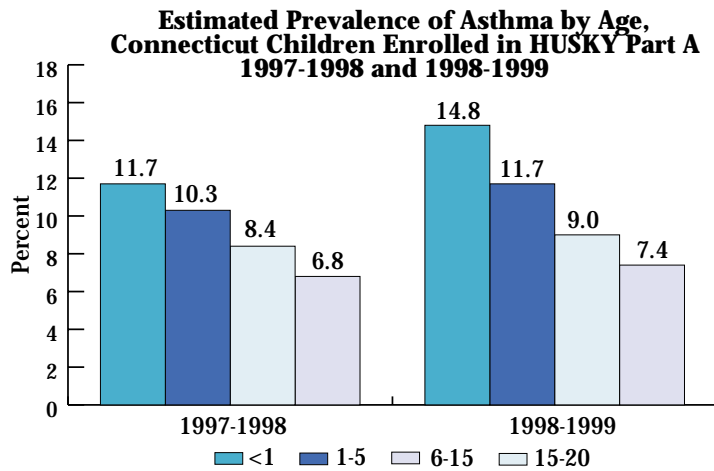
Prevalence Estimates Using Medicaid Managed Care Encounter Data

Since 1995, the Children's Health Council (CHC) has been monitoring the impact of Medicaid managed care on children's health services in the Early and Periodic Screening, Diagnosis, and Treatment program. The enrollment and encounter data available to the Council for performance monitoring was used for estimating the prevalence of asthma among children enrolled in HUSKY Part A (Medicaid managed care) and utilization rates for care associated with asthma. Prevalence estimates included in this document were based on the health care experiences of continuously enrolled children only. Children under age 21 who were continuously enrolled in HUSKY Part A between October 1, 1997 and September 30, 1998 were identified. HUSKY Part A encounter data for dates of service that fell within the study years were searched for outpatient, inpatient and emergency care records accompanied by a primary or secondary diagnosis of asthma (ICD-9-CM code 493.0-493.9). This was also done for children continuously enrolled between October 1, 1998 and September 30, 1999.

The prevalence estimates in this report were based on analyses of readily available, uniformly coded encounter data corresponding to care received by children with asthma. However, the methods used to generate these estimates certainly affected the results. First, the prevalence estimates in this report were based on the health care experiences of continuously enrolled children only, i.e., approximately 60% of children ever enrolled in any one-year period. Second, 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. In addition, significant changes in access to care and quality can affect prevalence estimates based on health services utilization. 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.

In addition to the following Figures, supplemental Tables 2-4 in the Appendix include prevalence estimates by age and race/ethnicity, age and residence and asthma-related care received.

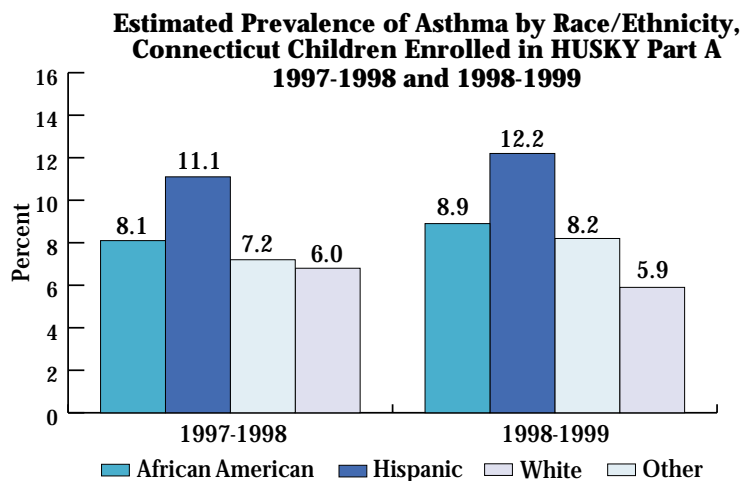
Figure 9



The estimated prevalence of asthma among children continuously enrolled in HUSKY Part A was 8.8% in 1997-1998 and 9.8% in 1998-1999.

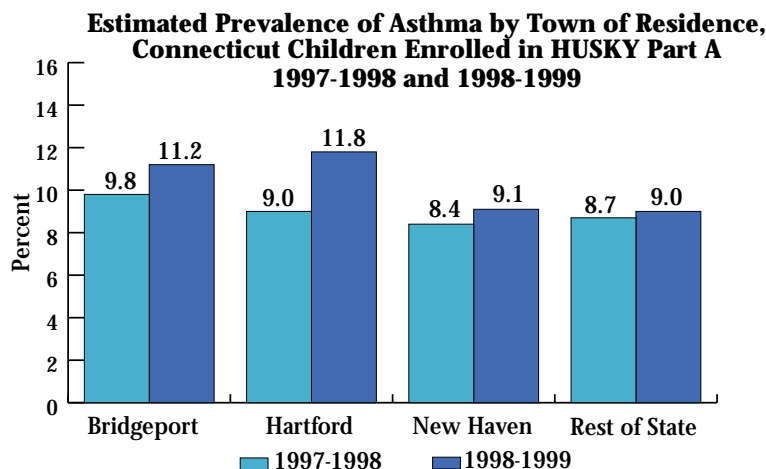
Asthma prevalence was highest among infants, <1 year of age and preschool children, 1-5 years of age. Asthma prevalence increased for every age group between 1997-1998 and 1998-1999.

Figure 10



Among children continuously enrolled in HUSKY Part A, asthma prevalence was highest among Hispanics. In 1997-1998, 11.1% of continuously enrolled Hispanic children had an asthma encounter. This increased to 12.2% in 1998-1999. Rates increased from 1997-1998 to 1998-1999 in the three specified race/ethnicity groups (Appendix, Table 2).

Figure 11



Asthma prevalence was determined for the major cities in Connecticut. There was an increase in the estimated prevalence of asthma for all areas between the two time periods. The estimated prevalence in Hartford and Bridgeport was higher than that of New Haven. The estimated prevalence in New Haven more closely resembled that for the rest of the state (Appendix Table 3).

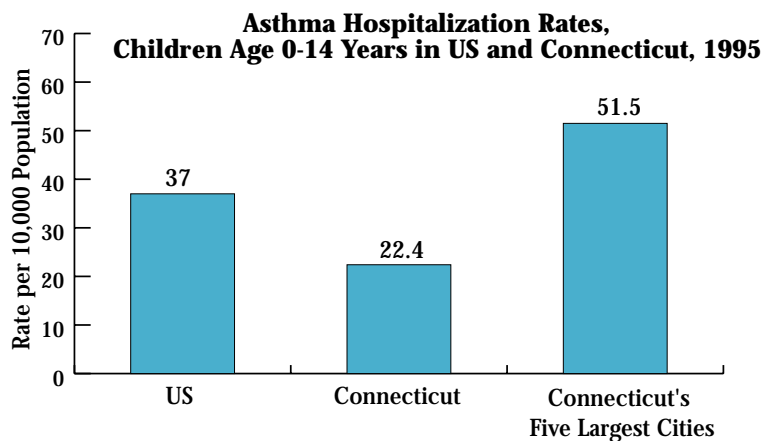
Hospital and Emergency Room Utilization for Asthma Among Connecticut Children

Chime, Inc., an affiliate of the Connecticut Hospital Association, collects inpatient, ambulatory surgery and emergency department non-admissions data from all Connecticut acute-care hospitals on a voluntary basis. Chime maintains a proprietary statewide healthcare information system consisting of clinical, financial and patient demographic data for the purpose of providing comparative information to its members and other organizations.

