

*Health Disparities in Connecticut:
Current Surveillance Data*



CONNECTICUT DEPARTMENT OF
PUBLIC HEALTH

*Presentation to the Multicultural Affairs
Commission - January 20, 2005*

Presented by
Lloyd M. Mueller, PhD
&

Margaret M. Hynes, PhD, MPH

Connecticut Department of Public Health
- Health Information Systems
& Reporting Division

OVERVIEW

- Conceptualizing and Measuring Health Disparities
- Data Sources
- Connecticut Population & Demographics
- Health Care Access
- Leading Causes of Death
- Infectious Disease Incidence & Trends
- Birth Outcomes

Measuring Health Disparities

Basic Concepts and Mistakes to Avoid

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

Rates—

- **are basic measures of disease occurrence**
- **measure the probability of disease in a specific population and time period**
- **are a basic components of disparity measures**

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

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

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

Risk Difference: The difference between the rate or percentage in the minority group and the rate or percentage for the comparison group (whites).

$$\text{Risk Difference} = (\text{Minority rate or percentage}) - (\text{White rate or percentage})$$

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

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)]

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

Sample Calculations of Relative Risk, Risk Difference, Excess Deaths

Table 7. Age-Adjusted Death Rates for All Causes of Death, Connecticut Residents, 1993-1997

<u>Race/Ethnicity</u>	<u>Numbers of Deaths</u>	Age-Adjusted Death Rate	Relative Risk	Risk Difference	Excess Deaths
Total	146,564	611.5			
African American/Black	10,200	859.9	1.45	267.6	3174.2
Puerto Rican/Hispanic	3,775	461.3	0.78	-131.0	-1072.0
Asian American/PI	439	232.7	0.39	-359.6	-678.4
Native American	164	505.7	0.85	-86.6	-28.1
White	135,486	592.3	1.00	0	0.0

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

Relative Risk (African America / White)

$$859.6 / 592.3 = 1.45$$

Risk Difference (African America -- White)

$$859.6 - 592.3 = 267.6 \text{ deaths per } 100,000 \text{ population.}$$

Definitions of Statistics Used to Evaluate and Quantify Health Disparities

Excess Deaths

Number of deaths x [1 - (1 / Relative risk)]

$$(10,200) \times (1 - [1 / 1.45]) = 3,174.2$$

estimated excess deaths

Comparison of Risk Ratio and Risk Difference Measures

- In general, rare events (e.g. deaths) will have lower risk difference and excess event values than more common events (e.g. behavioral risk factors like smoking).
- In this example, the Black/White RR value is the same (1.5) for both indicators, but the RD value is very different, because deaths are rare by comparison.

OUTCOME	RISK RATIO	RISK DIFFERENCE*
Current Smoker	1.5	11,100.0
AAMR-All Causes	1.5	267.6

* Events per 100,000 population

Comparison of Risk Ratio and Risk Difference Measures

Conclusions:

- When using RD values, also consider the severity of the conditions being compared.
- To compare rare conditions with common conditions, use RR measures.
- The RR and RD measures provide different information, and each is worth considering.

Common Challenges in Measuring Disparities

- Reporting accurate statistics due to small numbers for some subpopulation groups (this is a problem in all databases but behavioral risk factor (BRFSS) data are particularly problematic);
- The importance of examining trends in disparities over time in order to develop an accurate picture of the problem.
- Missing information on race/ethnicity in some databases (hospital discharge, in particular).

Summary Statistics Like an Age-Adjusted Mortality Rate Can Mask Important Details

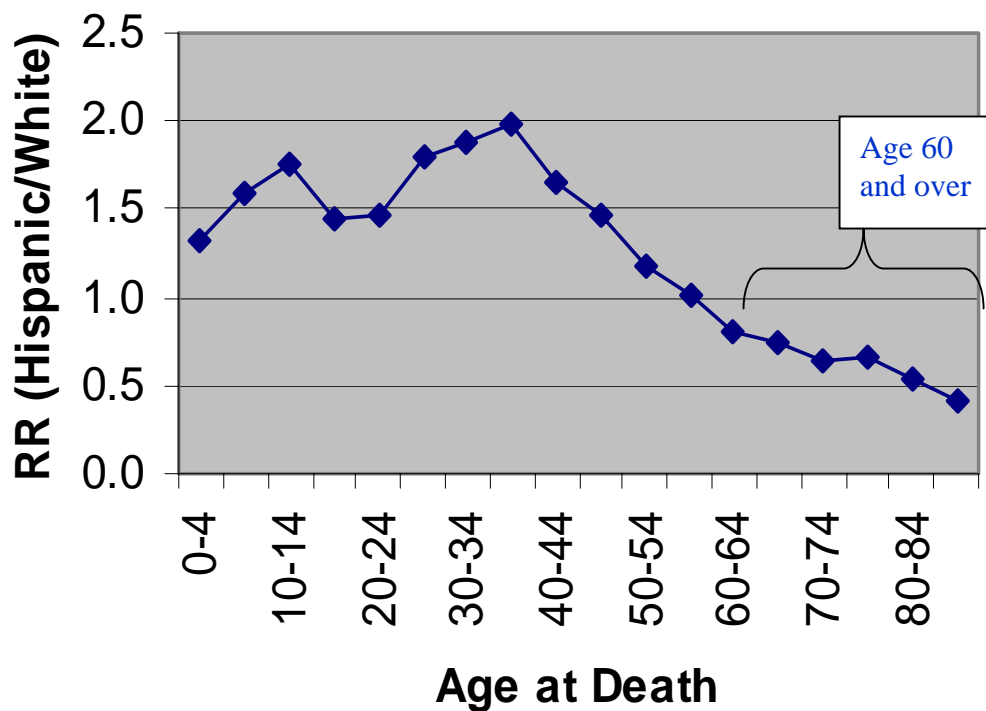
The Connecticut AAMR for all-cause mortality in 1993-1997 was lower for Hispanic than for the White population

Hispanic rate = 461.3 per 100,000

White rate = 592.3 per 100,000

Summary Statistics Like an Age-Adjusted Mortality Rate Can Mask Important Details

Age-specific Disparities for All-cause Mortality, Connecticut 1993-97



Protective & Risk Factor Disparities May Look Different

- **Assessing disparities based on the protective rather than the risk-factor characterization of an indicator can change the perceived degree of disparity.**
- **Prenatal care timing is a good example. Care can be characterized as "early", meaning that it began in the 1st trimester (per HP 2000), or the same data can be expressed in terms of "late or no care," as in the Connecticut data below.**

Protective & Risk Factor Disparities May Look Different

Connecticut Births, 1998.

GROUP MOTHER'S ETHNICITY/RACE

=====			
Geographic Area	TOTAL BIRTHS	LATE OR NO PRENATAL CARE	
		Number	%

MOTHER'S ETHNICITY			
All Races	43,741	5,005	12.2
<u>White NonHspnc</u>	<u>28,283</u>	<u>2,397</u>	<u>8.8</u>
Black NonHspnc	4,903	916	20.7
Other NonHspnc	1,456	192	14.1
Unknown NonHspnc	183	33	19.1
Hispanic	6,178	1,211	21.9

Reference Group

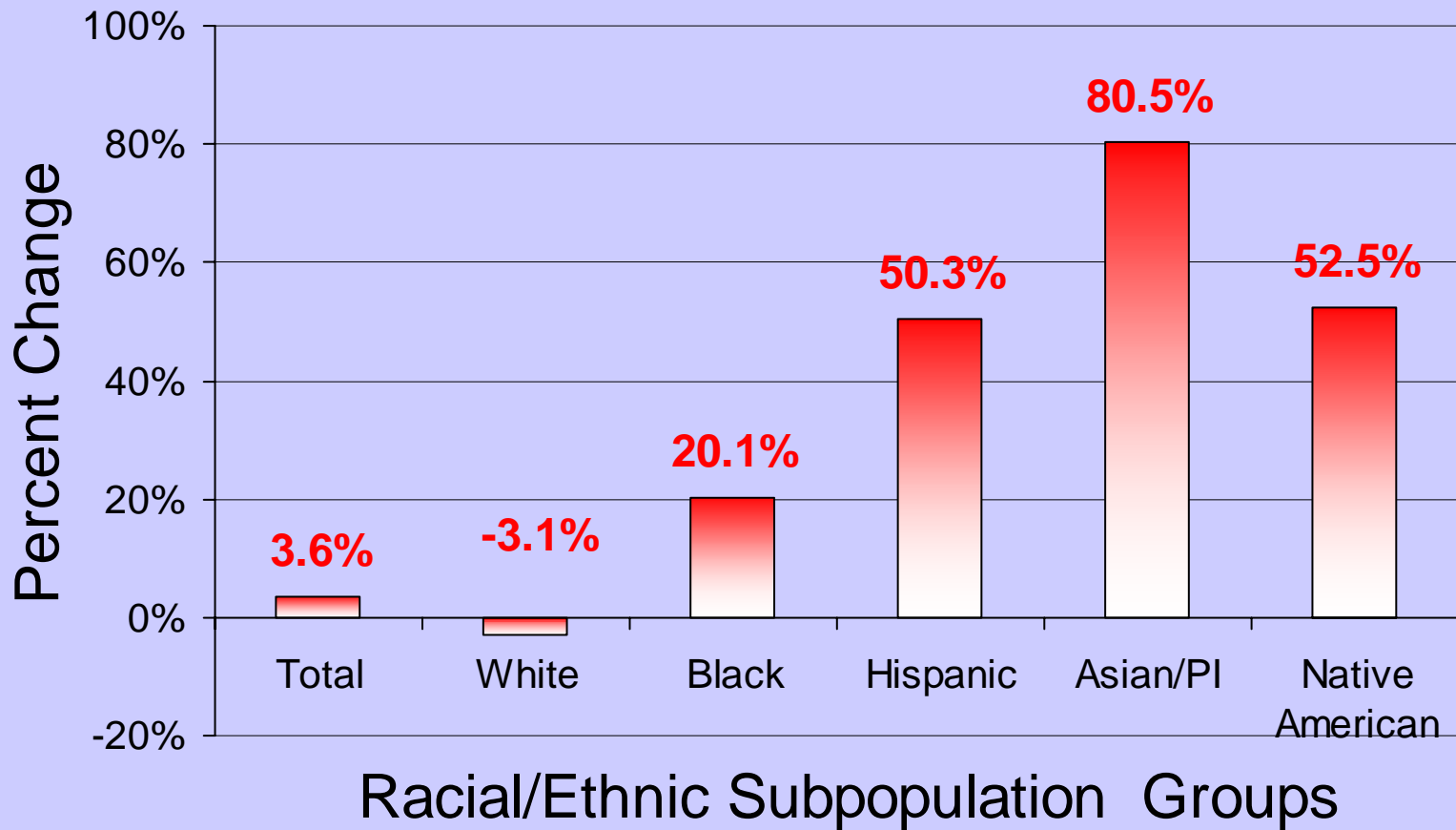
Risk Groups

Data Sources

- U.S. Census 2000
- Behavioral Risk Factor Surveillance System
- Connecticut Death Registry
- Connecticut Hospital Discharge Abstract & Billing Data Base
- Connecticut Birth Registry
- Infectious Diseases Division, CT DPH

Population Growth 1990 - 2000

Connecticut Subpopulation Groups



Source: CT DPH, Health Information Systems and Reporting Division

Connecticut Population 1990 & 2000

Race / Ethnicity	1990	2000	# Change	% Change
White	2,756,868	2,672,622	- 84,246	- 3.1%
Black	261,934	314,642	+ 52,708	+ 20.1%
Hispanic	213,116	320,323	+107,207	+ 50.3%
Asian/PI	49,238	88,890	+ 39,652	+ 80.5%
Native American	5,960	9,088	+ 3,128	+ 52.5%
Total	3,287,116	3,405,565	+ 118,449	+ 3.6%

