Multicultural Health

Connecticut Department of Public Health

1999

Multicultural Health

The Health Status of Minority Groups in Connecticut

Connecticut Department of Public Health
Hartford

June 1999
Second printing, August 2000

Copies of this document are available free of charge from:

Connecticut Department of Public Health
Office of Policy, Planning, and Evaluation
P.O. Box 340308, MS #13PPE
Hartford, CT 06134-0308

Telephone: 860 509-7140
Fax: 860 509-7160
E-mail: webmaster.dph@po.state.ct.us

ACKNOWLEDGMENTS

Prepared by:

Margaret M. Hynes, Ph.D., M.P.H.
Lloyd M. Mueller, Ph.D.
Carol E. Bower, B.S.
Michael J. Hofmann, Ph.D.

Policy, Planning, and Analysis Unit
Office of Policy, Planning, and Evaluation

We gratefully acknowledge the following people, who provided data, technical assistance, and critical reviews of the text. All are staff at the Connecticut Department of Public Health, unless otherwise noted.

Mary Adams, M.P.H.
Federico A. Amadeo, M.P.A.
Diane Aye, Ph.D., M.P.H.
Ross Bunnell[a]
Oscar Carrillo, M.P.A.[b]
Kenneth Carley, Dr.P.H.
Johanna Davis, B.S.
Mary Lou Fleissner, Dr.P.H.
Elizabeth A. Hicken
Joan Foland
Kenny Foscue, M.P.H.
Karen Frost, M.A.
Jadwiga Goclowski, Ph.D., R.N.
James Hadler, M.D., M.P.H.
Meg Hooper, M.P.A.
Margie Hudson, M.P.H.
Donald Iodice, B.A.
Angela A. Jimenez, B.S.
Mary C. Kapp, M.Phil.
Jennifer C. Kertanis, M.P.H.
William Kraynak[c]
Theanvy Kuoch, M.A.
Phat Ky
Heather Linardos, B.S.
Joseph G. Marino, M.P.A.
Charles R. Nathan Jr., M.B.A.
Barbara A. O'Connell, B.A.
David M. O'Sullivan
Edith Pestana, M.P.H.[a]
Anthony Polednak, Ph.D.
Aaron Roome, Ph.D., M.P.H.
Vincent A. Sacco, M.S.
Alan J. Siniscalchi, M.S., M.P.H.
Cindy Rankl
Mary Beth Reinhardt, M.B.A.[d]
Kaila J. Riggott, M.P.A.[d]
Stefan A. Russakow, M.A., R.S.
Rolinda Williams

Cover design by Jan V. Kulpanowski

---

[a] Department of Environmental Protection
[b] U.S. Environmental Protection Agency, New England Region
[c] State Census Liaison, Office of Policy and Management
[d] Office of Health Care Access

CONTENTS

I. HISTORY AND DEMOGRAPHICS

Introduction 1

Connecticut's Multicultural Heritage 1

Minority Populations in Connecticut 2

Growth of Connecticut's Minority Populations, 1980–97 4

Age Distribution of Connecticut's Minority Populations 6

Geographical Distribution of Minority Groups in Connecticut 7

II. SOCIOECONOMIC INDICATORS

Educational Attainment 11

Per Capita Income 14

Poverty Status 15

III. HEALTH INDICATORS

All-Cause Mortality 16

Chronic Diseases 17

Behavioral Risk Factors Related to Chronic Conditions 26

Injuries 26

Infectious Diseases 30

Sexually Transmitted Diseases 38

Pregnancy and Childbirth Indicators 43

Environmental Health 48

Access to Health Care 52

IV. STUDY LIMITATIONS

Analytic Limitations 57

Limitations of the Data Bases 57

Limitations of the Methodology 57

V. SUMMARY

Mortality 58

Infectious and Sexually Transmitted Diseases 60

Cancer Incidence 61

Pregnancy and Childbirth Outcomes 61

Hospitalizations 62

VI. DISCUSSION

NOTES 63

REFERENCES 64

APPENDICES

I. Countries of Origin of Connecticut's Minority Residents 71

II. Tribal Affiliations of Connecticut's Native American Residents 72

III. Data Sources Used in this Report 73

IV. Glossary 77

I. HISTORY AND DEMOGRAPHICS

INTRODUCTION

As the 21st century approaches, Connecticut is challenged by the well-being and health care needs of a population that is growing more racially and ethnically diverse. Analyses conducted both nationally and regionally point to striking differences in the health status of racial and ethnic minorities over the life course. *Healthy People 2000*, the Surgeon General's Report to the nation, notes that health care services in the U.S. are characterized by "unacceptable disparities linked to membership in certain racial and ethnic groups..." (U. S. Department of Health and Human Services, 1990). Research data consistently show that some minority populations, such as African Americans and Puerto Ricans, have more health problems and are at greater risk of death from many factors compared to the white population.

Because low income is more common in minority populations, the numerous health problems associated with poverty are also more prevalent among minorities. African Americans and Hispanics, the two largest minority groups in Connecticut, are much more likely to be born poor compared to other groups. Low-income, minority persons also experience substantial barriers to obtaining appropriate health care, most prominently lack of health insurance, lack of providers in low-income neighborhoods, and language barriers for non-English speakers.

The capacity to analyze data for racial and ethnic subgroups has become a priority at both the federal and state levels, as programs targeting the improvement of health for these populations are implemented. Health indicators, such as the infant mortality rate, age-adjusted mortality rates, chronic and infectious disease incidence rates, prevalence rates of behavioral risk factors, and indicators of health care access are useful because they point to specific problem areas within subgroup populations.

This report presents data on health indicators selected to reflect the following: indicators of community health status (U.S. Department of Health and Human Services, 1991); priority areas of the President's Initiative on Race and Health which focus on key areas of health disparity among minority populations (Council of Economic Advisers, 1998); *Healthy Connecticut 2000* health objectives (Connecticut Department of Public Health, 1994); and priority areas of the Connecticut Department of Public Health (Connecticut Department of Public Health, 1999).

The purpose of this Multicultural Health Report is twofold: first, to compare statewide data on key socioeconomic and health indicators for African American, Hispanic, Asian American and Pacific Islander, and Native American populations (identified as "minority groups" throughout this report) and the white population in Connecticut, specifically highlighting areas where disparities exist; and second, to examine these differences in the context of the social and economic conditions that affect the health and well-being of residents of Connecticut.[1]

For purposes of this report, the white population is used as the comparison group in assessing the social and health status of minority groups in the state. Like minority populations, the white population is heterogeneous in composition. White residents of Connecticut are of European, North African, and Middle Eastern ancestry and represent all levels of educational background and income. Those with low income and educational levels, for example, are very likely to have poorer health outcomes than whites with higher income and educational levels.

CONNECTICUT'S MULTICULTURAL HERITAGE

In this report, the concept of "multiculturalism" (Melzer et al., 1998) reflects a recognition of the multiple cultural heritages of Connecticut's citizens, whether first-, second-, or later-generation American; the unique contributions of various ethnic communities to the state's economy and culture; and the distinct health concerns and needs of each group.

Although this report focuses on the health status of minority groups in Connecticut, their story is part of a long history of migration and immigration of many different ethnic and cultural groups into the state. Native Americans were the original inhabitants of what is now the State of Connecticut. Dutch and English Puritan settlers entered in the seventeenth century (Fraser, 1986).

At the turn of the twentieth century, emigrants from Europe provided Connecticut with a large pool of unskilled workers for its developing industrial economy. The first great wave of immigration into the state took place in the 1850s, as Irish fled the potato famine. Between 1890 and 1910, a massive influx of Italian, Polish, Russian, and Lithuanian immigrants, escaping Europe's political and economic instability, greatly outnumbered the earlier Irish migration. While native-born Americans represented 75% of Connecticut's population in 1870, by World War I that percentage had decreased to 35% (Fraser, 1986).

MINORITY POPULATIONS IN CONNECTICUT

Minority residents of Connecticut come from more than 110 different countries including the United States and its territories. Appendix I contains a list of countries of origin of minority group residents of Connecticut.

African Americans

For purposes of this report, both U.S. and foreign-born persons of Sub-Saharan and east African ancestry are referred to as "African Americans," or "blacks" when referring to specific terminology used by other sources.

African Americans are the largest minority group in Connecticut. An estimated 275,300 non-Hispanic blacks lived in Connecticut in 1997 (U.S. Census Bureau of the Census, 1998). Ancestors of most black African Americans were brought to the Americas by Europeans as slaves beginning in 1619. Today, many African Americans have a mixed heritage and include individuals with African, Caribbean Native, Native American, and European ancestry (National Institutes of Health, 1998).

African Americans have lived in Connecticut since the Colonial period. Although slavery ended in Connecticut in 1848, African Americans did not possess the same legal rights as white citizens until the passage of civil rights legislation in the 1960s. In the post-World War I period, large numbers of African Americans began to migrate from the southern U.S. in search of employment in Connecticut's tobacco fields and factories (Fraser, 1986). In 1916, about 3,000 Southern blacks migrated to Hartford, Connecticut's industrial center. Although employment was plentiful and wages were good, poor housing conditions and discriminatory treatment by landlords in Hartford became a cause for civic concern and action. By 1917, Hartford confronted a "race problem." Although partial solutions developed, inadequate and inferior housing remained a chronic problem for African Americans (Scott, 1969).

Between 1950 and 1960, the minority population of Connecticut (mostly African American and Puerto Rican) roughly doubled, from 53,000 to 107,000 (Fraser, 1986). During this decade, Connecticut cities, like other American cities, experienced great deterioration due to a collapsing tax base. Factors contributing to the decline of American cities included the shift of the manufacturing base away from urban areas to suburban office parks, less developed states, and developing countries; the exodus of white middle, lower middle, and working classes out of urban residential neighborhoods to peripheral suburban areas; and banks' unwillingness to invest in certain urban residential neighborhoods (Jacobs, 1961; Hynes, 1996). Unemployment among African Americans was double that of whites, and family income was one-third lower (Fraser, 1986).

Today, although the vast majority of African Americans in Connecticut are U.S. born, many blacks are immigrants from African nations and non-Hispanic Caribbean countries, most notably Jamaica, Haiti, and Trinidad and Tobago. More than half of non-Hispanic Caribbean immigrants entered Connecticut since 1980, forming communities in urban areas like Hartford, New Haven, and Bridgeport. An estimated total of about 10,700 Jamaicans have entered Connecticut since 1989, along with an additional 7,100 immigrants from other Caribbean nations (Center for Urban Research, Education and Training, Inc., 1997). The diversity of Caribbean cultures is reflected in the mix of languages spoken. In addition to English and Spanish, they include French, Portuguese, Dutch, East Indian dialects, and Chinese (Center for Urban Research, Education, and Training, Inc., 1997).

Some Jamaicans entered Connecticut through the U.S. Department of Labor agricultural program as H-2A category farmworkers. The H-2A program allows employers who have been unsuccessful in securing United States workers to hire foreign nationals for agricultural jobs on a temporary or seasonal basis. It is estimated that during the 1997 growing season between 600 to 1,000 Jamaican H-2A workers were hosted by Connecticut (Cullin et al., 1998).

Hispanics or Latinos

The terms “Hispanic” and “Latino” are used in this report to characterize persons of Spanish and/or Latin American origin or descent (Hayes-Bautista and Chapa, 1987; Trevino, 1987). “Hispanic” is used when referring specifically to the data sources using this term. “Latino” is used to reflect some groups’ preferred usage.

Hispanics are the second largest minority group in the State of Connecticut. According to estimates from the Bureau of the Census (1998), 259,200 Hispanics lived in Connecticut in 1997. Latinos’ ancestry and culture is mixed, and can be traced to both the Spanish colonizers who entered the Americas in the 1500s and to people of Native American, African, and Asian heritage (National Institutes of Health, 1998).

Approximately 69% of all Hispanics in Connecticut are Puerto Rican, and hence, are U.S. citizens whether they were born in the mainland U.S. or the Commonwealth of Puerto Rico. Among foreign-born Hispanics, the largest numbers come from the countries of Colombia, Peru, and Cuba. Since 1980, Hispanics have shown the most growth in terms of absolute numbers among all minority groups in Connecticut (U.S. Bureau of the Census, 1980, 1990).

Puerto Ricans first came to Connecticut in the 1800s. It was not until after they gained citizenship in 1917, however, that Puerto Ricans migrated to the mainland in large numbers. The largest Puerto Rican migration into Connecticut occurred during the period between 1960 and 1990, when their population increased from roughly 15,000 to 146,000. Puerto Ricans migrated to Connecticut, like African Americans, in search of employment and a better life during an era of shrinking industrial employment, a decreased tax base, and deteriorating social and economic conditions in Connecticut’s cities (Glasser, 1997).

While several states have large Puerto Rican populations, Connecticut has the highest proportion of Puerto Ricans as a percentage of its Hispanic population (Glasser, 1997). In 1989, Puerto Ricans were 4.5% of the state population and 27% of the total population of Hartford (U.S. Bureau of the Census, 1990).

It is estimated that about 6,000 to 10,000 Puerto Ricans currently work as migrant laborers in Connecticut apple orchards, nurseries, vegetable farms, and tobacco fields (Glasser, 1997). The workers, selected through the agricultural recruitment system of the Connecticut Department of Labor, may come directly from Puerto Rico, from other states, or from local Connecticut towns. Increasingly, H-2A category farmworkers from Mexico and other Central American countries are employed on Connecticut farms. Reliable, detailed demographics are not available on these workers (Cullin et al., 1998).

Asian Americans and Pacific Islanders

The term “Asian Americans and Pacific Islanders” or “AAPIs” denotes all Connecticut residents who are of Asian, Pacific Island, or Native Hawaiian origin. An estimated 72,600 non-Hispanic Asian Americans and Pacific Islanders lived in Connecticut in 1997 (U.S. Bureau of the Census, 1998). AAPIs may be the most culturally and economically diverse minority group in Connecticut. In 1990, more than 80% of the AAPI population in Connecticut belonged to one of six Asian ethnic groups: Asian Indian, Chinese, Filipino, Korean, Japanese, or Vietnamese. Asian Indians, who represent about 23% of all AAPIs in Connecticut, tend to have higher levels of education and income compared to Southeast Asian populations like Cambodians, who comprise about 3% of the Asian American and Pacific Islander population. Chinese residents, who make up about 22% of all AAPIs in the state, come from both Taiwan and mainland China and represent a range of educational and income levels. Clearly, statistics presented in this report for the aggregate group “Asian Americans and Pacific Islanders” do not reflect the true cultural and socioeconomic heterogeneity of the constituent subgroups.

In 1990, approximately 66% of Connecticut resident Asian Americans and Pacific Islanders were foreign-born, and more than half of this group entered the U.S. between 1980 and 1990. About 57% of the total AAPI population in Connecticut were U.S. citizens (Hannon, 1996).

Large numbers of the Southeast Asian population in Connecticut—Vietnamese, Laotian, Cambodian, and Hmong—came to the United States as refugees after the Vietnam War, having been forced to leave their countries under threat of persecution or death. The Indochina Migration and Refugee Assistance Act of 1975 established a domestic resettlement program for Cambodian and Vietnamese refugees, and in 1976 was broadened to include Laotians. The Refugee Act of 1980 created a permanent procedure for refugee admission and resettlement (Lee, 1998).

An estimated 7,500 Southeast Asians entered Connecticut as refugees between 1980 and 1994 (Connecticut Department of Public Health Refugee Health Program, unpublished data). This number does not include other refugees residing in Connecticut who first entered the U.S. through some other state. Little information is collected or disseminated about the Southeast Asian refugee population in Connecticut but the research literature indicates that this group has certain health problems directly related to their experiences as refugees (Kuoch et al., 1998).

Although AAPIs are the fastest growing minority group in Connecticut, in 1997 they represented only about 2% of Connecticut's population (U.S. Bureau of the Census, 1998). For this reason, statistically meaningful group comparisons are not possible for some health status indicators included in this report.

Native Americans

In this report, the term "Native American" is used to denote all American Indians and Alaska Natives. As many as 15 million Native Americans lived in what is now known as North America in 1492 at the time of Columbus's arrival. Diseases previously unknown in the Americas, such as measles, malaria, yellow fever, smallpox, chicken pox, whooping cough, scarlet fever, diphtheria, plague, cholera, and poliomyelitis, were introduced into the continents by Europeans and had devastating effects on the Native American population. Today about 2 million Native Americans are estimated to reside in North America (National Institutes of Health, 1998).

Native Americans were the original inhabitants of the land now known as Connecticut. As many as 30,000 Native Americans once populated the region, and in 1620 there were at least 16 distinct tribes (Fraser, 1986). The Native American population in Connecticut was decimated in the seventeenth century by a series of epidemics, which included smallpox, and by war. It is estimated that the Pequots, for example, numbered about 13,000 persons in the early 1600s. After two serious epidemics of 1619 and 1633, but before the Pequot War of 1637, the population numbered about 3,000 persons. After the War, the population was estimated to be about 1,000 persons (Starna, 1990). An estimated 6,200 non-Hispanic American Indians and Alaska Natives lived in Connecticut in 1997 (U.S. Bureau of the Census, 1998).

Today, although many Native American residents of Connecticut belong to one of five tribes currently recognized by the state— the Mashantucket Pequots, the Paucatuck Eastern Pequots (also known as Eastern Pequot Indians of Connecticut), the Golden Hill Paugussetts, the Mohegans, and the Schaghticokes —at least 76 other Native American tribes are also represented by Connecticut residents. Appendix II provides tribal affiliations of Native American residents of Connecticut from the 1990 Census.

GROWTH OF CONNECTICUT'S MINORITY POPULATIONS, 1980-97

Minority racial and ethnic subgroups have grown considerably in Connecticut since 1980. For example, from 1980 to 1990, population growth among African Americans, Hispanics, Native Americans, and Asian American and Pacific Islanders was 4, 11, 9, and 27 times greater than Connecticut's overall population. In 1980, minorities represented about 10% of Connecticut's overall population, whereas, by 1990, they accounted for about 16% of the overall population (U.S. Bureau of the Census, 1980, 1990). The estimated increase in Connecticut's population by race and ethnicity for the period 1990-1997 is shown in Table 1.

The minority population (African American, Hispanic, Asian American and Pacific Islander, Native American) of Connecticut was estimated to be about 19% of the total state population in 1997. Changes in numbers and percent changes for racial and ethnic groups from 1990-1997 are shown in Figure 1. The non-Hispanic AAPI population increased by 46%, compared to a 22% increase for Hispanics, and a 3% increase for non-Hispanic African Americans. The non-Hispanic Native American population decreased by about 3%, while the white, non-Hispanic population decreased by more than 3%. U.S. Census projections indicate that by the year 2025 about 31% of all Connecticut residents will belong to a racial or ethnic minority group (U.S. Bureau of the Census, 1996).

Table 1. Connecticut's Population by Race and Ethnicity, 1990 and 1997

	1990		1997	
Race/Ethnicity[a]	Number	Percent	Number	Percent
African American	267,005	8.1%	275,302	8.4%
Hispanic[b]	212,677	6.5%	259,159	7.9%
Asian American PI	49,689	1.5%	72,646	2.2%
Native American[c]	6,329	0.2%	6,148	0.2%
White	2,753,210	83.7%	2,656,603	81.2%
All Persons	3,288,910	100.0%	3,269,858	100.0%

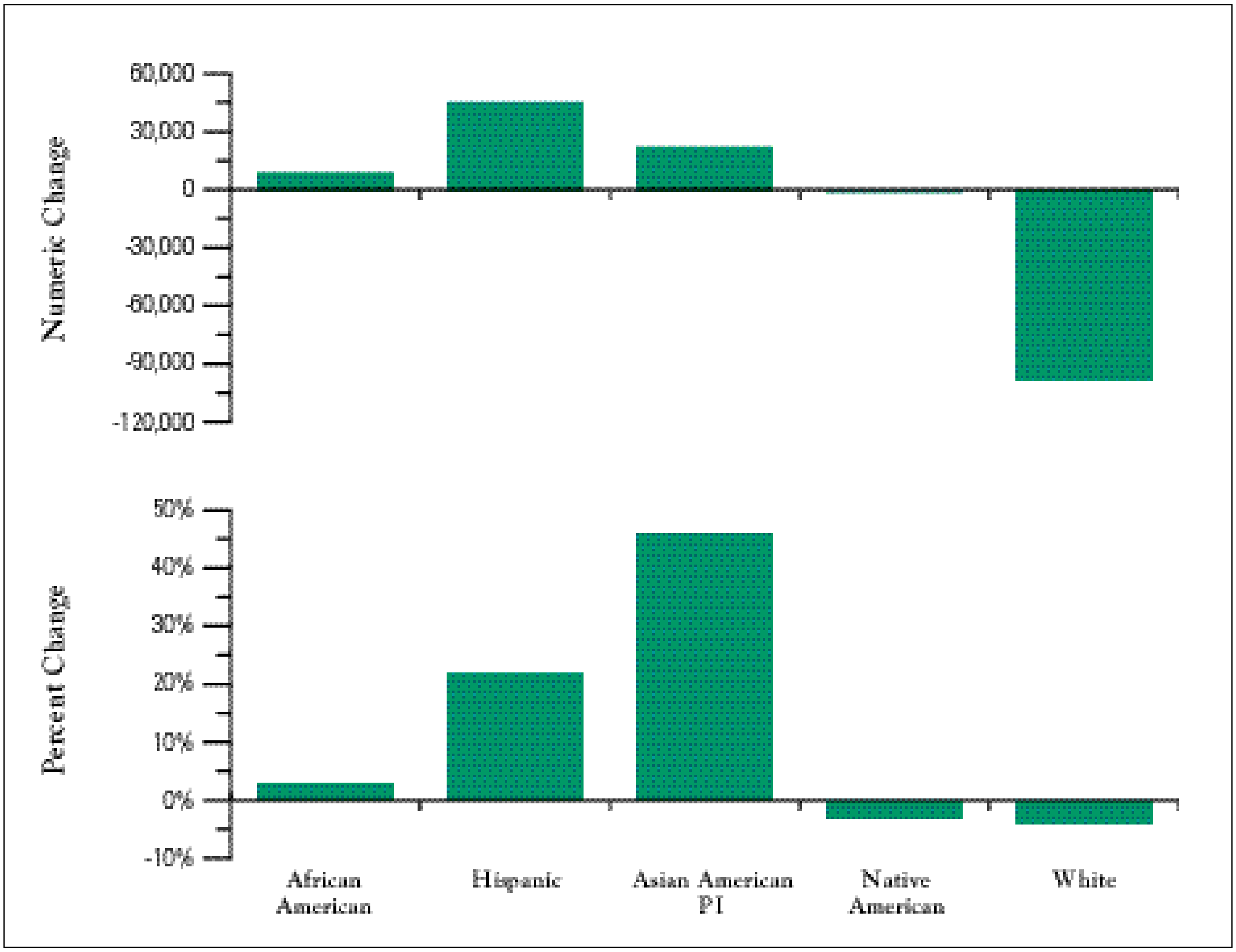
Source: U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Hispanic category includes any race.

[c] Native American includes American Indian and Alaska Native.

Figure 1. Change in Connecticut's Population by Race and Ethnicity, 1990-97



Source: U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

AGE DISTRIBUTION OF CONNECTICUT'S MINORITY POPULATIONS

The age distribution of Connecticut's population by race and ethnicity is shown in Table 2 and Figure 2. Connecticut's minority populations are younger than the white population. They are over-represented as a percentage of the school-aged population and under-represented as a percentage of the elderly population. More than one out of three African Americans and Hispanics and nearly one out of three Asian American and Pacific Islanders and Native Americans are under the age of 20, compared to less than one out of four whites in Connecticut. About 4% of Hispanics and AAPIs, 7% African Americans, and 9% of Native Americans are ages 65 or over, compared to about 16% of whites in Connecticut.

Table 2. Age Distribution of Connecticut's Population by Race and Ethnicity, 1997

	Percent by Race/Ethnicity[a]				
Age Group	African American	Hispanic[b]	Asian American PI	Native American[c]	White
0 - 4	8.0	11.9	9.0	7.4	5.9
5 - 19	26.3	27.9	22.8	21.2	18.4
20 - 64	58.5	55.9	63.9	62.3	59.3
65 & over	7.2	4.3	4.4	9.1	16.4
Total	100.0	100.0	100.0	100.0	100.0

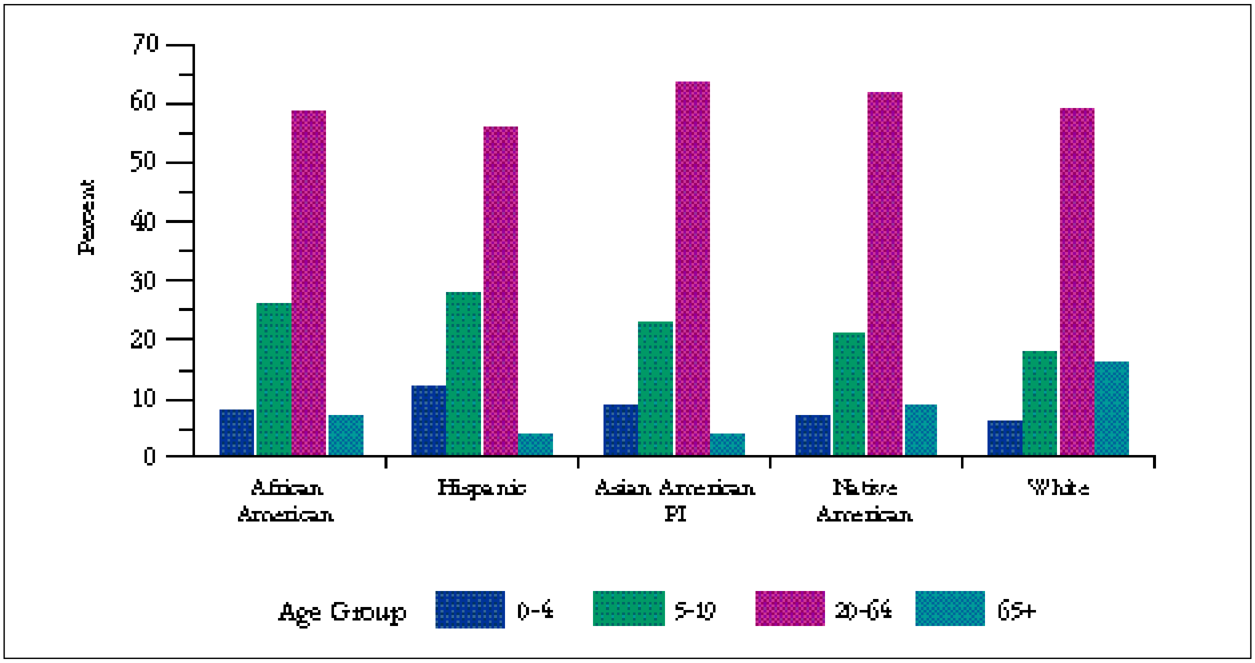
Source: U.S. Census Bureau Population Estimates for 1997, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Hispanic category includes any race.

[c] Native American includes American Indian and Alaska Native.

Figure 2. Age Distribution of Connecticut's Population by Race and Ethnicity, 1997



Source: U.S. Census Bureau Population Estimates for 1997, PE-65, 9/4/98.

GEOGRAPHICAL DISTRIBUTION OF MINORITY GROUPS IN CONNECTICUT

Data presented in this report on city of residence, educational attainment, *per capita* income, and poverty status by race and ethnicity for Connecticut residents are drawn from the 1990 Census of Population. These data reflect responses to two separate questions in the 1990 Census—one on race and the other on Hispanic origin. The Census presents data for four racial groups (White, Black, Asian or Pacific Islander, and American Indian, Eskimo or Aleut) and an "Other Race" category containing a write-in entry inclusive of Hispanic ethnicity. The U.S. Census Bureau found that most of the Other Race write-in entries for the 1990 Census indicated Hispanic origin (U.S. Bureau of the Census, 1993). Data for the Other Race category in this report are presented for city of residence (Tables 3.1 and 3.2) but not for the other U.S. Census based indicators (educational attainment, *per capita* income, and poverty status). See Appendix III for further explanation of race and ethnicity categories used by the U.S. Census.

In contrast to the white, non-Hispanic population, Connecticut's minority populations tend to be geographically concentrated in certain urban areas of the state. Residence in urban poverty areas is a factor that is closely associated with a wide range of disease conditions such as asthma, lead poisoning, tuberculosis, and AIDS, as well as the inability to access medical care. Epidemiological studies suggest that residence in poverty areas is associated with higher mortality from a wide variety of causes (Haan et al., 1987).

Table 3.1 shows that each of the four minority groups is over-represented relative to the white population in one or more of Connecticut's eight largest cities (Bridgeport, Hartford, New Haven, Waterbury, Stamford, Norwalk, New Britain, and Danbury). According to 1990 Census data, about 7 out of 10 African Americans and Hispanics and about 1 out of 3 AAPIs and Native Americans resided in these cities compared to about 2 out of 10 whites.

Although racial and ethnic minority persons are over-represented, white residents are the majority populations in seven of the eight largest cities (Hartford excepted). Percentages of racial and ethnic groups for Connecticut's eight largest cities are shown in Table 3.2 and Figures 3.1 and 3.2. In New Britain and Danbury, for example, minorities make up less than 2 out of 10 residents; in Waterbury, Stamford, and Norwalk, less than 3 out of 10 residents are minorities; in Bridgeport and New Haven, minorities make up less than half of all residents; and in Hartford, minorities make up about 6 out of 10 residents.

Table 3.1. Racial and Ethnic Group Populations in Selected Connecticut Cities, 1989

	Race[a]						
City	African American	Asian American PI	Native American[b]	White	Other Race	Total	Hispanic Ethnicity[c]
Connecticut	274,269	50,698	6,654	2,859,353	96,142	3,287,116	213,116
Bridgeport	37,684	3,288	405	82,945	17,364	141,686	37,547
Hartford	54,338	2,024	450	55,869	27,058	139,739	44,137
New Haven	47,157	3,141	402	70,263	9,511	130,474	17,243
Waterbury	14,133	787	344	86,681	7,016	108,961	14,578
Stamford	19,217	2,811	135	82,421	3,472	108,056	10,562
Norwalk	12,123	1,290	100	62,106	2,712	78,331	7,339
New Britain	5,723	1,348	130	61,605	6,685	75,491	12,284
Danbury	4,311	2,582	132	56,897	1,663	65,585	5,045
Total (8 Cities)	194,686	17,271	2,098	558,787	75,481	848,323	148,735
% of State Total	71.0%	34.1%	31.5%	19.5%	78.5%	25.8%	69.8%

Source: U.S. Census Bureau, 1990 (STF 1A).

