



TRENDS IN ASTHMA MORBIDITY AND MORTALITY

**AMERICAN LUNG ASSOCIATION
EPIDEMIOLOGY & STATISTICS UNIT
RESEARCH AND PROGRAM SERVICES
August 2007**

TABLE OF CONTENTS

Asthma Mortality, 1979-1998, 1999-2004
Asthma Prevalence, 1982-1996 and 1997-2006
Asthma Hospital Discharges, 1979-2005
Asthma Ambulatory Care Visits, 1989-2005
Economic Cost of Asthma, 2007
Glossary and References

List of Tables

Table 1: Number of Deaths by Race and Sex, 1979-1998, 1999-2004
Table 2: Age-Adjusted Death Rate per 100,000 Population, By Race & Sex, 1979-1998, 1999-2004
Table 3: Number of Deaths and Age-Adjusted Death Rate per 100,000 Population, By Origin and Sex, 1999-2004
Table 4: Number of Deaths in 10-Year Age Groups, 1979-1998, 1999-2004
Table 5: Mortality Rates Per 100,000 Population, by 10-Year Age Groups, 1979-1998, 1999-2004
Table 6: Number of People Ever Told by a Doctor that they had Asthma and Prevalence Rates Per 1,000 Persons, By Age, Sex and Race, 1998-2005
Table 7: Number of Conditions and Age-Specific Prevalence Rates Per 1,000 Persons, 1982-1996, 2001-2005
Table 8: Number of Conditions and Sex-Specific Prevalence Rates Per 1,000 Persons, 1982-1996, 2001-2005
Table 9: Number of Conditions and Prevalence Rates Per 1,000 Persons, By Race and Age, 1982-1996, 2001-2005
Table 10: Number of People Who Had an Asthma Attack or Episode and Prevalence Rates Per 1,000 Persons, By Age, Sex and Race, 1997-2005
Table 11: Number of Conditions and Prevalence Rates per 1,000 Persons, By Origin, 1998-2005
Table 12: Estimated Lifetime Prevalence (%) in Adults, By State, 2000-2006
Table 13: Estimated Current Prevalence (%) in Adults, By State, 2000-2006
Table 14: Estimated Lifetime and Current Prevalence (%) in Adults, By Selected MSA's, 2006
Table 15: Estimated Lifetime and Current Prevalence (%) in Children, By State, 2003
Table 16: Number of First-Listed Hospital Discharges and Rate per 10,000 Population, By Sex, 1979-2005
Table 17: Number of First-Listed Hospital Discharges and Rates per 10,000 Population By Age, 1979-2005
Table 18: Number of First-Listed Hospital Discharges and Rates per 10,000 Population By Race, 1988-2005
Table 19: Number of Visits to Physician Offices, Outpatient and Emergency Departments, 1989-2005
Table 20: Economic Cost of Asthma, US, 2007

List of Figures

Figure 1: Age-Adjusted Death Rates Based on 1940 and 2000 Standard Populations, 1979-2004
Figure 2: Percentage Distribution of Lifetime Asthma By Sex, Age, Race and Geographic Region, 2005
Figure 3: Percentage Distribution of Current Asthma By Sex, Age, Race and Geographic Region, 2005
Figure 4: Percentage Distribution of Asthma Attacks By Sex, Age, Race and Geographic Region, 2005
Figure 5: Estimated Current Asthma Prevalence (%) Among Adults, By State, 2006
Figure 6: Estimated Current Asthma Prevalence (%) Among Children, By State, 2003
Figure 7: First-Listed Hospital Discharge Rate per 10,000 Population by Age, 1979-2005
Figure 8: First-Listed Hospital Discharge Rate per 10,000 Population by Race, 1988-2005

Introduction

Many Americans are afflicted by asthma, a serious chronic lung disease caused by continual airway inflammation punctuated by episodes or attacks of increased inflammation often in response to specific triggers. These attacks are characterized by difficulty in breathing, which occasionally are extreme and constitute a medical emergency. Over the past two decades, the burden of asthma in the United States has greatly increased. However, within the last few years, mortality and hospitalizations due to asthma have decreased and asthma prevalence has stabilized, possibly indicating an improved level of disease management.

The following report delineates information available from national and state based surveys on the mortality, prevalence, hospitalizations, ambulatory care visits and economic costs due to asthma. Comparisons among racial groups are made without regard to Hispanic ethnicity, unless otherwise noted.

Asthma Mortality

Beginning with 1999 mortality data, the population standard used for calculating age-adjusted death rates was changed from the 1940 population to the 2000 population. This change has three important outcomes: (i) provides age-adjusted rates that are less divergent from crude rates (ii) ensures that all government agencies use the same standard and (iii) corrects the public perception that age adjustment to the 1940 population provides out-of-date statistics. Use of the 2000 population standard places more weight on death rates at older ages and less weight on death rates at younger ages. Because most lung disease rates increase with age, death rates using the new standard are higher than those using the old standard. Figure 1 compares the asthma age-adjusted death rates based on the 1940 and 2000 standard populations from 1979-2004. Age-adjusted death rates for asthma were approximately 1.4 times greater using the 2000 standard population than those based on the 1940 standard population.

In addition, starting with 1999 data, the tenth revision of international classification of diseases (ICD-10) replaced ICD-9 in coding and classifying mortality data from death certificates. The ICD is periodically revised to reflect changes in the medical field. This change has several consequences: (i) new cause-of death titles and corresponding cause-of-death codes, i.e. ICD-10 has alphanumeric categories rather than numeric categories, (ii) breaks in comparability of cause-of-death statistics, and (iii) restructuring of the leading causes of death. In order to assess the net effect of the new revision on death statistics, a comparability ratio is derived. The comparability ratio is calculated by dividing the number of deaths for a selected cause of death classified by the new revision by the number of deaths classified to the most nearly comparable cause of death by the previous revision. A comparability ratio of 1 denotes no change between revisions; a ratio of less than 1 signifies a decrease and a ratio of greater than 1 symbolizes an increase in deaths. The comparability ratio for asthma was 0.8938, indicating an 11% decrease in assignments of deaths due to asthma when using ICD-10.

Due to decennial revisions of the International Classification of Diseases (ICD) coding system and the change in age-adjusted standard population, the number and rate of asthma deaths for 1999-2004 are not directly comparable to those reported between 1978 and 1998.

Table 1 documents the number of deaths by race and sex between 1979 and 2004. In 2004, 3780 people died of asthma. Close to 64% of these deaths occurred in women. **Table 2** displays the age-adjusted death rate per 100,000 population by race and sex for the same years. The age-adjusted death rate in 2004 was 1.3 per 100,000. In 2003, the female death rate was 80% greater than the rate seen in males and the age-adjusted death rate for asthma in the black population (2.7 per 100,000) was more than double the rate in the white population (1.2 per 100,000). Black women had the highest mortality rate due to asthma in 2003 (2.9 per 100,000).¹

Table 3 delineates the number of deaths and age-adjusted death rate per 100,000 population by Hispanic origin. In 2003, 299 Hispanics died of asthma - an age-adjusted death rate of 1.3 per 100,000 population.² Age-adjusted death rates in Hispanics were 54% lower than non-Hispanic blacks, but the same as non-Hispanic Whites. However, studies have suggested that Puerto Ricans had higher age-adjusted death rates than all other Hispanic subgroups and non-Hispanic whites and blacks.³

Tables 4 and 5 delineate the number of deaths and mortality rates for asthma by 10-year age groups from 1979 to 2004. Asthma deaths are rare among children and increase with age. In 2003, 154 children under 15 died from asthma compared to 671 adults over 85. The age-adjusted death rate in those 85 and over was 145% greater than the second highest mortality rate seen in the 75-84 year olds (14.2 per 100,000 vs. 5.8 per 100,000).⁴

Unlike morbidity estimates, which are drawn from sample populations and extrapolated to the overall population, mortality data is obtained from the general population by way of death certificates. Therefore, sex- and race-specific mortality figures are actual counts that denote differences between groups.

As seen in recent years the number deaths due to asthma continue to decline, even after the ICD-10 revision is taken into account. The number of asthma deaths has decreased by 19% since 1999.

Asthma Prevalence

National Health Interview Survey, 1982 1996 and 1997-2005

The National Health Interview Survey (NHIS) is a multi-purpose health survey conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC). It is the principal source of information on the health of the civilian, noninstitutionalized, household population of the United States.

Despite the periodic revision of the NHIS Core questionnaire, Supplements began to play an increasingly important role in the survey as a means of enhancing topic coverage in the Core section. The unintended result was an increasingly unwieldy survey instrument and longer interviewing sessions: recent questionnaires (Core and Supplements combined) ran almost 300 pages, while the interviews averaged two hours. This imposed an unacceptable burden on NCHS staff, US Bureau of

Census interviewers, the data collection budget, and on the NHIS respondents. Furthermore, the excessive length of NHIS interviews contributed to declines in both response rate and data quality. For all these reasons, NCHS implemented a redesigned NHIS questionnaire in 1997.

Between 1997 and 2000, the revised questionnaire made it impossible to compare asthma estimates with those prior to 1997. The revised questionnaire evaluated both lifetime and attack prevalence of asthma. Respondents or their proxies were asked if they had ever been diagnosed with asthma by a health professional in their lifetime and if so, had they had an asthmatic attack or episode in the past 12 months. The question on asthma attack prevalence assists public health professionals plan interventions by measuring the population at risk for serious outcomes from asthma.

To improve data quality in 2001, National Health Interview Survey respondents or their proxies who answered yes to ever being diagnosed with asthma by a health professional in their lifetime were also asked if they still had asthma. This comes closest to the question asked in the National Health Interview Survey prior to 1997 – “Has anyone in your family had asthma during the past 12 months?”

These estimates most likely continue to reflect an underestimate of true asthma prevalence, since studies have shown that there are many individuals suffering from undiagnosed asthma.

Lifetime Prevalence

Based on the 2005 NHIS sample, it was estimated that 32.6 million Americans, or 112 per 1,000 persons, had been diagnosed with asthma by a health professional within their lifetime. Between 1998 and 2005, children 5-17 years of age have had the highest prevalence rates. In 2005, 142.2 per 1,000 children ages 5-17 had been diagnosed with asthma in their lifetime.⁵

Females have had consistently higher rates than males. In 2005, females were about 18% more likely than males to ever have been diagnosed with asthma.⁶ The difference between sexes was statistically significant.

Blacks are more likely to be diagnosed with asthma over their lifetime. In 2005, the prevalence rate in blacks was 26.4% higher than the rate in whites.⁷ Since 1997 the differences in lifetime asthma prevalence between races have been statistically significant.

These data are displayed in **Table 6**.

Current Prevalence

Data between 1982 and 1996 should not be compared to 2001-2005 estimates.

Age-specific current asthma prevalence trends are shown in **Table 7**. Approximately 22.2 million Americans (6.5 million children) had asthma in 2005; a rate of 76.3 per 1,000 population. The highest prevalence rate was seen in those 5-17 years of age (97.2 per 1,000 population), with rates decreasing with age. Overall, the rate in those under 18 (89.0 per 1,000) was significantly greater than those over 18 (72.1 per 1,000).⁸

Sex-specific current asthma prevalence trends are delineated in **Table 8**. In 2005, 9.1 million males and 13.1 million females had asthma. The prevalence rate in females (88.3 per 1,000 persons) was 38.4% greater than the rate in males (63.8 per 1,000 persons) overall and 78.2% greater in female adults over 18 than adult males over 18 (97.5 per 1,000 vs. 54.7 per 1,000). However, this pattern is reversed among children. The current asthma prevalence rate for boys under 18 (100.8 per 1,000) was 28% higher than the rate among girls (78.5 per 1,000). The difference in rates between sexes was statistically significant in both children and adults.⁹

Race and agespecific current asthma prevalence trends are displayed in **Table 9**. In 2005, the current asthma prevalence rate was 36.0% higher in blacks than in whites (100.1 per 1,000 persons vs. 73.6 per 1,000 persons, respectively). This difference between races was significant. The highest prevalence rates for whites and blacks were among the 5-17 age group. Whites had the lowest prevalence rates in those under 5 and blacks had the lowest in those 45-64 years old.¹⁰

Attack Prevalence

Table 10 displays asthma attack prevalence estimates between 1998 and 2005. In 2005, an estimated 12.2 million Americans (3.8 million children under 18) had an asthma attack. This represents 55% of the 22.2 million people who currently have asthma. The asthma attack rate was 42.0 per 1,000 persons.¹¹

For the past eight years, 5-17 year olds had the highest attack prevalence rates while those over 65 had the lowest. Between 1997 and 2005 the asthma attack prevalence rate in those under 18 was significantly greater than those over 18 (52.0 versus 38.7 per 1,000 respectively).¹²

Females tend to have consistently higher attack prevalence rates than males. In 2005, 7.4 million females (49.8 per 1,000) had an asthma attack compared to 4.8 million males (33.9 per 1,000). The difference in attack prevalence rates between sexes has been significant each year since 1998.¹³

The asthma attack prevalence rate in blacks was 19.2% higher than the rate in whites. The difference between races was significant. In 2005, asthma attack prevalence rates in whites were highest among the 5-17 age group and lowest in those over 65. Asthma attack prevalence rates in blacks were highest among those under the age of 5 and lowest in those 45-64 years old.¹⁴

Asthma in Hispanics

Table 11 displays the number of conditions and prevalence rates by Hispanic origin. In 2005, 3.9 million Hispanic Americans had been diagnosed with asthma in their lifetime; 2.6 million reported that they still have the disease, and 1.6 million of those experienced an asthma attack in the past year. Prevalence rates in Hispanics were significantly lower than Non-Hispanic blacks and somewhat lower than Non-Hispanic whites in 2005. Studies have suggested that within Hispanic subgroups, Puerto Ricans may have higher rates of asthma than other Hispanic subgroups and non-Hispanic whites.¹⁵

Percentage Distribution of Conditions

Percentage distributions of lifetime asthma, current asthma and asthma attacks in 2005 are displayed in **Figures 2, 3, and 4**, respectively. Each figure displays the distribution of asthma by sex, age group, ethnicity and geographic region. The overall percentage of asthma sufferers tend to be highest in the South, in Non-Hispanic whites, in 18-44 year olds, and in females.¹⁶

Behavioral Risk Factor Surveillance System, 2000-2006

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based telephone survey of the noninstitutionalized U.S. population aged 18 and over that collects information about modifiable risk factors for chronic diseases and other leading causes of death. This is the first survey to collect state-specific asthma prevalence data for adults.

Questions on lifetime and current asthma prevalence in the BRFSS are comparable to the National Health Interview Survey, but estimates vary due to sampling design. According to the 2006 BRFSS, an estimated 28.5 million adults (13.0%) had been diagnosed with asthma within their lifetime and 18.3 million adults (8.5%) still had asthma in 2006. This compares to 23.3 million adults (10.8 %) and 15.7 million adults (7.3%) who were diagnosed with lifetime and current asthma, respectively, in the 2005 National Health Interview Survey (NHIS). Data from the 2006 NHIS is not available yet. Confidence intervals around the prevalence rates indicate that the estimates from both surveys were statistically different.¹⁷

Tables 12 and 13 display estimated state-specific lifetime and current asthma prevalence in adults between 2000 and 2006. **Figure 5** shows the estimated state-specific current asthma prevalence for 2006. Current asthma prevalence in adults ranged from 5.9% in Louisiana to 10.5% in Rhode Island.¹⁸

In addition to asthma prevalence information by state, the BRFSS has calculated asthma prevalence estimates for approximately 100 metropolitan and micropolitan statistical areas for the years 2002-2006. **Table 14** displays estimated lifetime and current asthma prevalence in adults for 143 areas in 2006. Out of the selected MSAs, current asthma prevalence in adults ranged from 4.5% in Dallas-Plano-Irving, TX to 12.1% in Essex County, MA.¹⁹

National Survey of Children's Health, 2003

Recognizing the need for asthma and other health data that could be meaningfully compared across states for all children less than 18 years of age, the Maternal and Child Health Bureau of the Health Resources and Services Administration utilized the State and Local Area Integrated Telephone Survey (SLAITS) program to sponsor the National Survey of Children's Health (NSCH).

The National Survey of Children's Health (NSCH) is a state-based telephone survey of households with children less than 18 years of age that collects information on a variety of physical, emotional, and behavioral health indicators. The respondent was a parent or guardian who knew the most about the selected child's health. This is the first survey to collect state-specific asthma prevalence data in children under 18 years of age. The next survey of children's health is due to be conducted in 2007.

Questions on lifetime and current asthma prevalence in the NSCH are identical to that found in the Behavioral Risk Factor Surveillance System. This survey, like the National Health Interview Survey,

also questions respondents on asthma attack prevalence. **Table 15** displays estimated state-specific lifetime, current and asthma attack prevalence in children under 18 in 2003. **Figure 6** shows the estimated state-specific current asthma prevalence for 2003. Current asthma prevalence in children under 18 ranged from 5.7 in South Dakota and Idaho to 11.9% in Delaware. Children in Kentucky had the highest rates of asthma attacks with 7.2%.²⁰

First-Listed Asthma Hospital Discharges

A first listed diagnosis is the diagnosis identified as the principal diagnosis or listed first on the medical record. Due to a change in the design of the survey, data from 1988-2005 is not directly comparable to that of earlier years. The hospital discharge rate for asthma increased dramatically from 1979 to 1988, remained stable in the early 1990s, and peaked at 511,000 discharges (19.5 per 10,000 population) in 1995. During 2005, 488,594 discharges (16.6 per 10,000 population) were due to asthma. Between 2003 and 2005 there was a 16.2% decrease in hospitalization discharge rates for asthma in the United States.²¹

Table 16 delineates the trend in the number of hospital discharges and rates by sex from 1979 to 2005. Between 1995 and 2005 the number of hospital discharges decreased 4.3% overall, 8.6% in males and 1.7% in females. In 2005, a total of 296,128 discharges were reported in females and 192,466 were reported in males.²²

As shown in **Table 17**, hospital discharge rates for asthma decreased in all age groups between 1995 and 2005, except for those over 65 years of age. Unlike other chronic lung diseases, asthma discharges are very common among the pediatric population. Approximately 32.6% of the asthma discharges in 2005 were in those under 15, however only 27.8% of the U.S. population was less than 15 years old. **Figure 7** depicts this age specific trend.²³

The trend in hospital discharges by race is delineated in **Table 18**. The 2005 discharge rate for asthma in blacks (27.0 per 10,000) was almost 2.5 times higher than that seen in whites and other races (11.1 and 11.8 per 10,000, respectively). These rates, however, should be interpreted with caution due to a large percentage of discharges for which race was not reported. **Figure 8** displays this race-specific trend.