Source: CT DPH, Health Information Systems & Reporting Division

Per Capita Income – CT Residents by Race/Ethnicity

• Latino/Hispanic (all races):	\$13,123
• African American/Black:	\$16,685
• American Indian:	\$18,186
• Native Hawaiian & PI:	\$18,345
• Asian:	\$27,948
• White, Non-Hispanic:	\$32,330

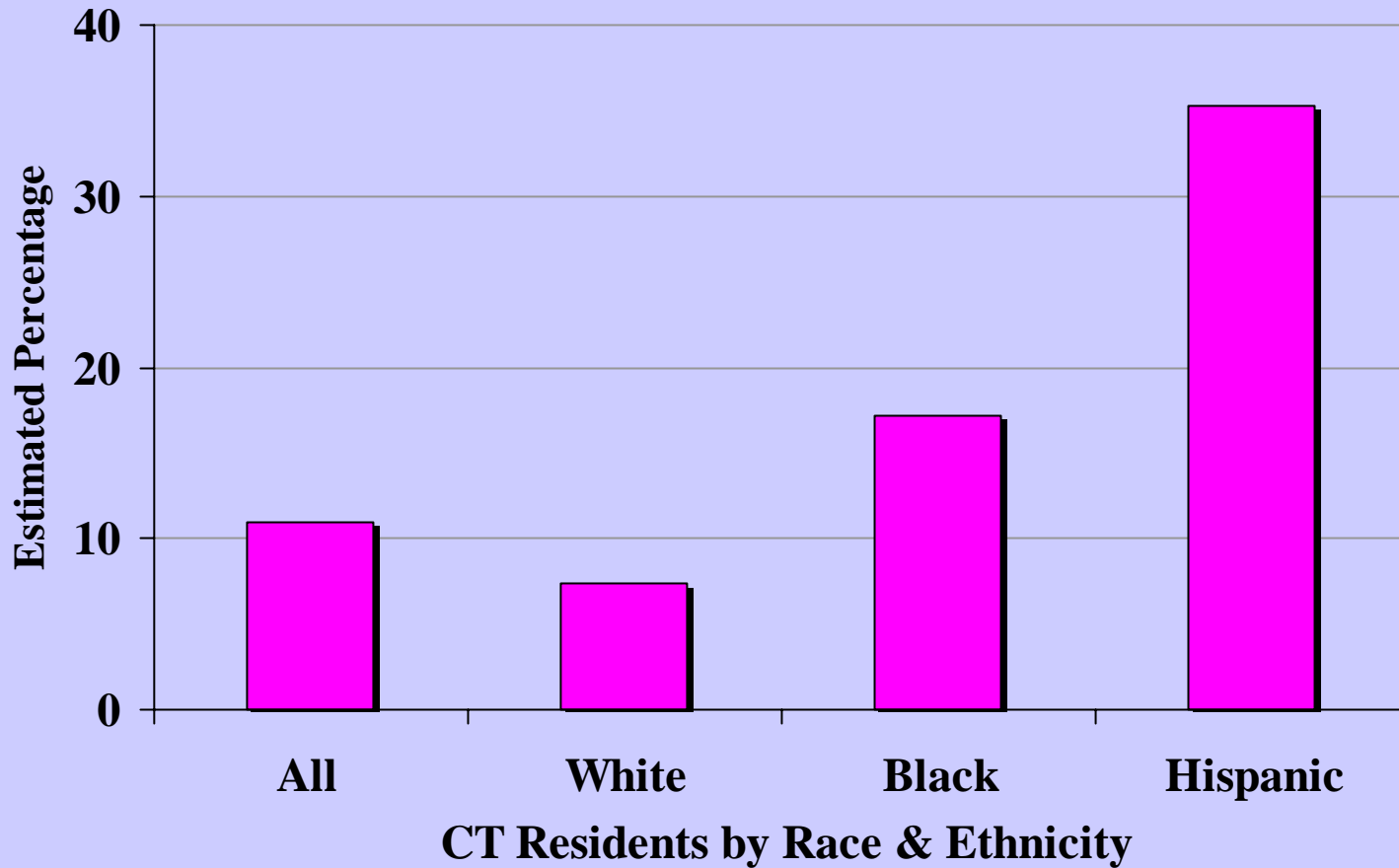
Educational Attainment - CT residents 25 Years and Older by Race/Ethnicity

Less than a High School diploma:

- 42% of all Latinos/Hispanics (all races)
- 26% of all African Americans/Blacks
- 32% of all American Indians
- 20% of all Native Hawaiian & PI
- 15% of all Asians
- 13% of all White, Non-Hispanics

Source: 2000 Census (Connecticut Residents)

No Health Care Coverage Connecticut Residents, 2002



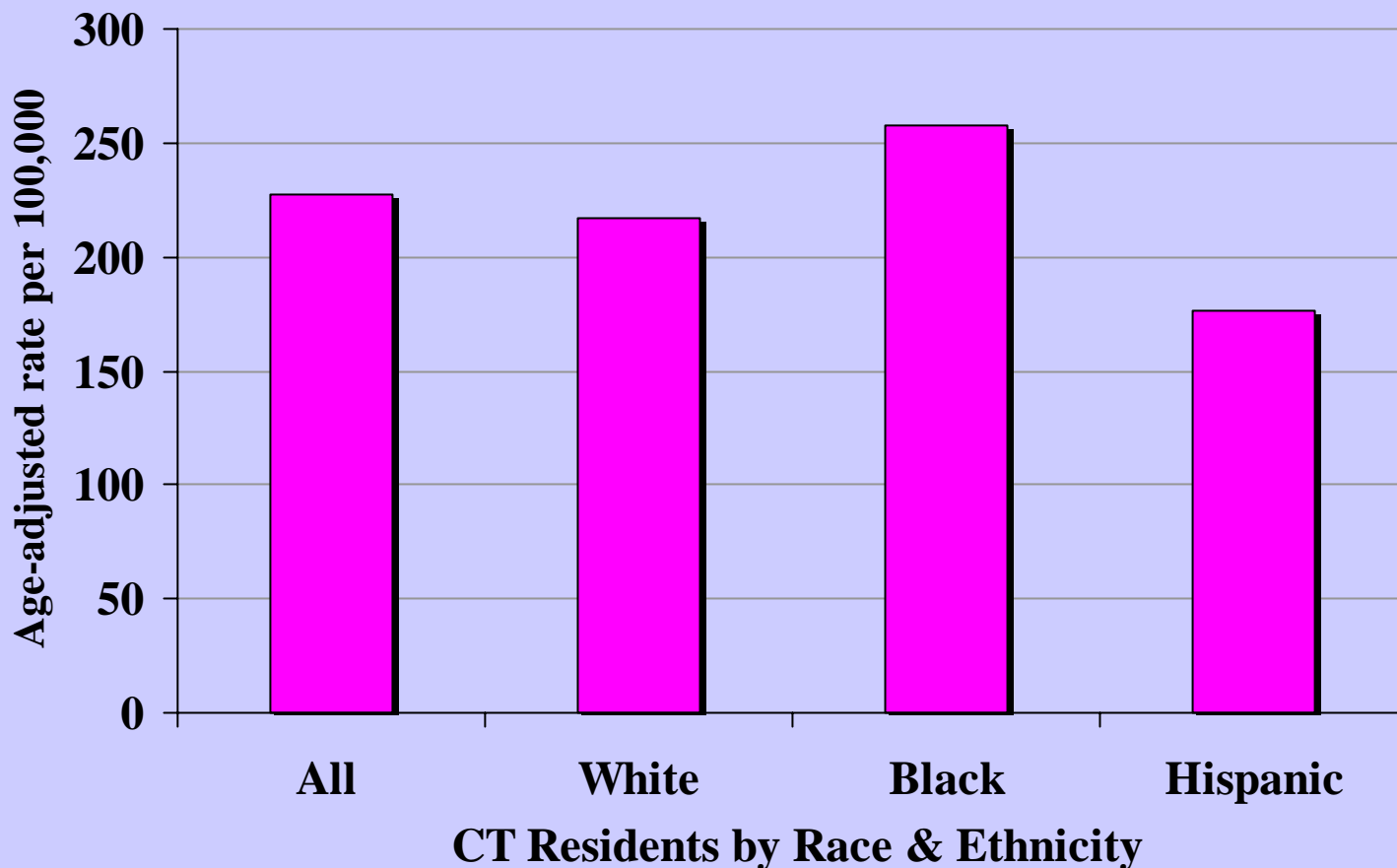
Leading Causes of Death

Leading Causes of Death

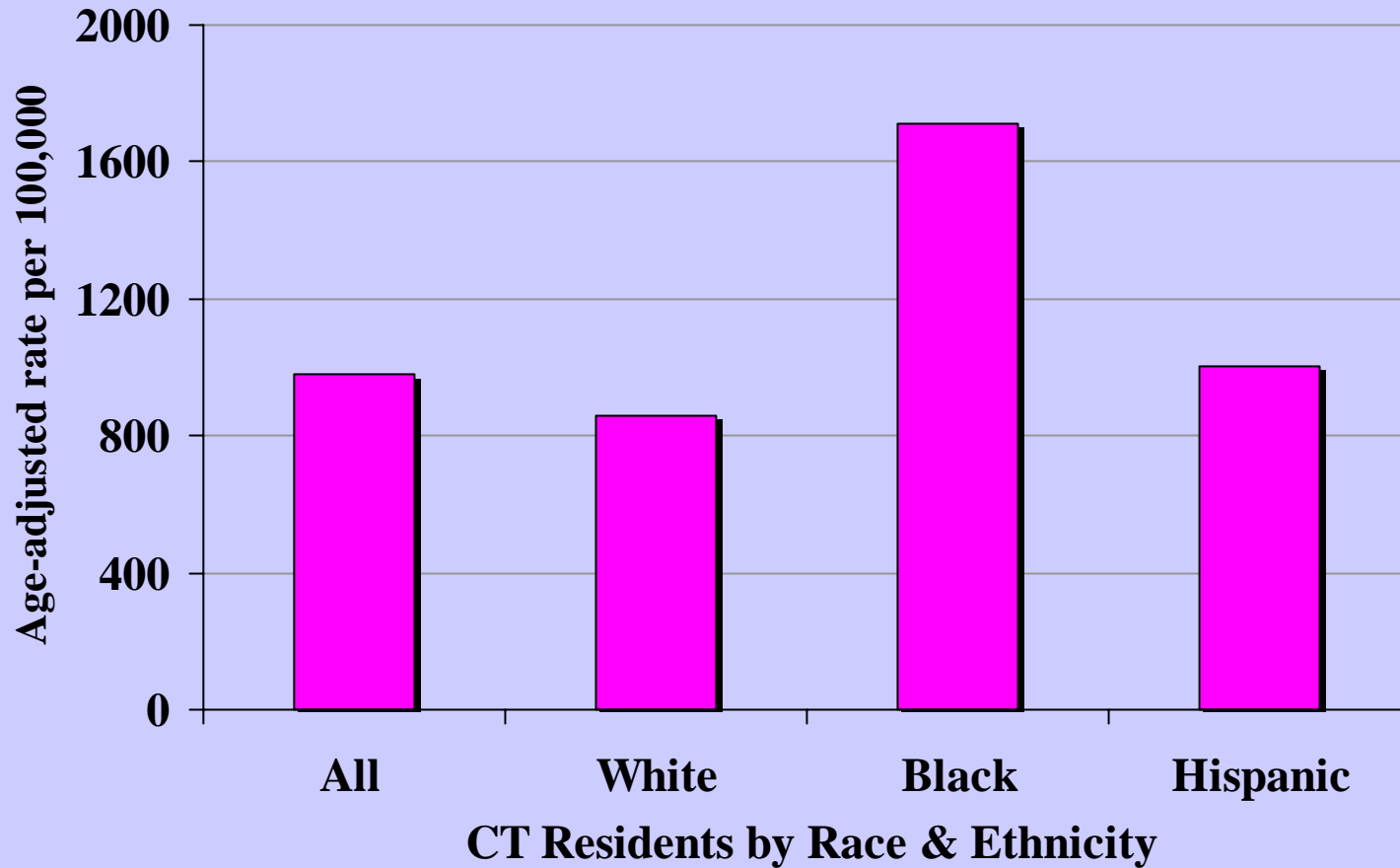
Connecticut Residents, 1999-2001

Rank	All	White	African American/Black	Latino/Hispanic
1	Heart disease	Heart disease	Heart disease	Heart disease
2	Cancer	Cancer	Cancer	Cancer
3	Cerebrovascular Disease	Cerebrovascular Disease	Unintentional Injuries	Unintentional Injuries
4	Chronic Lower Respiratory Disease	Chronic Lower Respiratory Disease	Cerebrovascular Disease	HIV
5	Unintentional Injuries	Unintentional Injuries	HIV	Cerebrovascular Disease
6	Pneumonia & Influenza	Pneumonia & Influenza	Diabetes	Diabetes