[a] Racial groupings (African American, Asian American PI, Native American, White, Other Race) include persons of Hispanic ethnicity.

[b] Native American includes American Indian and Alaska Native.

[c] Hispanic category includes any race.

Table 3.2. Percentages of Racial and Ethnic Group Populations in Selected Connecticut Cities, 1989

	Race[a]					
City	African American	Asian American PI	Native American[b]	White	Other Race	Hispanic Ethnicity[c]
Bridgeport	26.6	2.3	0.3	58.5	12.2	26.5
Hartford	38.9	1.4	0.3	40.0	19.4	31.6
New Haven	36.1	2.4	0.3	53.9	7.3	13.2
Waterbury	13.0	0.7	0.3	79.6	6.4	13.4
Stamford	17.8	2.6	0.1	76.3	3.2	9.8
Norwalk	15.5	1.6	0.1	79.3	3.5	9.4
New Britain	7.6	1.8	0.2	81.6	8.9	16.3
Danbury	6.6	3.9	0.2	86.8	2.5	7.7

Source: U.S. Census Bureau, 1990 (STF 1A).

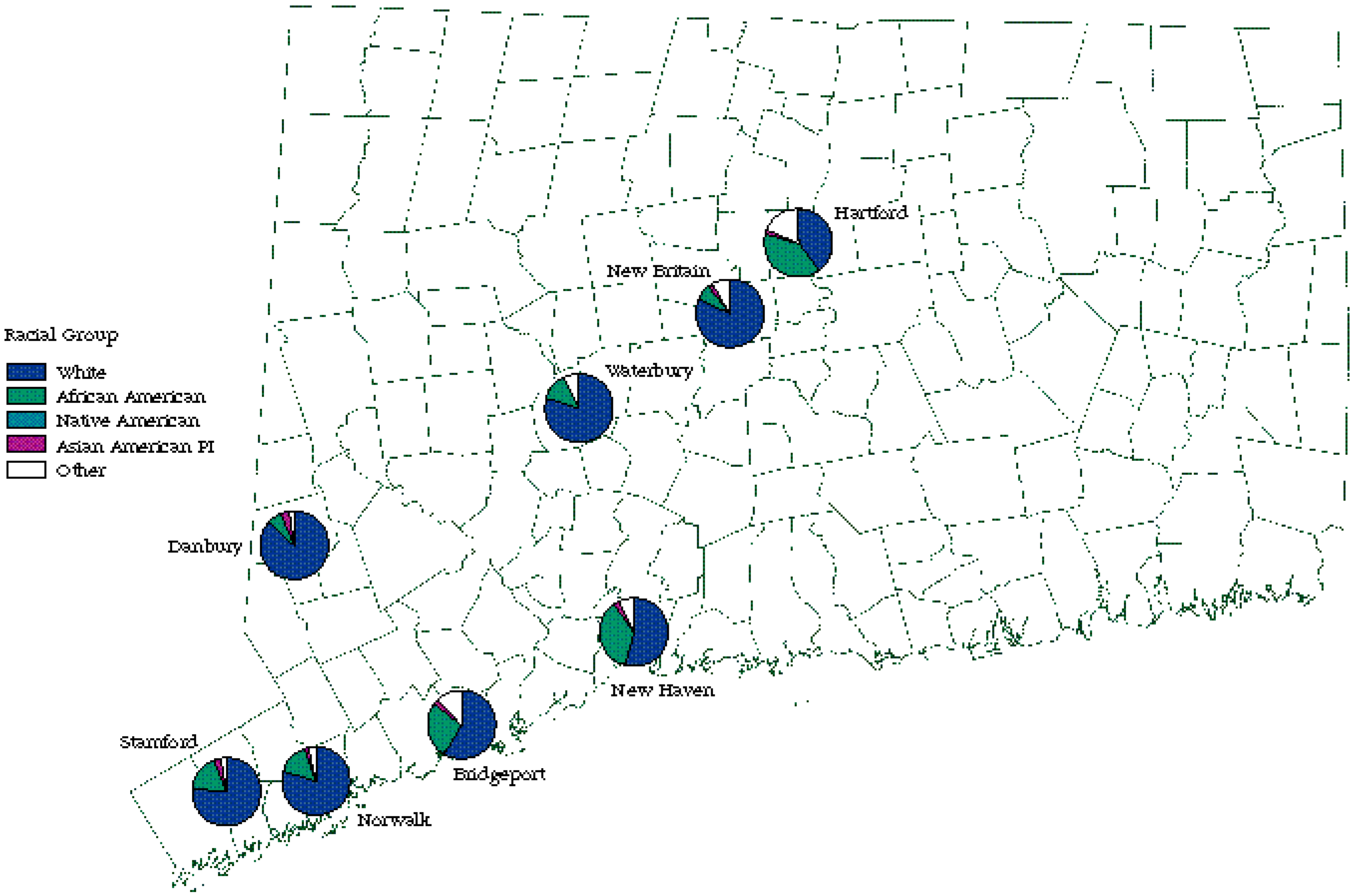
[a] Racial groupings (African American, Asian American PI, Native American, White, Other Race) include persons of Hispanic ethnicity.

[b] Native American includes American Indian and Alaska Native.

[c] Hispanic category includes any race.

Figure 3.1

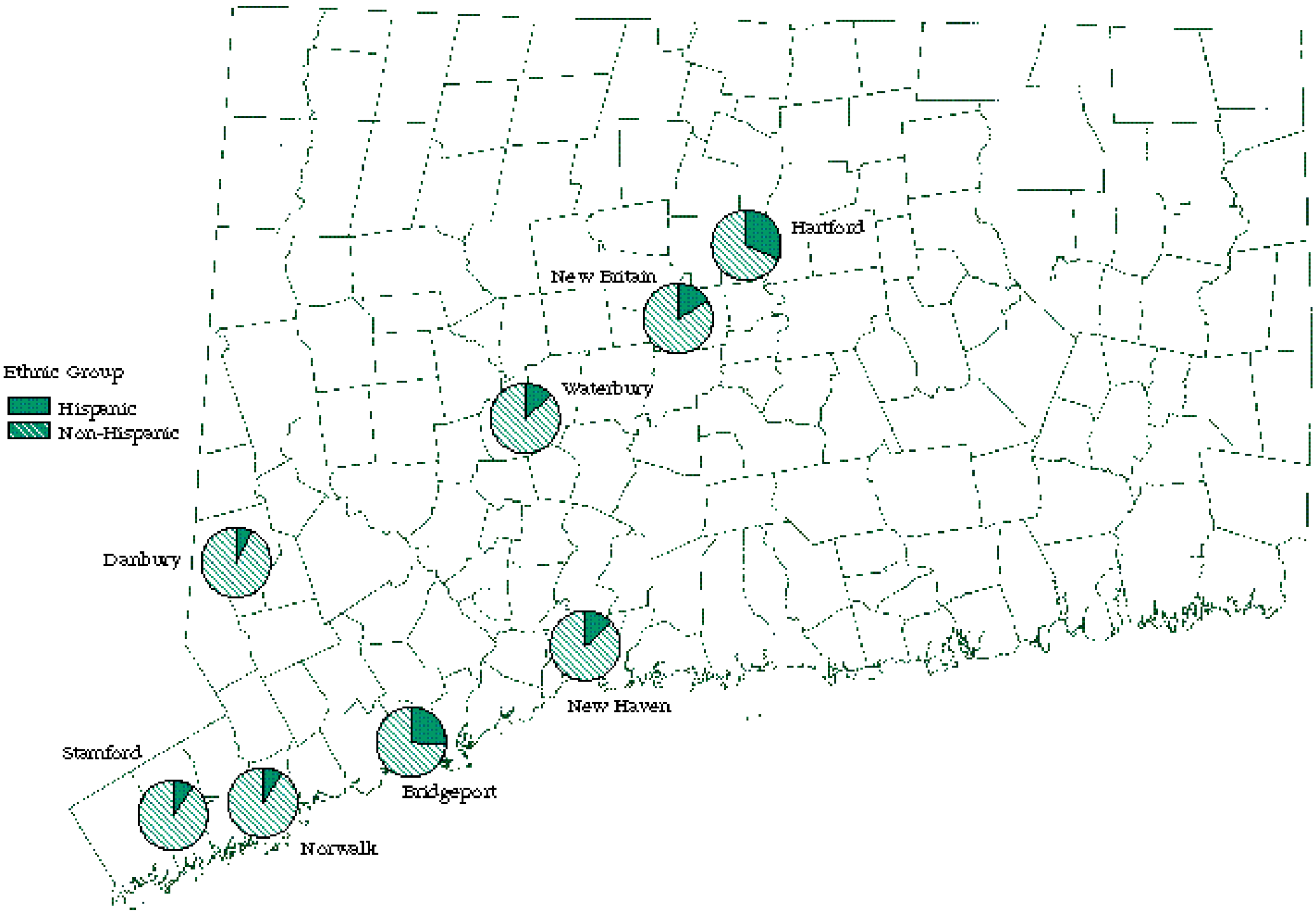
Relative Proportions of Racial Groups in Connecticut's Eight Largest Cities, 1989



Note: The Native American population percentage is less than 1% in all cases displayed.
Source: U.S. Census Bureau, 1990

Figure 3.2

Relative Proportions of Hispanic and Non-Hispanic Groups in Connecticut's Eight Largest Cities, 1989



Source: U.S. Census Bureau, 1990

II. SOCIOECONOMIC INDICATORS

Socioeconomic status, as measured by educational level, personal income, and occupation, historically has been associated with disease morbidity and mortality (Antonovsky, 1967; Illsley and Baker, 1991). It is likely that these factors affect many different disease outcomes because they embody access to important resources of a society. Nationwide, minority groups have lower levels of education and income, and are more likely to be poor when compared to the white population.

EDUCATIONAL ATTAINMENT

Persons with higher educational levels enjoy better health and lower age-adjusted mortality than those with lower levels of education (Kitagawa and Hauser, 1973; Pappas et al., 1993). Education can affect health outcomes both directly, through greater knowledge and ability to access information about health, or indirectly, through higher levels of income and lower levels of poverty (Liberatos et al., 1988). Higher income enables people to obtain safe and sanitary housing, healthy food, safer work conditions, jobs with better benefits, appropriate health care, and greater leisure.

Overall levels of education nationally and in Connecticut have increased steadily in the last several decades; however, educational levels vary considerably among racial and ethnic subgroups. Educational attainment—the highest level of education completed—among minority and white populations in Connecticut in 1989 is shown in Table 4 and Figure 4. Among persons 25 years of age and older, the proportion who had not completed high school in 1989 ranged from 18% for Asian Americans and Pacific Islanders to 47% for Hispanics. The percentage with a college degree or higher level of education ranged from 12% for Hispanics and African Americans to 50% for AAPIs. Only 5% of African Americans and Hispanics had a graduate or professional degree compared to 27% of AAPIs.

Table 4. Educational Attainment[a] of Connecticut Residents, 25 Years of Age and Over, 1989

Race/Ethnicity[b]	Population	Percent
African American	152,611	
No high school diploma	50,407	33
High school diploma	49,911	33
Some college, no bachelor's degree	33,515	22
Bachelor's degree	11,332	7
Graduate or professional degree	7,446	5
Hispanic[c]	99,987	
No high school diploma	46,454	47
High school diploma	24,359	24
Some college, no bachelor's degree	17,053	17
Bachelor's degree	6,941	7
Graduate or professional degree	5,180	5
Asian American Pacific Islander	28,304	
No high school diploma	5,127	18
High school diploma	3,948	14
Some college, no bachelor's degree	4,854	17
Bachelor's degree	6,646	23
Graduate or professional degree	7,729	27
Native American[d]	4,383	
No high school diploma	1,362	31
High school diploma	1,413	32
Some college, no bachelor's degree	1,061	25
Bachelor's degree	290	7
Graduate or professional degree	257	6
White	1,970,621	
No high school diploma	377,133	19
High school diploma	582,863	30
Some college, no bachelor's degree	449,820	23
Bachelor's degree	335,992	17
Graduate or professional degree	224,813	11

Source: U.S. Bureau of the Census, 1990 (STF3A).

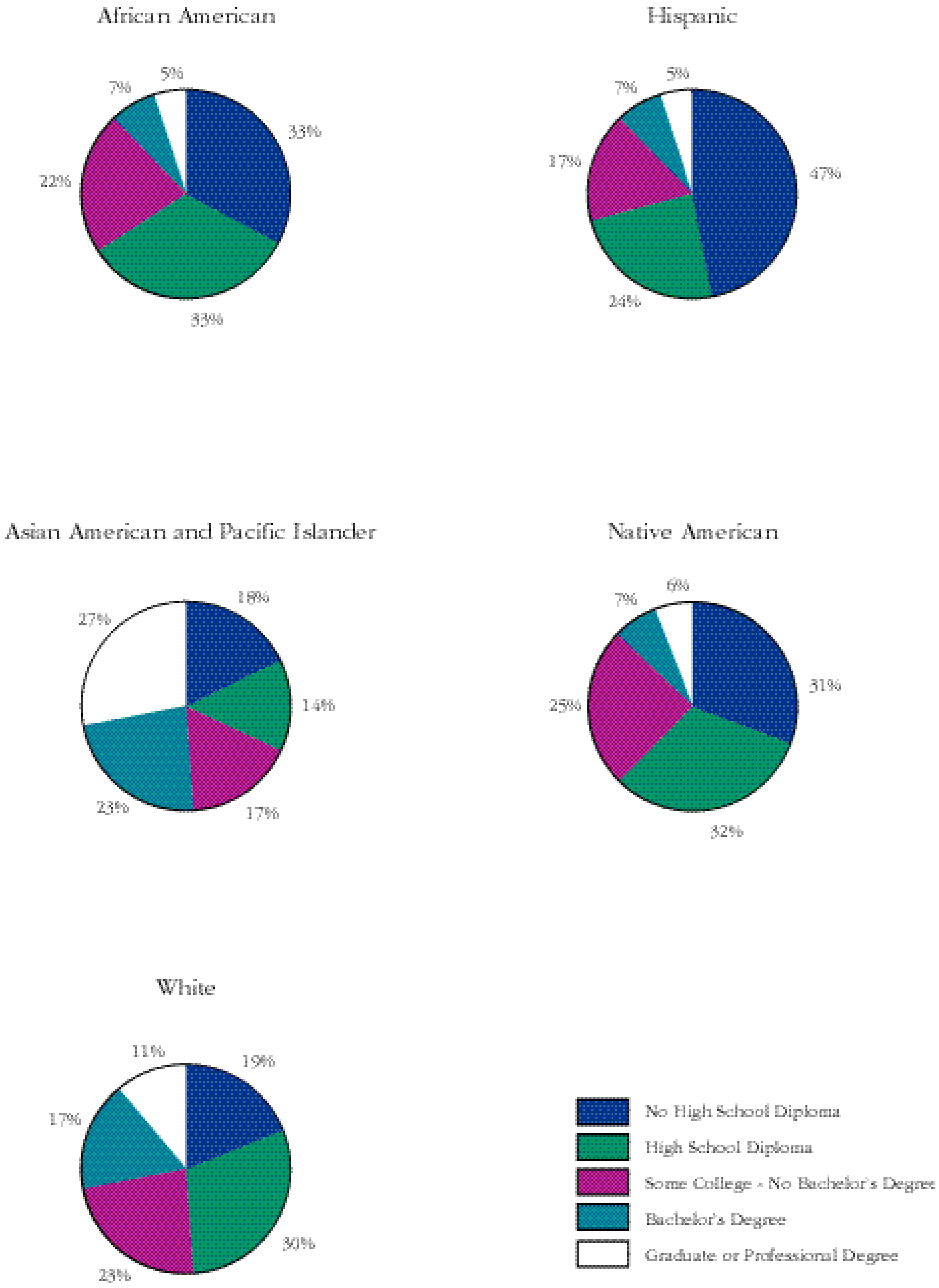
[a] Figures represent the highest level of education completed by Connecticut residents.

[b] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity.

[c] Hispanic category includes any race.

[d] Native American includes American Indian and Alaska Native.

Figure 4. Educational Attainment of Connecticut Residents, 25 Years of Age and Over, 1989



Source: U.S. Bureau of the Census, 1990 (STF3A).

PER CAPITA INCOME

Low income is both a cause and a consequence of poor health. Income is most likely associated with health because it enables individuals and families to afford better housing, live in better neighborhoods, obtain appropriate medical care, and increase the time and opportunity to practice healthy behaviors. Personal income may also be negatively affected by poor health by limiting the amount and type of a person's employment.

Income of Connecticut residents by race and ethnicity in 1989 is shown in Table 5 and Figure 5. *Per capita* income (personal income per person) in Connecticut was highest among all 50 states. White residents of Connecticut had the highest *per capita* income, followed by AAPIs and Native Americans. In contrast, *per capita* incomes of African Americans and Hispanics were less than 55% that of whites in Connecticut.

Table 5. Per Capita Income in the United States and Connecticut, 1989

	United States		Connecticut	
Race/Ethnicity[a]	Income	Ratio of Minority to White Income	Income	Ratio of Minority to White Income
Total	$14,420		$20,189	
African American	8,859	0.56	11,695	0.54
Hispanic[b]	8,400	0.54	9,786	0.46
Asian American PI	13,638	0.87	18,174	0.85
Native American[c]	8,328	0.53	13,657	0.64
White	15,687	1.00	21,466	1.00

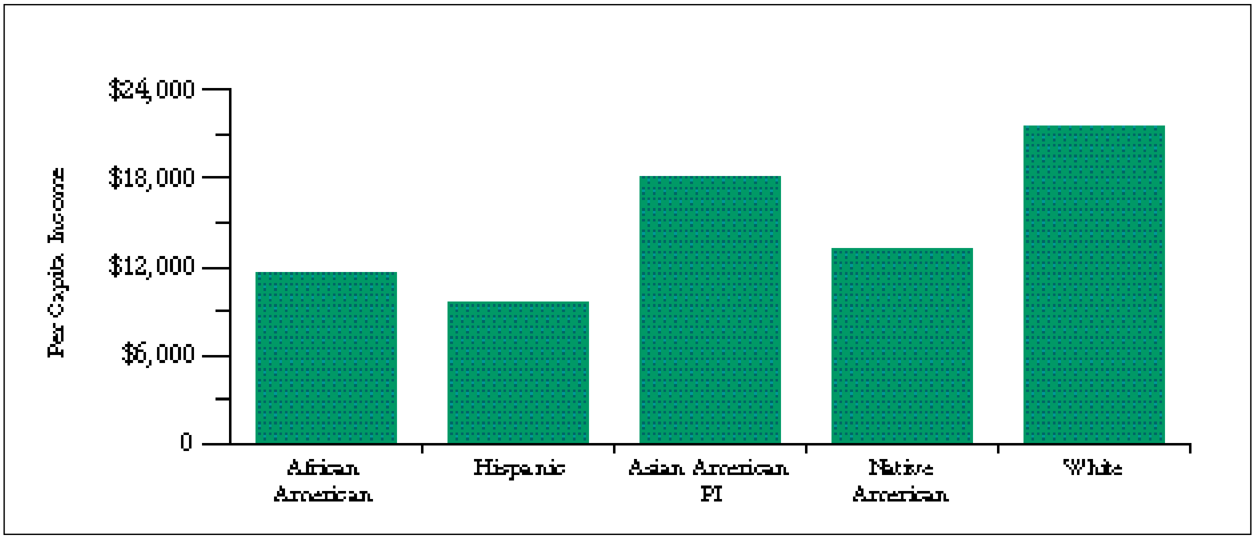
Source: U.S. Census Bureau, 1990 (STF 1A).

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity.

[b] Hispanic persons may be of any race.

[c] Native American includes American Indian and Alaska Native.

Figure 5. Per Capita Income of Connecticut Residents, 1989



Source: U.S. Bureau of the Census, 1990.

POVERTY STATUS

Poverty is closely associated with health outcomes of morbidity, mortality, and health behaviors. As such, it may be viewed as a risk factor for disease (MacMahon and Pugh, 1970). The U.S. poverty threshold, defined by the Social Security Administration in 1964, was based on a determination that families of three or more persons spend one-third of their household income on food. It was originally intended to identify an income level sufficient for adequate nutrition, not as an indicator of deprivation (Appendix IV). Although the U.S. Bureau of the Census provides annual modifications of the poverty threshold, it is generally agreed that official thresholds are too low to identify large segments of the population without incomes adequate to provide for basic food, clothing, and medical care (Polednak, 1997). Nationwide, African Americans and Latinos are disproportionately represented among the poor and near poor.

Compelling evidence in social science research suggests that the persistence of poverty in certain minority populations is most likely related to barriers to employment and discrimination in housing. Persistent housing discrimination has resulted in the concentration of poverty and minority groups in urban areas of the U.S., with the consequent negative impact on quality of life (Massey and Denton 1993). “Quality of life” includes good housing, clean and safe neighborhoods, educational opportunities, high-skill or high-paying jobs, and good health (Patrick and Erickson, 1993). It is essential, therefore, to consider the impact of persistent residential segregation and poverty in any discussion of the health status of minority groups.

According to the 1990 Census, about 7% of Connecticut residents had incomes below the poverty threshold. The percentage of persons living in poverty differed dramatically for minority groups in Connecticut (Table 6, Figure 6). Compared to whites, AAPIs were almost two times, Native Americans about three times, African Americans about four times, and Hispanics about six times more likely to be living in poverty in 1989. While higher percentages of racial and ethnic minorities are poor compared to whites, most poor people in Connecticut are white, as there are more whites in the state overall. Accordingly, whites accounted for 59% of all persons living below poverty in 1989.

Table 6. Persons Living in Poverty in Connecticut, 1989

Race/Ethnicity[a]	Number with Known Poverty Status	Below Federal Poverty Level Number	Below Federal Poverty Level Percent
Total	3,188,125	217,347	6.8
African American	261,675	51,689	19.8
Hispanic[b]	196,589	56,444	28.7
Asian American PI	46,528	3,803	8.2
Native American[c]	6,517	977	15.0
White	2,780,652	128,360	4.6

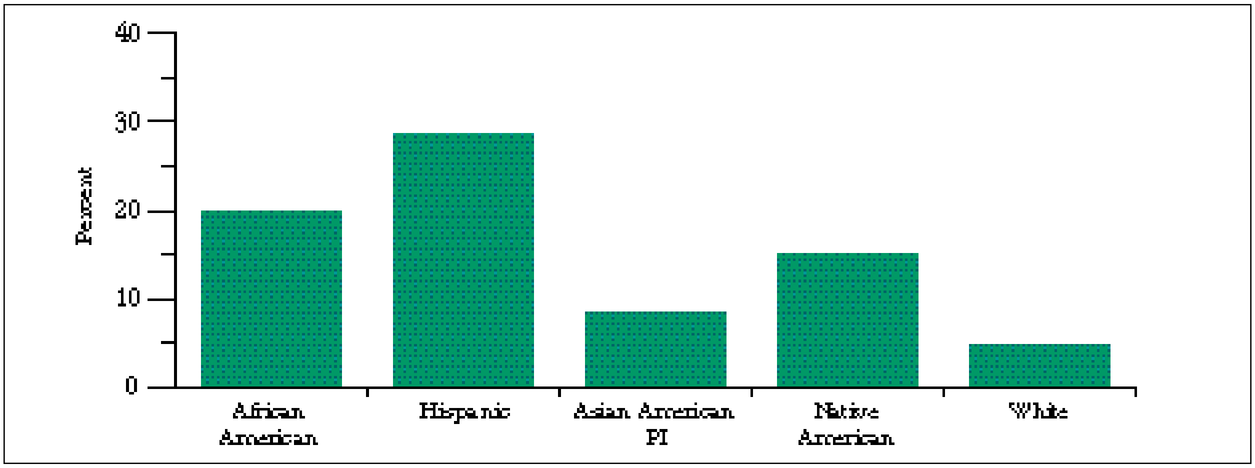
Source: U.S. Census Bureau, 1990 (STF 3A).

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity.

[b] Hispanic persons may be of any race.

[c] Native American includes American Indian and Alaska Native.

Figure 6. Percent of Persons Living in Poverty, Connecticut Residents, 1989



Source: U.S. Bureau of the Census, 1990.

III. HEALTH INDICATORS

The following section provides information on 34 key health indicators for minority group populations in Connecticut. Health indicators in this report are grouped as follows: age-adjusted mortality due to all causes; chronic diseases; injuries; infectious diseases; sexually transmitted diseases; pregnancy and childbirth indicators; environmental risk factors; and access to health care. Prevalence data on lead poisoning, not available by race and ethnicity, are presented for Connecticut's three largest cities. Because of differences in data collection methods, some indicators employ statistics for racial groups (African American, AAPI, Native American, and white) that include Hispanic ethnicity, whereas other indicators use statistics for racial groups exclusive of Hispanic ethnicity (African American non-Hispanic, Asian American and Pacific Islander non-Hispanic, Native American non-Hispanic, and white non-Hispanic). The manner of classification for each indicator is described in the notes for each table. Appendix III provides an explanation of data sources used in this report.

All but one (blood lead levels) of the tables in this report provide information for each health indicator by racial or ethnic group. Each table includes the following information: 1) numbers of persons or events related to the particular condition; 2) these numbers expressed as rates or percentages of the total population in the respective racial or ethnic group; 3) the "relative risk," that is, the risk or likelihood of a minority group having the condition compared to the white population; and 4) "excess events" or "excess deaths" (U.S. Department of Health and Human Services, 1985). Excess events or excess deaths represent the additional number of events or deaths experienced by the minority group beyond what one would expect if their rates were the same as that of the white population. In cases where a given minority group has fewer events or fewer deaths relative to the white population, this figure is printed in parentheses. Detailed explanations of relative risk and excess deaths or excess events are provided in Appendix IV.

ALL-CAUSE MORTALITY

The death rate for "all causes" is a comprehensive measure of health status that can be compared across populations. Risk factors such as age, gender, and socioeconomic status can influence the death rate. Death rates reported here have been age-adjusted to take into account the age differences among the racial and ethnic subpopulations in Connecticut. Appendix III provides a discussion of the problems associated with death certificate data. See Appendix IV for a complete list of classification codes used for causes of death.

African Americans had the highest death rate, about 1.5 times that of whites, whereas Hispanics, Native Americans, and Asian Americans and Pacific Islanders all had lower rates compared to whites (Table 7, Figure 7).

Table 7. Age-Adjusted Death Rates for All Causes of Death, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	146,564	611.5		
African American	10,200	859.9	1.5	3,174
Hispanic[e]	3,775	461.3	0.8	(1,072)
Asian American PI	439	232.7	0.4	(678)
Native American[f]	164	505.7	0.9	(28)
White	135,486	592.3	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

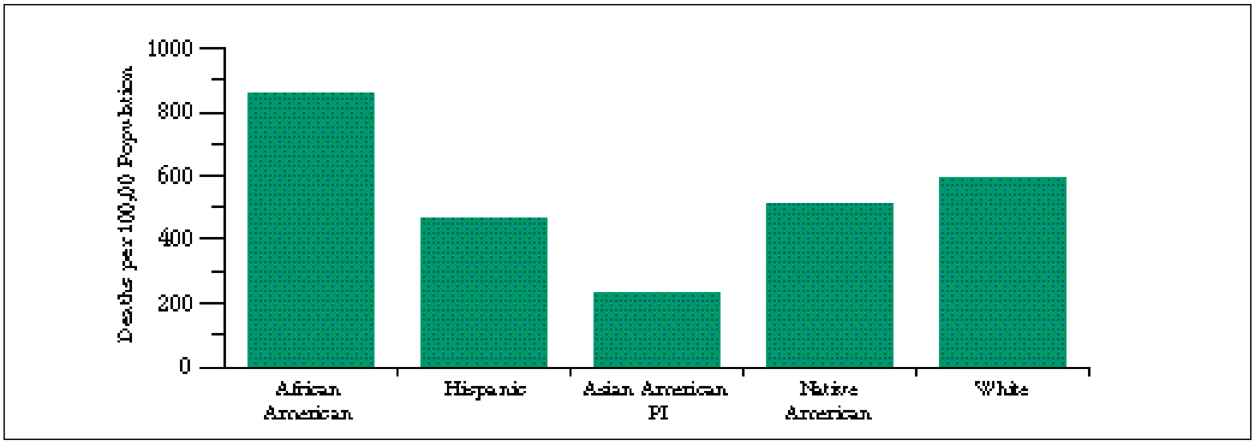
[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer deaths.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

Figure 7. Age-Adjusted Death Rates for All Causes of Death, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

CHRONIC DISEASES

In the twentieth century, chronic diseases, including cardiovascular disease, cancer, and diabetes, have replaced infectious diseases as the leading causes of death and disability in industrialized nations. Heart disease and cancer are the two leading causes of premature death among Americans aged 45 to 64. Nationwide, African Americans are at greater risk of mortality from these chronic diseases than any other group in this age range. The differences in death rates from chronic disease account for most of the disparity in the probability of survival to age 65 between African Americans and whites (Council of Economic Advisors, 1998).

Heart Disease

Heart disease is the leading cause of death both in Connecticut and the United States. Although heart disease deaths have declined by nearly one-third since 1980, most likely due to lifestyle changes and improved medical technology, heart disease still kills almost as many people as do all other diseases combined (Brownson et al., 1998). Among Connecticut residents in 1993-97, African Americans had the highest rate of heart disease mortality, followed by whites, Native Americans, Hispanics, and Asian Americans and Pacific Islanders, respectively (Table 8, Figure 8).