Asthma Ambulatory Care Visits

Table 19 displays the trend in visits to physician offices, hospital outpatient departments and emergency departments in the United States from 1989-2005. In 2005 there were 12.8 million physician office visits, 1.3 million hospital outpatient department visits and almost 1.8 million emergency room visits due to asthma.²⁴

Economic Cost of Asthma

Estimates of direct medical expenditures and indirect costs (in 2007 dollars) attributed to asthma are shown in **Table 20**. Asthma burdens our nation with an annual economic cost of \$14.7 billion in direct health care costs; indirect costs (lost productivity) add another \$5 billion for a total of \$19.7 billion. Prescription drugs represented the largest single direct medical expenditure, at \$6.2 billion.²⁵

A recent study by the American Lung Association Asthma Clinical Research Centers found that the inactivated influenza vaccine is safe to administer to adults and children with asthma, including those with severe asthma.²⁶ Influenza causes substantial morbidity in adults and children with asthma, and vaccination can prevent influenza and its complications. Currently, 36.3% of adults with asthma receive the influenza vaccine.²⁷

Summary

After a long period of steady increase, evidence suggests that asthma mortality and morbidity rates continue to plateau and/or decrease. Mortality figures due to asthma have been continuing to decline for the past 4 years. The number of deaths due to asthma in 2004 was approximately 18.8% lower than the number of deaths seen in 1999.²⁸

Hospital discharges have been declining since 1995. The number of hospital discharges has decreased 4.3% between 1995 and 2005 while the hospital discharge rate has declined 15% since it peaked at 19.5 per 10,000 in 1995.²⁹

Lifetime and attack prevalence rates have fluctuated over the past six years but have remained stable and there is only five years of data on current asthma. Therefore, more years of data from the revised National Health Interview Survey are needed to accurately assess the current prevalence trend.

However, asthma remains a major public health concern. In 2005, approximately 22.2 million Americans had asthma and the condition accounted for an estimated 12.8 million lost school days in children and 14.5 million lost work days in adults.^{30,31} Asthma ranks within the top ten prevalent conditions causing limitation of activity and costs our nation \$19.7 billion in health care costs annually.³²

GLOSSARY

- Prevalence:** The proportion of existing cases of a particular condition, disease, or other occurrence (e.g., persons smoking) at a given time.
- Lifetime Prevalence:** The proportion of cases that exist within a population at any point during a specified period of time. Therefore, respondents may not still have the condition in question. In this report: the proportion of people ever receiving a diagnosis of asthma from a health professional.
- Current Prevalence:** The proportion of cases that exist within a population at a single point in time. In this report: the proportion of people who have ever received a diagnosis of asthma and still have the disease.
- Attack Prevalence:** The proportion of attacks that occur within a population at a single point in time. In this report: the proportion of people who had one or more asthma attacks or episodes in the preceding year. This type of period prevalence estimate measures for active asthma.
- Crude Rate:** Cases in a particular population quantity- e.g. per hundred.
- Age-Adjusted Rate:** A figure that is statistically corrected to remove the distorting effect of age when comparing populations of different age structures.
- P value:** The probability of observing a result as extreme as that observed solely to chance. If the p-value is less than or equal to 0.05, then there is no more than a 5% chance of seeing that result again, but if the p- value is greater than or equal to 0.05, then chance cannot be excluded as a likely explanation and the findings are said to be not significant at that level.
- Metropolitan SA:** A group of counties with at least one urbanized area of 50,000 or more inhabitants.
- Micropolitan SA:** A group of counties with at least one urban cluster of at least 10,000 but less than 50,000 inhabitants.

SOURCES:

- ¹ Centers for Disease Control and Prevention (CDC). National Center for Health Statistics, Final Vital Statistics Report 1979-2003, 2004 Preliminary Data.
- ² Ibid.
- ³ Homa, D. et al. *Asthma Mortality in U.S. Hispanics of Mexican, Puerto Rican, and Cuban Heritage, 1990-1995*. American Journal of Respiratory and Critical Care Medicine, 2000; 161: 504-509.
- ⁴ CDC. National Center for Health Statistics, Final Vital Statistics Report 1979-2003.
- ⁵ CDC. National Center for Health Statistics. *Raw Data from the National Health Interview Survey, US, 1997-2005*. (Analysis by the American Lung Association, Using SPSS and SUDAAN software).
- ⁶ Ibid.
- ⁷ Ibid.
- ⁸ National Center for Health Statistics, National Health Interview Survey, 1982-1996, 2001-2005. (Analysis by the American Lung Association, Using SPSS and SUDAAN software).
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Ibid.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ CDC. Behavioral Risk Factor Surveillance Survey, 2000-2006.
- ¹⁸ Ibid.
- ¹⁹ Ibid.
- ²⁰ CDC. National Center for Health Statistics. SLAITS. National Survey of Children's Health, 2003.
- ²¹ CDC. National Center for Health Statistics. *National Hospital Discharge Survey, 1980-2004*. 2005 unpublished data provided upon special request to the NCHS.
- ²² Ibid.
- ²³ Ibid.
- ²⁴ CDC. National Center for Health Statistics. *National Ambulatory Medical Care Survey, 1992-2005*. National Hospital Ambulatory Medical Care Survey, 2005.
- ²⁵ National Heart, Lung and Blood Institute Chartbook on cardiovascular, lung and blood diseases, U.S. Department of Health and Human Services, National Institute of Health, 2007. Unpublished data provided upon special request to the NCHS.
- ²⁶ American Lung Association Asthma Clinical Research Centers. *The Safety of Inactivated Influenza Vaccine in Adults and Children with Asthma*. New England Journal of Medicine, 2001; 345(21): 1529-1536.
- ²⁷ CDC. BRFSS, raw data 2005. (Analysis by the American Lung Association, Using SPSS and SUDAAN software).
- ²⁸ National Center for Health Statistics, Final Vital Statistics Report 2003.
- ²⁹ CDC: National Hospital Discharge Survey, 1995-2005. (Analysis by the American Lung Association, Using SPSS and SUDAAN software).
- ³⁰ Centers for Disease Control and Prevention: U.S. Department of Health and Human Services: Vital and Health Statistics "The State of Childhood Asthma, United States, 1980-2005" Advanced Data No. 381, December 12, 2006.
- ³¹ American Academy of Allergy, Asthma and Immunology. Allergy and Asthma Advocate: Fall 2004. available at: www.aaaai.org/patients/advocate/2004/fall/costs.stm. Accessed 8/30/07.
- ³² National Heart, Lung and Blood Institute Chartbook on cardiovascular, lung and blood diseases, U.S. Department of Health and Human Services, National Institute of Health 2007. Unpublished data provided upon special request to the NHLBI.

TABLE 1: ASTHMA - NUMBER OF DEATHS BY RACE AND SEX, 1979-1998, 1999-2004

YEAR	TOTAL						ALL OTHER ⁽¹⁾					
	TOTAL			WHITE			TOTAL			BLACK		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
1979 ⁽²⁾	2,598	1,133	1,465	2,095	898	1,197	503	235	268	470	214	256
1980	2,891	1,292	1,599	2,291	1,008	1,283	600	284	316	557	260	297
1981	3,054	1,287	1,767	2,426	977	1,449	628	310	318	576	281	295
1982	3,154	1,314	1,840	2,450	983	1,467	704	331	373	647	301	346
1983	3,561	1,455	2,106	2,751	1,084	1,667	810	371	439	732	336	396
1984	3,564	1,467	2,097	2,779	1,106	1,673	785	361	424	701	312	389
1985	3,880	1,551	2,329	3,026	1,140	1,886	854	411	443	778	371	407
1986	3,955	1,584	2,371	3,036	1,178	1,858	919	406	513	828	360	468
1987	4,360	1,730	2,630	3,327	1,244	2,083	1,033	486	547	920	428	492
1988	4,597	1,822	2,775	3,473	1,299	2,174	1,124	523	601	1,012	460	552
1989	4,869	1,848	3,021	3,761	1,352	2,409	1,108	496	612	984	434	550
1990	4,819	1,885	2,934	3,696	1,358	2,338	1,123	527	596	986	460	526
1991	5,106	1,927	3,179	3,915	1,388	2,527	1,191	539	652	1,043	472	571
1992	4,964	1,869	3,095	3,789	1,362	2,427	1,175	507	668	1,036	433	603
1993	5,167	1,928	3,239	3,910	1,384	2,526	1,257	544	713	1,112	465	647
1994	5,487	2,101	3,386	4,134	1,492	2,642	1,353	609	744	1,186	525	661
1995	5,637	2,079	3,558	4,208	1,454	2,754	1,429	625	804	1,247	538	709
1996	5,667	2,075	3,592	4,110	1,426	2,684	1,557	649	908	1,325	540	785
1997	5,434	1,986	3,448	4,002	1,383	2,619	1,432	603	829	1,200	498	702
1998	5,438	2,000	3,438	3,947	1,366	2,581	1,491	634	857	1,290	536	754
1999 ⁽³⁾	4,657	1,620	3,037	3,328	1,046	2,282	1,329	574	755	1,145	481	664
2000	4,487	1,632	2,855	3,144	1,057	2,087	1,343	575	768	1,158	481	677
2001	4,269	1,479	2,790	2,990	937	2,053	1,279	542	737	1,108	459	649
2002	4,261	1,580	2,681	3,014	1,017	1,997	1,247	563	684	1,096	497	599
2003	4,099	1,493	2,606	2,888	961	1,927	1,211	532	679	1,030	445	585
2004	3,780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, FINAL VITAL STATISTICS REPORT 1979-2003, 2004 PRELIMINARY DATA

NOTES:

(1) ALL RACES OTHER THAN WHITE.

(2) DEATHS FROM 1979-1998 ARE CODED BY THE 9TH REVISION OF INTERNATIONAL CLASSIFICATION OF DISEASES, CODE 493.

(3) DEATHS FROM 1999-2004 ARE CODED BY THE 10TH REVISION OF INTERNATIONAL CLASSIFICATION OF DISEASES, CODE J45.

NA: NOT APPLICABLE

**TABLE 2: ASTHMA - AGE-ADJUSTED DEATH RATE PER 100,000 POPULATION, BY RACE & SEX
1979-1998, 1999-2004^(1,2)**

YEAR	TOTAL			WHITE			ALL OTHER ⁽³⁾					
	BOTH			BOTH			TOTAL			BLACK		
	SEXES	MALE	FEMALE	SEXES	MALE	FEMALE	SEXES	MALE	FEMALE	SEXES	MALE	FEMALE
1979 ⁽⁴⁾	0.9	0.9	0.9	0.8	0.8	0.8	1.8	1.8	1.8	1.9	1.9	2.0
1980	1.0	1.0	1.0	0.8	0.8	0.8	2.0	2.1	1.9	2.2	2.2	2.2
1981	1.0	1.0	1.1	0.9	0.8	0.9	2.1	2.2	1.9	2.3	2.4	2.1
1982	1.0	1.0	1.1	0.9	0.8	0.9	2.2	2.3	2.2	2.5	2.5	2.5
1983	1.2	1.1	1.3	0.9	0.9	1.0	2.5	2.5	2.5	2.8	2.8	2.8
1984	1.1	1.1	1.2	1.0	0.9	1.0	2.3	2.4	2.3	2.6	2.5	2.6
1985	1.2	1.1	1.3	1.0	0.9	1.2	2.5	2.6	2.3	2.8	3.0	2.7
1986	1.2	1.1	1.3	1.0	0.9	1.1	2.6	2.5	2.7	2.9	2.9	3.0
1987	1.3	1.2	1.4	1.1	1.0	1.2	2.9	2.9	2.8	3.2	3.3	3.2
1988	1.4	1.2	1.5	1.1	1.0	1.2	3.0	3.1	3.0	3.5	3.5	3.4
1989	1.4	1.2	1.6	1.2	1.0	1.3	2.8	2.8	2.9	3.3	3.2	3.3
1990	1.4	1.3	1.5	1.2	1.0	1.3	2.9	3.0	2.8	3.4	3.5	3.3
1991	1.5	1.3	1.6	1.2	1.0	1.4	3.0	3.0	3.0	3.5	3.5	3.5
1992	1.4	1.2	1.5	1.1	0.9	1.3	2.8	2.8	2.9	3.3	3.1	3.5
1993	1.4	1.3	1.6	1.2	1.0	1.3	2.9	2.8	3.0	3.5	3.3	3.7
1994	1.5	1.4	1.7	1.2	1.0	1.4	3.1	3.1	3.1	3.7	3.6	3.7
1995	1.5	1.3	1.7	1.3	1.0	1.5	3.2	3.1	3.3	3.8	3.6	3.9
1996	1.5	1.3	1.7	1.2	1.0	1.4	3.3	3.1	3.5	3.9	3.6	4.1
1997	1.4	1.2	1.6	1.1	1.0	1.3	3.0	2.9	3.1	3.5	3.2	3.6
1998	1.4	1.2	1.5	1.1	0.9	1.2	3.0	2.9	3.1	3.7	3.4	3.8
1999 ⁽⁵⁾	1.7	1.4	2.0	1.4	1.0	1.7	3.4	3.3	3.5	3.9	3.6	4.2
2000	1.6	1.3	1.8	1.3	1.0	1.5	3.3	3.1	3.5	3.9	3.5	4.2
2001	1.5	1.2	1.7	1.2	0.9	1.5	3.0	2.8	3.2	3.6	3.2	3.8
2002	1.5	1.2	1.7	1.2	0.9	1.4	2.8	2.7	2.8	3.4	3.3	3.4
2003	1.4	1.0	1.8	1.2	0.8	1.6	2.2	2.0	2.4	2.7	2.4	2.9
2004	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, FINAL MORTALITY STATISTICS REPORT, 1979-2003, 2004 PRELIMINARY DATA

NOTES:

(1) RATES FOR THE YEARS 1979-1998 ARE AGE-ADJUSTED TO THE 1940 U.S. STANDARD POPULATION.

(2) RATES FOR 1999-2004 ARE AGE-ADJUSTED TO THE 2000 U.S. STANDARD POPULATION.

(3) ALL RACES OTHER THAN WHITE.

(4) INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION (ICD-9) CODE 493.

(5) INTERNATIONAL CLASSIFICATION OF DISEASES, 10TH REVISION (ICD-10) CODE J45-J46.

NA: NOT APPLICABLE

TABLE 3: ASTHMA-NUMBER OF DEATHS AND AGE-ADJUSTED DEATH RATE PER 100,000 POPULATION BY ORIGIN AND SEX, 1999-2004 ^(1,2)

Year/Sex	TOTAL		HISPANIC		NON-HISPANIC (3)		NON-HISPANIC WHITE		NON-HISPANIC BLACK	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
Both Sexes										
1999	4,657	1.7	320	1.7	4,324	1.7	3,011	1.4	1,134	4.1
2000	4,487	1.6	292	1.5	4,164	1.6	2,836	1.3	1,145	4.1
2001	4,269	1.5	274	1.4	3,976	1.5	2,717	1.2	1,092	3.6
2002	4,261	1.5	287	1.3	3,950	1.5	2,720	1.2	1,083	3.5
2003	4,099	1.4	299	1.3	3,786	1.4	2,589	1.3	1,019	2.8
2004	3,780	1.3	NA	NA	NA	NA	NA	NA	NA	NA
Male										
1999	1,620	1.4	119	1.2	1,495	1.4	930	1.0	474	3.7
2000	1,632	1.3	129	1.3	1,486	1.3	920	1.0	472	3.6
2001	1,479	1.2	103	1.0	1,365	1.2	834	0.9	450	3.3
2002	1,580	1.2	114	1.0	1,448	1.2	895	0.9	488	3.4
2003	1,493	1.1	131	1.1	1,356	1.2	831	0.9	439	2.5
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Female										
1999	3,037	2.0	201	2.0	2,829	2.0	2,081	1.7	660	4.3
2000	2,855	1.8	163	1.6	2,678	1.9	1,916	1.5	673	4.3
2001	2,790	1.7	171	1.7	2,611	1.8	1,883	1.4	642	3.9
2002	2,681	1.7	173	1.5	2,502	1.7	1,825	1.4	595	3.5
2003	2,606	1.6	168	1.4	2,430	1.6	1,758	1.7	580	3.0
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, FINAL MORTALITY STATISTICS REPORT, 1999-2003, 2004 PRELIMINARY DATA

NOTES:

(1) NUMBER OF DEATHS ARE CODED BY THE 10TH REVISION OF THE INTERNATIONAL CLASSIFICATION OF DISEASES, J45-J46.

(2) RATES ARE AGE-ADJUSTED TO THE 2000 U.S. STANDARD POPULATION.

(3) INCLUDES RACES OTHER THAN WHITE AND BLACK.

NA: NOT APPLICABLE

TABLE 4: ASTHMA - NUMBER OF DEATHS IN 10-YEAR AGE GROUPS, 1979-1998, 1999-2004

YEAR	TOTAL	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1979 ⁽¹⁾	2,598	5	19	39	99	111	157	282	502	695	499	190
1980	2,891	8	21	61	105	130	145	309	529	765	596	222
1981	3,054	3	12	72	112	155	178	308	607	803	575	229
1982	3,154	8	26	70	162	169	176	341	582	793	593	234
1983	3,561	5	28	78	144	186	231	384	686	836	693	290
1984	3,564	10	17	79	132	159	227	355	674	905	702	303
1985	3,880	6	21	98	156	182	231	378	755	936	785	332
1986	3,955	13	17	92	166	197	251	356	688	982	843	350
1987	4,360	4	19	101	181	199	341	443	709	1,081	873	408
1988	4,597	7	19	93	162	231	343	440	785	1,097	991	429
1989	4,869	6	26	95	148	256	346	472	743	1,208	1,094	473
1990	4,819	12	24	102	160	237	332	502	738	1,125	1,074	512
1991	5,106	5	30	106	183	280	386	510	737	1,155	1,161	553
1992	4,964	9	38	88	168	232	373	495	692	1,164	1,097	608
1993	5,167	6	32	118	186	240	405	508	738	1,196	1,114	623
1994	5,487	5	24	118	215	304	421	597	780	1,223	1,155	644
1995	5,637	13	21	130	224	298	498	663	785	1,147	1,195	663
1996	5,667	8	34	149	214	288	496	649	816	1,095	1,177	739
1997	5,434	5	30	119	174	298	489	636	757	992	1,183	751
1998	5,438	7	33	131	214	277	487	647	673	972	1,190	807
1999 ⁽²⁾	4,657	5	27	126	182	262	447	607	583	773	925	720
2000	4,487	8	32	129	167	249	458	614	540	734	849	707
2001	4,269	10	31	99	140	233	455	603	553	634	802	709
2002	4,261	4	43	123	169	235	472	608	536	583	812	675
2003	4,099	7	37	110	158	227	411	632	562	532	752	671
2004	3,780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, FINAL VITAL STATISTICS REPORT, 1979-1998, 1999-2003, 2004 PRELIMINARY DATA

NOTES:

(1)Deaths from 1979-1998 are coded by the 9th revision of International Classification of Diseases, 493.