Hospital discharge data from 1992-1998 and emergency room data (non-admission) from 1995-1998 for children age 0-14 with a primary or secondary diagnosis of asthma (ICD-9-CM code 493.0-493.9) have been evaluated. Unless otherwise indicated, all information here is presented for admissions or visits with a primary diagnosis of asthma only. Data are presented for calendar years. Rates were calculated using the 1990 Census since intercensal estimates do not provide information on certain subgroups by town.

There are several limitations associated with the interpretation of these data. The data represent hospitalizations and emergency room visits and not individuals. Since some children may be hospitalized or visit the emergency room repeatedly in any given year, the rates overestimate the number of children utilizing these services. In these data sets, repeat visits could not be separated out. Connecticut children who receive care in out-of-state hospitals are not captured in these data. Data on race and ethnicity are missing or incomplete for 58% of all emergency room visits. Therefore, race/ethnicity-specific rates for emergency room visits were not calculated.

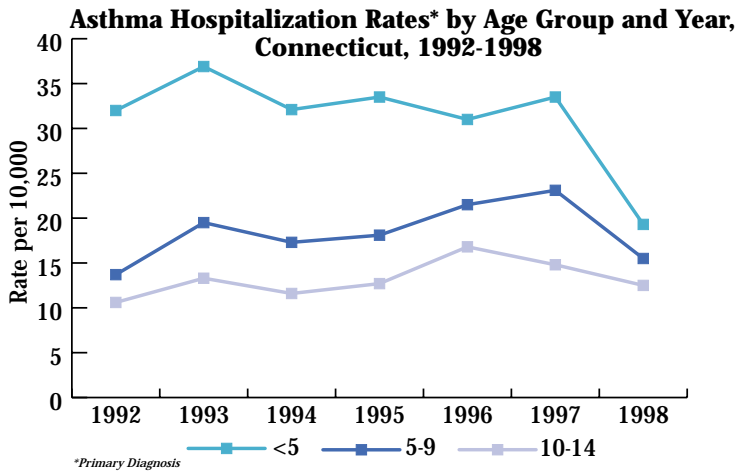
Figure 12



The asthma hospitalization rate for Connecticut children is lower than that for children in the United States (US). However, asthma hospitalization rates among children living in Connecticut's five largest cities (Hartford, New Haven, Bridgeport, Waterbury and Stamford) are much higher than the rate of the entire state and that in the US.

The most recent national data on children's hospitalization rates is 1995. Therefore, the 1995 CT children's hospitalization rate was used for comparison with the national rate.

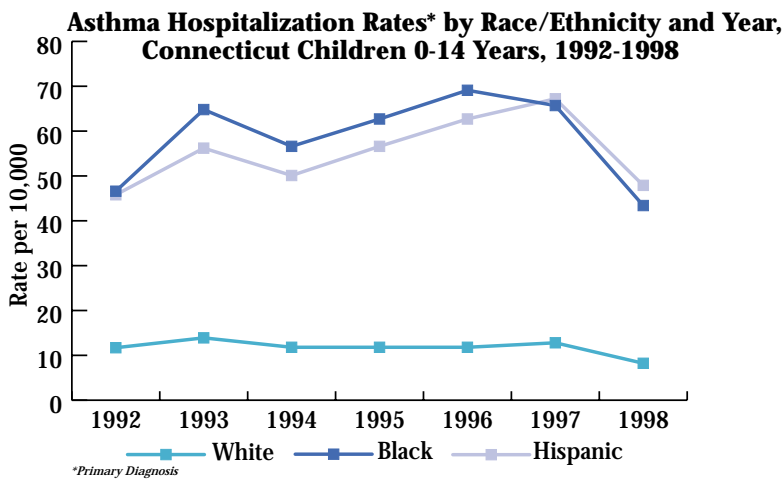
Figure 13



Each year in Connecticut there are approximately 1,400 hospitalizations for asthma among children age 0-14. Hospitalization rates are highest among very young children. In Connecticut, the average annual hospitalization rate for children 0-4 years of age from 1992-1998 was 31.2/10,000 (Appendix, Table 5).

Nationally, hospitalization rates were highest among children less than 5 years of age with a rate of 49.7/10,000 in 1993-94.

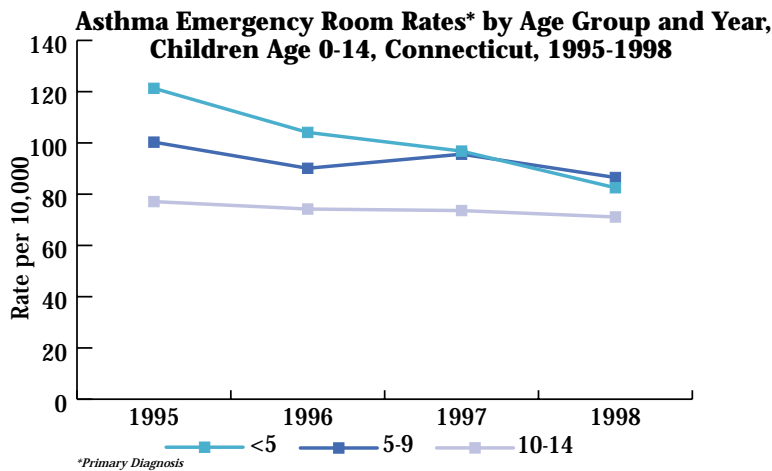
Figure 14



Hospitalization rates are much higher among black and Hispanic children than white children. In Connecticut, the average annual hospitalization rate for black children from 1992-1998 was 58/10,000, five times higher than the annual average for white children, 12/10,000 (Appendix, Table 6).

