Trends in Asthma Morbidity and Mortality

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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 can constitute a medical emergency. Over the period 1980 through 1996, the prevalence of asthma in the United States increased.[1] However, since 1999, mortality and hospitalizations due to asthma have decreased and asthma prevalence appears to have stopped increasing, 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. Since Hispanics can be of any race, comparisons among racial groups are made without regard to 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.[I] 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.[II] Due to the change in age-adjusted standard population and decennial revisions of the International Classification of Diseases (ICD) coding system, the number and rate of asthma deaths between 1999 and 2006 are not directly comparable to those reported between 1978 and 1998. **Figure 1** compares the asthma age-adjusted death rates based on the 1940 and 2000 standard populations from 1979-2006.

Table 1 documents the number of deaths by race and sex between 1979 and 2006. In 2006, 3,613 people died of asthma. Approximately 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 for 2006 was 1.2 per 100,000. In 2006, the female age-adjusted death rate was 44% greater than the rate seen in males. The age-adjusted death rate was three times higher among the black population than among the white population (2.7 versus 0.9 per 100,000,

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[I] The change from the 1940 standard to the 2000 standard 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. Age-adjusted deaths rates for asthma were approximately 1.4 times greater using the 2000 standard population than those based on the 1940 standard population.

[II] 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.

respectively). Black women had the highest age-adjusted mortality rate due to asthma in 2006 (2.8 per 100,000).[2]

Table 3 delineates the number of deaths and age-adjusted death rate per 100,000 population by Hispanic origin. In 2006, 257 Hispanics died of asthma – an age-adjusted death rate of 1.0 per 100,000 population. Age-adjusted death rates in Hispanics were 64% lower than non-Hispanic blacks, and 1% higher than non-Hispanic whites.[3] However, studies have suggested that Puerto Ricans had higher age-adjusted death rates than all other Hispanic subgroups and non-Hispanic whites and blacks.[4]

Tables 4 and 5 delineate the number of deaths and mortality rates for asthma by 10-year age groups from 1979 to 2006. Asthma deaths are rare among children and increase with age. In 2006, 131 children under 15 died from asthma (0.2 per 100,000 population) compared to 653 adults over 85. The death rate in those 85 and over was 156% greater than the second highest mortality rate, seen among those 75-84 years of age (12.3 per 100,000 versus 4.8 per 100,000).[5]

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

In recent years the number of deaths due to asthma has declined, even after the ICD-10 revision is taken into account. The number of asthma deaths has decreased by 22% since 1999.

Asthma Prevalence

National Health Interview Survey, 1982-1996 and 1997-2008

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 in planning 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 reflect an underestimate of true asthma prevalence, since studies have shown that there are individuals suffering from undiagnosed asthma.[6,7]

Lifetime Prevalence

Based on the 2008 NHIS sample, it was estimated that 38.4 million Americans, or 128.5 per 1,000 persons, had been diagnosed with asthma by a health professional within their lifetime. Since 1999, children 5-17 years of age have had the highest prevalence rates. In 2008, 8.7 million children ages 5-17 had been diagnosed with asthma in their lifetime. These data are displayed in **Table 6**.[8]

Females traditionally have consistently higher rates of asthma than males. In 2008, females were about 10.5% more likely than males to ever have been diagnosed with asthma.[9]

Blacks are also more likely to be diagnosed with asthma over their lifetime. In 2008, the prevalence rate in blacks was 29.0% higher than the rate in whites.[10] The lifetime asthma prevalence rates for the two races have been statistically significant every year since 1997.

Current Prevalence

Data between 1982 and 1996 should not be compared to 2001-2008 estimates.

Age-specific current asthma prevalence trends are shown in **Table 7**. Approximately 23.3 million Americans (including 7.0 million children) had asthma in 2008; a rate of 78.0 per 1,000 population. The highest prevalence rate was seen in those 5-17 years of age (107.0 per 1,000 population). Overall, the rate in those under 18 (94.1 per 1,000) was significantly greater than those over 18 (71.8 per 1,000).[11]

Sex-specific current asthma prevalence trends are delineated in **Table 8**. In 2008, 10.4 million males and 12.9 million females had asthma. The overall prevalence rate in females (84.6 per 1,000 persons) was 19% greater than the rate in males (71.1 per 1,000 persons). Among adults over 18 years, females were 56% more likely than males to have asthma (88.0 per 1,000 vs. 56.3 per 1,000). However, this pattern is reversed among children. The current asthma prevalence

rate for boys under 18 (114.3 per 1,000) was 54% higher than the rate among girls (74.0 per 1,000). The difference in rates between sexes was statistically significant in both children and adults.[12]

Race- and age-specific current asthma prevalence trends are displayed in **Table 9**. In 2008, the current asthma prevalence rate was 42% higher in blacks than in whites (105.3 per 1,000 persons versus 74.4 per 1,000 persons, respectively). This difference between races was statistically significant. The highest prevalence rates for whites and blacks were among the 5-17 age group. Whites under 5 and blacks 18-44 years old had the lowest prevalence rates compared to other age groups within each race.[13]

Attack Prevalence

Table 10 displays asthma attack prevalence estimates between 1999 and 2008. In 2008, an estimated 12.7 million Americans (including 4.1 million children under 18) had an asthma attack. This represents 55% of the 23.3 million people who currently have asthma. The asthma attack rate was 42.6 per 1,000 population.[14]

For the past nine years, 5-17 year olds had the highest attack prevalence rates while those over 65 had the lowest. Since 1999 the asthma attack prevalence rate in those under 18 has been significantly greater than among those over 18; in 2008, these rates were 56.0 versus 38.1 per 1,000 respectively.[15]

Females tend to have consistently higher attack prevalence rates than males. In 2008, 7.3 million females (47.9 per 1,000) had an asthma attack compared to 5.4 million males (37.0 per 1,000). The difference in attack prevalence rates between sexes has been significant each year since 1999.[16]

The asthma attack prevalence rate in blacks was 45% higher than the rate in whites. This difference between races was statistically significant. In 2008, asthma attack prevalence rates in whites and blacks were highest among the 5-17 age group and lowest in those 65 years and older.[17]

Asthma in Hispanics

Table 11 displays the number of conditions and prevalence rates by Hispanic origin. In 2008, 4.7 million Hispanics had been diagnosed with asthma in their lifetime; 2.7 million reported that they still have the disease, and 1.6 million of those experienced an asthma attack in the past year. Lifetime, current and attack prevalence rates in Hispanics were significantly lower than non-Hispanic blacks and non-Hispanic whites in 2008.[18] Studies have suggested that within Hispanic subgroups, Puerto Ricans may have higher rates of asthma than other Hispanic subgroups and non-Hispanic whites.

Percentage Distribution of Conditions

Percentage distributions of lifetime asthma, current asthma and asthma attacks in 2008 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.[19]

Behavioral Risk Factor Surveillance System, 2000-2008

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 2008 BRFSS, an estimated 30.9 million adults (13.3%) had been diagnosed with asthma within their lifetime and 19.6 million adults (8.5%) still had asthma in 2008. This compares to 38.4 million adults (12.9 %) and 23.3 million adults (7.8%) who were diagnosed with lifetime and current asthma, respectively, in the 2008 National Health Interview Survey (NHIS). Confidence intervals for the prevalence rates indicate that the estimates from both surveys were statistically different.[20]

Tables 12 and 13 display estimated state-specific lifetime and current asthma prevalence in adults between 2000 and 2008. **Figure 5** shows the estimated state-specific current asthma prevalence for 2008. Current asthma prevalence in adults ranged from 6.6% in Florida to 10.6% in Rhode Island.[21]

In addition to asthma prevalence information by state, the BRFSS has calculated asthma prevalence estimates for certain metropolitan and micropolitan statistical areas for the years 2002-2008. **Table 14** displays estimated lifetime and current asthma prevalence in adults for 172 areas in 2008. Out of the selected MSAs, current asthma prevalence in adults ranged from 3.6% in Fargo, ND to 13.2% in Rochester, NY.[22]

National Survey of Children's Health, 2007

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 second survey to collect state-specific asthma prevalence data in children under 18 years of age; the first took place in 2003.

Questions on lifetime and current asthma prevalence in the NSCH are identical to those found in the Behavioral Risk Factor Surveillance System. **Table 15** displays estimated state-specific lifetime and current asthma prevalence in children under 18 in 2007. **Figure 6** shows the estimated state-specific current asthma prevalence for 2007. Current asthma prevalence in children under 18 ranged from 5.2% in South Dakota to 14.4% in Delaware.[23]

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 1988-2006 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 2006, 444,000 discharges (14.9 per 10,000 population) were attributed to asthma. Between 2003 and 2006 there was a 25% decrease in the hospitalization discharge rate for asthma in the United States.[24]

Table 16 delineates the trend in the number of hospital discharges and rates by sex from 1979 to 2006. Between 1995 and 2006 the number of hospital discharges decreased 13% overall, 16% in males and 12% in females. In 2006, a total of 266,000 discharges were reported in females and 177,000 were reported in males.[25]

As shown in **Table 17**, between 1995 and 2006, hospital discharge rates for asthma decreased in all age groups except for those over 65 years of age. Unlike other chronic lung diseases, asthma discharges are very common among the pediatric population. Approximately 33% of the asthma discharges in 2006 were in those under 15, although only 20.2% of the U.S. population was less than 15 years old. **Figure 7** depicts this age-specific trend.[26]

The trend in hospital discharges by race is delineated in **Table 18**. The 2006 discharge rate for asthma in blacks (29.3 per 10,000) was over 3 times higher than that seen in whites and 4.4 times higher than that seen in other races (9.6 and 6.7 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.[27]

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 1989-2006. In 2006 there were 10.6 million physician office visits, 1.2 million hospital outpatient department visits and almost 1.7 million emergency room visits due to asthma.[28]

Economic Cost of Asthma

Estimates of direct medical expenditures and indirect costs (in 2010 dollars) attributed to asthma are shown in **Table 20**. Asthma burdens our nation with an annual economic cost of $15.6 billion in direct health care costs; indirect costs (lost productivity) add another $5.1 billion for a total of

$20.7 billion. Prescription drugs represented the largest single direct medical expenditure, at $5.6 billion.[29]

A 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.[30] Influenza causes substantial morbidity in adults and children with asthma, and vaccination can prevent influenza and its complications. Currently, 45.6% of adults with asthma receive the influenza vaccine.[31]

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 6 years. The number of deaths due to asthma in 2006 was approximately 22.4% lower than the number of deaths seen in 1999.[32]

Hospital discharges have been declining since 1995. The number of hospital discharges has decreased 13% between 1995 and 2006 while the hospital discharge rate has declined 24% since it peaked at 19.5 per 10,000 in 1995.[33]

Lifetime and attack prevalence rates have fluctuated over the past eight years but have remained stable. There are only eight 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 2008, approximately 23.3 million Americans had asthma. In 2008, the condition accounted for an estimated 14.4 million lost school days in children and 14.2 million lost work days in adults.[34] Asthma is a leading cause of activity limitation and costs our nation $20.7 billion in health care costs annually.[35]

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:

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Table 1: Asthma - Number of Deaths by Race and Sex, 1979-1998, 1999-2006

	Total			White			All Other [1]					
							Total			Black		
Year	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	3,816	1,386	2,430	2,658	851	1,807	1,158	535	623	1,008	455	553
2005	3,884	1,315	2,569	2,714	843	1,871	1,170	472	698	1,016	411	306
2006	3,613	1,296	2,317	2,497	805	1,692	1,116	491	625	957	423	534

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Vital Statistics Reports. Deaths: Final Data for 1979-2006.

Notes:

--- Data not available.

(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 1999-2006 are coded by the 10th revision of International Classification of Diseases, code J45-J46.

Table 2: Asthma - Age-Adjusted Death Rate per 100,000 population, by Race and Sex, 1979-1998, 1999-2006 [1,2]

	Total			White			All Other [3]					
							Total			Black		
Year	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both 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	1.0	1.4	1.0	0.8	1.2	2.5	2.5	2.5	3.0	3.0	3.1
2005	1.3	1.0	1.5	1.0	0.7	1.3	2.5	2.2	2.7	3.0	2.7	3.3
2006	1.2	0.9	1.3	0.9	0.7	1.1	2.2	2.1	2.3	2.7	2.5	2.8

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Vital Statistics Reports. Deaths: Final Data for 1979-2006.