(2)Deaths from 1999-2004 are coded by the 10th revision of International Classification of Diseases, J45-J46.

NA: NOT APPLICABLE

**TABLE 5: ASTHMA - MORTALITY RATE PER 100,000 POPULATION, BY 10-YEAR AGE GROUPS
1979-1998, 1999-2004**

YEAR	TOTAL	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1979 ⁽¹⁾	1.2	---	---	0.1	0.2	0.3	0.6	1.2	2.3	4.5	6.6	8.6
1980	1.3	---	0.2	0.2	0.2	0.4	0.6	1.4	2.4	4.9	7.7	9.9
1981	1.3	---	---	0.2	0.3	0.4	0.7	1.4	2.8	5.1	7.2	9.7
1982	1.4	---	0.2	0.2	0.4	0.4	0.6	1.5	2.6	4.9	7.2	9.6
1983	1.5	---	0.2	0.2	0.4	0.5	0.8	1.7	3.1	5.1	8.2	11.5
1984	1.5	---	---	0.2	0.3	0.4	0.7	1.6	3.0	5.4	8.1	11.7
1985	1.6	---	0.1	0.3	0.4	0.4	0.7	1.7	3.4	5.6	8.8	12.4
1986	1.6	---	---	0.3	0.4	0.5	0.8	1.6	3.1	5.7	9.2	12.8
1987	1.8	---	---	0.3	0.5	0.5	1.0	1.9	3.3	6.2	9.3	14.5
1988	1.9	---	---	0.3	0.4	0.5	1.0	1.8	3.6	6.2	10.3	14.9
1989	2.0	---	0.2	0.3	0.4	0.6	1.0	1.9	3.5	6.8	11.1	15.9
1990	1.9	---	0.2	0.3	0.4	0.5	0.9	2.0	3.5	6.2	10.7	16.9
1991	2.0	---	0.2	0.3	0.5	0.7	1.0	2.0	3.5	6.3	11.3	17.5
1992	1.9	---	0.2	0.2	0.5	0.5	0.9	1.8	3.3	6.3	10.4	18.7
1993	2.0	---	0.2	0.3	0.5	0.6	1.0	1.8	3.5	6.4	10.4	18.3
1994	2.1	---	0.2	0.3	0.6	0.7	1.0	2.0	3.7	6.5	10.6	18.3
1995	2.1	---	0.1	0.3	0.6	0.7	1.2	2.1	3.7	6.1	10.7	18.3
1996	2.1	---	0.2	0.4	0.6	0.7	1.1	2.0	3.8	5.9	10.3	19.6
1997	2.0	---	0.2	0.3	0.5	0.8	1.1	1.9	3.5	5.4	10.1	19.4
1998	2.0	---	0.2	0.3	0.6	0.7	1.1	1.9	3.0	5.3	10.0	19.9
1999 ⁽²⁾	1.7	---	0.2	0.3	0.5	0.7	1.0	1.7	2.5	4.2	7.6	17.2
2000	1.6	---	0.2	0.3	0.4	0.7	1.0	1.7	2.3	4.0	6.9	16.5
2001	1.5	---	0.2	0.2	0.4	0.6	1.0	1.5	2.2	3.5	6.4	16.1
2002	1.5	---	0.3	0.3	0.4	0.6	1.1	1.5	2	3.2	6.4	14.7
2003	1.4	---	0.2	0.3	0.4	0.6	0.9	1.5	2.0	2.9	5.8	14.2
2004	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, FINAL VITAL STATISTICS REPORT, 1979-2003, 2004 PRELIMINARY DATA

NOTES:

--- FIGURE DOES NOT MEET STANDARD OF RELIABILITY OR PRECISION (ESTIMATE BASED ON FEWER THAN 20 DEATHS)

(1) INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION (ICD-9) CODE 493.

(2) INTERNATIONAL CLASSIFICATION OF DISEASES, 10TH REVISION (ICD-10) CODE J45-J46.

NA:NOT APPLICABLE

TABLE 6: NUMBER OF PEOPLE EVER TOLD BY A HEALTH PROFESSIONAL THAT THEY HAD ASTHMA AND PREVALENCE RATE PER 1,000 PERSONS, BY AGE, SEX AND RACE, 1998-2005 (LIFETIME PREVALENCE) ¹

	1998			1999			2000			2001		
	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²
AGE												
TOTAL	26,394,037	98.1	(94.7--101.6)	24,701,614	90.9	(87.6--94.2)	27,615,006	100.8	(97.3--104.3)	31,353,657	113.4	(109.7--117.1)
<5	1,627,352	82.6	(71.2--94.1)	1,367,507	69.8	(60.1--79.5)	1,535,639	78.3	(68.5--88.1)	1,552,713	78.7	(68.6--88.7)
5-17	7,022,501	135.0	(127.0--143.0)	6,393,195	121.8	(113.2--130.4)	7,382,614	140.0	(131.4--148.7)	7,631,820	144.2	(135.0--153.5)
<18	8,649,853	120.6	(113.8--127.5)	7,760,702	107.7	(100.8--114.6)	8,918,253	123.3	(116.5--130.1)	9,184,533	126.4	(119.2--133.6)
18-44	9,935,452	91.6	(86.4--96.9)	10,121,640	93.3	(88.2--98.3)	10,676,318	98.4	(93.1--103.8)	12,795,275	118.0	(112.3--123.7)
45-64	5,304,135	93.6	(86.4--100.7)	4,694,098	80.1	(86.4--100.7)	5,266,650	87.0	(80.1--93.9)	6,507,867	104.1	(97.2--110.9)
65+	2,504,597	77.7	(70.7--84.8)	2,125,174	65.4	(70.7--84.8)	2,753,785	84.2	(77.3--91.2)	2,865,982	87.2	(79.0--95.4)
>18	17,744,184	89.9	3	16,940,912	84.9	(81.2--88.6)	18,696,753	92.7	(89.0--96.4)	22,169,124	108.8	(104.6--112.9)
SEX												
MALE	12,589,221	95.8	(90.8--100.8)	11,504,824	86.9	(82.1--91.6)	13,170,011	98.6	(93.9--103.2)	14,556,517	107.9	(102.8--113.0)
FEMALE	13,804,816	100.3	(95.5--105.2)	13,196,790	94.8	(90.1--99.4)	14,444,995	102.9	(98.2--107.6)	16,797,140	118.6	(113.8--123.5)
RACE												
WHITE	20,827,971	95.3	(91.5--99.1)	19,540,331	88.9	(85.2--92.6)	21,789,410	99.6	(95.6--103.5)	24,771,837	112.1	(107.8--116.4)
<5	1,064,697	70.5	(58.4--82.6)	926,215	62.3	(51.2--73.3)	987,127	68.1	(56.7--79.4)	978,206	65.8	(54.2--77.3)
5-17	5,287,332	131.6	(122.8--140.5)	4,615,812	114.4	(105.0--123.7)	5,395,877	135.4	(125.4--145.4)	5,592,504	139.4	(129.0--149.9)
18-44	7,869,545	90.9	(85.0--96.9)	8,126,454	94.2	(88.4--99.9)	8,706,016	102.5	(96.2--108.8)	10,227,098	120.8	(114.0--127.6)
45-64	4,437,937	92.1	(84.2--99.9)	3,970,537	80.2	(73.1--87.3)	4,335,147	85.6	(77.9--93.3)	5,499,261	104.9	(97.3--112.6)
65+	2,168,460	76.0	(68.6--83.4)	1,901,313	66.3	(59.3--73.3)	2,365,243	81.8	(74.6--88.9)	2,474,768	85.4	(76.8--94.0)
BLACK	4,165,356	124.2	(115.4--132.9)	3,449,728	102.3	(92.5--112.0)	3,966,949	115.7	(106.9--124.4)	4,453,467	128.6	(119.3--138.0)
<5	397,810	134.4	(100.3--168.5)	301,060	104.7	(73.7--135.7)	371,099	126.7	(96.1--157.4)	406,228	137.8	(104.8--170.9)
5-17	1,311,478	160.7	(136.6--184.7)	1,206,803	147.8	(125.8--169.8)	1,427,655	173.0	(152.7--193.2)	1,403,147	170.8	(146.0--195.5)
18-44	1,529,102	109.5	(96.2--122.7)	1,320,364	94.1	(80.0--108.2)	1,235,710	87.4	(74.4--99.8)	1,704,761	119.9	(104.4--135.3)
45-64	685,390	118.4	(96.5--140.2)	489,047	81.5	(59.3--103.6)	662,438	105.4	(88.4--122.5)	668,693	102.5	(85.8--119.2)
65+	241,576	90.7	(68.5--112.9)	132,454	50.0	(35.6--64.3)	270,047	100.4	(70.9--130.0)	270,638	99.9	(77.0--122.8)
2002												
	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²	NUMBER	RATE	CI OF RATE ²
AGE												
TOTAL	30,821,125	110.6	(106.7--114.4)	29,767,541	104.1	(100.7--107.5)	30,189,450	104.7	(100.8--108.6)	32,620,534	112.0	(108.3--115.7)
<5	1,451,929	73.2	(62.8--83.6)	1,490,625	75.1	(64.9--85.3)	1,454,498	72.8	(63.1--82.5)	1,741,465	85.8	(74.7--96.9)
5-17	7,442,217	140.0	(131.4--148.7)	7,580,355	142.7	(134.0--151.5)	7,435,318	140.1	(131.3--148.9)	7,545,500	142.2	(133.6--150.8)
<18	8,894,146	121.9	(114.8--129.0)	9,070,980	124.3	(117.4--131.2)	8,889,816	121.7	(114.6--128.8)	9,286,965	126.6	(119.6--133.6)
18-44	12,453,741	115.2	(108.8--121.6)	11,204,219	101.4	(95.8--106.9)	10,959,122	99.3	(93.3--105.2)	12,322,282	111.6	(105.3--117.9)
45-64	6,836,046	105.7	(98.8--112.7)	6,721,660	98.5	(91.7--105.3)	6,972,948	99.4	(92.2--106.5)	7,555,487	104.5	(97.7--111.3)
65+	2,637,162	79.8	(71.9--87.6)	2,770,682	80.9	(72.8--89.0)	3,367,564	97.4	(88.2--106.5)	3,455,800	98.6	(89.9--107.3)
>18	21,926,949	106.5	(102.1--111.0)	20,696,561	97.1	(93.5--100.8)	21,299,634	99.0	(94.8--103.2)	23,333,569	107.1	(102.8--111.4)
SEX												
MALE	14,340,497	105.4	(100.3--110.5)	13,503,561	96.7	(92.1--101.4)	14,319,905	101.6	(96.3--106.9)	14,628,489	102.7	(97.6--107.8)
FEMALE	16,480,628	115.5	(110.3--120.6)	16,263,980	111.1	(106.3--115.9)	15,869,545	107.7	(102.6--112.8)	17,992,044	121.0	(116.4--125.6)
RACE												
WHITE	23,921,769	107.3	(103.0--111.7)	23,876,627	101.0	(97.3--104.8)	24,045,954	101.5	(97.4--105.6)	25,986,225	108.7	(104.7--112.7)
<5	832,762	55.9	(45.2--66.6)	933,382	59.7	(50.0--69.3)	1,136,552	72.4	(55.4--76.6)	1,107,802	72.4	(59.5--80.1)
5-17	5,359,421	132.6	(123.1--142.1)	5,627,212	134.6	(124.9--144.3)	5,352,774	129.0	(122.2--140.6)	5,569,421	129.0	(124.3--143.7)
18-44	9,721,553	115.1	(107.8--122.5)	9,122,405	101.3	(94.9--107.6)	8,752,791	97.7	(90.8--104.6)	9,857,252	110.1	(103.1--117.1)
45-64	5,682,916	105.2	(97.8--112.6)	5,748,988	98.7	(91.3--106.1)	5,861,424	98.7	(90.9--106.5)	6,454,928	105.5	(98.2--112.8)
65+	2,325,117	79.9	(71.6--88.3)	2,444,640	80.1	(71.3--88.9)	2,942,413	95.4	(85.8--105.0)	2,996,822	96.8	(87.3--106.3)
BLACK	4,850,540	138.3	(127.2--149.4)	4,712,858	129.6	(120.1--139.1)	4,948,075	133.4	(122.8--144.0)	5,110,214	137.4	(127.2--147.6)
<5	431,731	145.9	(112.5--179.4)	491,459	150.4	(113.2--187.6)	395,616	119.9	(89.7--150.7)	528,218	119.9	(121.2--196.0)
5-17	1,506,656	183.5	(159.0--208.0)	1,570,114	184.8	(161.8--207.8)	1,681,349	196.9	(172.0--221.8)	1,554,894	196.9	(161.1--204.3)
18-44	1,881,512	131.4	(112.8--149.9)	1,685,252	117.3	(102.3--132.3)	1,732,061	118.9	(102.2--135.6)	1,794,574	123.8	(107.6--140.0)
45-64	794,872	116.3	(94.6--138.0)	735,785	99.7	(81.1--118.4)	818,936	107.0	(87.4--126.6)	880,522	111.6	(92.4--130.8)
65+	235,769	85.6	(58.9--112.4)	230,248	80.7	(55.7--105.7)	300,113	104.2	(77.3--131.1)	352,006	118.7	(91.9--145.5)

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1998-2005
CALCULATIONS PERFORMED BY THE EPIDEMIOLOGY AND STATISTICS UNIT

Notes:

- (1) Lifetime prevalence is defined as answering yes to "Have you EVER been told by a doctor or other health professional that you had asthma?"
- (2) 95% Confidence Interval.

TABLE 7: ASTHMA - NUMBER OF CONDITIONS AND PREVALENCE RATE PER 1,000 PERSONS BY AGE 1982-1996, 2001-2005 (CURRENT PREVALENCE) ^{1,2}

YEAR	ALL AGES		UNDER 5		5-17		<18		18-44		45-64		65+	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
1982	7,899,000	34.8	*	*	*	*	2,513,000	40.1	2,749,000	29.0	1,603,000	36.3	1,035,000	40.8
1983	8,787,000	38.3	*	*	*	*	2,828,000	45.2	3,487,000	36.1	1,529,000	34.6	943,000	36.4
1984	8,388,000	36.2	*	*	*	*	2,658,000	42.5	3,152,000	32.1	1,485,000	33.5	1,093,000	41.3
1985	8,612,000	36.8	*	*	*	*	2,997,000	47.8	3,323,000	33.4	1,255,000	28.2	1,036,000	38.3
1986	9,690,000	41.0	*	*	*	*	3,223,000	51.1	3,672,000	36.4	1,622,000	36.3	1,173,000	42.6
1987	9,565,000	40.1	*	*	*	*	3,323,000	52.5	3,522,000	34.5	1,633,000	36.3	1,087,000	38.6
1988	9,934,000	41.2	*	*	*	*	3,171,000	49.9	3,989,000	38.7	1,587,000	34.8	1,188,000	41.4
1989	11,621,000	47.7	*	*	*	*	3,901,000	61.0	4,302,000	41.3	1,914,000	41.5	1,504,000	51.5
1990	10,311,000	41.9	*	*	*	*	3,725,000	57.6	3,703,000	35.2	1,800,000	38.6	1,082,000	36.3
1991	11,735,000	47.2	*	*	*	*	4,094,000	62.5	4,594,000	43.4	1,921,000	40.7	1,126,000	37.2
1992	12,375,000	49.2	*	*	*	*	4,218,000	63.4	4,748,000	44.9	2,183,000	45.0	1,226,000	39.8
1993	13,074,000	51.4	*	*	*	*	4,830,000	71.6	4,495,000	42.5	2,242,000	45.0	1,506,000	48.2
1994	14,562,000	56.1	*	*	*	*	4,837,000	69.1	5,598,000	51.7	2,561,000	50.8	1,566,000	50.5
1995	14,878,000	56.8	*	*	*	*	5,294,000	74.9	5,577,000	51.6	2,754,000	53.3	1,253,000	39.8
1996	14,596,000	55.2	*	*	*	*	4,429,000	62.0	6,141,000	56.9	2,581,000	48.6	1,445,000	45.5
2001	20,280,603	73.4	1,127,711	57.1	5,192,266	98.1	6,319,977	87.0	7,796,024	71.9	4,207,483	67.3	1,957,119	59.6
2002	20,025,716	71.8	1,180,664	59.5	4,882,214	91.9	6,062,878	83.1	7,437,526	68.8	4,591,985	71.0	1,933,327	58.5
2003	19,836,001	69.4	1,177,472	59.3	5,035,963	94.8	6,213,435	85.1	6,972,303	63.1	4,678,034	68.5	1,972,229	57.6
2004	20,544,836	71.3	1,119,656	56.0	5,067,050	95.5	6,186,706	84.7	7,058,327	63.9	4,871,010	69.4	2,428,793	70.2
2005	22,227,378	76.3	1,371,199	67.5	5,159,596	97.2	6,530,795	89.0	7,745,701	70.1	5,280,703	73.0	2,670,179	76.2

**SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1982-1996, 2001-2005
CALCULATIONS PERFORMED BY THE EPIDEMIOLOGY AND STATISTICS UNIT**

NOTES:

* Data for these age groups were not calculated.

(1) Due to rounding, numbers across may not sum up to totals.