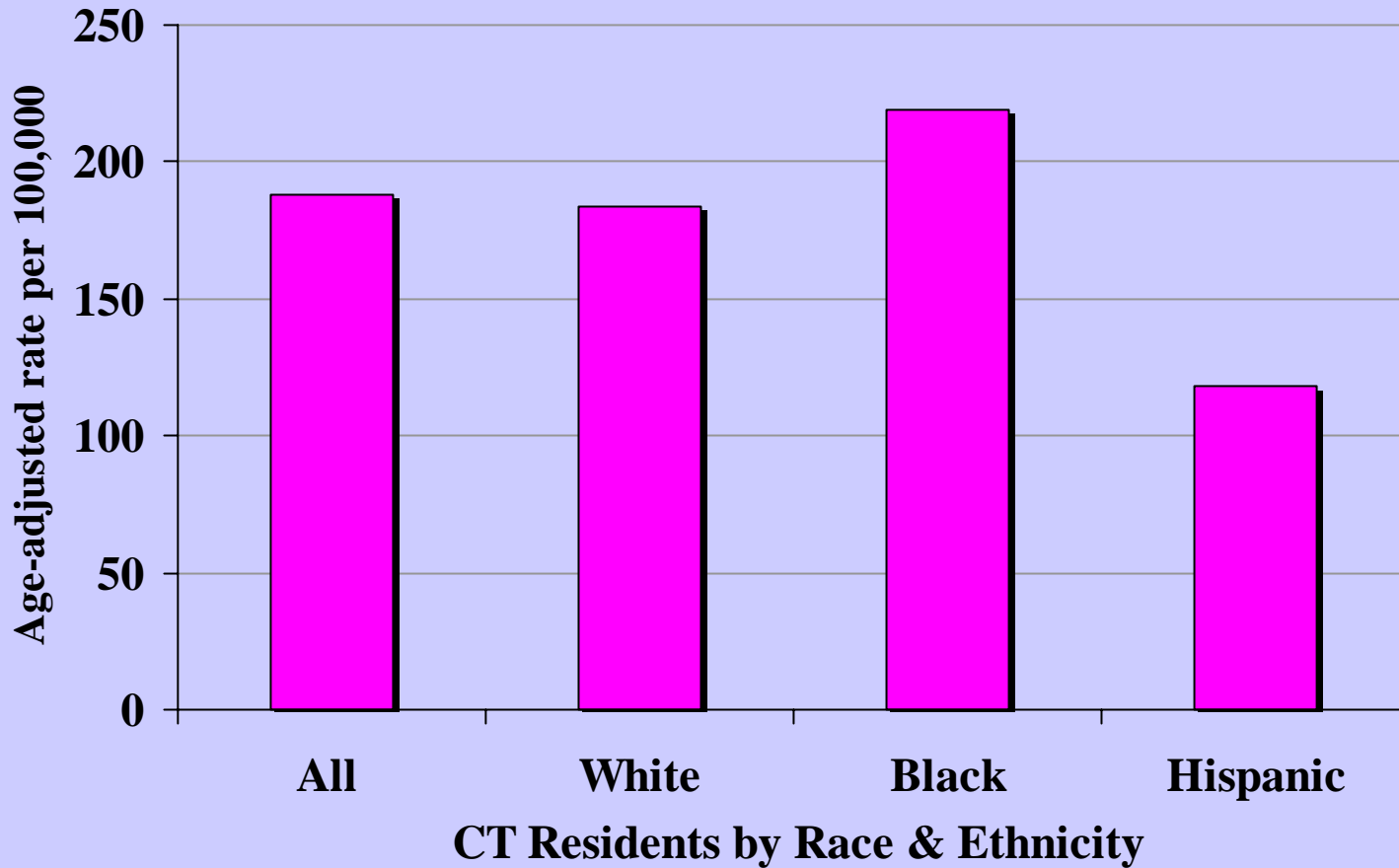
Age-Adjusted Death Rates for Heart Disease Connecticut Residents, 1999-2001



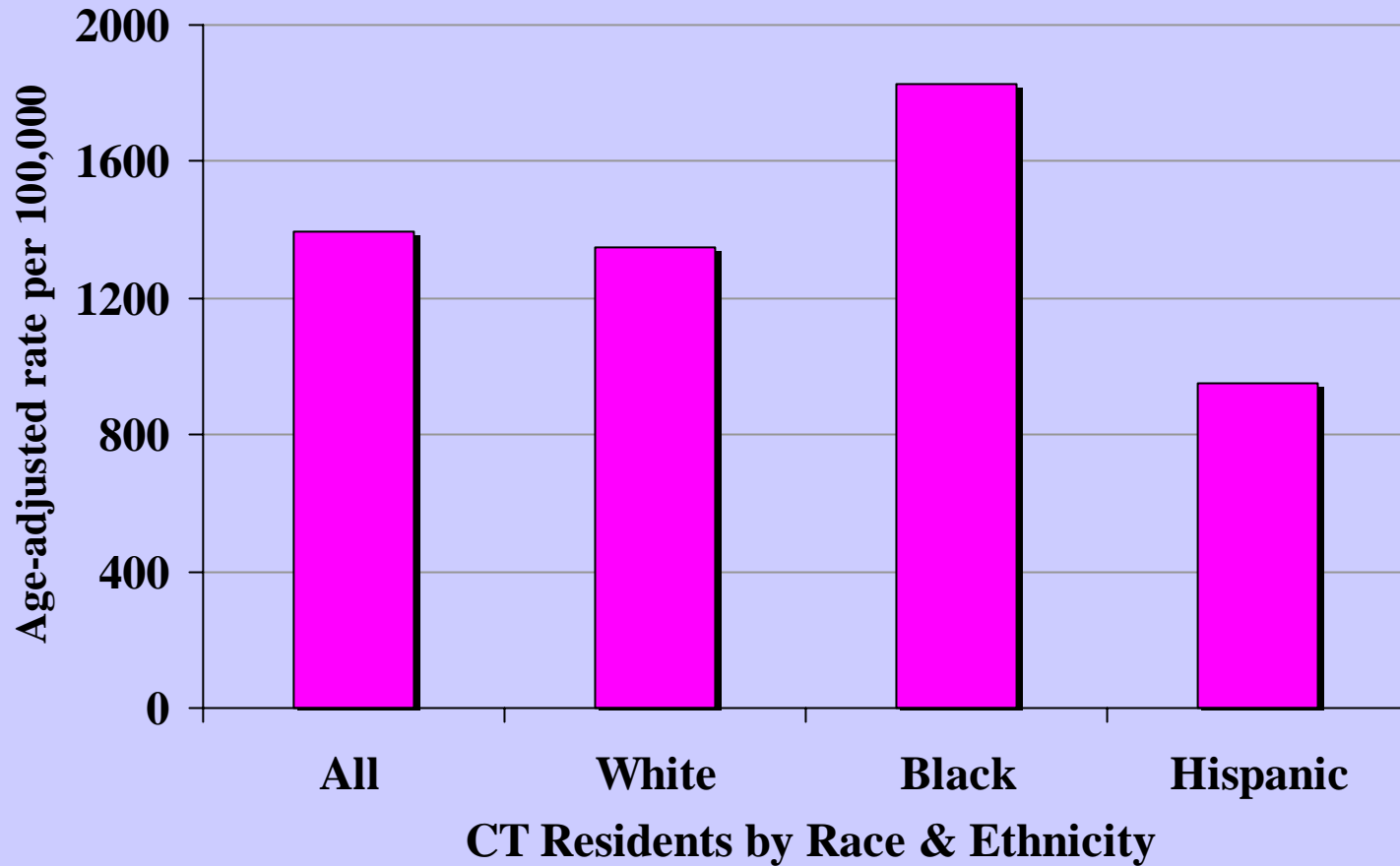
Age-Adjusted Premature Death Rates (<75 yrs) for Heart Disease Connecticut Residents, 1999-2001



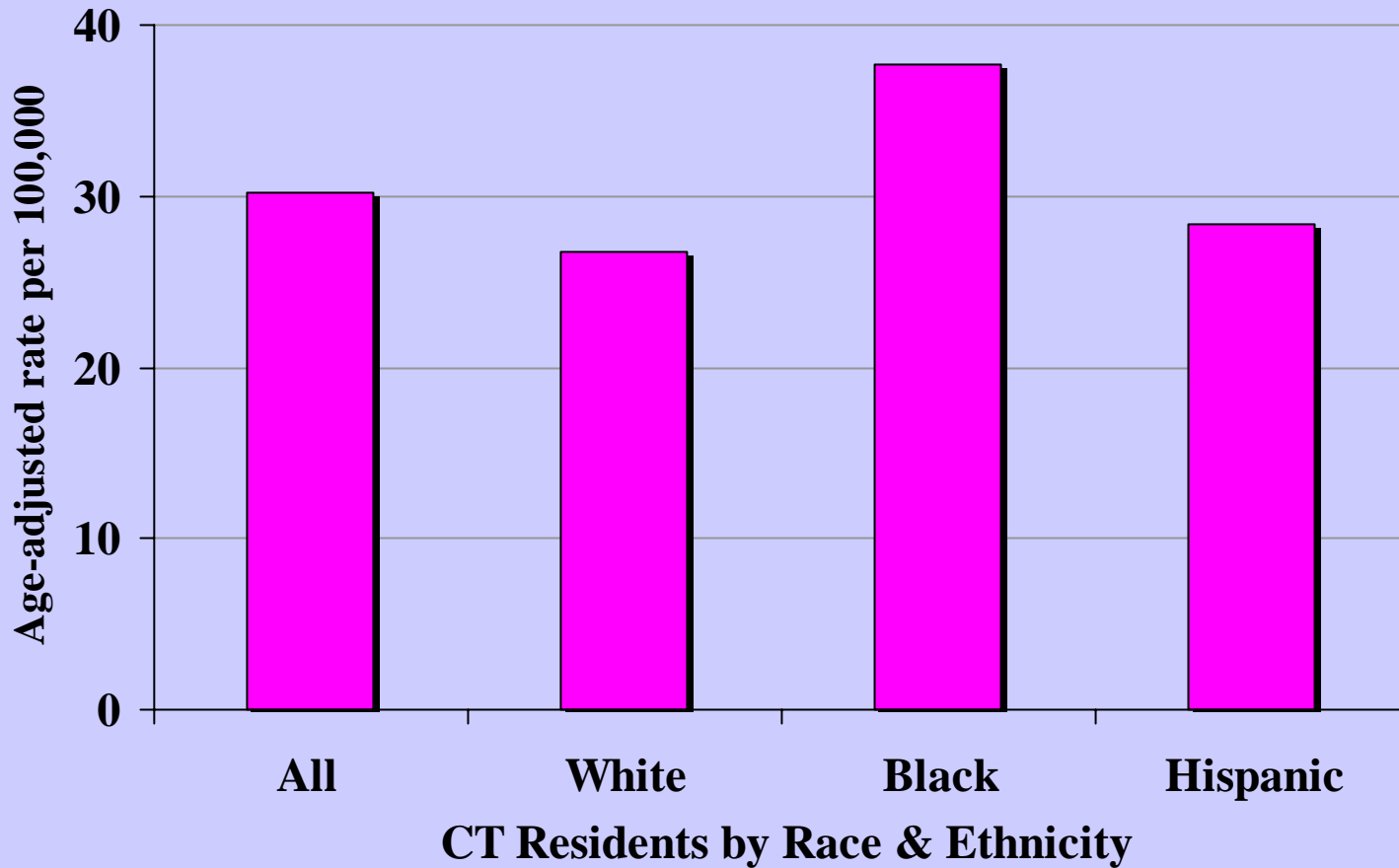
Age-Adjusted Death Rates for Cancer Connecticut Residents, 1999-2001