Table 8. Age-Adjusted Death Rates for Heart Disease, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	48,931	189.9		
African American	2,628	244.8	1.3	624
Hispanic[e]	791	122.8	0.7	(412)
Asian American PI	99	57.9	0.3	(220)
Native American[f]	53	168.8	0.9	(6)
White	46,124	186.7	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

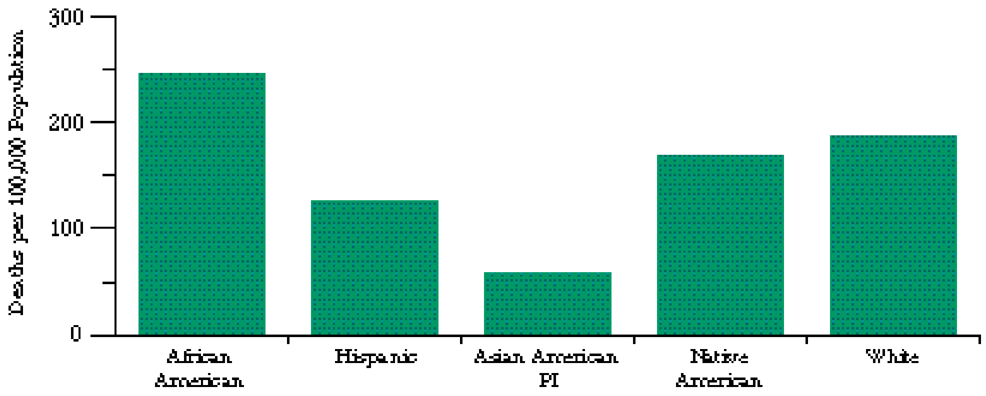
[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer deaths.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

Figure 8. Age-Adjusted Death Rates For Heart Disease, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Cerebrovascular Disease (Stroke)

Cerebrovascular disease is a leading cause of death in the U.S. and Connecticut; however, the rate of stroke deaths has been cut in half during the past two decades, reflecting improved control of high blood pressure and a decrease in smoking (Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 1997).

Among Connecticut residents in 1993-97, African Americans had the highest rate of deaths due to stroke, followed by whites, Asian Americans and Pacific Islanders, and Hispanics, respectively (Table 9, Figure 9). As there were only seven stroke deaths among Native Americans, the age-adjusted death rate presented for this group may not be reliable.

Table 9. Age-Adjusted Death Rates for Stroke, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	9,364	34.2		
African American	513	47.7	1.4	155
Hispanic[e]	154	23.4	0.7	(65)
Asian American PI	42	27.5	0.8	(9)
Native American[f]	7	21.0†	0.6†	(4)†
White	8,800	33.3	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

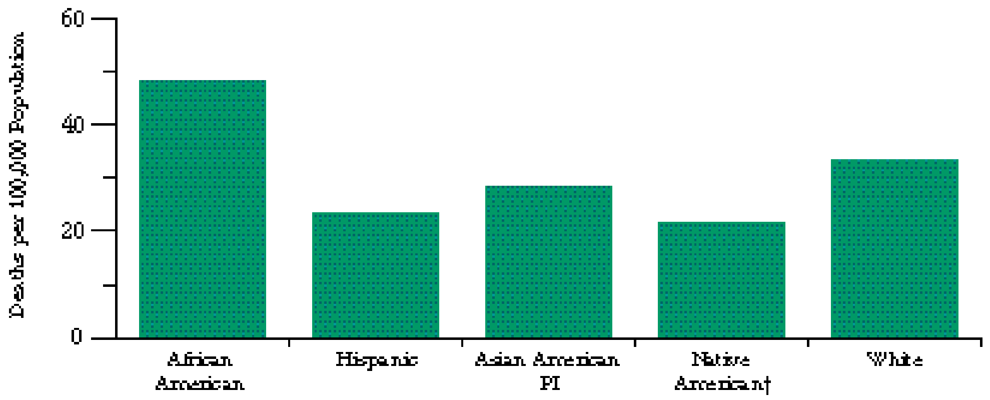
[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer deaths.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable, due to small numbers.

Figure 9. Age-Adjusted Death Rates For Stroke, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

† Rate considered unreliable due to small numbers.

Cancer

Cancer is the second-ranked leading cause of death nationwide and in Connecticut. Among Connecticut residents in 1993-97, African Americans had the highest rate of deaths due to cancer followed by whites, Native Americans, and Hispanics (Table 10, Figure 10). Asian Americans and Pacific Islanders had the lowest rate of cancer deaths among the groups considered, but cancer was still their leading cause of death.

Estimated invasive (malignant) cancer incidence rates by gender among African Americans, Hispanics, and white Connecticut residents in 1995 are shown in Table 11 and Figure 11. For all three racial ethnic groups, males had higher incidence rates than did females. Among males, African American males had the highest rate and whites the lowest, whereas among females, the opposite was true (Connecticut Tumor Registry, unpublished data).

Among Connecticut males, prostate cancer was the most common type in each racial and ethnic group, accounting for about one in three invasive cancers, whereas lung cancer was second most common in whites and African Americans, and third most common in Hispanics. Non-Hodgkin's lymphoma was the second most common cancer in Hispanic men.

Among Connecticut females, breast cancer was the most common type in each racial and ethnic group, accounting for about one in three invasive cancers, whereas colon cancer was second most common in Hispanics and African Americans and third most common among whites.

Because of small numbers of invasive cancers among Asian Americans and Native Americans in 1995, data for the period 1986-95 were examined. Numbers of cancers for Chinese and Asian Indians/Pakistanis, the largest Asian subgroups in Connecticut, are reported here. Among Chinese, the most common invasive cancers were colon-rectum (23), breast (21 females), and lung (14); among Asian Indians and Pakistanis, most common were breast (24 females), colon-rectum (11), and lung (9). The most common invasive cancers among Native Americans were colon-rectum (10), lung (7), and breast (7 females) (Connecticut Tumor Registry, unpublished data).

Table 10. Age-Adjusted Death Rates for All Cancers, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	35,446	160.8		
African American	2,138	199.2	1.3	432
Hispanic[e]	576	86.6	0.5	(482)
Asian American PI	130	67.6	0.4	(176)
Native American[f]	39	128.2	0.8	(9)
White	33,119	159.0	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

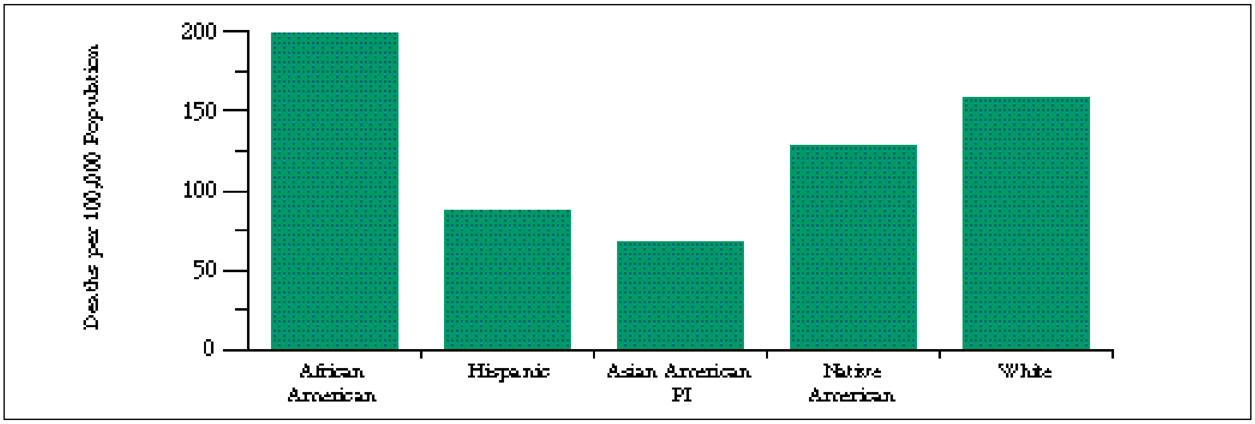
[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer deaths.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

Figure 10. Age-Adjusted Death Rates For All Cancers, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Table 11. Age-Adjusted Invasive Cancer Incidence Rates, Connecticut Residents, 1995

Race/Ethnicity[a]	Number of Cases	Age-Adjusted Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Events[d]
Males				
African American	542	604.2	1.3	117
Hispanic[e]	263	479.2	1.0	3
White	7,951	474.1	1.0	0
Females				
African American	389	294.8	0.8	(100)
Hispanic[e]	246	306.5	0.8	(52)
White	7,872	370.7	1.0	0

Source: Connecticut Tumor Registry.

[a] Racial groupings (African American and White) include persons of Hispanic ethnicity.

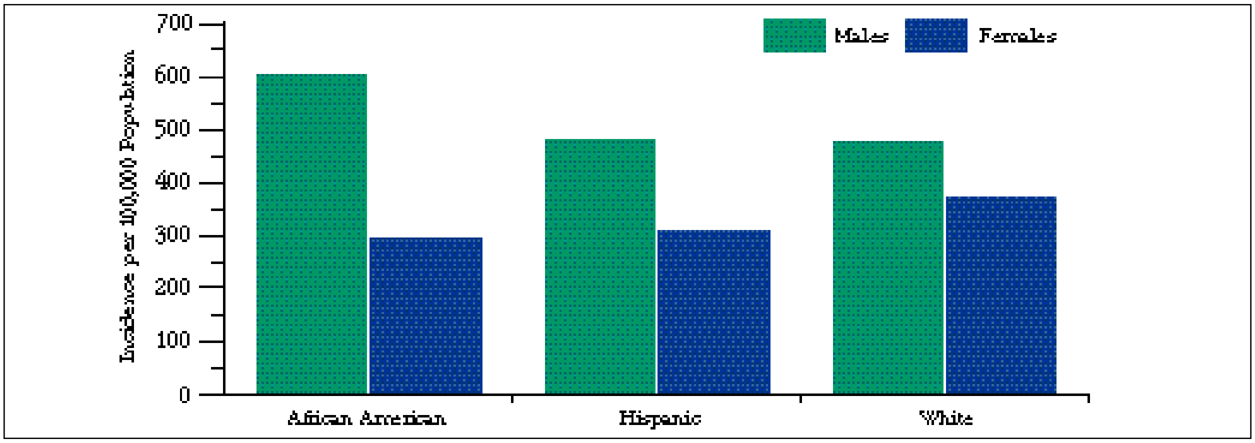
[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated using the age distribution of the total 1970 U.S. population as the standard.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic category includes any race.

Figure 11. Invasive Cancer Incidence Rates, Connecticut Residents



Source: Connecticut Tumor Registry.

Diabetes

Diabetes is a chronic metabolic disorder that affects almost 16 million Americans (Bishop et al., 1998). More than 115,000 Connecticut adults are estimated to have diabetes (Connecticut Department of Public Health, unpublished data). About one-third of diabetes cases are undiagnosed, partly because symptoms develop gradually and severe symptoms may occur only after several years. Most minority groups in the United States have higher prevalence rates of Type 2 (adult onset) diabetes, develop more complications, and have higher death rates from the disease than do whites (Oxendine, 1999). The disproportionate impact of Type 2 diabetes on minority populations has been attributed to factors such as a high-fat, high-calorie, and low-fiber diet; little exercise; obesity; and certain genetic factors. The relative contributions of these and related socioeconomic factors, however, are not well defined (Carter et al., 1996). Lack of timely, appropriate medical care may contribute to the complications of diabetes, such as lower extremity amputations, end stage renal disease, and blindness. For people living with diabetes, the impact of this disease may extend over many years and be expressed as the numerous health complications associated with the disease.

As many diabetics actually die from complications of diabetes, rather than the disease itself, diabetes deaths alone understate the extent to which diabetes contributes to mortality. Age-adjusted death rates for diabetes from 1993-97 are shown in Table 12 and Figure 12. African Americans had the highest rate of deaths due to diabetes, more than twice that of whites, followed by Hispanics. Because of the small numbers, age-adjusted death rates reported for Asian Americans and Pacific Islanders and Native Americans may not be reliable.

Data on deaths due to diabetes-related causes from 1993-97 are shown in Table 13 and Figure 13. Native Americans and African Americans had the highest death rates, more than twice that of whites. Hispanics also had rates higher than whites, whereas Asian Americans and Pacific Islanders had the lowest rates of all groups considered, about one-third that of whites.

Hospitalization rates for diabetes for 1996 are shown in Table 14 and Figure 14. African Americans had the highest rate of diabetes hospitalizations, more than 2.5 times that of whites. The rate for Hispanics was slightly higher than that of whites. Asian Americans and Pacific Islanders had the lowest rates of diabetes hospitalizations, but the figure may be unreliable due to the small number of hospitalizations. Rates were not calculated for Native Americans because of the small numbers of hospitalizations recorded. See “Hospitalization” in Appendix IV for a complete list of codes used in classifying hospital discharge data.

Table 12. Age-Adjusted Death Rates for Diabetes, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	3,134	13.5		
African American	324	30.5	2.4	190
Hispanic[e]	97	15.9	1.3	20
Asian American PI	8	5.3†	0.4†	(11) †
Native American[f]	6	18.0†	1.4†	2†
White	2,793	12.6	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method, using the 1970 U.S. standard million.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

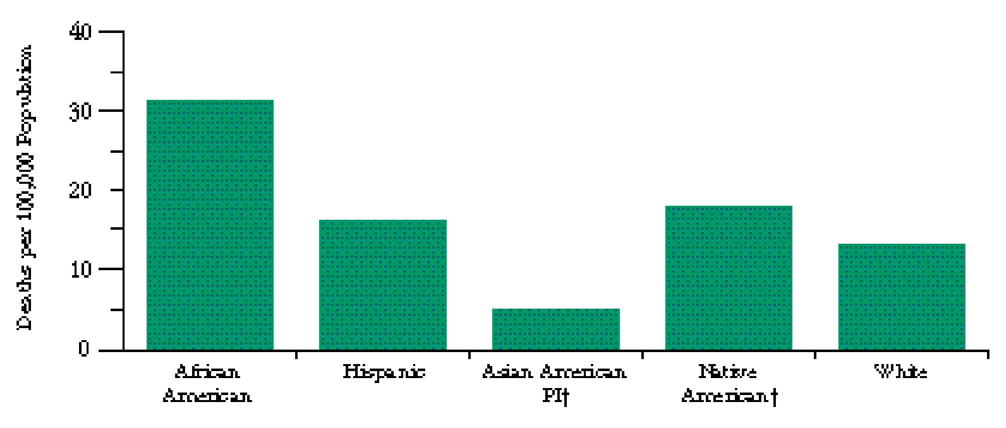
[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

Figure 12. Age-Adjusted Death Rates For Diabetes, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

† Rate considered unreliable due to small numbers.

Table 13. Age-Adjusted Death Rates for Diabetes-Related Causes,[a] Connecticut Residents, 1993-97

Race/Ethnicity[b]	Number of Deaths	Age-Adjusted Death Rate[c]	Relative Risk[d] (Minority/White)	Excess (Fewer) Deaths[e]
Total	12,377	52.3		
African American	1,079	102.9	2.1	560
Hispanic[f]	368	60.8	1.2	68
Asian American PI	25	17.0	0.3	(48)
Native American[g]	35	118.6	2.4	20
White	11,234	49.5	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Diabetes-related deaths include all deaths with diabetes listed as either the underlying or a contributing cause of death.

[b] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[c] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method, using the 1970 U.S. standard million.

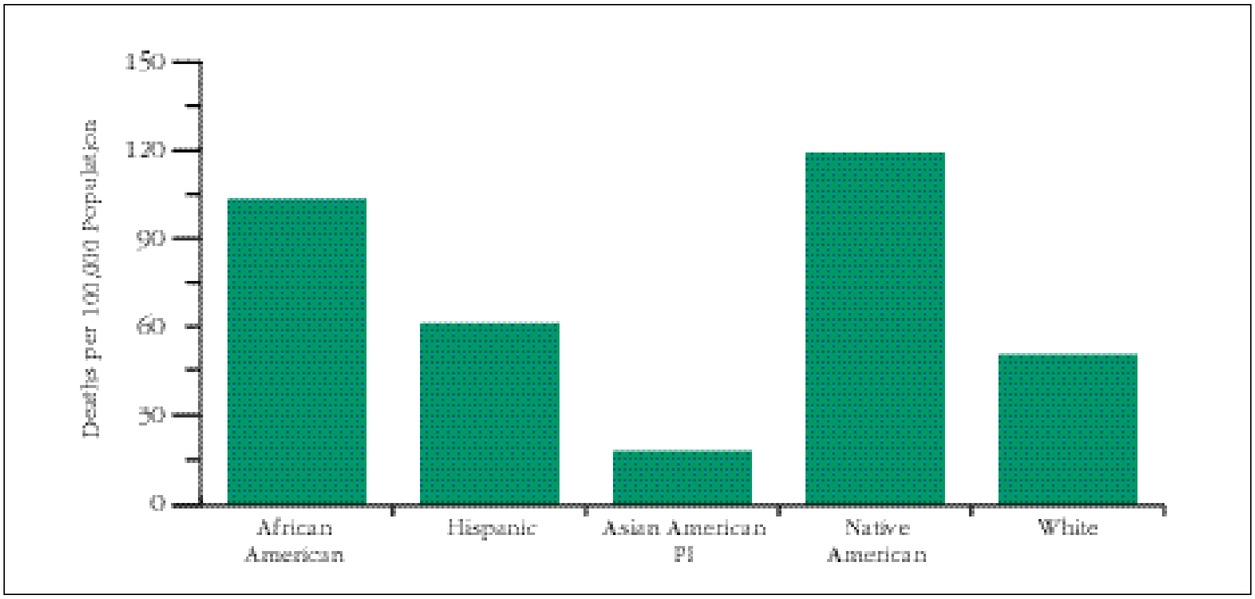
[d] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[e] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer deaths.

[f] Hispanic persons may be of any race.

[g] Native American includes American Indian and Alaska Native.

Figure 13. Age-Adjusted Death Rates for Diabetes-Related Causes, Connecticut Residents 1993-97



Source: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population estimates, PE-65, 9/4/98.

Table 14. Hospitalization Rates for Diabetes, Connecticut Residents, 1996

Race/Ethnicity[a]	Number of Hospitalizations	Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Events[d]
Total	4,061	124.3		
African American	799	292.6	2.7	502
Hispanic[e]	305	121.0	1.1	31
Asian American PI	6	8.7†	0.1†	(69)†
Native American[f]	< 6‡	‡	‡	‡
White	2,898	108.7	1.0	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 2% of the data are not classified by race and ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

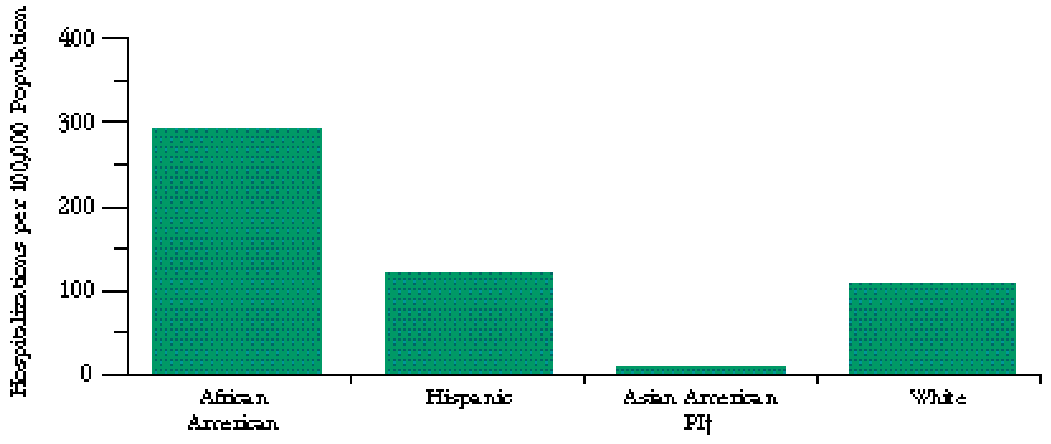
[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

‡ OHCA's confidentiality regulations prohibit disclosure of data based on fewer than 6 events.

Figure 14. Hospitalization Rates for Diabetes, Connecticut Residents, 1996



Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base, 1996.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
†Rate considered unreliable due to small numbers.

BEHAVIORAL RISK FACTORS RELATED TO CHRONIC CONDITIONS

Behavioral factors such as smoking, dietary habits, and physical activity levels are closely linked to individuals' risk of chronic disease morbidity and mortality. While much of the burden of chronic disease may be reduced by lifestyle modification, public health research points out that individual risk factors for disease should be viewed in the context of larger social conditions in a given community (Link and Phelan, 1995). Social factors such as educational level, degree of poverty and resultant stress, housing quality, neighborhood environmental quality, environmental exposures, amount of leisure time, and access to quality consumer goods and medical care all impinge on individuals' choices and behaviors.

The behavioral risk factor data discussed in this report come from the 1997 state-based Behavioral Risk Factor Surveillance System (BRFSS), a randomized survey of adults, ages 18 and over. The number of minority respondents in this general population survey was too small for reliable Connecticut estimates. BRFSS estimates (based on median values for 50 states, the District of Columbia, and Puerto Rico) for African Americans, Hispanics, and whites are more stable; and therefore, they are discussed here with reference to Connecticut residents. BRFSS estimates for AAPIs and Native Americans are not available.

Smoking

Cigarette smoking is the single most important risk factor linked to heart disease and cancer mortality. Cigarette smoking is a major cause of disease and death nationwide among the four minority groups considered in this report, with African Americans bearing the greatest health burden. Differences in the magnitude of disease risk are directly related to differences in patterns of smoking (U.S. Department of Health and Human Services, 1998).

In 1997, 24.0% of African American and 22.6% of Hispanic adults aged 18 and over reported that they were current smokers, compared to 23.5% of whites nationwide (Centers for Disease Control and Prevention, 1999). By applying these rates to the Connecticut population, it is estimated that about 66,000 African American, 59,000 Hispanic, and 624,000 white adults are current smokers. Because Connecticut's smoking rate is slightly lower than the national median, these numbers may slightly overestimate Connecticut smokers. The *Healthy Connecticut 2000* objective is to reduce cigarette smoking to a prevalence of no more than 15% of people 20 years of age and over.

Obesity

Obesity is a risk factor for the chronic illnesses of heart disease, stroke, diabetes, and cancer. Obesity is based on self-report of height and weight converted into a "body mass index" or BMI. BRFSS data for 1997 indicate that nationwide 42.0% of African American, 33.0% of Hispanic, and 29.3% of white adults aged 18 and over were at risk for health problems related to being overweight (Centers for Disease Control and Prevention, 1999). By applying these rates to the Connecticut population, it is estimated that approximately 115,000 African American, 85,000 Hispanic, and 778,000 white Connecticut adults are at risk for health problems related to being overweight.

INJURIES

Unintentional Injuries

Deaths due to unintentional injuries include fires, falls, motor vehicle-related injuries, and drownings. Many of these deaths are related to motor vehicle crashes involving motor vehicle occupants, motorcyclists, bicyclists, and pedestrians. In Connecticut, unintentional injuries are the leading cause of death for persons 1 to 34 years old. They are also a leading cause of disability, which carries additional burdens to society in terms of lost work productivity and high costs of medical care and rehabilitation (Connecticut Department of Public Health, 1999).

Among Connecticut residents in 1993-97, African Americans had the highest rate of death due to unintentional injury, followed closely by Native Americans, then Hispanics, whites, and Asian Americans and Pacific Islanders (Table 15, Figure 15).

Hospital discharge data for non-fatal unintentional injuries for Connecticut for 1996 are shown in Table 16 and Figure 16. African Americans had the highest hospitalization rate, followed by whites, Hispanics, Asian Americans and Pacific Islanders, and Native Americans. The rate for Native Americans may not be reliable due to small numbers. The rate for African Americans was more than five times the rates of the two lowest groups.

Homicide

Although homicide may be associated with criminal acts, the majority of homicides occur during personal arguments or fights. Nationwide, African Americans are more likely than any other racial or ethnic group to be victims of homicide, and homicide deaths are most common among males between the ages of 15 and 34 (Council of Economic Advisors, 1998). Firearms are associated with about 70% of homicide deaths in the U.S. (Powell et al., 1998).

In Connecticut, more than one-third of all homicide victims are between 15 and 24 years of age, and homicide is the leading cause of death for African Americans and Hispanics between the ages of 15 and 24. For the years 1993-97, the age-adjusted death rates for homicide in Connecticut among African Americans and Hispanics were more than seven and a half and four times that of whites, respectively. Asian Americans and Pacific Islanders had the lowest rate of homicide deaths, but this rate may not be reliable due to small numbers. There were too few homicide deaths among Native Americans to calculate meaningful rates (Table 17, Figure 17).

Table 15. Age-Adjusted Death Rates for Unintentional Injuries, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	5,093	25.7		
African American	500	34.2	1.4	132
Hispanic[e]	327	26.5	1.1	16
Asian American PI	28	9.6	0.4	(46)
Native American[f]	13	33.5	1.3	3
White	4,545	25.2	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

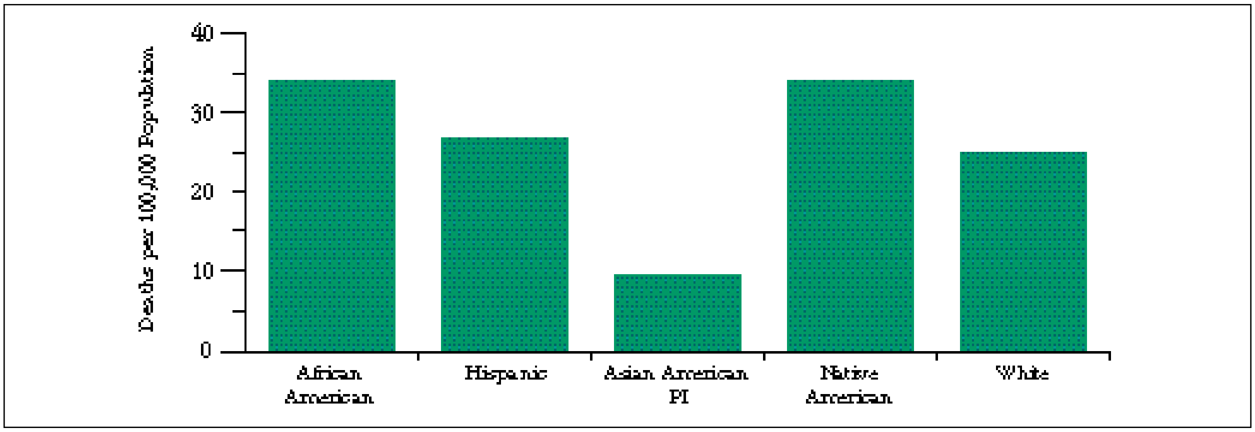
[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

Figure 15. Age-Adjusted Death Rates for Unintentional Injuries, Connecticut Residents, 1993-97



Source: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Table 16. Hospitalization Rates for Non-Fatal Unintentional Injuries, Connecticut Residents, 1996

Race/Ethnicity[a]	Number of Hospitalizations	Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	15,959	488.4		
African American	1,481	542.3	1.1	132
Hispanic[e]	976	387.3	0.8	(269)
Asian American PI	72	104.2	0.2	(269)
Native American[f]	6	98.5†	0.2†	(24)†
White	13,172	493.9	1.0	0

Sources: Office of Health Care Access, Hospital Discharge and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 2% of the data are not classified by race and ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

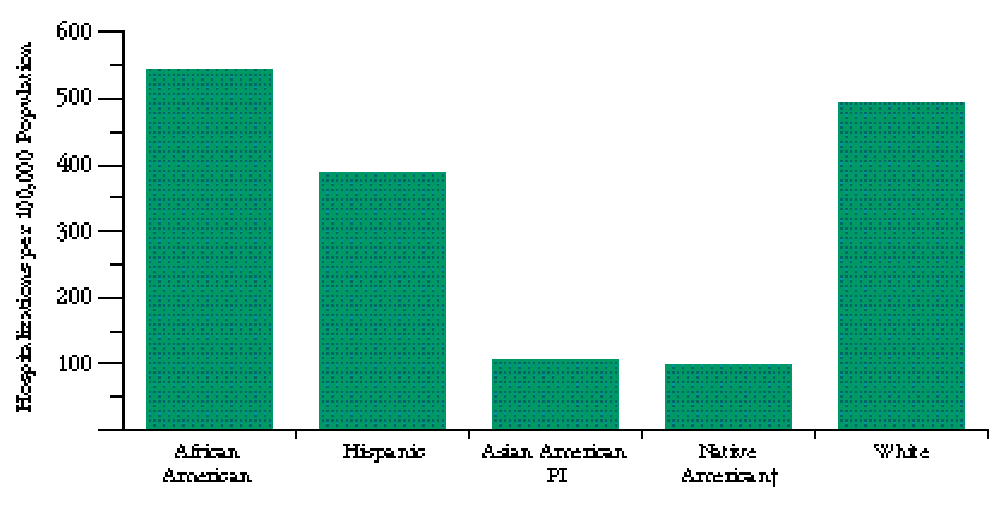
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

Figure 16. Hospitalization Rates for Non-Fatal Unintentional Injuries, Connecticut Residents, 1996



Source: Office of Health Care Access, Hospital Discharge and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

† Rate considered unreliable due to small numbers.

Table 17. Age-Adjusted Death Rates for Homicide, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Deaths[d]
Total	863	5.7		
African American	407	25.9	7.9	355
Hispanic[e]	183	14.3	4.3	141
Asian American PI	6	1.3†	0.4†	(9)†
Native American[f]	3	‡	‡	‡
White	440	3.3	1.0	0.0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

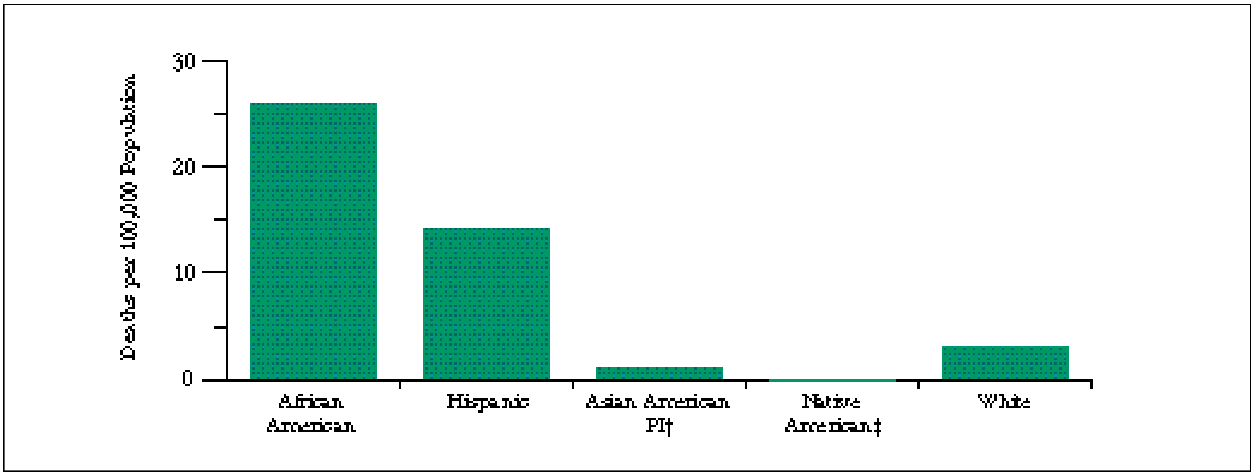
[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

‡ Statistics not calculated for fewer than five events.