(2) With the revision of the National Health Interview Survey in 1997, the question "During the past 12 months, did anyone in the family have asthma?" was eliminated and was replaced with two questions: "Have you ever been told by a doctor or other health professional that you had asthma?" (Table 6) and "During the past 12 months, have you had an episode of asthma or asthma attack?" (Table 10). Realizing the information gap resulting with the revised questions, "Do you still have asthma?" was added in 2001- reinstating a measure of current prevalence. However, **data between 1982 and 1996 should not be compared to 2001-2005 estimates.**

TABLE 8: ASTHMA - NUMBER OF CONDITIONS AND PREVALENCE RATE PER 1,000 PERSONS BY SEX, 1982-1996, 2001-2005 (CURRENT PREVALENCE) ¹

YEAR	MALE						FEMALE					
	ALL AGES		UNDER 18		18 AND OVER		ALL AGES		UNDER 18		18 AND OVER	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
1982	3,994,000	36.5	*	*	*	*	3,906,000	33.2	*	*	*	*
1983	3,818,000	34.5	*	*	*	*	4,968,000	41.9	*	*	*	*
1984	3,924,000	35.1	*	*	*	*	4,464,000	37.3	*	*	*	*
1985	3,864,000	34.2	*	*	*	*	4,748,000	39.3	*	*	*	*
1986	4,670,000	40.8	*	*	*	*	5,019,000	41.1	*	*	*	*
1987	4,609,000	39.9	*	*	*	*	4,956,000	40.3	*	*	*	*
1988	4,650,000	39.9	*	*	*	*	5,285,000	42.5	*	*	*	*
1989	5,593,000	47.4	*	*	*	*	6,028,000	48.0	*	*	*	*
1990	4,741,000	39.7	*	*	*	*	5,570,000	44.0	*	*	*	*
1991	5,724,000	47.4	*	*	*	*	6,011,000	47.0	*	*	*	*
1992	5,516,000	45.1	*	*	*	*	6,859,000	53.1	*	*	*	*
1993	5,946,000	48.1	*	*	*	*	7,127,000	54.6	*	*	*	*
1994	6,542,000	51.7	*	*	*	*	8,019,000	60.2	*	*	*	*
1995	6,687,000	52.4	*	*	*	*	8,190,000	61.0	*	*	*	*
1996	5,751,000	44.4	*	*	*	*	8,845,000	65.3	*	*	*	*
2001	8,579,722	63.6	3,679,050	99.0	4,900,672	50.1	11,700,881	82.6	2,640,927	74.4	9,059,954	85.4
2002	8,461,150	62.6	3,520,764	94.8	4,940,386	50.5	11,564,566	81.0	2,542,114	71.6	9,022,452	85.0
2003	8,212,724	58.8	3,548,147	95.5	4,664,577	47.7	11,623,277	79.4	2,665,288	75.1	8,957,989	84.4
2004	8,937,331	63.4	3,789,642	101.5	5,147,689	49.7	11,607,505	78.8	2,397,064	67.1	9,210,441	82.5
2005	9,092,310	63.8	3,744,508	100.8	5,347,802	54.7	13,135,068	88.3	2,786,287	78.5	10,348,781	97.5

**SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1982-1996, 2001-2005
CALCULATIONS PERFORMED BY THE EPIDEMIOLOGY AND STATISTICS UNIT**

Notes:

(1) With the revision of the National Health Interview Survey in 1997, the question "During the past 12 months, did anyone in the family have asthma?" was eliminated and was replaced with two questions: "Have you ever been told by a doctor or other health professional that you had asthma?" (Table 6) and "During the past 12 months, have you had an episode of asthma or asthma attack?" (Table 10). Realizing the information gap resulting with the revised questions, "Do you still have asthma?" was added in 2001- reinstating a measure of current prevalence. However, **data between 1982 and 1996 should not be compared to 2001-2005 estimates.**

**TABLE 9: ASTHMA - NUMBER OF CONDITIONS AND PREVALENCE RATE PER 1,000 PERSONS
BY RACE AND AGE 1982-1996, 2001-2005 (CURRENT PREVALENCE) ¹**

YEAR	WHITE											
	ALL AGES		UNDER 5		5-17		18-44		45-64		65+	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
1982	6,711,000	34.6	*	*	*	*	*	*	1,423,000	36.5	895,000	39.0
1983	7,412,000	37.7	*	*	*	*	*	*	1,367,000	35.0	848,000	36.2
1984	7,296,000	36.9	*	*	*	*	*	*	1,295,000	33.1	1,019,000	42.6
1985	7,425,000	37.2	*	*	*	*	*	*	1,121,000	28.7	932,000	38.1
1986	8,190,000	40.9	*	*	*	*	*	*	1,451,000	37.2	981,000	39.6
1987	8,126,000	40.3	*	*	*	*	*	*	1,463,000	37.4	987,000	38.8
1988	8,101,000	39.9	*	*	*	*	*	*	1,327,000	33.5	1,046,000	40.5
1989	9,675,000	47.1	*	*	*	*	*	*	1,743,000	43.6	1,313,000	49.9
1990	8,544,000	41.3	*	*	*	*	*	*	1,585,000	39.3	926,000	34.6
1991	9,660,000	46.4	*	*	*	*	*	*	1,689,000	41.6	1,013,000	37.2
1992	10,309,000	49.2	*	*	*	*	*	*	1,900,000	45.5	1,068,000	38.8
1993	10,616,000	50.2	*	*	*	*	*	*	1,904,000	44.5	1,374,000	49.2
1994	12,052,000	56.2	*	*	*	*	*	*	2,258,000	52.3	1,441,000	51.9
1995	12,198,000	56.2	*	*	*	*	*	*	2,323,000	52.5	1,041,000	37.0
1996	11,764,000	53.5	*	*	*	*	*	*	2,168,000	47.4	1,295,000	45.3
2001	15,897,376	71.9	689,084	46.3	3,836,665	95.6	6,209,214	73.3	3,491,749	66.6	1,670,664	57.7
2002	15,475,067	69.4	681,148	45.7	3,515,172	87.0	5,806,930	68.8	3,753,208	69.5	1,718,609	59.1
2003	15,764,764	66.7	712,084	45.5	3,582,880	85.7	5,637,921	62.6	4,085,667	70.1	1,746,212	57.2
2004	16,390,255	69.2	782,879	49.9	3,709,265	89.4	5,604,879	62.6	4,120,743	69.4	2,172,489	70.5
2005	17,594,734	73.6	822,609	51.8	3,477,676	91.1	6,112,174	68.2	4,557,893	74.5	2,314,382	74.8

YEAR	BLACK											
	ALL AGES		UNDER 5		5-17		18-44		45-64		65+	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
1982	1,055,000	39.2	*	*	*	*	*	*	156,000	37.2*	103,000	48.7*
1983	1,230,000	45.1	*	*	*	*	*	*	150,000	35.5*	95,000	44.5*
1984	965,000	34.8	*	*	*	*	*	*	153,000	35.9*	62,000	28.4*
1985	1,119,000	39.8	*	*	*	*	*	*	122,000	27.5	84,000	37.2*
1986	1,212,000	42.5	*	*	*	*	*	*	164,000	36.5	146,000	63.5*
1987	1,281,000	44.3	*	*	*	*	*	*	148,000	32.5	100,000	42.5*
1988	1,631,000	55.5	*	*	*	*	*	*	225,000	48.5	105,000	43.7*
1989	1,586,000	53.1	*	*	*	*	*	*	112,000	23.8*	170,000	69.3
1990	1,414,000	46.6	*	*	*	*	*	*	180,000	37.6	127,000	50.7*
1991	1,740,000	56.3	*	*	*	*	*	*	195,000	40.1	83,000	32.4*
1992	1,787,000	56.8	*	*	*	*	*	*	249,000	49.9	145,000	55.3*
1993	1,967,000	61.4	*	*	*	*	*	*	315,000	61.3	98,000	36.7*
1994	1,861,000	56.3	*	*	*	*	*	*	255,000	49.7	111,000	44.0*
1995	2,217,000	67.7	*	*	*	*	*	*	313,000	60.0	178,000	70.1*
1996	2,310,000	69.6	*	*	*	*	*	*	275,000	50.7*	109,000	41.7*
2001	3,053,514	88.2	323,209	109.7	960,289	116.9	1,089,907	76.6	488,195	74.8	191,914	70.9
2002	3,355,658	95.7	373,140	126.1	1,030,164	125.5	1,201,855	83.9	586,386	85.8	164,113	59.6
2003	3,369,723	92.7	408,342	125.0	1,180,065	138.9	1,225,577	78.2	503,141	68.2	155,598	54.5
2004	3,478,451	94.2	292,406	88.6	1,222,293	143.2	1,205,919	82.8	547,399	71.5	210,434	73.0
2005	3,721,281	100.1	469,857	141.1	1,099,549	129.2	1,291,843	89.1	587,452	74.5	272,580	91.9

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1982-1996, 2001-2005: CALCULATIONS PERFORMED BY THE EPIDEMIOLOGY AND STATISTICS UNIT

NOTES:

* Estimate for which the numerator has a relative standard error of more than 30%.

(1) With the revision of the National Health Interview Survey in 1997, the question "During the past 12 months, did anyone in the family have asthma?" was eliminated and was replaced with two questions: "Have you ever been told by a doctor or other health professional that you had asthma?" (Table 6) and "During the past 12 months, have you had an episode of asthma or asthma attack?" (Table 10). Realizing the information gap resulting with the revised questions, "Do you still have asthma?" was added in 2001- reinstating a measure of current prevalence. However, **data between 1982 and 1996 should not be compared to 2001-2005 estimates.**

TABLE 10: NUMBER OF PEOPLE WHO HAD AN ASTHMA ATTACK OR EPISODE AND PREVALENCE RATE PER 1,000 PERSONS BY AGE, SEX AND RACE, 1998-2005 (ATTACK PREVALENCE)¹

	1998		1999		2000		2001		2002		2003		2004		2005	
	NUMBER	RATE														
AGE																
TOTAL	10,613,056	39.5	10,488,284	38.6	10,979,222	40.1	11,986,059	43.4	11,908,191	42.7	11,045,888	38.6	11,684,355	40.5	12,233,688	42.0
<5	914,961	46.5	825,304	42.1	853,688	43.5	925,924	46.9	957,613	48.3	838,226	42.2	781,424	39.1	893,310	44.0
5-17	2,894,220	55.6	2,973,538	56.7	3,144,009	59.6	3,230,542	61.1	3,239,335	61.0	3,136,594	59.1	3,193,643	60.2	2,922,723	55.1
<18	3,809,181	53.1	3,798,842	52.7	3,997,697	55.3	4,156,466	57.2	4,196,948	57.5	3,974,820	54.5	3,975,067	54.4	3,816,033	52.0
18-44	3,817,945	35.2	4,021,816	37.1	3,865,362	35.6	4,621,288	42.6	4,353,083	40.3	3,775,135	34.2	3,877,444	35.1	4,538,617	41.1
45-64	2,061,312	36.4	1,950,980	33.3	2,187,430	36.1	2,347,541	37.5	2,387,972	36.9	2,528,134	37.0	2,743,583	39.1	2,814,887	38.9
65+	924,618	28.7	716,646	22.1	928,733	28.4	860,764	26.2	970,188	35.7	767,799	22.4	1,088,261	31.5	1,064,151	30.4
>18	6,803,875	34.5	6,689,442	33.5	6,981,525	34.6	7,829,593	38.4	7,711,243	37.5	7,071,068	33.2	7,709,288	35.8	8,417,655	38.7
SEX																
MALE	4,550,372	34.6	4,310,426	32.5	4,566,516	34.2	4,894,372	36.3	4,862,958	35.7	4,433,896	31.8	5,164,431	36.7	4,833,535	33.9
FEMALE	6,062,684	44.1	6,177,858	44.4	6,412,706	45.7	7,091,687	50.1	7,045,233	49.4	6,611,992	45.2	6,519,924	44.3	7,400,153	49.8
RACE																
WHITE	8,351,811	38.2	8,225,725	37.4	8,574,362	39.2	9,316,903	42.2	9,135,316	41.0	8,700,764	36.8	9,282,163	39.2	9,829,145	41.1
<5	600,960	39.8	542,560	36.5	556,163	38.3	585,966	39.4	563,698	37.8	510,295	32.6	557,772	35.5	540,648	34.0
5-17	2,191,663	54.6	2,144,632	53.1	2,221,117	55.7	2,388,686	59.5	2,340,836	57.9	2,254,002	53.9	23,414,442	56.4	2,245,862	54.0
18-44	3,001,924	34.7	3,265,910	37.8	3,232,200	38.0	3,678,584	43.5	3,454,845	40.9	3,034,374	33.7	3,112,209	34.8	3,647,258	40.7
45-64	1,755,150	36.4	1,669,630	33.7	1,790,264	35.3	1,946,520	37.1	1,928,267	35.7	2,210,594	37.9	2,323,470	39.1	2,498,698	40.9
65+	802,114	28.1	602,993	21.0	774,618	26.8	717,147	24.8	847,670	29.1	691,499	22.7	947,270	30.7	896,679	29.0
BLACK	1,679,906	50.1	1,535,360	45.5	1,631,233	47.6	1,928,640	55.7	1,974,247	56.3	1,905,572	52.4	2,031,045	55.0	1,821,757	49.0
<5	208,240	70.4	218,657	76.0	193,908	66.2	240,243	81.5	282,694	95.6	284,424	87.1	215,308	65.3	286,893	66.1
5-17	528,300	64.7	592,920	72.6	663,850	80.4	633,474	77.1	664,074	80.9	683,115	80.4	736,672	86.3	534,281	62.8
18-44	614,097	44.0	495,630	35.3	401,595	28.4	670,130	47.1	608,292	42.5	624,012	43.4	613,177	42.1	627,619	43.3
45-64	265,660	45.9	151,304	25.2	278,686	44.4	271,703	41.6	320,550	46.9	269,789	36.6	340,064	44.4	262,489	33.3
65+	63,609	23.9	76,849	29.0	93,194	34.7	113,090	41.8	98,637	35.8	44,232	15.5	125,824	43.7	110,475	37.3

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1998-2005
CALCULATIONS PERFORMED BY THE EPIDEMIOLOGY AND STATISTICS UNIT

Notes:
(1) Attack prevalence is defined as answering yes to "Have you EVER been told by a doctor or other health professional that you had asthma?" and "During the PAST 12 MONTHS, have you had an episode of asthma or asthma attack?"

TABLE 11: ASTHMA-NUMBER OF CONDITIONS AND PREVALENCE RATE PER 1,000 PERSONS BY ORIGIN, 1998-2005

	Hispanic			Non-Hispanic White			Non-Hispanic Black			Non-Hispanic Others ⁵		
	Number	Rate	CI of Rate ¹	Number	Rate	CI of Rate ¹	Number	Rate	CI of Rate ¹	Number	Rate	CI of Rate ¹
Lifetime Prevalence²												
1998	2,627,891	84.7	(76.4-93.0)	18,887,569	97.2	(93.0-101.4)	4,105,291	124.9	(116.1-133.7)	773,286	71.8	(58.3-85.2)
1999	2,564,233	80.2	(71.6-88.8)	17,833,735	91.1	(87.1-95.1)	3,424,782	102.8	(93.0-112.7)	878,864	82.7	(65.5-99.9)
2000	2,700,985	81.7	(74.4-89.1)	19,958,214	102.2	(98-106.4)	3,900,457	115.8	(107.0-124.6)	1,055,350	87.9	(69.8-106)
2001	3,232,703	94.7	(86.8-102.5)	22,607,687	115.3	(110.7-120.0)	4,291,178	126.2	(116.7-135.6)	1,222,089	99.1	(81.9-116.3)
2002	2,925,277	83.0	(75.5-90.5)	21,850,318	111.2	(106.4-116.0)	4,736,386	137.7	(126.5-149.0)	1,309,144	103.5	(85.6-121.4)
2003	3,478,767	87.5	(79.6-95.5)	20,663,795	104.0	(99.9-108.1)	4,563,212	129.3	(119.5-139.1)	1,061,767	86.1	(68.6-103.7)
2004	3,436,124	84.3	(77.0-91.6)	20,982,719	105.7	(101.2-110.2)	4,734,121	132.9	(122.1-143.7)	1,036,486	77.2	(61.3-93.1)
2005	3,876,926	91.9	(84.4-99.4)	22,426,806	112.5	(108.1-116.9)	4,904,487	136.1	(125.8-146.4)	1,412,314	103.9	(86.4-121.4)
Current Prevalence³												
2001	2,007,520	58.8	(55.3-62.3)	14,603,075	74.5	(72.3-76.7)	2,933,767	86.2	(80.8-91.7)	736,241	59.7	(51.5-68.0)
2002	1,726,590	49.0	(45.5-52.5)	14,245,694	72.5	(70.3-74.7)	3,271,962	95.1	(90.9-99.4)	781,470	61.8	(52.7-70.9)
2003	2,198,710	55.3	(51.4-59.3)	13,750,543	69.2	(66.9-71.5)	3,269,269	92.6	(87.6-97.7)	617,479	50.1	(41.7-58.5)
2004	2,123,900	52.1	(48.2-56.0)	14,475,412	72.9	(70.8-75.1)	3,355,168	94.2	(88.9-99.4)	590,356	44.0	(36.5-51.4)
2005	2,622,402	62.2	(58.7-65.6)	15,206,366	76.3	(74.1-78.5)	3,578,998	99.3	(94.1-104.5)	819,612	60.3	(50.2-70.4)
Attack Prevalence⁴												
1998	1,117,182	36.0	(32.3-39.7)	7,570,852	39.0	(37.0-41.0)	1,648,035	50.1	(45.1-55.1)	276,987	25.7	(19.0-32.4)
1999	1,089,428	34.1	(30.2-37.9)	7,500,035	38.3	(36.3-40.3)	1,526,119	45.8	(41.2-50.4)	372,702	35.1	(25.9-44.2)
2000	1,087,330	32.9	(29.7-36.1)	7,864,152	40.3	(36.8-42.5)	1,601,492	47.6	(42.6-52.5)	426,248	35.5	(27.5-43.5)
2001	1,164,204	34.1	(30.2-38.0)	8,581,795	43.8	(41.5-46.0)	1,847,680	54.3	(48.7-59.9)	392,380	31.8	(24.0-39.6)
2002	1,087,489	30.8	(27.3-34.4)	8,401,593	42.8	(40.4-45.1)	1,895,262	55.1	(50.2-60.0)	523,847	41.4	(33.1-49.8)
2003	1,317,684	33.2	(29.6-36.7)	7,494,952	37.7	(35.6-39.9)	1,823,502	51.7	(46.6-56.7)	409,750	33.2	(25.1-41.4)
2004	1,242,176	30.5	(27.2-33.8)	8,162,307	41.1	(38.7-43.6)	1,948,083	54.7	(49.7-59.7)	331,788	24.7	(18.0-31.4)
2005	1,556,114	36.9	(33.1-40.7)	8,435,306	42.3	(59.6-69.6)	1,715,563	47.6	(42.3-52.9)	526,705	38.7	(29.9-47.6)

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH INTERVIEW SURVEY, 1998-2005
 CALCULATIONS PERFORMED BY THE AMERICAN LUNG ASSOCIATION, EPIDEMIOLOGY AND STATISTICS UNIT

NOTES:

(1) 95% Confidence Interval.

(2) Lifetime prevalence was defined as answering "yes" to "Have you EVER been told by a health professional that you had asthma?"

(3) With the revision of the National Health Interview Survey in 1997, the question "During the past 12 months, did anyone in the family have asthma?" was eliminated and was replaced with two questions: "Have you ever been told by a doctor or other health professional that you had asthma?" (Table 6) and "During the past 12 months, have you had an episode of asthma or asthma attack?" (Table 10). Realizing the information gap resulting with the revised questions, "Do you still have asthma?" was added in 2001- reinstating a measure of current prevalence. However, **data between 1982 and 1996 should not be compared to 2001-2005 estimates.**

(4) Attack prevalence was defined as answering yes to " Have you EVER been told by a health professional that you had asthma?" and "During the PAST 12 MONTHS, have you had an episode of asthma or asthma attack?"