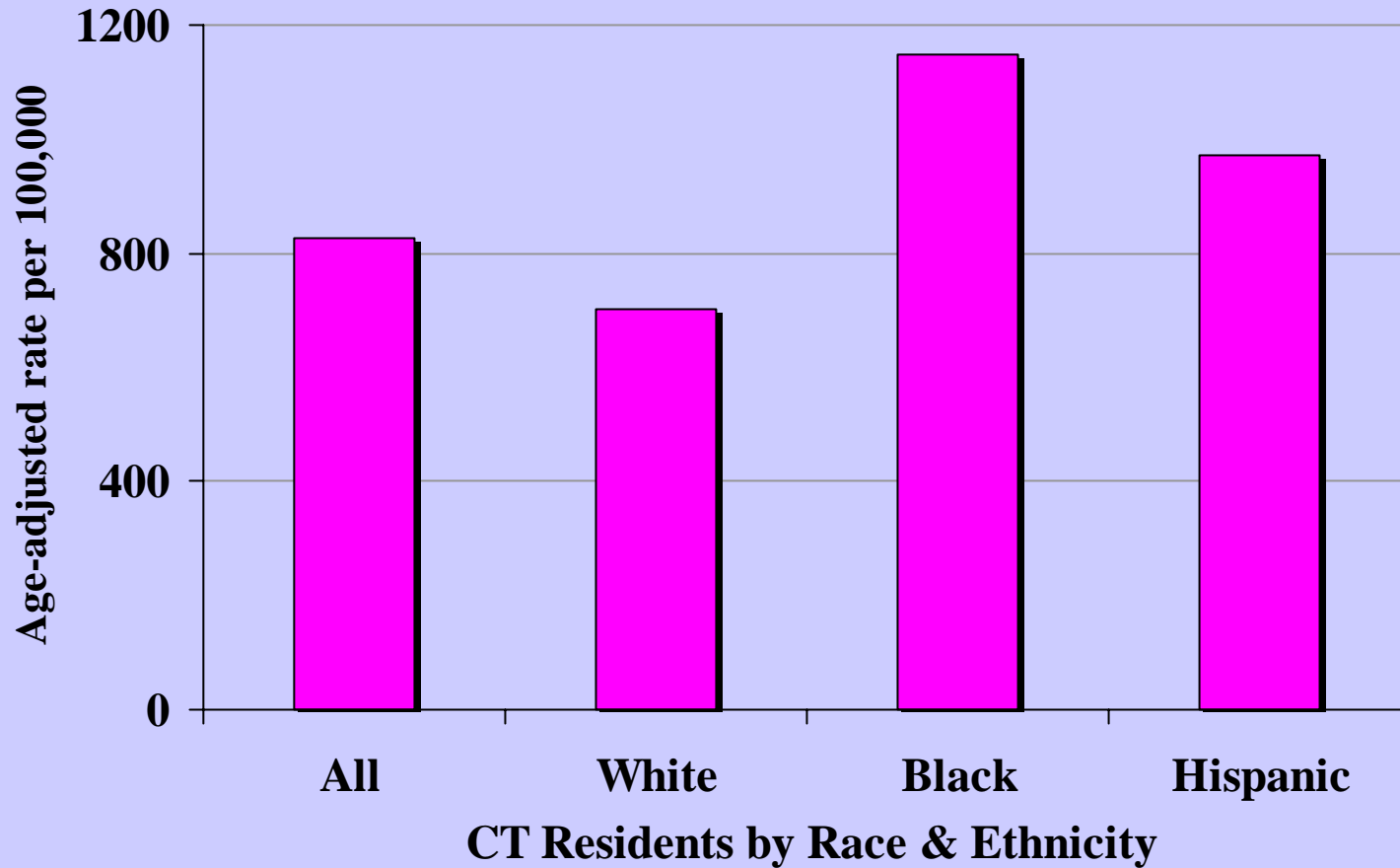
Age-Adjusted Premature Death Rates (<75 yrs) for Cancer Connecticut Residents, 1999-2001



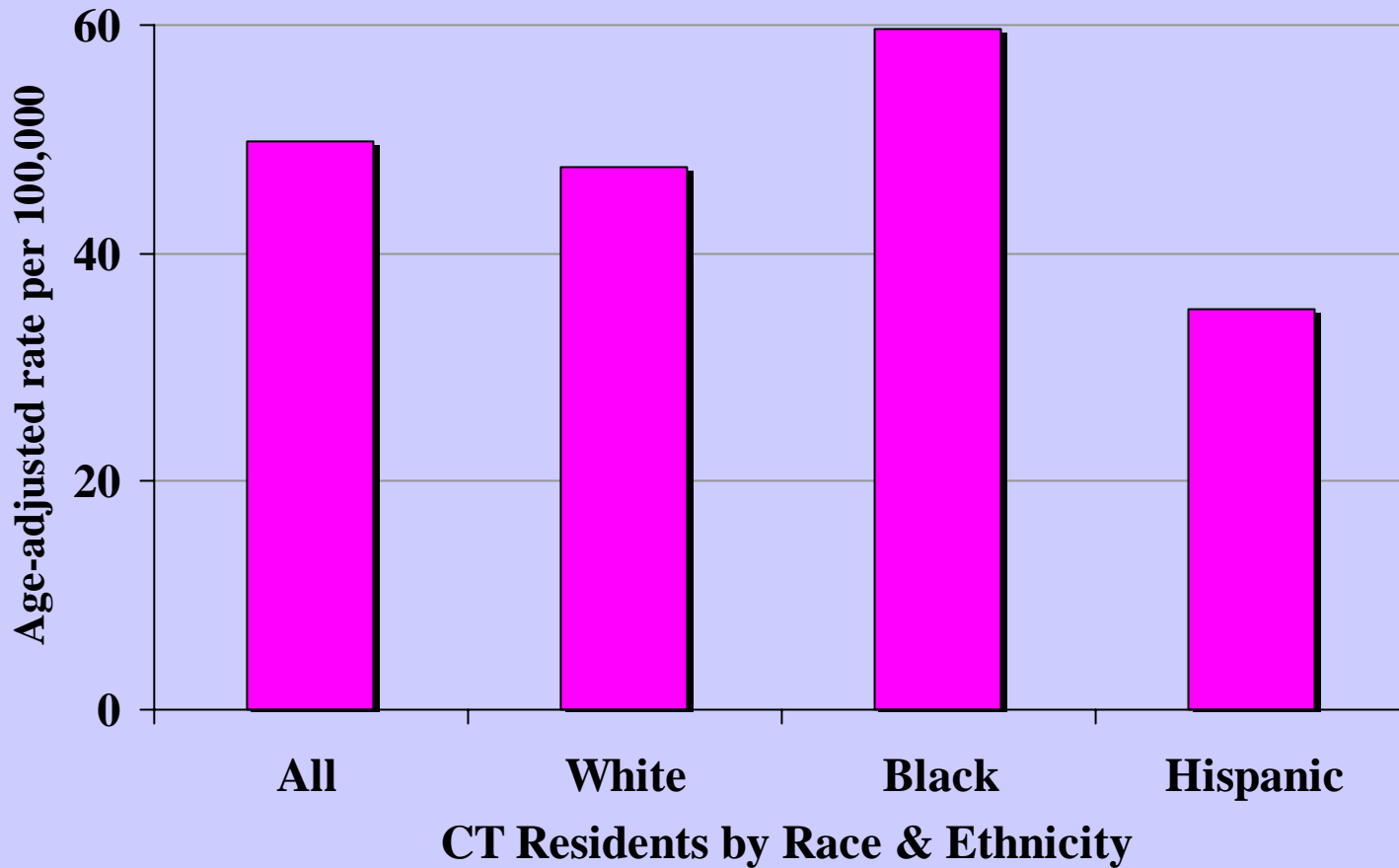
Age-Adjusted Death Rates for Unintentional Injury Connecticut Residents, 1999-2001