Figure 17. Age-Adjusted Death Rates for Homicide, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

†Rate considered unreliable, due to small numbers.

‡Rate not calculated for Native Americans (< 5 events).

INFECTIOUS DISEASES

The declining incidence of infectious disease is the single most important public health achievement of the 20th century. Still, certain groups in the population—very young children, older adults, lower income, and minority persons—are at greater risk of illness and death from infectious diseases, compared to the overall population. This section provides incidence data for those infectious diseases that disproportionately affect minority populations in Connecticut: pneumococcal disease, varicella (chicken pox), tuberculosis, hepatitis B, and AIDS; and the sexually transmitted diseases, chlamydia, gonorrhea, and syphilis.

Invasive Pneumococcal Infection

Each year in the United States**,** *Streptococcus pneumoniae* infections cause an estimated 3,000 cases of meningitis, 50,000 cases of bacteremia, 500,000 cases of pneumonia, and 7 million cases of otitis media (middle ear infection). Persons at increased risk include young children, immunocompromised persons, and the elderly. *S. pneumoniae* was once considered to be routinely susceptible to penicillin. However, resistance of this organism to penicillin and other antimicrobial agents has been increasing since the mid-1980s and complicates the treatment of these infections (Barrett et al., 1998).

Aggregated incidence data for invasive pneumococcal infection in Connecticut for 1995-98 are shown in Table 18 and Figure 18. African Americans had the highest rate, almost three times that of whites in Connecticut, and Hispanics had the second highest rate. The rate for Asian Americans and Pacific Islanders may not be reliable, as only eight cases of invasive pneumococcal disease were reported for the four-year period. Only one case was reported among Native Americans.

Table 18. Invasive Pneumococcal Infection Incidence Rates, Connecticut Residents, 1995-98

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	2,187	22.3		
African American	455	55.4	2.9	296
Hispanic	177	23.3	1.2	30
Asian American PI	8	3.8†	0.2†	(33)†
Native American[e]	1	‡	‡	‡
White	1,546	19.3	1.0	0

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, 1996.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

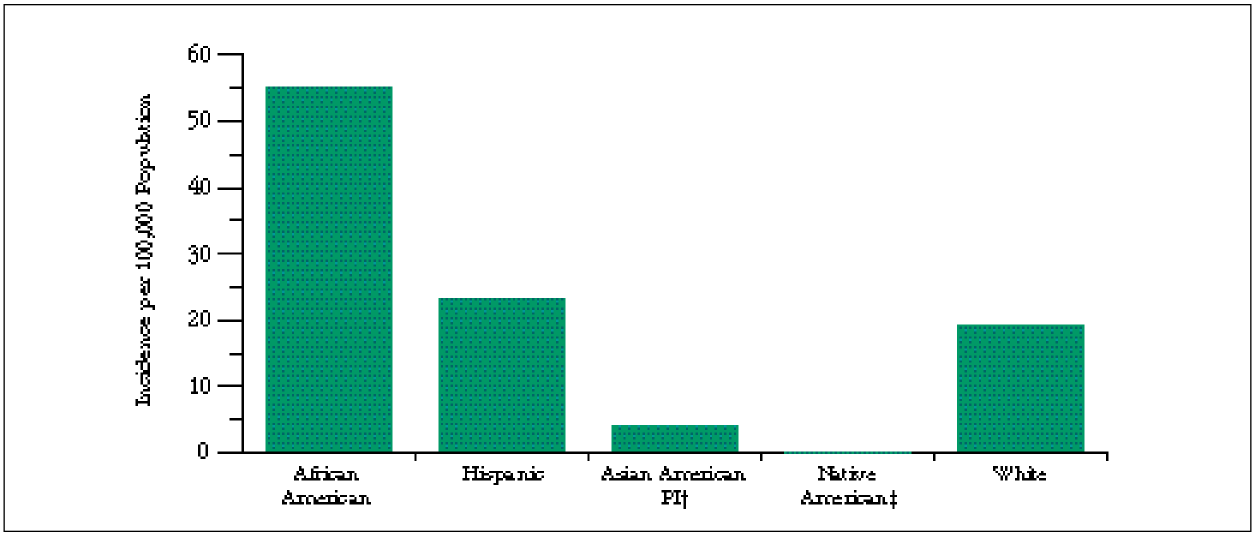
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

‡ Statistics not calculated for fewer than five events.

Figure 18. Invasive Pneumococcal Infection Incidence Rates, Connecticut Residents, 1995-98



Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases
U.S. Census Bureau Population Estimates, 1996.
†Rate considered unreliable due to small numbers.
‡Rate not calculated for Native Americans (< 5 events).

Varicella (Chickenpox)

Infection with varicella-zoster virus causes varicella (chickenpox) and shingles. It has always been of public health concern, because it is transmitted from person-to-person via respiratory and possibly skin contact. Since varicella vaccine was licensed in 1995, varicella has assumed greater public health importance because it is now preventable. In the absence of a vaccine, almost everyone would contract chickenpox at some time in his or her life.

In Connecticut, the impact of severe chickenpox has been monitored through hospital discharge data. Each year from 1991-95, the last five years before the vaccine became widely available, an average of 156 Connecticut residents were hospitalized with chickenpox and 569 with shingles. In addition, an average of two people died each year from chickenpox and another 25 from shingles (Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases, unpublished data).

Subgroups at high risk for hospitalization due to varicella include children (49% of all hospitalizations are children less than 10 years of age), persons who are immunosuppressed (17% of all hospitalizations), and racial and ethnic minorities. Hospitalization rates for varicella for the period 1986 to 1995 are shown in Table 19 and Figure 19. Overall, in the 10-year period before vaccine availability, Hispanics in all age groups were about four times more likely than non-Hispanic whites to be hospitalized with varicella, and African Americans were more than twice as likely. Detailed information was not available for Asian Americans and Pacific Islanders and Native Americans; however, individuals in the "Other Race and Ethnicity" category, which includes both of these groups, were greater than three times more likely than whites to be hospitalized for varicella.

Table 19. Varicella Hospitalization Rates, Connecticut Residents, 1986-95

Race/Ethnicity[a]	Number of Hospitalizations	Rate[b]	Relative Risk[c] (Minority/White)	Excess Events[d]
Total	1,341	4.1		
African American	204	7.8	2.6	126
Hispanic	260	12.2	4.1	196
White	818	3.0	1.0	0
Other Race/Ethnicity	59	10.0	3.3	41

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau, 1990 Census.
Connecticut Hospital Association, CHIME data base.

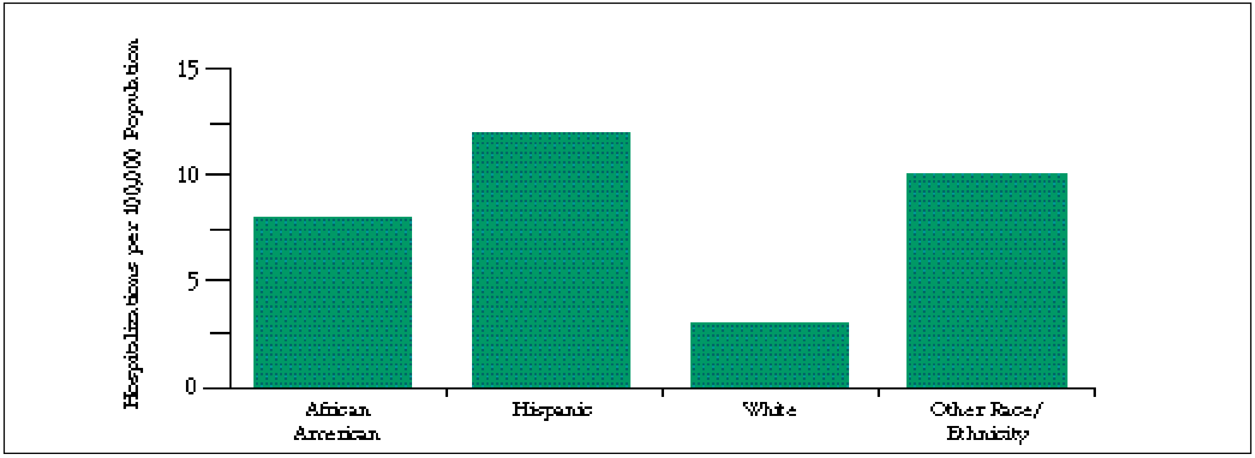
[a] Race/ethnicity groupings include Hispanics of all races, non-Hispanic blacks and non-Hispanic whites.

[b] Rates are per 100,000 persons based on race and ethnicity specific population measures.

[c] "Relative risk" is estimated to be the ratio of minority group rate to the white rate.

[d] "Excess events" are the events that would not have occurred if the minority groups had the same rate as the white population.

Figure 19. Varicella Hospitalization Rates, Connecticut Residents, 1986-95



Sources: Connecticut DPH, BCH, Division of Infectious Diseases.
U.S. Census Bureau, 1990 Census.
Connecticut Hospital Association, CHIME data base.

Tuberculosis

Although tuberculosis (TB) is no longer a leading cause of death in the U.S., it is a leading cause of death worldwide. TB recently had a resurgence in urban areas in the U.S., and it remains an important cause of preventable morbidity in minority groups both nationwide and in Connecticut. Certain subgroups in the population are at particular risk for tuberculosis; persons infected with the human immunodeficiency virus are more susceptible to tuberculosis once exposed to it, and individuals born in high-incidence countries, (e.g., certain immigrant subgroups) are more likely than U.S. born persons to have been exposed to TB in the past (Bloom and Murray, 1992; Brudney and Dobkin, 1991).

In Connecticut, in 1993-97 Asian Americans and Pacific Islanders had the highest incidence of TB, nearly 24 times that of whites (Table 20, Figure 20). Relative to whites, incidence among African Americans and Hispanics was about nine and eight times higher, respectively. An incidence rate was not calculated for Native Americans because only one case was reported.

As of 1997, Connecticut's overall rate of tuberculosis, the lowest ever reported at 3.8 cases per 100,000, still exceeded both the *Healthy Connecticut 2000* objective (no more than 2.8 cases per 100,000) and the national Year 2000 objective (3.5 cases per 100,000). The TB rate for AAPI residents of Connecticut exceeded the state's Year 2000 target for this subgroup by more than a factor of three (no more than 12.0 cases per 100,000). Rates in African Americans and Hispanics exceeded but approached the Connecticut Year 2000 targets (no more than 9 and 5 cases respectively, per 100,000).

Table 20. Tuberculosis Incidence Rates, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk[c] (Minority/White)	Excess Events[d]
Total	706	4.3		
African American	201	14.8	9.3	179
Hispanic[e]	161	13.1	8.2	141
Asian American PI	127	38.3	23.9	122
Native American[f]	1	†	†	†
White	216	1.6	1.0	0

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

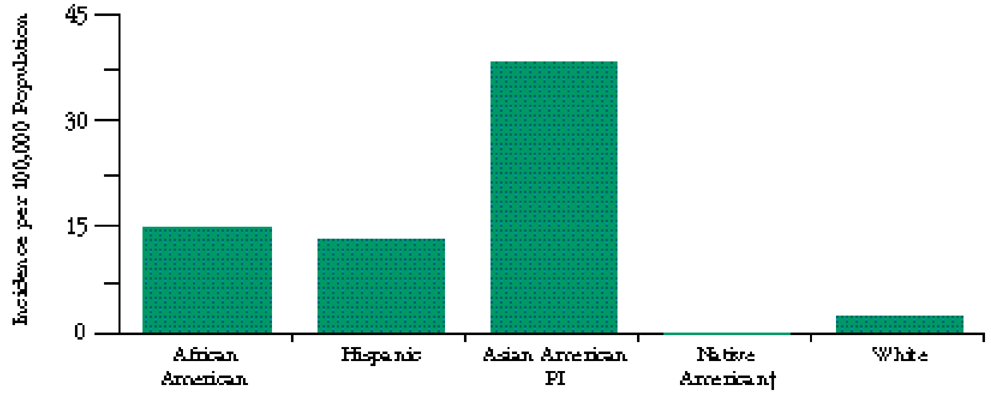
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Statistics not calculated for fewer than five events.

Figure 20. Tuberculosis Incidence Rates, Connecticut Residents, 1993-97



Sources: U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
†Rate not calculated for Native Americans (< 5 events).

Hepatitis B

Acute and chronic illness resulting from hepatitis B infection continues to be a public health concern, with an estimated 140,000 to 320,000 infections occurring each year in the United States. Between 1985 and 1993, incidence decreased by 55%, due to wider use of vaccine among adults and children, reduction of high-risk behavior, and possibly a decrease in the number of susceptible persons. Currently, the groups at highest risk for infection include sexually active adults and injection drug users. Infants and children of first-generation immigrant mothers from parts of the world where hepatitis B infection is endemic, especially Asia, are also at high risk (McQuillan et al., 1999).

In Connecticut, the number of reports of acute hepatitis B infection decreased from 244 cases in 1990 to 57 in 1997. In Connecticut in 1993-97, Hispanics and African Americans had the highest incidence rates, about four times that of whites, followed closely by Asian Americans and Pacific Islanders (Table 21 and Figure 21). Due to small numbers of reported cases among Native Americans, incidence rates were not calculated.

Table 21. Hepatitis B Incidence Rates, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk [c] (Minority/White)	Excess Events[d]
Total	401	2.5		
African American	54	4.1	3.7	40
Hispanic[e]	51	4.2	3.8	38
Asian American PI	13	3.9	3.6	9
Native American[f]	3	†	†	†
White	143	1.1	1.0	0
Missing[g]	137			

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

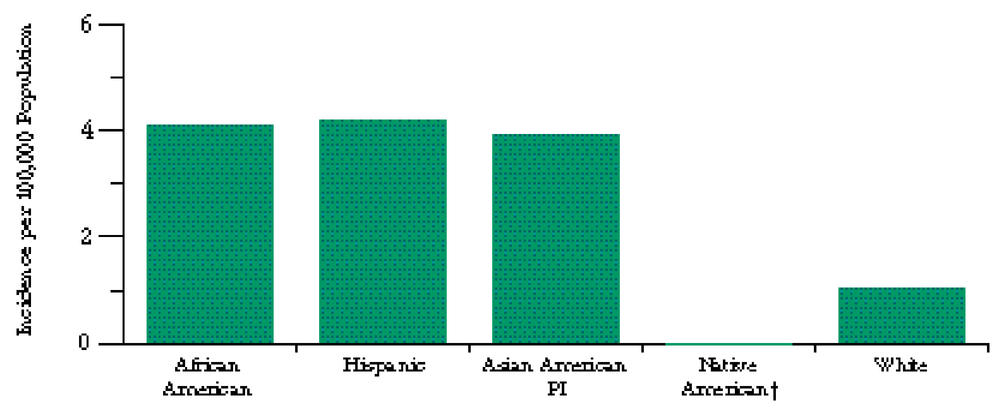
[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

[g] Data on race/ethnicity is missing.

†Statistics not calculated for fewer than five events.

Figure 21. Hepatitis B Incidence Rates, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

† Rate not calculated for Native Americans (<5 events).

Acquired Immunodeficiency Syndrome

Since 1981, when Acquired Immunodeficiency Syndrome (AIDS) was first identified, great progress has been made in understanding its etiologic agent, the human immunodeficiency virus (HIV), the nature of the disease, and its risk factors. Since 1983, when AIDS first became a reportable disease, 9,686 cases of AIDS have been reported in Connecticut. Since 1990, the numbers of persons living with AIDS have progressively increased, and an estimated 5,000 people with AIDS were living in Connecticut in 1997. The annual numbers of diagnosed cases of AIDS and AIDS deaths have declined slowly in Connecticut since 1995, a trend consistent with national findings (Connecticut Department of Public Health, 1998a).

Incidence data for newly diagnosed cases of AIDS in Connecticut for 1993-97 are shown in Table 22 and Figure 22. The highest rates of diagnosed AIDS cases occurred among African Americans, more than 12 times that of whites, followed by Hispanics, who had almost 9 times the rate of whites. Although small numbers of diagnosed AIDS cases were reported among Native Americans, their rate exceeded that of whites by more than a factor of two. Asian Americans and Pacific Islanders had the lowest rate of diagnosed AIDS cases among all groups considered. Connecticut's statewide rate of 34 cases per 100,000 is slightly above the *Healthy Connecticut 2000* objective of no more than 32.9 cases per 100,000 population.

Data on AIDS deaths among Connecticut residents are presented in Table 23 and Figure 23. African Americans had the highest rate of deaths due to AIDS, more than seven times that of whites, followed by Hispanics, with a rate more than four times that of whites. There were no AIDS deaths among Asian Americans and Pacific Islanders and too few AIDS deaths among Native Americans to calculate a meaningful rate.

Table 22. Diagnosed AIDS Incidence Rates, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Diagnosed Cases	Incidence Rate[b]	Relative Risk[c] (Minority/White)	Excess (Fewer) Events[d]
Total	5,554	34.0		
African American	2,258	166.0	12.4	2,075
Hispanic[e]	1,470	119.7	8.9	1,305
Asian American PI	13	3.9	0.3	(32)
Native American[f]	11	36.2	2.7	7
White	1,797	13.4	1.0	0
Missing[g]	5			

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

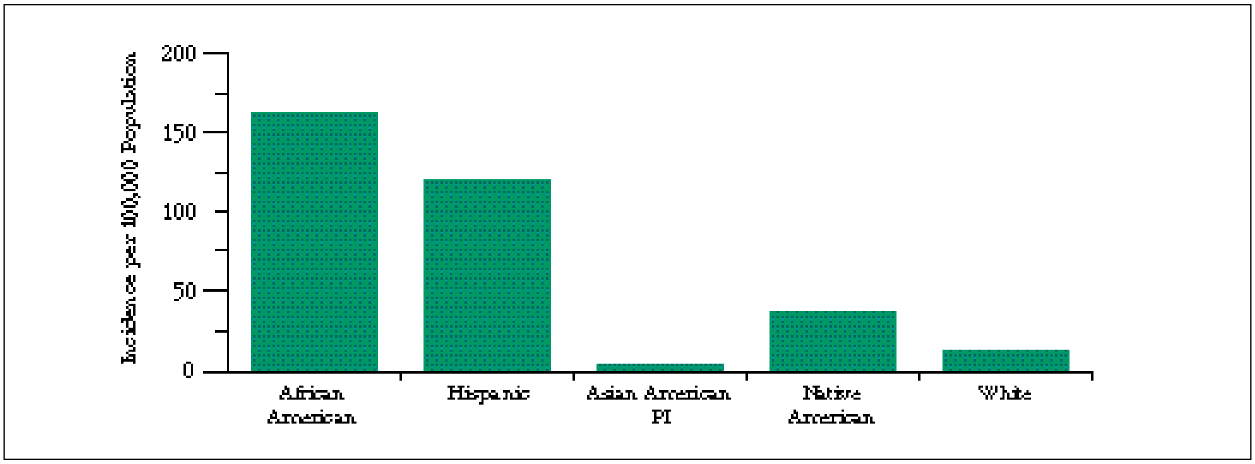
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

[g] Data on race/ethnicity are missing.

Figure 22. Diagnosed AIDS Incidence Rates, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Table 23. Age-Adjusted Death Rates for AIDS, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Deaths	Age-Adjusted Death Rate[b]	Relative Risk [c] (Minority/White)	Excess Deaths[d]
Total	2,280	10.9		
African American	949	54.1	7.6	824
Hispanic[e]	453	32.6	4.6	354
Asian American PI	0	-	-	-
Native American[f]	4	†	†	†
White	1,321	7.1	1.0	0

Sources: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity. Less than 1% of the mortality data are not classified by race or ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 1970 U.S. standard million.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

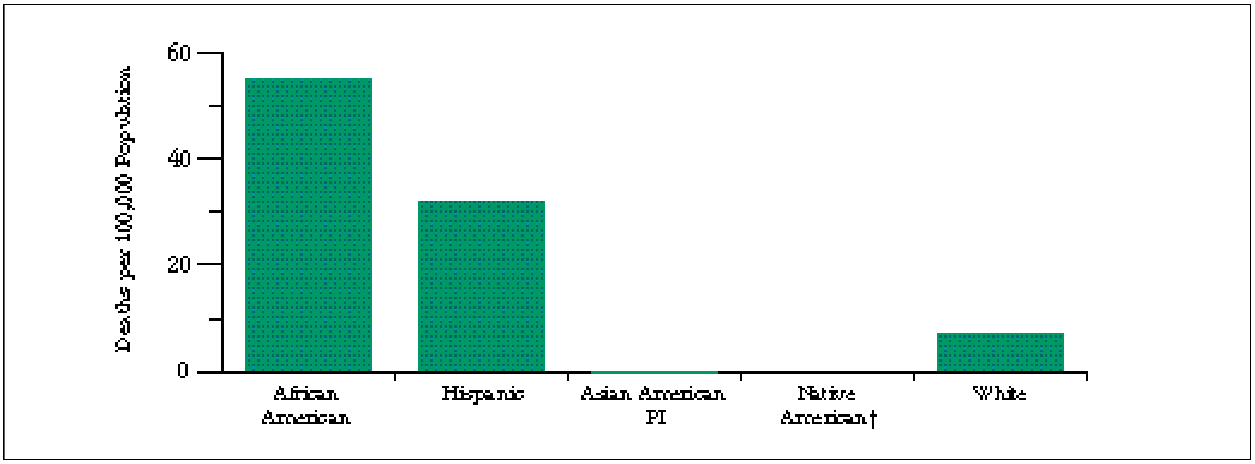
[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† Statistics not calculated for fewer than five events.

Figure 23. Age-Adjusted Death Rates for AIDS, Connecticut Residents, 1993-97



Source: Connecticut Department of Public Health, Vital Records Mortality Files.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
†Rate not calculated for Native Americans (< 5 events).

SEXUALLY TRANSMITTED DISEASES

Sexually transmitted diseases (STDs) can cause serious complications, including infertility, ectopic pregnancy, blindness, fetal and infant deaths, and congenital defects. The presence of STDs can facilitate the transmission of the AIDS virus (Connecticut Department of Public Health, 1998b). Racial and ethnic minority persons are at higher risk for sexually transmitted diseases, experiencing higher rates of disease and disability than the overall population (Piot and Islam, 1994; Ellen et al., 1998; Aral and Wasserheit, 1998; Fox et al., 1998).

Three sexually transmitted diseases, chlamydia, gonorrhea, and syphilis, were systematically monitored in Connecticut during 1993-97. Race and ethnicity were reported for only 66% of chlamydia cases and 74% of gonorrhea cases during this period, thus making it difficult to accurately estimate the incidence of these diseases by race or ethnicity. Furthermore, reporting of race and ethnicity was relatively higher in urban areas, where there are more African Americans and Latinos, and relatively lower in suburban areas, where there are more whites, a situation that could bias the incidence rates toward relatively lower rates for whites than for African American and Latino residents (Connecticut Department of Public Health, 1998b).

Chlamydia

Chlamydia infection, especially when left untreated, leads to pelvic inflammatory disease, a serious condition that disproportionately affects young women 15 to 19 years of age (Washington et al., 1991). Incidence rates for 1993-97 for Connecticut residents are presented in Table 24 and Figure 24. The highest rates of chlamydia infection were reported among African Americans (more than 21 times that of whites), followed by Hispanics (more than 12 times that of whites), and Asian Americans and Pacific Islanders. The incidence rate for Native Americans may not be reliable, because of the small number of cases. Statewide chlamydia incidence rates for the years 1993-97 (207.2 cases per 100,000 persons), though steadily decreasing, still exceeded the *Healthy Connecticut 2000* target of no more than 170 cases per 100,000 persons.

Gonorrhea

Gonorrhea is a leading cause of pelvic inflammatory disease and can result in infertility and ectopic pregnancy (Fox et al., 1998). Gonorrhea incidence rates for 1993-97 in Connecticut were highest for African Americans (more than 57 times that of whites), followed by Hispanics (more than 11 times that of whites) and Native Americans (about 3 times that of whites) (Table 25, Figure 25). The gonorrhea incidence rate for Asian Americans and Pacific Islanders was the lowest of all groups considered.

Connecticut's statewide rate for 1993-97 (122.4 cases per 100,000 population) is above the *Healthy Connecticut 2000* target of no more than 120 cases per 100,000 but below the national *Healthy People 2000* target of 225 cases per 100,000. The rate for African Americans (738.3 cases per 100,000) was well below the *Healthy Connecticut 2000* target of no more than 1,150 cases per 100,000 for this subpopulation and the national target of 1,300 cases per 100,000.

Connecticut hospitalization rates in 1996 for pelvic inflammatory disease (PID) for women aged 15-44 are shown in Table 26 and Figure 26. African Americans had the highest rate, about six times that of whites, followed by Hispanics, with more than three times the rate of whites. Because the number of PID hospitalizations among AAPIs was so small, a rate was not calculated. There were no reported PID hospitalizations for Native Americans.

Primary and Secondary Syphilis

Primary and secondary syphilis incidence rates for 1993-97 for Connecticut residents were highest for African Americans (more than 68 times that of whites) followed by Hispanics (about 17 times that of whites) (Table 27, Figure 27). There were only six reported cases among Asian Americans and Pacific Islanders, so this rate is considered unreliable. There were no reported cases among Native Americans for the five-year period.

Connecticut's statewide rate for 1993-97 (3.1 cases per 100,000 population) was below the *Healthy Connecticut 2000* target of no more than four cases per 100,000. The rate for African Americans (27.3 cases per 100,000) was also lower than the Year 2000 target for this subpopulation (no more than 30 cases per 100,000).

Table 24. Chlamydia Incidence Rates, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk [c] (Minority/White)	Excess Events[d]
Total	33,876	207.2		
African American	10,054	739.2	21.8	9,593
Hispanic[e]	5,241	426.8	12.6	4,825
Asian American PI	142	42.9	1.3	30
Native American[f]	10	32.9†	1.0†	0†
White	4,548	33.9	1.0	0
Missing[g]	13,881			

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

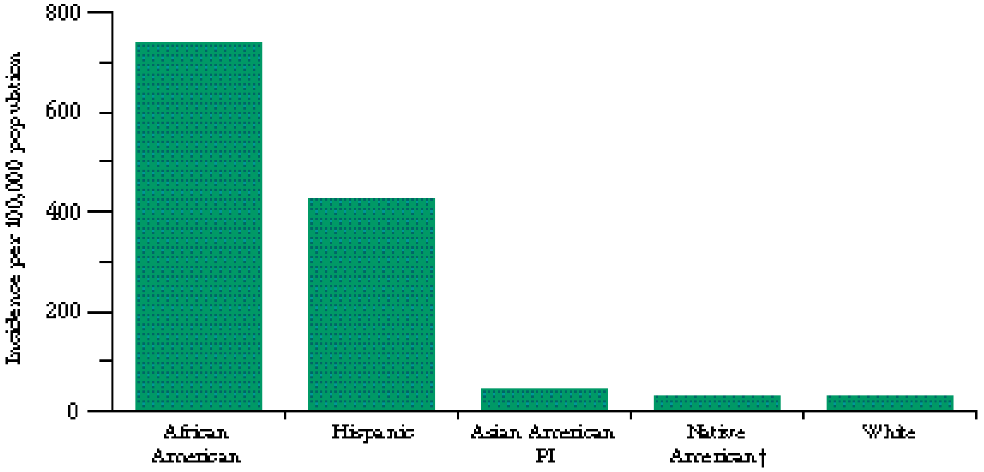
[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

[g] Data on race/ethnicity is missing.

† Figure considered unreliable due to small numbers.

Figure 24. Chlamydia Incidence Rates, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

† Rate considered unreliable due to small numbers.

Table 25. Gonorrhea Incidence Rates, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	20,013	122.4		
African American	10,042	738.3	57.2	9,867
Hispanic[e]	1,876	152.8	11.8	1,718
Asian American PI	40	12.1	0.9	(3)
Native American[f]	13	42.8	3.3	9
White	1,733	12.9	1.0	0
Missing[g]	6,309			

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

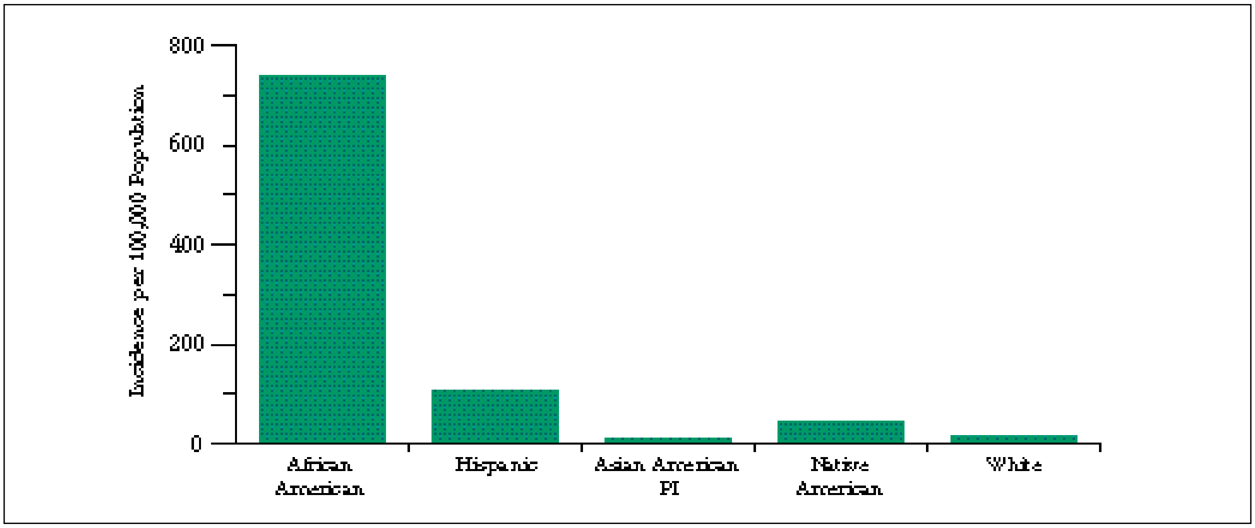
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

[g] Data on race/ethnicity are missing.