Notes:
(1) Rates for the years 1979-1998 are age-adjusted to the 1940 U.S. standard population.
(2) Rates for 1999-2006 are age-adjusted to the 2000 U.S. standard population.
(3) All races other than White.
(4) Deaths from 1979-1998 are coded by the 9th revision of International Classification of Diseases, code 493.
(5) Deaths from 1999-2006 are coded by the 10th revision of International Classification of Diseases, code J45-J46.
--- Data not available.

Table 3: Asthma - Number of Deaths and Age-Adjusted Death Rate per 100,000 population by Ethnic Origin and Sex, 1999-2006 [1,2]

	Total		Hispanic		Non-Hispanic [3]		Non-Hispanic White		Non-Hispanic Black	
Year/Sex	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	3,816	1.3	281	1.1	3,524	1.3	2,377	1.0	1,001	3.1
2005	3,884	1.3	248	1.0	3,626	1.3	2,475	1.0	1,002	3.1
2006	3,613	1.2	257	1.0	3,343	1.2	2,246	0.9	943	2.8
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	1,386	1.0	111	0.9	1,272	1.1	743	0.8	452	3.1
2005	1,315	1.0	106	0.9	1,205	1.0	743	0.7	403	2.7
2006	1,296	0.9	94	0.7	1,196	1.0	715	0.7	414	2.6
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	2,430	1.4	170	1.4	2,252	1.5	1,634	1.2	549	3.1
2005	2,569	1.5	142	1.1	2,421	1.6	1,732	1.3	599	3.4
2006	2,317	1.3	163	1.2	2,147	1.4	1,531	1.1	529	2.9

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Vital Statistics Reports. Deaths: Final Data for 1999-2006.

Notes:

(1) Number of deaths are coded by the 10th revision of International Classification of Diseases, code J45-J46.

(2) Rates are age-adjusted to the 2000 U.S. standard population.

(3) Includes races other than White and Black.

Table 4: Asthma - Number of Deaths in 10-Year Age Groups, 1979-1998, 1999-2006

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	3,816	7	29	105	159	197	376	562	520	504	673	684
2005	3,884	4	37	97	131	207	369	595	510	475	709	740
2006	3,613	6	26	99	135	194	373	566	492	443	626	653

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Vital Statistics Reports. Deaths: Final Data for 1979-2006.

Notes:

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

(2) Deaths from 1999-2006 are coded by the 10th revision of International Classification of Diseases, J45-J46.

Table 5: Asthma - Mortality Rate per 100,000 population, by 10-Year Age Groups 1979-1998, 1999-2006

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	2.0	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	---	0.2	0.3	0.4	0.5	0.9	1.4	1.8	2.7	5.2	14.1
2005	1.3	---	0.2	0.2	0.3	0.5	0.8	1.4	1.7	2.5	5.4	14.5
2006	1.2	---	0.2	0.2	0.3	0.5	0.9	1.3	1.6	2.3	4.8	12.3

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Vital Statistics Reports. Deaths: Final Data for 1979-2006.

Notes:

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

(2) Deaths from 1999-2006 are coded by the 10th revision of International Classification of Diseases, J45-J46.

--- Figure does not meet standard of reliability or precision (Estimate based on fewer than 20 deaths).

Table 6: Asthma - Number of People Ever Told by a Health Professional that they had Asthma and Prevalence Rate per 1,000 population, by Age, Sex and Race, 1999-2008 (Lifetime Prevalence) [1]

	2001			2002			2003			2004		
	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]
Total	31,353,657	113.4	*(109.7--117.1)*	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)*
Age												
<5	1,552,713	78.7	*(68.6--88.7)*	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)*
5-17	7,631,820	144.2	*(135.0--153.5)*	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)*
<18	9,184,533	126.4	*(119.2--133.6)*	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)*
18-44	12,795,275	118.0	*(112.3--123.7)*	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)*
45-64	6,507,867	104.1	*(97.2--110.9)*	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)*
65+	2,865,982	87.2	*(79.0--95.4)*	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)*
>18	22,169,124	108.8	*(104.6--112.9)*	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)*
Sex												
Male	14,556,517	107.9	*(102.8--113.0)*	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)*
Female	16,797,140	118.6	*(113.8--123.5)*	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)*
Race												
White	24,771,837	112.1	*(107.8--116.4)*	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)*
<5	978,206	65.8	*(54.2--77.3)*	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)*
5-17	5,592,504	139.4	*(129.0--149.9)*	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)*
18-44	10,227,098	120.8	*(114.0--127.6)*	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)*
45-64	5,499,261	104.9	*(97.3--112.6)*	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)*
65+	2,474,768	85.4	*(76.8--94.0)*	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)*
Black	4,453,467	128.6	*(119.3--138.0)*	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	406,228	137.8	*(104.8--170.9)*	431,731	145.9	*(112.5--179.4)*	491,459	150.4	*(113.2--187.6)*	395,616	119.9	*(89.7-150.7)*
5-17	1,403,147	170.8	*(146.0--195.5)*	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)*
18-44	1,704,761	119.9	*(104.4--135.3)*	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)*
45-64	668,693	102.5	*(85.8--119.2)*	794,872	116.3	*(94.6--138.0)*	735,785	99.7	*(81.1--118.4)*	818,936	107.0	*(87.4-126.6)*
65+	270,638	99.9	*(77.0--122.8)*	235,769	85.6	*(58.9--112.4)*	230,248	80.7	*(55.7--105.7)*	300,113	104.2	*(77.3-131.1)*

	2005			2006			2007			2008		
	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]	Number	Rate	CI of Rate [2]
Total	32,620,534	112.0	*(108.3-115.7)*	34,131,580	116.2	*(111.6-120.8)*	34,007,590	114.5	*(110.0-119.1)*	38,430,376	128.5	*(124.0-133.0)*
Age												
<5	1,741,465	85.8	*(74.7-96.9)*	1,521,299	74.5	*(63.4-85.7)*	1,636,267	79.5	*(66.2-92.8)*	1,498,621	72.0	*(58.9-85.2)*
5-17	7,545,500	142.2	*(133.6-150.8)*	8,354,541	157.4	*(146.2-168.6)*	7,968,828	149.9	*(138.9-161.0)*	8,691,354	163.8	*(152.4-175.2)*
<18	9,286,965	126.6	*(119.6-133.6)*	9,875,840	134.4	*(125.9-142.8)*	9,605,095	130.3	*(121.6-138.9)*	10,189,975	138.0	*(128.7-147.2)*
18-44	12,322,282	111.6	*(105.3-117.9)*	12,668,079	114.8	*(107.4-122.1)*	12,995,928	117.2	*(109.6-124.8)*	14,891,564	134.6	*(126.6-142.6)*
45-64	7,555,487	104.5	*(97.7-111.3)*	7,806,115	105.2	*(96.9-113.5)*	7,895,449	103.7	*(95.7-111.7)*	9,265,710	119.7	*(110.8-128.6)*
65+	3,455,800	98.6	*(89.9-107.3)*	3,781,546	106.0	*(95.8-116.2)*	3,511,118	97.1	*(85.6-108.6)*	4,083,127	109.8	*(99.8-119.8)*
>18	23,333,569	107.1	*(102.8-111.4)*	24,255,740	110.1	*(105.0-115.2)*	24,402,495	109.3	*(104.4-114.3)*	28,240,401	125.4	*(120.0-130.8)*
Sex												
Male	14,628,489	102.7	*(97.6-107.8)*	15,952,818	110.9	*(104.7-117.2)*	15,932,657	109.6	*(103.4-115.7)*	17,867,295	122.0	*(115.3-128.6)*
Female	17,992,044	121.0	*(116.4-125.6)*	18,178,762	121.2	*(114.6-127.9)*	18,074,933	119.3	*(113.0-125.7)*	20,563,061	134.8	*(128.9-140.6)*
Race												
White	25,986,225	108.7	*(104.7-112.7)*	27,036,551	113.7	*(108.5-118.9)*	26,798,402	112.1	*(107.0-117.2)*	30,025,619	124.7	*(119.7-129.7)*
<5	1,107,802	69.7	*(59.5-80.1)*	1,125,619	71.4	*(58.9-83.9)*	954,773	61.2	*(47.9-74.5)*	984,128	61.6	*(46.6-76.7)*
5-17	5,569,421	134.0	*(124.3-143.7)*	6,227,995	151.1	*(137.8-164.3)*	5,518,513	134.7	*(122.7-146.6)*	6,017,946	147.7	*(135.7-159.6)*
18-44	9,857,252	110.1	*(103.1-117.1)*	9,993,077	114.1	*(105.3-122.8)*	10,577,772	120.5	*(111.7-129.3)*	11,892,854	136.1	*(126.8-145.3)*
45-64	6,454,928	105.5	*(98.2-112.8)*	6,446,946	103.8	*(94.6-113.1)*	6,652,131	105.4	*(96.2-114.5)*	7,655,811	118.9	*(109.1-128.7)*
65+	2,996,822	96.8	*(87.3-106.3)*	3,242,914	104.4	*(93.3-115.5)*	3,095,213	98.0	*(85.3-110.7)*	3,474,880	107.5	*(96.7-118.3)*
Black	5,110,214	137.4	*(127.2-147.6)*	5,342,756	136.6	*(125.1-148.1)*	5,248,110	133.8	*(121.6-146.1)*	6,353,327	160.9	*(148.2-173.7)*
<5	528,218	158.6	*(121.2-196.0)*	351,576	102.2	*(70.6-133.9)*	544,230	156.5	*(114.6-198.4)*	384,767	110.2	*(80.0-140.4)*
5-17	1,554,894	182.7	*(161.1-204.3)*	1,707,643	192.7	*(166.9-218.4)*	1,855,699	210.6	*(185.7-235.4)*	2,192,429	252.3	*(220.8-283.9*
18-44	1,794,574	123.8	*(107.6-140.0)*	1,939,503	126.0	*(109.1-143.0)*	1,681,732	110.6	*(92.4-128.7)*	2,228,770	145.8	*(125.8-165.8)*
45-64	880,522	111.6	*(92.4-130.8)*	938,301	114.3	*(93.2-135.3)*	848,297	98.7	*(80.5-117.0)*	1,154,966	131.3	*(107.1-155.4)*
65+	352,006	118.7	*(91.9-145.5)*	405,733	126.1	*(99.3-152.9)*	318,152	101.8	*(74.6-129.0)*	392,395	122.3	*(93.8-150.9)*

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1999-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

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 population by Age, 1982-1996, 2001-2008 (Current Prevalence) [1,2]

	All Ages		Under 5		5-17		<18		18-44		45-64		65+	
Year	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
2006	22,875,985	77.9	1,177,912	57.7	5,641,460	106.3	6,819,372	92.8	7,990,497	72.4	5,575,548	75.1	2,490,568	69.8
2007	22,879,141	77.1	1,395,164	67.8	5,307,438	99.9	6,702,602	90.9	7,996,454	72.1	5,475,500	71.9	2,704,585	74.8
2008	23,317,502	78.0	1,276,343	61.4	5,676,458	107.0	6,952,801	94.1	7,944,927	71.8	5,765,100	74.5	2,654,674	71.4

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1999-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

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 2001-2008 estimates.**

Table 8: Asthma - Number of Conditions and Prevalence Rate per 1,000 population by Sex, 1982-1996, 2001-2008 (Current Prevalence) [1]

	Male						Female					
	All Ages		Under 18		18 and Over		All Ages		Under 18		18 and Over	
Year	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	94.4	4,940,386	50.0	11,564,566	81.0	2,542,114	71.3	9,022,452	84.3
2003	8,212,724	58.8	3,548,147	95.1	4,664,577	45.6	11,623,277	79.4	2,665,288	74.7	8,957,989	80.9
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	99.8	5,347,802	51.0	13,135,068	88.3	2,786,287	77.7	10,348,781	91.7
2006	10,026,373	69.7	4,122,206	109.7	5,904,167	55.6	12,849,612	85.7	2,697,166	75.1	10,152,446	89.0
2007	9,484,900	65.2	3,659,782	97.4	5,825,118	54.1	13,394,241	88.4	3,042,820	84.7	10,351,421	89.7
2008	10,410,894	71.1	4,293,261	114.3	6,117,633	56.3	12,906,608	84.6	2,659,540	74.0	10,247,068	88.0

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1999-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

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 2001-2008 estimates.**

Table 9: Asthma - Number of Conditions and Prevalence Rate per 1,000 population by Race and Age, 1982-1996, 2001-2008 (Current Prevalence) [(1)]