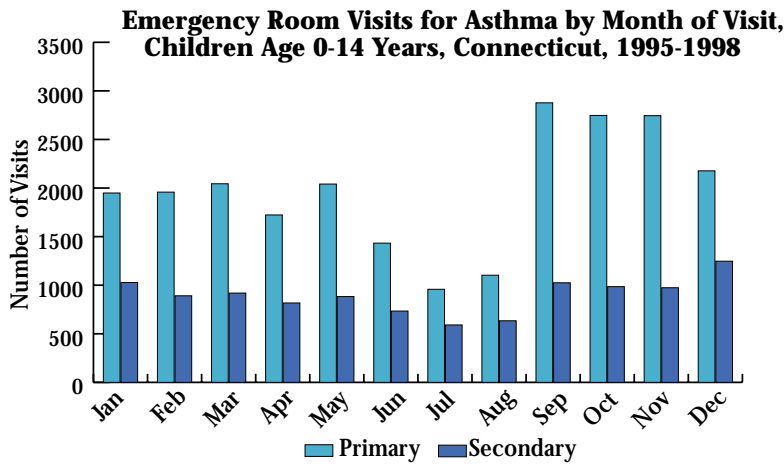
Nationally, hospitalization rates among blacks (adults and children) are approximately 3 times higher than whites.

Figure 15



Each year in Connecticut there are approximately 6,000 ER visits for asthma among children age 0-14. Emergency room rates were generally higher for younger children, with the rate decreasing for all age groups between 1995 and 1998. The steepest decline was seen in the less than 5 year age group (Appendix, Table 7).

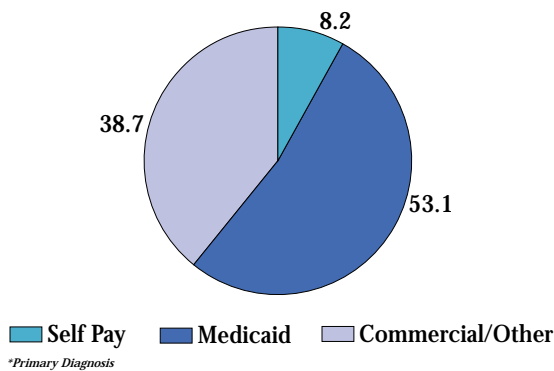
Figure 16



Emergency room visits with a primary diagnosis of asthma were markedly seasonal. Visits associated with a secondary diagnosis of asthma were not seasonal, but tended to remain fairly constant across the months. Primary visits peaked in the early fall and accounted for the least number of visits during the summer.

Figure 17

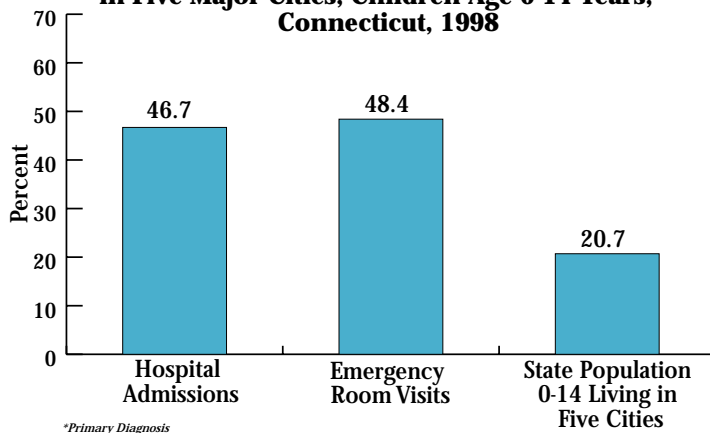
Asthma Emergency Room Visits* by Payer, Children Age 0-14 Years, Connecticut, 1995-1998



The major payer for emergency room visits for asthma is Medicaid, suggesting that children living in poverty are more likely to use the emergency room for care. It may also reflect more severe disease in this population or poorer disease management. In the larger cities, Medicaid paid for approximately 80% of emergency room visits.

Figure 18

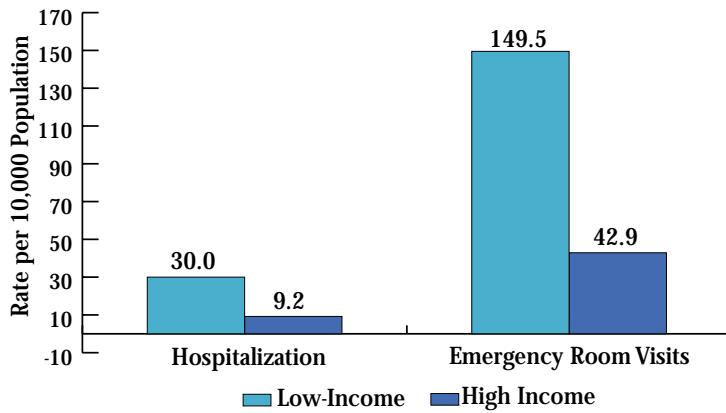
Asthma Hospitalizations and Emergency Room Visits* in Five Major Cities, Children Age 0-14 Years, Connecticut, 1998



In cities, more children use hospitals for asthma care. Approximately 20% of the State's children 0-14 years of age resided in the cities of Bridgeport, Hartford, New Haven, Stamford and Waterbury, whereas children in these cities accounted for 50% of all hospitalizations and emergency room visits for asthma.

Figure 19

**Asthma Hospitalization and Emergency Room Rates,
by High- and Low-Income Towns*, Children Age 0-14 Years,
Connecticut, 1998**



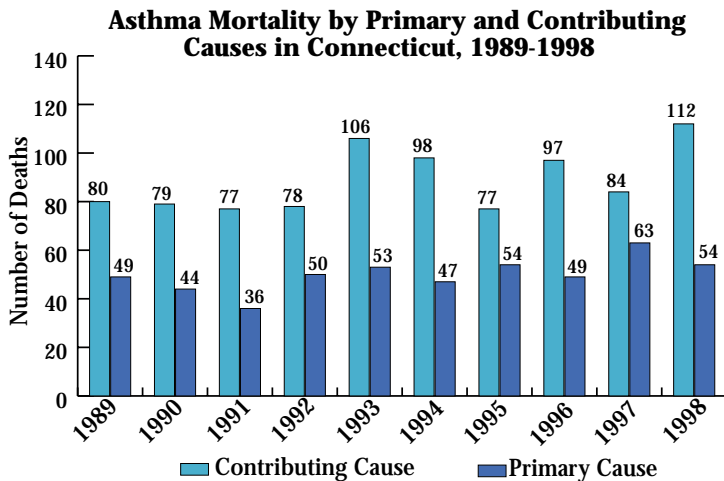
Hospitalization and emergency room use for asthma are strongly associated with socioeconomic factors. This is reflected by higher rates of hospitalization and emergency room use in lower-income towns compared to higher-income towns. In 1998, rates of emergency room visits and hospitalization rates for children from low-income towns were more than three times higher than those of children from high-income towns.