Figure 25. Gonorrhea Incidence Rates, Connecticut Residents, 1993-97



Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Disease.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Table 26. Hospitalization Rates for Pelvic Inflammatory Disease, Connecticut Resident Women 15-44 Years of Age, 1996

Race/Ethnicity[a]	Number of Hospitalizations	Rate[b]	Relative Risk [c] (Minority/White)	Excess Events[d]
Total	336	46.6		
African American	113	161.9	6.0	94
Hispanic[e]	59	91.3	3.4	41
Asian American PI	<6†	†	†	†
Native American[f]	0	-	-	-
White	154	27.2	1.0	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 2% of the data are not classified by race and ethnicity.

[b] Rates are per 100,000 women 15-44 years of age based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

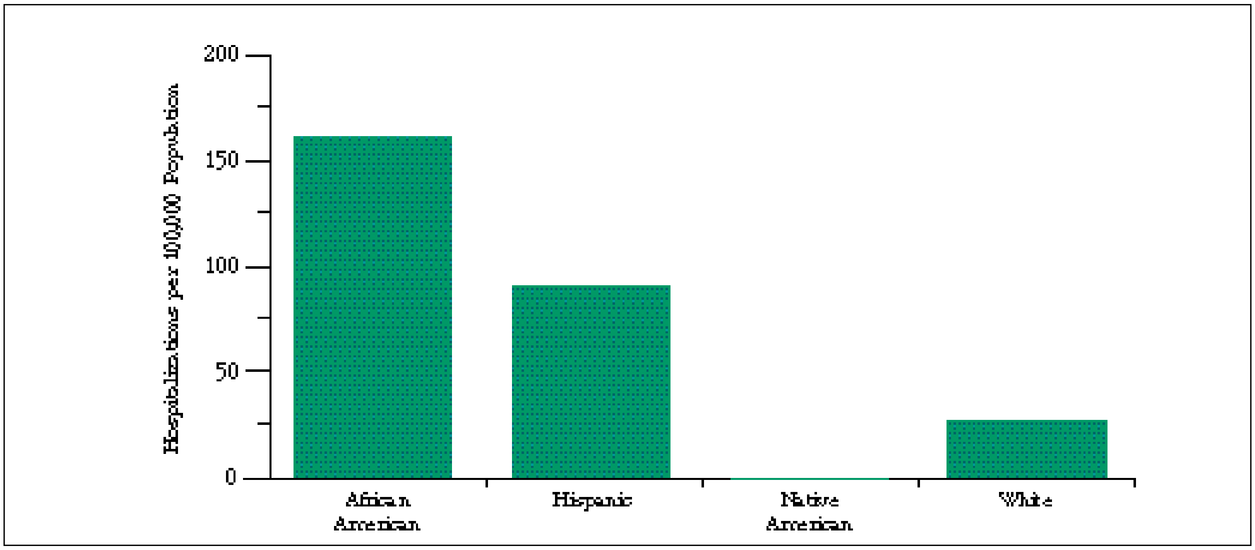
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

† OHCA's confidentiality regulations prohibit disclosure of data based on fewer than six events.

Figure 26. Hospitalization Rates for Pelvic Inflammatory Disease, Connecticut Resident Women 15-44 Years of Age, 1996



Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Table 27. Incidence Rates for Primary and Secondary Syphilis, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number of Reported Cases	Incidence Rate[b]	Relative Risk [c] (Minority/White)	Excess Events[d]
Total	514	3.1		
African American	371	27.3	68.3	366
Hispanic[e]	85	6.9	17.3	80
Asian American PI	6†	1.8†	4.5†	5†
Native American[f]	0	-	-	-
White	52	0.4	1.0	0

Sources: Connecticut Department of Public Health, Bureau of Community Health, Division of Infectious Diseases.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

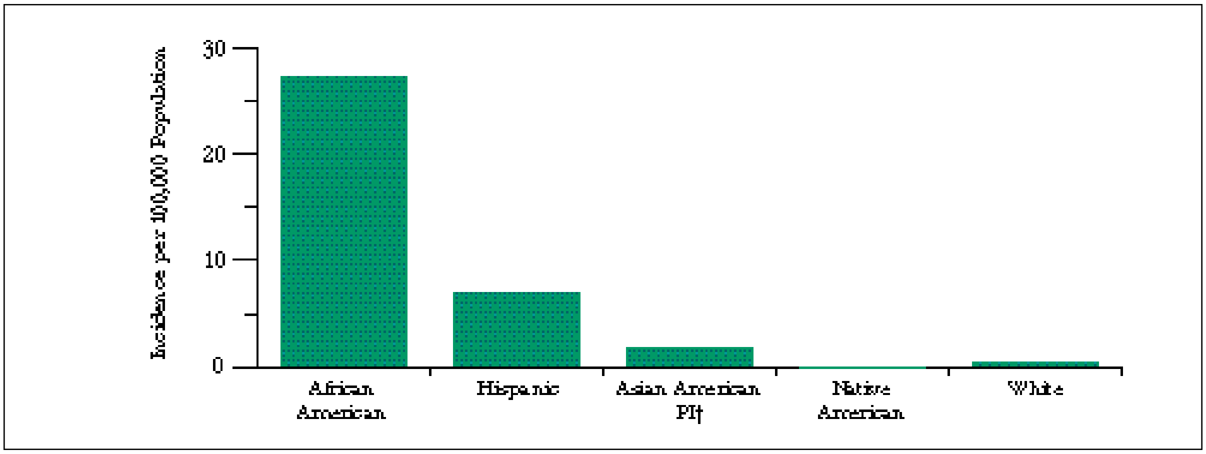
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

[e] Hispanic persons may be of any race.

[f] Native American includes American Indian and Alaska Native.

†Figure considered unreliable due to small numbers.

Figure 27. Incidence Rates for Primary and Secondary Syphilis, Connecticut Residents, 1993-97



Sources: Connecticut DPH, Bureau of Community Health, Division of Infectious Disease.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
†Figure considered unreliable due to small numbers.

PREGNANCY AND CHILDBIRTH INDICATORS

Infant Mortality

The infant mortality rate (IMR) represents the number of deaths among infants under one year of age per 1,000 live births. It is associated with other factors, such as maternal health, socioeconomic conditions, and quality of and access to health care (Centers for Disease Control and Prevention, 1995). Although infant mortality in the U.S. has declined over the past several decades and is at a record low, the U.S. still ranks 24th in infant mortality compared to other industrialized nations.

Pooled data on Connecticut resident infant deaths by race and ethnicity for 1993 to 1995 are shown in Table 28 and Figure 28. IMRs varied substantially among and within racial and ethnic groups with rates among African Americans, Native Americans, and Hispanics all being above the state value of 7.2 deaths per 1,000 live births. The infant death rate for Asian Americans and Pacific Islanders was slightly below the state value.

The greatest disparity was for African Americans and Native Americans, whose infant death rates were more than double that of white infants. The rate for Native Americans may not be reliable, however, due to small numbers. Excess infant deaths were highest for African Americans, followed by Hispanics and AAPIs.

Connecticut's 1993-95 rate is slightly higher than the Year 2000 national health objective for infant morality (7.0 per 1,000 population). It also exceeds the *Healthy Connecticut 2000* objective of no more than 5.5 infant deaths per 1,000 live births. Special nationwide population targets have been set for African Americans (no more than 11.0 infant deaths per 1,000 live births), Native Americans (no more than 6.5 infant deaths per 1,000 live births), and Hispanics (no more than 8.0 infant deaths per 1,000 live births). Rates for groups in Connecticut are well above their targets.

The IMRs for Asian Americans and Pacific Islanders and Hispanics in Connecticut may not reflect the ethnic diversity within these two groups. For example, nationwide among Hispanics, infant mortality per 1,000 live births ranged from 5.3 for Cubans to 8.9 for Puerto Ricans. Among AAPIs, infant mortality rates ranged from 3.8 for persons of Chinese origin to 6.5 for Hawaiians (National Center for Health Statistics, 1998). In Connecticut for the years 1993-95, the infant mortality rate for Cubans, Mexicans, and Central and South Americans was 5.7 compared to 9.5 per 1,000 live births for Puerto Ricans. Numbers of infant deaths among the various Asian ethnic groups in Connecticut during 1993-95 were not large enough for rate comparisons (Connecticut Department of Public Health, unpublished data).

Table 28. Infant Death Rates, Connecticut Residents, 1993-95

Race/Ethnicity[a]	Number	Rate[b]	Relative Risk [c] (Minority/White)	Excess Deaths[d]
Total	983	7.2		
African American	252	15.1	2.6	155
Hispanic[e]	148	9.1	1.6	54
Asian American PI	24	7.0	1.2	4
Native American[f]	5	13.7†	2.4†	3†
White	657	5.8	1.0	0
Missing or Not Classified	45			

Source: Connecticut Department of Public Health, Vital Records Birth Cohort File.

[a] Racial groupings (African American, Asian American PI, Native American, White) include persons of Hispanic ethnicity.

[b] Infant death rates are per 1,000 live births based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

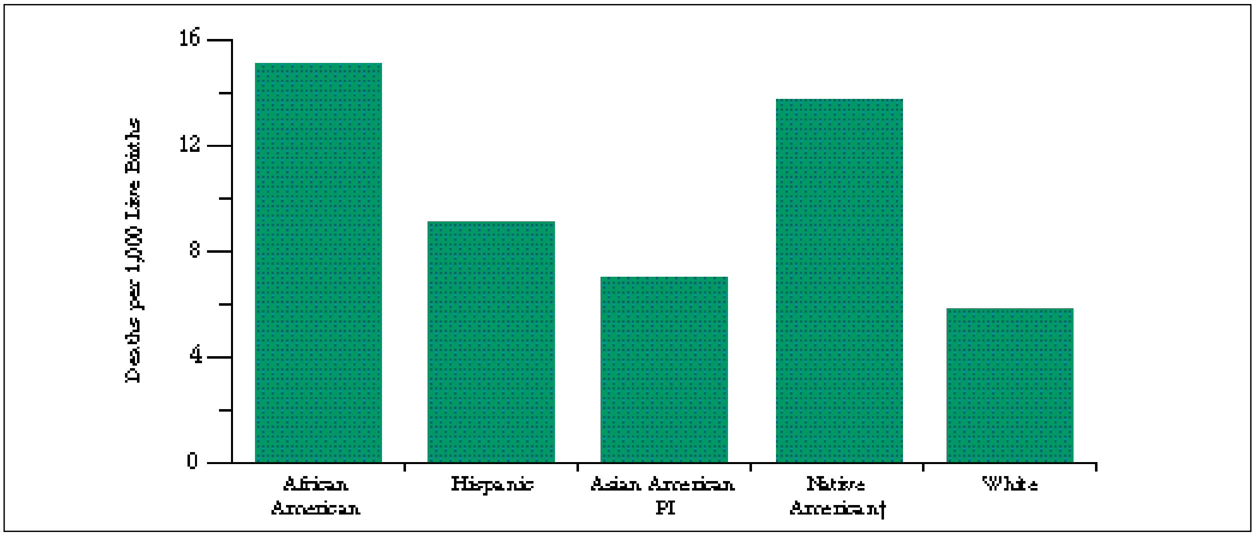
[d] "Excess deaths" are the deaths that would not have occurred if the minority group had the same rate as the white population.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

Figure 28. Infant Death Rates, Connecticut Residents, 1993-95



Source: Connecticut Department of Public Health, Vital Records Birth Cohort File.
† Rate is considered unreliable due to small numbers.

Low Birthweight Infants

Compared to normal birthweight infants, low birthweight infants (< 2,500 grams) are at much higher risk of death and long-term illness and disability, such as mental retardation, cerebral palsy, and vision and hearing disabilities (National Center for Health Statistics, 1998). Low birthweight infants account for less than 7% of all live births in the U.S., but they account for almost 60% of all infant deaths. In Connecticut from 1993-95, low birthweight infants accounted for about 7% of infant births and 68% of all infant deaths (Connecticut Department of Public Health, unpublished data). Both the *Healthy People 2000* and the *Healthy Connecticut 2000* objectives for low birthweight infants are set at no more than 5% of total births.

For the years 1993 to 1997, African Americans had the highest rate of low birthweight in Connecticut (more than double that of whites) followed by Native Americans, Hispanics, and Asian Americans and Pacific Islanders (Table 29, Figure 29). The number of excess low birthweight births relative to whites was highest among African Americans, followed by Hispanics, Asian Americans and Pacific Islanders, and Native Americans.

Table 29. Percent of Low Birthweight Infants,[a] Connecticut Residents, 1993-97

Race/Ethnicity[b]	Number	Percent of Total Births[c]	Relative Risk [d] (Minority/White)	Excess Events[e]
Total	14,718	7.0		
African American	3,083	12.6	2.2	1,664
Hispanic[f]	2,402	8.7	1.5	801
Asian American PI	466	8.2	1.4	136
Native American[g]	43	10.4	1.8	19
White	8,645	5.8	1.0	0
Missing or Not Classified	79			

Source: Connecticut Department of Public Health, Vital Records Birth Files.

[a] Low birthweight infants weigh less than 2,500 grams at birth.

[b] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[c] Percentages based on live births excluding unknown birthweight.

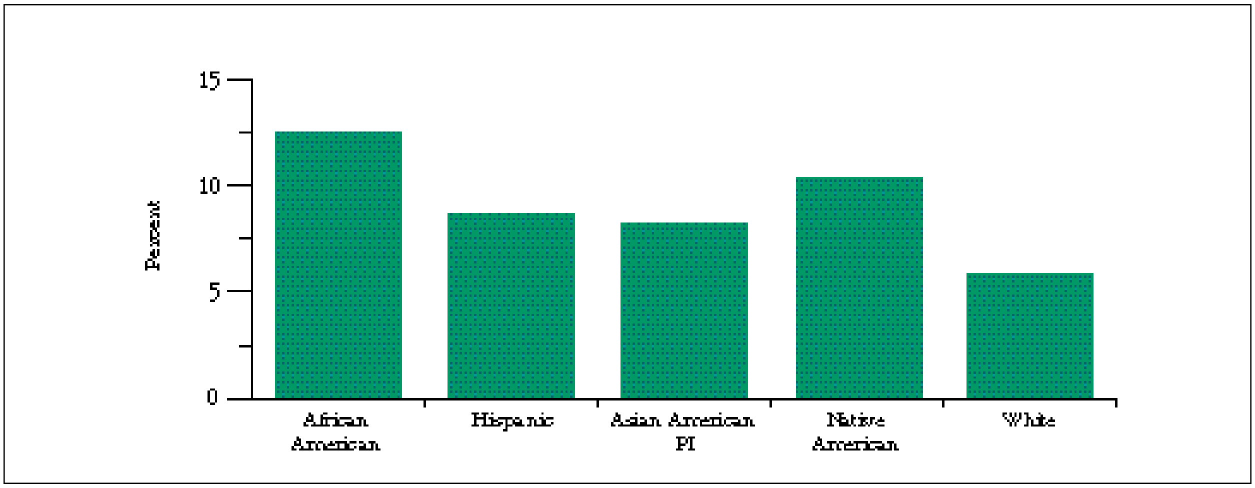
[d] "Relative risk" is estimated to be the ratio of the minority group percent to the white percent.

[e] "Excess events" are the events that would not have occurred if the minority group had the same percentage as the white population.

[f] Hispanic category includes any race.

[g] Native American includes American Indian and Alaska Native.

Figure 29. Percent of Low Birthweight Infants, Connecticut Residents, 1993-97



Source: Connecticut Department of Public Health, Vital Records Birth Files.

Births to Mothers Under 18 Years of Age

Adolescent childbearing in the United States is associated with long-term difficulties for the mother, her child, and society. These consequences are often attributable to poverty, low educational levels, and other adverse socioeconomic circumstances that frequently accompany early childbearing. Infants born to teen mothers are at higher risk of having adverse birth outcomes (low birthweight and infant mortality) and are more likely to live in poverty than are children of older mothers. For the mothers, giving birth during adolescence is associated with limited educational attainment, which in turn can reduce future employment prospects and earning potential (National Center for Health Statistics, 1998).

Live births to females under 18 years of age in Connecticut represented 3.5% of all births from 1993-97. Among racial and ethnic subgroups in the population (Table 30, Figure 30), Hispanics had the highest percentage of births to mothers under 18, more than seven times that of whites, followed by African Americans, and Native Americans, both with more than five times the percentage of births to whites. AAPIs had the lowest percentage of births to mothers under 18 of all the groups considered.

Table 30. Percent of Births to Mothers under 18 Years of Age, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number	Percent of Total Births[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	7,921	3.5		
African American	2,127	8.7	5.8	1,760
Hispanic[e]	3,048	11.1	7.4	2,636
Asian American PI	56	1.0	0.7	(28)
Native American[f]	32	7.8	5.2	26
White	2,218	1.5	1.0	0
Missing or Not Classified	440			

Source: Connecticut DPH, Vital Records Birth Files.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Percentages based on live births excluding unknown age of mother.

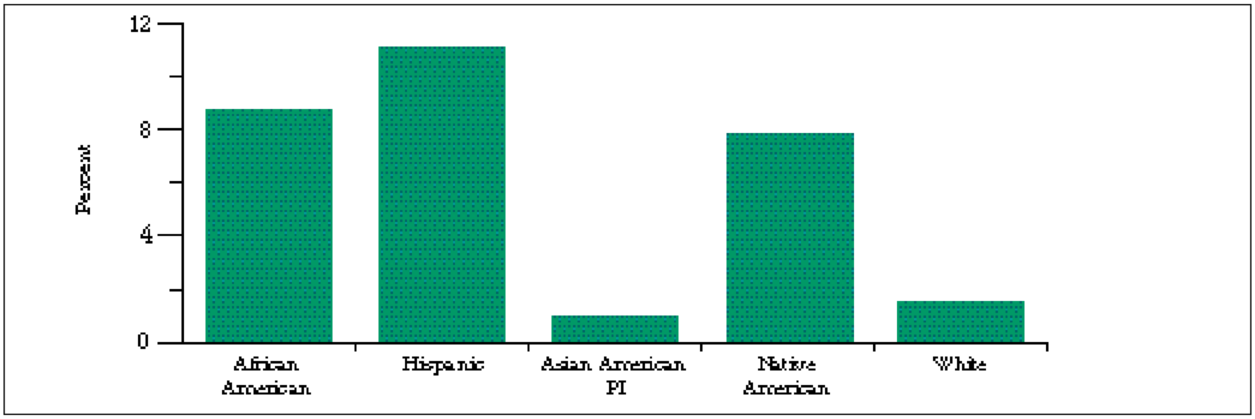
[c] "Relative risk" is estimated to be the ratio of the minority group percent to the white percent.

[d] "Excess events" are the events that would not have occurred if the minority group had the same percentage as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

Figure 30. Percent of Births to Mothers Under 18 Years of Age, Connecticut Residents, 1993-97



Source: Connecticut Department of Public Health, Vital Records Birth Files.

Prenatal Care

Prenatal care initiated within the first three months of pregnancy allows for early identification of risks and appropriate interventions. Late or no prenatal care, defined as no care within the first trimester of pregnancy, is associated with poor birth outcomes. It is also an indicator of problems with access to care (National Center for Health Statistics, 1998).

In Connecticut from 1993-97, Native American women had the highest percentage of no prenatal care in the first trimester of pregnancy, more than triple that of whites, followed by Hispanics and African Americans, and Asian Americans and Pacific Islanders (Table 31, Figure 31). The excess number of births to mothers with late or no prenatal care was highest among Hispanics, followed by African Americans, AAPIs, and Native Americans. For all groups except whites, percentages exceeded the *Healthy Connecticut 2000* goal of no more than 10%.

Table 31. Percent of Women Receiving Late or No Prenatal Care, Connecticut Residents, 1993-97

Race/Ethnicity[a]	Number	Percent without Care in the First Trimester[b]	Relative Risk [c] (Minority/White)	Excess Events[d]
Total	24,615	11.9		
African American	5,024	22.8	2.9	3,283
Hispanic[e]	5,612	23.2	2.9	3,701
Asian American PI	718	13.8	1.8	307
Native American[f]	104	26.2	3.3	73
White	11,346	7.9	1.0	0
Missing or Not Classified	1,811			

Source: Connecticut DPH, Vital Records Birth Files.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity.

[b] Percentages based on live births excluding unknown care.

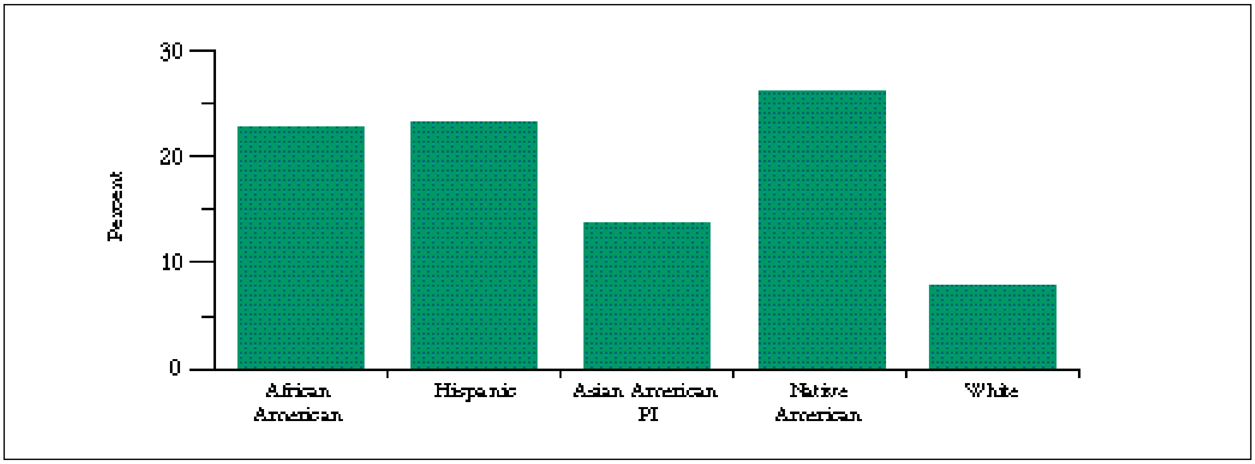
[c] "Relative risk" is estimated to be the ratio of the minority group percent to the white percent.

[d] "Excess events" are the events that would not have occurred if the minority group had the same percentage as the white population.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

Figure 31. Percent of Women Receiving Late or No Prenatal Care, Connecticut Residents, 1993-97



Source: Connecticut Department of Public Health, Vital Records Birth Files.

ENVIRONMENTAL HEALTH

Federal and State Initiatives

Environmental health risks are greatest in low-income, urban, minority communities. Such risks arise from a community's proximity to industrial facilities and waste disposal sites, and the consequent potential exposure of the community to toxic substances through air, soil, or water contamination. Asthma and other chronic respiratory diseases are exacerbated by factors like air pollution from highway traffic and industrial emissions, and by poor indoor air quality caused by dust mites, household molds, and pesticides.

In 1994, President Clinton issued Executive Order 12898 establishing "environmental justice" as a national priority. The order focused federal attention on minority and low-income populations with regard to environmental and human health conditions, and aimed to provide environmental protection for all communities. This effort directed all federal agencies with a public health or environmental mission to make environmental justice a central part of their policies and activities (U.S. Environmental Protection Agency, 1998).

The U.S. Environmental Protection Agency (EPA) New England Region Office works collaboratively with the State of Connecticut on community-based projects through its Urban Environmental Initiative Program (U.S. EPA Region I communiqué, 1998). State initiatives include the environmental-equity program, founded in 1993 as a result of statewide evidence that low-income minority groups are exposed to higher than average concentrations of environmental pollutants (Pestana, 1994). A preliminary study by the Connecticut Department of Environmental Protection's Waste Management Bureau examined the percentages of minority and poor populations in Connecticut towns with respect to ten types of environmental pollution sources—hazardous waste sites, solid waste landfills, and industrial air emission sources (Connecticut Department of Environmental Protection, Waste Management Bureau, 1994). It found that for nine out of ten categories of source pollutants, Connecticut residents who are members of minority groups and those living below the federal poverty level lived in towns with 15% to 220% more source pollutants than did whites or persons living above the federal poverty line. It was recently reported that the majority of hospital discharges for pediatric lead poisoning occur among African American and Hispanic children who are poor (Connecticut Office of Health Care Access and Connecticut Department of Public Health, 1998). In the following section, data are presented on two health hazards that result from poor quality living environments—lead poisoning and asthma—and are of particular concern for low-income minority communities in Connecticut.

Lead Poisoning

Elevated blood lead levels in young children (10 micrograms of lead or greater per deciliter of blood [≥10µg/dL]) can result in lowered intelligence, learning disabilities, and behavioral problems. Factors contributing to high blood lead levels in young children are contaminated soil, peeling lead paint, and lead pipes in household plumbing (National Center for Health Statistics, 1998).

Although the sale of lead-based paint for home use was banned in 1978, homes built earlier, particularly before 1950, contain high concentrations of lead-based paint in interiors and exteriors. About 35% of the dwelling units in Connecticut were constructed before 1950 (U.S. Bureau of the Census, 1990). Compared with other parts of Connecticut, urban areas contain a larger proportion of older dwellings and are more likely to contain lead-based paint in poor condition, particularly in low-income neighborhoods. More than half of all residential dwellings in Connecticut's three largest cities—Bridgeport, New Haven, and Hartford—were built prior to 1950. These three cities are also home to 51% of African Americans, 46% of Hispanics, 17% of Asian Americans and Pacific Islanders, and 19% of Native Americans who reside in Connecticut, compared to 7% of Connecticut's white residents (U.S. Bureau of the Census, 1990).

Nationwide, children in poor families are more likely than others to live in older, sub-standard housing containing lead paint (Lanphear et al., 1996). They may also be exposed to higher levels of lead contaminated soil. It was estimated that children living in families below the poverty level were about 3.5 times more likely than those above poverty to have elevated blood lead levels (Lin-Fu, 1992).

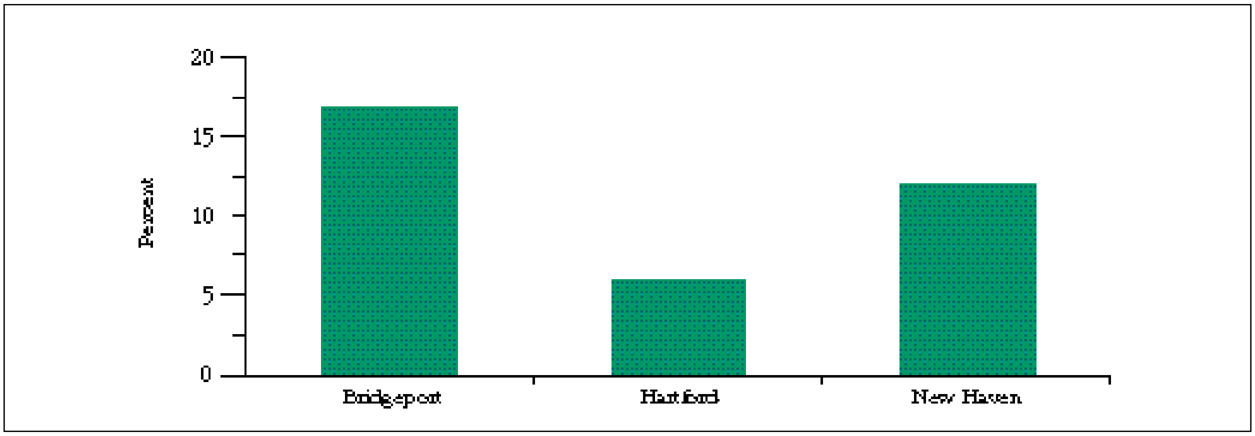
Table 32 and Figure 32 display data on children under six screened in 1998 for elevated blood lead levels in Bridgeport, Hartford, and New Haven. Information on children's race and ethnicity is not available; however, minority children are over-represented in these cities. Children in Bridgeport, Hartford, and New Haven were more likely to be screened for blood lead levels compared to all children in the state and were also much more likely to show elevated blood lead levels. Nearly 17% of the children in Bridgeport who were screened, about 12% in New Haven, and almost 6% in Hartford had blood lead levels of ≥ 10µg/dL compared to less than 5% of children in this age group statewide.

Table 32. Percent of Screened[a] Children with Elevated Blood Lead Levels (≥10µg/dL), Bridgeport, Hartford, and New Haven, CT, 1998

Location	Number of Children under Age 6	Number (Percent) of Children Screened[a]	Number (Percent) of Screened[a] Children with a Validated Blood Lead Level ≥10µg/dL
Connecticut	272,294	56,339 (20.6)	2,483 (4.4)
Bridgeport	14,013	3,976 (28.3)	668 (16.8)
Hartford	14,245	6,646 (46.6)	390 (5.9)
New Haven	12,076	4,460 (36.9)	545 (12.2)

Sources: 1990 U.S. Census (children under 6 years of age).
Sources: Connecticut Department of Public Health, Bureau of Community Health, Childhood Lead Poisoning Prevention Program.
[a] "Screened" indicates children who received either a venipuncture or finger-stick test.

Figure 32. Percent of Screened[a] Children with Elevated Blood Lead Levels (>10µg/dL), Bridgeport, Hartford, and New Haven, CT, 1998



Sources: 1990 U.S. Census (children under 6 years of age).
Sources: Connecticut Department of Public Health, Bureau of Community Health, Childhood Lead Poisoning Prevention Program.
[a] "Screened" indicates children who received either a venipuncture or finger-stick test.

Asthma

Asthma is a chronic inflammatory disorder of the lungs characterized by episodic and reversible symptoms of airflow obstruction (National Institutes of Health, 1997). Self-reported asthma prevalence in the U.S. increased 75% from 1980 to 1994, with about 17 million people estimated to have the condition in 1998. Self-reported asthma cases in Connecticut in 1998 numbered 215,900 with an estimated prevalence of 6.6%, which is comparable to the national prevalence of 6.4% (Centers for Disease Control and Prevention, 1998).

Among children under 12 years of age nationwide, asthma prevalence is estimated at 5 to 9% and is highest among inner-city African American children. These higher asthma rates have been attributed to factors common to poor indoor and outdoor environments, including exposure to cockroaches; potential allergens, such as dust mites and molds; air pollution; industrial emissions; and reduced access to or inadequate use of primary care, which may necessitate emergency department visits and hospitalizations for asthma (Farber, 1997).