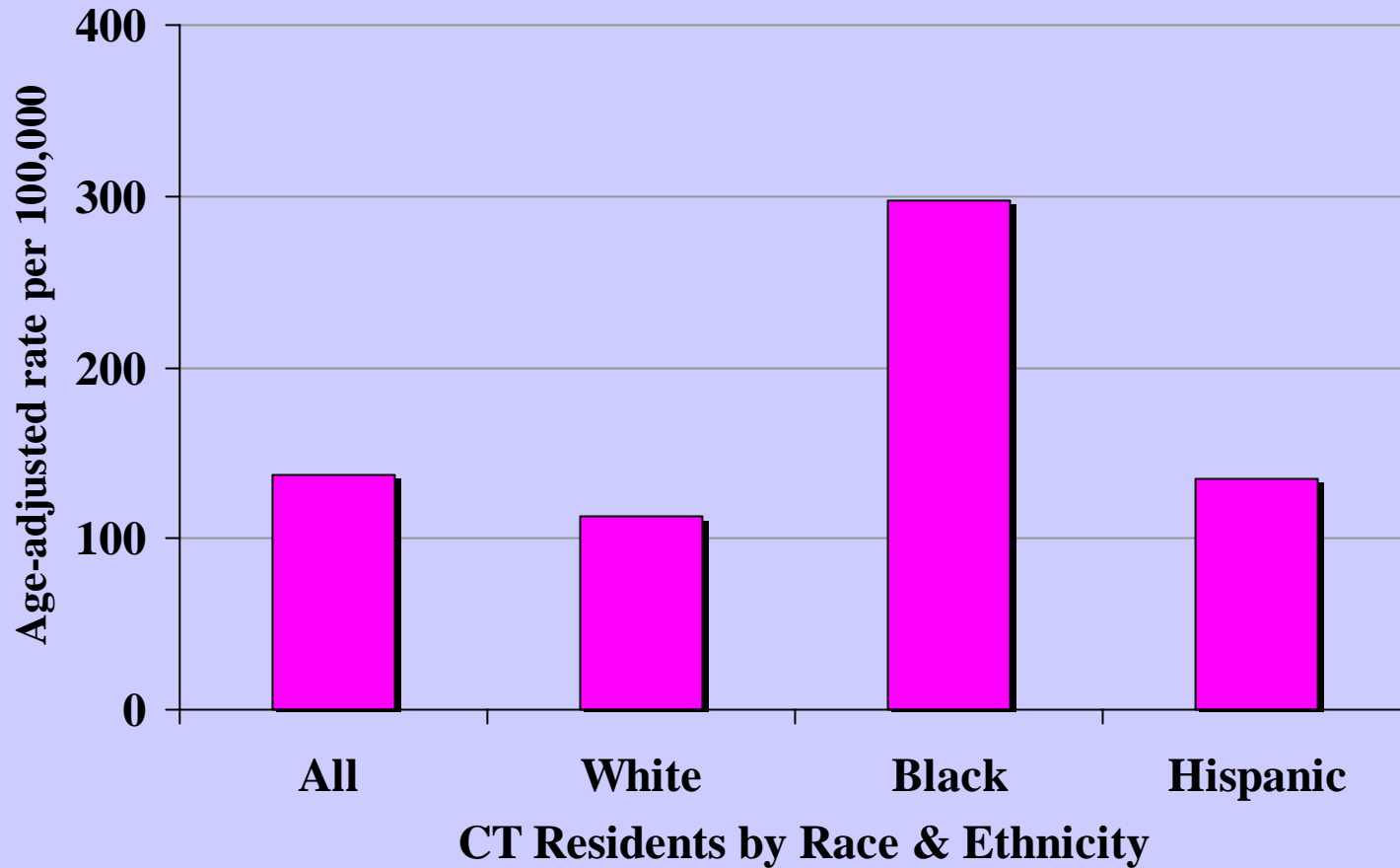
Age-Adjusted Premature Death Rates (<75 yrs) for Unintentional Injury Connecticut Residents, 1999-2001



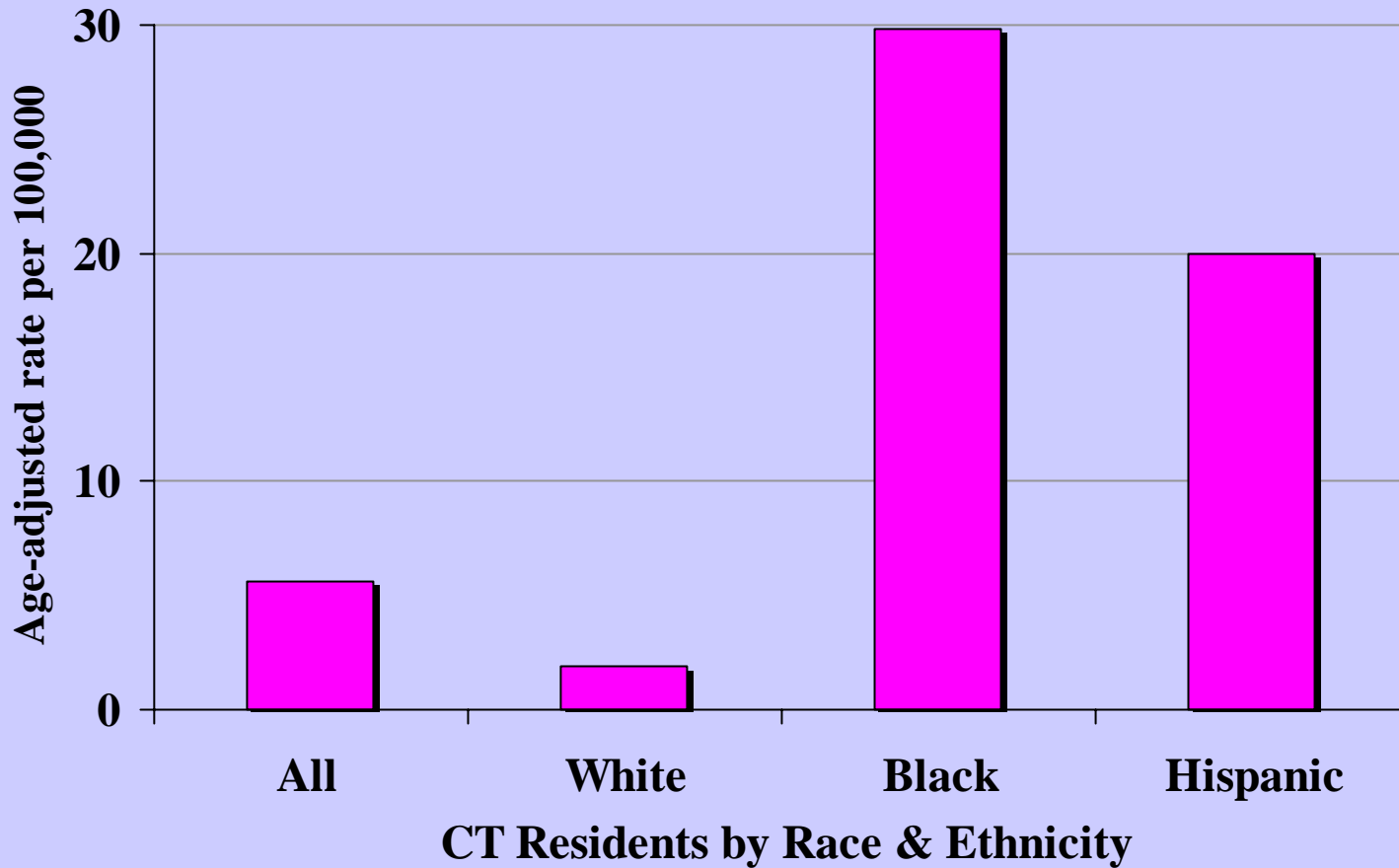
Age-Adjusted Death Rates for Cerebrovascular Disease Connecticut Residents, 1999-2001



Age-Adjusted Premature Death Rates (<75 yrs) for Cerebrovascular Disease Connecticut Residents, 1999-2001