**Income status was based on 1996 per capita income (Department of Economic Development). Low-income towns were defined as the bottom 20% of the State's towns and high-income was defined as the top 20% of the State's towns. Table 8 in the Appendix provides hospitalization rates by town.*

Mortality Data

Connecticut's vital statistics database contains mortality records for events that occur both in Connecticut and among Connecticut residents. The data presented here are for Connecticut residents only. Causes of death in 1989 through 1998 were coded using the ninth revision of the International Classification of Disease (known as ICD-9), which became effective in 1979. The ICD-9 code for asthma is 493. Data are presented for both primary (underlying) cause of death and contributing cause for the period 1989-1998. Connecticut codes up to seven contributing causes of death. Population figures from the United States Census estimates of the population of states by age, sex, race and Hispanic origin 1990-1997 were used in determining sex and race/ethnicity specific rates. Estimates from 1993 and 1994 for both sexes and by race/ethnicity were combined and averaged. This provided the mid-point population average to calculate the average asthma mortality rates for 1989-1998. These rates were not adjusted by age. The estimated population by age for 1997 was used to calculate the age-specific mortality rates for Connecticut. Mortality rates are for primary cause and are presented per 100,000 population.

Figure 20



Asthma mortality has increased in recent years in the United States. Interpretation of long term trends of asthma mortality is difficult due to changes in cause of death coding. However, a consistent cause of death coding was in effect between 1979 and 1998. In the U.S., asthma mortality increased 55 % between the time periods 1979-1980 and 1994-1995. The latest available mortality data for Connecticut are for 1989 through 1998. These data indicate that the number of deaths with asthma listed as the primary cause has remained relatively stable during this time period. Asthma as a contributing cause of death has increased in Connecticut. Corresponding national data are not available.

Figure 21

Average Annual Crude Mortality Rate* from Asthma by Race/Ethnicity and Sex, Connecticut, 1989-1998

| Race | Sex | | Total |
|----------|------|--------|-------|
| | Male | Female | |
| Black | 2.7 | 2.8 | 2.7 |
| Hispanic | 1.7 | 2.4 | 2.1 |
| White | 0.8 | 1.8 | 1.4 |
| Total | 1.0 | 2.0 | 1.5 |

**Rate per 100,000 population*

Nationally, more blacks than whites die from asthma. National information on deaths from asthma for Hispanics is not available. In Connecticut from 1989 to 1998, blacks had the highest mortality rate followed by Hispanics. Nationally, mortality rates have been higher for females than males. This is also evident in the Connecticut data, although the mortality rate for black females was similar to black males.

Figure 22

Age Specific Cause of Death* from Asthma, Connecticut, 1996-1998 and United States, 1998

| Age | 1996-1998 | 1998 |
|-------|-----------|------|
| | CT | US |
| 1-4 | 0.2 | 0.2 |
| 5-14 | 0.1 | 0.3 |
| 15-24 | 0.5 | 0.6 |
| 25-34 | 0.4 | 0.7 |
| 35-44 | 1.2 | 1.1 |
| 45-54 | 1.9 | 1.9 |
| 55-64 | 2.7 | 3.0 |
| 65-74 | 3.2 | 5.3 |
| 75-84 | 7.3 | 10.0 |
| 85+ | 13.0 | 19.9 |

**Per 100,000 population*

Nationally, age-specific mortality rates from asthma appear to be more reliable for those less than 35 years of age. This probably reflects an overlap in diagnosis of asthma with chronic obstructive pulmonary disease, which is most likely to occur in older persons. Age-specific mortality rates are available for the United States for 1998. In 1998 in Connecticut there were only 54 deaths due to asthma, thus age-specific asthma mortality rates are unstable. Therefore, asthma deaths in Connecticut for 1996-1998 were combined to compare with the U.S. rate. Generally, rates increase with increasing age. The rates in Connecticut are similar to those found in the United States.

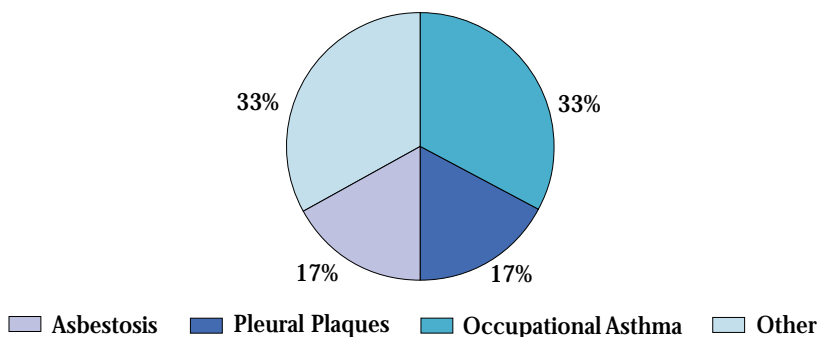
Occupational Disease Surveillance

With the passage of the 1990 Occupational Health Clinics Bill, DPH established an Occupational Disease Surveillance System (ODSS) in the fall of 1991. Surveillance data are gathered through information recorded on the confidential Physician's Report of Occupational Disease form. Title 3, Sec. 31-40a of the Connecticut General Statutes requires physicians to report any known or suspected cases of occupational disease. As with all occupational diseases and disorders, occupational asthma is believed to be underreported. The majority of the occupational asthma reports come from the occupational medicine clinics around the state. Approximately 2,000 reports are submitted each year.

Because of the importance of occupational asthma, each person reported with the disease is interviewed to learn more about workplace exposures that may have caused or exacerbated asthma in workers. There are over 250 substances in the workplace known to cause or exacerbate occupational asthma. These asthmagens include adhesives, buffing compounds, dust/dust mites, various chemicals and solvents, cutting oils and coolants, latex, isocyanates, lab animals, mold, paint vapors and welding fumes.

Figure 23

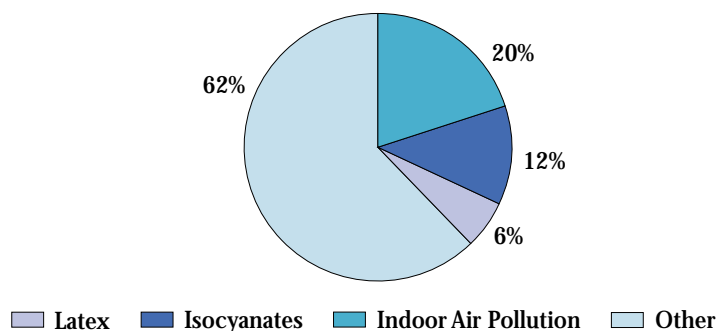
Occupational Asthma as a Percentage of Respiratory Disease and Disorders, 1990-1998



It is estimated that up to 15% of adult onset asthma is due to occupational exposure. Occupational asthma accounts for approximately a third of all the respiratory diseases and disorders reported. On average, 28 reports of occupational asthma are received each year.

Figure 24

Reported Causes of Occupational Asthma 1990-1998



In Connecticut, the most frequently identified reported cause of occupational asthma is indoor air pollution, which includes mold, dust and dust mites, bioaerosols, cigar/cigarette smoke, poor ventilation, renovation activities.

While 18% of Connecticut's workforce is employed in manufacturing, 43% of occupational asthma reports come from these industries. Service industries including automotive repair, health services and educational services account for 28% of occupational asthma reports while 31% of Connecticut's workforce is employed in these industries.

