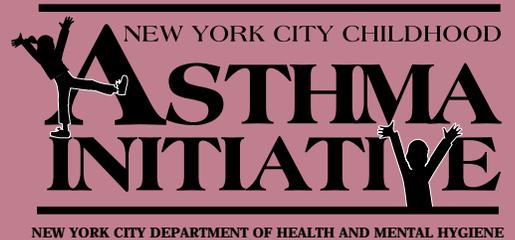


ASTHMA  
**FACTS**  
SECOND EDITION



May 2003





## ACKNOWLEDGMENTS

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*Asthma Facts, Second Edition* was prepared by Renu Garg, Adam Karpati, Jessica Leighton, Mary Perrin and Mona Shah of the New York City Department of Health and Mental Hygiene.

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This publication is also available at [www.nyc.gov/health](http://www.nyc.gov/health). For additional copies of *Asthma Facts, Second Edition*, or for more information about the New York City Childhood Asthma Initiative, please call 3-1-1.

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The New York City Department of Health and Mental Hygiene's Childhood Asthma Initiative (NYCCAI) is a public health effort to reduce asthma morbidity among children 0 -18 years of age. Expected outcomes of the NYCCAI include reductions in hospitalizations, emergency department visits and school absences due to asthma, and, relatedly, improvements in management of childhood asthma among families. The NYCCAI is building on existing research, educational and clinical efforts, resulting in a coordinated and comprehensive effort to understand, treat and prevent asthma in New York City.

The NYCCAI is currently working to:

- Improve family management of asthma
- Promote state-of-the-art medical diagnosis and treatment
- Reduce exposure to asthma triggers in both homes and communities
- Increase coordination among families, schools, day cares, medical providers, pharmacists, community-based organizations, housing agencies, managed care organizations, and others
- Monitor and track the number of children with asthma.

The NYCCAI encompasses both citywide and community-based interventions. Citywide activities include:

- A citywide asthma partnership
- A media campaign emphasizing that asthma can be well managed
- A medical provider education program aimed at improving asthma diagnosis and management practices among medical providers
- Development of culturally sensitive and multilingual asthma education materials for families
- Support for Open Airways, a school-based curriculum for children with asthma
- Training programs for school, after-school, and daycare personnel to better serve children with asthma in their programs
- Collaborations with a variety of city agencies – including the New York City Housing Authority, the New York City Administration for Children Services, the New York City Department of Homeless Services, the

New York City Human Resources Administration, the New York City Department of Education, the New York City Health and Hospitals Corporation and others– to better coordinate the care provided to children with asthma.

Community-based programs targeting high-risk neighborhoods have emphasized the development of local asthma partnerships to coordinate community activities. These include: medical provider training, health education for children with asthma and their caregivers; case management services that include educating families about asthma and its management, conducting home visits to identify asthma allergens and facilitate remediation, and linking families to primary care; and other asthma management activities involving housing organizations, day cares, schools and others.

Finally, the NYCCAI is conducting asthma surveillance and evaluation activities. These include collecting and analyzing hospital discharge and mortality data, developing innovative strategies for monitoring emergency department visits and determining asthma prevalence, and evaluating the effectiveness of NYCCAI efforts.

Morbidity and mortality from asthma had been rising throughout the United States, with New York City having experienced a disproportionate increase in the early 1990s. However, asthma hospitalization rates have been gradually declining in the United States since the peak in the mid-1980s, and in New York City since the peak in the mid-1990s. Further, the New York City asthma hospitalization rate (3.36 per 1,000) in 2000 was the lowest rate since 1990, though costs remained high, totaling more than \$242 million.

The underlying reasons for both the upward and downward trends are not entirely understood. Experts have theorized that the increase in asthma morbidity rates may have been due to: greater exposure to indoor allergens, outdoor environmental irritants, and/or environmental tobacco smoke; underlying changes in the immune systems of children; and/or greater barriers to obtaining health care services. The decline in hospitalizations in New York City may indicate success from extensive efforts by medical providers and community organizations, as well as the New York City Department of Health and Mental Hygiene (DOHMH), to promote better management of asthma in New York City.

This report provides information on asthma deaths and hospitalizations in New York City residents as well as prevalence among adults and 4-5 year old children. An examination of the data, presented in the following tables and figures, reveals:

### Hospitalizations

- In 2000, children in New York City were **almost twice as likely** to be hospitalized for asthma as children in the United States as a whole.
- Between 1997 and 2000, the asthma hospitalization rate for children aged 0-14 in New York City decreased by **36%** from 9.43 per 1,000 children to 6.06 per 1,000 children.

- Between 1997 and 2000, major decreases in asthma hospitalization rates occurred in several New York City low-income neighborhoods, especially those having the highest rates. The largest decline (56%) occurred in the Hunts Point-Mott Haven community of the Bronx. East Harlem in Manhattan, while continuing to have the highest rate of childhood asthma in NYC, had a decrease of 41%.
- In 2000, children 0-4 years of age from low-income areas were **more than four times as likely** to be hospitalized for asthma than children from high-income areas.

### Deaths

- Overall, in 2000 there was a total of 204 deaths due to asthma in New York City – the majority (69%) in persons 45 years and older.
- Few children died from asthma: **2** deaths in children 0-4 years of age, and **7** deaths in children 5-14 years old.

### Prevalence

- School-based asthma prevalence among children 4-5 years old in 1999 was **more than twice as high** among children residing in low-income areas than among children residing in high-income areas.
- One in eight adults in New York City report that they had been diagnosed with asthma at some time in their life.
- Hispanic adults had the highest (6.4%) prevalence of current asthma.
- In recent years, **the Bronx** has been the New York City borough with the highest overall rates of asthma hospitalizations, deaths and prevalence among children as well as adults.

Morbidity and mortality from asthma had been rising throughout the United States, with New York City having experienced a disproportionate increase in the early 1990s. However, asthma hospitalization rates have been gradually declining in the United States since the peak in the mid-1980s, and in New York City since the peak in the mid-1990s. Further, the New York City asthma hospitalization rate (3.36 per 1,000) in 2000 was the lowest rate since 1990, though costs remained high, totaling more than \$242 million.

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The data presented in this report are intended to update the 1999 edition of *Asthma Facts* which included data through 1997. Some of the figures in this document, therefore, compare 2000 with 1997. Morbidity and mortality rates presented in the original *Asthma Facts* may be slightly different than rates currently presented due to a change in population denominator data (see Appendix for further explanation). The past and current versions of *Asthma Facts* use hospital discharge and mortality data to describe the problem of asthma in New York City. New to this report are two measures of prevalence: school-based prevalence data illustrating the burden of asthma among New York City school

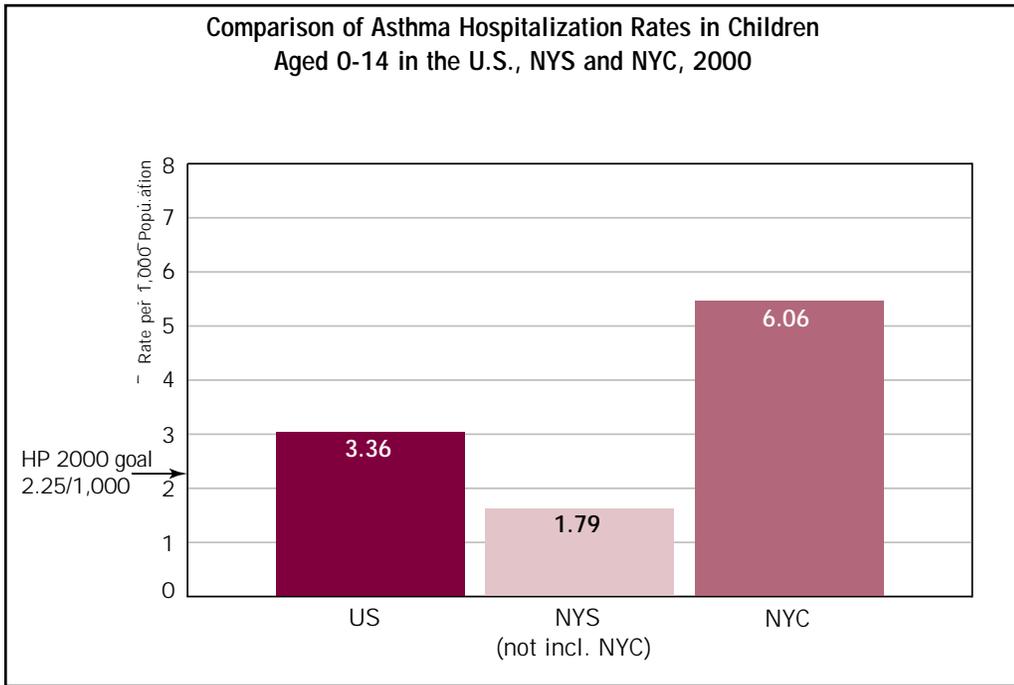
children ages 4-5 years old and data describing asthma prevalence in individuals 18 years and older. The current report describes who is hospitalized for asthma; how asthma hospitalization and mortality rates have changed over time; the average length of hospital stay; hospitalization costs; who dies from asthma; the proportion of school children and adults who have asthma; and how New York City compares to the rest of the country in terms of asthma morbidity, mortality and adult asthma prevalence. This report also identifies boroughs and specific neighborhoods with high rates of asthma hospitalizations and high proportions of school children and adults with asthma.

Mortality data are collected by the DOHMH Office of Vital Statistics. Hospital discharge data are compiled by the New York State Department of Health for the Statewide Planning and Research Cooperative System (SPARCS). School-based prevalence data are obtained by the DOHMH School Health Program through new school entrants' examination forms. The adult prevalence data were obtained from the New York City Community Health Survey, a health and risk factor survey conducted by the DOHMH. A fuller description of the data and its limitations is contained in the *About the Data* section (see Appendix).

Mortality, hospitalization, school-based prevalence data and prevalence data on adults are useful in characterizing the population severely affected by asthma. In the near future, emergency department visit data will also be available to provide an even fuller picture of the asthma burden in New York City. These data will be available through the recent mandate by the New York State legislature that hospitals report emergency department visits to the New York State Department of Health.

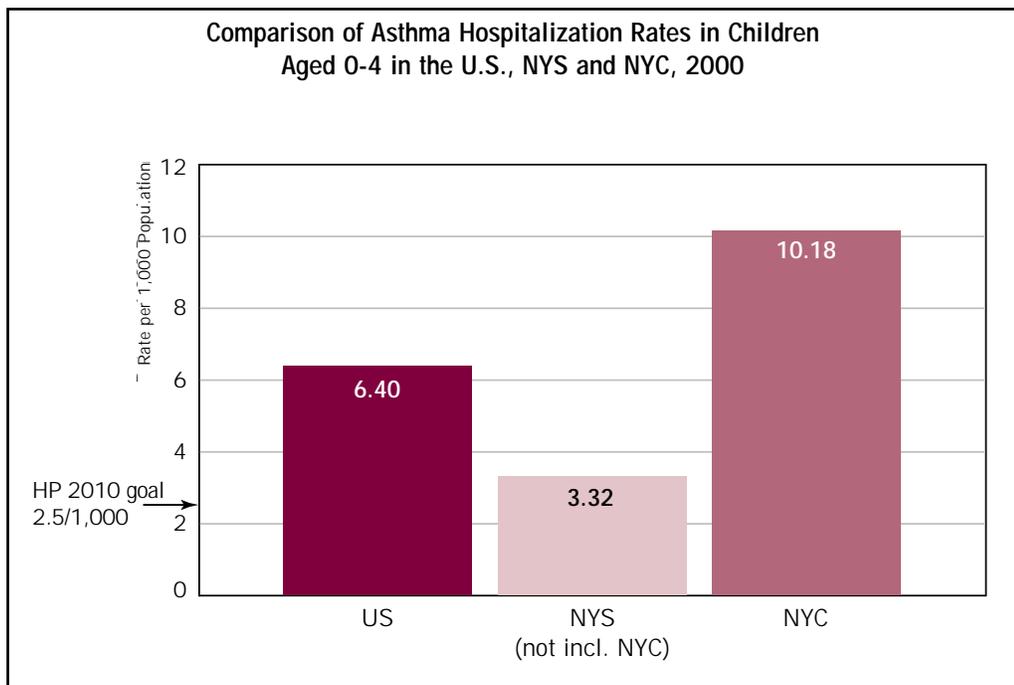


FIGURE 1



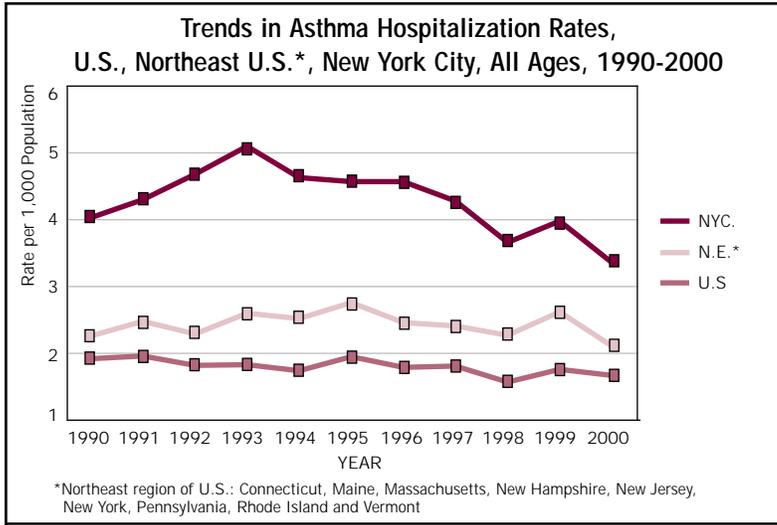
New York City (NYC) children continued to have notably higher asthma hospitalization rates than children in the United States (U.S.) and the rest of New York State (NYS). The 2000 NYC asthma hospitalization rate among children aged 0-14 years was 1.8 times higher than the rate in the U.S. and 3.4 times the rate in the rest of NYS. A goal of the U.S. Department of Health and Human Services for the year 2000 (Healthy People 2000) was to decrease asthma morbidity to no more than 2.25 asthma hospitalizations per 1,000 children aged 0-14 years.

FIGURE 2



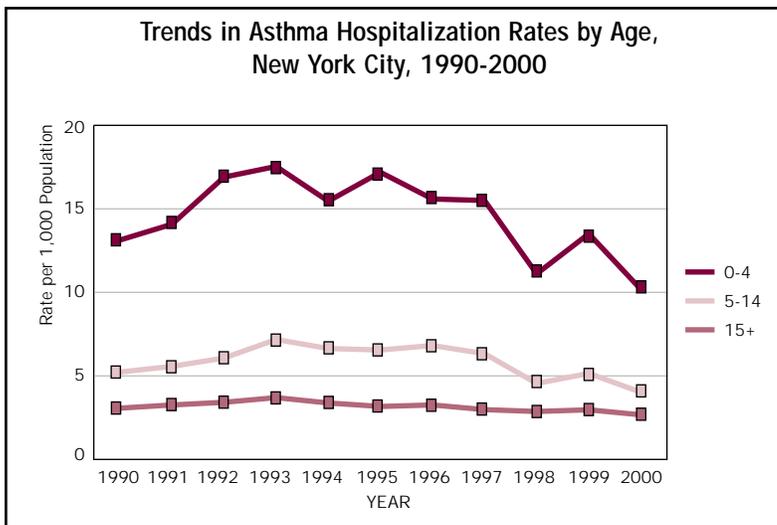
A similar pattern was seen among children aged 0-4 years, with NYC children having an asthma hospitalization rate 1.6 times the national rate and 3.1 times the rate in the rest of the state. The Healthy People 2010 goal has targeted children 0-4 years of age, aiming to reduce the asthma hospitalization rate to 2.5 hospitalizations per 1,000 children.