(5) Does not include Non Hispanic Whites and Blacks.

TABLE 12: ASTHMA-ESTIMATED LIFETIME PREVALENCE (%) IN ADULTS, BY STATE, 2000-2006

STATE	LIFETIME PREVALENCE ¹													
	2000		2001		2002		2003		2004		2005		2006	
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER ⁽²⁾	%	NUMBER	%
United States	21,311,096	10.4	23,210,259	11.0	25,176,198	11.8	25,777,202	11.9	29,064,305	13.3	28,090,493	12.6	28,534,268	13.0
Alabama	298,612	9.1	323,695	9.7	369,224	11.0	391,671	11.6	476,083	14.0	388,422	11.2	470,053	13.6
Alaska	48,997	11.3	51,029	11.5	51,547	11.6	60,933	13.3	59,546	13.0	59,417	12.5	68,280	14.4
Arizona	395,300	11.1	474,929	12.4	551,442	13.9	511,360	12.5	513,810	12.4	531,780	12.2	640,112	14.7
Arkansas	189,021	9.9	212,687	10.6	243,901	12.1	231,481	11.3	246,838	12.0	239,803	11.4	247,852	11.8
California	2,832,152	11.5	3,044,855	12.1	3,209,230	12.7	3,473,157	13.4	3,681,050	14.0	3,488,798	13.2	3,400,733	12.7
Colorado	289,301	9.5	394,610	12.1	404,461	12.1	424,685	12.4	462,911	13.5	463,459	13.3	423,762	12.1
Connecticut	269,833	10.8	321,831	12.3	341,552	13.2	319,497	12.2	402,123	15.3	331,736	12.4	371,538	13.8
Delaware	59,724	10.4	71,450	11.9	71,567	11.8	72,281	11.7	91,569	14.4	81,603	12.6	94,573	14.5
District of Columbia	44,925	11.0	54,330	12.0	65,214	14.2	58,117	12.7	69,533	15.3	66,966	15.3	68,310	15.5
Florida	1,076,350	9.1	1,242,381	9.9	1,348,584	10.5	1,327,772	10.1	1,634,184	12.3	1,605,472	11.7	1,606,690	11.6
Georgia	559,965	9.6	674,099	11.0	728,052	11.7	757,483	11.8	797,776	12.3	771,633	11.5	876,730	13.1
Hawaii	102,277	11.4	111,954	12.1	125,142	13.4	110,997	11.6	N/A	12.3	137,523	14.1	154,939	15.9
Idaho	96,499	10.8	108,286	11.7	113,045	11.8	114,347	11.7	131,431	13.1	123,425	11.7	137,293	13.1
Illinois	955,071	10.6	1,049,350	11.3	992,316	10.7	1,046,454	11.1	1,235,253	13.1	1,009,367	10.6	1,238,486	13.0
Indiana	494,719	11.2	515,076	11.3	514,621	11.3	552,962	12.0	615,746	13.3	592,979	12.7	596,402	12.7
Iowa	181,406	8.5	212,254	9.7	197,950	9.0	227,881	10.3	237,427	10.5	266,282	11.6	219,429	9.6
Kansas	214,168	10.9	232,248	11.6	222,271	11.2	232,690	11.5	244,306	12.0	223,603	10.8	251,105	12.2
Kentucky	317,557	10.7	333,057	10.9	393,275	12.8	391,927	12.6	444,475	13.9	424,702	13.3	375,058	11.7
Louisiana	251,523	8.0	293,612	9.1	340,082	10.4	336,420	10.2	389,856	11.8	364,606	10.8	363,337	10.8
Maine	117,749	12.5	121,535	12.6	134,683	13.6	134,498	13.4	150,850	14.7	156,625	15.0	147,710	14.1
Maryland	413,442	10.6	445,760	11.1	510,826	12.7	507,830	12.3	575,936	13.9	549,863	13.1	56,082	13.4
Massachusetts	566,455	11.9	639,174	13.0	629,268	12.9	710,328	14.4	743,248	14.9	701,580	14.2	720,570	14.5
Michigan	751,031	10.3	914,468	12.4	949,081	12.8	1,019,132	13.6	1,010,998	13.4	1,055,925	13.9	1,072,020	14.1
Minnesota	334,685	9.5	368,504	10.1	416,551	11.3	395,216	10.5	441,325	11.6	460,580	11.8	434,049	11.1
Mississippi	195,389	9.8	188,785	9.2	222,829	10.6	230,890	10.9	251,450	11.8	241,152	11.1	250,916	11.5
Missouri	434,002	10.6	502,586	11.9	526,495	12.5	508,330	11.9	579,825	13.4	627,935	14.2	558,313	12.6
Montana	73,732	11.4	78,547	11.8	97,766	14.5	76,242	11.1	90,922	13.0	92,065	12.6	89,826	12.4
Nebraska	106,027	8.7	106,309	8.4	134,251	10.6	132,872	10.3	137,485	10.6	143,333	10.8	147,497	11.2
Nevada	191,582	13.4	204,462	13.3	201,143	12.4	189,390	11.4	213,040	12.6	225,997	12.6	222,609	12.3
New Hampshire	109,430	12.0	117,309	12.5	132,599	13.9	125,421	12.9	148,349	15.0	147,998	14.7	150,852	14.9
New Jersey	542,781	8.7	610,724	9.4	757,385	11.8	710,625	10.9	887,629	13.6	767,067	11.7	798,272	12.1
New Mexico	124,406	10.0	141,099	10.7	155,098	11.7	142,570	10.5	202,131	14.7	208,641	14.5	200,317	13.9
New York	1,475,831	10.7	1,603,109	11.0	1,645,388	11.5	1,697,945	11.7	2,072,314	14.2	2,029,807	13.8	1,923,308	13.1
North Carolina	595,899	10.1	624,605	10.1	678,962	10.9	720,819	11.3	843,869	13.2	660,762	10.1	719,909	10.9
North Dakota	42,458	9.2	42,783	9.1	49,026	10.3	48,224	10.1	53,717	11.0	55,518	11.1	50,792	10.3
Ohio	912,891	10.9	832,186	9.8	872,153	10.3	931,899	10.8	1,054,109	12.3	983,657	11.3	1,182,149	13.6
Oklahoma	229,026	9.2	259,907	10.1	289,843	11.2	309,038	11.8	353,966	13.4	358,375	13.3	374,947	14.0
Oregon	301,185	12.1	335,009	12.9	369,041	14.0	395,124	14.7	442,292	16.3	427,040	15.3	425,338	15.3
Pennsylvania	851,019	9.3	1,007,466	10.7	1,079,272	11.5	1,129,529	11.9	1,245,840	13.1	1,182,384	12.3	1,180,673	12.2
Rhode Island	89,469	11.7	98,047	12.1	104,562	12.8	118,314	14.4	122,950	14.6	127,118	15.3	136,033	16.0
South Carolina	300,905	10.4	322,915	10.7	305,845	10.0	316,653	10.1	375,526	11.8	361,523	11.2	401,184	12.4
South Dakota	42,490	8.0	42,124	7.7	47,763	8.6	60,240	10.7	58,867	10.3	61,705	10.5	65,478	11.2
Tennessee	435,098	10.4	406,008	9.3	531,158	12.2	523,609	11.8	655,730	14.7	530,403	11.6	536,372	11.7
Texas	1,534,031	10.5	1,466,052	9.6	1,806,359	11.6	1,791,427	11.3	2,077,901	12.9	1,851,772	11.2	2,071,722	12.4
Utah	144,407	10.3	157,803	10.7	191,128	12.3	180,462	11.3	216,508	13.1	224,514	13.0	235,698	13.8
Vermont	43,400	9.7	55,490	12.1	59,539	12.7	57,969	12.2	72,274	15.0	73,074	14.9	67,889	13.8
Virginia	551,390	10.5	616,160	11.4	660,055	12.1	676,348	12.1	748,668	13.3	815,491	14.2	759,603	13.2
Washington	511,851	11.9	530,013	11.9	641,694	14.3	634,069	13.8	718,004	15.5	701,296	14.6	687,128	14.3
West Virginia	162,187	11.7	173,501	12.5	179,052	12.8	166,795	11.8	219,922	15.5	205,113	14.3	170,622	11.9
Wisconsin	411,281	10.6	434,848	10.9	473,049	11.7	451,051	11.0	516,521	12.4	555,467	13.1	529,183	12.5
Wyoming	40,169	11.8	41,239	11.6	40,858	11.1	42,219	11.2	48,222	12.7	49,767	12.6	52,525	13.3

SOURCE: BEHAVIORAL RISK FACTOR SURVEILLANCE SURVEY, 2000-2006

Note:

(1) Lifetime prevalence was defined as answering yes to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?"

N/A: Not available

(2) Represents estimates based on 2005 adult population estimates obtained from the U.S. Census Bureau.

TABLE 13: ASTHMA-ESTIMATED CURRENT PREVALENCE (%) IN ADULTS, BY STATE, 2000-2006

STATE	CURRENT PREVALENCE ¹													
	2000		2001		2002		2003		2004		2005		2006	
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER ⁽²⁾	%	NUMBER	%
United States	14,665,135	7.2	15,139,313	7.1	15,960,496	7.5	16,640,152	7.7	17,624,929	8.1	17,835,234	8.0	18,272,438	8.5
Alabama	199,227	6.1	211,835	6.3	240,795	7.2	253,590	7.5	293,302	8.6	246,232	7.1	305,741	8.9
Alaska	29,977	6.9	32,179	7.2	32,851	7.4	41,766	9.1	41,028	9.0	37,076	7.8	44,835	9.5
Arizona	303,723	8.6	316,659	8.2	356,712	9.0	341,357	8.3	297,681	7.2	322,555	7.4	385,692	8.9
Arkansas	125,142	6.6	139,615	6.9	152,569	7.6	148,628	7.3	150,688	7.4	157,765	7.5	159,328	7.6
California	1,793,998	7.3	1,751,211	7.0	1,633,769	6.4	2,171,227	8.4	2,011,241	7.7	1,902,981	7.2	2,031,457	7.6
Colorado	199,982	6.6	259,324	8.0	255,409	7.7	281,149	8.3	297,140	8.7	285,741	8.2	274,835	7.9
Connecticut	196,115	7.8	204,445	7.8	220,216	8.5	216,680	8.3	253,416	9.7	214,023	8.0	247,824	9.3
Delaware	40,536	7.1	45,025	7.5	46,112	7.6	46,213	7.5	62,935	10.0	55,050	8.5	62,522	9.6
District of Columbia	32,278	7.9	33,283	7.4	41,246	9.1	35,548	7.8	41,568	9.2	40,267	9.2	43,721	10.0
Florida	672,793	5.7	722,627	5.7	833,013	6.5	801,089	6.1	961,017	7.3	933,095	6.8	993,890	7.2
Georgia	358,829	6.2	442,374	7.2	459,342	7.4	449,626	7.0	480,174	7.4	489,819	7.3	531,047	8.0
Hawaii	65,700	7.3	67,148	7.3	63,672	6.9	54,170	5.6	N/A	N/A	73,151	7.5	77,928	8.1
Idaho	68,229	7.7	73,682	7.9	73,458	7.7	76,716	7.9	79,281	8.0	77,009	7.3	95,258	9.2
Illinois	713,374	7.9	729,934	7.8	664,163	7.2	692,016	7.4	796,395	8.4	666,563	7.0	790,144	8.3
Indiana	357,357	8.1	343,028	7.5	341,274	7.5	370,367	8.1	386,834	8.4	382,868	8.2	390,702	8.4
Iowa	134,940	6.3	147,200	6.7	141,516	6.4	138,355	6.2	149,594	6.6	165,278	7.2	147,692	6.5
Kansas	153,546	7.8	161,251	8.1	150,713	7.6	151,163	7.5	150,327	7.4	142,858	6.9	170,368	8.3
Kentucky	230,371	7.8	253,887	8.3	291,944	9.5	304,498	9.8	262,930	8.3	281,006	8.8	261,590	8.2
Louisiana	157,766	5.0	170,990	5.3	195,574	6.0	205,465	6.2	203,677	6.2	199,183	5.9	199,144	5.9
Maine	84,202	8.9	90,243	9.4	99,008	10.0	98,475	9.9	98,627	9.6	106,505	10.2	100,915	9.7
Maryland	284,461	7.3	282,677	7.0	331,315	8.2	320,823	7.8	322,297	7.8	348,386	8.3	372,862	8.9
Massachusetts	403,234	8.5	462,332	9.4	433,978	8.9	488,412	9.9	479,099	9.7	474,308	9.6	487,835	9.9
Michigan	534,161	7.3	665,636	9.0	646,354	8.8	693,663	9.3	620,085	8.3	691,289	9.1	723,120	9.6
Minnesota	251,966	7.2	238,842	6.5	275,320	7.5	254,593	6.8	283,896	7.5	327,871	8.4	304,195	7.8
Mississippi	134,081	6.8	113,916	5.5	127,915	6.1	145,707	6.9	150,640	7.1	156,423	7.2	150,914	6.9
Missouri	294,564	7.2	343,826	8.2	356,257	8.5	339,842	8.0	392,871	9.1	397,987	9.0	380,384	8.6
Montana	53,246	8.3	53,044	8.0	59,721	8.9	54,624	7.9	60,162	8.6	57,723	7.9	59,786	8.3
Nebraska	80,486	6.6	72,885	5.8	91,754	7.2	91,434	7.1	89,957	6.9	88,920	6.7	98,618	7.5
Nevada	117,713	8.3	126,692	8.2	121,819	7.6	108,545	6.6	120,476	7.1	127,348	7.1	138,399	7.7
New Hampshire	75,715	8.3	79,093	8.4	82,902	8.7	82,578	8.5	101,106	10.3	103,699	10.3	97,524	9.7
New Jersey	384,947	6.2	402,339	6.2	496,395	7.8	460,222	7.1	563,149	8.6	491,709	7.5	502,676	7.6
New Mexico	85,785	6.9	90,543	6.9	104,145	7.8	91,757	6.7	127,614	9.3	128,062	8.9	121,382	8.5
New York	1,058,759	7.7	1,059,051	7.3	1,130,548	7.9	1,106,254	7.6	1,292,115	8.9	1,367,913	9.3	1,240,431	8.5
North Carolina	417,570	7.1	397,774	6.4	402,207	6.5	451,015	7.1	481,011	7.5	425,243	6.5	444,380	6.8
North Dakota	34,316	7.4	32,143	6.8	34,874	7.3	33,510	7.0	37,378	7.7	36,512	7.3	34,767	7.1
Ohio	719,001	8.6	615,294	7.2	621,936	7.3	608,796	7.1	726,742	8.5	696,394	8.0	842,229	9.8
Oklahoma	158,064	6.3	178,660	6.9	182,254	7.1	198,626	7.6	217,629	8.3	229,037	8.5	236,351	8.9
Oregon	211,366	8.5	209,380	8.1	229,049	8.7	249,204	9.3	260,500	9.7	281,902	10.1	272,413	9.8
Pennsylvania	599,423	6.5	691,529	7.3	741,664	7.9	785,143	8.3	837,444	8.8	778,643	8.1	845,882	8.8
Rhode Island	64,420	8.5	75,642	9.3	72,311	8.9	78,694	9.6	81,218	9.6	88,899	10.7	89,235	10.5
South Carolina	196,081	6.8	195,558	6.5	178,930	5.8	191,055	6.1	242,164	7.6	213,040	6.6	246,732	7.7
South Dakota	29,384	5.6	28,954	5.3	32,804	5.9	41,290	7.3	37,769	6.7	42,899	7.3	44,952	7.7
Tennessee	303,235	7.3	297,976	6.8	356,379	8.2	350,559	7.9	400,139	9.0	352,078	7.7	386,334	8.5
Texas	949,490	6.5	932,057	6.1	1,104,526	7.1	1,093,265	6.9	1,147,991	7.1	1,124,290	6.8	1,209,906	7.3
Utah	106,714	7.6	103,383	7.0	124,327	8.0	117,491	7.4	131,414	8.0	138,162	8.0	143,141	8.4
Vermont	31,945	7.2	40,448	8.8	40,343	8.6	39,683	8.4	40,767	8.5	48,062	9.8	45,383	9.3
Virginia	368,099	7.1	348,225	6.4	392,023	7.2	422,958	7.6	412,370	7.3	499,632	8.7	484,637	8.4
Washington	352,103	8.2	337,123	7.6	396,172	8.9	412,896	9.1	423,408	9.2	441,912	9.2	424,579	8.9
West Virginia	117,033	8.5	128,863	9.3	126,906	9.1	114,053	8.1	143,407	10.1	131,961	9.2	122,851	8.6
Wisconsin	300,402	7.7	310,235	7.8	345,132	8.5	307,347	7.5	353,340	8.6	390,099	9.2	371,803	8.8
Wyoming	29,286	8.6	29,251	8.2	26,880	7.3	28,018	7.5	28,918	7.7	30,808	7.8	34,104	8.7

SOURCE: BEHAVIORAL RISK FACTOR SURVEILLANCE SURVEY, 2000-2006

Note:

(1) Current prevalence was defined as answering yes to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?" and "Do you still have asthma?"

N/A : Not Available

(2) Represents estimates based on 2005 adult population estimates obtained from the U.S. Census Bureau.