Discussion

Despite the complexities of asthma and the difficulties associated with collecting data that comprehensively describe the burden of this disease, existing data sources do provide useful information about asthma in Connecticut. The BRFSS provides information on the prevalence of asthma among Connecticut residents and subgroups (Appendix, Table 1). The BRFSS also provides insights into various characteristics that may be associated with having asthma. Medicaid managed care (HUSKY Part A) encounter data can be used to estimate the prevalence of asthma in children continuously enrolled in HUSKY Part A and to describe asthma-related health care utilization among this population (Appendix, Table 2-4). Hospitalization and emergency room data (ER) identify populations that may have more severe asthma or asthma that is poorly managed, or those that inappropriately use hospital-based care (Appendix, Tables 5-9). Each data source by itself is limited in scope, but combining the information from all sources provides a more complete picture of the burden of asthma in Connecticut.

The BRFSS estimate of the total number of persons with asthma in Connecticut in 1998-1999 was 266,000, or 8% of the population. This estimate included 180,000 adults (7.3% of all adults) and 86,000 children (10.4% of all children). The asthma prevalence was higher for adult women than for men; gender differences were not available for children. These results are similar to findings from other self-reported surveys for the United States and for the states of Oregon, New Hampshire, and Washington. Nationally, the prevalence among young children is higher in boys but by age 10 the prevalence differences between boys and girls diminish. Among adults, the prevalence is higher in females.

The asthma prevalence rate for children from the BRFSS (10.4%) was similar to the overall rate for children from the HUSKY Part A encounter data (9.8%) although different methodology and population groups were used. The HUSKY data represent only those children continuously enrolled in HUSKY Part A for the federal fiscal year. The HUSKY Part A data represent encounters, not self-reports as in the BRFSS. Estimates based on encounter records are dependent on the quality of the data. To the extent that encounter data are complete or do not accurately represent the health status of the child, this approach may lead to an inaccurate estimate of the prevalence. In addition, when pharmacy data were used to estimate asthma prevalence among this population, the prevalence was 11.2%, while asthma-related care plus any asthma medication-dispensing event increased the prevalence estimate to 14.8 %.

The hospitalization and ER visit data for all children were highest in the larger cities and/or lower income towns. One of the limitations of these data is that it includes only residents using in-state facilities. Therefore, children using ERs or hospitals out of state would not be captured in these data. This would most likely affect those living in border areas. Hospitalization and ER visit data indicate higher rates among younger children and Hispanic children. The Hispanic population grew by 50% from the last census period, 1990. Since the 1990 Census was used to calculate the hospitalization rates, the rates presented are probably an overestimate for the Hispanic population. For the most part, major cities lost population in the 2000 Census while suburban areas grew. This population change would also affect the rates for towns and cities. Since individuals may be counted multiple times, it is difficult to interpret yearly changes or differences between regions. It is known that those living close to hospitals are more likely to use these facilities for routine care. In the HUSKY Part A data, individuals with multiple emergency room visits could be identified. In 1997-1998, 17 % of those identified with asthma, who used the ER for asthma care, used the ER more than once. This increased to 23 % in 1998-1999. DPH is currently doing a survey regarding ER usage by Medicaid children. This will have important implications for interventions.

Statewide, hospitalization rates over the seven-year period from 1992-1998 have decreased by 16%. During this same period, hospitalization rates have increased in some of Connecticut's largest cities, including increases in New Haven (24%) and Hartford (3%). Rates of emergency room visits have also decreased by 19% over the four-year period from 1995-1998, statewide. Decreases were also seen in the major cities. Among HUSKY Part A children identified with asthma there was a slight increase in those hospitalized in the later time period, but a doubling in those hospitalized more than once.

The percent of HUSKY Part A children with asthma who used the emergency room also increased between 1997-1998 and 1998-1999. Statewide ER and hospitalization data for 1999 have not been analyzed. These data may show similar trends since more than 50% of all ER visits for those 0-14 years of age during 1995-1998 were for those on Medicaid. Among children living in cities, the percentage of ER visits for those on Medicaid during these years was even higher. The increase in ER visits by those in HUSKY Part A is difficult to interpret and may be indicative of other things including more severe disease, misuse of hospitals for routine care, suboptimal asthma management and access to care. In order to understand this increase, additional years of data will have to be reviewed along with the statewide data. Data from the DPH ER survey that is in progress may identify additional issues not listed here.

Asthma mortality rates were much higher for blacks and Hispanics as were urgent care visits for adults with asthma, as self-reported on the BRFSS (three times higher for non-whites, which were mostly blacks and Hispanics). Urgent care visits may include free-standing clinics as well as hospital-based emergency departments in the BRFSS. Asthma mortality rates were also higher for women, which is consistent with the higher prevalence among women in the BRFSS.

National data suggest that asthma prevalence rates are higher for low-income persons, minorities, and women. Connecticut data show that the effect of asthma is disproportionately felt also among these groups. Asthma is also a disease that affects younger persons, especially young children. In addition, people in their most productive years are feeling the effects of asthma on their physical and mental health. For all these reasons, the monitoring and control of asthma must be considered a priority for health providers and public health professionals.

Appendix: Supplemental Tables

Table 1

Adult Asthma Prevalence Connecticut BRFSS, 1998-99

| Respondents Who Reported Current Asthma | | | | | | | |
|---|-------|---------------|----------|---------------|-------|-------|----------|
| Sex | N | % | Std. err | Age | N | % | Std. err |
| Male | 2,629 | 5.4 | 0.47 | 18-24 | 513 | 14.6 | 1.77 |
| Female | 3,945 | 9.1 | 0.61 | 25-34 | 1,263 | 7.9 | 0.87 |
| Total | 6,574 | 7.3 | 0.43 | 35-44 | 1,571 | 5.0 | 0.48 |
| P value | | 0.0039 | | 45-54 | 1,213 | 8.7 | 0.78 |
| Race/Ethnicity | | | | 55-64 | 730 | 6.6 | 0.83 |
| White | 5,396 | 7.3 | 0.40 | 65+ | 1,201 | 4.6 | 0.81 |
| Black | 463 | 8.3 | 1.29 | P value | | 0.537 | |
| Hispanic | 499 | 7.5 | 1.39 | Income | | | |
| Other | 165 | 4.2 | 2.44 | <\$25K | 785 | 7.0 | 1.68 |
| P value | | 0.530 | | \$25-\$50K | 2,141 | 8.7 | 0.64 |
| Insurance | | | | \$50-\$75K | 899 | 7.9 | 0.91 |
| Insured | 6,115 | 7.1 | 0.44 | >\$75,000 | 1,173 | 7.0 | 0.74 |
| Uninsured | 459 | 10.4 | 1.48 | P value | | 0.512 | |
| P value | | 0.1115 | | | | | |