FIGURE 3



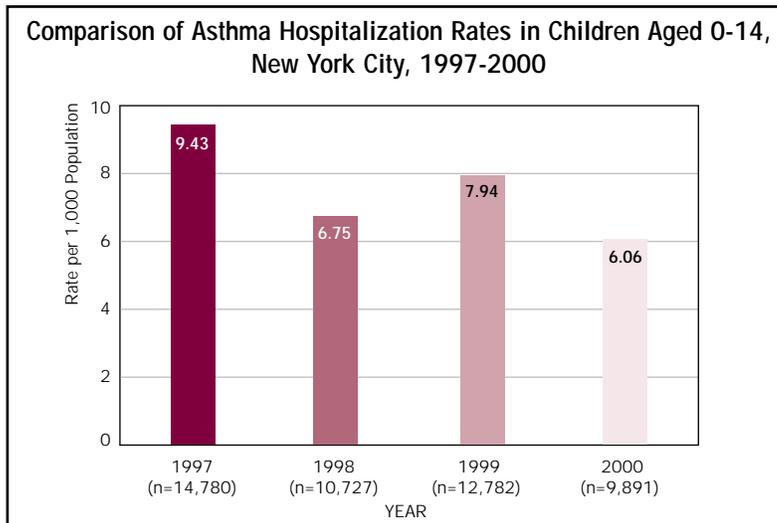
Between 1990 and 2000, the rates of asthma hospitalization were consistently higher in NYC than in the U.S. and the Northeast U.S. region (N.E.). Overall, during this time asthma hospitalization rates decreased in NYC, N.E. and in the U.S. by 17%, 7% and 13%, respectively. While there was a general downward trend since 1991 in the U.S., rates peaked in 1993 in NYC and in 1995 in the N.E. (Table 1).

FIGURE 4



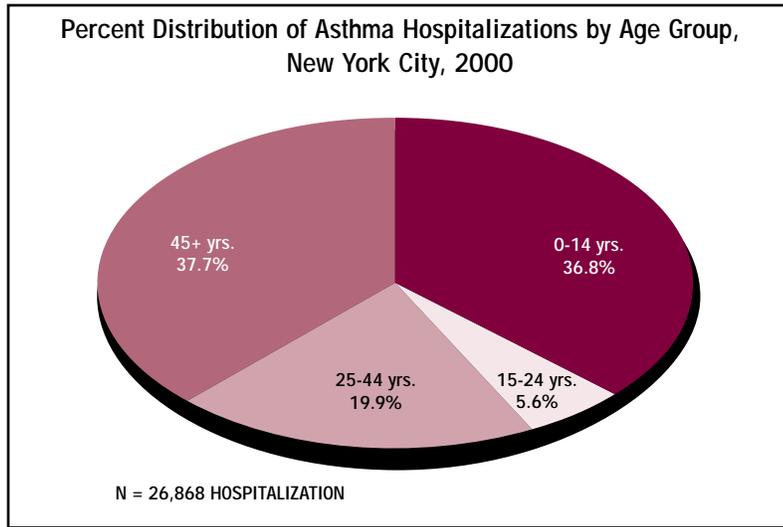
Hospitalization rates between 1990 and 2000 peaked at 17.54 per 1,000 in 1993 for children 0-4 years old and at 7.18 per 1,000 for children 5-14 years old (Table 2). In 2000, hospitalization rates were lower than those in 1990 (declining 22% among children 0-4 years, 23% among children aged 5-14 years and 13% among those 15 years of age and older). Overall, asthma hospitalization rates decreased by 17% among NYC residents between 1990 and 2000 from 4.03 per 1,000 to 3.36 per 1,000.

FIGURE 5



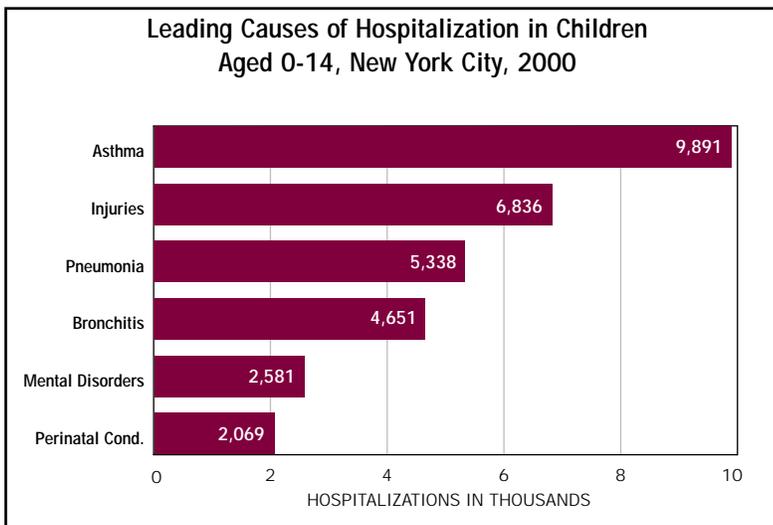
In 2000, the asthma hospitalization rate among NYC children aged 0-14 years was 6.06 per 1,000 children, a decline of 36% from the 1997 asthma hospitalization rate of 9.43 per 1,000 children (Table 2).

FIGURE 6



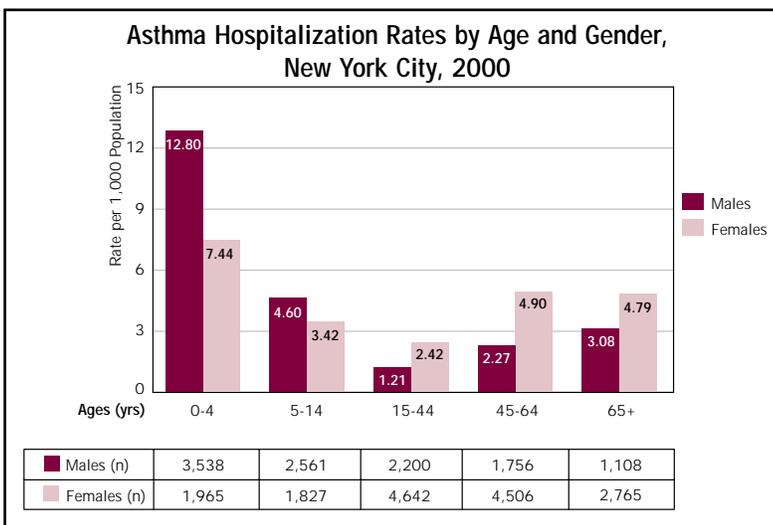
In total, there were 26,868 hospitalizations for asthma in NYC during 2000. Children aged 0-14 accounted for 37% of all asthma hospitalizations, although they represented only 20% of the population.

FIGURE 7



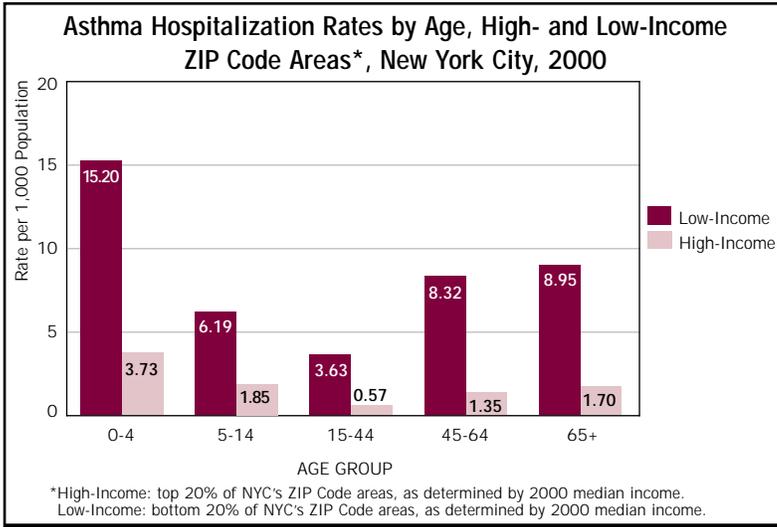
Asthma was the leading cause of hospitalization in NYC children aged 0-14. In 2000, there were 9,891 asthma hospitalizations among these children.

FIGURE 8



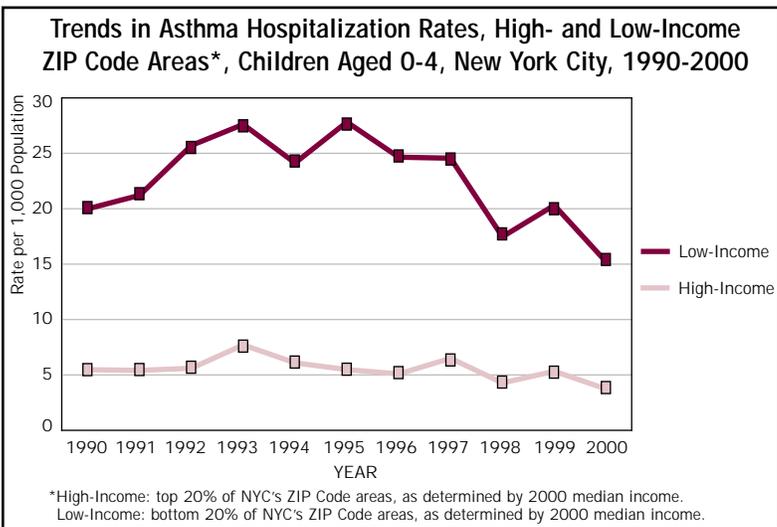
Hospitalization rates varied considerably by age and gender. Children aged 0-4 had disproportionately high asthma hospitalization rates. For children aged 0-14, boys had higher rates of asthma hospitalization than girls; after age 14 females had higher rates. This pattern was similar to those seen in previous years [see *Asthma Facts* (1999)].

FIGURE 9



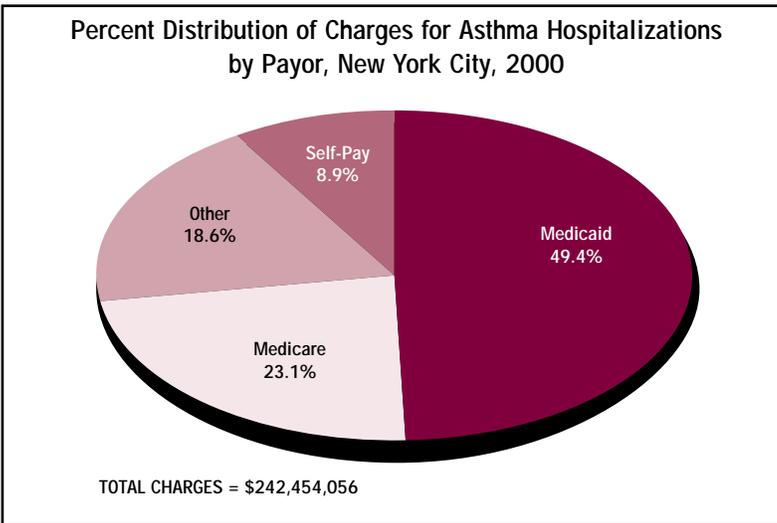
In 2000, higher rates of asthma hospitalization among residents of low-income areas compared to residents of high-income areas demonstrated the strong association between asthma hospitalizations and socioeconomic conditions. This pattern was evident among children aged 0-4 from low-income areas who had an asthma hospitalization rate more than 4 times the rate among children in high-income areas. This relationship exists across all age groups. For instance, low-income residents aged 15-44 had a rate 6.4 times that of their counterparts in high-income areas (Table 3).

FIGURE 10



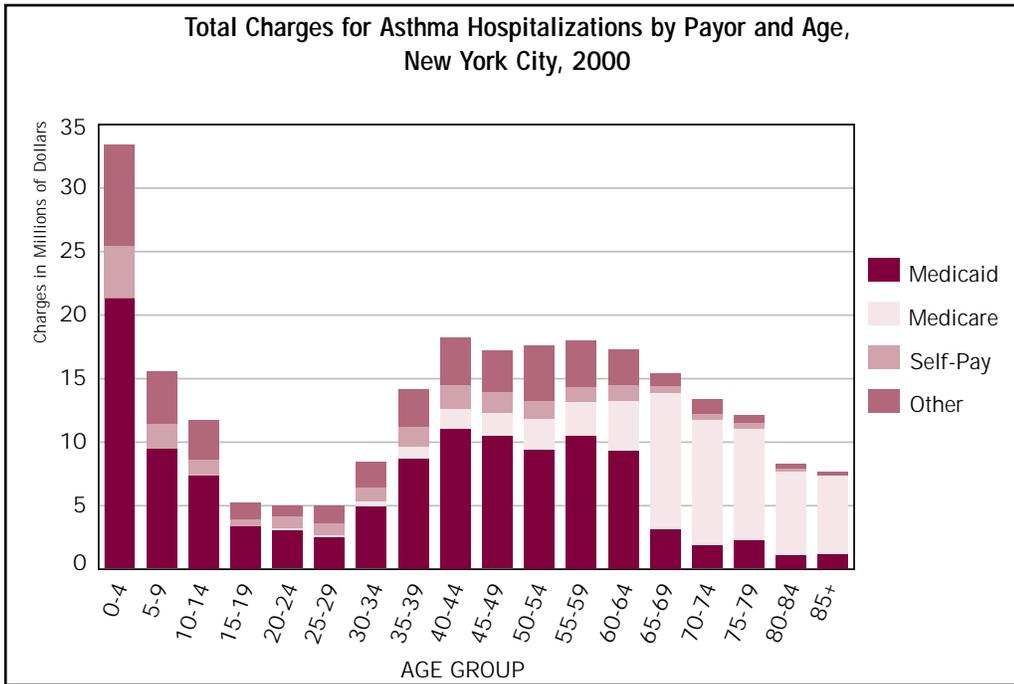
Children from low-income populations continued to experience a higher asthma hospitalization rate than children from high-income populations in 2000; the rate for children from low-income areas was 4.1 times the rate for children from high-income areas (Table 3). However, between 1990 and 2000 there were notable decreases in asthma hospitalization rates among children from low-income areas (24%) as well as among children living in high-income areas (32%).

FIGURE 11



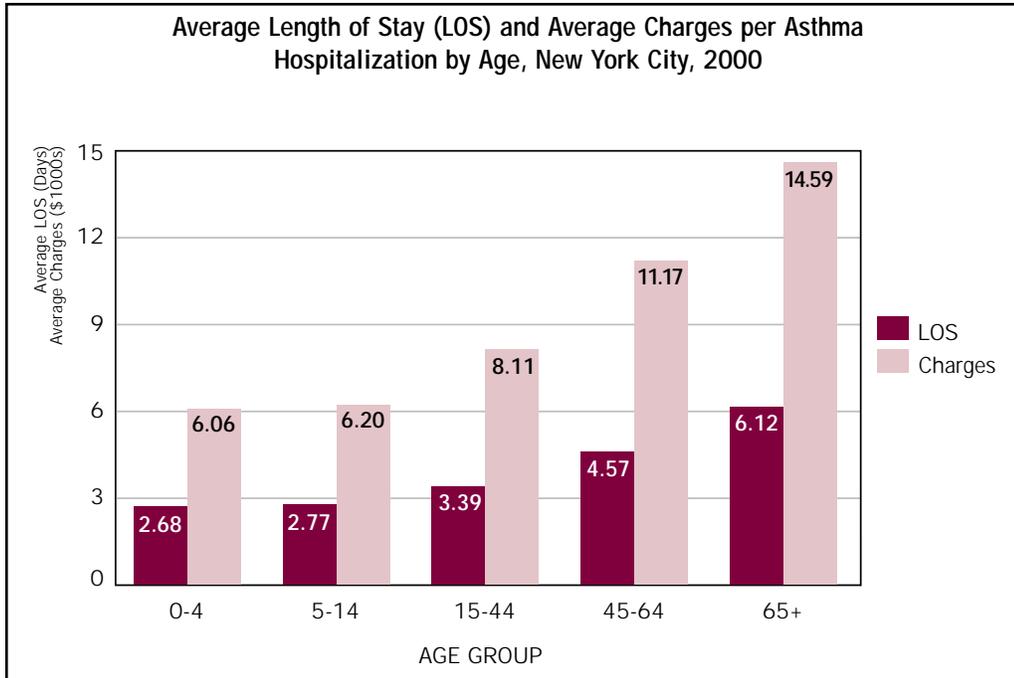
As noted in the first edition of *Asthma Facts*, Medicaid was the major payor for asthma hospitalizations in 2000. Comprising almost half of the costs for asthma, charges to Medicaid reflect the large number of those in poverty who were hospitalized for asthma (Table 4).