White												
	All Ages		Under 5		5-17		18-44		45-64		65+	
Year	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
2006	18,102,518	76.1	842,705	53.5	4,170,650	101.2	6,411,485	73.2	4,564,948	73.5	2,112,730	68.0
2007	17,818,348	74.5	801,099	51.3	3,608,489	88.1	6,417,722	73.1	4,616,492	73.1	2,374,546	75.2
2008	17,922,870	74.4	805,346	50.4	3,838,544	94.2	6,335,706	72.5	4,629,422	71.9	2,313,852	71.6

Black												
	All Ages		Under 5		5-17		18-44		45-64		65+	
Year	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	122,577	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
2006	3,685,130	94.2	308,660	89.7	1,261,526	142.3	1,208,699	78.6	624,522	76.0	281,723	87.6
2007	4,045,683	103.2	496,932	142.9	1,403,745	159.3	1,205,631	79.3	689,291	80.2	250,084	80.0
2008	4,157,754	105.3	348,345	99.8	1,542,877	177.6	1,149,238	75.2	841,223	95.6	276,071	86.1

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1999-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

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 2001-2008 estimates.**

Table 10: Number of People Who Had an Asthma Attack or Episode and Prevalence Rate per 1,000 population by Age, Sex and Race, 1999-2008 (Attack Prevalence) [(1)]

	1999		2000		2001		2002		2003		2004		2005		2006		2007		2008	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Total	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	12,443,111	42.4	12,308,749	41.5	12,726,197	42.6
Age																				
<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	923,306	45.2	850,544	41.3	848,244	40.8
5-17	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	3,147,874	59.3	2,976,960	56.0	3,287,958	62.0
<18	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	4,071,180	55.4	3,827,504	51.9	4,136,202	56.0
18-44	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	4,133,895	37.4	4,289,594	38.7	4,302,711	38.9
45-64	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	3,225,412	43.5	2,957,884	38.8	3,201,220	41.3
65+	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	1,012,624	28.4	1,233,767	34.1	1,086,064	29.2
>18	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	8,371,931	38.0	8,481,245	38.0	8,589,995	38.1
Sex																				
Male	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	4,958,737	34.5	4,858,810	33.4	5,418,404	37.0
Female	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	7,484,374	49.9	7,449,939	49.2	7,307,793	47.9
Race																				
White	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	9,894,621	41.6	9,628,157	40.3	9,735,407	40.4
<5	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	682,037	43.3	508,885	32.6	547,288	34.3
5-17	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	2,307,950	56.0	2,107,139	51.4	2,215,470	54.4
18-44	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	3,340,080	38.1	3,406,015	38.8	3,472,952	39.7
45-64	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	2,727,915	43.9	2,503,344	39.6	2,556,822	39.7
65+	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	836,639	26.9	1,102,774	34.9	942,875	29.2
Black	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	1,921,835	49.1	2,081,926	53.1	2,310,002	58.5
<5	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	86.1	217,268	63.2	302,700	87.0	211,781	60.7
5-17	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	697,787	78.7	698,916	79.3	900,544	103.6
18-44	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	615,762	40.0	653,044	42.9	635,252	41.5
45-64	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	292,257	35.6	326,682	38.0	447,113	50.8
65+	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	98,761	30.7	100,584	32.2	115,312	36.0

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1999-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

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 asthma attack?"

Table 11: Asthma - Number of Conditions and Prevalence Rate per 1,000 population by Ethnic Origin, 1998-2008

	Hispanic			Non-Hispanic White			Non-Hispanic Black			Non-Hispanic Others [1]		
	Number	*Rate*	*CI of Rate* [2]	*Number*	*Rate*	*CI of Rate* [2]	*Number*	*Rate*	*CI of Rate* [2]	*Number*	*Rate*	*CI of Rate* [2]
Lifetime Prevalence [3]												
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	*(98.0-106.4)*	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)*
2006	4,245,710	97.6	*(86.8-108.5)*	23,183,063	117.4	*(111.5-123.2)*	5,063,688	135.7	*(124.0-147.3)*	1,639,119	106.2	*(90.3-122.1)*
2007	4,624,043	102.3	*(93.3-111.3)*	22,616,361	114.7	*(108.9-120.5)*	5,010,098	132.6	*(119.9-145.3)*	1,757,088	105.3	*(89.0-121.5)*
2008	4,676,998	100.8	*(91.5-110.2)*	25,764,148	130.2	*(124.4-136.0)*	6,133,131	160.6	*(147.7-173.5)*	1,856,099	111.8	*(94.1-129.5)*
Current Prevalence [4]												
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)*
2006	2,774,937	63.8	*(59.0-68.6)*	15,588,033	78.9	*(76.1-81.7)*	3,490,816	93.5	*(87.8-99.2)*	1,022,199	66.2	*(56.8-75.7)*
2007	3,086,458	68.3	*(63.6-72.9)*	15,023,012	76.2	*(73.5-78.9)*	3,868,248	102.4	*(97.6-107.1)*	901,423	54.0	*(45.6-62.4)*
2008	2,696,473	58.1	*(52.8-63.4)*	15,471,719	78.2	*(75.1-81.2)*	4,029,342	105.5	*(99.4-111.6)*	1,119,968	67.4	*(57.9-76.9)*
Attack Prevalence [5]												
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)*
2006	1,606,472	36.9	*(32.2-41.7)*	8,442,077	42.7	*(39.9-45.6)*	1,801,492	48.3	*(42.4-54.2)*	593,070	38.4	*(29.3-47.5)*
2007	1,847,798	40.9	*(36.3-45.4)*	7,985,031	40.5	*(37.3-43.7)*	1,949,084	51.6	*(45.4-57.7)*	526,836	31.6	*(23.7-39.4)*
2008	1,563,994	33.7	*(28.6-38.8)*	8,336,575	42.1	*(39.0-45.3)*	2,230,905	58.4	*(52.1-64.7)*	594,723	35.8	*(26.9-44.8)*

Source: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 1998-2008. Analysis by the American Lung Assocation Research and Program Services Division using SPSS and SUDAAN software.

Notes:
(2) Does not include non-Hispanic Whites and Blacks.
(2) 95% Confidence Interval.
(3) Lifetime prevalence was defined as answering "yes" to "Have you EVER been told by a health professional that you had asthma?"
(4) 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. **Data prior to 1997 should not be compared to data after 1997.**
(5) 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?"

Table 12: Asthma - Estimated Lifetime Prevalence (%) in Adults, by State, 2001-2008

State	2001		2002		2003		2004		2005		2006		2007		2008	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Alabama	323,695	9.7	369,224	11.0	391,671	11.6	476,083	14.0	388,422	11.2	470,053	13.6	458,143	13.1	435,900	12.3
Alaska	51,029	11.5	51,547	11.6	60,933	13.3	59,546	13.0	59,417	12.5	68,280	14.4	65,838	13.7	80,001	16.1
Arizona	474,929	12.4	551,442	13.9	511,360	12.5	513,810	12.4	531,780	12.2	640,112	14.7	636,534	14.0	703,901	14.9
Arkansas	212,687	10.6	243,901	12.1	231,481	11.3	246,838	12.0	239,803	11.4	247,852	11.8	250,015	11.7	274,924	12.8
California	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	3,512,686	12.9	3,828,105	13.8
Colorado	394,610	12.1	404,461	12.1	424,685	12.4	462,911	13.5	463,459	13.3	423,762	12.1	457,501	12.9	476,750	13.0
Connecticut	321,831	12.3	341,552	13.2	319,497	12.2	402,123	15.3	331,736	12.4	371,538	13.8	379,818	14.1	360,941	13.4
DC	54,330	12.0	65,214	14.2	58,117	12.7	69,533	15.3	66,966	15.3	68,310	15.5	70,384	11.7	90,061	13.6
Delaware	71,450	11.9	71,567	11.8	72,281	11.7	91,569	14.4	81,603	12.6	94,573	14.5	77,623	15.2	75,563	16.2
Florida	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	1,516,150	10.7	1,482,482	10.2
Georgia	674,099	11.0	728,052	11.7	757,493	11.8	797,776	12.3	771,633	11.5	876,730	13.1	832,340	12.0	904,220	12.7
Hawaii	111,954	12.1	125,142	13.4	110,997	11.6	N/A	12.3	137,523	14.1	154,939	15.9	136,675	13.9	160,671	16.1
Idaho	108,286	11.7	113,045	11.8	114,347	11.7	131,431	13.1	123,425	11.7	137,293	13.1	143,209	13.2	137,638	12.7
Illinois	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	1,221,897	12.7	1,281,794	13.2
Indiana	515,076	11.3	514,621	11.3	552,962	12.0	615,746	13.3	592,979	12.7	596,402	12.7	627,860	13.3	646,585	13.7
Iowa	212,254	9.7	197,950	9.0	227,881	10.3	237,427	10.5	266,282	11.6	219,429	9.6	234,488	10.2	246,625	10.7
Kansas	232,248	11.6	222,271	11.2	232,690	11.5	244,306	12.0	223,603	10.8	251,105	12.2	252,736	12.1	274,017	13.2
Kentucky	333,057	10.9	393,275	12.8	391,927	12.6	444,475	13.9	424,702	13.3	375,058	11.7	407,060	12.6	477,284	14.7
Louisiana	293,612	9.1	340,082	10.4	336,420	10.2	389,856	11.8	364,606	10.8	363,337	10.8	325,451	10.0	386,009	11.7
Maine	121,535	12.6	134,683	13.6	134,498	13.4	150,850	14.7	156,625	15.0	147,710	14.1	159,793	15.2	164,628	15.7
Maryland	445,760	11.1	510,826	12.7	507,830	12.3	575,936	13.9	549,863	13.1	56,082	13.4	549,850	12.9	614,939	14.3
Massachusetts	639,174	13.0	629,268	12.9	710,328	14.4	743,248	14.9	701,580	14.2	720,570	14.5	759,457	15.4	738,079	14.8
Michigan	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	1,132,013	14.8	1,181,157	15.4
Minnesota	368,504	10.1	416,551	11.3	395,216	10.5	441,325	11.6	460,580	11.8	434,049	11.1	429,115	10.9	490,354	12.4
Mississippi	188,785	9.2	222,829	10.6	230,890	10.9	251,450	11.8	241,152	11.1	250,916	11.5	242,065	11.0	243,155	11.2
Missouri	502,586	11.9	526,495	12.5	508,330	11.9	579,825	13.4	627,935	14.2	558,313	12.6	590,670	13.2	608,359	13.6
Montana	78,547	11.8	97,766	14.5	76,242	11.1	90,922	13.0	92,065	12.6	89,826	12.4	97,102	13.1	107,378	14.6
Nebraska	106,309	8.4	134,251	10.6	132,872	10.3	137,485	10.6	143,333	10.8	147,497	11.2	151,883	11.4	138,106	10.4
Nevada	204,462	13.3	201,143	12.4	189,390	11.4	213,040	12.6	225,997	12.6	222,609	12.3	251,505	13.4	265,973	13.6
New Hampshire	117,309	12.5	132,599	13.9	125,421	12.9	148,349	15.0	147,998	14.7	150,852	14.9	153,914	15.0	157,863	15.3
New Jersey	610,724	9.4	757,385	11.8	710,625	10.9	887,629	13.6	767,067	11.7	798,272	12.1	851,242	12.9	852,177	12.8
New Mexico	141,099	10.7	155,098	11.7	142,570	10.5	202,131	14.7	208,641	14.5	200,317	13.9	204,292	13.9	185,452	12.6
New York	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	2,067,410	14.0	2,077,823	14.1
North Carolina	624,605	10.1	678,962	10.9	720,819	11.3	843,869	13.2	660,762	10.1	719,909	10.9	809,224	12.1	803,050	11.7
North Dakota	42,783	9.1	49,026	10.3	48,224	10.1	53,717	11.0	55,518	11.1	50,792	10.3	56,129	11.2	56,933	11.6
Ohio	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	1,142,773	13.1	1,236,970	14.2
Oklahoma	259,907	10.1	289,843	11.2	309,038	11.8	353,966	13.4	358,375	13.3	374,947	14.0	365,423	13.5	375,566	13.9
Oregon	335,009	12.9	369,041	14.0	395,124	14.7	442,292	16.3	427,040	15.3	425,338	15.3	448,345	15.8	434,186	14.9
Pennsylvania	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	1,255,615	13.0	1,282,433	13.3
Rhode Island	98,047	12.1	104,562	12.8	118,314	14.4	122,950	14.6	127,118	15.3	136,033	16.0	123,166	14.7	127,454	15.4
South Carolina	322,915	10.7	305,845	10.0	316,653	10.1	375,526	11.8	361,523	11.2	401,184	12.4	396,566	12.0	458,211	13.7
South Dakota	42,124	7.7	47,763	8.6	60,240	10.7	58,867	10.3	61,705	10.5	65,478	11.2	58,177	9.8	65,432	11.1
Tennessee	406,008	9.3	531,158	12.2	523,609	11.8	655,730	14.7	530,403	11.6	536,372	11.7	577,917	12.4	587,796	12.6
Texas	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	2,200,103	12.9	2,120,744	12.2
Utah	157,803	10.7	191,128	12.3	180,462	11.3	216,508	13.1	224,514	13.0	235,698	13.8	233,690	13.2	239,488	13.1
Vermont	55,490	12.1	59,539	12.7	57,969	12.2	72,274	15.0	73,074	14.9	67,889	13.8	70,810	14.3	75,669	15.4
Virginia	616,160	11.4	660,055	12.1	676,348	12.1	748,668	13.3	815,491	14.2	759,603	13.2	804,446	13.7	836,765	14.1
Washington	530,013	11.9	641,694	14.3	634,069	13.8	718,004	15.5	701,296	14.6	687,128	14.3	719,032	14.7	743,189	14.9
West Virginia	173,501	12.5	179,052	12.8	166,795	11.8	219,922	15.5	205,113	14.3	170,622	11.9	175,833	12.2	196,107	13.7
Wisconsin	434,848	10.9	473,049	11.7	451,051	11.0	516,521	12.4	555,467	13.1	529,183	12.5	566,309	13.2	605,906	14.2
Wyoming	41,239	11.6	40,858	11.1	42,219	11.2	48,222	12.7	49,767	12.6	52,525	13.3	49,833	12.5	55,557	14.0
United States	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	29,758,055	13.1	30,901,203	13.3