P value of <0.05 indicates statistical significance

Table 2

**Asthma Prevalence Among Children Continuously Enrolled in HUSKY Part A
by Age and Race/Ethnicity Connecticut, 1997-98 and 1998-99**

| Age | | <1 | | 1-5 | | 6-14 | | 15-20 | | Total | |
|----------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Year | | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 |
| Black | (N) | 109 | 156 | 1151 | 1327 | 1379 | 1325 | 327 | 401 | 2966 | 3509 |
| | (%) | 11.2% | 14.8% | 10% | 11.2% | 7.4% | 8.0% | 6.0% | 6.5% | 8.1% | 8.9% |
| Hispanic | (N) | 145 | 236 | 1635 | 1910 | 2148 | 2556 | 495 | 604 | 4423 | 5306 |
| | (%) | 14.6% | 19.7% | 13.6% | 14.9% | 10.5% | 11.3% | 7.9% | 8.7% | 11.1% | 12.2% |
| White | (N) | 102 | 171 | 893 | 1161 | 1328 | 1642 | 338 | 428 | 2661 | 3402 |
| | (%) | 9.6% | 11.3% | 7.4% | 9.1% | 7.1% | 7.8% | 6.6% | 7.0% | 7.2% | 8.2% |
| Other | (N) | 2 | 5 | 40 | 45 | 38 | 40 | 4 | 10 | 84 | 100 |
| | (%) | 4.4% | 6.5% | 8.5% | 7.9% | 5.9% | 5.3% | 1.7% | 3.3% | 6.0% | 5.9% |

Table 3

**Asthma Prevalence Among Children Continuously Enrolled in HUSKY Part A
by Age and Residence Connecticut, 1997-98 and 1998-99**

| Age | <1 | | 1-5 | | 6-14 | | 15-20 | | Total | |
|-------------|--------------|--------------|---------------|---------------|--------------|---------------|--------------|--------------|---------------|---------------|
| Year | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 | 97-98 | 98-99 |
| Bridgeport | 48 11.3% | 73 16.8% | 522 11.9% | 621 13.6% | 642 9.2% | 803 10.4% | 143 7.0% | 187 8.1% | 1355 9.8% | 1684 11.2% |
| Danbury | 13 18.6% | 12 20.3% | 111 16.7% | 124 17.1% | 121 12.7% | 116 11.7% | 20 7.6% | 14 4.7% | 265 13.6% | 266 12.8% |
| Hartford | 61 14.1% | 110 19.9% | 635 11.2% | 934 16.0% | 813 8.4% | 1062 10.3% | 202 6.2% | 285 8.0% | 1711 9.0% | 2391 11.8% |
| New Britain | 15 10.3% | 39 18.9% | 173 9.9% | 227 12.2% | 292 9.8% | 298 8.8% | 57 6.6% | 62 6.2% | 537 8.2% | 626 9.7% |
| New Haven | 44 11.3% | 48 12.0% | 426 10.0% | 441 10.3% | 526 7.6% | 649 8.6% | 154 7.2% | 193 8.1% | 1150 8.4% | 1331 9.1% |
| New London | 8 19.1% | 12 14.5% | 67 10.9% | 77 12.4% | 87 9.3% | 87 8.2% | 25 9.6% | 24 8.5% | 187 10.1% | 200 9.8% |
| Stamford | 1 2.0% | 7 8.1% | 94 10.1% | 74 7.9% | 101 6.9% | 103 6.6% | 20 4.6% | 21 4.4% | 216 7.5% | 205 6.7% |
| Other | 148 9.5% | 242 13.3% | 1447 7.9% | 1666 8.8% | 2034 6.8% | 2407 7.4% | 487 5.2% | 592 5.7% | 4116 6.9% | 4907 7.7% |
| Total | 358 11.7% | 568 14.8% | 3719 10.3% | 4443 11.7% | 4893 8.4% | 5863 9.0% | 1164 6.8% | 1443 7.4% | 10134 8.8% | 12317 9.8% |

Table 4

**Asthma-related Care Received Among Children Continuously Enrolled in HUSKY Part A
Connecticut, 1997-98 and 1998-99**

| | 1997-1998 | 1998-1999 |
|--|-------------|-------------|
| Ambulatory Care | | |
| Average number of visits w/asthma diagnosis (range): | 4.5 (1-308) | 4.7 (1-302) |
| Children with more than one visit w/asthma diagnosis: | 67.8% | 70.7% |
| Hospital-Based Care | | |
| Children with any emergency visits w/asthma diagnosis | 17.7% | 25.3% |
| Among children with any emergency visits for asthma | | |
| Children with more than one visit | 17.1% | 22.6% |
| Children with three or more visits | 4.7% | 6.7% |
| Children ever hospitalized | 3.9% | 4.9% |
| Among children ever hospitalized for asthma | | |
| Children hospitalized more than once | 10.4% | 21.9% |

Table 5

**Asthma Hospitalization Rates* for Children 0-14
Connecticut, 1992-1998**

| Year | Age 0-4 | Age 5-9 | Age 10-14 |
|------|---------|---------|-----------|
| 1992 | 32.0 | 13.7 | 10.6 |
| 1993 | 36.9 | 19.5 | 13.3 |
| 1994 | 32.1 | 17.3 | 11.6 |
| 1995 | 33.5 | 18.1 | 12.7 |
| 1996 | 31.0 | 21.5 | 16.8 |
| 1997 | 33.5 | 23.1 | 14.8 |
| 1998 | 19.3 | 15.5 | 13.5 |

*Rate per 10,000

Table 6

**Asthma Hospitalization Rates* for Children 0-14 by Race/Ethnicity
Connecticut, 1992-1998**

| Year | Black | Hispanic | White |
|------|-------|----------|-------|
| 1992 | 46.6 | 45.8 | 11.7 |
| 1993 | 64.8 | 56.2 | 13.9 |
| 1994 | 56.6 | 50.1 | 11.8 |
| 1995 | 62.7 | 56.6 | 11.8 |
| 1996 | 69.1 | 62.7 | 11.8 |
| 1997 | 65.7 | 67.2 | 12.8 |
| 1998 | 43.4 | 47.9 | 8.23 |

*Rate per 10,000

Table 7

**Asthma Emergency Room Visit Rates* for Children 0-14 by Age
Connecticut, 1995-1998**

| Year | Age 0-4 | Age 5-9 | Age 10-14 |
|------|---------|---------|-----------|
| 1995 | 121.3 | 100.3 | 77.1 |
| 1996 | 104.1 | 90.1 | 74.2 |
| 1997 | 96.8 | 95.6 | 73.6 |
| 1998 | 82.5 | 86.5 | 71.1 |