FIGURE 12



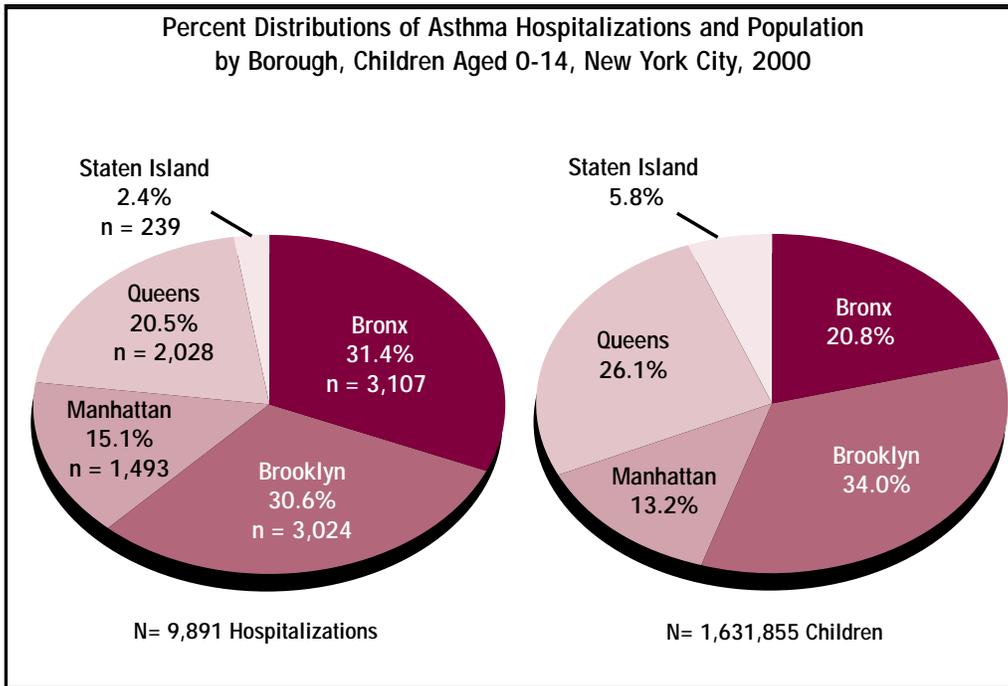
Further reflecting the greater number of asthma hospitalizations in younger children, the charges for hospitalizations in younger children - totaling 33.4 million dollars - were the highest of all age groups (Table 4). The distribution of total charges by age in 2000 was similar to 1997.

FIGURE 13



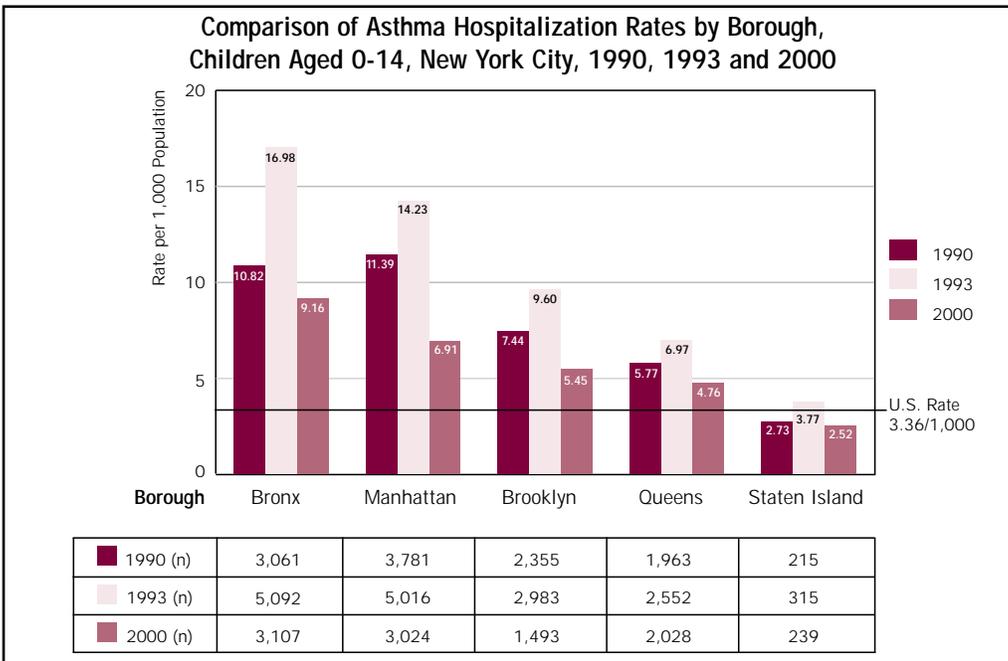
Though total costs for asthma hospitalizations were highest for young children, the average lengths of stay and, thus, the charges per visit among older persons were more than twice as much as those of young children. Higher rates of co-morbidity in the elderly may contribute to a longer stay in the hospital.

FIGURE 14



The Bronx and Brooklyn accounted for almost two-thirds of the asthma hospitalizations among NYC children. These two boroughs had nearly the same number of asthma hospitalizations (pie chart on left). However, because 21% of NYC's children aged 0-14 reside in the Bronx while 34% reside in Brooklyn (pie chart on right), the hospitalization rate in Brooklyn was lower than in the Bronx (as shown in the next Figure).

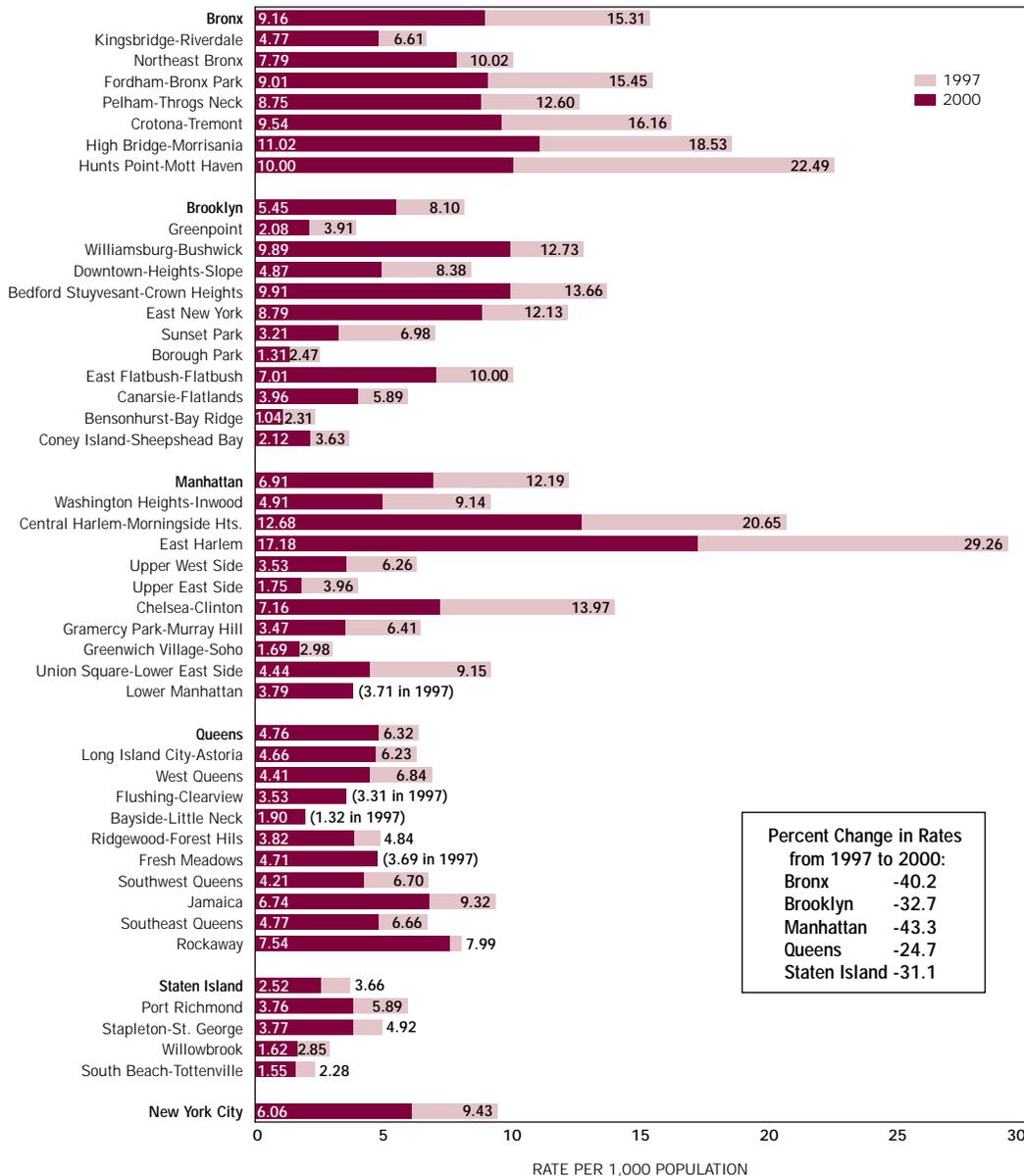
FIGURE 15



The burden of asthma hospitalizations among children 0-14 years was unevenly spread throughout NYC's boroughs in 1990 and 2000, and in 1993 when asthma hospitalization rates peaked. While Manhattan had the highest rate among children in 1990, the Bronx had the highest rate in 1993 and 2000. Rates were substantially higher than the 2000 national average of 3.36 per 1,000 children 0-14 years in all boroughs except Staten Island. Between 1990 and 2000, asthma hospitalization rates for children decreased in all boroughs: by 15% in the Bronx; 27% in Brooklyn; 39% in Manhattan; 18% in Queens; and by 8% in Staten Island.

FIGURE 16

### Asthma Hospitalization Rates by Neighborhood\*, Children Aged 0-14, New York City, 1997 and 2000



\*Based on United Hospital Fund (UHF) neighborhood definitions as indicated in Table 5; refer to Appendix for further explanation.

The tremendous disparity in asthma hospitalizations by neighborhood observed in 1997 has continued in 2000. However, between 1997 and 2000 asthma hospitalization rates decreased among children aged 0-14 years citywide in all NYC boroughs: by 40% in the Bronx; 33% in Brooklyn; 43% in Manhattan; 25% in Queens; and by 31% in Staten Island.

In the Bronx, the Hunts Point-Mott Haven community – a low-income neighborhood where the DOHMH implemented a major childhood asthma initiative in 1998 – had the largest decrease in rates (56%). However, the Bronx continues to have the highest rates overall. Additionally, despite the dramatic decrease of 41% in East Harlem in Manhattan, this low-income neighborhood, also home to the DOHMH Childhood Asthma Initiative, continues to have the highest rate of childhood asthma among NYC neighborhoods. Major decreases in asthma hospitalization rates also occurred in other NYC low-income neighborhoods having high asthma hospitalization rates: 41% in Crotona-Tremont; 42% in Fordham-Bronx Park; 41% in High Bridge-Morrisania; 28% in Bedford Stuyvesant-Crown Heights; 28% in East New York; and 39% in Central Harlem-Morningside Heights (Table 5). Rates for each ZIP Code area in NYC are presented in the map on the following page and illustrate the variation in rates throughout the City (Table 6).

FIGURE 17

Asthma Hospitalization Rates by ZIP Code Area, Children Aged 0-14,  
New York City, 2000