TABLE 14: ASTHMA-ESTIMATED LIFETIME AND CURRENT PREVALENCE (%) IN ADULTS FOR SELECTED AREAS, 2006

METROPOLITAN / MICROPOLITAN AREA ¹	LIFETIME PREVALENCE (%) ²	CURRENT PREVALENCE (%) ³
Akron, OH Metropolitan Statistical Area	9.1	7.4
Albuquerque, NM Metropolitan Statistical Area	15.3	8.6
Allentown-Bethlehem-Easton, PA-NJ Metropolitan Statistical Area	13.9	10.6
Asheville, NC Metropolitan Statistical Area	9.6	7.3
Atlanta-Sandy Springs-Marietta, GA Metropolitan Statistical Area	12.4	7.7
Atlantic City, NJ Metropolitan Statistical Area	13.0	7.6
Augusta-Richmond County, GA-SC Metropolitan Statistical Area	11.7	7.9
Austin-Round Rock, TX Metropolitan Statistical Area	13.9	7.1
Baltimore-Towson, MD Metropolitan Statistical Area	13.2	8.6
Barre, VT Micropolitan Statistical Area	12.1	8.3
Baton Rouge, LA Metropolitan Statistical Area	9.8	5.3
Bethesda-Frederick-Gaithersburg, MD Metropolitan Division	13.7	9.5
Billings, MT Metropolitan Statistical Area	11.9	8.1
Birmingham-Hoover, AL Metropolitan Statistical Area	12.2	8.2
Bismarck, ND Metropolitan Statistical Area	10.8	7.4
Boise City-Nampa, ID Metropolitan Statistical Area	13.5	9.7
Boston-Quincy, MA Metropolitan Division	13.8	8.6
Bremerton-Silverdale, WA Metropolitan Statistical Area	16.8	9.7
Bridgeport-Stamford-Norwalk, CT Metropolitan Statistical Area	13.0	8.7
Burlington-South Burlington, VT Metropolitan Statistical Area	12.7	8.5
Cambridge-Newton-Framingham, MA Metropolitan Division	14.2	9.0
Camden, NJ Metropolitan Division	12.1	8.5
Casper, WY Metropolitan Statistical Area	12.5	8.6
Charleston, WV Metropolitan Statistical Area	11.2	8.2
Charleston-North Charleston, SC Metropolitan Statistical Area	12.8	7.3
Charlotte-Gastonia-Concord, NC-SC Metropolitan Statistical Area	9.0	5.3
Cheyenne, WY Metropolitan Statistical Area	12.6	8.6
Chicago-Naperville-Joliet, IL-IN-WI Metropolitan Statistical Area	13.0	8.3
Cincinnati-Middletown, OH-KY-IN Metropolitan Statistical Area	12.9	9.8
Cleveland-Elyria-Mentor, OH Metropolitan Statistical Area	16.1	9.9
Colorado Springs, CO Metropolitan Statistical Area	11.0	7.7
Columbia, SC Metropolitan Statistical Area	11.6	7.0
Concord, NH Micropolitan Statistical Area	13.1	8.1
Dallas-Plano-Irving, TX Metropolitan Division	9.4	4.5
Dayton, OH Metropolitan Statistical Area	15.4	8.8
Denver-Aurora, CO Metropolitan Statistical Area	12.8	8.3
Des Moines, IA Metropolitan Statistical Area	10.1	5.9
Detroit-Livonia-Dearborn, MI Metropolitan Division	15.4	10.3
Dover, DE Metropolitan Statistical Area	14.9	10.3
Durham, NC Metropolitan Statistical Area	8.9	6.1
Edison, NJ Metropolitan Division	12.0	6.4
El Paso, TX	9.5	5.1
Essex County, MA Metropolitan Division	16.1	12.1
Eugene-Springfield, OR Metropolitan Statistical Area	15.3	9.1
Fargo, ND-MN Metropolitan Statistical Area	8.6	5.5
Farmington, NM Metropolitan Statistical Area	11.6	8.4
Fayetteville, NC Metropolitan Statistical Area	12.8	8.3
Fayetteville-Springdale-Rogers, AR-MO Metropolitan Statistical Area	14.8	10.7
Fort Worth-Arlington, TX Metropolitan Division	11.7	7.5
Great Falls, MT Metropolitan Statistical Area	13.7	10.7
Greensboro-High Point, NC Metropolitan Statistical Area	10.6	6.5
Greenville, SC Metropolitan Statistical Area	9.8	6.7
Hagerstown-Martinsburg, MD-WV Metropolitan Statistical Area	10.7	7.7
Hartford-West Hartford-East Hartford, CT Metropolitan Statistical Area	15.7	10.4
Hickory-Morganton-Lenoir, Metropolitan Statistical Area	10.4	6.0
Hilo, HI Metropolitan Statistical Area	15.1	8.6
Hilton Head Island-Beaufort, SC Micropolitan Statistical Area	13.5	8.0
Honolulu, HI Metropolitan Statistical Area	16.3	7.9
Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area	14.2	8.7
Huntington-Ashland, WV-KY-OH Metropolitan Statistical Area	10.2	8.4
Indianapolis-Carmel, IN Metropolitan Statistical Area	13.0	7.7
Jackson, MS Metropolitan Statistical Area	10.9	7.1
Jacksonville, FL Metropolitan Statistical Area	14.4	8.7
Kahului-Wailuku, HI Micropolitan Statistical Area	14.8	8.4
Kansas City, MO-KS Metropolitan Statistical Area	12.3	7.7
Kapaa, HI Micropolitan Statistical Area	15.6	8.4
Keene, NH Micropolitan Statistical Area	14.8	9.3
Kennewick-Richland-Pasco, WA Metropolitan Statistical Area	10.0	6.8
Las Cruces, NM Metropolitan Statistical Area	13.1	10.0
Las Vegas-Paradise, NV Metropolitan Statistical Area	12.0	7.4
Lebanon, NH-VT Micropolitan Statistical Area	14.7	9.7
Lewiston, ID-WA Metropolitan Statistical Area	13.9	10.1
Lincoln, NE Metropolitan Statistical Area	12.8	9.9
Little Rock-North Little Rock, AR Metropolitan Statistical Area	13.0	8.1

TABLE 14 cont'd: ASTHMA-ESTIMATED LIFETIME AND CURRENT PREVALENCE (%) IN ADULTS FOR SELECTED AREAS, 2006

METROPOLITAN / MICROPOLITAN AREA ¹	LIFETIME	CURRENT
	PREVALENCE (%) ²	PREVALENCE (%) ³
Los Angeles-Long Beach-Glendale, CA Metropolitan Division	10.6	6.2
Louisville, KY-IN Metropolitan Statistical Area	10.4	7.7
Lubbock, TX Metropolitan Statistical Area	15.1	9.0
Manchester-Nashua, NH Metropolitan Statistical Area	15.0	9.5
Memphis, TN-MS-AR Metropolitan Statistical Area	13.0	7.8
Miami-Fort Lauderdale-Miami Beach, FL Metropolitan Statistical Area	10.0	5.5
Milwaukee-Waukesha-West Allis, WI Metropolitan Statistical Area	12.7	8.8
Minneapolis-St. Paul-Bloomington, MN-WI Metropolitan Statistical Area	12.2	8.9
Missoula, MT Metropolitan Statistical Area	13.6	9.2
Myrtle Beach-Conway-North Myrtle Beach, SC Metropolitan Statistical Area	14.5	9.5
Nashville-Davidson--Murfreesboro, TN Metropolitan Statistical Area	9.3	6.8
Nassau-Suffolk, NY Metropolitan Statistical Area	11.8	6.7
New Haven-Milford, CT Metropolitan Statistical Area	11.5	8.0
New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area	10.8	6.3
New York-Wayne-White Plains, NY-NJ Metropolitan Division	12.3	7.9
Newark-Union, NJ-PA Metropolitan Division	10.2	6.9
Norwich-New London, CT Metropolitan Statistical Area	15.0	9.9
Ocean City, NJ Metropolitan Statistical Area	13.8	7.7
Ogden-Clearfield, UT Metropolitan Statistical Area	12.5	8.0
Oklahoma City, OK Metropolitan Statistical Area	15.1	9.7
Olympia, WA Metropolitan Statistical Area	15.6	9.9
Omaha-Council Bluffs, NE-IA Metropolitan Statistical Area	13.0	8.9
Orlando-Kissimmee, FL Metropolitan Statistical Area	10.8	7.2
Philadelphia, PA Metropolitan Division	14.8	10.5
Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area	15.6	8.9
Pittsburgh, PA Metropolitan Statistical Area	11.3	8.8
Portland-South Portland, ME Metropolitan Statistical Area	12.6	8.1
Portland-Vancouver-Beaverton, OR-WA Metropolitan Statistical Area	16.3	10.9
Providence-New Bedford-Fall River, RI-MA Metropolitan Statistical Area	15.7	8.6
Provo-Orem, UT Metropolitan Statistical Area	13.2	8.6
Raleigh-Cary, NC Metropolitan Statistical Area	11.3	5.4
Rapid City, SD Metropolitan Statistical Area	14.0	8.9
Reno-Sparks, NV Metropolitan Statistical Area	12.8	8.6
Richmond, VA Metropolitan Statistical Area	12.9	8.7
Riverside-San Bernardino-Ontario, CA Metropolitan Statistical Area	12.6	8.2
Rockingham County-Strafford County, NH Metropolitan Division	14.9	9.7
Rutland, VT Micropolitan Statistical Area	13.8	9.9
Salt Lake City, UT Metropolitan Statistical Area	15.6	9.8
San Antonio, TX Metropolitan Statistical Area	12.0	7.3
San Diego-Carlsbad-San Marcos, CA Metropolitan Statistical Area	10.9	7.1
San Francisco-Oakland-Fremont, CA Metropolitan Statistical Area	13.6	7.9
Sante Fe, NM Metropolitan Statistical Area	16.8	8.9
Scottsbluff, NE Micropolitan Statistical Area	12.3	7.3
Scranton--Wilkes-Barre, PA Metropolitan Statistical Area	10.0	6.7
Seaford, DE Micropolitan Statistical Area	13.6	9.1
Seattle-Bellevue-Everett, WA Metropolitan Division	13.8	7.9
Shreveport- Bossier City, LA Metropolitan Statistical Area	11.9	5.9
Sioux Falls, SD Metropolitan Statistical Area	11.3	8.0
Spokane, WA Metropolitan Statistical Area	14.7	9.9
Springfield, MA Metropolitan Statistical Area	15.7	10.6
St. Louis, MO-IL Metropolitan Statistical Area	11.8	8.2
Tacoma, WA Metropolitan Division	14.2	8.8
Tampa-St. Petersburg-Clearwater, FL Metropolitan Statistical Area	13.2	9.1
Topeka, KS Metropolitan Statistical Area	13.0	8.7
Trenton-Ewing, NJ Metropolitan Statistical Area	14.9	11.3
Tucson, AZ Metropolitan Statistical Area	13.5	8.5
Tulsa, OK Metropolitan Statistical Area	12.8	7.6
Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area	12.1	8.5
Warren-Troy-Farmington Hills-Troy, MI Metropolitan Division	13.4	8.0
Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Division	12.1	7.7
Wenatchee, WA Metropolitan Statistical Area	13.9	9.6
Wichita, KS Metropolitan Statistical Area	12.3	8.1
Wilmington, DE-MD-NJ Metropolitan Division	15.1	9.7
Wilmington, NC Metropolitan Statistical Area	11.8	7.3
Winston-Salem, NC Metropolitan Statistical Area	10.9	6.5
Worcester, MA Metropolitan Statistical Area	14.0	10.2
Yakima, WA Metropolitan Statistical Area	12.6	8.4
Youngstown-Warren-Boardman, OH-PA Metropolitan Statistical Area	8.9	6.6
Yuma, AZ Metropolitan Statistical Area	14.5	9.9

SOURCE: BEHAVIORAL RISK FACTOR SURVEILLANCE SURVEY, 2006

Notes:

- (1) A metropolitan area is a group of counties with at least one urbanized area of 50,000 more inhabitants, a micropolitan area is a group of counties with at least one urban cluster of at least 10,000 but less than 50,000 inhabitants and a metropolitan division is a smaller group of counties within a metropolitan statistical area of 2.5 million or more inhabitants.
- (2) Lifetime prevalence was defined as answering yes to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?"
- (3) Current prevalence was defined as answering yes to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?" and "Do you still have asthma?"

TABLE 15: ASTHMA - ESTIMATED PREVALENCE (%) IN CHILDREN, BY STATE, 2003¹

STATE	LIFETIME ²		CURRENT ³		ASTHMA ATTACK ⁴	
	NUMBER	%	NUMBER	%	NUMBER	%
United States	9,040,298	12.4	6,433,204	8.8	4,179,980	5.7
Alabama	133,734	12.1	105,501	9.6	64,250	5.8
Alaska	20,404	10.8	15,548	8.3	10,299	5.5
Arizona	176,846	11.7	129,746	8.6	86,552	5.7
Arkansas	77,606	11.4	55,852	8.2	36,034	5.3
California	1,152,803	12.3	698,613	7.4	459,816	4.9
Colorado	120,351	10.5	88,220	7.7	56,702	4.9
Connecticut	113,600	13.7	71,884	8.6	45,375	5.5
Delaware	30,324	15.3	23,552	11.9	12,804	6.5
District of Columbia	16,387	15.2	12,645	11.8	7,467	6.9
Florida	566,211	14.5	369,725	9.5	266,507	6.8
Georgia	303,309	13.3	219,312	9.6	128,486	5.6
Hawaii	50,603	17.1	34,979	11.8	17,760	6.0
Idaho	32,791	8.9	20,947	5.7	12,712	3.4
Illinois	356,368	11.1	245,199	7.6	164,201	5.1
Indiana	209,675	13.1	174,106	10.9	113,526	7.1
Iowa	64,701	9.4	45,113	6.5	26,468	3.8
Kansas	91,861	13.3	73,465	10.6	46,394	6.7
Kentucky	133,035	13.4	101,193	10.2	71,403	7.2
Louisiana	170,312	14.5	125,649	10.7	80,523	6.9
Maine	41,716	14.6	30,377	10.6	20,392	7.1
Maryland	193,721	14.1	143,018	10.4	80,998	5.9
Massachusetts	215,434	14.5	151,742	10.2	102,171	6.9
Michigan	342,284	13.5	253,579	10.0	160,785	6.4
Minnesota	103,497	8.3	76,885	6.2	45,073	3.6
Mississippi	96,835	12.8	68,855	9.1	46,497	6.1
Missouri	164,930	11.8	121,338	8.7	73,793	5.3
Montana	20,649	9.6	15,294	7.1	10,222	4.8
Nebraska	38,693	8.8	29,610	6.8	17,276	3.9
Nevada	60,179	10.4	40,192	6.9	26,622	4.6
New Hampshire	35,332	11.6	24,155	7.9	16,059	5.3
New Jersey	255,484	12.0	180,159	8.5	116,583	5.5
New Mexico	62,567	12.5	44,068	8.8	27,478	5.5
New York	588,777	13.1	447,853	9.9	280,633	6.2
North Carolina	255,092	12.3	186,754	9.0	132,645	6.4
North Dakota	12,835	8.8	9,676	6.6	6,709	4.6
Ohio	365,826	13.0	279,524	10.0	177,272	6.3
Oklahoma	116,770	13.3	80,244	9.2	60,035	6.9
Oregon	80,638	9.5	54,822	6.5	39,030	4.6
Pennsylvania	344,373	12.2	235,151	8.4	165,769	5.9
Rhode Island	33,628	13.9	24,451	10.1	14,937	6.2
South Carolina	127,577	12.5	93,938	9.2	57,147	5.6
South Dakota	15,863	8.2	11,054	5.7	6,725	3.5
Tennessee	157,469	11.3	118,206	8.5	73,443	5.3
Texas	817,441	13.1	618,052	9.9	399,081	6.4
Utah	60,500	8.2	46,073	6.2	34,278	4.6
Vermont	15,623	11.4	11,006	8.0	6,642	4.8
Virginia	220,488	12.3	149,339	8.3	99,566	5.6
Washington	167,777	11.2	109,996	7.4	73,162	4.9
West Virginia	52,390	13.5	43,060	11.1	27,311	7.0
Wisconsin	145,234	10.9	115,728	8.7	69,258	5.2
Wyoming	9,752	8.1	7,751	6.4	5,110	4.2

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, STATE AND LOCAL INTEGRATED TELEPHONE SURVEY, NATIONAL SURVEY OF CHILDREN'S HEALTH, 2003

Notes:

(1) Represents the most updated information available through SLAITS. Next update is scheduled for 2007.

(2) Lifetime prevalence was defined as answering yes to "Has a doctor or health professional ever told you that the sample child had asthma?"

(3) Current prevalence was defined as answering yes to "Has a doctor or health professional ever told you that the sample child had asthma?" and "Does the child still have asthma?"

(4) Attack prevalence was defined as answering yes to "Has a doctor or health professional ever told you that the sample child had asthma?" and "During the past 12 months, has the child had an episode of asthma or an asthma attack?"

TABLE 16: ASTHMA - NUMBER OF FIRST-LISTED HOSPITAL DISCHARGES AND RATE PER 10,000 POPULATION BY SEX, 1979-2005 ⁽¹⁾

YEAR	TOTAL		MALE		FEMALE	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
1979	339,000	15.7	143,000	13.1	196,000	17.0
1980	408,000	18.0	180,000	16.3	228,000	19.6
1981	418,000	18.4	180,000	16.2	237,000	20.1
1982	434,000	18.9	190,000	17.1	245,000	20.6
1983	459,000	19.8	190,000	17.0	269,000	22.4
1984	465,000	19.8	197,000	17.1	268,000	22.0
1985	462,000	19.5	195,000	17.0	266,000	21.8
1986	477,000	19.9	206,000	17.8	271,000	21.9
1987	454,000	18.8	193,000	16.5	261,000	20.9
1988 ²	479,000	19.6	210,000	17.7	270,000	21.4
1989	475,000	19.3	204,000	17.1	271,000	21.3
1990	476,000	19.1	191,000	15.8	285,000	22.2
1991	490,000	19.6	221,000	18.2	269,000	20.9
1992	463,000	18.3	201,000	16.3	263,000	20.1
1993	468,000	18.3	191,000	15.3	278,000	21.1
1994	451,000	17.4	189,000	15.0	262,000	19.7
1995	511,000	19.5	210,000	16.5	301,000	22.4
1996	474,000	17.9	195,000	15.1	279,000	20.6
1997	484,000	17.9	204,000	15.4	279,000	20.2
1998	423,000	15.5	168,000	12.6	255,000	18.3
1999	478,000	17.4	190,000	14.1	288,000	20.4
2000	465,000	16.7	198,000	14.5	267,000	18.8
2001	454,000	16.0	186,000	13.4	268,000	18.5
2002	484,000	16.9	196,000	13.9	288,000	19.7
2003	574,000	19.8	232,000	16.3	342,000	23.2
2004	497,000	17.0	207,000	14.5	290,000	19.4
2005	489,000	16.6	192,000	13.3	296,000	19.7

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HOSPITAL DISCHARGE SURVEY, 1979-2005

NOTES:

(1) DUE TO ROUNDING NUMBERS ACROSS MAY NOT ADD TO THE TOTAL NUMBER OF HOSPITAL DISCHARGES.

(2) DATA FROM 1988-2005 MAY NOT BE COMPARABLE TO EARLIER YEARS DUE TO A REDESIGN OF THE SURVEY.