*Rate per 10,000

Table 8

Asthma Hospitalizations by Town*
Number of Hospitalizations and Average Annual Rate**
Children 0-14 Years, Connecticut, 1992-93 and 1997-98

| Town | Number 1992-1993 | Annual Average Rate 1992-1993 | Number 1997-1998 | Annual Average Rate 1997-1998 |
|---------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Ansonia | 15 | 20.1 | 10 | 13.4 |
| Bethel | 28 | 35.6 | 12 | 15.3 |
| Bloomfield | 15 | 24.4 | 16 | 26.0 |
| Bridgeport | 209 | 33.1 | 196 | 31.0 |
| Bristol | 34 | 15.0 | 21 | 9.2 |
| Brookfield | 12 | 20.6 | 8 | 13.7 |
| Cheshire | 8 | 7.9 | 16 | 15.8 |
| Colchester | 15 | 22.6 | 11 | 16.6 |
| Danbury | 134 | 55.4 | 57 | 23.5 |
| Darien | 15 | 20.1 | 11 | 14.7 |
| Derby | 6 | 15.8 | 11 | 29.0 |
| East Hartford | 36 | 21.8 | 43 | 26.0 |
| East Haven | 12 | 13.3 | 22 | 24.5 |
| Enfield | 8 | 4.5 | 11 | 6.2 |
| Fairfield | 29 | 16.4 | 16 | 9.1 |
| Glastonbury | 11 | 10.6 | 6 | 5.8 |
| Greenwich | 23 | 12.0 | 24 | 12.5 |
| Griswold | 11 | 17.2 | 10 | 15.6 |
| Groton | 20 | 10.1 | 17 | 8.6 |
| Hamden | 37 | 21.7 | 64 | 37.5 |
| Hartford | 369 | 56.7 | 372 | 57.1 |
| Killingly | 12 | 17.2 | 11 | 15.8 |
| Manchester | 50 | 24.4 | 38 | 18.6 |
| Meriden | 52 | 21.0 | 57 | 23.1 |
| Middletown | 23 | 16.8 | 18 | 13.1 |
| Milford | 40 | 22.0 | 24 | 13.2 |
| Montville | 9 | 13.4 | 11 | 16.4 |
| Naugatuck | 17 | 12.4 | 13 | 9.5 |
| New Britain | 75 | 27.3 | 47 | 17.1 |
| New Canaan | 13 | 18.8 | 9 | 13.0 |
| New Fairfield | 10 | 17.3 | 10 | 17.3 |
| New Haven | 340 | 64.3 | 442 | 83.6 |
| New London | 34 | 34.3 | 30 | 30.3 |
| New Milford | 15 | 14.1 | 19 | 17.8 |
| Newtown | 15 | 17.0 | 10 | 11.3 |
| North Haven | 14 | 18.8 | 14 | 18.8 |
| Norwalk | 73 | 27.3 | 50 | 18.7 |
| Norwich | 52 | 30.5 | 43 | 25.3 |
| Plainfield | 16 | 23.2 | 20 | 29.0 |
| Ridgefield | 7 | 8.3 | 14 | 16.6 |

* Towns with less than 10 hospitalizations omitted from table. **Rate per 10,000

Asthma Hospitalizations by Town*
Number of Hospitalizations and Average Annual Rate**
Children 0-14 Years, Connecticut, 1992-93 and 1997-98

| Town | Number 1992-1993 | Annual Average Rate 1992-1993 | Number 1997-1998 | Annual Average Rate 1997-1998 |
|--------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Shelton | 10 | 7.2 | 9 | 6.5 |
| South Windsor | 10 | 10.8 | 7 | 7.5 |
| Southington | 8 | 5.3 | 10 | 6.6 |
| Stamford | 148 | 40.0 | 101 | 27.3 |
| Stratford | 19 | 11.5 | 27 | 16.3 |
| Torrington | 31 | 25.5 | 13 | 10.7 |
| Trumbull | 16 | 13.6 | 11 | 9.3 |
| Vernon | 18 | 15.8 | 13 | 11.4 |
| Wallingford | 19 | 12.0 | 21 | 13.2 |
| Waterbury | 153 | 35.1 | 126 | 28.9 |
| Waterford | 9 | 15.8 | 10 | 17.5 |
| West Hartford | 19 | 9.8 | 20 | 10.3 |
| West Haven | 64 | 32.5 | 103 | 52.3 |
| Wilton | 13 | 19.9 | 6 | 9.2 |
| Winchester | 28 | 61.3 | 2 | 4.4 |
| Windham | 7 | 8.0 | 33 | 37.6 |
| Windsor | 25 | 23.3 | 11 | 10.3 |
| Connecticut | 2,780 | 22.0 | 2,608 | 20.6 |

* Towns with less than 10 hospitalizations omitted from table. **Rate per 10,000

Table 9

Asthma Emergency Room Visits by Town*
Number of Emergency Room Visits and Average Annual Rate**
Children 0-14 Years, Connecticut, 1995-96 and 1997-98

| Town | Number 1995-1996 | Annual Average Rate 1995-1996 | Number 1997-1998 | Annual Average Rate 1997-1998 |
|---------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Ansonia | 13 | 17.4 | 13 | 17.4 |
| Bethel | 13 | 16.5 | 25 | 31.8 |
| Bloomfield | 54 | 87.8 | 54 | 87.8 |
| Branford | 33 | 36.7 | 24 | 26.7 |
| Bridgeport | 1,277 | 202.3 | 1,260 | 199.6 |
| Bristol | 153 | 67.3 | 170 | 74.8 |
| Brookfield | 29 | 49.7 | 18 | 30.9 |
| Canton | 8 | 24.6 | 10 | 30.8 |
| Chaplin | 2 | 21.7 | 1 | 10.9 |
| Cheshire | 32 | 31.6 | 25 | 24.7 |
| Clinton | 32 | 56.9 | 36 | 64.0 |
| Colchester | 53 | 79.8 | 36 | 54.2 |
| Columbia | 14 | 71.1 | 19 | 96.5 |
| Coventry | 21 | 47.9 | 24 | 54.7 |
| Cromwell | 8 | 18.9 | 14 | 33.1 |
| Danbury | 303 | 125.2 | 197 | 81.4 |
| Darien | 12 | 16.1 | 23 | 30.8 |
| Deep River | 18 | 49.0 | 7 | 19.1 |
| Derby | 12 | 31.6 | 19 | 50.0 |
| Durham | 7 | 28.1 | 13 | 52.2 |
| East Haddam | 5 | 16.7 | 10 | 33.4 |
| East Hampton | 22 | 49.1 | 38 | 84.7 |
| East Hartford | 209 | 126.6 | 201 | 121.7 |
| East Haven | 58 | 64.5 | 50 | 55.6 |
| East Lyme | 17 | 30.8 | 29 | 52.6 |
| East Windsor | 19 | 52.1 | 18 | 49.4 |
| Ellington | 21 | 46.4 | 27 | 59.7 |
| Enfield | 39 | 22.2 | 50 | 28.4 |
| Fairfield | 70 | 39.6 | 69 | 39.1 |
| Farmington | 17 | 22.9 | 19 | 25.6 |
| Glastonbury | 31 | 29.9 | 25 | 24.1 |
| Granby | 2 | 4.9 | 16 | 39.1 |
| Greenwich | 103 | 53.6 | 128 | 66.7 |
| Griswold | 35 | 54.8 | 22 | 34.4 |
| Groton | 128 | 64.6 | 159 | 80.3 |
| Guilford | 22 | 26.6 | 17 | 20.6 |
| Hamden | 141 | 82.5 | 148 | 86.6 |
| Hartford | 2,287 | 351.3 | 1,667 | 256.0 |
| Harwinton | 5 | 23.4 | 14 | 65.5 |
| Hebron | 25 | 67.8 | 26 | 70.5 |