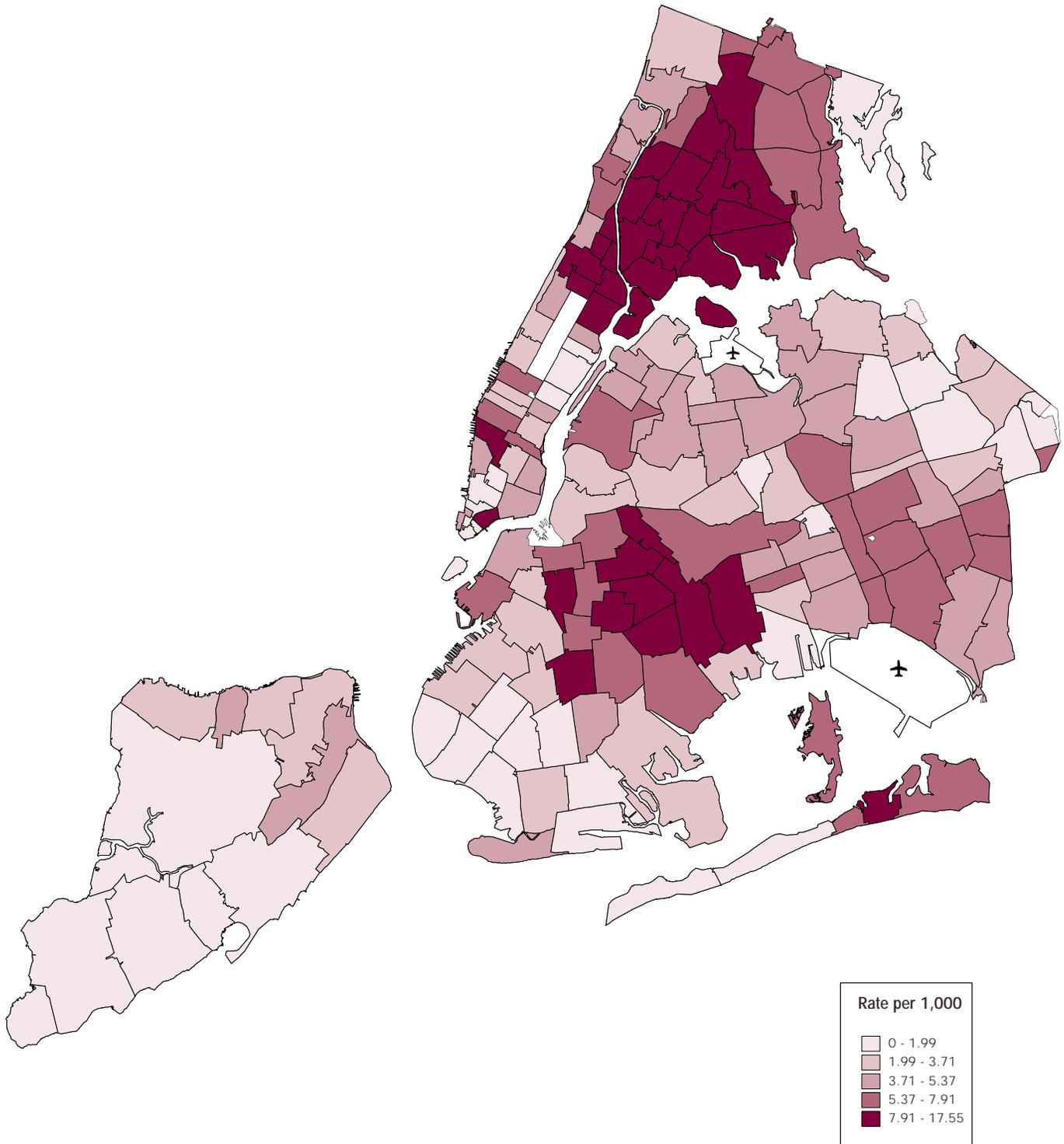
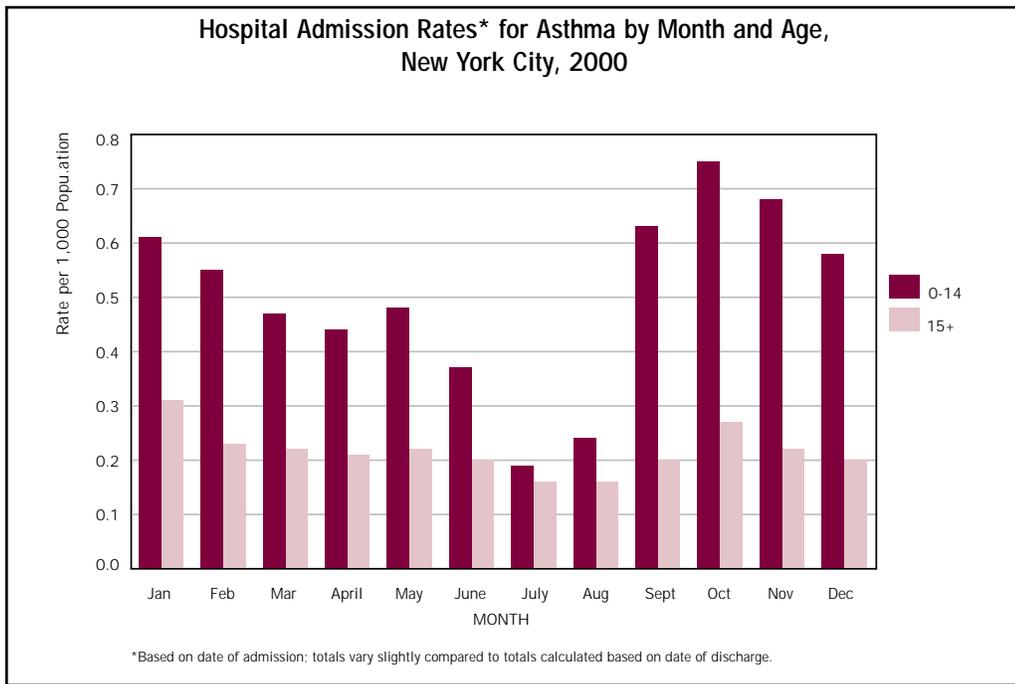


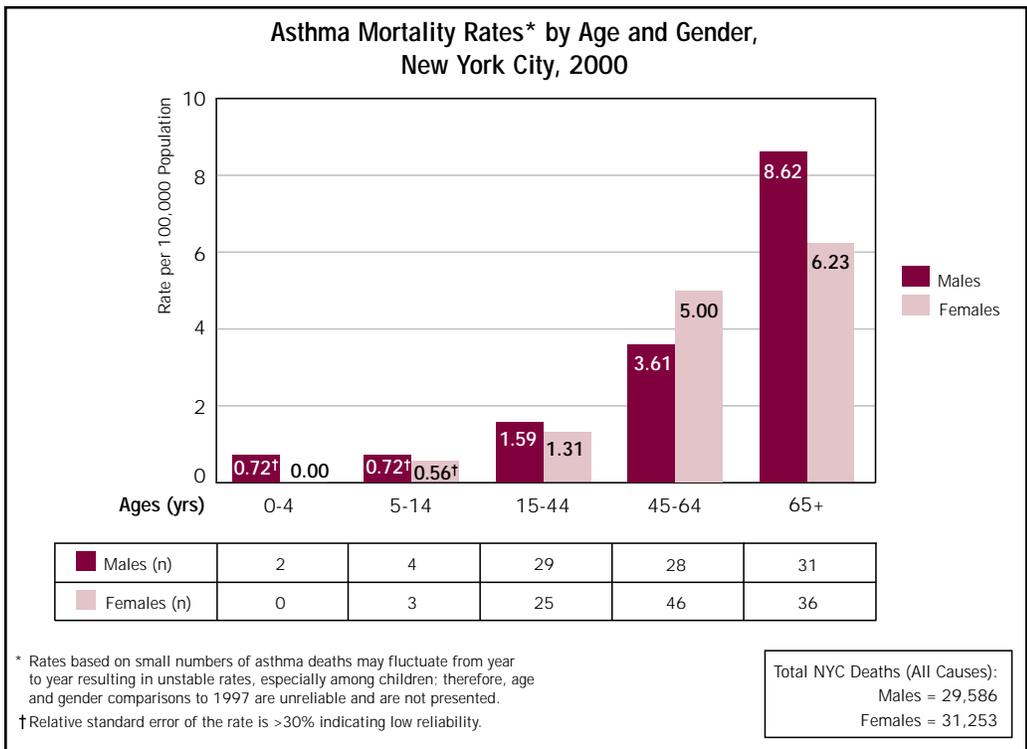
FIGURE 18



Asthma admissions varied by season in 2000 as in previous years. The highest rates of admissions occurred in the fall and early winter months, and the lowest in the summer months. Seasonal variation was more pronounced in children aged 0-14 than in those 15 years and older (Table 7).

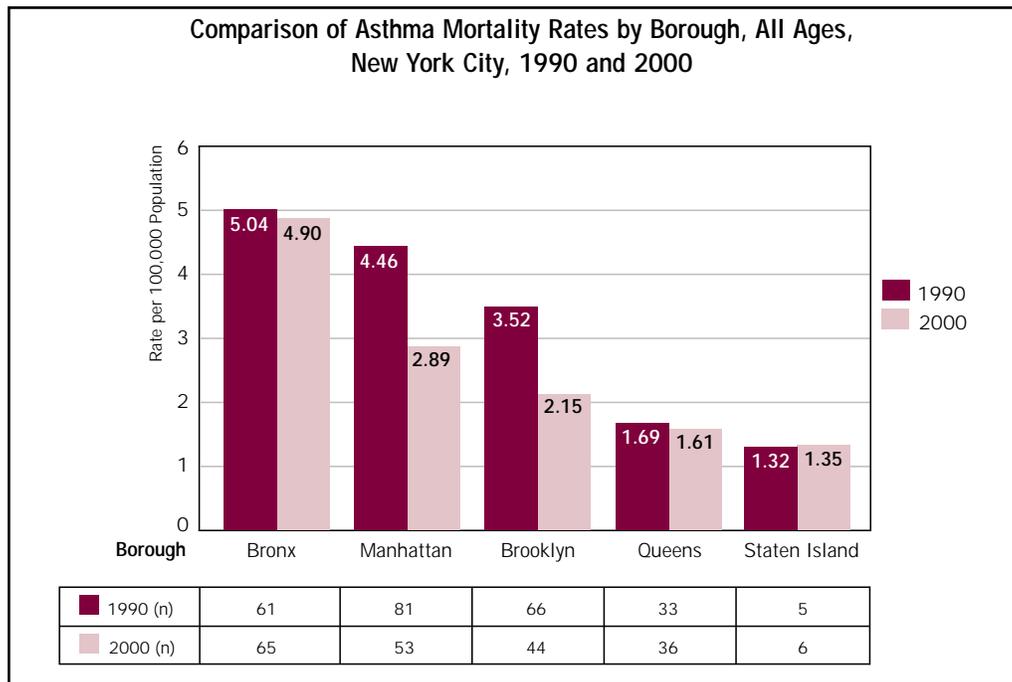


FIGURE 19



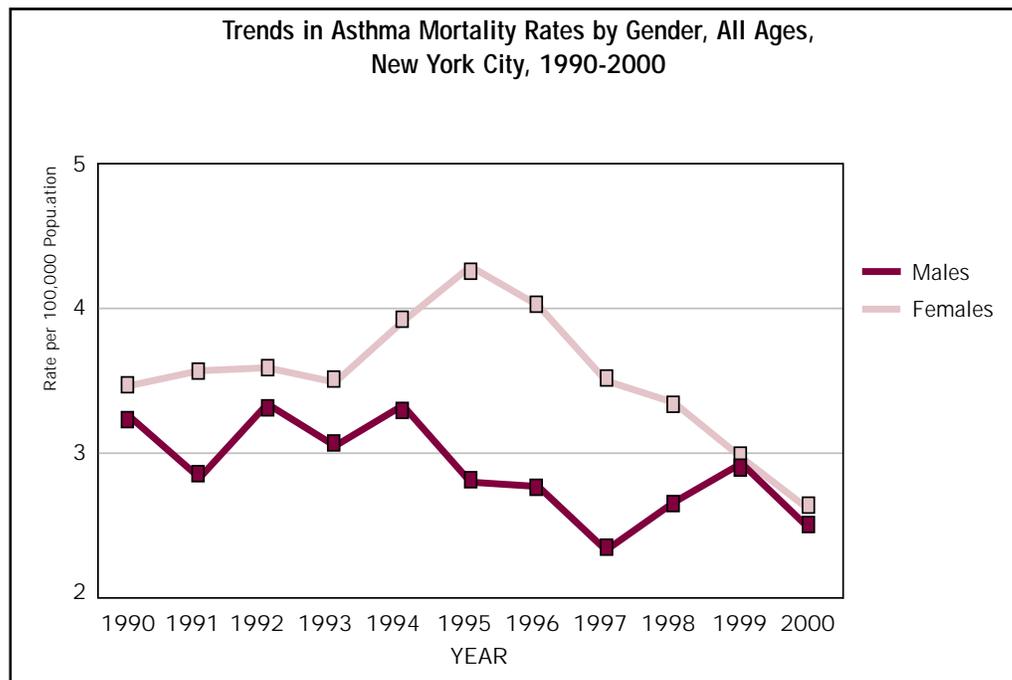
Overall, asthma mortality rates across all age groups were low in 2000. Similar to national asthma mortality rates, the rates were lowest among children aged 0-14, and substantially higher among adults, particularly those 65 years and older. Asthma mortality among the oldest adults, as well as in individuals younger than 45 years of age, was higher in males than females.

FIGURE 20



Asthma mortality rates varied by borough in both 1990 and 2000. The Bronx and Manhattan experienced the highest asthma mortality rates in both years. While the rates in Brooklyn and Manhattan had substantial decreases of 39% and 35%, respectively, between 1990 and 2000, the rates decreased only slightly in the Bronx (3%) and in Queens (5%). (Because Staten Island had small numbers of asthma deaths, the asthma mortality rates there are unstable. Though Staten Island appears to have had a slight increase of 2% in asthma mortality rates, there were only 5 deaths in 1990 and 6 deaths in 2000.)

FIGURE 21

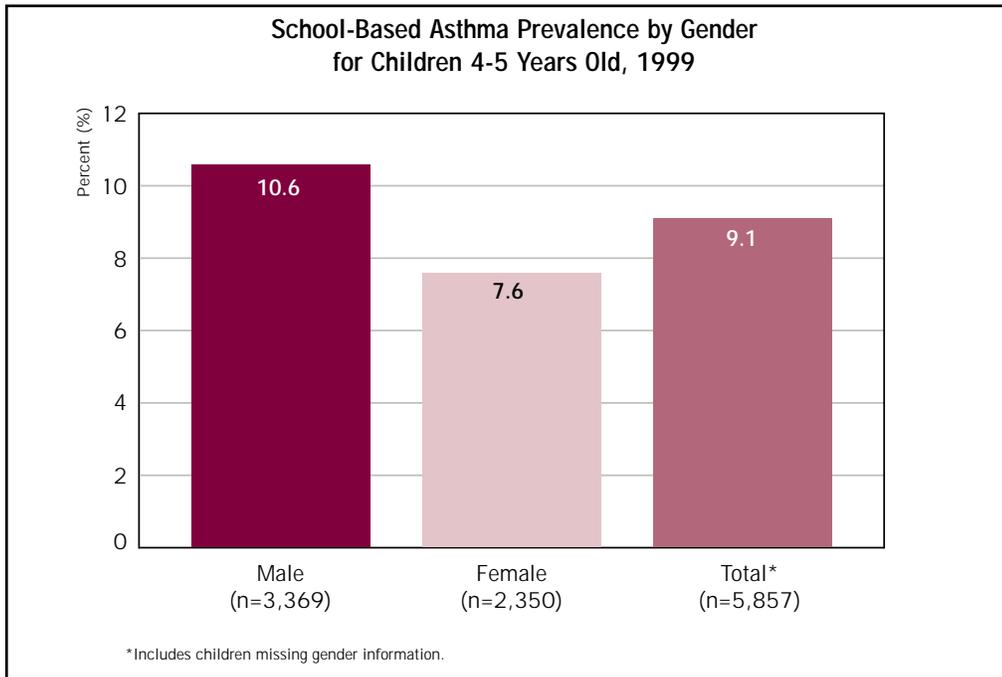


Citywide, asthma mortality rates for all ages declined between 1990 and 2000 from 3.36 to 2.55 per 100,000 population – a decrease of 24% in the population, 23% in males and 25% in females (Table 8). Generally, asthma mortality rates were slightly higher in women than in men, but over the last few years the disparity has been almost eliminated.