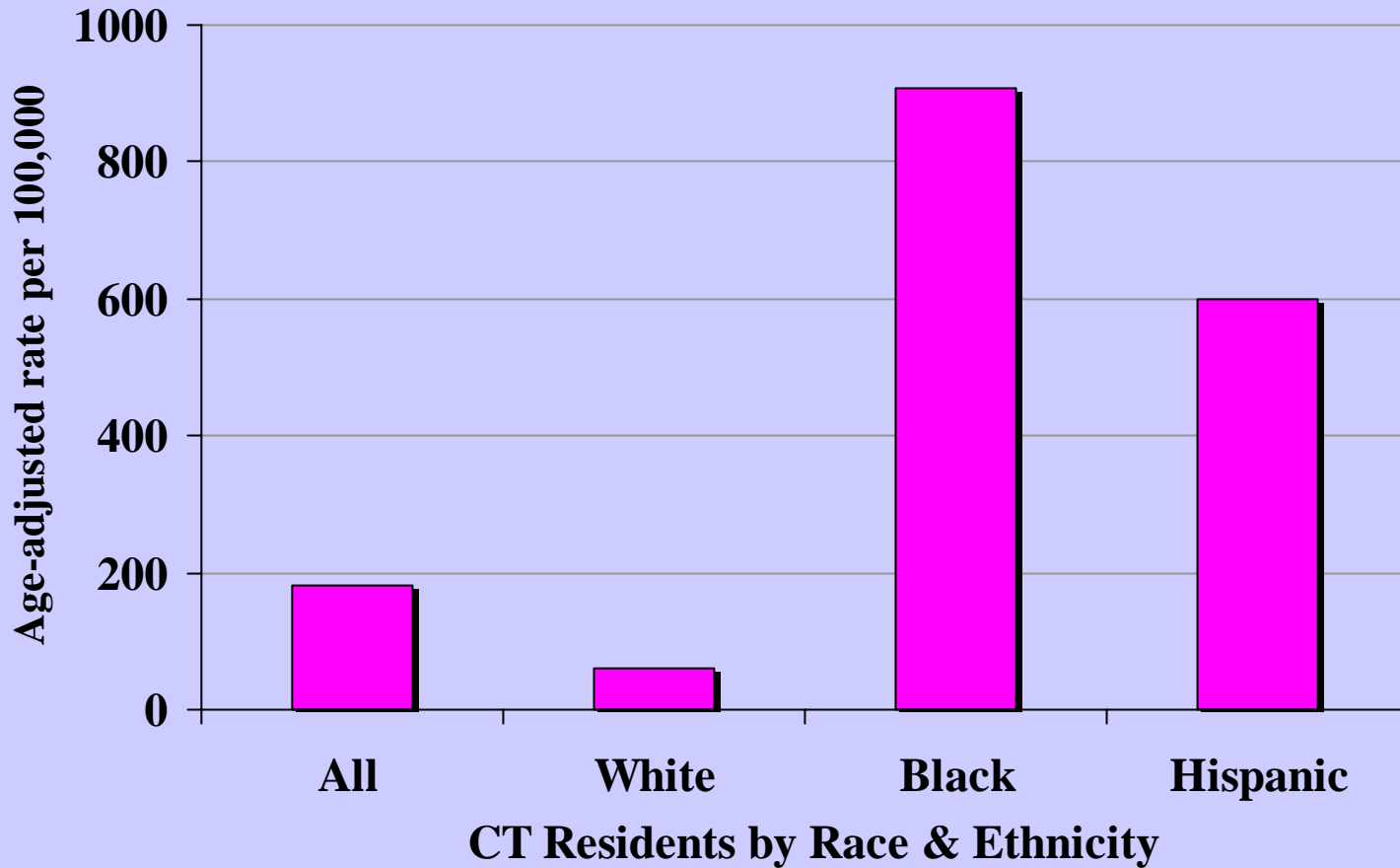


Age-Adjusted Death Rates for HIV Connecticut Residents, 1999 -2001

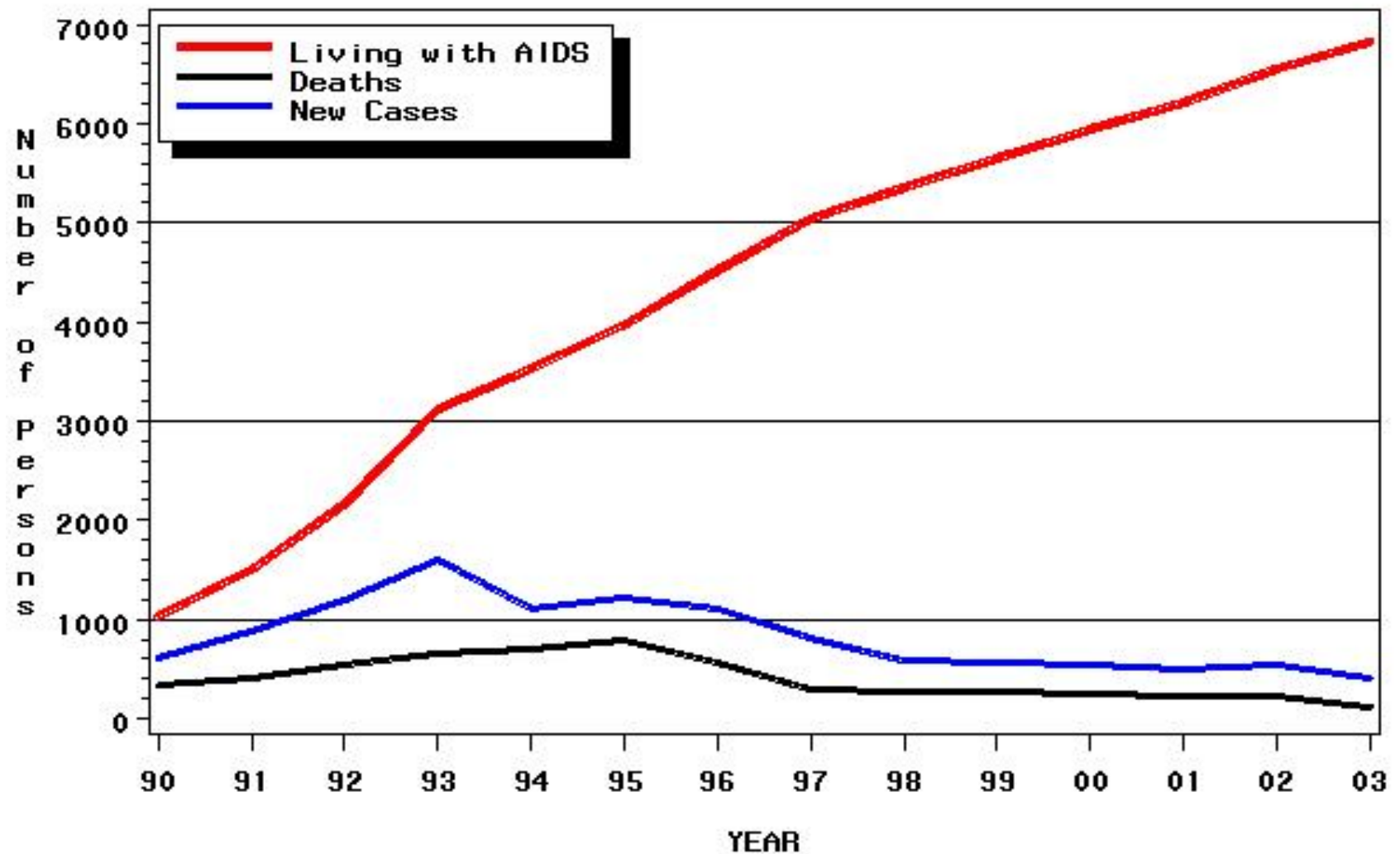


Age-Adjusted Premature Death Rates (<75 yrs) for HIV

Connecticut Residents, 1999-2001

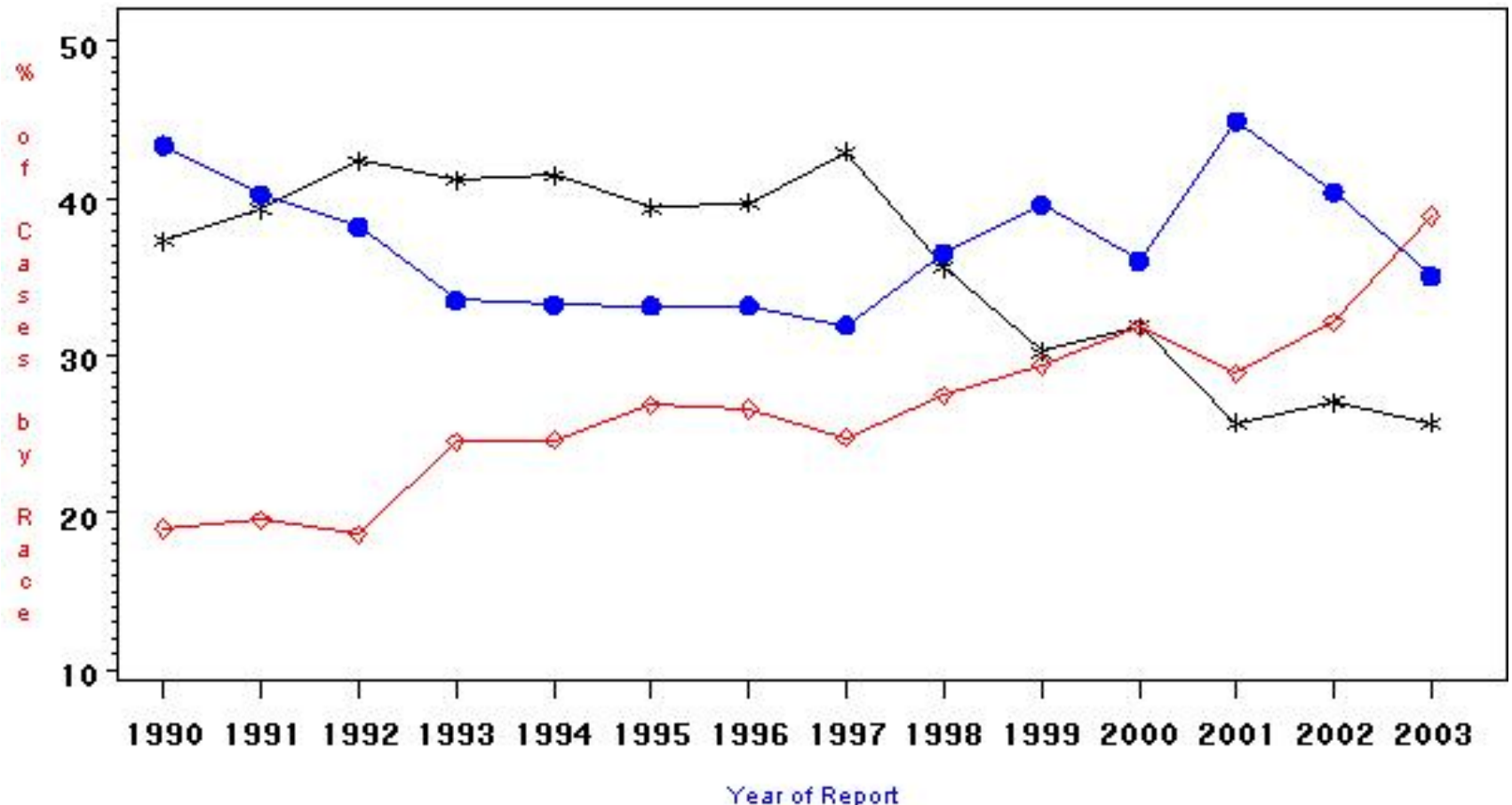


New AIDS Cases, AIDS Deaths, and People Living with AIDS, By Year, Connecticut Data through December 31, 2003



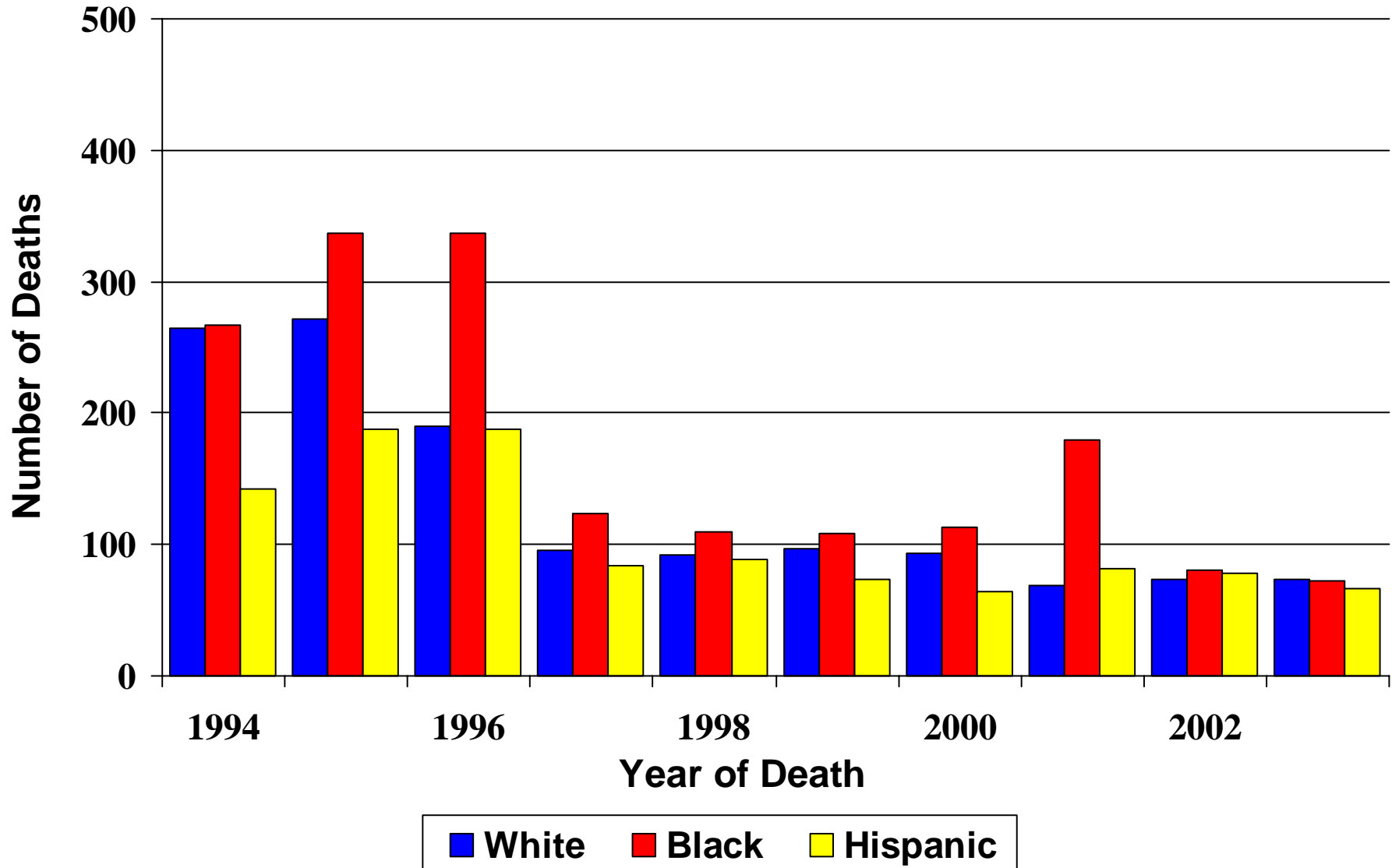
Connecticut AIDS Cases: Race by year of report