* Towns with less than 10 ER visits omitted from table. **Rate per 10,000

Table 9 *continued*

Asthma Emergency Room Visits by Town*
Number of Emergency Room Visits and Average Annual Rate**
Children 0-14 Years, Connecticut, 1995-96 and 1997-98

| Town | Number 1995-1996 | Annual Average Rate 1995-1996 | Number 1997-1998 | Annual Average Rate 1997-1998 |
|----------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Killingly | 54 | 77.3 | 49 | 70.2 |
| Lebanon | 13 | 46.9 | 15 | 54.2 |
| Ledyard | 31 | 43.7 | 30 | 42.3 |
| Litchfield | 12 | 37.5 | 12 | 37.5 |
| Madison | 22 | 35.7 | 13 | 21.1 |
| Manchester | 184 | 89.9 | 215 | 105.0 |
| Mansfield | 24 | 58.8 | 27 | 66.1 |
| Marlborough | 21 | 79.6 | 15 | 56.9 |
| Meriden | 387 | 156.6 | 356 | 144.1 |
| Middlefield | 10 | 66.1 | 5 | 33.0 |
| Middletown | 109 | 79.4 | 133 | 96.9 |
| Milford | 112 | 61.7 | 123 | 67.8 |
| Monroe | 17 | 22.1 | 8 | 10.4 |
| Montville | 48 | 71.6 | 38 | 56.7 |
| Naugatuck | 107 | 77.9 | 85 | 61.9 |
| New Britain | 415 | 150.8 | 403 | 146.5 |
| New Canaan | 14 | 20.3 | 15 | 21.7 |
| New Fairfield | 9 | 15.5 | 10 | 17.3 |
| New Hartford | 10 | 41.3 | 6 | 24.8 |
| New Haven | 1,125 | 212.8 | 1,044 | 197.4 |
| New London | 226 | 228.2 | 209 | 211.1 |
| New Milford | 74 | 69.3 | 73 | 68.4 |
| Newington | 19 | 20.7 | 36 | 39.3 |
| Newtown | 17 | 19.2 | 26 | 29.4 |
| North Branford | 23 | 42.6 | 16 | 29.7 |
| North Haven | 23 | 30.9 | 26 | 35.0 |
| Norwalk | 269 | 100.8 | 216 | 80.9 |
| Norwich | 195 | 114.5 | 193 | 113.3 |
| Old Lyme | 18 | 74.9 | 8 | 33.3 |
| Old Saybrook | 27 | 84.6 | 17 | 53.3 |
| Orange | 13 | 28.0 | 15 | 32.3 |
| Plainfield | 48 | 69.7 | 37 | 53.7 |
| Plainville | 18 | 30.0 | 13 | 21.7 |
| Plymouth | 21 | 42.9 | 15 | 30.7 |
| Portland | 14 | 47.1 | 13 | 43.7 |
| Putnam | 20 | 51.3 | 25 | 64.1 |
| Ridgefield | 17 | 20.1 | 16 | 18.9 |
| Rocky Hill | 18 | 36.4 | 18 | 36.4 |
| Seymour | 11 | 11.6 | 10 | 10.5 |
| Sharon | 10 | 105.9 | 15 | 158.9 |

* Towns with less than 10 ER visits omitted from table. **Rate per 10,000

Asthma Emergency Room Visits by Town*
Number of Emergency Room Visits and Average Annual Rate**
Children 0-14 Years, Connecticut, 1995-96 and 1997-98

| Town | Number 1995-1996 | Annual Average Rate 1995-1996 | Number 1997-1998 | Annual Average Rate 1997-1998 |
|--------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Shelton | 24 | 17.3 | 31 | 22.4 |
| Simsbury | 15 | 16.6 | 17 | 18.8 |
| South Windsor | 40 | 43.0 | 49 | 52.7 |
| Southbury | 15 | 29.8 | 11 | 21.8 |
| Southington | 73 | 48.3 | 45 | 29.8 |
| Sprague | 11 | 87.9 | 6 | 47.9 |
| Stafford | 19 | 36.3 | 27 | 51.6 |
| Stamford | 520 | 140.4 | 423 | 114.2 |
| Stonington | 8 | 14.0 | 20 | 35.0 |
| Stratford | 170 | 102.5 | 134 | 80.8 |
| Thomaston | 24 | 85.0 | 15 | 53.1 |
| Thompson | 11 | 29.4 | 10 | 26.7 |
| Tolland | 18 | 35.3 | 21 | 41.2 |
| Torrington | 110 | 90.4 | 102 | 83.8 |
| Trumbull | 40 | 34.0 | 40 | 34.0 |
| Vernon | 78 | 68.5 | 93 | 81.7 |
| Wallingford | 69 | 43.5 | 69 | 43.5 |
| Washington | 11 | 70.2 | 10 | 63.9 |
| Waterbury | 1,073 | 245.9 | 909 | 208.3 |
| Waterford | 40 | 70.1 | 40 | 70.1 |
| Watertown | 61 | 75.6 | 49 | 60.7 |
| West Hartford | 100 | 51.5 | 111 | 57.2 |
| West Haven | 192 | 97.5 | 228 | 115.8 |
| Westport | 17 | 21.5 | 18 | 22.8 |
| Wethersfield | 28 | 36.8 | 39 | 51.2 |
| Wilton | 15 | 23.0 | 13 | 19.9 |
| Winchester | 28 | 61.3 | 32 | 70.1 |
| Windham | 143 | 162.9 | 128 | 145.8 |
| Windsor | 62 | 57.8 | 59 | 55.0 |
| Windsor Locks | 15 | 36.7 | 9 | 22.0 |
| Wolcott | 31 | 59.4 | 21 | 40.2 |
| Woodbridge | 9 | 17.4 | 13 | 25.2 |
| Woodbury | 13 | 44.7 | 5 | 17.2 |
| Woodstock | 10 | 39.5 | 11 | 43.4 |
| Connecticut | 12,451 | 98.6 | 11,304 | 89.5 |

* Towns with less than 10 ER visits omitted from table. **Rate per 10,000

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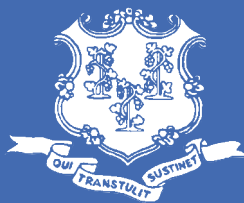
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