Rates of emergency department (ED) visits with a primary diagnosis of asthma for children 14 years of age or younger in the two year period 1995-96 are shown in Table 33 and Figure 33. Forty-one percent of the cases for this indicator were missing information on patient race and ethnicity. Rates reported in the table, therefore, may understate the estimates for one or more groups.

Hispanics had the highest rate of asthma emergency department visits, more than nine times that of whites, followed by African Americans, with a rate nearly four times that of whites. AAPIs had a rate less than half that of whites. An asthma ED visit rate was not calculated for Native Americans due to an insufficient number of cases.

Asthma hospitalization data for 1996 for Connecticut residents of all ages are displayed in Table 34 and Figure 34. Hispanics had the highest rate of asthma hospitalizations followed by African Americans, both with rates more than four times that of whites. Asian Americans and Pacific Islanders had the lowest rate of asthma hospitalizations among all the groups considered—about one-third that of whites. A rate was not calculated for Native Americans because of small numbers.

Table 33. Rates of Emergency Department Visits with A Primary Diagnosis of Asthma, Connecticut Resident Children 0 to 14 Years of Age, 1995-96

Race/Ethnicity[a]	Number of Visits	Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	12,451	931.4		
African American	1,334	923.3	3.8	987
Hispanic[e]	3,544	2,290.4	9.5	3,172
Asian American PI	34	96.1	0.4	(51)
Native American[f]	<6†	†	†	†
White	2,407	240.4	1.0	0

Sources: Connecticut Hospital Information Management Exchange Inc. (CHIME), Wallingford, CT.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Forty-one percent of the data are not classified by race and ethnicity.

[b] Rates are per 100,000 children ages 0 to 14 based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

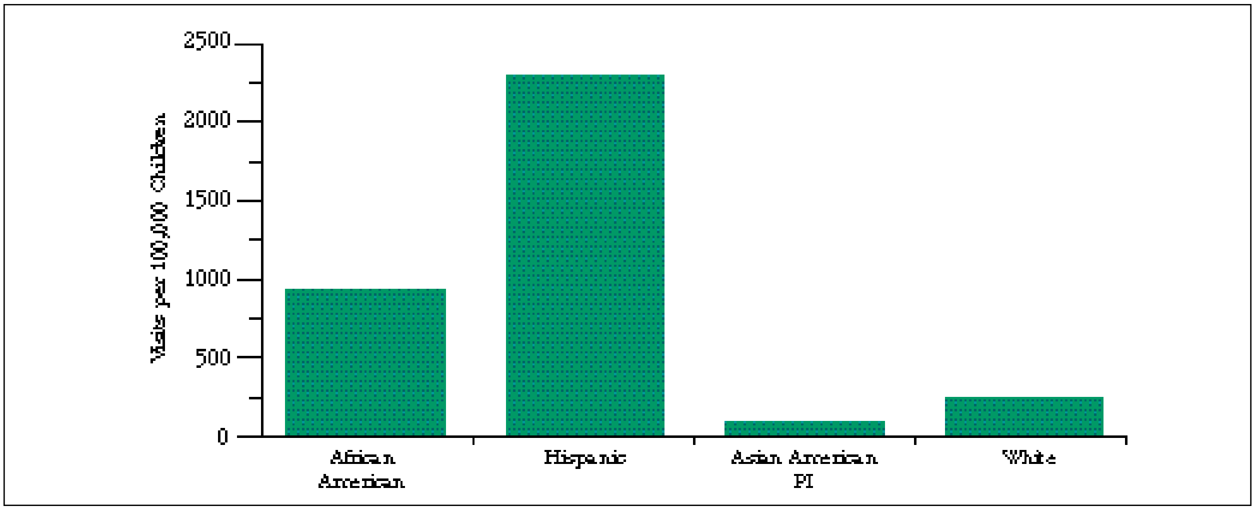
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

† CHIME policies prohibit the disclosure of data based on fewer than six events.

Figure 33. Rates of Emergency Department Visits with A Primary Diagnosis of Asthma, Connecticut Resident Children 0 to 14 Years of Age, 1995-96



Source: Connecticut Hospital Information Management Exchange Inc. (CHIME), Wallingford, CT.
U.S. Census Bureau Population Estimates, PE-65. 9/4/98.

Table 34. Asthma Hospitalization Rates, Connecticut Residents, 1996

Race/Ethnicity[a]	Number of Hospitalizations	Rate[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	4,440	135.9		
African American	1,041	381.2	4.4	806
Hispanic[e]	1,038	411.9	4.8	822
Asian American PI	19	27.5	0.3	(40)
Native American[f]	<6†	†	†	†
White	2,290	85.9	1.0	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 2% of the data are not classified by race and ethnicity.

[b] Rates are per 100,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

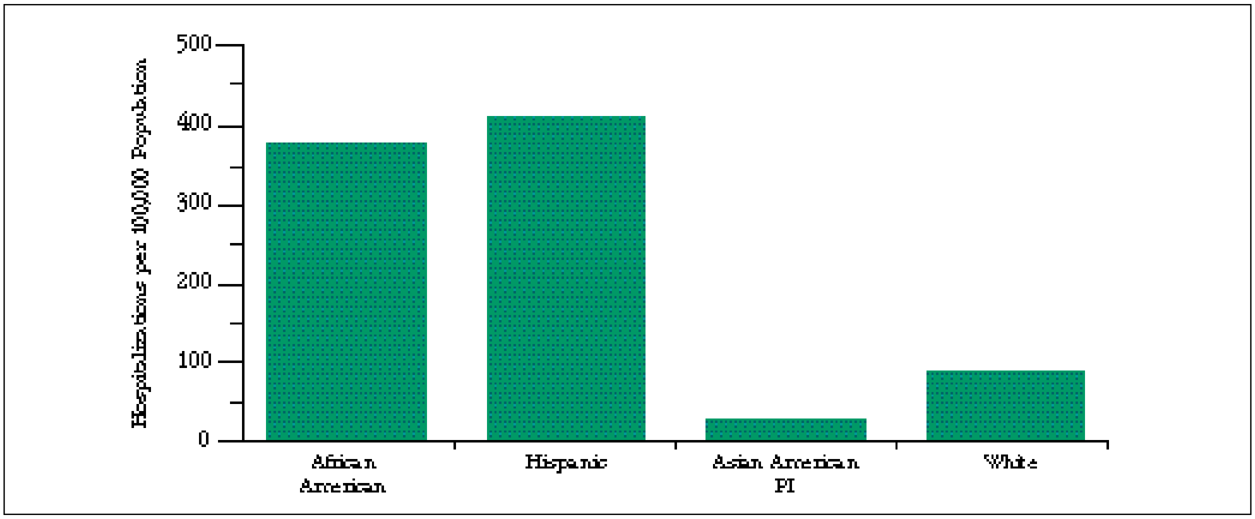
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Numbers in parentheses indicate fewer events.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

† OHCA's confidentiality regulations prohibit disclosure of data based on fewer than six events.

Figure 34. Asthma Hospitalization Rates, Connecticut Residents, 1996



Source: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

ACCESS TO HEALTH CARE

Avoidable Hospitalizations

Appropriate and timely primary care can prevent hospitalizations for such chronic conditions as asthma, uncontrolled hypertension, and diabetes. Likewise, effective outpatient medical care for acute conditions such as pneumonia and kidney or urinary tract infections can prevent complications requiring hospitalization. Typically, hospital admissions for the above types of conditions, termed “avoidable hospitalizations,” are higher in poor neighborhoods than in wealthier ones, suggesting that there are barriers to adequate primary care in these areas. The disparity in such admissions is particularly wide for asthma and bacterial pneumonia. Avoidable hospitalizations are a useful indicator for monitoring access to care (Pappas et al., 1997).

In 1996 among Connecticut residents under age 65, African Americans had the highest rate of avoidable hospitalizations, more than double that of whites, followed by Hispanics (Table 35 and Figure 35). American Indians and Asian Americans and Pacific Islanders had the lowest rates of avoidable hospitalizations among all groups considered.

Table 35. Avoidable Hospitalization[a] Rates, Connecticut Residents Under 65 Years of Age, 1996

Race/Ethnicity[b]	Number of Hospitalizations	Incidence Rate[c]	Relative Risk[d] (Minority/White)	Excess Events[e]
Total	17,925	6.4		
African American	3,182	12.6	2.3	1,793
Hispanic[f]	2,130	8.8	1.6	799
Asian American PI	106	1.6	0.3	(258)
Native American[g]	20	3.6	0.7	(11)
White	12,223	5.5	1.0	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] "Avoidable hospitalizations" include: bacterial pneumonia, cellulitis, congestive heart failure, dehydration, angina, uncontrolled diabetes, kidney/urinary infections, COPD, convulsions, ruptured appendix, gastroenteritis, perforated or bleeding ulcer, epilepsy, severe ENT infections, asthma, and uncontrolled hypertension.

[b] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 2% of the data are not classified by race and ethnicity.

[c] Rates are per 1,000 persons based on race and ethnicity specific population estimates.

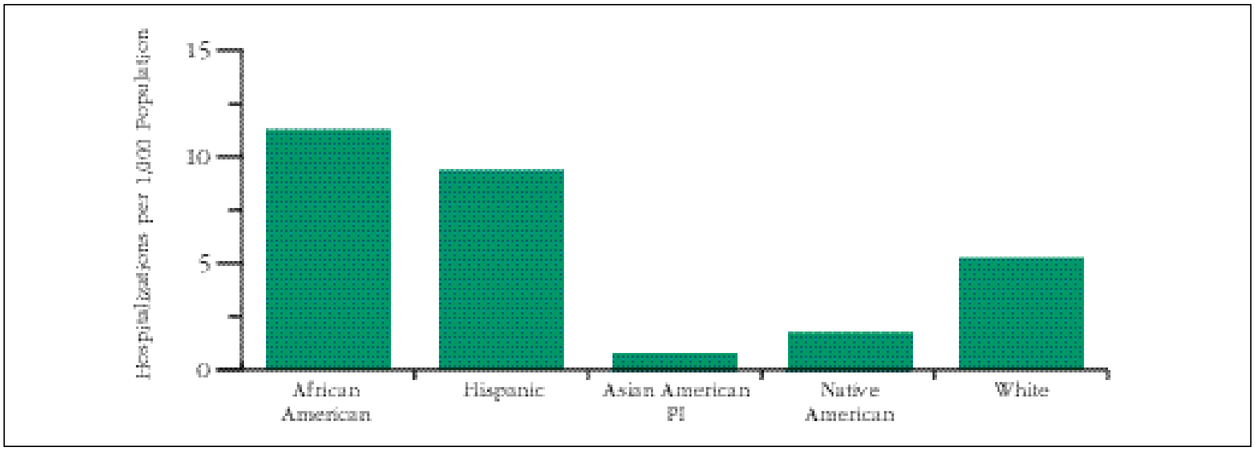
[d] "Relative risk" is estimated to be the ratio of the minority group rate to the white rate.

[e] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population.

[f] Hispanic category includes any race.

[g] Native American includes American Indian and Alaska Native.

Figure 35. Avoidable Hospitalization Rates, Connecticut Residents Under 65 Years of Age, 1996



Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base, 1996.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

Surgery Rates for Heart Disease

Heart disease is the number one cause of deaths for adults in both the U.S. and Connecticut. Two surgical interventions—coronary artery bypass graft surgery (bypass surgery) and percutaneous transluminal coronary angioplasty (angioplasty)—are commonly used to treat coronary artery disease.

Nationally, the use of bypass surgery and angioplasty has increased for both African American and white persons, but there remains a sizeable gap between surgery rates for the two groups. For instance, the cardiac surgery rate for black Medicare enrollees is about one-third that of white Medicare enrollees. Differences in insurance coverage, therefore, can only be a partial explanation of the difference. Nationwide, people living in poor neighborhoods are both less likely to receive primary health care for heart problems and less likely to have heart surgery compared to people in more affluent neighborhoods (Center for Health Economics Research, 1993).

Increasingly, some bypass surgery has been deemed medically unnecessary. This viewpoint is supported by experiences in other developed countries, which have much lower usage rates for these procedures with no apparent decline in the overall health status. This fact does not explain the gap between black and white rates, however, and also does not explain the large gaps observed for angioplasty. It is likely that whites and high-income people are receiving too many procedures, whereas African Americans and low-income people may not be receiving surgery when it could be beneficial (Center for Health Economics Research, 1993).

Data for bypass procedures are presented in Table 36 and Figure 36 and data for angioplasty procedures in Table 37 and Figure 37. In 1996, in Connecticut, white residents were more likely than African Americans, Hispanics, and AAPIs to have each procedure performed. Both African Americans and Hispanics were less than half as likely as whites to have a bypass. Small numbers of these procedures among Asian Americans and Pacific Islanders and Native Americans may make the rates reported here unreliable. African Americans and Hispanics were also less likely than whites to have an angioplasty performed.

Table 36. Coronary Bypass Surgery Rates, Connecticut Residents 35+ Years of Age, 1996

Race/Ethnicity[a]	Number of Cases	Rates[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	4,711	2.8		
African American	124	1.1	0.4	(203)
Hispanic[e]	93	1.1	0.4	(152)
Asian American PI	6	0.2†	0.1†	(81) †
Native American[f]	9	3.2†	1.1†	1†
White	4,326	2.9	1.0	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 4% of the data are not classified by race and ethnicity.

[b] Rates are per 1,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is the ratio of the minority group rate to the white rate.

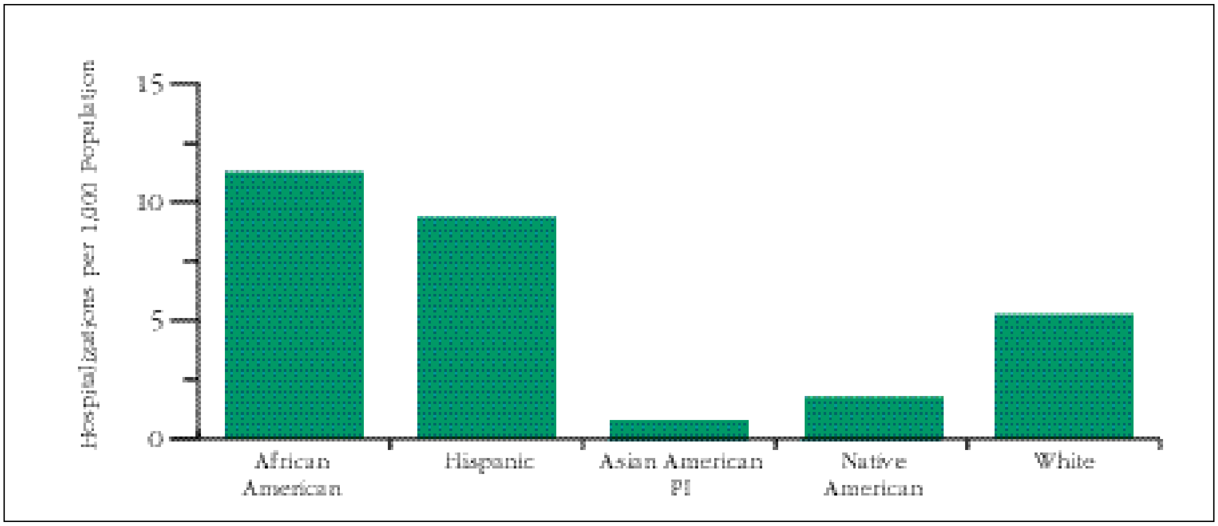
[d] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population. Parentheses indicate fewer events.

[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

Figure 36. Coronary Bypass Surgery Rates, Connecticut Residents 35+ Years of Age, 1996



Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
† Figure considered unreliable due to small numbers.

Table 37. Coronary Angioplasty Rates, Connecticut Residents 35+ Years of Age, 1996

Race/Ethnicity[a]	Number of Cases	Rates[b]	Relative Risk [c] (Minority/White)	Excess (Fewer) Events[d]
Total	5,856	3.4		
African American	194	1.7	0.5	(217)
Hispanic [e]	192	2.4	0.7	(96)
Asian American PI	7	0.3†	0.1†	(77)†
Native American[f]	<6	‡	‡	‡
White	5,315	3.5	1.00	0

Sources: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.

[a] Racial groupings (African American, Asian American PI, Native American, White) exclude persons of Hispanic ethnicity. Less than 3% of the data are not classified by race and ethnicity.

[b] Rates are per 1,000 persons based on race and ethnicity specific population estimates.

[c] "Relative risk" is the ratio of the minority group rate to the white rate.

[d] "Excess Events" are the events that would not have occurred if the minority group had the same rate as the white population. Parentheses indicate fewer events.

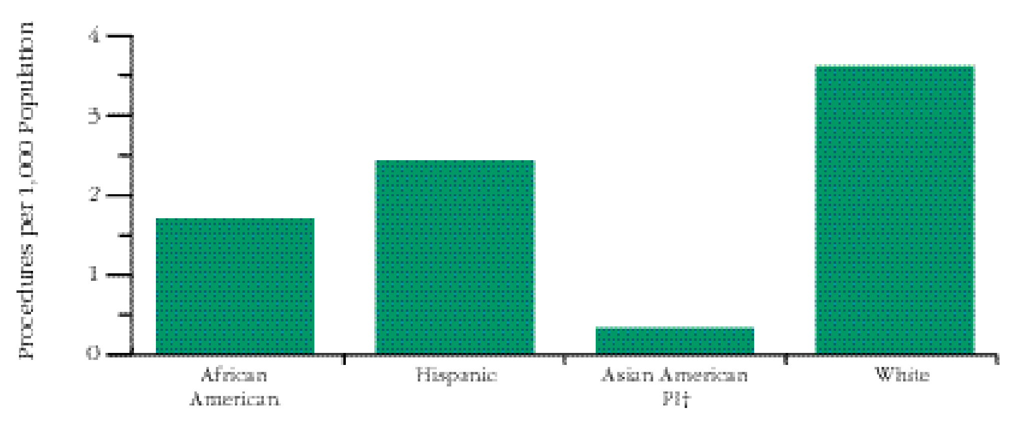
[e] Hispanic category includes any race.

[f] Native American includes American Indian and Alaska Native.

† Figure considered unreliable due to small numbers.

‡ OHCA's confidentiality regulations prohibit disclosure of data based on fewer than 6 events.

Figure 37. Coronary Angioplasty Rates, Connecticut Residents 35+ Years of Age, 1996



Source: Office of Health Care Access, Hospital Discharge Abstract and Billing Data Base.
U.S. Census Bureau Population Estimates, PE-65, 9/4/98.
† Rate considered unreliable due to small numbers.

Health Insurance Status

Individuals without health insurance are less likely than others to receive preventive or primary health care services and to have a usual source of care. Health insurance provides people with a safety net against unnecessary pain and suffering associated with no medical care when it is needed. The health status of the overall population is compromised when large numbers of people are uninsured, and it also imposes a significant additional financial burden on society. The *Healthy People 2000* goal is for no American to be without health insurance (National Center for Health Statistics, 1998).

The costs associated with no health insurance are compounded when large numbers of young, healthy adults choose to forego health insurance coverage. The absence of these individuals in risk pools eliminates cross subsidies they would normally pay, raising premiums for the insured. Thus, the entire population pays indirectly for the portion that is uninsured.

Data from the 1995 Connecticut Family Health Care Access Survey indicate that white, non-Hispanics make up the largest percentage of the uninsured population in Connecticut (70.3% of the uninsured are white non-Hispanic, 12.2% are African American non-Hispanic, and 12.5% are Hispanic); however, African Americans and Hispanics are over-represented among the uninsured relative to their numbers in the population. An estimated 11.2% of non-Hispanic African Americans and 12.5% of Hispanics lack health insurance compared to 6.6% of non-Hispanic whites. African Americans are about 1.7 times more likely than white non-Hispanics to be uninsured. Hispanics are almost twice as likely as white non-Hispanics to lack insurance coverage (Office of Health Care Access, unpublished data).

IV. STUDY LIMITATIONS

The limitations of this report fall into three categories: analytic limitations due to the small numbers of some minority populations in Connecticut; limitations of the data bases used; and limitations of the methodology used.

LIMITATIONS OF SMALL NUMBERS

Adequate data in critical areas of health are not available for the Asian American and Pacific Islander population of Connecticut for a few reasons. It is a relatively new and young segment of Connecticut's population, and the aggregate grouping "AAPI" masks the cultural and socioeconomic heterogeneity of the various AAPI subpopulations. Because it is a relatively small proportion of the total state population, numbers of cases reported for most indicators are small even when pooled over several years. Natality, infectious disease, and some mortality and hospitalization data are available for the aggregate group AAPIs; however, numbers are not large enough to report data for the AAPI subpopulations in Connecticut.

Particularly because AAPIs are a growing percentage of the Connecticut population, it is through the examination of data over time that an adequate picture of the health status of this population will emerge. Very little data are collected in some areas that research shows are important for health, like access to care and cultural and language barriers that may prevent AAPIs (or other less acculturated ethnic subgroups) from seeking appropriate primary care.

Because Native Americans are less than 1% of the Connecticut resident population, it may be necessary to pool health data over much longer time periods to view the health status and health care needs of this population comprehensively.

LIMITATIONS OF THE DATA BASES

Racial and ethnic status is subject to misclassification, particularly in data bases for which that information is reported by someone other than the individual in question, such as mortality and hospitalization statistics. Research has consistently shown that mortality statistics nationwide significantly underestimate mortality of minorities and Native Americans in particular (Support Services International, Inc., 1996).

Misclassification of patient race and ethnicity by hospital personnel would produce artificially low rates of hospitalizations among racial and ethnic subgroups. Because Native Americans do not necessarily fit an obvious racial or ethnic profile when evaluated by surname or appearance, they, in particular, are subject to misclassification by hospital personnel.

LIMITATIONS OF THE METHODOLOGY

There are a few limitations to the analytic strategy employed in this report. These limitations reflect two dimensions of the analysis: 1) the choice of comparison groups, and 2) the summary indicators used to compare these groups. In this study we have chosen to focus on health disparities relative to the white population in Connecticut. While the identification of significant disparities is an important first step, this approach may obscure instances in which there are major problems in both the white and minority group populations. For example, although high rates of heart disease deaths in whites and in African Americans are problematic for both groups, our approach does not emphasize this fact because it only examines the disparity between these groups. Thus, lack of a reported disparity does not necessarily mean that health status of these groups is good relative to national or other standards.

The second limitation is that comparisons between white and minority groups tend to obscure important health concerns within particular minority groups. Cancer, for example, is the leading cause of death for Asian American and Pacific Islander residents of Connecticut (it is the second leading cause of death for all other racial and ethnic populations). Comparisons of relative risk and excess event estimates show that AAPIs have the lowest relative risk of all groups and fewer deaths from cancer compared to the white population. These statistics do not address the fact that cancer accounts for more deaths among AAPIs than any other cause and, as such, may be a concern for some subgroups within the AAPI population.

Finally, the choice of statistics used to compare these groups (relative risk estimates and excess event counts) presents some limitations. Relative risk estimates give equal weight to each population subgroup, regardless of its size. Use of these figures alone for decision-making may be of limited value if one does not distinguish between situations in which relative risk levels are comparable but the number of people affected is very different. The use of excess event statistics is intended to compensate for these limitations. However, undue emphasis on the number of excess events in the minority population rather than on the relative risk itself may understate the seriousness of a condition because the measure is heavily dependent on the population size of the minority group. This is an important consideration for smaller minority populations such as Native Americans and AAPIs. For example, although Native American residents of Connecticut have the highest relative risk of death due to diabetes-related causes, they have only four excess deaths due to diabetes-related causes per year.

The excess deaths methodology has been used extensively in comparisons between the black and white populations nationwide (U.S. Department of Health and Human Services, 1985). As used in this report, this statistic is most informative in characterizing the disparities in health indicators for African Americans and Latinos, the two largest minority groups in CT, compared to whites. Relative risk estimates are relevant for all groups, but especially for the smaller minority groups like AAPIs and Native Americans.

V. SUMMARY

Health indicators in this report highlight areas of disparity for minorities compared to whites in Connecticut. Relative risks and annualized excess events by race and ethnicity are summarized in Table 38. Both measures use the white resident population of Connecticut as the comparison group. In the absence of an absolute standard by which to measure health status, the white, majority population may be the best comparison group by which to assess minority groups' health. The excess events calculation highlights health concerns that affect large proportions of the minority population and dramatically displays disparities as excess occurrences.

Compared to whites, there were consistently large disparities in health indicators for African Americans across all categories—mortality, chronic diseases, infectious diseases, pregnancy and birth outcomes, and hospitalizations. In fact, the relative risk was greater than 1.0 for all indicators but one, invasive cancer incidence in females.

For Hispanics, there were large disparities in homicide and AIDS death rates but not in chronic disease mortality rates compared to whites. Hispanics also showed consistent disparities in all infectious disease incidence rates, all pregnancy and birth outcomes, and most hospitalization rates.

Compared to whites, Asian Americans and Pacific Islanders did not show disparities in death rates from seven causes of death for which there were sufficient numbers to calculate rates. AAPIs, however, showed disparities with whites in four out of seven infectious disease incidence rates, and three out of four pregnancy and birth outcomes. There were no apparent disparities in hospitalization rates for five of seven conditions for which rates could be calculated.

Native Americans showed disparities in two out of four causes of deaths, in two infectious diseases for which rates could be calculated, and in all pregnancy and birth outcomes. There were insufficient numbers of hospitalizations among Native Americans to calculate rates for five of seven categories of hospitalizations.

MORTALITY

Of all racial and ethnic groups considered in this report, African Americans had the highest relative risk and most excess deaths from all causes. Compared to whites, they had an estimated excess of more than 600 deaths per year. African Americans also had the highest relative risk for seven of eight causes of death and the greatest numbers of excess deaths for all eight causes of mortality compared to other racial and ethnic groups. AIDS stands out as a leading cause of excess deaths among African Americans in Connecticut, who had more than seven and a half times the rate of deaths compared to whites and an estimated excess of 165 AIDS deaths per year. Heart disease, diabetes-related, and cancer deaths were also prominent as causes of excess mortality for African Americans. Rates of homicide deaths among African Americans were almost eight times those of whites with an estimated excess of more than 70 deaths per year.

Hispanics had lower age-adjusted mortality for all causes and for chronic illnesses of heart disease, stroke, and cancer, compared to whites. They had more than four times the rate of age-adjusted mortality due to AIDS and homicide

Table 38. Summary of Annualized Excess Events and Relative Risks for Health Indicators in Racial and Ethnic Groups Compared to Whites[a, b], Connecticut, Various Years

		African American		Hispanic[c]		Asian American PI		Native American[d]	
Indicator	Year(s)	Relative Risk[e]	Excess (Fewer) Events[f]	Relative Risk[e]	Excess (Fewer) Events[f]	Relative Risk[e]	Excess (Fewer) Events[f]	Relative Risk[e]	Excess (Fewer) Events[f]
Mortality									
All causes	1993-97	1.5	635	0.8	(214)	0.4	(136)	0.9	(6)
AIDS	1993-97	7.6	165	4.6	71	‡	‡	‡	‡
Cancer	1993-97	1.3	86	0.5	(96)	0.4	(35)	0.8	(2)
Diabetes	1993-97	2.4	38	1.3	4	0.4§	(2)§	1.4§	0§
Diabetes-related	1993-97	2.1	112	1.2	14	0.3	(10)	2.4	4
Heart disease	1993-97	1.3	125	0.7	(82)	0.3	(44)	0.9	(1)
Homicide	1993-97	7.9	71	4.3	28	0.4§	(2)§	‡	‡
Stroke	1993-97	1.4	31	0.7	(13)	0.8	(2)	0.6§	(1)§
Unintentional injuries	1993-97	1.4	26	1.1	3	0.4	(9)	1.3	1
Infectious Diseases/STDs									
AIDS	1993-97	12.4	415	8.9	261	0.3	(6)	2.7	1
Chlamydia	1993-97	21.8	1,919	12.6	965	1.3	6	1.0§	0§
Gonorrhea	1993-97	57.2	1,973	11.8	344	0.9	(1)	3.3	2
Hepatitis B	1993-97	3.7	8	3.8	8	3.6	2	‡	‡
Inv. pneumococcal infection	1995-98	2.9	74	1.2	7	0.2	(8)	‡	‡
P & S syphilis	1993-97	68.3	73	17.3	16	4.5	1	‡	‡
Tuberculosis	1993-97	9.3	36	8.2	28	23.9	24	‡	‡
Chronic Diseases									
Inv. cancer incidence-males	1995	1.3	117	1.0	3	†	†	†	†
Inv. cancer incidence-females	1995	0.8	(100)	0.8	(52)	†	†	†	†
Pregnancy and Birth Outcomes									
Infant deaths	1993-95	2.6	52	1.6	18	1.2	1	2.4	1
Late or no prenatal care	1993-97	2.9	657	2.9	740	1.8	61	3.3	15
Low birthweight	1993-97	2.2	333	1.5	160	1.4	27	1.8	4
Teen births	1993-97	5.8	352	7.4	527	0.7	(6)	5.2	5
Hospitalizations									
Avoidable hospitalizations	1996	2.3	1,793	1.6	799	0.3	(258)	0.7	(11)
Asthma (all ages)	1996	4.4	806	4.8	822	0.3	(40)	‡	‡
Asthma ED visits (children)	1995-96	3.8	494	9.5	1,586	0.4	(26)	‡	‡
Diabetes	1996	2.7	502	1.1	31	0.1	(69)	‡	‡
Pelvic inflammatory disease	1996	6.0	94	3.4	41	‡	‡	‡	‡
Unintentional injuries	1996	1.1	132	0.8	(269)	0.2	(269)	0.2§	(24)§
Varicella (Chicken Pox)	1986-95	2.6	13	4.1	20	†	†	†	†

---

[a] For whites for all indicators relative risk = 1.0 and excess events = 0.

[b] Racial groupings (African American, Asian American PI, Native American) exclude persons of Hispanic ethnicity for the following indicators: low birthweight, teen births, prenatal care, all infectious diseases, and all hospitalizations. Racial groupings (African American, Asian American PI, Native American) include persons of Hispanic ethnicity for the following: infant deaths, all mortality indicators, and cancer incidence.

[c] Hispanic category includes any race.

[d] Native American includes American Indian and Alaska Native.

[e] "Relative risk" is the ratio of the minority group rate to the white rate.

[f] "Excess events" are the events that would not have occurred if the minority group had the same rate as the white population, and are presented on an annualized or per year basis. Parentheses indicate fewer events.

† Data not available.

‡ Statistic not calculated due to small numbers.