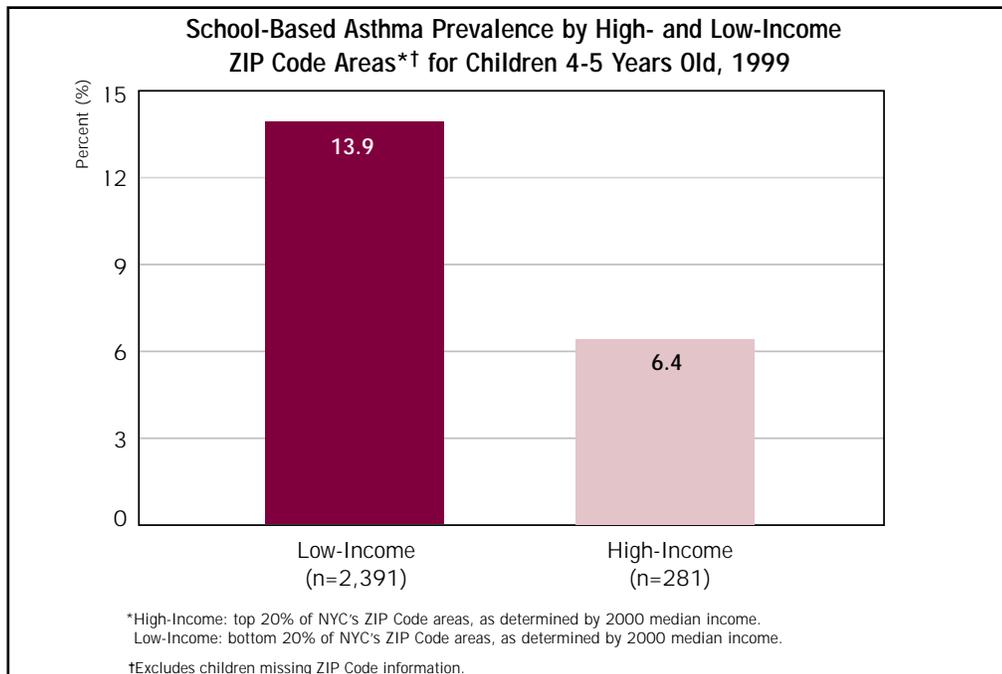
# SCHOOL-BASED PREVALENCE

FIGURE 22



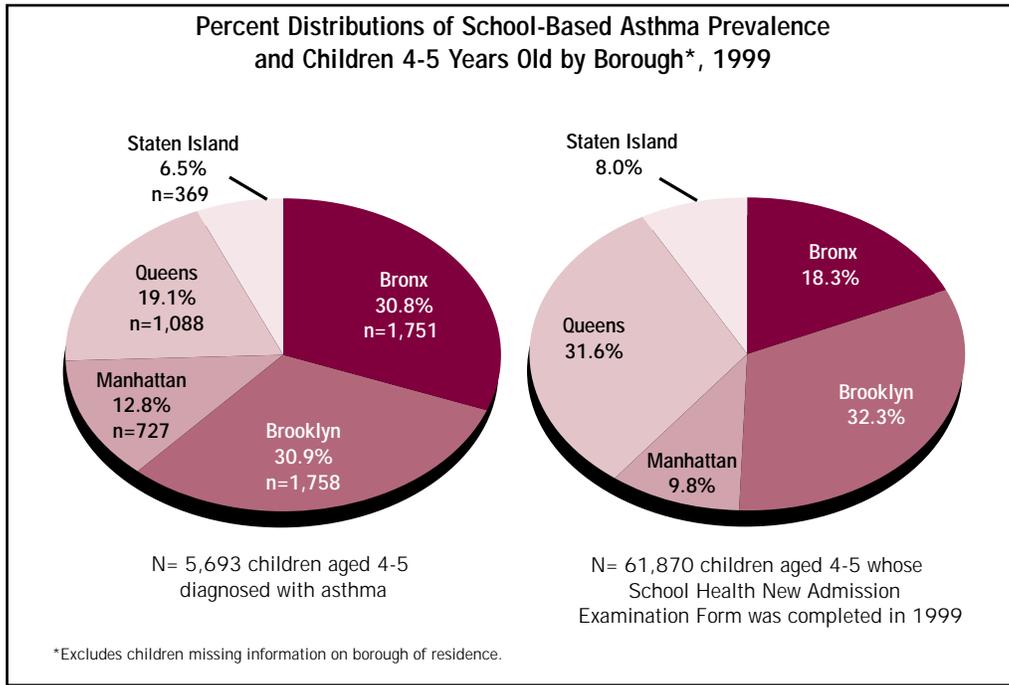
In 1999, 9.1% of children 4-5 years old had ever been diagnosed with asthma. Asthma prevalence differed by gender among children aged 4-5, with boys having a higher prevalence of asthma than girls. Asthma prevalence for these children was 10.6% among boys and 7.6% among girls in 1999.

FIGURE 23



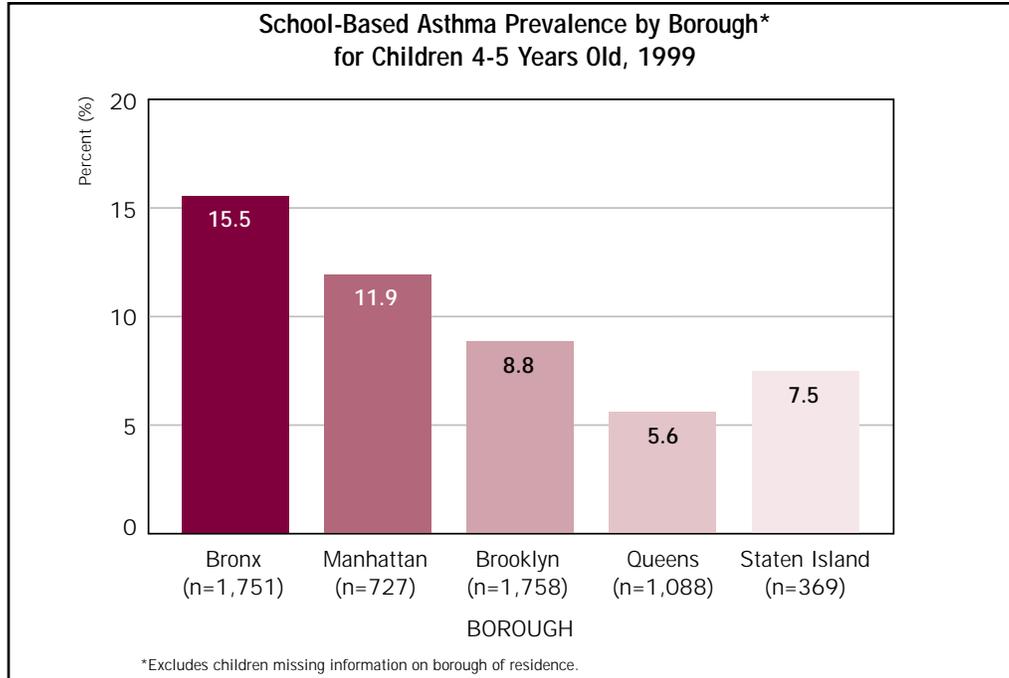
The asthma prevalence for children from low-income areas was more than twice the prevalence for children from high-income areas.

FIGURE 24



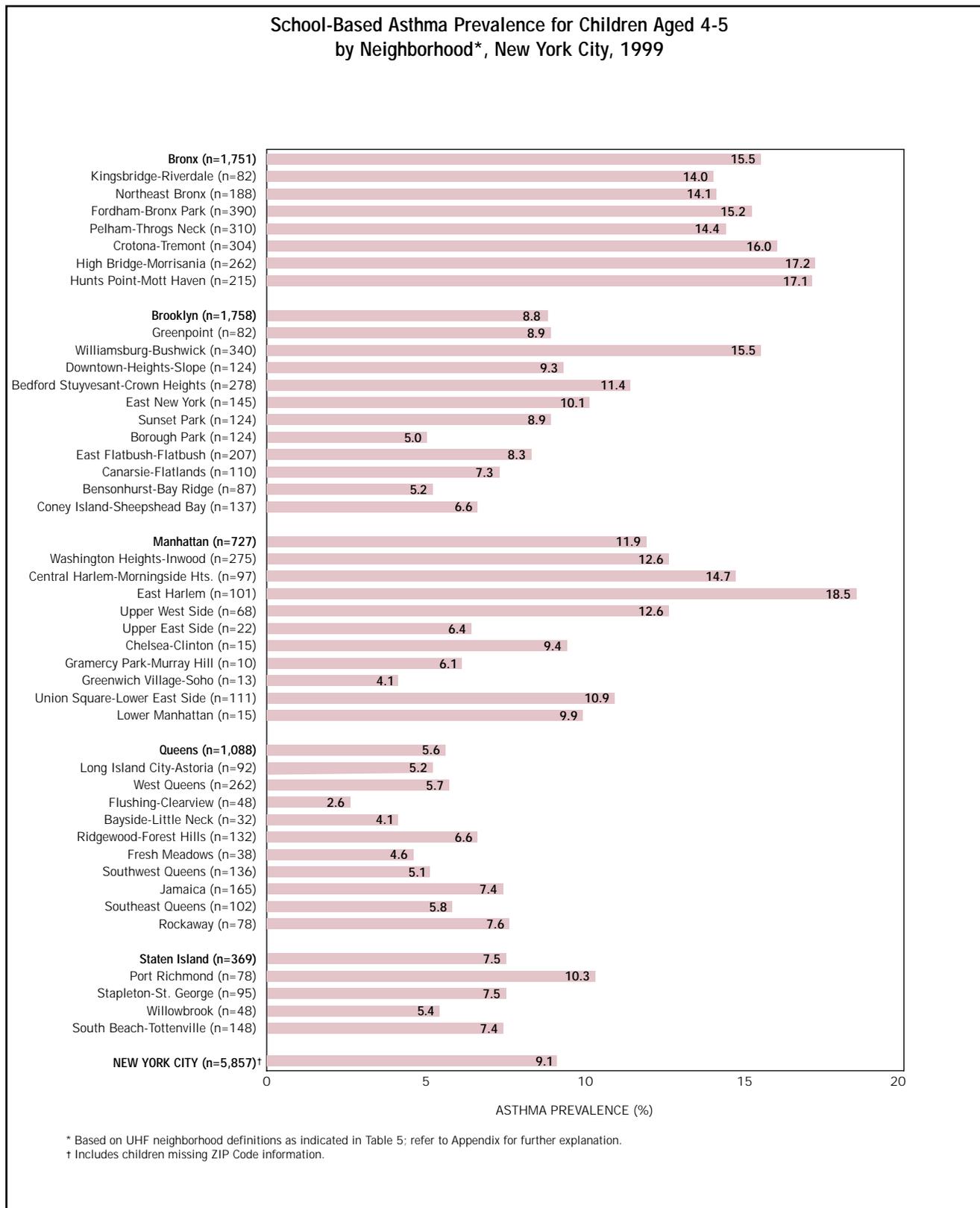
There was a disproportionate percentage of children aged 4-5 with asthma in the Bronx. Although only 18% of the 4-5 year olds lived in the Bronx, nearly one-third of the children with asthma in New York City resided in the Bronx. In contrast, 32% of the 4-5 year olds lived in Queens, while 19% of the children with asthma in New York City resided in Queens.

FIGURE 25



Asthma prevalence among children aged 4–5 varied by borough of residence. Children in the Bronx had the highest prevalence of asthma, while children in Queens had the lowest asthma prevalence in 1999.

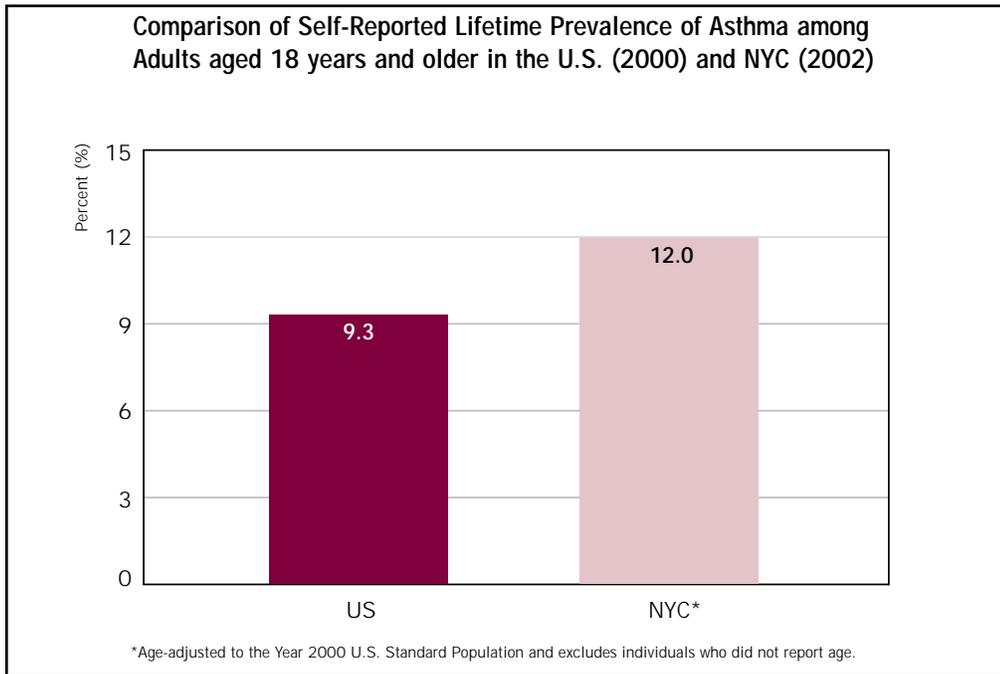
FIGURE 26



There was a tremendous disparity in asthma prevalence by neighborhood for children aged 4-5 in 1999. The East Harlem neighborhood in Manhattan and the High Bridge-Morrisania and Hunts Point-Mott Haven neighborhoods in the Bronx had the highest prevalence of asthma among children aged 4-5 in New York City. The lowest prevalence of asthma was found in the Greenwich Village-Soho neighborhood in Manhattan and in the Flushing-Clearview and Bayside-Little Neck neighborhoods in Queens.

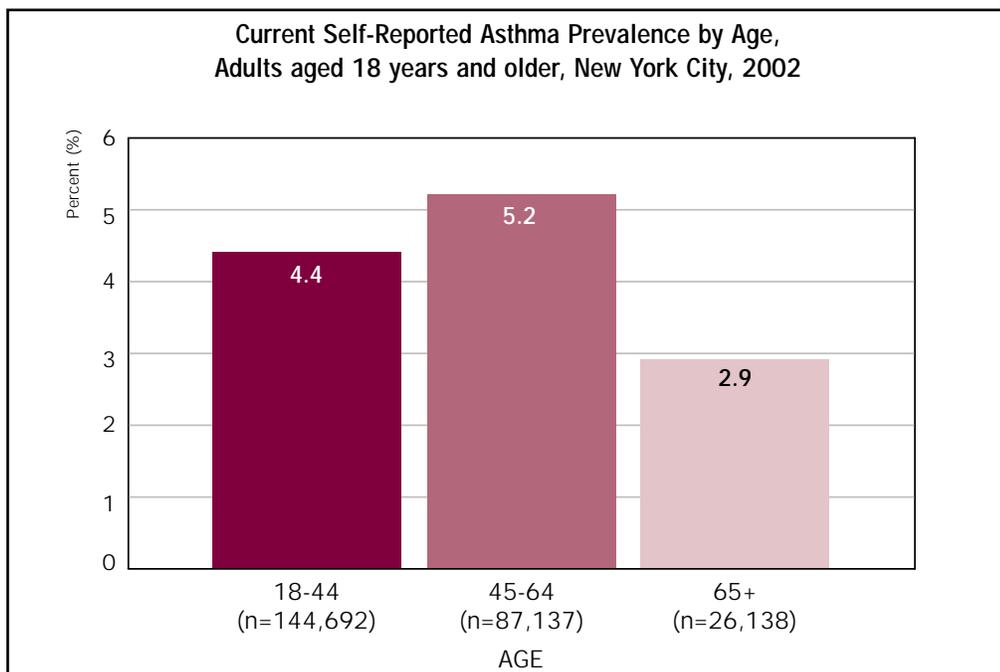


FIGURE 27



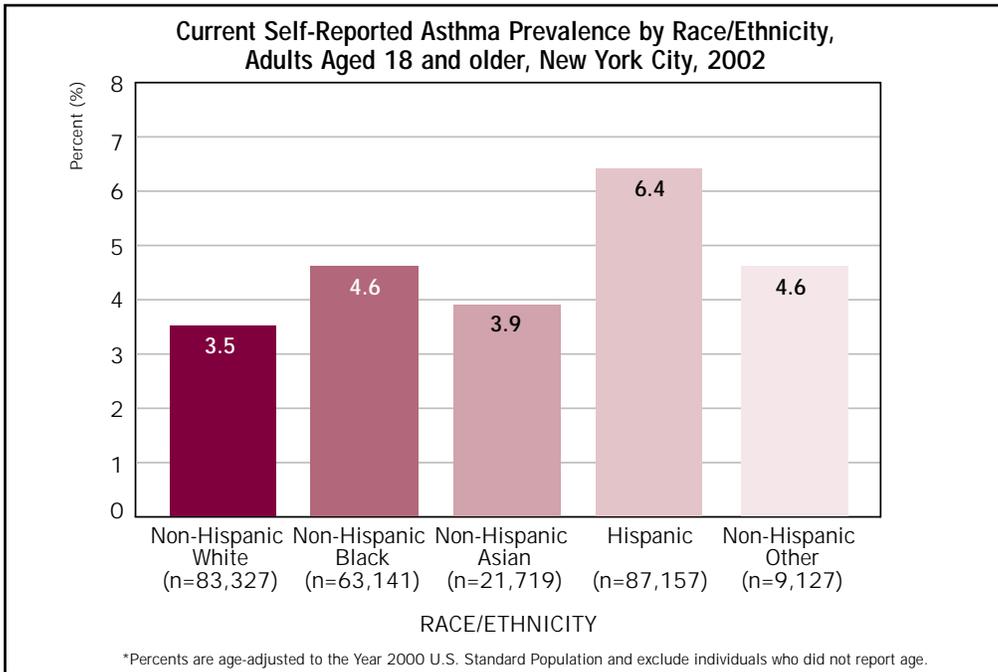
One in eight adults in NYC have reported that they had been diagnosed with asthma at some time in their life. This self-reported lifetime prevalence of asthma for adults aged 18 and older in NYC in 2002 was 29% higher than the prevalence in the U.S. in 2000.