Source: Behavioral Risk Factor Surveillance Survey, 2001-2008

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

Table 13: Asthma - Estimated Current Prevalence (%) in Adults, by State, 2001-2008

State	2001		2002		2003		2004		2005		2006		2007		2008	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Alabama	211,835	6.3	240,795	7.2	253,590	7.5	293,302	8.6	246,232	7.1	305,741	8.9	306,327	8.8	274,722	7.8
Alaska	32,179	7.2	32,851	7.4	41,766	9.1	41,028	9.0	37,076	7.8	44,835	9.5	37,290	7.8	47,032	9.6
Arizona	316,659	8.2	356,712	9.0	341,357	8.3	297,681	7.2	322,555	7.4	385,692	8.9	391,673	8.7	461,326	9.8
Arkansas	139,615	6.9	152,569	7.6	148,628	7.3	150,688	7.4	157,765	7.5	159,328	7.6	147,985	7.0	177,067	8.3
California	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	2,047,732	7.5	2,326,451	8.4
Colorado	259,324	8.0	255,409	7.7	281,149	8.3	297,140	8.7	285,741	8.2	274,835	7.9	275,248	7.8	294,938	8.1
Connecticut	204,445	7.8	220,216	8.5	216,680	8.3	253,416	9.7	214,023	8.0	247,824	9.3	249,490	9.3	235,398	8.8
Delaware	45,025	7.5	46,112	7.6	46,213	7.5	62,935	10.0	55,050	8.5	62,522	9.6	43,161	7.8	63,483	9.6
District of Columbia	33,283	7.4	41,246	9.1	35,548	7.8	41,568	9.2	40,267	9.2	43,721	10.0	51,921	9.4	44,405	9.6
Florida	722,627	5.7	833,013	6.5	801,089	6.1	961,017	7.3	933,095	6.8	993,890	7.2	870,423	6.2	954,707	6.6
Georgia	442,374	7.2	459,342	7.4	449,626	7.0	480,174	7.4	489,819	7.3	531,047	8.0	524,105	7.6	603,748	8.5
Hawaii	67,148	7.3	63,672	6.9	54,170	5.6	N/A	N/A	73,151	7.5	77,928	8.1	78,472	8.0	95,665	9.6
Idaho	73,682	7.9	73,458	7.7	76,716	7.9	79,281	8.0	77,009	7.3	95,258	9.2	94,123	8.7	95,785	8.9
Illinois	729,934	7.8	664,163	7.2	692,016	7.4	796,395	8.4	666,563	7.0	790,144	8.3	792,632	8.3	759,775	7.9
Indiana	343,028	7.5	341,274	7.5	370,367	8.1	386,834	8.4	382,868	8.2	390,702	8.4	411,625	8.8	432,805	9.2
Iowa	147,200	6.7	141,516	6.4	138,355	6.2	149,594	6.6	165,278	7.2	147,692	6.5	160,200	7.0	178,374	7.7
Kansas	161,251	8.1	150,713	7.6	151,163	7.5	150,327	7.4	142,858	6.9	170,368	8.3	174,725	8.4	180,033	8.7
Kentucky	253,887	8.3	291,944	9.5	304,498	9.8	262,930	8.3	281,006	8.8	261,590	8.2	289,874	9.0	312,561	9.7
Louisiana	170,990	5.3	195,574	6.0	205,465	6.2	203,677	6.2	199,183	5.9	199,144	5.9	203,641	6.3	264,428	8.0
Maine	90,243	9.4	99,008	10.0	98,475	9.9	98,627	9.6	106,505	10.2	100,915	9.7	107,576	10.3	107,556	10.3
Maryland	282,677	7.0	331,315	8.2	320,823	7.8	322,297	7.8	348,386	8.3	372,862	8.9	350,892	8.3	404,518	9.4
Massachusetts	462,332	9.4	433,978	8.9	488,412	9.9	479,099	9.7	474,308	9.6	487,835	9.9	484,178	9.9	477,599	9.6
Michigan	665,636	9.0	646,354	8.8	693,663	9.3	620,085	8.3	691,289	9.1	723,120	9.6	719,418	9.5	750,954	9.9
Minnesota	238,842	6.5	275,320	7.5	254,593	6.8	283,896	7.5	327,871	8.4	304,195	7.8	305,592	7.7	307,490	7.8
Mississippi	113,916	5.5	127,915	6.1	145,707	6.9	150,640	7.1	156,423	7.2	150,914	6.9	144,009	6.6	151,990	7.0
Missouri	343,826	8.2	356,257	8.5	339,842	8.0	392,871	9.1	397,987	9.0	380,384	8.6	380,658	8.5	377,375	8.4
Montana	53,044	8.0	59,721	8.9	54,624	7.9	60,162	8.6	57,723	7.9	59,786	8.3	68,341	9.3	70,590	9.6
Nebraska	72,885	5.8	91,754	7.2	91,434	7.1	89,957	6.9	88,920	6.7	98,618	7.5	107,180	8.1	94,457	7.1
Nevada	126,692	8.2	121,819	7.6	108,545	6.6	120,476	7.1	127,348	7.1	138,399	7.7	129,045	6.9	156,829	8.6
New Hampshire	79,093	8.4	82,902	8.7	82,578	8.5	101,106	10.3	103,699	10.3	97,524	9.7	104,353	10.2	106,788	10.4
New Jersey	402,339	6.2	496,395	7.8	460,222	7.1	563,149	8.6	491,709	7.5	502,676	7.6	549,463	8.3	572,877	8.6
New Mexico	90,543	6.9	104,145	7.8	91,757	6.7	127,614	9.3	128,062	8.9	121,382	8.5	127,055	8.7	124,847	8.5
New York	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	1,287,371	8.7	1,293,638	8.8
North Carolina	397,774	6.4	402,207	6.5	451,015	7.1	481,011	7.5	425,243	6.5	444,380	6.8	524,000	7.8	519,735	7.6
North Dakota	32,143	6.8	34,874	7.3	33,510	7.0	37,378	7.7	36,512	7.3	34,767	7.1	38,334	7.7	38,885	7.9
Ohio	615,294	7.2	621,936	7.3	608,796	7.1	726,742	8.5	696,394	8.0	842,229	9.8	773,188	8.9	831,787	9.6
Oklahoma	178,660	6.9	182,254	7.1	198,626	7.6	217,629	8.3	229,037	8.5	236,351	8.9	232,877	8.6	241,011	8.9
Oregon	209,380	8.1	229,049	8.7	249,204	9.3	260,500	9.7	281,902	10.1	272,413	9.8	274,990	9.7	249,787	8.6
Pennsylvania	691,529	7.3	741,664	7.9	785,143	8.3	837,444	8.8	778,643	8.1	845,882	8.8	900,883	9.3	892,650	9.3
Rhode Island	75,642	9.3	72,311	8.9	78,694	9.6	81,218	9.6	88,899	10.7	89,235	10.5	82,206	9.9	87,265	10.6
South Carolina	195,558	6.5	178,930	5.8	191,055	6.1	242,164	7.6	213,040	6.6	246,732	7.7	246,859	7.5	276,366	8.3
South Dakota	28,954	5.3	32,804	5.9	41,290	7.3	37,769	6.7	42,899	7.3	44,952	7.7	41,679	7.1	42,409	7.2
Tennessee	297,976	6.8	356,379	8.2	350,559	7.9	400,139	9.0	352,078	7.7	386,334	8.5	401,989	8.7	419,409	9.0
Texas	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	1,396,996	8.2	1,271,563	7.3
Utah	103,383	7.0	124,327	8.0	117,491	7.4	131,414	8.0	138,162	8.0	143,141	8.4	143,469	8.1	153,175	8.4
Vermont	40,448	8.8	40,343	8.6	39,683	8.4	40,767	8.5	48,062	9.8	45,383	9.3	47,053	9.6	48,390	9.9
Virginia	348,225	6.4	392,023	7.2	422,958	7.6	412,370	7.3	499,632	8.7	484,637	8.4	466,343	8.0	544,652	9.3
Washington	337,123	7.6	396,172	8.9	412,896	9.1	423,408	9.2	441,912	9.2	424,579	8.9	452,707	9.3	461,670	9.3
West Virginia	128,863	9.3	126,906	9.1	114,053	8.1	143,407	10.1	131,961	9.2	122,851	8.6	129,573	9.0	137,715	9.6
Wisconsin	310,235	7.8	345,132	8.5	307,347	7.5	353,340	8.6	390,099	9.2	371,803	8.8	394,596	9.2	400,500	9.4
Wyoming	29,251	8.2	26,880	7.3	28,018	7.5	28,918	7.7	30,808	7.8	34,104	8.7	32,152	8.1	36,454	9.2
United States	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	18,778,074	8.4	19,617,958	8.5

Source: Behavioral Risk Factor Surveillance Survey, 2001-2008

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

Table 14: Asthma - Estimated Lifetime and Current Prevalence (%) in Adults for Selected Areas, 2008