Data through December 31, 2003

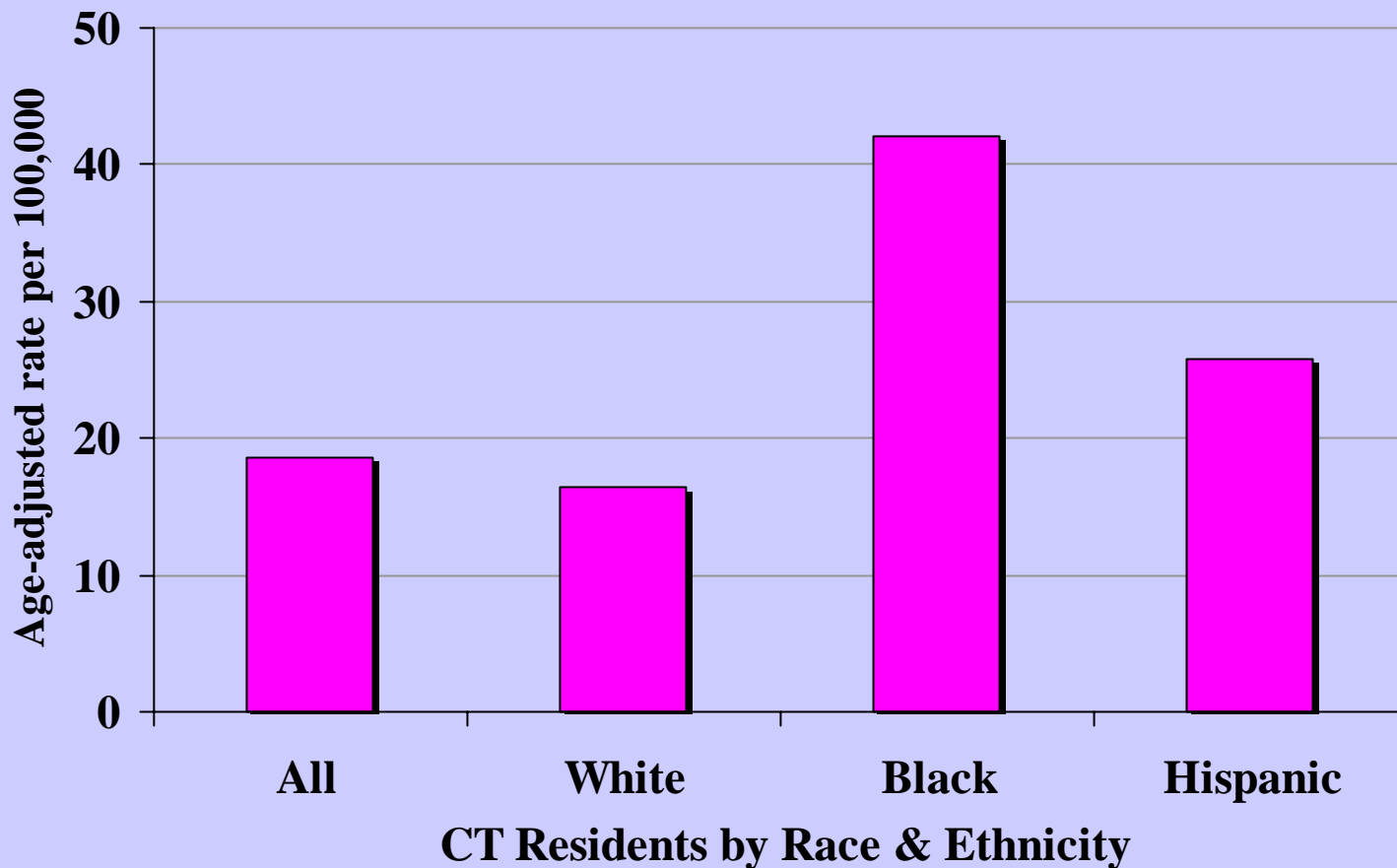


race *-*-* Black ◆◆◆ Hispanic ●●● White

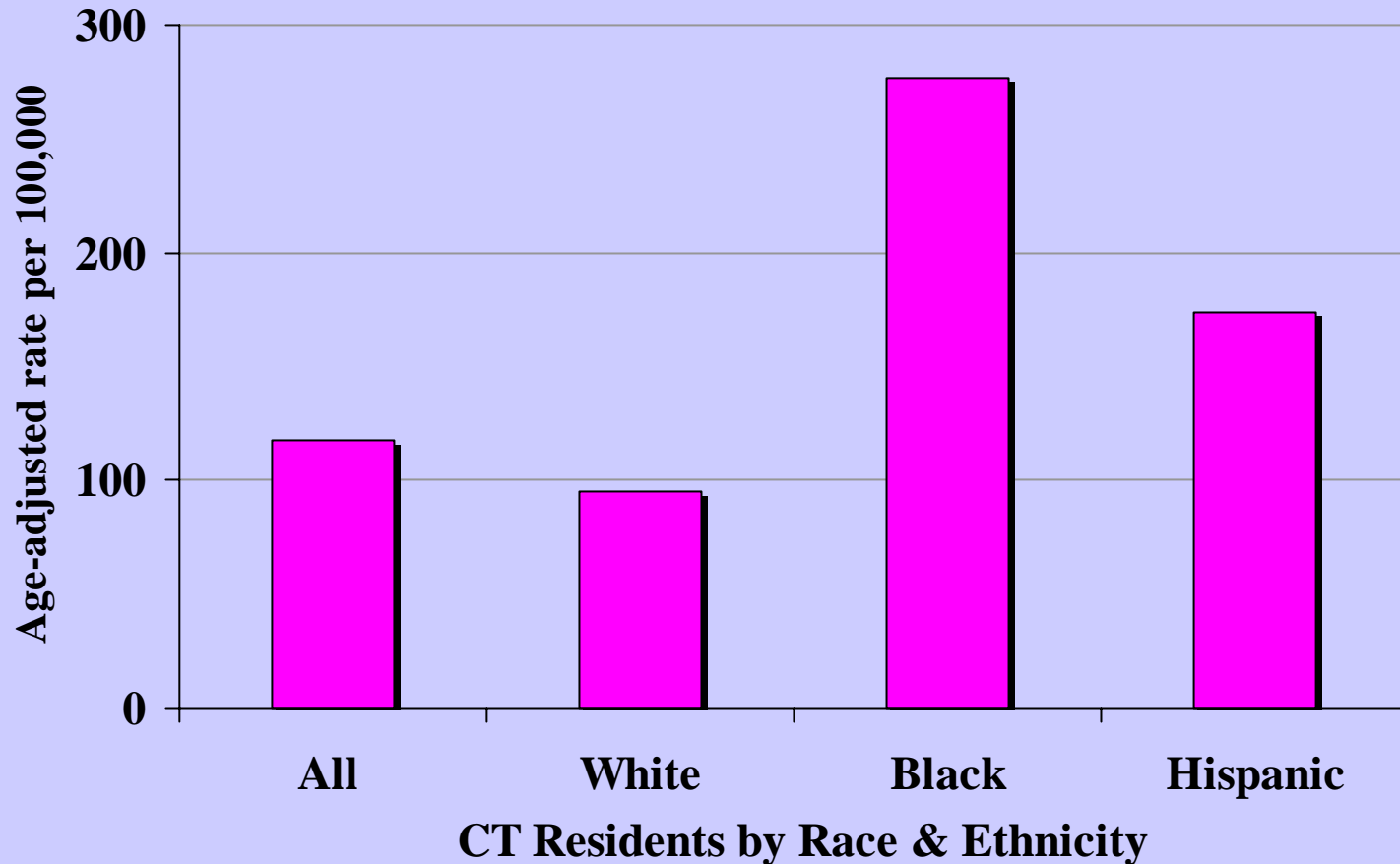
Deaths in Connecticut People with AIDS by Year of Death and Race/Ethnicity 1994-2003



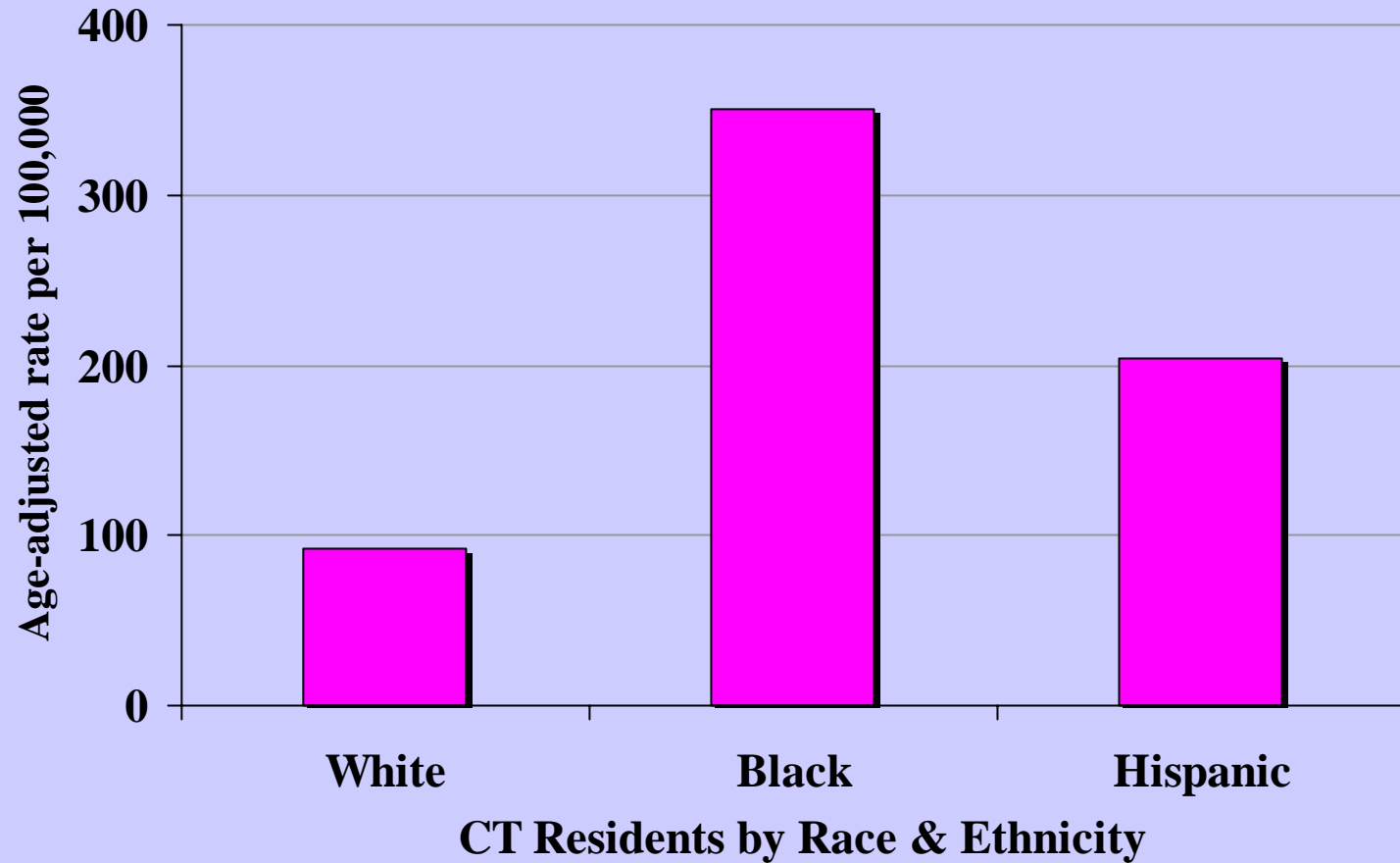
Age-Adjusted Death Rates for Diabetes Connecticut Residents, 1999-2001