FIGURE 28



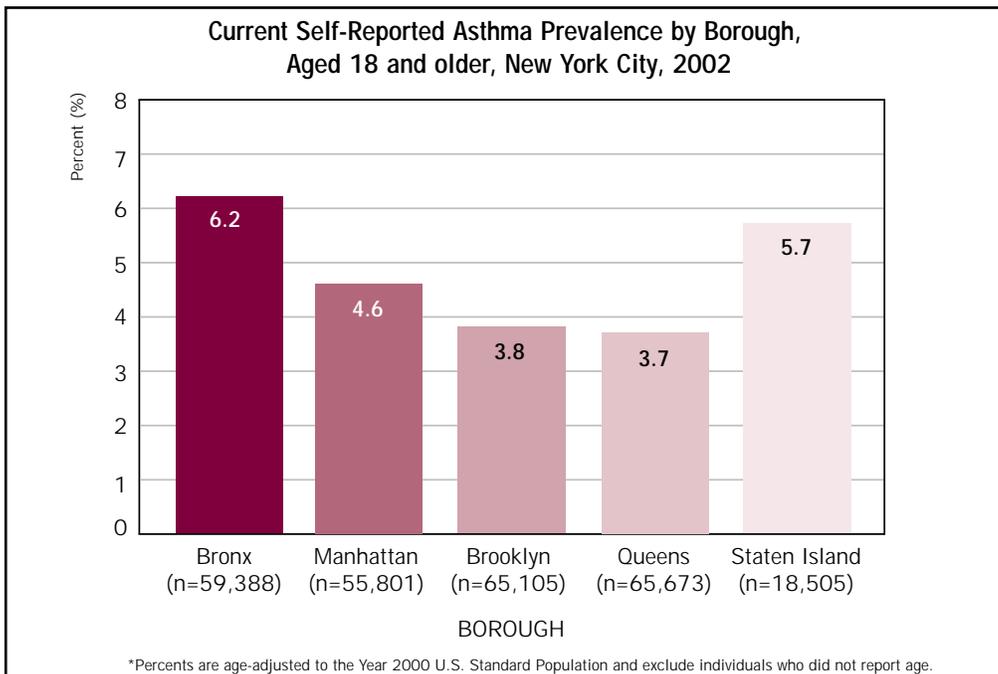
Prevalence of self-reported current asthma among NYC adults varied by age in 2002. While adults aged 45-64 had the highest prevalence of current asthma, prevalence was lowest among the elderly.

FIGURE 29



Prevalence of self-reported current asthma among adults in 2002 differed by race/ethnicity. The prevalence among Black adults was approximately 1.5 times the prevalence among White and Asian adults. Hispanic adults had the highest (6.1%) prevalence of current asthma.

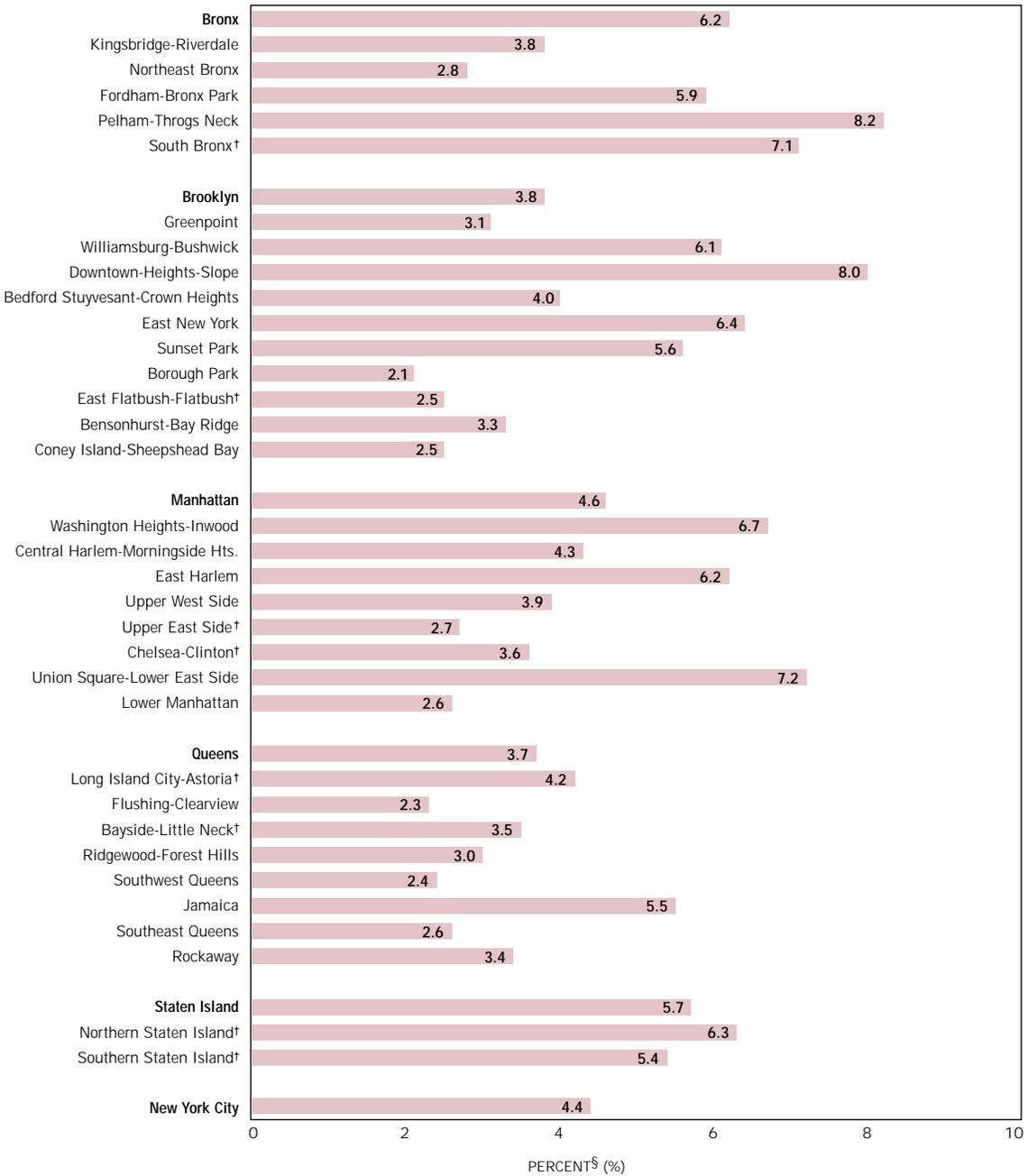
FIGURE 30



In 2002, there was a slight variation in the prevalence of self-reported current asthma among adults by borough of residence, ranging from 3.7% in Queens to 6.2% in the Bronx.

FIGURE 31

Current Self-Reported Asthma Prevalence By Neighborhood\*,  
Adults Aged 18 and Older, New York City, 2002



\*Based on UHF neighborhood definitions as indicated in Table 9.

†Includes or consists of one or more UHF neighborhoods; refer to Table 9 and Appendix for regrouping of these neighborhoods and explanation.

§Percents are age-adjusted to the Year 2000 U.S. Standard Population and exclude individuals who did not report age.

As with asthma hospitalizations and prevalence among children, a disparity in adult asthma prevalence exists among NYC neighborhoods. The prevalence of self-reported current asthma among adults was as low as 2.1% in the Borough Park community in Brooklyn and as high as 8.2% in Pelham-Throgs Neck of the Bronx. Other neighborhoods having the highest prevalence were Downtown-Heights-Slope in Brooklyn; Union Square-Lower East Side and Washington Heights-Inwood in Manhattan; and the South Bronx (Table 9).



There are six sources for the data contained in *Asthma Facts 2000*: the DOHMH Office of Vital Statistics and Epidemiology for the mortality data; the New York State Department of Health Statewide Planning and Research Cooperative System (SPARCS) for the hospital discharge data; the DOHMH School Health Program for the school-based prevalence data; the New York City Community Health Survey for the adult prevalence data; the Centers for Disease Control and Prevention (CDC) for the national asthma data; and the U.S. Census Bureau for the population data.

### Mortality Data

Mortality data are based on deaths to New York City residents whose underlying cause of death was asthma. Underlying cause of death is selected in accordance with rules issued by the National Center for Health Statistics (NCHS) and codes of the International Classification of Diseases, Ninth Revision (ICD-9). Demographic data on death certificates are coded in agreement with NCHS standards. Interpretation of mortality data can be complicated due to the fact that there may be much misclassification of asthma deaths in the older age groups. Also note that mortality rates are presented per 100,000 population, as compared to hospitalization rates, which are presented per 1,000 population.

### Hospital Discharge Data

The SPARCS data set consists of hospital discharge information contained in two forms – the Discharge Data Abstract (DDA) and the Uniform Billing Form (UBF). These forms, completed by all general hospitals in New York State, are submitted electronically to SPARCS, checked for errors and returned to the hospitals for correction. The DDA and UBF share several common fields and are linked, thereby producing a combined record with medical and financial information. Criteria for inclusion of SPARCS records in this fact book included:

(1) a principal ICD-9 diagnosis code for asthma (493.XX) and (2) residence in New York City, as determined by zip code, at the time of the hospitalization.

Interpretation and presentation of the SPARCS data present certain difficulties. SPARCS data represent numbers of hospitalizations, not numbers of individuals hospitalized. Since some asthmatics may be hospitalized repeatedly in any given year, the numbers or rates may overestimate the number of asthmatics hospitalized.

Additionally, SPARCS data on the race and ethnicity of individual patients are imprecise. Primarily, these data are not collected in a standardized manner across hospitals. Data regarding Hispanic origin are missing for approximately 25% of the asthma cases. Finally, large numbers of records had race listed as “other.” Consequently, race/ethnicity-specific rates for asthma hospitalization could not be calculated.

### School-Based Prevalence Data

The DOHMH School Health Examination Form, known as the 211S form, is completed by parents or guardians and medical providers for children entering New York City public and private schools for the first time. The 211S data provide information on students' gender, race and ethnicity, place of birth, medical history, physical examination results, immunization dates, lead and tuberculosis screening test results, and recommendation or restrictions for full physical activity.

It is estimated that the DOHMH receives approximately 80% of forms for new entrants by the end of the calendar year. Sixty percent of the children whose 211S forms were completed in 1999 were aged 4-5 years old (64,712). Therefore, the 211S data set can provide estimates of asthma prevalence among these children, who are primarily kindergartners, entering New York City public and private schools.

The results presented here include all children 4-5 years of age whose 211S forms were completed in 1999 and subsequently submitted to DOHMH. Asthma diagnosis was determined from two different fields on the form both of which were completed by the physician: (1) an ICD-9 diagnosis code for asthma (493.XX) or (2) an indication of the child having "ever been diagnosed" with asthma. Asthma prevalence was calculated by dividing the number of children diagnosed with asthma by the number of children with a specified diagnosis, including a "well-child" diagnosis. Less than 1 percent of 4-5 year old children were missing a "well-child" or other diagnostic code and thus the denominator includes over 99% of children with a 211S form.

Since there is incomplete ascertainment of children 4-5 years old entering the New York City public and private schools the estimate of asthma prevalence presented may be either an overestimate or underestimate of the true asthma prevalence among these children. An additional limitation of these data is the large amount of missing data for race/ethnicity (38%) and place of birth (45%). As a result, asthma prevalence was not calculated for groups based on specific race/ethnicity or place of birth.

### Adult Prevalence

The New York City Community Health Survey (CHS) is a telephone survey that was conducted over a 2-month period from May to July 2002 among non-institutionalized adults aged 18 and older with telephones in New York City. The survey was based on the CDC Behavioral Risk Factor Surveillance System (BRFSS) (CDC. *BRFSS User's Guide*. Atlanta: US Department of Health and Human Services, CDC, 1998). Of the 103 questions on the survey, 75 were identical or very similar to those asked in either the BRFSS or the National Health Interview Survey conducted by CDC's National Center for Health Statistics (NCHS). Topics on the CHS included: access to health care, cardiovascular disease risks, mental health, nutrition and exercise, clinical preventative services, smoking and alcohol among others. A few additional questions on topics such as domestic violence, occupational injury and sexual behavior were added to the CHS.

The CHS used a stratified random sample of United Hospital Fund (UHF) neighborhoods (see *Presentation of Data* section below) in order to produce citywide as well as neighborhood specific estimates. For the purposes of generalizability of the CHS, several UHF neighborhoods were combined in the sampling and, therefore, in the interpretation of the data. These regrouped neighborhoods are indicated in Table 23. A computer-assisted telephone interviewing (CATI) system was used to collect the survey data. The sampling frame was constructed through a list of telephone numbers provided by a commercial vendor. Households were then selected randomly using a random digit dialing method; 10 attempts were made to reach each household. It is estimated that about 2.6% of households in NYC do not have telephone service at any given time, ranging from 0.4% to 9.96% among the UHF neighborhoods (New York City Department of City Planning. *Socioeconomic Profile*:

*New York City and Boroughs, 1990-2000*). Upon agreement to participate in the survey, 1 adult was randomly selected from each household. Interviews were conducted in a variety of different languages, including Spanish, Chinese, Greek, Korean, Russian, Yiddish, Polish and Haitian Creole. All data collected were self-reported.

Approximately three hundred interviews were conducted in each of the 33 neighborhoods, resulting in a total sample size of 9,674. Forty-five interviews were discarded, as they were deemed incomplete by the BRFSS definition of a completed survey. An incomplete survey is defined as a respondent who begins the interview but terminates it without answering several key demographic questions (i.e., age, sex, race) and the question pertaining to the number of telephone lines in the household. The overall cooperation rate was 83%.

In order to appropriately analyze the CHS data, weights were applied to each record. The weight consisted of the probability of selection (number of adults in each household/ number of residential telephone lines) as well as a post-stratification weight. The post-stratification weights were created by weighting each record up to the population of the UHF neighborhood while taking into account the respondent's age, sex and race.

Asthma prevalence is presented in two measures. Lifetime asthma prevalence was determined if respondents reported that they had been diagnosed with asthma at some time in their life. Current asthma prevalence is defined as those respondents who reported having both a doctor's diagnosis in their lifetime and an asthma episode in the past 12 months.