Metropolitan / Micropolitan Area [1]	Lifetime Prevalence [2]	Current Prevalence [3]
Akron, OH Metropolitan Statistical Area	13.7	8.0
Albuquerque, NM Metropolitan Statistical Area	13.5	9.3
Allentown-Bethlehem-Easton, PA-NJ Metropolitan Statistical Area	10.7	8.1
Anchorage, AK Metropolitan Statistical Area	18.2	11.1
Asheville, NC Metropolitan Statistical Area	13.4	10.1
Atlanta-Sandy Springs-Marietta, GA Metropolitan Statistical Area	13.1	8.7
Augusta-Richmond County, GA-SC Metropolitan Statistical Area	10.9	7.3
Augusta-Waterville, ME Micropolitan Statistical Area	15.4	10.6
Austin-Round Rock, TX Metropolitan Statistical Area	11.8	5.7
Baltimore-Towson, MD Metropolitan Statistical Area	14.4	9.7
Bangor, ME Metropolitan Statistical Area	19.5	13.1
Barnstable Town, MA Metropolitan Statistical Area	12.9	9.1
Barre, VT Micropolitan Statistical Area	15.1	8.1
Baton Rouge, LA Metropolitan Statistical Area	12.7	8.7
Berlin, NH-VT Micropolitan Statistical Area	14.9	9.1
Bethesda-Gaithersburg-Frederick, MD Metropolitan Division	12.7	7.1
Billings, MT Metropolitan Statistical Area	15.2	8.5
Birmingham-Hoover, AL Metropolitan Statistical Area	11.6	8.0
Bismarck, ND Metropolitan Statistical Area	14.0	9.5
Boise City-Nampa, ID Metropolitan Statistical Area	13.1	9.8
Boston-Quincy, MA Metropolitan Division	14.9	9.8
Boulder, CO Metropolitan Statistical Area	11.0	8.1
Bozeman, MT Micropolitan Statistical Area	14.0	9.7
Bremerton-Silverdale, WA Metropolitan Statistical Area	18.3	11.7
Bridgeport-Stamford-Norwalk, CT Metropolitan Statistical Area	12.0	8.0
Buffalo-Cheektowaga-Tonawanda, NY Metropolitan Statistical Area	13.6	9.2
Burlington-South Burlington, VT Metropolitan Statistical Area	15.3	9.3
Butte-Silver Bow, MT Micropolitan Statistical Area	16.2	11.0
Cambridge-Newton-Framingham, MA Metropolitan Division	15.6	9.7
Camden, NJ Metropolitan Division	15.0	11.4
Canton-Massillon, OH Metropolitan Statistical Area	12.1	8.3
Casper, WY Metropolitan Statistical Area	15.9	11.0
Charleston, WV Metropolitan Statistical Area	12.9	8.8
Charleston-North Charleston, SC Metropolitan Statistical Area	13.2	6.6
Charlotte-Gastonia-Concord, NC-SC Metropolitan Statistical Area	11.6	7.4
Cheyenne, WY Metropolitan Statistical Area	12.7	8.2
Chicago-Naperville-Joliet, IL-IN-WI Metropolitan Statistical Area	13.7	7.6
Cincinnati-Middletown, OH-KY-IN Metropolitan Statistical Area	13.2	9.0
Cleveland-Elyria-Mentor, OH Metropolitan Statistical Area	15.4	10.4
Colorado Springs, CO Metropolitan Statistical Area	12.9	8.1
Columbia, SC Metropolitan Statistical Area	11.4	7.3
Columbus, OH Metropolitan Statistical Area	17.0	11.4
Concord, NH Micropolitan Statistical Area	13.7	8.8
Dallas-Plano-Irving, TX Metropolitan Division	13.0	8.1
Dayton, OH Metropolitan Statistical Area	16.6	12.1
Denver-Aurora, CO Metropolitan Statistical Area	13.5	7.8
Des Moines-West Des Moines, IA Metropolitan Statistical Area	10.7	8.0
Detroit-Livonia-Dearborn, MI Metropolitan Division	17.5	11.4
Durham, NC Metropolitan Statistical Area	13.9	8.4
Dover, DE Metropolitan Statistical Area	13.7	9.5
Edison, NJ Metropolitan Division	11.8	7.7
El Paso, TX Metropolitan Statistical Area	10.9	7.0
Fairbanks, AK Metropolitan Statistical Area	16.7	9.3
Fargo, ND-MN Metropolitan Statistical Area	6.0	3.6
Fayetteville, NC Metropolitan Statistical Area	13.5	8.6

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Table 14 cont'd: Asthma - Estimated Lifetime and Current Prevalence (%) in Adults for Selected Areas, 2008

Metropolitan / Micropolitan Area [1]	Lifetime Prevalence [2]	Current Prevalence [3]
Fayetteville-Springdale-Rogers, AR-MO Metropolitan Statistical Area	12.3	6.8
Fort Collins-Loveland, CO Metropolitan Statistical Area	12.9	7.7
Fort Worth-Arlington, TX Metropolitan Division	15.2	9.7
Gillette, WY Micropolitan Statistical Area	12.8	8.5
Grand Island, NE Micropolitan Statistical Area	10.5	7.0
Grand Rapids-Wyoming, MI Metropolitan Statistical Area	12.0	7.4
Greeley, CO Metropolitan Statistical Area	11.8	8.3
Greensboro-High Point, NC Metropolitan Statistical Area	9.9	5.0
Greenville, SC Metropolitan Statistical Area	16.8	9.6
Hagerstown-Martinsburg, MD-WV Metropolitan Statistical Area	14.2	10.3
Hartford-West Hartford-East Hartford, CT Metropolitan Statistical Area	15.6	10.4
Hastings, NE Micropolitan Statistical Area	12.8	9.7
Hickory-Morganton-Lenoir, NC Metropolitan Statistical Area	12.6	8.8
Hilo, HI Micropolitan Statistical Area	19.9	12.0
Hilton Head Island-Beaufort, SC Micropolitan Statistical Area	11.3	7.1
Honolulu, HI Metropolitan Statistical Area	15.4	9.2
Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area	11.3	6.1
Huntington-Ashland, WV-KY-OH Metropolitan Statistical Area	16.9	12.0
Indianapolis-Carmel, IN Metropolitan Statistical Area	15.6	11.1
Jackson, MS Metropolitan Statistical Area	10.5	6.2
Jacksonville, FL Metropolitan Statistical Area	16.1	10.4
Kahului-Wailuku, HI Micropolitan Statistical Area	16.2	10.1
Kansas City, MO-KS Metropolitan Statistical Area	14.3	9.1
Kapaa, HI Micropolitan Statistical Area	17.4	9.3
Kennewick-Richland-Pasco, WA Metropolitan Statistical Area	11.2	7.3
Las Cruces, NM Metropolitan Statistical Area	9.5	6.4
Las Vegas-Paradise, NV Metropolitan Statistical Area	14.2	8.6
Lebanon, NH-VT Micropolitan Statistical Area	13.6	9.6
Lewiston, ID-WA Metropolitan Statistical Area	15.8	11.6
Lincoln, NE Metropolitan Statistical Area	10.3	7.3
Little Rock-North Little Rock, AR Metropolitan Statistical Area	12.1	7.9
Los Angeles-Long Beach-Glendale, CA Metropolitan Division	12.4	7.8
Louisville, KY-IN Metropolitan Statistical Area	14.2	9.1
Lubbock, TX Metropolitan Statistical Area	15.4	10.5
Manchester-Nashua, NH Metropolitan Statistical Area	13.9	10.2
Memphis, TN-MS-AR Metropolitan Statistical Area	9.9	6.9
Miami-Fort Lauderdale-Miami Beach, FL Metropolitan Statistical Area	6.5	4.7
Milwaukee-Waukesha-West Allis, WI Metropolitan Statistical Area	14.1	10.3
Minneapolis-St. Paul-Bloomington, MN-WI Metropolitan Statistical Area	13.5	8.4
Mobile, AL Metropolitan Statistical Area	10.6	11.1
Montgomery, AL Metropolitan Statistical Area	11.3	6.3
Myrtle Beach-Conway-North Myrtle Beach, SC Metropolitan Statistical Area	15.7	7.7
Nashville-Davidson--Murfreesboro, TN Metropolitan Statistical Area	12.1	9.0
Nassau-Suffolk, NY Metropolitan Division	11.5	6.8
New Haven-Milford, CT Metropolitan Statistical Area	12.0	7.0
New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area	12.0	7.6
New York-White Plains-Wayne, NY-NJ Metropolitan Division	12.7	7.3
Newark-Union, NJ-PA Metropolitan Division	12.8	8.4
Norfolk, NE Micropolitan Statistical Area	8.9	7.1
North Platte, NE Micropolitan Statistical Area	11.7	9.4
Oakland-Fremont-Hayward, CA	14.7	8.9
Ocean City, NJ Metropolitan Statistical Area	14.9	10.4
Ogden-Clearfield, UT Metropolitan Statistical Area	13.1	7.4
Oklahoma City, OK Metropolitan Statistical Area	14.1	8.5

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Table 14 cont'd: Asthma - Estimated Lifetime and Current Prevalence (%) in Adults for Selected Areas, 2008

Metropolitan / Micropolitan Area [1]	Lifetime Prevalence [2]	Current Prevalence [3]
Olympia, WA Metropolitan Statistical Area	17.9	11.0
Omaha-Council Bluffs, NE-IA Metropolitan Statistical Area	9.9	6.9
Orangeburg, SC Micropolitan Statistical Area	15.5	9.1
Orlando-Kissimmee, FL Metropolitan Statistical Area	9.;8	6.6
Peabody, MA	13.3	8.9
Philadelphia, PA Metropolitan Division	13.9	9.0
Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area	15.2	10.2
Pittsburgh, PA Metropolitan Statistical Area	13.4	8.9
Portland-South Portland-Biddeford, ME Metropolitan Statistical Area	14.9	9.3
Portland-Vancouver-Beaverton, OR-WA Metropolitan Statistical Area	15.0	8.2
Providence-New Bedford-Fall River, RI-MA Metropolitan Statistical Area	15.1	10.2
Provo-Orem, UT Metropolitan Statistical Area	11.1	7.5
Raleigh-Cary, NC Metropolitan Statistical Area	6.6	4.4
Rapid City, SD Metropolitan Statistical Area	10.1	7.0
Reno-Sparks, NV Metropolitan Statistical Area	11.7	7.4
Richmond, VA Metropolitan Statistical Area	10.2	7.,2
Riverside-San Bernardino-Ontario, CA Metropolitan Statistical Area	10.2	7.,3
Riverton, WY Micropolitan Statistical Area	14.6	9.8
Rochester, NY Metropolitan Statistical Area	18.0	13.2
Rock Springs, WY Metropolitan Statistical Area	13.8	9.3
Rockingham County-Strafford County, NH Metropolitan Division	15.4	10.3
Rutland, VT Micropolitan Statistical Area	14.4	11.3
Sacramento-Arden-Arcade-Roseville, CA Metropolitan Statistical Area	16.9	10.4
Salt Lake City, UT Metropolitan Statistical Area	13.8	9.1
San Antonio, TX Metropolitan Statistical Area	12.8	6.9
San Diego-Carlsbad-San Marcos, CA Metropolitan Statistical Area	12.3	8.1
San Francisco-Oakland-Fremont, CA Metropolitan Statistical Area	15.8	9.0
San Jose-Sunnyvale-Santa Clara, CA Metropolitan Statistical Area	15.2	10.1
Santa Ana-Anaheim-Irvine, CA Metropolitain Division	12.0	6.4
Santa Fe, NM Metropolitan Statistical Area	9.2	4.2
Scottsbluff, NE Micropolitan Statistical Area	8.5	6.7
Scranton--Wilkes-Barre, PA Metropolitan Statistical Area	13.2	8.8
Seaford, DE Micropolitan Statistical Area	12.8	8.7
Seattle-Bellevue-Everett, WA Metropolitan Division	15.2	8.9
Shreveport-Bellevue-Everett, WA Metropolitan Division	9.9	7.7
Sierra Vista-Douglas, AZ Micropolitan Statistical Area	13.0	9.0
Sioux City, IA-NE-SD Metropolitan Statistical Area	9.3	6.2
Sioux Falls, SD Metropolitan Statistical Area	11.0	6.8
Spokane, WA Metropolitan Statistical Area	13.7	9.0
Springfield, MA Metropolitan Statistical Area	14.5	9.7
St. Louis, MO-IL Metropolitan Statistical Area	11.0	7.3
Tacoma, WA Metropolitan Division	16.1	10.6
Tallahassee, FL Metropolitan Statistical Area	14.2	7.1
Tampa-St. Petersburg-Clearwater, FL Metropolitan Statistical Area	13.1	8.0
Toledo, OH Metropolitan Statistical Area	14.6	9.4
Topeka, KS Metropolitan Statistical Area	14.8	11.2
Tucson, AZ Metropolitan Statistical Area	16.0	10.0
Tulsa, OK Metropolitan Statistical Area	13.9	9.1
Tuscaloosa, AL Metropolitan Statistical Area	9.2	5.1
Tyler, TX Metropolitan Statistical Area	15.7	9.9
Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area	15.2	10.5
Warren-Troy-Farmington Hills, MI Metropolitan Division	15.2	9.8

(Continued on next page)

Table 14 cont'd: Asthma - Estimated Lifetime and Current Prevalence (%) in Adults for Selected Areas, 2008

Metropolitan / Micropolitan Area [1]	Lifetime Prevalence [2]	Current Prevalence [3]
Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Division	14.4	9.2
Wenatchee, WA Metropolitan Statistical Area	11.1	7.7
Wichita Falls, TX Metropolitan Statistical Area	14.6	8.7
Wichita, KS Metropolitan Statistical Area	12.8	8.7
Wilmington, DE-MD-NJ Metropolitan Division	14.4	10.4
Wilmington, NC Metropolitan Statistical Area	13.4	6.4
Winston-Salem, NC Metropolitan Statistical Area	13.8	9.6
Worcester, MA Metropolitan Statistical Area	15.4	9.2
Yakima, WA Metropolitan Statistical Area	14.7	8.6
Youngstown-Warren-Boardman, OH-PA Metropolitan Statistical Area	13.2	10.5
Yuma, AZ Metropolitan Statistical Area	11.6	9.3