§ Figure considered unreliable due to small numbers.

accounting for more than 70 excess AIDS deaths and more than 20 excess homicide deaths annually. Hispanics also had slightly higher rates of age-adjusted mortality due to diabetes, diabetes-related conditions, and to unintentional injuries.

Asian Americans and Pacific Islanders had lower age-adjusted mortality due to all causes, heart disease, stroke, cancer, diabetes, diabetes-related causes, unintentional injuries, and homicide compared to whites. AAPIs did not have sufficient numbers of deaths due to AIDS to calculate meaningful relative risks. As noted earlier, AAPIs in Connecticut are a heterogeneous group both in socioeconomic status and cultural practices. Analyses of the mortality data for Asian subgroups were not possible due to small numbers; however, it is quite possible that differences exist in age-adjusted mortality among subgroups, and this would be important in suggesting intervention strategies.

Native Americans and whites had similar age-adjusted mortality rates due to all causes, heart disease, and cancer. The rate of deaths due to diabetes-related causes among Native Americans was more than twice that of whites and the death rates due to diabetes and unintentional injuries were slightly higher than that of whites. Numbers of deaths due to homicide and AIDS were insufficient to calculate reliable relative risks for Native Americans.

Research studies have documented the relationship between lower socioeconomic status and higher mortality (Adler et al., 1994). Higher mortality among African Americans compared to whites has been linked to their lower socioeconomic profile (Sorlie et al., 1993) and residential segregation in urban areas (Polednak, 1997). Nationwide, Latinos also have a lower socioeconomic status than do non-Latino whites, yet national data show them with lower income-adjusted mortality rates compared to whites for all-cause mortality, cardiovascular disease, and cancer (Sorlie et al., 1993; Liao et al., 1998). Explanations for these lower mortality rates include cultural factors, such as protective health practices and greater family support (Markides and Coreil 1986; Scribner, 1996; Abraido-Lanza et al., under review).

INFECTIOUS AND SEXUALLY TRANSMITTED DISEASES

Compared to whites, African Americans were disproportionately affected by all infectious diseases considered in this report. Among African Americans, the rate of invasive pneumococcal infection was almost three times, hepatitis B almost four times, tuberculosis more than nine times, and AIDS more than 12 times that of whites. African Americans were also disproportionately affected by high rates of sexually transmitted diseases with rates of chlamydia more than 20 times, gonorrhea about 57 times, and primary and secondary syphilis about 68 times higher than that of whites. Excess cases of AIDS among African Americans were estimated at more than 400, while excess cases of both gonorrhea and chlamydia were estimated to be more than 1,900 per year.

Hispanics had higher relative risks compared to whites for all infectious diseases with the exception of invasive pneumococcal disease, which was about the same or slightly higher. The rate of primary and secondary syphilis among Hispanics was more than 17 times, the rate of chlamydia more than 12 times, the rate of gonorrhea more than 11 times, the rate of AIDS more than eight times, and the rate of hepatitis B more than three times that of whites. There were estimated annual excesses of more than 900 cases of chlamydia, 300 cases of gonorrhea, and 200 cases of AIDS among Hispanics.

Asian Americans and Pacific Islanders had a TB rate almost 24 times greater, a hepatitis B rate more than three times greater, and a primary and secondary syphilis rate more than four times greater than those of whites. The chlamydia rate was slightly higher for AAPIs compared to whites.

The rate of gonorrhea among Native Americans was more than three times greater than that of whites and the AIDS rate more than twice the rate of whites. Because the AAPI and Native Americans are not large populations in Connecticut, the numbers of estimated annual excess events represented by these relative risks are not large.

Epidemiological research indicates that geographical location and social networks in a given community, rather than race or ethnicity *per se*, are the important factors to consider in understanding the dynamics of sexual disease transmission (Aral and Wasserheit, 1998; Fox, et al., 1998; Ellen, et al., 1998; R.E. Fullilove, 1998).

While not all minorities are at high risk, they may appear to be at increased risk for STDs because they are more likely than whites to live in poverty areas where a core of high risk individuals reside. More detailed analyses of risk factors that include place of residence, income level, and social networks would better pinpoint higher risk subgroups within minority group populations.

Time trends show continued decline for some sexually transmitted diseases in Connecticut. From 1996 to 1997, gonorrhea rates declined statewide as well as among African Americans. The primary and secondary syphilis rate decreased for African Americans and whites, but reported cases increased among Hispanics. Chlamydia incidence remained stable for all Hispanics but increased among African Americans (Connecticut Department of Public Health, 1998b).

Between 1996 and 1997, the percentage of AIDS cases that were African American increased from 40% to 43% while the percentage that were Hispanic decreased slightly from 27% to 25% (Connecticut Department of Public Health, 1998a).

CANCER INCIDENCE

Invasive cancer incidence rates were highest among African American males followed by Hispanic and white males, white females, Hispanic females, and African American females in Connecticut. Nationwide, overall cancer survival rates have improved due to earlier diagnosis and better treatments but research indicates that African Americans tend to be diagnosed with certain cancers at later stages and consequently have lower survival rates compared to whites (Institute of Medicine, 1999).

Socioeconomic status (SES) factors play an important role in early detection and treatment of certain types of common cancers like breast and cervical. Because low-income people of any race or ethnicity tend to have less access to medical care, they are less likely to be diagnosed with cancer at an early stage when prognosis for treatment is best. Data from the Behavioral Risk Factor Survey indicate that both white women and women of higher SES are much more likely to be screened for cervical and breast cancer than are women of lower SES and African American and Hispanic women (Centers for Disease Control and Prevention, 1999).

PREGNANCY AND CHILDBIRTH OUTCOMES

Late or no prenatal care, that is, care not initiated within the first trimester of pregnancy, was almost three times more common in African Americans than in whites, resulting in an estimated annual excess of more than 600 African American mothers with late or no care. The percentage of low birthweight infants and rate of infant deaths were more than double those of whites, resulting in estimated annual excesses of more than 300 low birthweight infants and more than 50 infant deaths among African Americans. The percentage of births to females under age 18 was nearly six times greater among African Americans.

Hispanics had higher relative risks for all pregnancy and childbirth outcomes compared to whites. Late or no prenatal care was almost three times as common among Hispanics with an estimated annual excess of more than 700 women not receiving timely care. The percentage of low birthweight infants and infant death rates were about one and a half times more common among Hispanics accounting for an estimated annual excess of more than 100 low birthweight infants and nearly 20 infant deaths. The percentage of births to Hispanic females under age 18 was more than seven times that of whites.

Late or no prenatal care was more than one and a half times more common among Asian Americans and Pacific Islanders compared to whites, while low birthweight births were slightly higher among AAPIs. Although national data indicate that subgroups within the Asian population vary with respect to pregnancy and birth outcomes, small numbers precluded additional subgroup analyses for Connecticut AAPIs. Native Americans had higher relative risks for all pregnancy and childbirth outcomes compared to whites. They were about three times as likely to have late or no prenatal care and almost twice as likely to have low birthweight infants. Native American's infant mortality rate was more than double that of whites. They had about five times the rate of teen births compared to whites.

Research indicates that the risk factors associated with infant deaths and low birthweight are related to socioeconomic conditions (National Center for Health Statistics, 1998). Timely prenatal care and good health practices during pregnancy are key factors in positive birth outcomes. Low-income and minority women are likely to have insufficient medical insurance and access to transportation to get appropriate prenatal care. In addition to socioeconomic factors like low educational level of the mother, inadequate housing, and stressful work environments, other related factors—poor nutrition, poor health practices, and lack of family and social supports—are linked to poor birth outcomes (National Center for Health Statistics, 1998).

It is useful to view disparities in health and access indicators in the context of trends over time. From 1989 to 1997, some pregnancy and childbirth outcomes improved in Connecticut; that is, late or no prenatal care, infant mortality, and births to teenaged mothers decreased for the overall population as well as for African Americans and Hispanics, the only two minority groups for which these data are currently available. Low birthweight births increased slightly for the overall population from 1989 to 1997 but decreased slightly for African Americans and Hispanics (Connecticut Department of Public Health, unpublished data).

HOSPITALIZATIONS

African Americans had higher rates of hospitalizations for all conditions reported compared to whites including more than twice the rate of "avoidable hospitalizations," that is, hospitalizations that could be avoided if timely and appropriate primary care were given. Excess avoidable hospitalizations among African Americans were estimated to be almost 1,800 per year. Hospitalizations due to asthma were more than four times that of whites, resulting in an estimated annual excess of about 800 hospitalizations, while emergency department visits among children for asthma were almost four times that of whites, with an estimated excess of almost 500 visits. Diabetes hospitalizations were almost three times that of whites, with an estimated excess of about 500 diabetes hospitalizations. Those due to pelvic inflammatory disease were six times that of whites resulting in an estimated excess of more than 90 hospitalizations, and varicella hospitalizations were more than two and a half times that of whites.

Hispanics had more than one and a half times the rate of avoidable hospitalizations compared to whites with an estimated annual excess of almost 800 hospitalizations. They had almost five times the rate of asthma hospitalizations as whites with an estimated annual excess of more than 800 hospitalizations and more than nine times the rate of asthma emergency department visits among children with an excess of more than 1,500 visits annually. Hospitalizations due to PID among Hispanics were more than three times and varicella hospitalizations about four times the rate of whites.

Rates of hospitalizations among Asian Americans and Pacific Islanders did not appear to be higher than rates for whites in Connecticut. For five of seven indicators, numbers of hospitalizations for Native Americans were insufficient to calculate meaningful rates. Small numbers of hospitalizations are most likely a function of the smaller size of these two population groups in Connecticut. It is possible that the small numbers of hospitalizations reported for AAPIs and Native Americans reflect the fact that there really are few hospitalizations. Fewer hospitalizations may indicate either lower rates of illness within these populations or barriers to obtaining medical care.

VI. DISCUSSION

This report documents some of the disparities in social and health status indicators for Connecticut's four racial and ethnic minority groups, compared to white residents, using available data from both the U.S. Census and the State of Connecticut. This pattern of health disparities is not unique to Connecticut, and is mirrored in other states throughout the U.S. Despite several limitations, analyses reported here are a first step toward a more refined, systematic examination of key indicators of health status and risk of developing poor health in Connecticut's minority populations.

Although this report addresses health disparities, some minority groups in Connecticut do compare favorably with whites on various health indicators. It is possible that protective factors such as social support, social networks, and other health-related practices may account for better health outcomes among some minority subgroups. Further examination of such factors could provide insight into the protective aspects of culture on health outcomes.

The findings of this report are limited by the lack of data in critical areas such as behavioral risk factors, occupational risk factors, malnutrition, disability, interpersonal violence, and environmental risk factors like poor housing and neighborhood safety and pollution. Each of these factors affects the quality of life of urban and minority group populations. Such data are important components of a more comprehensive assessment of minority health status in Connecticut, because without adequate attention, these conditions may preclude the success of intervention strategies that have been used effectively in other settings with different populations. Future analyses should identify specific age, gender, and ethnic subgroups that might be at high risk for cause-specific morbidity and mortality.[2]

Race is a major basis of division in the United States, and racial disparities in health have long been documented in the public health literature. Differences in disease patterns among racial and ethnic groups may be explained by a variety of factors, including group beliefs and attitudes, traditional health-related practices, social and economic conditions, living environments, access to high quality health care, and genetic factors.

While genetic factors may contribute to observed differences among groups of people, the public health literature points to culture, degree of acculturation, and socioeconomic factors as the more important determinants of health status in the United States today (U.S. Department of Health and Human Services, 1998; Freeman, 1993; Adler et al., 1994). The U.S. Department of Health and Human Services notes that racial and ethnic data are essentially descriptive and do not address the conditions underlying the disparities. It calls for additional information on factors affecting health like socioeconomic status, culture (including behavioral risk factors and acculturation), and the effects of racism and discrimination (U.S. Department of Health and Human Services, 1998).

Racial and ethnic labels, furthermore, are not always consistent in their definitions, and data collection is not always uniform. Use of racial and ethnic classifications in the United States has changed historically. The available scientific evidence indicates that racial and ethnic classifications do not capture biological distinctiveness (M. Fullilove, 1998), and that there is more genetic variation within racial groups than there is between racial groups (Williams et al., 1994). Thus, racial and ethnic categories may be viewed more accurately as proxies for current social and economic conditions that put individuals at higher risk for certain disease conditions. In other words, minority racial and ethnic group status is closely linked with many other factors known to affect health status negatively, such as residence in urban poverty areas, lower income, lower educational levels, hazardous occupations, language barriers, and less access to primary health care. These social and economic conditions must be addressed if effective programs for reducing health disparities are to be implemented in minority communities.

The U.S. Department of Health and Human Service's concern that racial and ethnic classifications do not address underlying disparities has renewed urgency now, in 1999, on the eve of the year 2000 Census. New classifications used to report race in the next Census will complicate efforts to use "race" as an explanatory variable. For this reason, there is an impetus to consider how to measure more directly the social and economic factors that affect the health of communities and individuals. In the past, these measures provided a basis for measuring disparities that are targets of the national public health initiative, *Healthy People 2010*. In addition to reducing existing health disparities, tracking progress toward and meeting this objective in the next decade presents a substantial challenge.

NOTES

[1] This report examines health status indicators for which there are disparities for one or more minority groups compared to whites in Connecticut. Disparities do exist in the vast majority of health status indicators and in all key access indicators; consequently, relatively few of the indicators considered for inclusion in this report did not meet this selection criterion. The leading causes of death among Connecticut residents aged 20 and over for which disparities do not appear to exist (for minorities compared to whites) are pneumonia, chronic obstructive pulmonary disease, and suicide.

[2] With few exceptions, age-specific health data are not presented in this report. The health status of young people in Connecticut is of particular interest because risk factors and health behaviors established early in life have a lasting impact on lifelong health, and also because racial and ethnic minorities are over-represented among Connecticut residents under 21 years of age. Detailed data on the health status of Connecticut youth is available from the following sources: Connecticut Department of Public Health's *Voice of Connecticut Youth*, December, 1996 and *Child and Adolescent Health Needs Assessment*, September, 1998; and CDC's "Youth Risk Behavior Surveillance—United States, 1997" *Morbidity and Mortality Weekly Report,* August 14, 1998 47(SS–3); 1-89.

REFERENCES

Abraido-Lanza, A.F., B.P. Dohrenwend, D.S. Ng-Mak, and J.B. Turner. 1999. The Latino mortality paradox: A test of the "salmon bias" and healthy migrant hypotheses. Under review.

Adler, N.E., T. Boyce, M.A. Chesney, S. Cohen, S. Folkman, R.L. Kahn, et al. 1994. Socioeconomic status and health: The challenge of the gradient. *American Psychologist,* 49:15-24.

Antonovsky, A. 1967. Social class, life expectancy and overall mortality. *Milbank Memorial Fund Quarterly, XLV,* 31-73.

Aral, S.O., and J.N. Wasserheit. 1998. Social and behavioral correlates of pelvic inflammatory disease. *Sexually Transmitted Diseases,* 25:378-385.

Barrett, N., P.A. Mshar, C.A. Morin, M.L. Cartter, and J.L Hadler. 1998. Epidemiology of invasive penicillin-resistant *Streptococcus pneumoniae* (PRSP) in Connecticut, 1995-96. *In:* Program Abstracts Book, p. 139. International Conference on Emerging Infectious Diseases, Atlanta, GA, March 8-11, 1998.

Bishop, D.B., B.R. Zimmerman, and J.S. Roesler. 1998. Diabetes. Pp. 421-464 in *Chronic Disease Epidemiology and Control, 2nd ed.,* R.C. Brownson, P.L. Remington, and J.R. Davis (eds.). Washington, DC: American Public Health Association.

Bloom, B.R., and C.J. Murray. 1992. Tuberculosis: Commentary on a reemergent killer. *Science,* 257:1055-64.

Brownson, R.C., P.L. Remington, and J.R. Davis (eds.). 1998. *Chronic Disease Epidemiology and Control, 2nd ed.* Washington, DC: American Public Health Association, 546 pp.

Brudney, K., and J. Dobkin. 1991. Resurgent tuberculosis in New York City: Human immunodeficiency virus, homelessness and the decline of tuberculosis control programs. *American Review of Respiratory Disease, 144:745-49.*

Carter, J. S., J.A. Pugh, and A. Monterrosa. 1996. Non-insulin-dependent diabetes mellitus in minorities in the United States. *Annals of Internal Medicine*, 125: 221-32.

Center for Health Economics Research. 1993. *Access to Health Care. Key Indicators for Policy.* Princeton, NJ: The Robert Wood Johnson Foundation. 98 pp.

Center for Urban Research, Education and Training, Inc. 1997. *Caribbean West Indian Needs Assessment Report*. Hartford, CT: Center for Urban Research, Education and Training, Inc.

Centers for Disease Control and Prevention. 1995. Poverty and infant mortality. United States, 1988. *Morbidity and Mortality Weekly Report* 44:922-27.

Centers for Disease Control and Prevention. 1998. Forecasted state-specific estimates of self-reported asthma prevalence—United States, 1998. *Morbidity and Mortality Weekly Report* 47:1022-25.

Centers for Disease Control and Prevention. 1999. *Behavioral Risk Factor Surveillance System Online Prevalence Data.* http://www2.cdc.gov/nccdphp/brfss.

Connecticut Department of Environmental Protection, Waste Management Bureau. 1994. A preliminary analysis of the distribution of various environmental sites in Connecticut with respect to race and ethnicity. Hartford, CT: CT Department of Environmental Protection. Unpublished preliminary report.

Connecticut Department of Public Health. 1994. *Healthy Connecticut 2000 Baseline Assessment Report.* Hartford, CT: CT Department of Public Health.

Connecticut Department of Public Health. 1998a. *HIV/AIDS Surveillance Program, Annual Report, December 31,* 1997. Hartford, CT: CT Department of Public Health, 37 pp.

Connecticut Department of Public Health. 1998b. *Sexually Transmitted Diseases. 1997 Surveillance Summary.* Hartford, CT: CT Department of Public Health, 47 pp.

Connecticut Department of Public Health. 1999. *Looking Toward 2000. An Assessment of Health Status and Health Services.* Hartford, CT: CT Department of Public Health, 378 pp.

Connecticut Office of Health Care Access and the Department of Public Health. 1998. *Report on the Status of Lead Poisoning in Connecticut.* Hartford, CT: CT Office of Health Care Access and the Department of Public Health, 14 pp.

Council of Economic Advisors for the President's Initiative on Race. 1998. *Changing America: Indicators of Social and Economic Well-Being by Race and Hispanic Origin.* Washington, DC: Council of Economic Advisors for the President's Initiative on Race, 74 pp.

Cullin, J., S.A. Harvey, Fl. Parisky, and E. Hicken. 1998. *Connecticut Migrant Farmworkers.* Report commissioned by CT Department of Public Health, Bureau of Community Health, under Agreement No. 98-115. Hartford, CT, 129 pp.

Ellen, J.M., S.O. Aral, and L.S. Madger. 1998. Do differences in sexual behaviors account for the racial/ethnic differences in adolescents' self-reported history of a sexually transmitted disease? *Sexually Transmitted Diseases* 25:125-129.

Executive Order 12898, Federal Action to Address Environmental Justice, February 11, 1994. Cited at Office of Environmental Justice, U.S. Environmental Protection Agency, web site, 3/9/99: http://es.epa.gov/oeca/oejbut.html.

Farber, H.J. 1997. Trends in asthma prevalence. The Bogalusa heart study. *Annals of Allergy, Asthma, and Immunology* 78:265-269.

Fox, K.K., W.L. Whittington, W.C. Levine, J.S. Moran, A.A. Zaidi, and A.K. Nakashima. 1998. Gonorrhea in the United States, 1981-1996. Demographic and geographic trends. *Sexually Transmitted Diseases* 25:386-392.

Fraser, B. 1986. *The Land of Steady Habits: A Brief History of Connecticut.* Hartford, CT: Connecticut Historical Commission.

Freeman, H.P. 1993. Poverty, race, racism, and survival. *Annals of Epidemiology*, 3: 145-49.

Fullilove, M. 1998. Abandoning 'race' as a variable in public health research--an idea whose time has come. *American Journal of Public Health*, 88:1297-98.

Fullilove R.E. 1998. Race and sexually transmitted diseases. *Sexually Transmitted Diseases*, 25:130-131.

Glasser R. 1997. *Aquí Me Quedo: Puerto Ricans in Connecticut.* Hartford, CT: Connecticut Humanities Council, 195 pp.

Haan, M., G.S. Kaplan, T. Camacho. 1987. Poverty and health: Prospective study from the Alameda County study. *American Journal of Epidemiology,* 125: 989-998.

Hannon, L. 1996. *Asians in Connecticut: A demographic fact book.* Storrs, CT: University of Connecticut, Asian American Studies Institute.

Hayes-Bautista, D. E., and J. Chapa. 1987. Latino terminology: Conceptual bases for standardized terminology. *American Journal of Public Health*, 77:61-68.

Hynes, H.P. 1996. *A Patch of Eden. America's Inner-City Gardeners.* White River Junction, VT: Chelsea Green Publishing, 185 pp.

Illsley, R., and D. Baker. 1991. Contextual variations in the meaning of health inequality. *Social Science and Medicine,* 32: 359-365.

Institute of Medicine. 1999. *The Unequal Burden of Cancer: An Assessment of NIH Research and Programs for Ethnic Minorities and the Medically Underserved.* Washington, DC: National Academy Press.

Jacobs, J. 1961. *The Death and Life of Great American Cities.* New York: Vintage, 458 pp.

Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. 1997. The sixth report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI). *Archives of Internal Medicine.* 157: 2413-2446.

Kitagawa, E.M., and P.M. Hauser (eds.). 1973. *Differential Mortality in the United States: A Study in Socioeconomic Epidemiology.* Cambridge, MA: Harvard University Press.

Kuoch, T, M.F. Scully, R.A. Miller, D. Miller, and C. Boua. 1998. *Health Crisis in the Cambodian Community.* West Hartford, CT: Khmer Health Advocates, Inc. Unpublished working paper.

Lanphear B.P., M. Weitzman, and S. Eberly. 1986. Racial differences in urban children's environmental exposures to lead. *American Journal of Public Health*, 86:1189-97.

Lee, S.M. 1998. Asian Americans: Diverse and growing. *Population Bulletin* 53(2):1-40.

Liao, Y., R.S. Cooper, G. Cao, R. Durazo-Arvizu, J.S. Kaufman, A. Luke, and D.L McGee. 1998. Mortality patterns among adult Hispanics: Findings from the NHIS, 1986 to 1990. *American Journal of Public Health,* 88:227-232.

Liberatos, P., B.G. Link, and J. Kelsey. 1988. The measurement of social class in epidemiology. *Epidemiological Review,* 10:87-121.

Lin-Fu, J.S. 1992. Modern history of lead poisoning: A century of discovery and rediscovery. Pages 23-43 *in* H.L. Needleman (ed.), *Human Lead Exposure*. Boca Raton, FL: CRC Press, Inc.

Link, B.G., and J. Phelan. 1995. Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior* (Extra Issue):80-94.

Massey D.S., and N.A. Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard University Press.

Melzer, A.M., J. Weinberger, and M.R. Zinman. 1998. *Multiculturalism and American Democracy*. Lawrence, KS: University Press of Kansas.

MacMahon, B., and T.F. Pugh. 1970. *Epidemiology: Principles and Methods*. Boston: Little-Brown.

Markides, K.S., and J. Coreil. 1986. The health of Hispanics in the southwestern United States: An epidemiologic paradox. *Public Health Reports,* 101:253-265.

McQuillan, G.M., P.J. Coleman, D. Kruszon-Moran, L.A. Moyer, S.B. Lambert, and H.S. Margolis. 1999. Prevalence of hepatitis B virus infection in the United States: The National Health and Nutrition Examination Surveys, 1976 through 1994. *American Journal of Public Health*, 89:14-18.

National Center for Health Statistics. 1998. *Health, United States, 1998 with Socioeconomic Status and Health Chartbook.* Hyattsville, MD: U.S. Department of Health and Human Services, DHHS Publication No. (PHS) 98-1232.

National Institutes of Health. 1997. P*ractical Guide for the Diagnosis and Management of Asthma*. Washington, DC: U.S. Department of Health and Human Services, NIH. Publication No. 97-4053.

National Institutes of Health. 1998. *Women of Color Health Data Book*. Bethesda, MD: Office of Research on Women's Health, NIH Publication No. 98-4247.

Oxendine, J. 1999. Who has diabetes? *Closing the Gap* (Newsletter of the Office of Minority Health, U.S. Department of Health and Human Services), February/March 1999:5.

Pappas, G., S. Queen, W. Hadden, and G. Fisher. 1993. The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *The New England Journal of Medicine,* 329(2):103-109.

Pappas, G., W. Hadden, L.J. Kozak, and G.F. Fisher. 1997. Potentially avoidable hospitalizations: Inequalities in rates between U.S. socioeconomic groups. *American Journal of Public Health*, 87:811-816.

Patrick, D.L., and P. Erickson. 1993. *Health Status and Health Policy*. Oxford: Oxford University Press.

Pestana, E. 1994. Environmental racism and the call for justice. *Connecticut Law Tribune*, December 12, 1994, p. 10-14.

Piot, P., and M.Q. Islam. 1994. Sexually transmitted diseases in the 1990s: Global epidemiology and challenges for control. *Sexually Transmitted Diseases* 21:S7-S13.

Polednak, A.P. 1997. *Segregation, Poverty, and Mortality in Urban African Americans*. New York: Oxford University Press, 184 pp.

Powell, K.E., B.C. Jacklin, D.E. Nelson, and S. Bland. 1998. State estimates of household exposure to firearms, loaded firearms, and handguns, 1991 through 1995. *American Journal of Public Health,* 88:969-972.

Scott, E.J. 1969. *Negro Migration during the War*. New York: Arno Press and *The New York Times*. 189 pp.

Scribner, R. 1996. Editorial: Paradox as paradigm—the health outcomes of Mexican Americans. *American Journal of Public Health,* 86: 303-305.

Sorlie, P.D., E. Rogot, R. Anderson, and N.J. Johnson. 1992. Black-white mortality differences by family income. *The Lancet*. 340:346-350.

Starna, W.A. 1990. Pequots in the early seventeenth century. *In:* L.M. Hauptman and J.D. Wherry (eds.), *The Pequots in Southern New England*. Norman, OK: University of Oklahoma Press, 268 pp.

Support Services International, Inc. 1996. *Adjusting for Miscoding of Indian Race on State Death Certificates*. Rockville, MD: Indian Health Service, November, 1996. 36 pp.

Tiller, V.E.V. (ed.). 1996. *American Indian Reservations and Trust Areas*. Albuquerque, NM: Tiller Research, Inc. Prepared under an award from the U.S. Department of Commerce, Economic Development Administration.

Trevino, F.M. 1987. Standardized terminology for Hispanic populations. *American Journal of Public Health*, 77:69-71.

U.S. Bureau of the Census. 1980. *1980 Census of Population*. Washington, DC: U.S. Bureau of the Census (Summary Tape Files 1A and 3A).

U.S. Bureau of the Census. 1990. *1990 Census of Population*. Washington, DC: U.S. Bureau of the Census (Summary Tape Files 1A and 3A).

U.S. Bureau of the Census. 1993. *1990 Census of Population and Housing Guide, Parts A and B*. (1990 CPH-R-1B). Washington, DC: U.S. Government Printing Office.

U.S. Bureau of the Census. 1996. *Population Projections for States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2025*. http://www.census.gov/population/projections/state/stpjpop.txt. Release date October 16, 1998.

U.S. Bureau of the Census. 1998. *Estimates of the Population of Connecticut by Age, Sex, Race, and Hispanic Origin: 1996*. (PE-65). http://www.census.gov/population/estimates/state/sasrh/sasrh96.txt. Release date September 4, 1998.

U.S. Department of Health and Human Services. 1985. *Report of the Secretary's Task Force on Black & Minority Health, Volume II: Crosscutting Issues in Minority Health*. Washington, D.C., August 1985.

U.S. Department of Health and Human Services. 1990. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington, D.C., DHHS Publication (PHS) 91-50212, September 1990.

U.S. Department of Health and Human Services. 1991. *Health Status Indicators for the Year 2000*. National Center for Health Statistics, Statistical Notes, 1991: 1(1).

U.S. Department of Health and Human Services. 1998. *Tobacco Use among U.S. Racial/Ethnic Minority Groups: A Report of the Surgeon General*. Atlanta, Georgia: Centers for Disease Control and Prevention.

U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assistance. 1998. *Environmental justice*. http://es.epa.gov/oeca/oejbut.html. November 1998.

U.S. Environmental Protection Agency (EPA), Region 1. 1998. *Urban Environmental Initiative*. Boston: U.S. EPA New England Region 1.

Washington, A.E., S.O. Aral, P. Wolner-Hanssen, D.A. Grimes, and KK. Holmes. 1991. Assessing risk for pelvic inflammatory disease and its sequelae. *Journal of the American Medical Association* 266:2581-2586.

Williams, D.R., R. Lavizzo-Mourey, and R.C. Warren. 1994. The concept of race and health status in America. *Public Health Reports,* 109:26-41.

APPENDICES

Appendix I.

Countries of Origin of Connecticut's Minority Residents

Appendix II.

Tribal Affiliations of Connecticut's Native American Residents

Appendix III.

Data Sources Used in this Report

Appendix IV.

Glossary

Appendix I

COUNTRIES OF ORIGIN OF CONNECTICUT'S MINORITY RESIDENTS

The following is a list of countries of origin of Connecticut residents who gave birth from 1993 to 1997 and who identified themselves as African American or black, Hispanic or Latino, Asian American or Pacific Islander, or Native American.

Afghanistan
Angola
Anguilla
Antigua
Argentina
Aruba
Bahamas
Bangladesh
Barbados
Belgian Congo
Belize
Benin
Bermuda
Bolivia
Brazil
Burma
Cambodia
Cameroon
Canada
Cape Verde
Cayman Islands
Chile
China
Colombia
Costa Rica
Cuba
Cyprus
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
England
Ethiopia
France
Gambia
Germany
Ghana
Great Britain
Grenada
Guadaloupe
Guam
Guatemala
Guyana
Haiti
Holland
Honduras
Hong Kong
Ile Europa
India
Indonesia
Iran
Iraq
Italy
Ivory Coast
Jamaica
Japan
Kenya
Korea
Kuwait
Laos
Liberia
Libya
Malawi
Malaysia
Marruecos
Mexico
Middle Congo
Monsterrat
Mozambique
Namibia
Nepal
New Zealand
Nicaragua
Nigeria
Northern Ireland
Oman
Ontario
Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Samoa
Scotland
Senegal
Sierra Leone
Singapore
South Africa
Somalia
Spain
Sri Lanka
St Kitts-Anguilla
St Lucia
St Vincent
Sudan
Sweden
Taiwan
Tanzania
Thailand
Togo
Tortola
Trinidad-Tobago
Turkey
Uganda
Uruguay
United States
Venezuela
Vietnam
Wales
Yemen
Yugoslavia

Source: 1993-1997 Connecticut Birth Registry.