TABLE 17: ASTHMA - NUMBER OF FIRST-LISTED HOSPITAL DISCHARGES AND RATE PER 10,000 POPULATION BY AGE, 1979-2005 ⁽¹⁾

YEAR	<15		15-44		45-64		65+		TOTAL	
	NUMBER	RATE								
1979	99,000	19.8	94,000	9.5	83,000	19.1	63,000	27.0	339,000	15.7
1980	124,000	24.2	99,000	9.5	101,000	22.7	84,000	32.7	408,000	18.0
1981	128,000	25.0	112,000	10.6	104,000	23.4	74,000	28.2	418,000	18.4
1982	151,000	29.3	104,000	9.7	98,000	22.1	81,000	30.4	434,000	18.9
1983	136,000	26.4	110,000	10.1	119,000	26.7	94,000	34.2	459,000	19.8
1984	150,000	29.0	109,000	9.9	102,000	22.8	105,000	37.4	466,000	19.8
1985	144,000	27.8	124,000	11.1	97,000	21.5	97,000	34.1	462,000	19.5
1986	158,000	30.3	122,000	10.8	99,000	22.0	98,000	33.7	477,000	19.9
1987	149,000	28.4	112,000	9.8	92,000	20.4	101,000	33.8	454,000	18.8
1988 ²	164,000	31.0	110,000	9.6	93,000	20.3	112,000	36.8	479,000	19.6
1989	168,000	31.2	127,000	11.0	88,000	19.0	93,000	29.9	475,000	19.3
1990	169,000	30.8	119,000	10.3	86,000	18.2	102,000	32.4	476,000	19.1
1991	187,000	33.9	128,000	10.9	85,000	18.2	90,000	28.5	490,000	19.6
1992	193,000	34.4	117,000	10.0	78,000	16.1	76,000	23.6	463,000	18.3
1993	159,000	28.0	128,000	10.9	94,000	19.0	87,000	26.6	468,000	18.3
1994	169,000	29.5	125,000	10.6	80,000	15.7	76,000	22.9	451,000	17.4
1995	212,000	36.7	135,000	11.4	87,000	16.7	77,000	23.0	511,000	19.5
1996	195,000	33.8	132,000	11.1	88,000	16.4	59,000	17.4	474,000	17.9
1997	214,000	35.8	117,000	9.6	88,000	15.9	65,000	19.2	484,000	17.9
1998	166,000	27.7	104,000	8.6	92,000	16.2	60,000	17.7	423,000	15.5
1999	190,000	31.5	122,000	10.0	94,000	15.9	73,000	21.3	478,000	17.4
2000	203,000	33.6	111,000	9.1	84,000	13.7	68,000	19.6	465,000	16.7
2001	182,000	30.1	104,000	8.4	92,000	14.3	76,000	21.4	454,000	16.0
2002	187,000	30.8	109,000	8.8	109,000	16.4	80,000	22.5	484,000	16.9
2003	213,000	35.0	127,000	10.2	125,000	18.3	109,000	30.5	574,000	19.8
2004	190,000	31.0	91,000	7.3	112,000	15.9	104,000	28.7	497,000	17.0
2005	159,302	26.2	97,810	7.8	119,444	16.4	112,038	30.5	488,594	16.6

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HOSPITAL DISCHARGE SURVEY, 1979-2005

NOTES:

(1) DUE TO ROUNDING NUMBERS ACROSS MAY NOT ADD TO THE TOTAL NUMBER OF HOSPITAL DISCHARGES.

(2) DATA FROM 1988-2005 MAY NOT BE COMPARABLE TO EARLIER YEARS DUE TO THE REDESIGN OF THE SURVEY.

TABLE 18: ASTHMA - NUMBER OF FIRST-LISTED HOSPITAL DISCHARGES AND RATE PER 10,000 POPULATION BY RACE, 1988-2005

YEAR	NUMBER					RATE ¹			
	TOTAL ²	WHITE	BLACK	ALL OTHER	NOT REPORTED ³	TOTAL	WHITE	BLACK	ALL OTHER
1988	479,000	295,000	116,000	31,000	37,000	19.6	14.4	39.4	36.1
1989	475,000	286,000	117,000	22,000	50,000	19.3	13.9	39.2	24.2
1990	476,000	263,000	116,000	19,000	78,000	19.1	12.7	38.3	19.8
1991	490,000	269,000	120,000	23,000	78,000	19.6	12.8	38.9	22.9
1992	463,000	215,000	134,000	25,000	89,000	18.3	10.2	42.8	23.8
1993	468,000	246,000	103,000	22,000	97,000	18.3	11.5	32.3	20.1
1994	451,000	227,000	125,000	29,000	70,000	17.4	10.5	38.6	26.0
1995	511,000	256,000	140,000	25,000	90,000	19.5	11.6	42.7	21.4
1996	474,000	237,000	133,000	33,000	70,000	17.9	10.8	40.1	27.6
1997	484,000	262,000	125,000	39,000	58,000	17.9	11.8	35.5	30.7
1998	423,000	222,000	115,000	28,000	58,000	15.5	10.0	32.2	21.0
1999	478,000	236,000	128,000	42,000	72,000	17.4	10.4	35.5	31.2
2000	465,000	234,000	117,000	18,000	79,000	16.7	10.3	32.9	10.3
2001	454,000	231,000	114,000	22,000	86,000	16.0	10.1	31.7	12.2
2002	484,000	244,000	131,000	19,000	90,000	16.9	10.5	36.0	9.9
2003	574,000	284,000	145,000	32,000	113,000	19.8	12.2	39.3	16.7
2004	497,000	236,000	126,000	35,000	100,000	17.0	10.0	33.9	17.3
2005	488,594	262,905	101,581	24,227	99,881	16.6	11.1	27.0	11.8

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS: NATIONAL HOSPITAL DISCHARGE SURVEY, 1988-2005

NOTES:

- (1) RATES MAY DIFFER FROM PREVIOUSLY PUBLISHED RATES DUE TO ADJUSTMENTS MADE TO POPULATION USED.
- (2) INCLUDES WHITE, BLACK AND OTHER RACE DISCHARGES AS WELL AS THOSE OF AN UNSPECIFIED RACE.
- (3) BETWEEN 1988 AND 2005, THE NUMBER OF DISCHARGES NOT REPORTING RACE INCREASED DRAMATICALLY. IT APPEARS THAT HOSPITAL DISCHARGES IN WHITES MIGHT BE DISPROPORTIONATELY UNDERESTIMATED, PARTICULARLY IN LATER YEARS. FOR THIS REASON, COMPARISONS BETWEEN RACES SHOULD BE MADE WITH CAUTION.

TABLE 19: ASTHMA-NUMBER OF VISITS TO PHYSICIAN OFFICES, OUTPATIENT DEPARTMENTS AND EMERGENCY DEPARTMENTS, 1989-2005

YEAR	COMBINED SETTINGS	PHYSICIAN OFFICES	OUTPATIENT DEPARTMENTS	EMERGENCY DEPARTMENTS
<i>NUMBER OF VISITS IN THOUSANDS</i>				
1989	6,822	6,822	NA	NA
1990	7,137	7,137	NA	NA
1991	NA	NA	NA	NA
1992	11,851	9,740	644	1,467
1993	14,048	11,340	1,022	1,686
1994	13,373	10,757	1,009	1,607
1995	12,192	9,026	1,301	1,865
1996	11,889	9,051	903	1,935
1997	12,848	9,834	1,097	1,917
1998	15,886	12,868	984	2,034
1999	12,805	9,498	1,310	1,997
2000	12,203	9,332	1,036	1,835
2001	14,231	11,280	1,286	1,665
2002	15,815	12,692	1,225	1,898
2003	16,120	12,855	1,512	1,753
2004	16,500	13,607	1,054	1,838
2005	15,897	12,823	1,304	1,770

SOURCE: NATIONAL AMBULATORY MEDICAL CARE SURVEY, 1989-2005
 NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY: 1992-2005

TABLE 20: ECONOMIC COST OF ASTHMA, UNITED STATES, 2007 ¹

CATEGORY	COST
	(in billions)
<i>Direct Medical Expenditures:</i>	
<i>Hospital Care</i>	4.7
<i>Physicians' Services ²</i>	3.8
<i>Prescription Drugs</i>	6.2
All Direct Expenditures	14.7
<i>Indirect Costs:</i>	
<i>Morbidity</i>	3.1
<i>Mortality (Death)</i>	1.9
All Indirect Costs	5.0
All Costs:	19.7

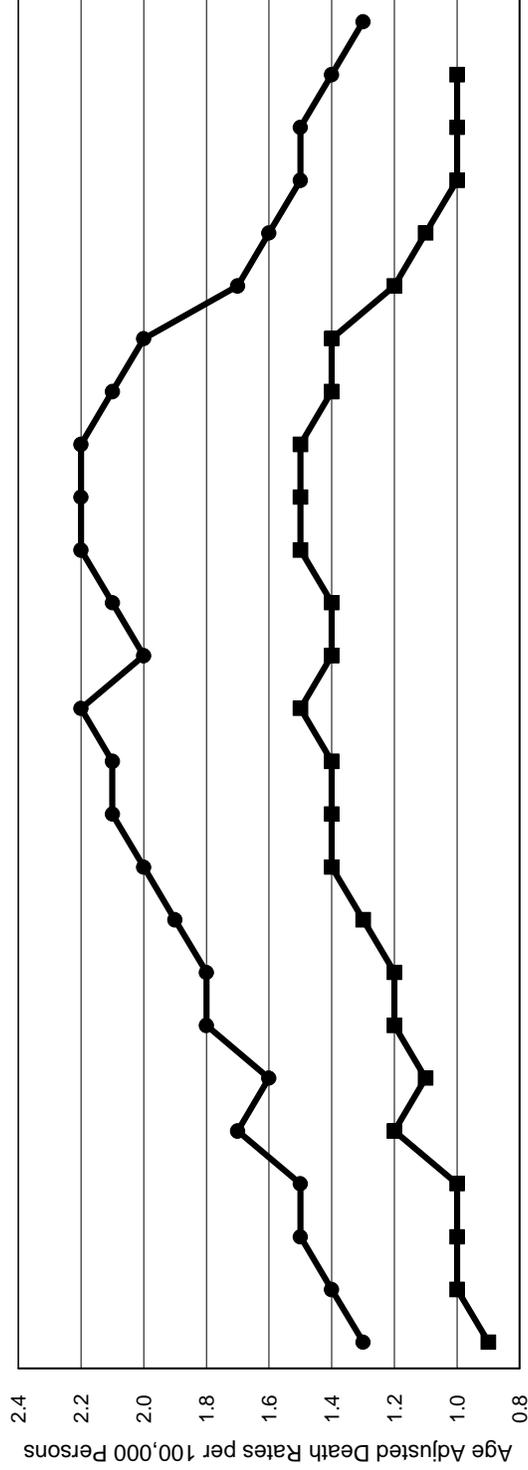
SOURCE: NEW ENGLAND JOURNAL OF MEDICINE, VOL. 326, NO. 13, MARCH 26, 1992
NHLBI - CHARTBOOK ON CARDIOVASCULAR, LUNG AND BLOOD DISEASES, 2007

Notes:

(1) Estimates of overall direct and indirect costs were obtained from the NHLBI Chartbook 2007. More specific cost estimates were calculated from applying proportions found in the sourced article with the projected NHLBI 2007 costs. Cost estimates were derived using mortality and health survey data as well as health expenditure and income data from various sources.

(2) Physician services includes physicians, clinics and other professional services.

FIGURE 1: ASTHMA AGE ADJUSTED DEATH RATES BASED ON THE 1940 AND 2000 STANDARD POPULATIONS, 1979-2004



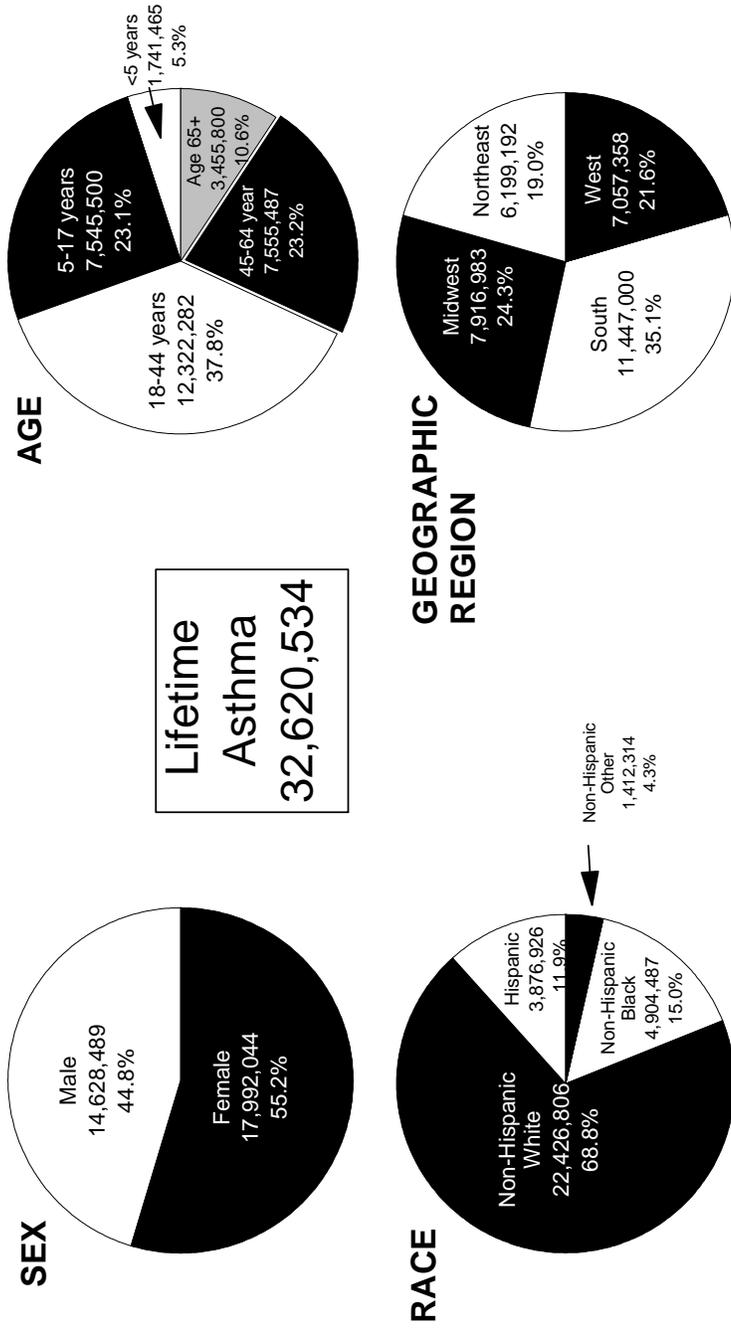
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
■ 1940		1.0	1.0	1.0	1.2	1.1	1.2	1.2	1.3	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.4	1.4	1.2	1.1	1.0	1.0	1.0	NA
● 2000	1.3	1.4	1.5	1.5	1.7	1.6	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.2	2.0	2.1	2.2	2.2	2.1	2.0	1.7	1.6	1.5	1.5	1.4	1.3

Source: Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports, 1979-2004 (2004 Preliminary) Additional calculations performed by the American Lung Association, Epidemiology and Statistics Unit.

Notes:

- 1) 1979-1998 rates reflect the International Classification of Diseases, 9th Revision Code 493. 1999-2004 rates reflect the ICD 10th Revision Codes J45-J46.
- NA-not available

**Figure 2: Percentage Distribution of Lifetime Asthma
By Sex, Age, Ethnicity and Geographic Region, 2005⁽¹⁾**

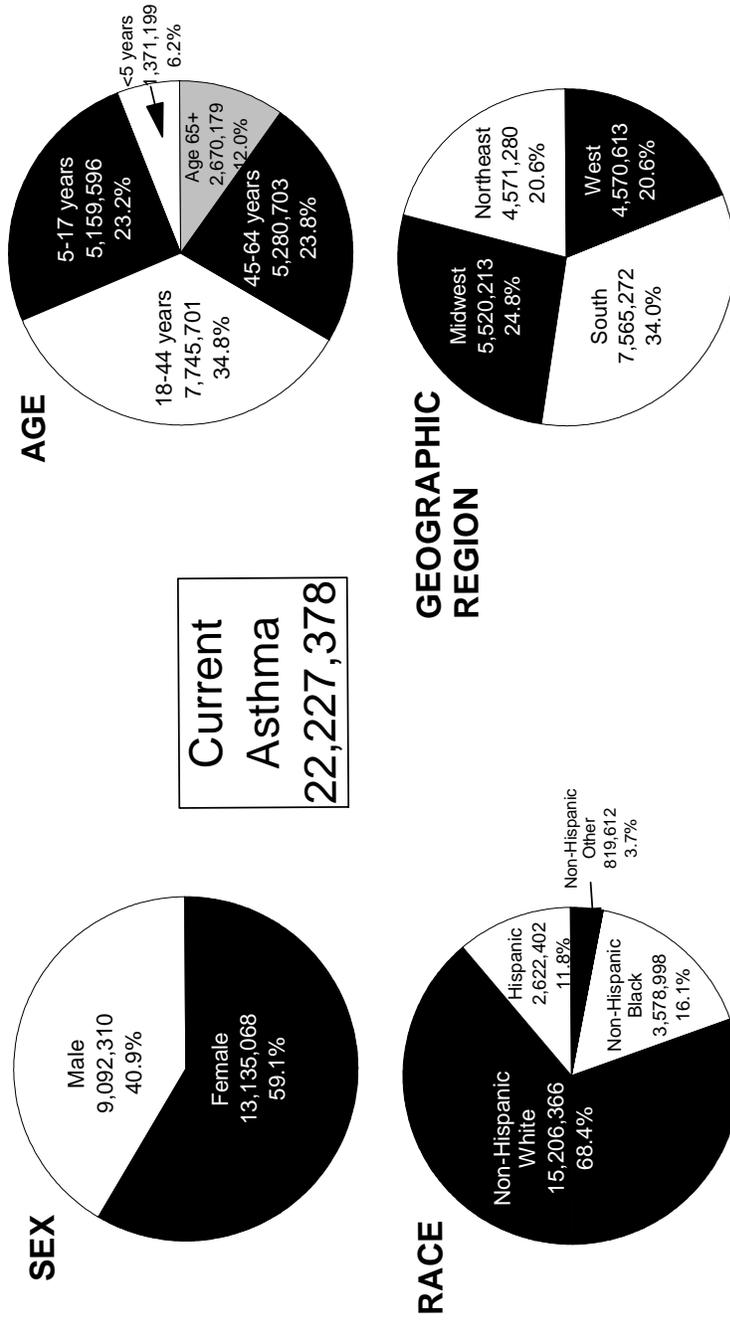


Source: National Center for Health Statistics. National Health Interview Survey, 2005.

Note:

(1) Lifetime Prevalence is defined as answering yes to "Have you EVER been told by a doctor or other health professional that you had asthma?"