### Comparison Data

National asthma data for 1990-1999 were obtained from the CDC Morbidity and Mortality Weekly Report (MMWR) on asthma (CDC. *Surveillance for Asthma – United States, 1980-1999*. MMWR 2002;51[No. SS-1]:1-14). The report presents data on various components of asthma surveillance, including asthma hospitalization data which are collected in the National Hospital Discharge Survey (NHDS) conducted by NCHS. U.S. asthma hospitalization estimates for 2000 were provided by the NCHS Vital and Health Statistics report on the NHDS (Kozak LJ, Hall MJ, Owings MF. NHDS: 2000 Annual Summary With Detailed Diagnosis and Procedure Data. National Center for Health Statistics. Vital Health Stat Series No. 13 (153). 2002). In addition, national asthma prevalence data were available through the NCHS National Health Interview Survey.

### Population Data

The denominators for the morbidity and mortality rates in *Asthma Facts 2000* use data from the 2000 Census. Morbidity and mortality rates presented in the original *Asthma Facts* were calculated using estimates from Claritas population data. Claritas data are projections based on the preceding Census and a variety of post-Census population and household data sources. These data were used because mid-Census years may be misrepresented by using Census data. For *Asthma Facts 2000*, annual mortality and hospitalization rates for the years 1991-1999 were recalculated based on 1990/2000 Census data interpolations for more accurate annual comparisons. Therefore, previously released rates for the years 1990-1997 may be slightly different than rates currently presented.

### Presentation of Data

Much of the data contained in *Asthma Facts 2000* are expressed as rates. A rate is the number of health events (e.g., deaths due to asthma) in a population or subgroup divided by the number of people in that population or subgroup within a given time period. It should be noted that rates based on small populations and/or small numbers of health events may fluctuate dramatically year-to-year due to slight changes in the number of health events. Thus, these rates can appear extremely high or extremely low and are considered unstable. Rates having relative standard errors (RSEs) of >30% indicate low reliability and are footnoted in the charts and/or tables. Caution should be used in interpreting these rates.

To examine asthma hospitalization rates by income level, data from high-income areas (defined as the top 20% of the city's ZIP Code areas, as determined by the 2000 median income) were aggregated, and "high-income" hospitalization rates were calculated. Data from low-income areas (defined as the bottom 20% of the city's ZIP Code areas, as determined by the 2000 median income) were similarly aggregated, and "low-income" hospitalization rates were calculated. Formerly in *Asthma Facts*, 1990 Census median income data were used, therefore some ZIP Codes defining high- and low-income areas have changed.

In this report, "neighborhood" areas are groups of ZIP Codes as defined by UHF; these groups of ZIP Codes are provided in Tables 5 and 9. Please note that UHF neighborhood definitions have changed since the release of *Asthma Facts*, and the updated definitions have been used in this publication. Therefore, the 1997 numbers and rates previously presented for NYC neighborhoods may differ slightly from those currently presented.

## APPENDIX B – TABLES

TABLE 1

### Trends in Asthma Hospitalization Rates per 1,000 Persons, All Ages, U.S., Northeast U.S.\*, New York City, 1990-2000

Year	NYC	NE	US
1990	4.03	2.26	1.92
1991	4.30	2.48	1.96
1992	4.68	2.29	1.82
1993	5.10	2.60	1.83
1994	4.63	2.52	1.74
1995	4.57	2.76	1.95
1996	4.57	2.46	1.79
1997	4.28	2.41	1.81
1998	3.66	2.27	1.57
1999	3.98	2.62	1.76
2000	3.36	2.11	1.67

\*Northeast region of U.S.: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

TABLE 2

### Trends in Asthma Hospitalization Rates per 1,000 Persons by Age, New York City, 1990-2000

YEAR	0-4		5-14		15+		Total	
	Number	Rate/1,000	Number	Rate/1,000	Number	Rate/1,000	Number	Rate/1,000
1990	6,595	13.13	4,780	5.23	18,103	3.07	29,478	4.03
1991	7,122	14.08	5,194	5.57	19,431	3.26	31,747	4.30
1992	8,613	16.90	5,770	6.07	20,535	3.42	34,918	4.68
1993	9,012	17.54	6,946	7.18	22,396	3.70	38,354	5.10
1994	7,999	15.46	6,545	6.64	20,587	3.38	35,131	4.63
1995	8,967	17.19	6,577	6.55	19,478	3.17	35,022	4.57
1996	8,188	15.59	6,961	6.82	20,144	3.26	35,293	4.57
1997	8,202	15.50	6,578	6.33	18,568	2.98	33,348	4.28
1998	5,922	11.11	4,805	4.55	18,028	2.87	28,755	3.66
1999	7,252	13.51	5,530	5.15	18,794	2.97	31,576	3.98
2000	5,503	10.18	4,388	4.02	16,977	2.67	26,868	3.36

TABLE 3

**Trends in Asthma Hospitalization Rates per 1,000 Persons in  
High- and Low-Income Zip Code Areas\* by Age, New York City, 1990-2000**

Year	Ages 0-4		Ages 5-14		Ages 15-44		Ages 45-64		Ages 65+	
	Low-Income	High-Income								
1990	19.99	5.47	7.73	2.49	4.82	0.93	9.18	1.22	7.58	1.42
1991	21.21	5.41	7.73	2.89	5.16	0.88	8.86	1.09	8.05	1.73
1992	25.71	5.60	8.98	2.65	5.50	0.82	9.23	1.15	9.60	1.49
1993	27.61	7.71	11.32	2.93	5.95	0.87	9.65	1.34	12.67	2.15
1994	27.82	5.48	10.65	2.38	5.69	0.91	9.53	1.31	8.85	1.89
1995	27.82	5.48	10.40	2.70	5.38	0.81	8.40	1.37	8.55	1.73
1996	24.65	5.09	10.71	2.67	5.58	0.82	8.78	1.39	8.96	1.56
1997	24.56	6.50	9.98	2.36	4.96	0.80	8.19	1.40	8.12	1.50
1998	17.47	4.28	7.01	2.10	4.39	0.64	8.47	1.28	8.44	1.83
1999	20.31	5.33	7.72	2.55	4.22	0.72	8.70	1.59	9.05	1.89
2000	15.20	3.73	6.19	1.85	3.63	0.57	8.32	1.35	8.95	1.70

\*High-Income Areas are comprised of the top 20% of NYC's ZIP Code areas, as determined by 2000 median income. These ZIP code areas are: 10003, 10004, 10005, 10006, 10007, 10010, 10011, 10012, 10014, 10016, 10017, 10021, 10022, 10023, 10024, 10028, 10069, 10128, 10162, 10280, 10282, 10307, 10308, 10309, 10312, 10314, 11040, 11360, 11362, 11363, 11366, 11411, 11422, 11426, 11430, 11697. Low-Income Areas are comprised of the bottom 20% of NYC's ZIP Code areas, as determined by 2000 median income. These ZIP code areas are: 10002, 10026, 10027, 10029, 10030, 10031, 10032, 10035, 10037, 10039, 10451, 10452, 10453, 10454, 10455, 10456, 10457, 10458, 10459, 10460, 10468, 10472, 10474, 11206, 11207, 11208, 11211, 11212, 11213, 11216, 11219, 11221, 11224, 11233, 11237, 11239.

TABLE 4

**Asthma Hospitalizations by Payor and Age: Numbers of Hospitalizations and Hospital Days,  
and Total Charges for Asthma Hospitalizations by Payor and Age, New York City, 2000**

Age Group	Medicaid			Medicare		
	Hospitalizations	Days	Charges (\$)	Hospitalizations	Days	Charges (\$)
0-4	3,372	9,504	21,256,207	2	6	7,444
5-9	1,562	4,218	9,384,279	6	16	26,018
10-14	1,094	3,279	7,327,798	1	2	3,784
15-19	469	1,440	3,295,646	4	6	12,649
20-24	395	1,204	2,945,167	13	60	188,525
25-29	364	1,024	2,448,535	16	55	139,706
30-34	560	1,883	4,829,639	43	183	458,838
35-39	921	3,649	8,645,037	97	399	934,427
40-44	1,105	4,528	10,995,285	129	586	1,493,419
45-49	1,001	4,371	10,388,850	158	785	1,838,957
50-54	828	3,700	9,332,255	163	919	2,412,160
55-59	810	4,100	10,457,364	244	1,051	2,613,353
60-64	724	3,705	9,271,655	313	1,594	3,853,293
65-69	262	1,300	3,067,794	731	4,397	10,701,415
70-74	133	762	1,801,417	669	4,121	9,852,872
75-79	124	853	2,174,130	583	3,652	8,815,988
80-84	74	442	1,033,437	436	2,834	6,558,678
85+	57	464	1,128,669	337	2,562	6,141,603
<b>Total</b>	<b>13,855</b>	<b>50,426</b>	<b>119,783,164</b>	<b>3,945</b>	<b>23,228</b>	<b>56,053,129</b>

TABLE 4 (CONTINUED)

**Asthma Hospitalizations by Payor and Age: Numbers of Hospitalizations and Hospital Days,  
and Total Charges for Asthma Hospitalizations by Payor and Age, New York City, 2000**

Age Group	Self-Pay			Other		
	Hospitalizations	Days	Charges (\$)	Hospitalizations	Days	Charges (\$)
0-4	656	1,669	4,132,544	1,473	3,582	7,966,775
5-9	308	761	1,912,421	737	1,959	4,156,867
10-14	188	485	1,194,186	492	1,421	3,176,577
15-19	102	229	549,010	223	604	1,282,704
20-24	151	391	970,083	140	369	831,994
25-29	157	351	897,725	215	618	1,417,994
30-34	179	438	1,068,250	282	872	1,972,013
35-39	240	650	1,535,599	384	1,305	2,942,054
40-44	243	762	1,940,277	410	1,600	3,688,302
45-49	185	644	1,598,000	397	1,451	3,352,213
50-54	157	594	1,463,869	415	1,887	4,337,118
55-59	135	493	1,218,849	339	1,566	3,665,503
60-64	121	488	1,257,241	272	1,267	2,862,943
65-69	62	228	564,071	104	510	1,026,127
70-74	51	206	507,294	88	511	1,096,629
75-79	40	153	406,432	50	274	673,697
80-84	14	80	252,858	34	204	351,272
85+	1	5	12,600	23	148	335,672
<b>Total</b>	<b>2,990</b>	<b>8,627</b>	<b>21,481,309</b>	<b>6,078</b>	<b>20,148</b>	<b>45,136,454</b>

TABLE 5

**Asthma Hospitalizations by Borough and UHF Neighborhood\*: Rate per 1,000 Children and  
Number of Hospitalizations, Children Aged 0-14, New York City, 1997 and 2000**

NEIGHBORHOOD	1997		2000		% Change 1997-2000
	Number	Rate/1,000	Number	Rate/1,000	
<b>Bronx</b>	<b>4,934</b>	<b>15.31</b>	<b>3,107</b>	<b>9.16</b>	<b>-40.2</b>
Kingsbridge-Riverdale <i>10463, 10471</i>	99	6.61	73	4.77	-27.8
Northeast Bronx <i>10466, 10469, 10470, 10475</i>	362	10.02	308	7.79	-22.3
Fordham-Bronx Park <i>10458, 10467, 10468</i>	957	15.45	598	9.01	-41.7
Pelham-Throgs Neck <i>10461, 10462, 10464, 10465, 10472, 10473</i>	770	12.60	568	8.75	-30.6
Crotona-Tremont <i>10453, 10457, 10460</i>	953	16.16	579	9.54	-41.0
High Bridge-Morrisania <i>10451, 10452, 10456</i>	998	18.53	617	11.02	-40.5
Hunts Point-Mott Haven <i>10454, 10455, 10459, 10474</i>	795	22.49	364	10.00	-55.5
<b>Brooklyn</b>	<b>4,382</b>	<b>8.10</b>	<b>3,024</b>	<b>5.45</b>	<b>-32.7</b>
Greenpoint <i>11211, 11222</i>	116	3.91	62	2.08	-46.8
Williamsburg-Bushwick <i>11206, 11221, 11237</i>	696	12.73	538	9.89	-22.3
Downtown-Heights-Slope <i>11201, 11205, 11215, 11217, 11231</i>	306	8.38	175	4.87	-41.9
Bedford Stuyvesant-Crown Heights <i>11212, 11213, 11216, 11233, 11238</i>	1,093	13.66	794	9.91	-27.5
East New York <i>11207, 11208</i>	584	12.13	433	8.79	-27.5
Sunset Park <i>11220, 11232</i>	180	6.98	87	3.21	-54.0
Borough Park <i>11204, 11218, 11219, 11230</i>	180	2.47	102	1.31	-47.0
East Flatbush-Flatbush <i>11203, 11210, 11225, 11226</i>	746	10.00	519	7.01	-29.9
Canarsie-Flatlands <i>11234, 11236, 11239</i>	231	5.89	171	3.96	-32.8
Bensonhurst-Bay Ridge <i>11209, 11214, 11228</i>	69	2.31	33	1.04	-55.0
Coney Island-Sheepshead Bay <i>11223, 11224, 11229, 11235</i>	181	3.63	110	2.12	-41.6
<b>Manhattan</b>	<b>2,601</b>	<b>12.19</b>	<b>1,493</b>	<b>6.91</b>	<b>-43.3</b>
Washington Heights-Inwood <i>10031, 10032, 10033, 10034, 10040</i>	532	9.14	288	4.91	-46.3
Central Harlem-Morningside Heights <i>10026, 10027, 10030, 10037, 10039</i>	659	20.65	420	12.68	-38.6
East Harlem <i>10029, 10035</i>	735	29.26	435	17.18	-41.3
Upper West Side <i>10023, 10024, 10025</i>	155	6.26	89	3.53	-43.6

\*The specific groups of ZIP codes that comprise each UHF neighborhood are listed below each neighborhood.

TABLE 5 (CONTINUED)

**Asthma Hospitalizations by Borough and UHF Neighborhood\*: Rate per 1,000 Children and  
Number of Hospitalizations, Children Aged 0-14, New York City, 1997 and 2000**

NEIGHBORHOOD	1997		2000		% Change 1997-2000
	Number	Rate/1,000	Number	Rate/1,000	
<b>Manhattan (continued)</b>					
Upper East Side <i>10021, 10028, 10044, 10128</i>	86	3.96	40	1.75	-55.8
Chelsea-Clinton <i>10001, 10011, 10018, 10019, 10020, 10036</i>	123	13.97	62	7.16	-48.7
Gramercy Park-Murray Hill <i>10010, 10016, 10017, 10022</i>	46	6.41	26	3.47	-45.9
Greenwich Village-Soho <i>10012, 10013, 10014</i>	21	2.98	12	1.69	-43.3
Union Square-Lower East Side <i>10002, 10003, 10009</i>	232	9.15	109	4.44	-51.5
Lower Manhattan <i>10004, 10005, 10006, 10007, 10038, 10280</i>	12	3.71	12	3.79	2.2
<b>Queens</b>	<b>2,533</b>	<b>6.32</b>	<b>2,028</b>	<b>4.76</b>	<b>-24.7</b>
Long Island City-Astoria <i>11101, 11102, 11103, 11104, 11105, 11106</i>	213	6.23	169	4.66	-25.2
West Queens <i>11368, 11369, 11370, 11372, 11373, 11377, 11378</i>	555	6.84	389	4.41	-35.5
Flushing-Clearview <i>11354, 11355, 11356, 11357, 11358, 11359, 11360</i>	134	3.31	148	3.53	6.6
Bayside-Little Neck <i>11361, 11362, 11363, 11364</i>	18	1.32	27	1.90	43.9
Ridgewood-Forest Hills <i>11374, 11375, 11379, 11385</i>	183	4.84	155	3.82	-21.1
Fresh Meadows <i>11365, 11366, 11367</i>	62	3.69	83	4.71	27.6
Southwest Queens <i>11414, 11415, 11416, 11417, 11418, 11419, 11420, 11421</i>	350	6.70	242	4.21	-37.2
Jamaica <i>11412, 11423, 11432, 11433, 11434, 11435, 11436</i>	553	9.32	420	6.74	-27.7
Southeast Queens <i>11004, 11005, 11411, 11413, 11422, 11426, 11427, 11428, 11429</i>	265	6.66	200	4.77	-28.4
Rockaway <i>11691, 11692, 11693, 11694, 11695, 11697</i>	200	7.99	195	7.54	-5.6
<b>Staten Island</b>	<b>330</b>	<b>3.66</b>	<b>239</b>	<b>2.52</b>	<b>-31.1</b>
Port Richmond <i>10302, 10303, 10310</i>	88	5.89	61	3.76	-36.2
Stapleton-St George <i>10301, 10304, 10305</i>	114	4.92	93	3.77	-23.4
Willowbrook <i>10314</i>	47	2.85	27	1.62	-43.2
South Beach-Tottenville <i>10306, 10307, 10308, 10309, 10312</i>	81	2.28	58	1.55	-32.0
<b>New York City Total</b>	<b>14,780</b>	<b>9.43</b>	<b>9,541</b>	<b>6.06</b>	<b>-35.7</b>

\*The specific groups of ZIP codes that comprise each UHF neighborhood are listed below each neighborhood.