Source: Behavioral Risk Factor Surveillance System, 2008

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 Lifetime and Current Prevalence (%) in Children, by State, 2007 [1]

	Lifetime [2]		Current [3]	
State	**Number**	**%**	**Number**	**%**
Alabama	191,301	17.1	137,091	12.3
Alaska	19,016	10.4	11,681	6.4
Arizona	192,240	11.6	140,975	8.5
Arkansas	104,456	15.0	71,221	10.2
California	1,359,862	14.5	747,853	8.0
Colorado	138,524	11.7	93,769	7.9
Connecticut	136,922	16.9	95,648	11.8
Delaware	21,024	18.5	16,291	14.4
District of Columbia	31,749	15.8	22,826	11.4
Florida	587,648	14.6	332,007	8.3
Georgia	366,411	14.5	251,754	10.0
Hawaii	53,412	19.1	31,337	11.2
Idaho	34,978	8.5	21,839	5.3
Illinois	383,770	12.0	266,317	8.4
Indiana	200,498	12.6	137,924	8.7
Iowa	74,850	10.5	61,027	8.6
Kansas	86,832	12.4	63,728	9.1
Kentucky	181,151	17.9	119,604	11.9
Louisiana	161,860	15.0	97,069	9.0
Maine	37,675	13.3	25,505	9.0
Maryland	197,809	14.5	130,086	9.6
Massachusetts	235,701	16.5	153,637	10.8
Michigan	349,645	14.3	230,102	9.5
Minnesota	109,778	8.7	74,746	6.0
Mississippi	110,522	14.6	80,022	10.6
Missouri	206,671	14.7	152,450	10.8
Montana	23,421	10.3	15,043	6.6
Nebraska	46,071	10.1	30,036	6.6
Nevada	82,220	12.4	58,195	8.8
New Hampshire	37,173	12.5	25,977	8.8
New Jersey	246,470	12.0	172,094	8.4
New Mexico	56,555	11.5	38,115	7.7
New York	696,431	15.8	489,847	11.1
North Carolina	307,467	14.0	201,537	9.2
North Dakota	15,045	10.5	9,782	6.9
Ohio	445,671	16.3	336,884	12.3
Oklahoma	158,317	17.5	105,573	11.7
Oregon	108,056	12.6	63,484	7.4
Pennsylvania	416,681	14.9	296,421	10.6
Rhode Island	37,501	15.9	26,255	11.2
South Carolina	125,229	11.8	90,005	8.5
South Dakota	15,255	7.9	9,963	5.2
Tennessee	187,651	12.9	137,242	9.5
Texas	719,846	11.0	452,569	6.9
Utah	88,358	10.9	56,716	7.0
Vermont	17,795	13.6	12,507	9.6
Virginia	265,843	14.6	186,832	10.3
Washington	160,928	10.5	106,438	6.9
West Virginia	57,831	14.8	42,120	10.8
Wisconsin	150,585	11.5	106,212	8.1
Wyoming	13,034	10.3	8,646	6.9
United States	*10,053,739*	*13.6*	*6,645,002*	*9.0*

Source: National Center for Health Statistics. State and Local Integrated Telephone Survey: National Survey of Children's Health, 2007

Notes:

(1) Represents the most updated information available through SLAITS.

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

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

Table 16: Asthma - Number of First-Listed Hospital Discharges and Rate per 10,000 population by Sex, 1979-2006 [1]

	Total		Male		Female	
Year	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	479,000	19.6	210,000	17.7	270,000	21.4
1989 [2]	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
2006	444,000	14.9	177,000	12.1	266,000	17.6

Source: National Center for Health Statistics. National Hospital Discharge Survey, 1979-2006.

Notes:

(1) Due to rounding, numbers across may not add to the total number of hospital discharges.

(2) Data from 1988-2006 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, 1979-2006 [1]

	<15		15-44		45-64		65+		Total	
Year	Number	Rate	Number	Rate	Number	Rate	Number	Rate	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	164,000	31.0	110,000	9.6	93,000	20.3	112,000	36.8	479,000	19.6
1989 [2]	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	77000	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
2006	145,000	23.9	89,000	7.1	121,000	16.2	88,000	23.7	444,000	14.9

Source: National Center for Health Statistics. National Hospital Discharge Survey, 1979-2006.

Notes:

(1) Due to rounding, numbers across may not add to the total number of hospital discharges.

(2) Data from 1988-2006 may not be comparable to earlier years due to a redesign of the survey.

Table 18: Asthma - Number of First-Listed Hospital Discharges and Rate per 10,000 population by Race, 1988-2006

	Number					Rate [1]			
Year	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
2006	444,000	228,000	112,000	14,000	89,000	14.9	9.6	29.3	6.7

Source: National Center for Health Statistics. National Hospital Discharge Survey, 1979-2006.

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 2006, the number of discharges not reporting race increased dramatically. It appears that hospital disharges 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, 1989-2006

Year	Combined Settings	Physician Offices	Outpatient Departments	Emergency Departments
		Number of visits in thousands		
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
2006	14,586	10,590	1,198	1,681

Sources: National Ambulatory Medical Care Survey, 1989-2006, and National Hospital Ambulatory Medical Care Survey, 1992-2006.

Note:
NA: Not Available

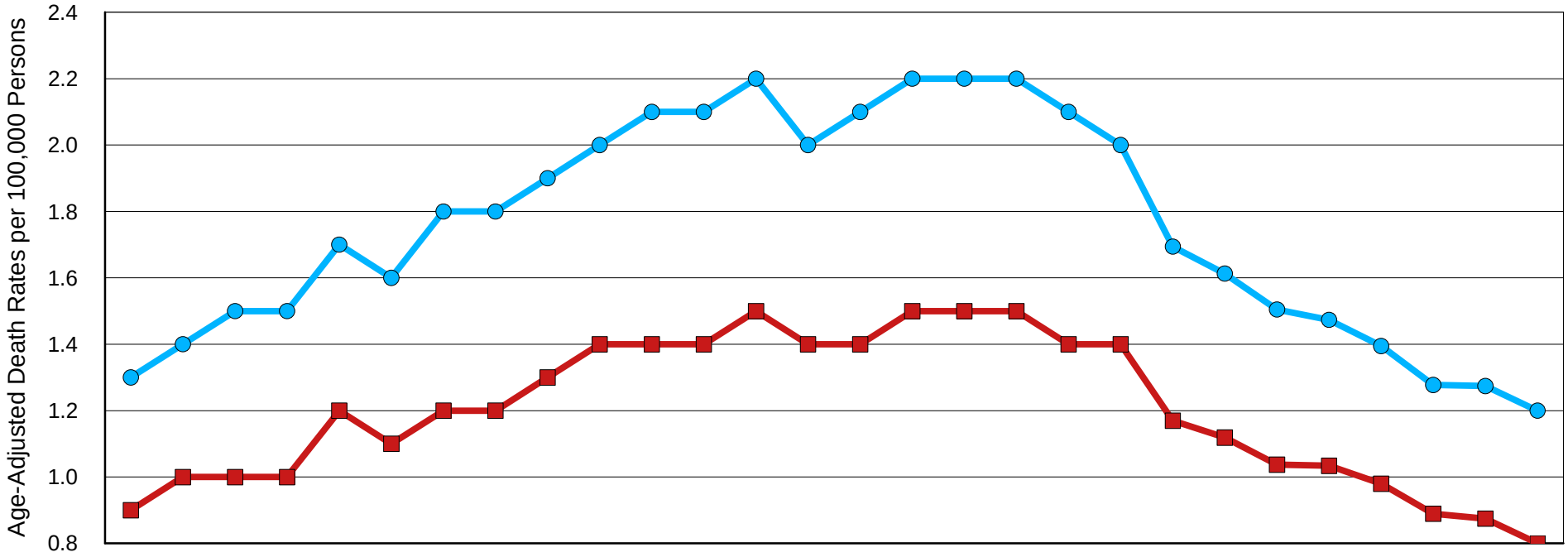
Table 20: Projected Economic Cost of Asthma, United States, 2010

Category	Cost
	(in billions)
Direct Medical Expenditures:	
Hospital Care	*5.5*
Physicians' Services [1]	*4.2*
Prescription Drugs	*5.9*
All Direct Expenditures	**15.6**
Indirect Costs:	
Morbidity	*3.1*
Mortality (Death)	*2.0*
All Indirect Costs	**5.1**
All Costs:	**20.7**

Source: NHLBI - 2009 Chartbook on Cardiovascular, Lung and Blood Diseases

Note:
(1) Physician services includes physicians, clinics and other professional services.

Figure 1: Asthma - Age-Adjusted Death Rates Based on the 1940 and 2000 Standard populations, 1979-2006 [1]



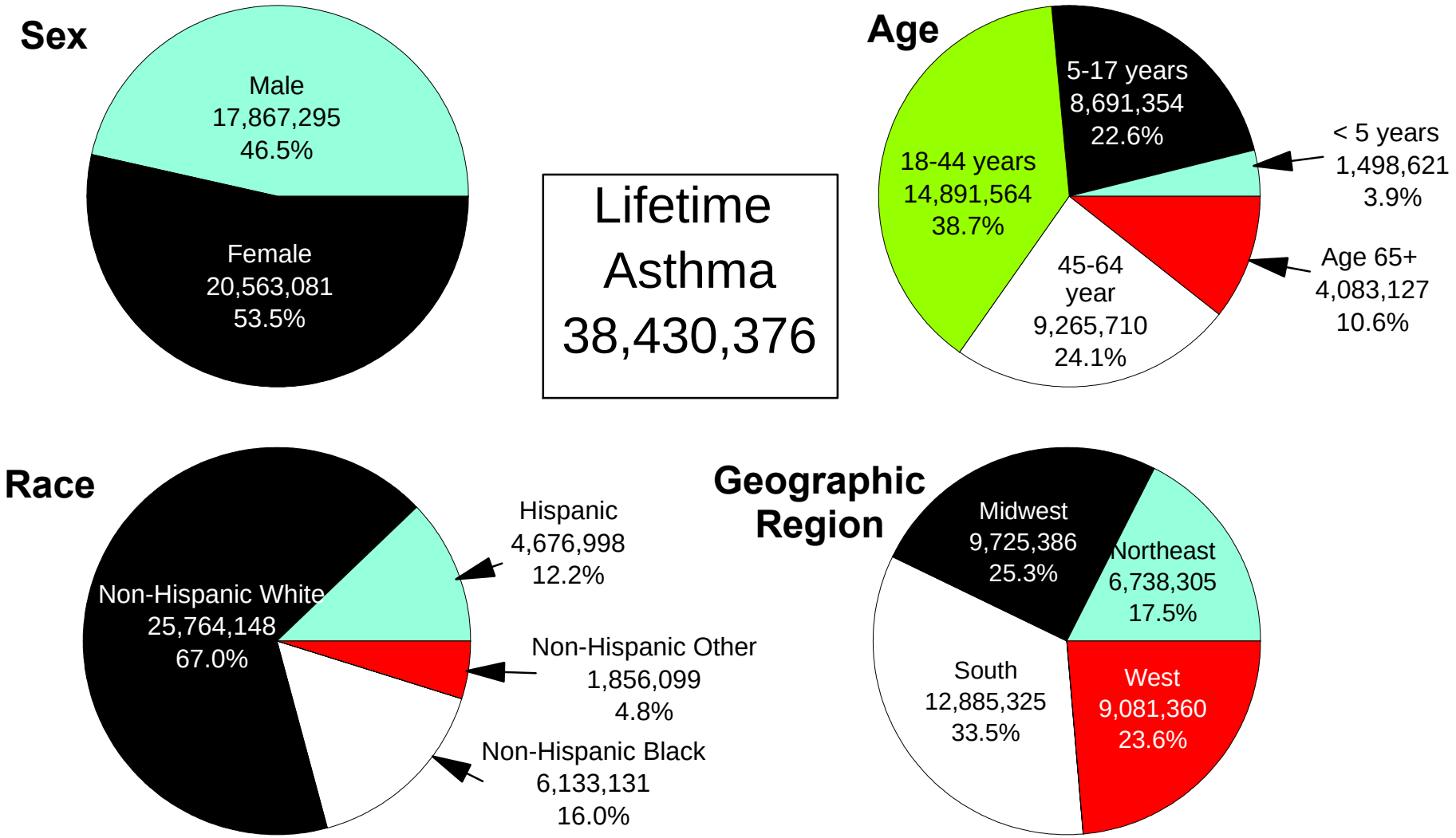
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1940	0.9	1.0	1.0	1.0	1.2	1.1	1.2	1.2	1.3	1.4	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.4	1.2	1.1	1.0	1.0	1.0	0.9	0.9	0.8
2000	1.3	1.4	1.5	1.5	1.7	1.6	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.0	2.1	2.2	2.2	2.2	2.1	2.0	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2

Source: Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports Vol. 47 No. 3 and CDC Wonder On-line Database, compiled from Compressed Mortality File 1999-2005 Series 20 No. 2K, 2008. Accessed on August 12, 2008.