**Figure 3: Percentage Distribution of Current Asthma
By Sex, Age, Ethnicity and Geographic Region, 2005 ⁽¹⁾**

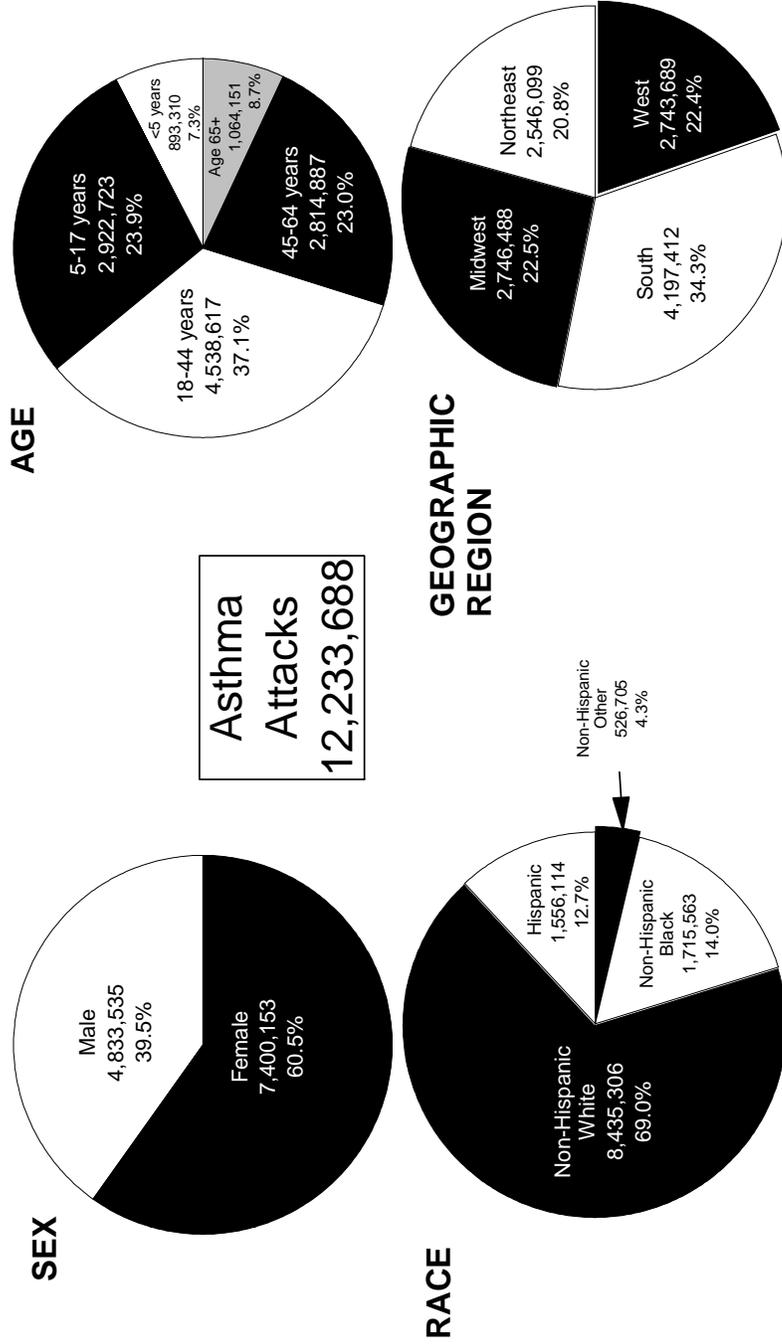


Source: National Center for Health Statistics. National Health Interview Survey, 2005.

Note:

(1) Current prevalence is defined as answering yes to "Have you EVER been told by a doctor or other health professional that you had asthma?" and "Do you still have asthma?"

Figure 4: Percentage Distribution of Asthma Attacks By Sex, Age, Ethnicity and Geographic Region, 2005 (1)

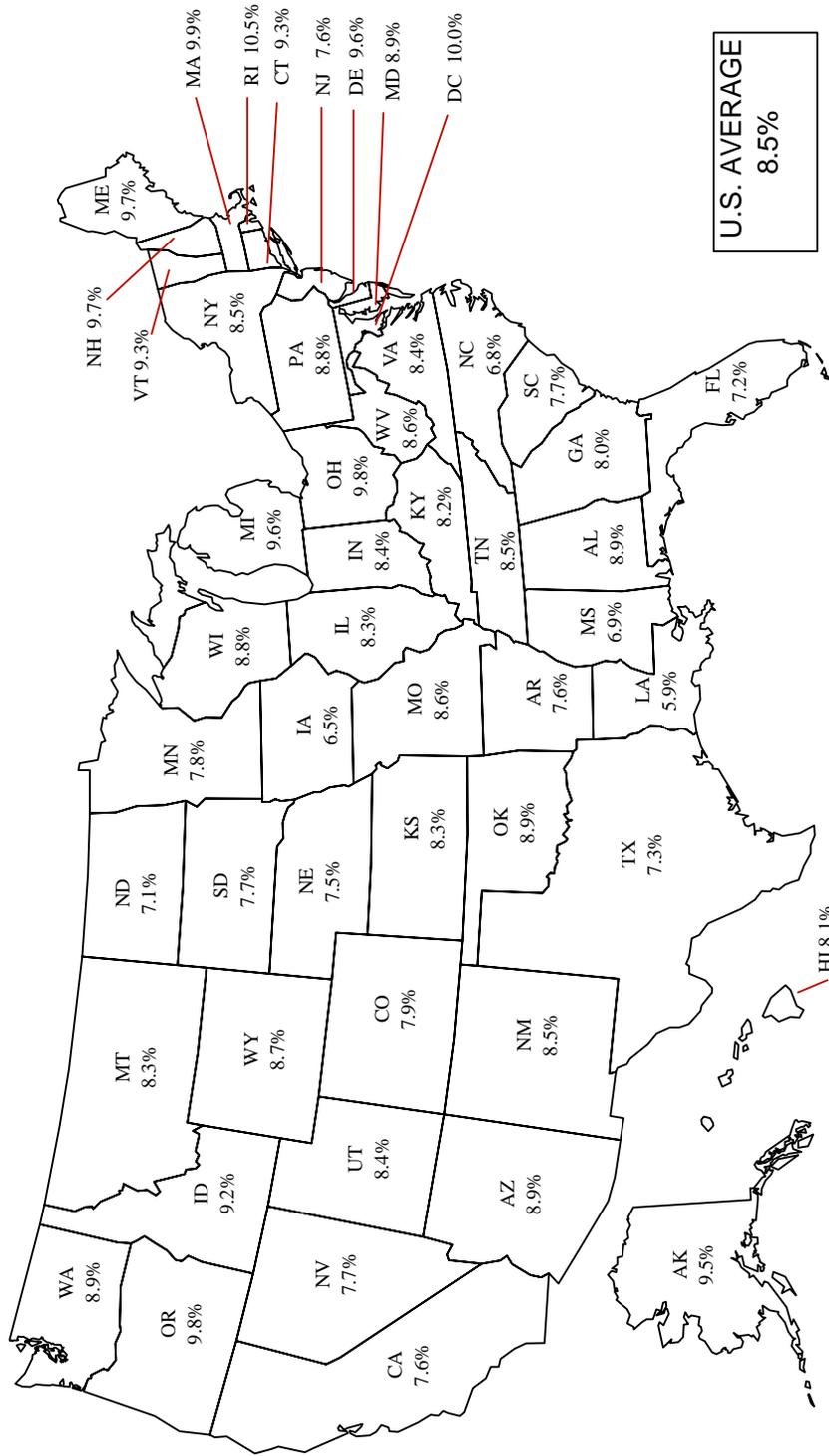


Source: National Center for Health Statistics. National Health Interview Survey, 2005.

Note:

(1) Attack prevalence is defined as answering yes to "Have you EVER been told by a doctor or other health professional that you had asthma?" and "During the past 12 months have you had an episode of asthma or an asthma attack?"

FIGURE 5: SELF-REPORTED CURRENT ASTHMA PREVALENCE (%) AMONG ADULTS, 2006 (1)

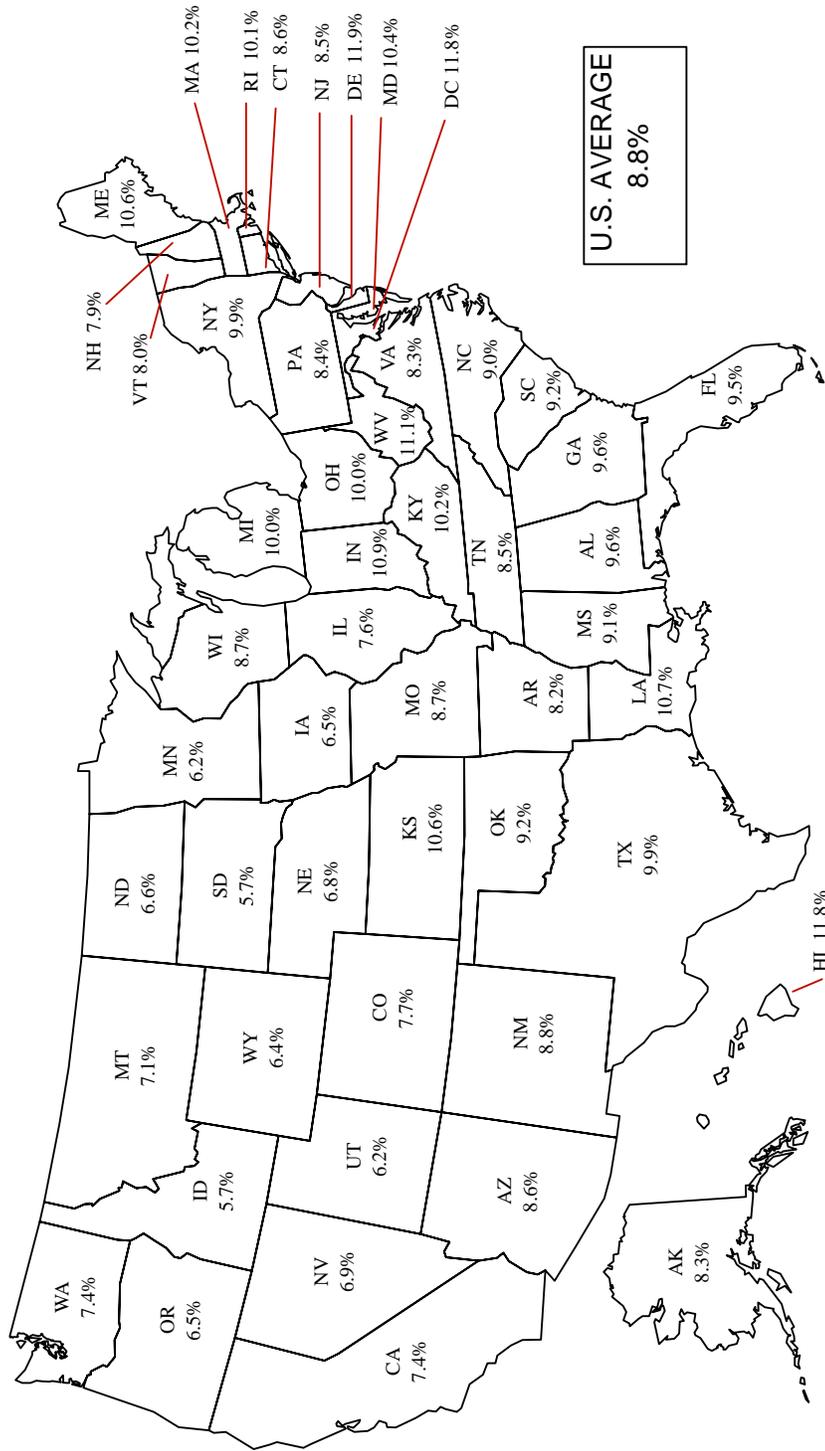


SOURCE: CDC Behavioral Risk Factor Surveillance System, 2006.

NOTE:

1) Answering "YES" to "Have you EVER been told by a doctor, nurse, or other health professional that you had asthma?" and "Do you still have asthma?"

FIGURE 6: SELF-REPORTED CURRENT ASTHMA PREVALENCE (%) AMONG CHILDREN, 2003 (1)

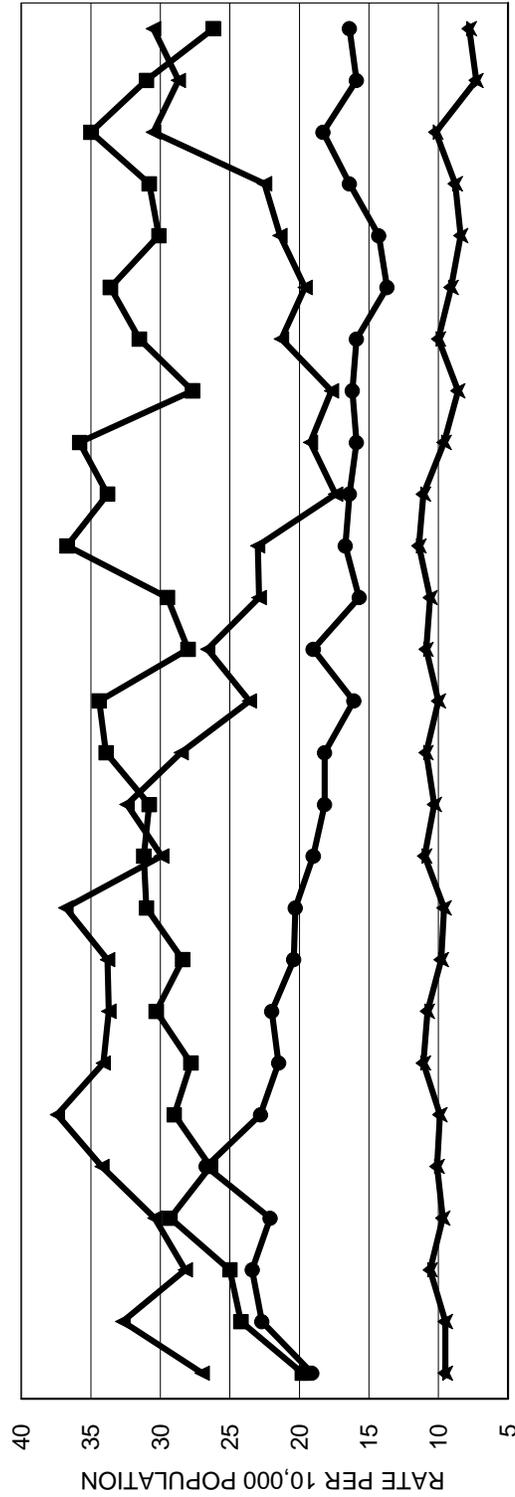


SOURCE: CDC, National Center for Health Statistics, State and Local Area Integrated Telephone Survey, National Survey of Children's Health, 2003.

NOTE:

1) Answering "YES" to "Have you EVER been told by a doctor or other health professional that you had asthma?" and "Do you still have asthma?"

FIGURE 7: ASTHMA: FIRST-LISTED HOSPITAL DISCHARGE RATES PER 10,000 POPULATION BY AGE, 1979-2005 ^(1,2)

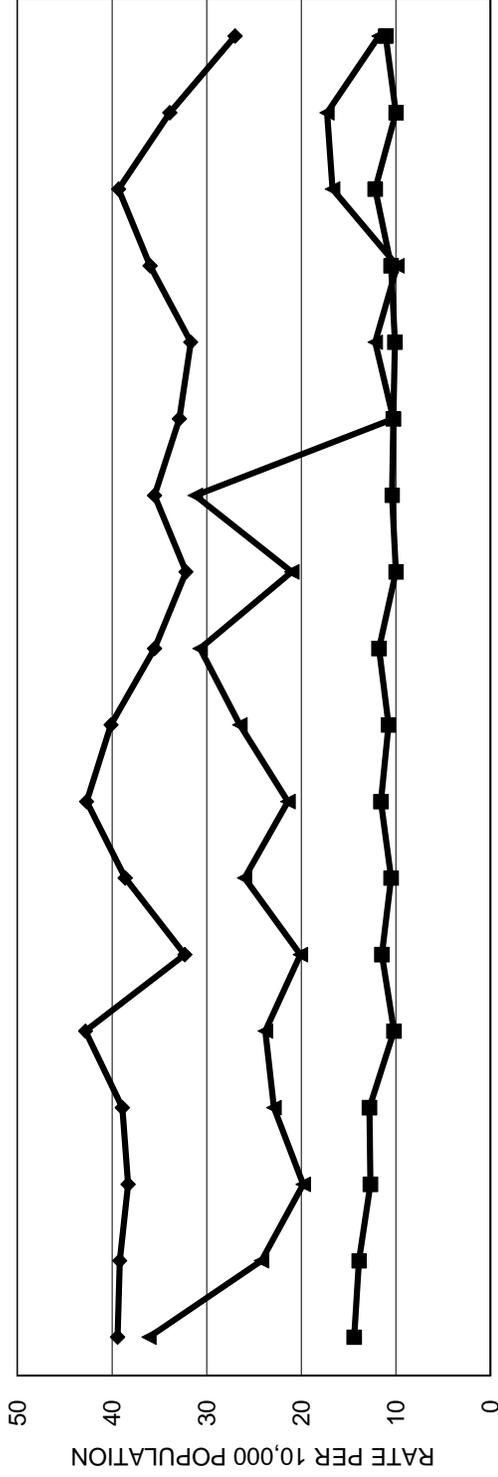


SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS: NATIONAL HOSPITAL DISCHARGE SURVEY, 1979-2005

NOTES:

- (1) Data from 1988-2005 may not be comparable to earlier years due to the re-design of the survey.
- (2) Because these estimates are based on a sample, they may differ from figures that would be obtained from a census of the population. Each data point reported is an estimate of the true population value and subject to sampling variability.

FIGURE 8: ASTHMA: FIRST-LISTED HOSPITAL DISCHARGE RATES PER 10,000 POPULATION BY RACE, 1988-2005 ^(1,2)



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
■ White	14.4	13.9	12.7	12.8	10.2	11.5	10.5	11.6	10.8	11.8	10.0	10.4	10.3	10.1	10.5	12.2	10.0	11.1
◆ Black	39.4	39.2	38.3	38.9	42.8	32.3	38.6	42.7	40.1	35.5	32.2	35.5	32.9	31.7	36.0	39.3	33.9	27.0
▲ Other	36.1	24.2	19.8	22.9	23.8	20.1	26.0	21.4	26.5	30.7	21.0	31.2	10.3	12.2	9.9	16.7	17.3	11.8

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS: NATIONAL HOSPITAL DISCHARGE SURVEY, 1988-2005

NOTES:

1. Between 1988 and 2005, the number of discharges not reporting race increased dramatically. It appears that hospital discharges in whites might be proportionally underestimated, particularly in later years. For this reason comparisons between races should be made with caution.
2. Rates shown here may differ from previously published rates due to adjustments made to the populations used. Because these estimates are based on a sample, they may differ from figures that would be obtained from a census of the population. Each data point reported is an estimate of the true population value and subject to sampling variability.