TABLE 6

**Asthma Hospitalizations by ZIP Code: Number of Hospitalizations and Rate per 1,000 Children,  
Children Aged 0-14, New York City, 2000**

ZIP	Number	Population	Rate/1,000	ZIP	Number	Population	Rate/1,000
10001*	8	1,358	5.89	10306	21	10,870	1.93
10002	65	13,667	4.76	10307*	2	2,864	0.70
10003*	8	3,096	2.58	10308*	7	5,316	1.32
10004*	0	97	0.00	10309*	7	6,185	1.13
10005*	0	27	0.00	10310	19	5,696	3.34
10006*	0	80	0.00	10312	21	12,107	1.73
10007*	0	399	0.00	10314	27	16,700	1.62
10009	36	7,776	4.63	10451	171	10,995	15.55
10010	11	1,874	5.87	10452	192	22,019	8.72
10011	30	3,170	9.46	10453	204	23,721	8.60
10012*	1	1,945	0.51	10454	118	10,528	11.21
10013*	3	3,196	0.94	10455	117	10,727	10.91
10014*	8	1,974	4.05	10456	254	22,985	11.05
10016*	9	2,977	3.02	10457	197	20,975	9.39
10017*	4	797	5.02	10458	218	21,763	10.02
10018*	1	328	3.05	10459	97	11,601	8.36
10019	18	2,446	7.36	10460	178	16,017	11.11
10020	---	---	---	10461	46	8,237	5.58
10021*	10	9,371	1.07	10462	146	16,301	8.96
10022*	2	1,839	1.09	10463	62	12,238	5.07
10023	11	5,400	2.04	10464*	1	787	1.27
10024	23	7,280	3.16	10465	45	7,720	5.83
10025	55	12,506	4.40	10466	127	16,596	7.65
10026	83	7,320	11.34	10467	222	23,218	9.56
10027	116	10,396	11.16	10468	158	21,412	7.38
10028	8	5,010	1.60	10469	102	13,349	7.64
10029	310	17,666	17.55	10470	20	2,888	6.93
10030	100	6,667	15.00	10471	11	3,073	3.58
10031	66	13,205	5.00	10472	190	17,520	10.84
10032	78	13,602	5.73	10473	140	14,346	9.76
10033	67	11,990	5.59	10474	32	3,557	9.00
10034	38	9,340	4.07	10475	52	6,706	7.75
10035	125	7,653	16.33	10550	7	---	---
10036*	5	1,361	3.67	11001*	5	576	8.68
10037	52	3,127	16.63	11004*	5	2,620	1.91
10038*	10	1,661	6.02	11005*	0	24	0.00
10039	69	5,602	12.32	11101	35	5,212	6.72
10040	39	10,485	3.72	11102	36	6,701	5.37
10044*	4	1,386	2.89	11103	27	6,725	4.01
10128	18	7,113	2.53	11104	21	4,359	4.82
10280*	2	903	2.21	11105	20	6,133	3.26
10301	27	7,660	3.52	11106	30	7,101	4.22
10302	18	3,831	4.70	11201	27	5,977	4.52
10303	24	6,707	3.58	11202	3	---	---
10304	38	9,376	4.05	11203	119	18,002	6.61
10305	28	7,641	3.66	11204	16	16,036	1.00

TABLE 6 (CONTINUED)

**Asthma Hospitalizations by ZIP Code: Number of Hospitalizations and Rate per 1,000 Children,  
Children Aged 0-14, New York City, 2000**

ZIP	Number	Population	Rate/1,000	ZIP	Number	Population	Rate/1,000
11205	52	8,093	6.43	11365	31	7,825	3.96
11206	137	18,881	7.26	11366*	6	2,272	2.64
11207	218	24,672	8.84	11367	46	7,520	6.12
11208	215	24,570	8.75	11368	111	22,077	5.03
11209	11	10,936	1.01	11369	41	8,014	5.12
11210	80	15,642	5.11	11370	19	5,794	3.28
11211	49	24,011	2.04	11372	64	12,449	5.14
11212	250	24,328	10.28	11373	79	18,807	4.20
11213	163	16,790	9.71	11374*	9	6,156	1.46
11214	15	13,814	1.09	11375	19	8,949	2.12
11215	24	10,378	2.31	11377	59	15,097	3.91
11216	88	13,136	6.70	11378	16	5,930	2.70
11217	20	5,386	3.71	11379*	10	4,461	2.24
11218	44	17,264	2.55	11385	117	21,057	5.56
11219	13	23,983	0.54	11411	23	4,166	5.52
11220	70	20,925	3.35	11412	53	8,011	6.62
11221	220	21,339	10.31	11413	43	8,401	5.12
11222	13	5,735	2.27	11414*	8	4,200	1.90
11223	35	15,436	2.27	11415*	7	3,587	1.95
11224	45	10,475	4.30	11416	32	5,584	5.73
11225	99	14,459	6.85	11417	16	6,053	2.64
11226	221	25,967	8.51	11418	41	8,168	5.02
11227	2	---	---	11419	51	11,235	4.54
11228*	7	6,985	1.00	11420	47	10,291	4.57
11229	16	14,785	1.08	11421	40	8,351	4.79
11230	29	20,371	1.42	11422	33	7,104	4.65
11231	47	6,070	7.74	11423	26	6,565	3.96
11232	17	6,220	2.73	11426*	7	3,526	1.99
11233	221	17,266	12.80	11427	17	4,584	3.71
11234	39	17,417	2.24	11428	24	4,639	5.17
11235	14	11,252	1.24	11429	43	6,288	6.84
11236	126	22,927	5.50	11430*	1	98	10.20
11237	181	14,188	12.76	11432	82	11,035	7.43
11238	72	8,632	8.34	11433	46	7,082	6.50
11239*	6	2,794	2.15	11434	108	13,658	7.91
11354	42	8,588	4.89	11435	72	11,546	6.24
11355	57	14,242	4.00	11436	32	4,314	7.42
11356	17	4,131	4.12	11691	112	14,629	7.6
11357	13	5,979	2.17	11692	57	4,382	13.01
11358	12	6,513	1.84	11693	19	2,745	6.92
11360*	7	2,495	2.81	11694*	5	3,379	1.48
11361*	7	4,809	1.46	11696	1	---	---
11362*	6	2,646	2.27	11697*	1	717	1.39
11363*	3	1,134	2.65	<b>TOTAL</b>	<b>9,891</b>	<b>1,631,855</b>	<b>6.06</b>
11364	11	5,657	1.94				

\*Relative standard error of the rate is &gt;30% indicating low reliability

TABLE 7

**Asthma Hospital Admissions\* by Month and Age:  
Number of Admissions and Rate per 1,000 Persons, New York City, 2000**

Month	Ages 0-14		Ages 15+	
	Number	Rate/1,000	Number	Rate/1,000
Jan	996	0.61	1,990	0.31
Feb	905	0.55	1,445	0.23
March	767	0.47	1,415	0.22
April	718	0.44	1,359	0.21
May	790	0.48	1,416	0.22
June	610	0.37	1,286	0.20
July	309	0.19	1,032	0.16
Aug	399	0.24	989	0.16
Sept	1,033	0.63	1,272	0.20
Oct	1,224	0.75	1,691	0.27
Nov	1,116	0.68	1,419	0.22
Dec	948	0.58	1,298	0.20
<b>Total</b>	<b>9,815</b>	<b>6.01</b>	<b>16,612</b>	<b>2.61</b>

\*Based on date of admission; totals vary slightly compared to totals calculated based on date of discharge.

TABLE 8

**Trends in Asthma Mortality by Age and Gender:  
Numbers of Deaths and Rates per 100,000 Persons, All Ages, New York City, 1990-2000**

YEAR	Male		Female		Total	
	Number	Rate	Number	Rate	Number	Rate
1990	111	3.24	135	3.47	246	3.36
1991	98	2.83	140	3.57	238	3.22
1992	117	3.34	142	3.59	259	3.47
1993	108	3.05	139	3.49	247	3.28
1994	119	3.33	157	3.91	276	3.63
1995	101	2.80	174	4.29	275	3.59
1996	101	2.77	164	4.02	265	3.43
1997	86	2.33	144	3.50	230	2.95
1998	99	2.66	139	3.35	238	3.03
1999	110	2.93	124	2.97	234	2.95
2000	94	2.48	110	2.61	204	2.55

Table 9

**Current Self-Reported Asthma Prevalence by Borough and UHF Neighborhood\*:  
Number and Percentage<sup>†</sup>, Adults Aged 18 and Older, New York City, 2002**

NEIGHBORHOOD	Number	Percent <sup>†</sup> (%)
<b>Bronx</b>	<b>57,703</b>	<b>6.2</b>
Kingsbridge-Riverdale <i>10463, 10471</i>	2,386	3.8
Northeast Bronx <i>10466, 10469, 10470, 10475</i>	3,886	2.8
Fordham-Bronx Park <i>10458, 10467, 10468</i>	10,440	5.9
Pelham-Throgs Neck <i>10461, 10462, 10464, 10465, 10472, 10473</i>	16,760	8.2
South Bronx <sup>§</sup> Crotona-Tremont ( <i>10453, 10457, 10460</i> ) High Bridge-Morrisania ( <i>10451, 10452, 10456</i> ) Hunts Point-Mott Haven ( <i>10454, 10455, 10459, 10474</i> )	24,231	7.1
<b>Brooklyn</b>	<b>68,262</b>	<b>3.7</b>
Greenpoint <i>11211, 11222</i>	2,613	3.1
Williamsburg-Bushwick <i>11206, 11221, 11237</i>	7,049	6.1
Downtown-Heights-Slope <i>11201, 11205, 11215, 11217, 11231</i>	13,616	8.0
Bedford Stuyvesant-Crown Heights <i>11212, 11213, 11216, 11233, 11238</i>	8,616	4.0
East New York <i>11207, 11208</i>	7,662	6.4
Sunset Park <i>11220, 11232</i>	4,157	5.6
Borough Park <i>11204, 11218, 11219, 11230</i>	4,769	2.1
East Flatbush-Flatbush <sup>§</sup> <i>11203, 11210, 11225, 11226</i> Includes Canarsie-Flatlands ( <i>11234, 11236, 11239</i> )	9,246	2.5
Bensonhurst-Bay Ridge <i>11209, 11214, 11228</i>	4,777	3.3
Coney Island-Sheepshead Bay <i>11223, 11224, 11229, 11235</i>	5,757	2.5
<b>Manhattan</b>	<b>56,731</b>	<b>4.5</b>
Washington Heights-Inwood <i>10031, 10032, 10033, 10034, 10040</i>	12,918	6.7
Central Harlem-Morningside Heights <i>10026, 10027, 10030, 10037, 10039</i>	5,057	4.3
East Harlem <i>10029, 10035</i>	4,742	6.2
Upper West Side <i>10023, 10024, 10025</i>	6,652	3.9
Upper East Side <sup>§</sup> <i>10021, 10028, 10044, 10128</i> Includes Gramercy Park-Murray Hill ( <i>10010, 10016, 10017, 10022</i> )	8,774	2.7

\* The specific groups of ZIP codes that comprise each UHF neighborhood are listed below each neighborhood.

<sup>†</sup> Percents are age-adjusted to the Year 2000 U.S. Standard Population and exclude individuals who did not report age.

<sup>§</sup> Includes or consists of one or more UHF neighborhoods as indicated below neighborhood; refer to Appendix for further explanation.

Table 9 (CONTINUED)

**Current Self-Reported Asthma Prevalence by Borough and UHF Neighborhood\*:  
Number and Percentage†, Adults Aged 18 and Older, New York City, 2002**

NEIGHBORHOOD	Number	Percent†(%)
<b>Manhattan (continued)</b>		
Chelsea-Clinton§ 10001, 10011, 10018, 10019, 10020, 10036 Includes Greenwich Village-Soho (10012, 10013, 10014)	6,549	3.6
Union Square-Lower East Side 10002, 10003, 10009	11,331	7.2
Lower Manhattan 10004, 10005, 10006, 10007, 10038, 10280	707	2.6
<b>Queens</b>	<b>63,272</b>	<b>3.7</b>
Long Island City-Astoria§ 11101, 11102, 11103, 11104, 11105, 11106 Includes West Queens (11368, 11369, 11370, 11372, 11373, 11377, 11378)	24,604	4.2
Flushing-Clearview 11354, 11355, 11356, 11357, 11358, 11359, 11360	4,587	2.3
Bayside-Little Neck§ 11361, 11362, 11363, 11364 Includes Fresh Meadows (11365, 11366, 11367)	4,873	3.5
Ridgewood-Forest Hills 11374, 11375, 11379, 11385	6,567	3.0
Southwest Queens 11414, 11415, 11416, 11417, 11418, 11419, 11420, 11421	4,952	2.4
Jamaica 11412, 11423, 11432, 11433, 11434, 11435, 11436	11,233	5.5
Southeast Queens 11004, 11005, 11411, 11413, 11422, 11426, 11427, 11428, 11429	3,916	2.6
Rockaway 11691, 11692, 11693, 11694, 11695, 11697	2,541	3.4
<b>Staten Island</b>	<b>18,505</b>	<b>5.7</b>
Northern Staten Island§ Port Richmond (10302, 10303, 10310) Stapleton-St. George (10301, 10304, 10305)	8,124	6.3
Southern Staten Island§ Willowbrook (10314) South Beach-Tottenville (10306, 10307, 10308, 10309, 10312)	10,381	5.4
<b>New York City Total</b>	<b>264,473</b>	<b>4.4</b>

\* The specific groups of ZIP codes that comprise each UHF neighborhood are listed below each neighborhood.  
† Percents are age-adjusted to the Year 2000 U.S. Standard Population and exclude individuals who did not report age.  
§ Includes or consists of one or more UHF neighborhoods as indicated below neighborhood; refer to Appendix for further explanation.





THE CITY OF NEW YORK  
DEPARTMENT of HEALTH and MENTAL HYGIENE

Michael R. Bloomberg, Mayor  
Thomas R. Frieden, M.D., M.P.H., Commissioner