Notes:

1)1979-1998 rates reflect the International Classification of Diseases, 9th Revision Code 493. 1999-2006 rates reflect the ICD 10th Revision Codes J45-J46.

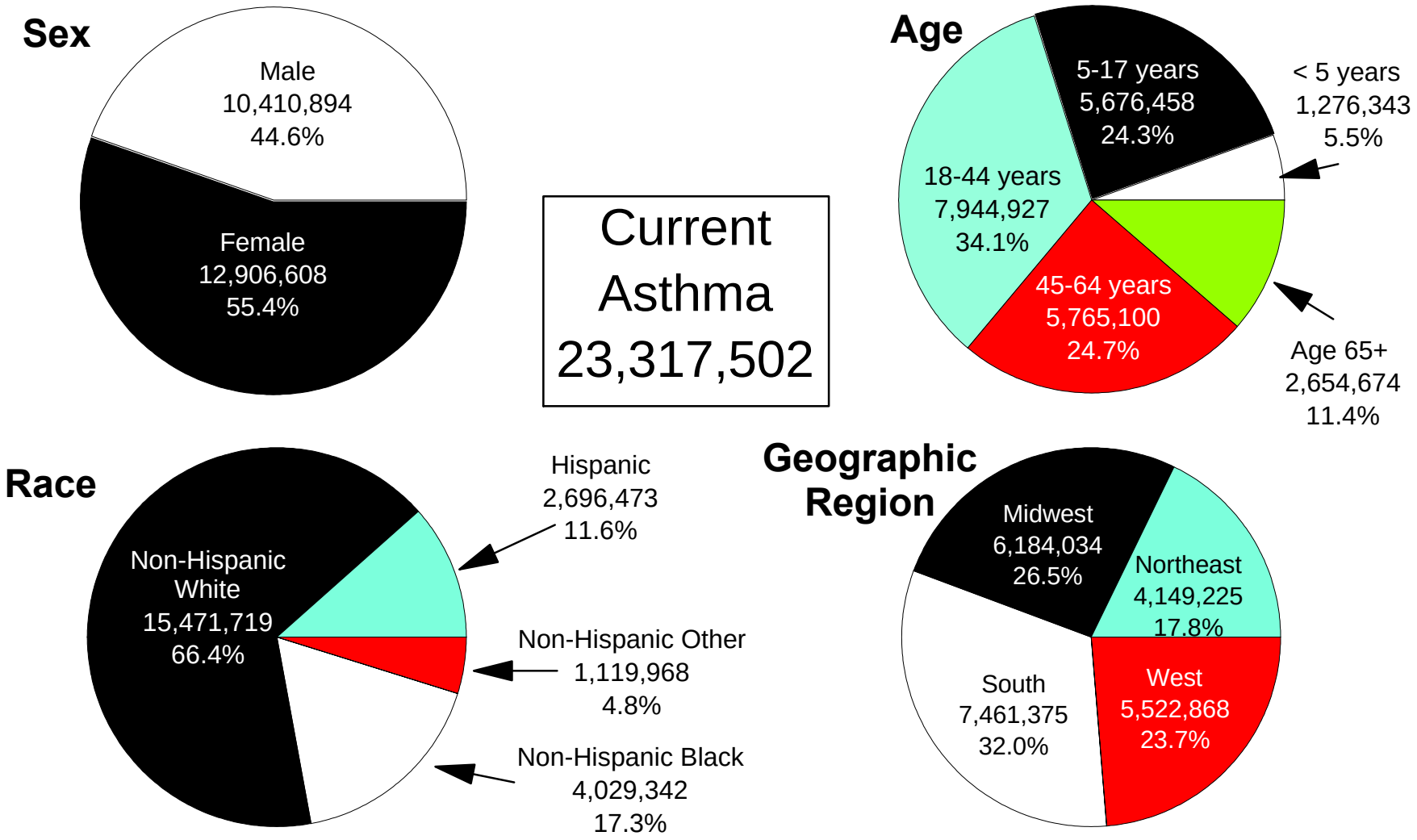
Figure 2: Percentage Distribution of Lifetime Asthma by Sex, Age, Ethnic Origin and Geographic Region, 2008 (1)



Source: National Center for Health Statistics. National Health Interview Survey, 2008

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, Ethnic Origin and Geographic Region, 2008 (1)

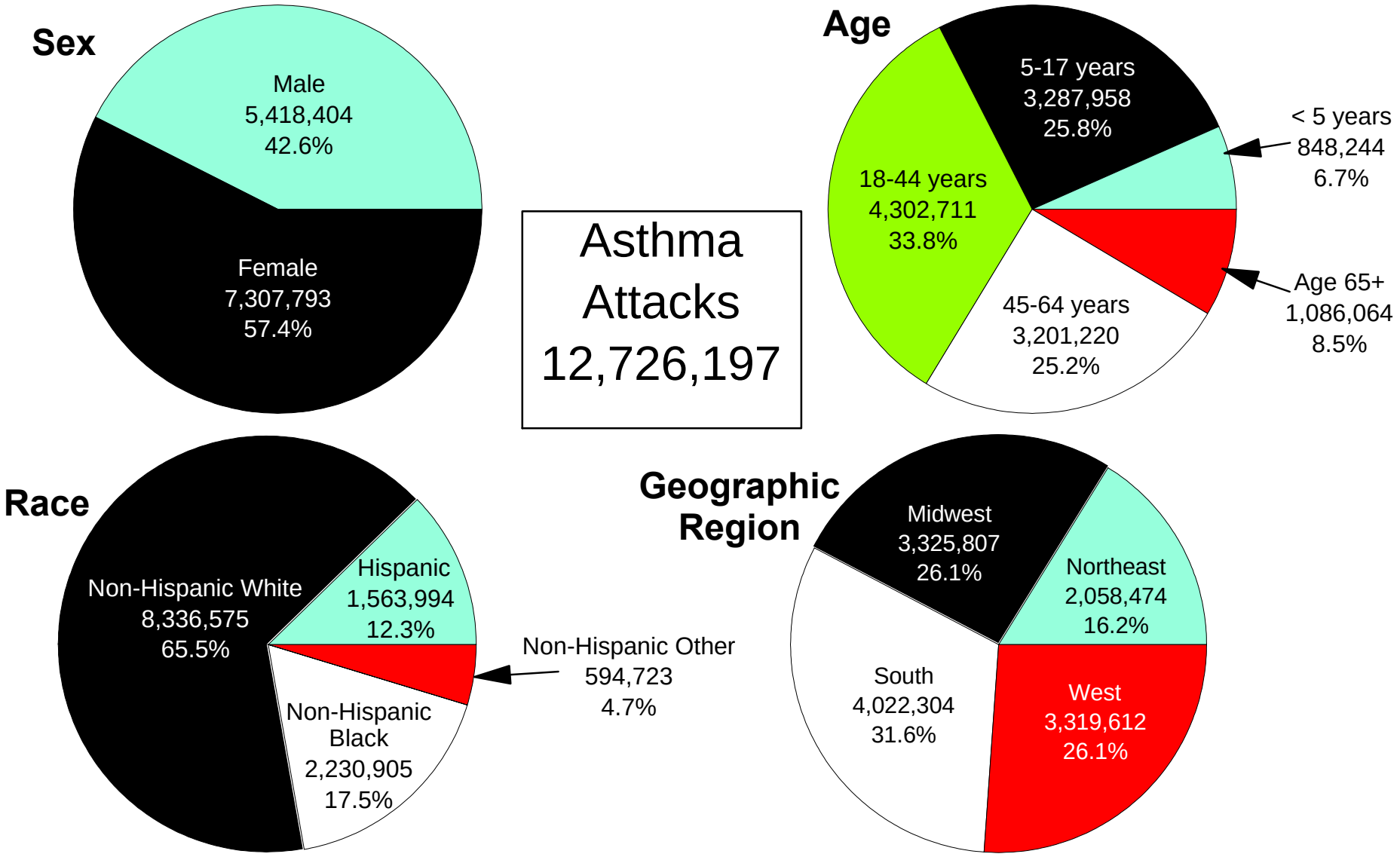


Source: National Center for Health Statistics. National Health Interview Survey, 2008.

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, Ethnic Origin and Geographic Region, 2008 (1)

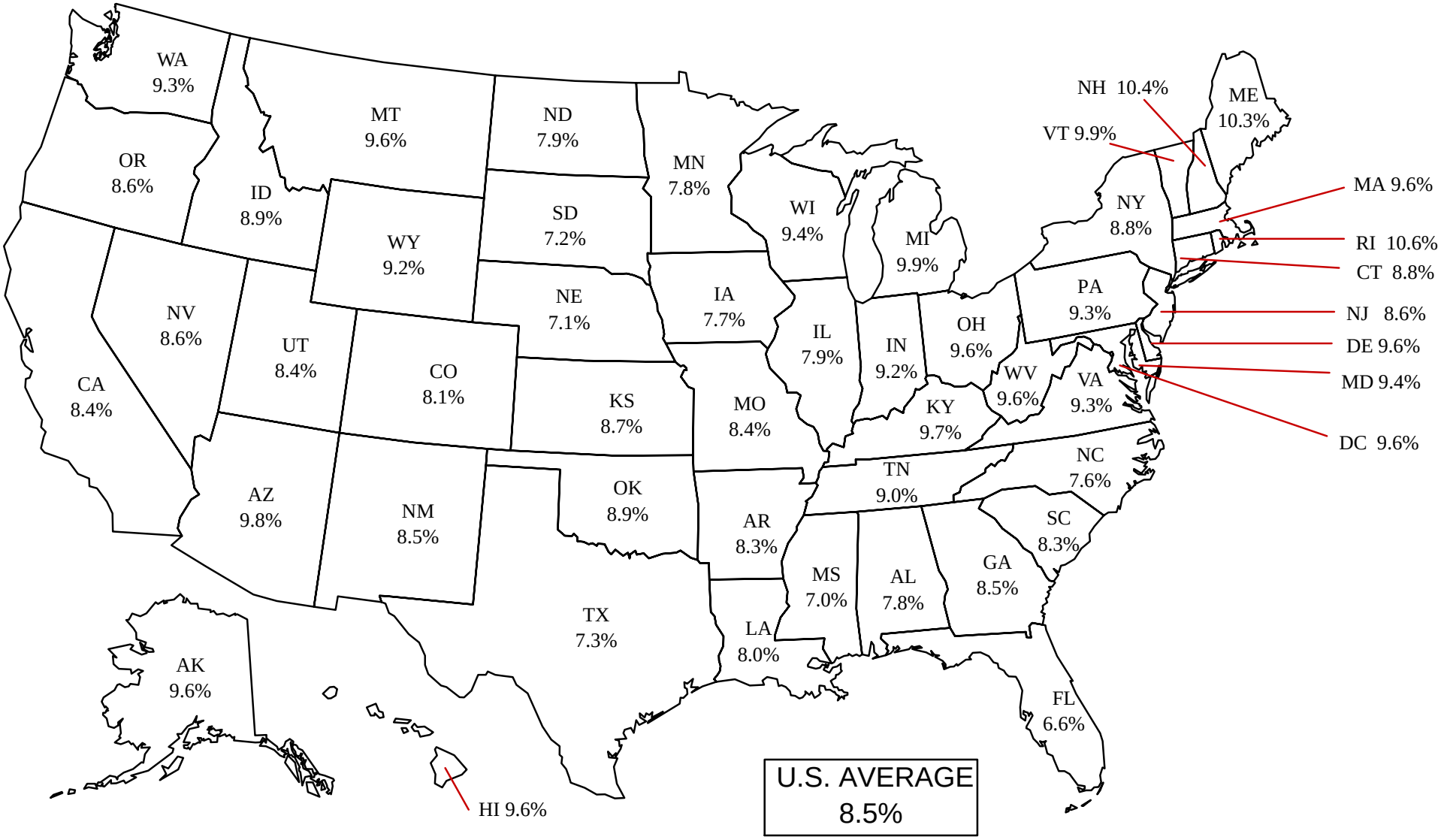


Source: National Center for Health Statistics. National Health Interview Survey, 2008

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 epidsode of asthma or an asthma attack?"