Appendix II

TRIBAL AFFILIATIONS OF CONNECTICUT'S NATIVE AMERICAN RESIDENTS

The following is a partial list of tribal affiliations of Connecticut residents and the five tribes recognized by the State of Connecticut.

- Abenaki
- Alaskan Athabaskans
  - Alaskan Athabaskans
  - Doyon
- Algonquian
- Apache
  - Apache
  - San Carlos Apache
  - White Mountain Apache
- Arapaho
- Blackfoot
- Brotherton
- Caddo
- Canadian and Latin American
  - Canadian Indian
  - Central American Indian
  - French American Indian
  - Mexican American Indian
  - South American Indian
- Catawba
- Cherokee
- Cherokee Shawnee
- Cheyenne
- Chickasaw
- Chippewa
  - Chippewa
  - Minnesota Chippewa
  - Red Lake Chippewa
  - White Earth
- Choctaw
  - Choctaw
  - Oklahoma Choctaw
- Comanche
- Cowlitz
- Cree
- Creek
  - Creek
  - Eastern Creek
- Delaware
  - Delaware
  - Lenni-Lenape
  - Rampough Mountain
- Eastern Tribes
  - Nipmuc
  - Southeastern Indians
- Fort Hall
- Golden Hill Paugussett
- Gabrieleno
- Haida
- Iroquois
  - Iroquois
  - Mohawk
  - Oneida
  - Seneca
  - Tuscarora
- Long Island
  - Montauk
- Lumbee
- Makah
- Maliseet
- Menominee
- Micmac
- Miwok
- Mohegan
- Nanticoke
- Narragansett
- Navajo
- Nez Perce
- Northwest Tribes
  - Columbia
- Osage
- Passamaquoddy
- Penobscot
- Pequot
  - Paucatuck Eastern (a.k.a. Eastern Pequot Indians of Connecticut)
  - Mashantucket
- Potawatomi
- Powhatan
- Pueblo
  - Hopi
  - Pueblo
- Schaghticoke
- Seminole
- Shinnecock
- Shoshone
- Sioux
  - Cheyenne River Sioux
  - Dakota Sioux
  - Sioux
  - Teton Sioux
- Stockbridge
- Tlingit
- Tohono O'Odham
- Wampanoag
- Wichita
- Yokuts
  - Chukchansi
- Yurok

Sources: 1990 Census of Population, CP-3-7.
Tiller, V.E.V. (ed.). 1996. American Indian Reservations and Trust Areas. Albuquerque, NM: Tiller Research, Inc. Prepared under an award from the U.S. Department of Commerce, Economic Development Administration.

Appendix III

DATA SOURCES USED IN THIS REPORT

Connecticut Department of Public Health

Division of Infectious Diseases

The Infectious Diseases Division collects data on the occurrence of selected infectious diseases for which reporting by health care providers and laboratories to the Department is required pursuant to Connecticut General Statutes Section 19a-215 and the Annual Lists of Reportable Diseases and Laboratory findings. Reports are submitted by health care providers and laboratories to the Department on each individual with a reportable disease or laboratory finding. Among the required elements for each report, if the information is available, is information on the race and on the ethnicity of each person being reported.

The recorded race and ethnicity of each person may be self-reported, if the individual filled out his/her own registration information on site or it may be based on the observation of the health care provider. The Department of Public Health does not attempt to validate the reported race and ethnicity. While the standard state report forms contain separate categories for race and ethnicity and options based on the U.S. Bureau of the Census, it is unusual when "Hispanic" is checked to have a race category also completed. Thus, most reportable disease information is reported to DPH in mutually exclusive race-ethnicity categories: "white, non-Hispanic;" "black, non-Hispanic;" "Hispanic of any race;" "Asian or Pacific Islander, non-Hispanic;" "American Indian or Alaska Native, non-Hispanic;" and "Other, non-Hispanic."

Completeness of reporting of race-ethnicity is variable. It is 99-100% complete for diseases for which there is routine medical chart review or follow-up of the patient or a need to get additional information. Such diseases include: syphilis, tuberculosis, most vaccine-preventable diseases of childhood, hepatitis B and AIDS. Race-ethnicity data are less complete for diseases for which most reporting is laboratory-based and for which the laboratories are not directly attached to clinical settings where information on the person's race and ethnicity is available. Such diseases include: chlamydia (66% complete), gonorrhea (75% complete) and most food-borne diseases (as low as 20% complete).

A caveat to interpreting race-ethnicity data when reporting is less than 100% complete is that race-ethnicity data are apt to be more complete when they come from urban areas rather than suburban areas. For chlamydia for 1997, for example, the reports of persons living in the largest urban areas included race-ethnicity status 79% of the time, whereas those coming from other parts of the state recorded race-ethnicity only 53% of the time. This creates a possible bias toward reporting race-ethnicity status more often on blacks and Hispanics than whites, given that these two minority groups make up a higher percentage of the population of urban than non-urban areas of Connecticut. Thus, the relative risk of disease for these two minority groups could be somewhat over-estimated for some diseases such as chlamydia and gonorrhea.

Other considerations when interpreting race-ethnicity data for reportable diseases are whether there could be any selective bias in detection/diagnosis of the diseases by race-ethnicity (only confirmed cases are counted, so if one does not get tested, one does not get counted), and whether there could be any selective reporting of the diseases once diagnosed by race-ethnicity.

Connecticut Birth and Death Registries

These registries are part of the state's vital statistics data base that contains records pertaining to births and deaths that occur within the state as well as those events involving Connecticut residents that occur in other states and Canada. Registration of births in Connecticut is complete and there is virtually no under-reporting of deaths. Birth data are highly reliable for two reasons: the race and ethnicity designations of infants are based on the mothers' self-reports. The statistics surrounding birth events are calculated using the number of live births in the denominator, thus both the numerator and the denominator are from the same source. The race-ethnicity designation is reported in mutually exclusive race-ethnicity categories: "white, non-Hispanic;" "black, non-Hispanic;" "Hispanic of any race;" "Asian or Pacific Islander, non-Hispanic;" "American Indian or Alaska Native, non-Hispanic;" and "Other, non-Hispanic."

The race-ethnicity designation for death statistics is less reliable than that of birth statistics because the information is typically based on report by next of kin, a funeral director, coroner, or other official. Race-ethnicity designation based on observation may be reported incorrectly. A second source of error is the fact that death rates are calculated using two different sources of data—the death certificate for the numerator and the Census Bureau population estimates for the denominator. Errors in under- or overcounting populations by race and ethnicity will affect the death rates reported for these groups. Mortality data are reported using racial categories that include persons of Hispanic origin (all whites; all blacks; all American Indians, Eskimos, and Aleuts; all Asian and Pacific Islanders) and by Hispanic ethnicity (Hispanics of any race).

Data for the Birth and Death Registries follows National Center for Health Statistics guidelines for coding race and Hispanic ethnicity of persons. In this coding scheme, persons of Brazilian ancestry or origin are included in the Hispanic category.

Connecticut Linked File of Live Births and Infant Deaths

This file comprises linked vital records for infants born in a given year who died in that year or the next year before their first birthday. The use of linked files avoids discrepancies in the reporting of race between the birth and infant death certificates. Data from this file are reported by racial categories that include persons of Hispanic origin (all whites; all blacks; all American Indians, Eskimos, and Aleuts; all Asian and Pacific Islanders) and by Hispanic ethnicity (Hispanics of any race).

Connecticut Tumor Registry (CTR)

CTR is a population-based resource for examining cancer patterns in Connecticut. The Registry has been part of the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program since 1973. The SEER Program now includes 10 population-based registries in the U.S. "Population-based" refers to the fact that the registries attempt to identify all cancers diagnosed in defined geographic areas. For these areas, data on population size and demographic characteristics are produced by the U.S. Bureau of the Census. All hospitals and pathology laboratories in Connecticut are required by public health legislation to report incident cases, along with information on follow-up and treatment. The Registry also has reciprocal cancer-reporting agreements with other states that allow identification of Connecticut residents whose cancers are diagnosed or treated in other states.

The SEER Program and CTR code both "race" and "Spanish surname or origin." Under SEER rules, Hispanic does not include persons of Portuguese or Brazilian ancestry. SEER data include as Hispanic those individuals reported to the Registry as "Hispanic" or "Spanish origin" as well as those based solely on the results of the Registry's matching of the patient's surname with a list of Spanish surnames developed from the 1980 Census. This method improves the ascertainment of persons who would probably regard themselves as Hispanic. Data are reported by racial categories that are include persons of Hispanic origin (all whites; all blacks; all American Indians, Eskimos, and Aleuts; all Asian and Pacific Islanders) and by Hispanic ethnicity (Hispanics of any race).

There is uncertainty in the accuracy of reporting of race-ethnicity to SEER registries and in interpreting cancer incidence rates. Also, information on race-ethnicity in cancer registries is derived mainly from hospital medical records, whereas denominators are from questionnaires used in the 1990 Census. Differences in classification of race-ethnicity, and especially Hispanic ethnicity, between these sources would result in either underestimation or overestimation of cancer rates. Therefore, numbers of cancers and cancer rates are best used only to identify general racial-ethnic patterns or to suggest leads for more intensive studies of specific cancers in specific racial-ethnic groups.

Connecticut Childhood Lead Poisoning Prevention Program (CCLPPP)

CLPPP at the Department of Public Health collects data on blood lead levels for children who have not yet reached their sixth birthday. These values are reported on a mandatory basis by health care providers and laboratories according to state statute (19a-110 CGS). Effective October 1, 1998, all tests for blood lead are reportable either on a monthly summary basis for tests under 10 mcg/dL or as previously reportable on an individual basis by the laboratory or medical provider for those tests over 10 mcg/dL.

Racial and ethnic data are required as part of the reporting forms. Approximately 80% of the racial/ethnic data in the surveillance system prior to October 1, 1998 were incomplete or missing. Record input often list "unknown" or "other" for either or both of these categories. Children's caretakers, who are responsible for providing the information may not fill in the answer or else legitimately list as missing information that does not match standardized U.S. Census designations.

Office of Health Care Access

Connecticut Hospital Discharge Abstract and Billing Data Base

This data base, maintained by the Office of Health Care Access, is the source of inpatient hospitalization data. It contains patient-level demographic, clinical, and billing data for all non-federal acute care hospitals in the state. In addition to age, gender, and town of residence, the demographic data elements include race and ethnicity. Based upon observation of the patient rather than self-reporting by the patient, race is designated as: White, Black, American Indian/Eskimo/Aleut, Hawaiian/Pacific Islander, Asian, Other Non-white. Ethnicity refers to a patient's cultural origin limited to the following: Spanish origin/Hispanic, Non-Spanish origin/Non-Hispanic.

The data should be used with caution because of the way they are collected—they are "observer biased." For example, 99% of those patients whose ethnicity is of Spanish origin/Hispanic, have a race designation of Other Non-white. There are no missing data for these two data elements for 1996.

It also should be noted that counts reflect hospitalizations, not persons. For example, a patient admitted to a hospital on two separate occasions in 1996 would be counted twice in these data. Another limitation of the data is the fact that it is an administrative data set. It contains diagnoses and procedures based on ICD-9-CM codes. The literature contains many reports on the validity and reliability of hospital discharge data with clinical conditions emphasizing discrepancies between ICD-9-CM codes and the clinical data.

1995 Connecticut Family Health Care Access Survey

This survey was the source of data on insurance status. A total of 2,026 telephone and 53 in-person interviews were conducted. . The household, consisting of all persons residing at a dwelling unit, was the unit screened for survey eligibility. The survey used a random sample stratified by type of insurance coverage— uninsured persons and Medicaid beneficiaries were oversampled. Sampling weights, were post-stratified to U.S. Census figures. Weight distributions of race, ethnic origin, sex, median income, and age were examined and compared with 1990 Census distributions. Statistics reported here were weighted estimates. The question regarding insurance status included in this report, reflects the insurance status of the individual respondent, not the household. Two questions, one on respondent's race and the other on ethnicity, are based on self-report. The race-ethnicity designation is reported in mutually exclusive categories:(white, non-Hispanic; black, non-Hispanic; American Indian or Alaska Native, non-Hispanic; Asian or Pacific Islander, non-Hispanic) and Hispanic ethnicity (Hispanics of any race)

Connecticut Hospital Information Management Exchange, Inc. (CHIME)

CHIME maintains a statewide data base of clinical and financial data submitted voluntarily by Connecticut's acute care, non-governmental hospitals. Data are submitted to CHIME under individual contract with each participating facility. CHIME discharge data are obtained through an agreement with the Connecticut Department of Public Health's Division of Environmental Epidemiology and Occupational Health.

Data elements for patient race and ethnicity are based upon observation of the patient rather than self-report. As such, they are more subject to misclassification. Data are presented in racial categories exclusive of Hispanic ethnicity (white, non-Hispanic; black, non-Hispanic; American Indian or Alaska Native, non-Hispanic; Hawaiian or Pacific Islander, non-Hispanic; Asian, non-Hispanic; and other non-white) and Hispanic ethnicity (Hispanics of any race). Readers should note that 41% of cases for the variable "emergency department visits with a primary diagnosis of asthma" are missing data for race and ethnicity.

Centers for Disease Control and Prevention

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a state-based, random-digit-dialed telephone survey of the civilian, non-institutionalized adult (aged > 18 years) population conducted in the 50 states, the District of Columbia, Puerto Rico, and other U.S. territories. The race/ethnicity designation is obtained from two separate questions and is based on the self-report of the interviewee. Race and ethnicity designations are as follows: White, non-Hispanic, Black non-Hispanic, Hispanic, and "Other." The Other category includes Asian Americans and Pacific Islanders, and Native Americans.

U.S. Census Bureau

Explanation of Race and Hispanic Origin Categories

"The race and Hispanic origin categories used by the U.S. Census Bureau are mandated by the Office of Management and Budget Directive No. 15, which requires all federal record keeping and data presentation to use four race categories (White, Black, American Indian and Alaska Native, Asian and Pacific Islander) and two ethnicity categories (Hispanic, non-Hispanic). These classifications are not intended to be scientific in nature, but are designed to promote consistency in federal record keeping and data presentation. It is important to recognize that this system treats race and ethnicity as separate and independent categories. This means that within the federal system everyone is classified as both a member of one of the four race groups and also as either Hispanic or non-Hispanic" (U.S. Bureau of the Census, September 4, 1998).

1980 Census and 1990 Census of Population

The 1980 and 1990 censuses were conducted mainly through self-enumeration. Responses were based mostly on self-administered questionnaires. For the telephone and in-person interviews, census interviewers were instructed to read the questions directly from the questionnaire. The 1980 and 1990 censuses report data by racial categories that include persons of Hispanic origin (all whites; all blacks; all American Indians, Eskimos, and Aleuts; all Asian and Pacific Islanders) and by Hispanic ethnicity (Hispanics of any race).

Population Estimates by Age, Sex, Race, and Hispanic Origin: 1990-1997

These files contain estimates of the population of Connecticut by single year of age (0 to 84), sex (male, female), modified race, and Hispanic Origin. Racial-ethnic categories for these population estimates are reported as follows: white (Hispanic); white (non-Hispanic); black (Hispanic); black (non-Hispanic); American Indian, Eskimo, and Aleut (Hispanic); American Indian, Eskimo, and Aleut (non-Hispanic); Asian and Pacific Islander (Hispanic); and Asian and Pacific Islander (non-Hispanic). There is one file for each year's estimates, July 1, 1990; July 1, 1991; July 1, 1992; July 1, 1993; July 1, 1994; July 1, 1995; July 1, 1996; and July 1, 1997.

Appendix IV

GLOSSARY

African American (Black): Persons who trace their ancestry to the peoples of sub-Saharan or east Africa. This encompasses the U.S. Census definition of persons whose origins are in "any of the black racial groups of Africa."

Acculturation: A process in which contact between two or more cultural groups leads to the acquisition of new cultural patterns or behaviors by one group with the adoption of all or some parts of the other's culture.

Age-adjusted death rate (Direct method): A summary of age-specific death rates, applied to the 1970 standard population, to compare death rates in different populations by controlling for differences in age distribution. (Age-specific death rate refers to the number of deaths in a given age group per 1,000 population in the same age group.) The following equation is used:

$$\text{Age-adjusted death rate} = \frac{\text{Total expected deaths}}{\text{Total standard population}} \times 100{,}000$$

Expected deaths are those that would occur in the standard population if the age-specific rates of the population being studied were employed. The 1970 U.S. standard million population distribution is shown below.

Table 1. 1970 U.S. standard million population.

Age	Population	Age	Population
< 5	84,416	50-54	54,643
5-9	98,204	55-59	49,077
10-14	102,304	60-64	42,403
15-19	93,845	65-69	34,406
20-24	80,561	70-74	26,789
25-29	66,320	75-79	18,871
30-34	56,249	80-84	11,241
35-39	54,656	85+	7,435
40-44	58,958	Total	58,958
45-49	59.622		

AIDS: Acquired immunodeficiency syndrome.

Alaska Native: See Native American.

Asian American/Pacific Islander: Persons who trace their origins to peoples of the Far East, the Indian subcontinent, Southeast Asia, or the Pacific Islands.

Avoidable hospitalization: Hospital admissions that could have been prevented by appropriate and timely primary care. The causes of avoidable hospitalizations used in this report are shown below.

Table 2. Coding used for conditions that are causes of avoidable hospitalizations.

Condition	ICD-9-CM Code [a]
Angina	411.1, 411.8, 413
Appendix with rupture	540.0-540.1
Asthma	493.0
Bacterial pneumonia	481, 482.2, 482.3, 482.9, 483, 485-486
Cellulitis	681, 682
Congestive heart failure	402.1, 402.11, 402.91, 428, excluding procedures 35, 36, 37.5-37.8
Convulsions	780.3
Chronic obstructive pulmonary disease	491, 492, 494, 496, or 466.0 with secondary diagnoses 491, 492, 494, or 496
Dehydration	276.5
Diabetes, uncontrolled	250.1-250.3, 250.8-250.9
Epilepsy	345
Gastroenteritis	558.9
Hypertension	401.0, 401.9, 402.00, 402.10, 402.90, excluding procedures 35, 36, 37.5-37.8
Kidney/urinary infection	590, 599.0
Perforated or bleeding ulcer	531.0- 531.2, 531.4- 531.6, 532.0- 532.2, 532.4- 532.6, 533.0-533.2, 533.4, 533.6
Severe ENT infections	462, 463, 465, 472.1, 382 if procedure not 20.1

[a] Principal diagnosis codes, unless otherwise specified.

Behavioral Risk Factor Surveillance System (BRFSS): See Appendix III, under Centers for Disease Control and Prevention.

Birthweight: The first weight of a fetus or infant at time of delivery. This weight is usually measured during the first hour of life, before postnatal weight loss occurs.

Birth rate: This rate, expressed as live births per thousand population, is calculated by dividing the number of live births in a population in a given year by the midyear resident population estimate or census population, according to the equation:

$$\text{Birth rate} = \frac{\text{Total live births}}{\text{Total population}} \times 1{,}000$$

Black: See African American.

Body mass index (BMI): Weight in kilograms divided by height in square meters. In this report, overweight was defined using a BMI of >27.8 for men and >27.3 for women. In 1998, the CDC established new criteria for overweight of BMI >25.0, <30.0 and for obesity of BMI >30.

Cause of death: Based on information on the death certificate, every death is attributable to one underlying cause. The ICD-9 (International Classification of Diseases, Ninth Revision) is followed for classifying and coding cause of death.

Table 3. Coding used for causes of death.

Cause of Death	ICD-9 Code
AIDS	042-044
Cancer	140-208
Diabetes	250
Diabetes-related	250
Heart disease	390-398, 402, 404-429
Homicide	E960-E978
Stroke	430-438
Unintentional injuries	E800-E949

Culture: The shared products of human society, comprising its total way of life. Culture includes both material products, such as houses and cities, and non-material products such as languages and religions.

Current smokers: Persons who reported smoking at least 100 cigarettes in their lifetimes and presently smoke some days or every day.

Emergency department: A hospital facility that provides unscheduled outpatient services 24 hours a day for conditions requiring immediate care.

Environmental justice: According to the U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, environmental justice, as mandated by President Clinton in Executive Order 12898 on February 11, 1994, is a national priority ensuring that communities comprising predominately minority and low income populations receive protection under environmental laws.

Ethnicity: Two ethnic categories are used in this report: Hispanic or Latino origin and not of Hispanic or Latino origin. See also Race and ethnicity.

Excess events: Those events (births, deaths, cases of disease, hospitalizations, etc.) that would not have occurred to a minority group if the minority group had the same rate or percentage as the white population. Excess events are calculated as follows:

Excess events in minority group = Number of cases x [1 - (1 / Relative risk)]

The estimated excess death figures provided in this report use the overall age-adjusted rates as the basis for assessing the relative risk in each race/ethnicity group. For purposes of these estimates, the relative risk is treated as being equal over all ages. This assumption is not true to the same extent for each cause of death or race/ethnic subgroup. The potential exists for differences in age-specific rates and differences in the age distribution for certain subgroups to combine, producing substantial differences in the number of estimated excess deaths when comparing age-adjusted and unadjusted estimates. Preliminary analyses of all-cause mortality data in this report indicate that this pattern holds for the Hispanic population. This fact underscores the importance of examining age-specific death patterns when attempting to describe disparities in deaths for Hispanics, and possibly for other subgroups in the population.

Hispanic: Refers to people whose origins are from Spain, the Spanish-speaking countries of Central America, South America, and the Caribbean, or persons identifying themselves as Spanish, Spanish-American, Hispanic, Hispano, Latino, etc. Data bases used in this report have a separate line item for the individual's Hispanic status, to distinguish Hispanic ethnicity from race. The birth and death data bases used in this report also include Brazilians in the Hispanic category. Individuals identifying themselves as Hispanic can be of any race.

HIV: Human immunodeficiency virus.

Hospitalization: Admission as a registered inpatient into one of Connecticut's acute care general hospitals, with a stay of 24 hours or more. In this report, the term is used synonymously with discharge (the formal release of a patient from a hospital), because patient-specific information on hospitalizations derive from the hospital discharge abstract and billing data base maintained by the Office of Health Care Access.

Table 4. Coding used for selected causes of hospitalizations. (See also *Avoidable hospitalizations.)*

Cause of Hospitalization	ICD-9-CM Code[a]
Asthma	493.0
Diabetes	250
Pelvic inflammatory disease	614.0-614.5, 614.7-614.9, 615.0, 615.1, 615.9, 098.10, 098.30, 098.36, 098.37, 098.39, 098.86
Unintentional injuries	800-994, E800-E869, E880-E929

[a] Principal diagnosis unless otherwise specified.

ICD-9: The International Classification of Diseases, Ninth Revision, which is used to classify mortality information for statistical purposes.

ICD-9-CM: The International Classification of Diseases, Ninth Revision, Clinical Modification, which provides procedure codes for morbidity data. The procedures are classified as diagnostic and other non-surgical procedures or as surgical operation.

Incidence: The number of cases of an illness having their onset during given period of time in a specified population (e.g., for infectious diseases); more generally, the number of new events, commonly expressed as a rate. Incidence is the rate at which new disease occurs in a previously disease-free population group.

$$\text{Incidence rate} = \frac{\text{Number of new cases}}{\text{Population at risk}} \text{ x } 1{,}000 \text{ or } 100{,}000$$

Infant death: A death of an individual less than 1 year (365 days) of age.

$$\text{Infant death rate} = \frac{\text{Number of infant deaths}}{\text{Number of live births}} \text{ x } 1{,}000$$

Inpatient cardiac procedures: Two surgical interventions, coronary artery bypass grafts (coronary bypass surgery) and percutaneous transluminal coronary angioplasty (coronary angioplasty), are commonly used to treat coronary artery disease and can be used as indicators of access to health care. Nationally, residents of poor neighborhoods are less likely than those from affluent neighborhoods to receive both primary care for heart problems and surgical procedures for coronary artery disease. The ICD-9 codes used for bypass and angioplasty procedures in this report are given below.

Table 5. Coding used for coronary artery surgical procedures.

Procedur e	ICD-9-CM Code
Bypass surgery	36.10-36.19
Angioplasty	36.01, 36.02, 36.05

Invasive cancer: The ICD system uses codes 140-208 for malignant (i.e. invasive) cancers, 210-229 for benign neoplasms, and 230-234 for in situ cancers. Some tumor registries use the ICD-9 coding system, which is also used for causes of death, whereas others, including the Connecticut Tumor Registry and all SEER registries, use the ICD for Oncology (ICD-O). The ICD-O involves a site code (anatomic location) and a behavior code. The behavior code, part of the morphology code, is “0” for benign, “1” for uncertain, “2” for in situ, and “3” for malignant or invasive. This coding corresponds to the potential progression of neoplasms (tumors) from benign to in situ to invasive.

Histologically or pathologically, invasive refers to the microscopic extension of tumor cells throughout the basement membrane into adjacent structures, and hence the capability of spreading directly or indirectly (by blood or lymph) to distant or metastatic sites. Invasive cancers differ from in situ or non-invasive cancers (also called carcinoma in situ, intraepithelial, or non-infiltrating) in terms of this histologic/pathologic criterion.

Late or no prenatal care: No prenatal care received at any time during the pregnancy, or prenatal care that was initiated after the first trimester of pregnancy.

Latino: see Hispanic.

Leading cause of death: The cause of death having the greatest number of deaths.

Live birth: The complete expulsion or extraction from the mother of a product of conception, regardless of the duration of pregnancy; after such separation, shows signs of life (e.g., heartbeat, pulsation of the umbilical cord, or movement of voluntary muscles).

Low birthweight: A birthweight of less than 2,500 grams (approximately 5 lbs., 8 oz.).

Morbidity: The extent of illness, injury, or disability in a defined population, expressed as general or specific rates of incidence or prevalence. Sometimes used to refer to any episode of disease.

Native American: Persons who trace their ancestry to any of the original peoples of North American, including Alaska, and who maintain cultural identification by self-identification or tribal affiliation. "Alaska Native" encompasses the U.S. Census designations of Eskimo and Aleut. (See Appendix II on Tribal Affiliations.)

Obesity: See Body Mass Index (BMI).

Overweight: See Body Mass Index (BMI).

Poverty: The federal government issues two different measures of poverty: poverty thresholds and poverty guidelines.

Poverty thresholds are the original version of the federal poverty measure developed by the Social Security Administration, and are used for statistical purposes. All official poverty population figures are calculated using poverty thresholds. The thresholds are updated annually by the U.S. Bureau of the Census based on changes in the consumer price index, and comprise a set of income thresholds that vary by family size and composition, taking into account age (under age 65 or age 65+) and number of related children under age 18.

Poverty guidelines are simplified poverty thresholds, used for determining eligibility for programs. They are updated annually by the U.S. Department of Health and Human Services, and printed in the Federal Register. Poverty guidelines pertain to family units by size only, without regard to age or number of children.

The 1998 poverty thresholds and 1999 poverty guidelines for family units of four or fewer persons are shown below. The 1999 guidelines are shown because they reflect changes in the consumer price index through 1998, and are thus approximately equal to the 1998 thresholds.

Table 6. Federal poverty guidelines and thresholds.

Size of family unit	1999 HHS Guidelines	1998 USBOC Poverty Thresholds Related children under 18 years of age			
		None	1	2	3
One person	$8,240				
<65 years		$8,480			
65+ years		7,818			
Two persons	11,060				
One <65 years		10,915	$11,235		
One 65+ years		9,853	11,193		
Three persons	13,880	12,750	13,120	$13,133	
Four persons	16,700	16,813	17,088	16,530	$16,588

Prevalence: The total number of individuals in a specified population who have a disease or other condition at a given time (e.g., for chronic diseases). Prevalence is often expressed as a rate.

$$\text{Prevalence rate} = \frac{\text{Number of existing cases}}{\text{Total population}} \times 1{,}000 \text{ or } 100{,}000$$

Race and ethnicity: In the United States, racial and ethnic classifications are used by federal, state and local governments, private agencies, as well as in research for the purpose of defining group characteristics, tracking morbidity and mortality, and documenting the health status of population groups. Most classification schema identify four racial groups (African American or black, American Indian and Alaska Native, Asian/Pacific Islander, and white) plus an "other race" category, and two ethnic categories (Hispanic or Latino origin and not of Hispanic or Latino origin).

Labels used in this report differ slightly from those published in the Race and Ethnic Standards for Federal Statistics and Administrative Reporting, also known as Directive 15 (U.S. Department of Commerce, 1978). Directive 15 classifies persons into four racial groups (American Indian or Alaskan Native, Asian or Pacific Islander, black, and white) and two ethnic categories (Hispanic origin and not of Hispanic origin). Labels used in this report were chosen with consideration of the following: general consistency with terminology of data sources used; common, preferred usage by members of each group; and clearer identification of members of a particular group.

Refugee: An individual who is unable or unwilling to return to his or her country of nationality because of persecution or a well-founded fear of persecution. The persecution may be based on race, religion, nationality, membership in a particular social group. or political opinion.

Relative risk: The ratio of the rate or percentage in the minority group to the rate or percentage for the comparison group (whites).

$$\text{Relative risk} = \frac{\text{Minority rate or percentage}}{\text{White rate or percentage}}$$

Reportable disease: A reportable or notifiable disease is one that, when diagnosed, health care providers or laboratories are required, usually by law, to report to State or local public health officials. Reportable diseases are of interest usually because of their contagiousness, severity, or frequency of occurrence.

Residence: The usual place of abode of the person to whom the event occurred. For births, residence is defined as the mother's usual place of domicile.

Socioeconomic status: A person's overall position or "class" within a social system. Measures of socioeconomic status used in health research include a person's educational level, occupational level, place of residence, and per capita income.

White: Persons who trace their origins to peoples of Europe, North Africa, or the Middle East. Depending on the data source used, this report presents data for "white, non-Hispanics" or "whites, including Hispanics."