Figure 5: Self-Reported Current Asthma Prevalence (%) Among Adults by State, 2008 [1]

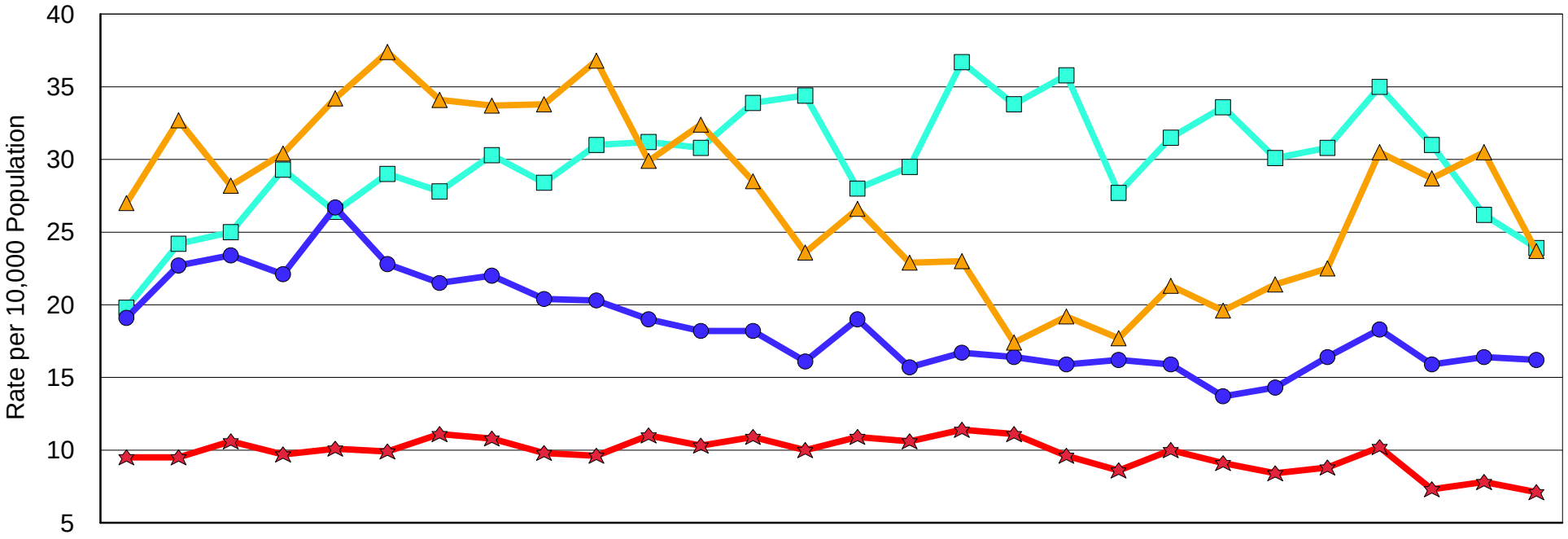


Source: CDC. Behavioral Risk Factor Surveillance System, 2008

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 7: Asthma - First-Listed Hospital Discharge Rates per 10,000 population by Age, 1979-2006 [1, 2]



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1998	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<15	19.8	24.2	25.0	29.3	26.4	29.0	27.8	30.3	28.4	31.0	31.2	30.8	33.9	34.4	28.0	29.5	36.7	33.8	35.8	27.7	31.5	33.6	30.1	30.8	35.0	31.0	26.2	23.9
15-44	9.5	9.5	10.6	9.7	10.1	9.9	11.1	10.8	9.8	9.6	11.0	10.3	10.9	10.0	10.9	10.6	11.4	11.1	9.6	8.6	10.0	9.1	8.4	8.8	10.2	7.3	7.8	7.1
45-64	19.1	22.7	23.4	22.1	26.7	22.8	21.5	22.0	20.4	20.3	19.0	18.2	18.2	16.1	19.0	15.7	16.7	16.4	15.9	16.2	15.9	13.7	14.3	16.4	18.3	15.9	16.4	16.2
65+	27.0	32.7	28.2	30.4	34.2	37.4	34.1	33.7	33.8	36.8	29.9	32.4	28.5	23.6	26.6	22.9	23.0	17.4	19.2	17.7	21.3	19.6	21.4	22.5	30.5	28.7	30.5	23.7
Total	15.7	18.0	18.4	18.9	19.8	19.8	19.5	19.9	18.8	19.6	19.3	19.1	19.6	18.3	18.3	17.4	19.5	17.9	17.9	15.5	17.4	16.7	16.0	16.9	19.8	17.0	16.6	14.9

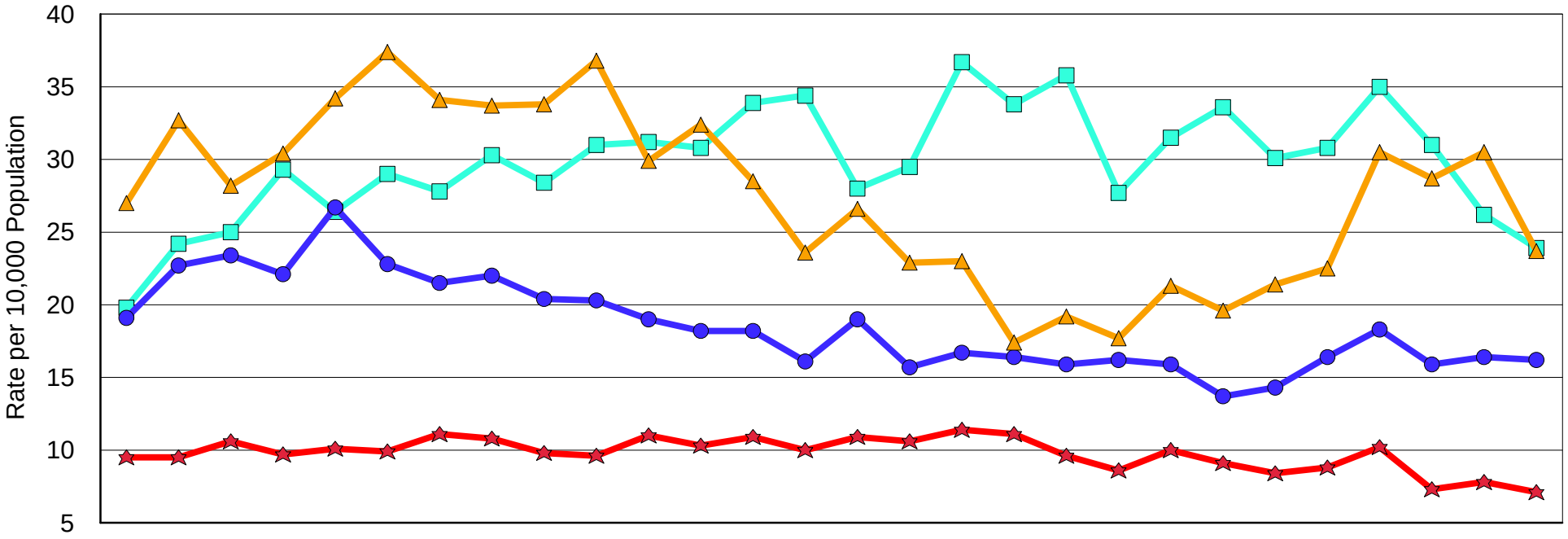
Source: National Center for Health Statistics. National Hospital Discharge Survey, 1979-2006, and unpublished data provided upon special request.

Notes:

(1) Data from 1988-2006 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 variabilitity.

Figure 7: Asthma - First-Listed Hospital Discharge Rates per 10,000 population by Age, 1979-2006 [1, 2]



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1998	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<15	19.8	24.2	25.0	29.3	26.4	29.0	27.8	30.3	28.4	31.0	31.2	30.8	33.9	34.4	28.0	29.5	36.7	33.8	35.8	27.7	31.5	33.6	30.1	30.8	35.0	31.0	26.2	23.9
15-44	9.5	9.5	10.6	9.7	10.1	9.9	11.1	10.8	9.8	9.6	11.0	10.3	10.9	10.0	10.9	10.6	11.4	11.1	9.6	8.6	10.0	9.1	8.4	8.8	10.2	7.3	7.8	7.1
45-64	19.1	22.7	23.4	22.1	26.7	22.8	21.5	22.0	20.4	20.3	19.0	18.2	18.2	16.1	19.0	15.7	16.7	16.4	15.9	16.2	15.9	13.7	14.3	16.4	18.3	15.9	16.4	16.2
65+	27.0	32.7	28.2	30.4	34.2	37.4	34.1	33.7	33.8	36.8	29.9	32.4	28.5	23.6	26.6	22.9	23.0	17.4	19.2	17.7	21.3	19.6	21.4	22.5	30.5	28.7	30.5	23.7
Total	15.7	18.0	18.4	18.9	19.8	19.8	19.5	19.9	18.8	19.6	19.3	19.1	19.6	18.3	18.3	17.4	19.5	17.9	17.9	15.5	17.4	16.7	16.0	16.9	19.8	17.0	16.6	14.9

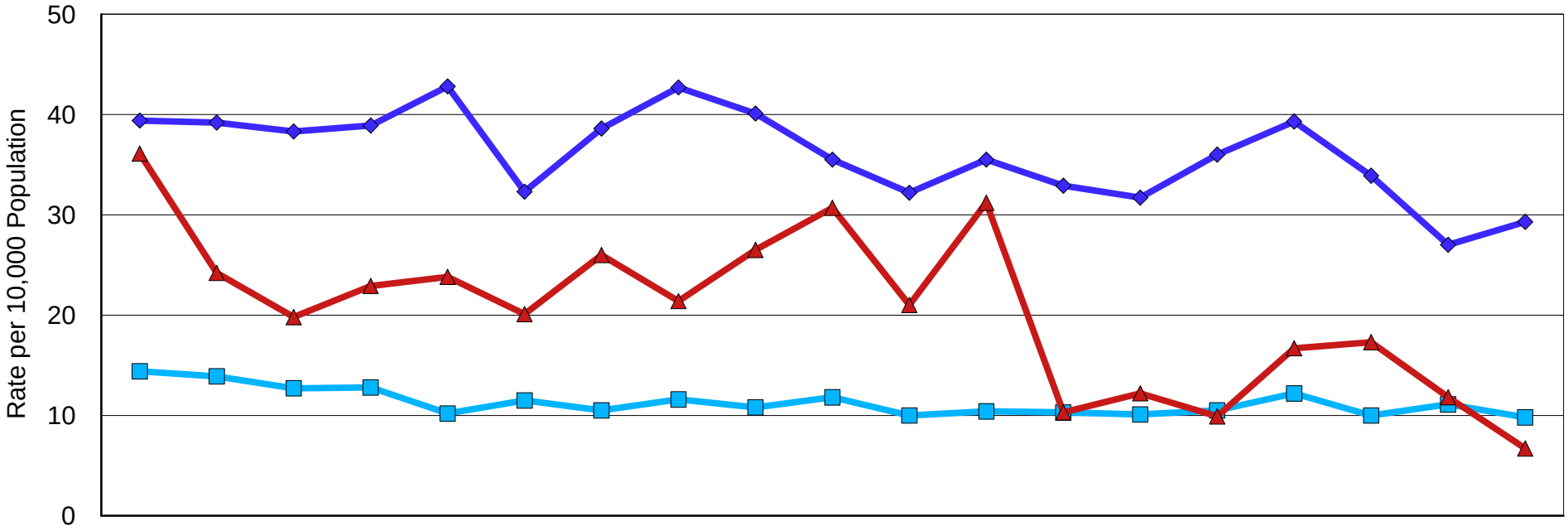
Source: National Center for Health Statistics. National Hospital Discharge Survey, 1979-2006, and unpublished data provided upon special request.

Notes:

(1) Data from 1988-2006 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 variabilitity.

Figure 8: Asthma - First-Listed Hospital Discharge Rates per 10,000 population by Race 1988-2006 [1,2]



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
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	9.8
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	29.3
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	6.7

Source: National Center For Health Statistics. National Hospital Discharge Survey, 1988-2006, and unpublished data provided upon special request.

Notes:

1. Between 1988 and 2006, the number of discharges not reporting race increased dramatically. It appears that hospital discharges in whites might be disproportionally 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.