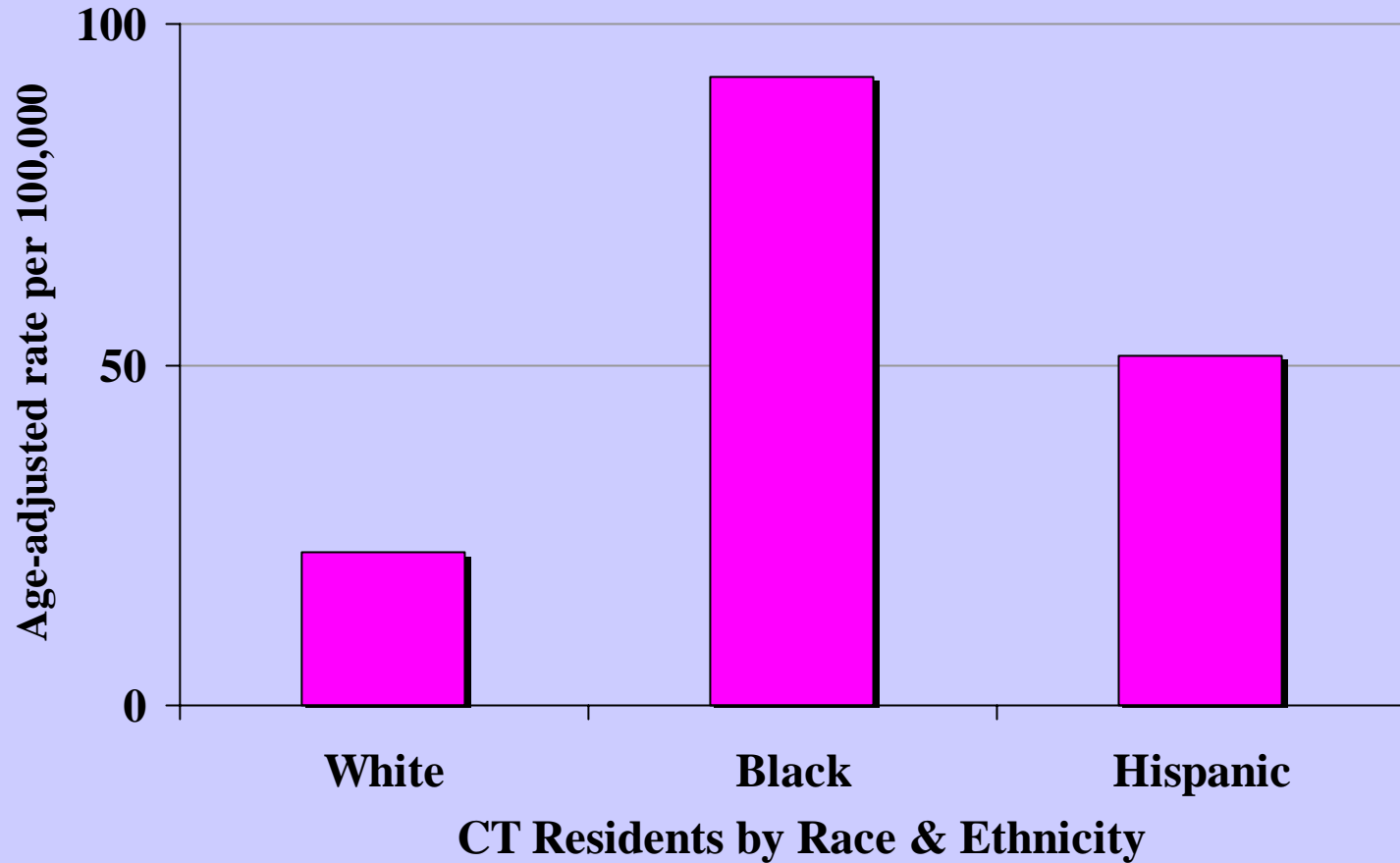
Age-Adjusted Premature Death Rates (<75 yrs) for Diabetes Connecticut Residents, 1999-2001



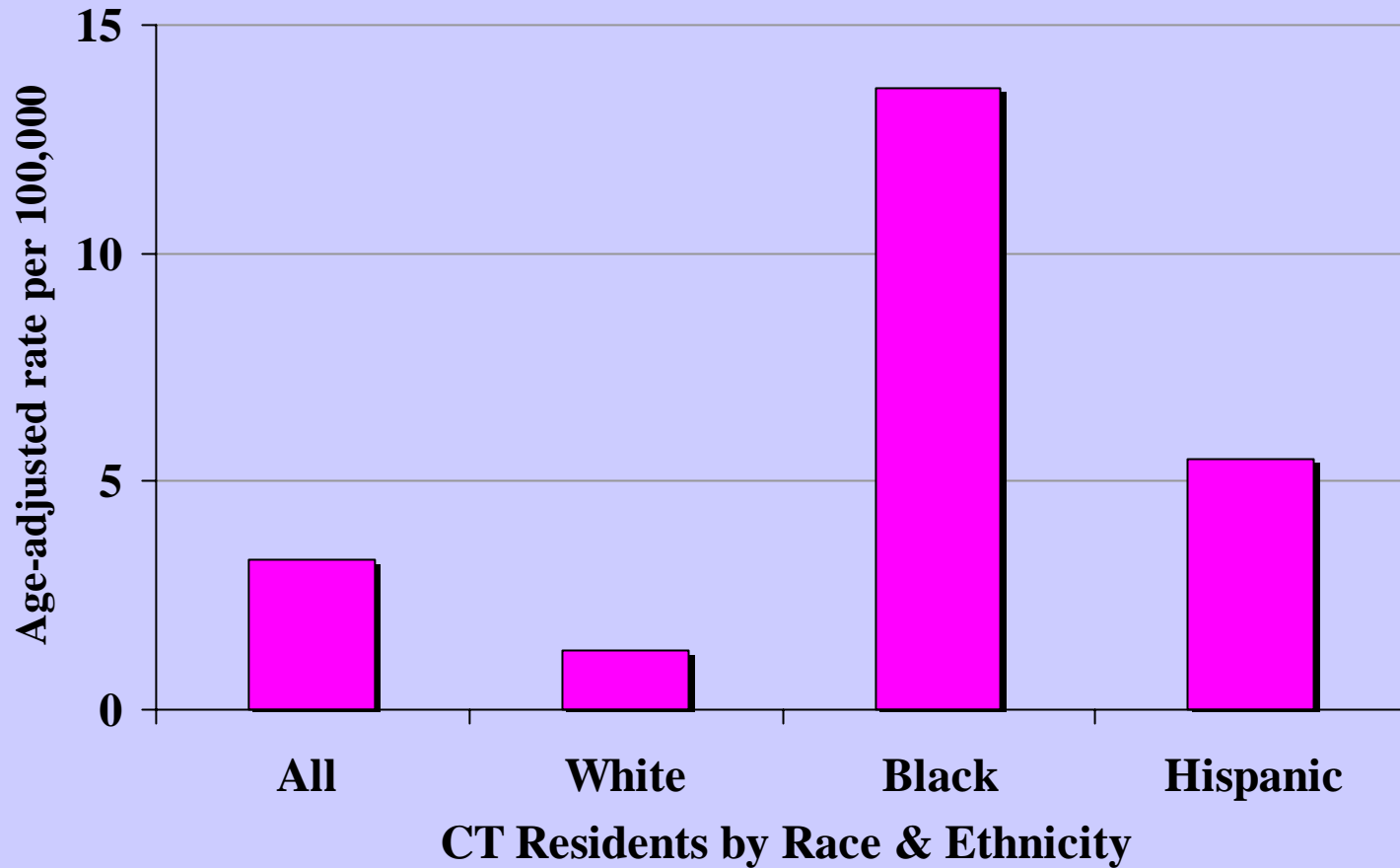
Age-Adjusted Hospitalization Rates for Diabetes Connecticut Residents, 2001



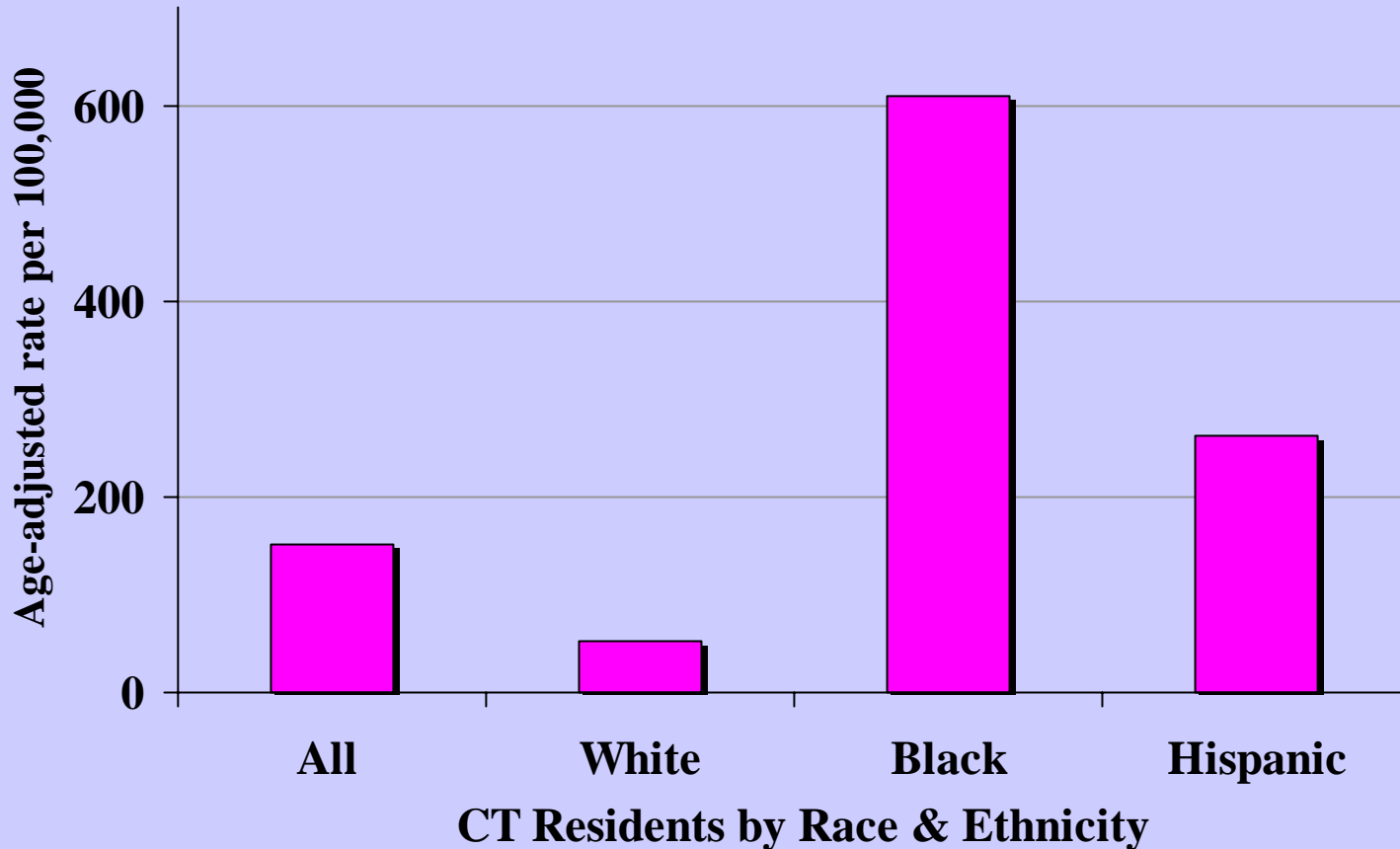
Age-Adjusted Hospitalization Rates for Diabetes-related Lower Extremity Amputation Connecticut Residents, 2001



Age-Adjusted Death Rates for Homicide Connecticut Residents, 1999-2001



Age-Adjusted Premature Death Rates (<75 yrs) for Homicide Connecticut Residents, 1999-2001



Changes in Age-Adjusted Mortality Rates African American Residents of Connecticut (1989-1998)

- Significant decreases for Black males:
 - All Causes of Death
 - Cerebrovascular Disease
 - Heart Disease
 - COPD
- There were no significant increases in mortality rates for Black males among any of the leading causes of death.

Source: CT Department of Public Health, *Mortality and Its Risk Factors in Connecticut* (2004)



Changes in Age-Adjusted Mortality Rates African American Residents of Connecticut (1989-1998)

- Significant increase for Black females:
 - Congestive Heart Failure
- There were no significant decreases in mortality rates for Black females among any of the leading causes of death.
- There were no other significant changes in mortality rates for Black females during the 1990s.

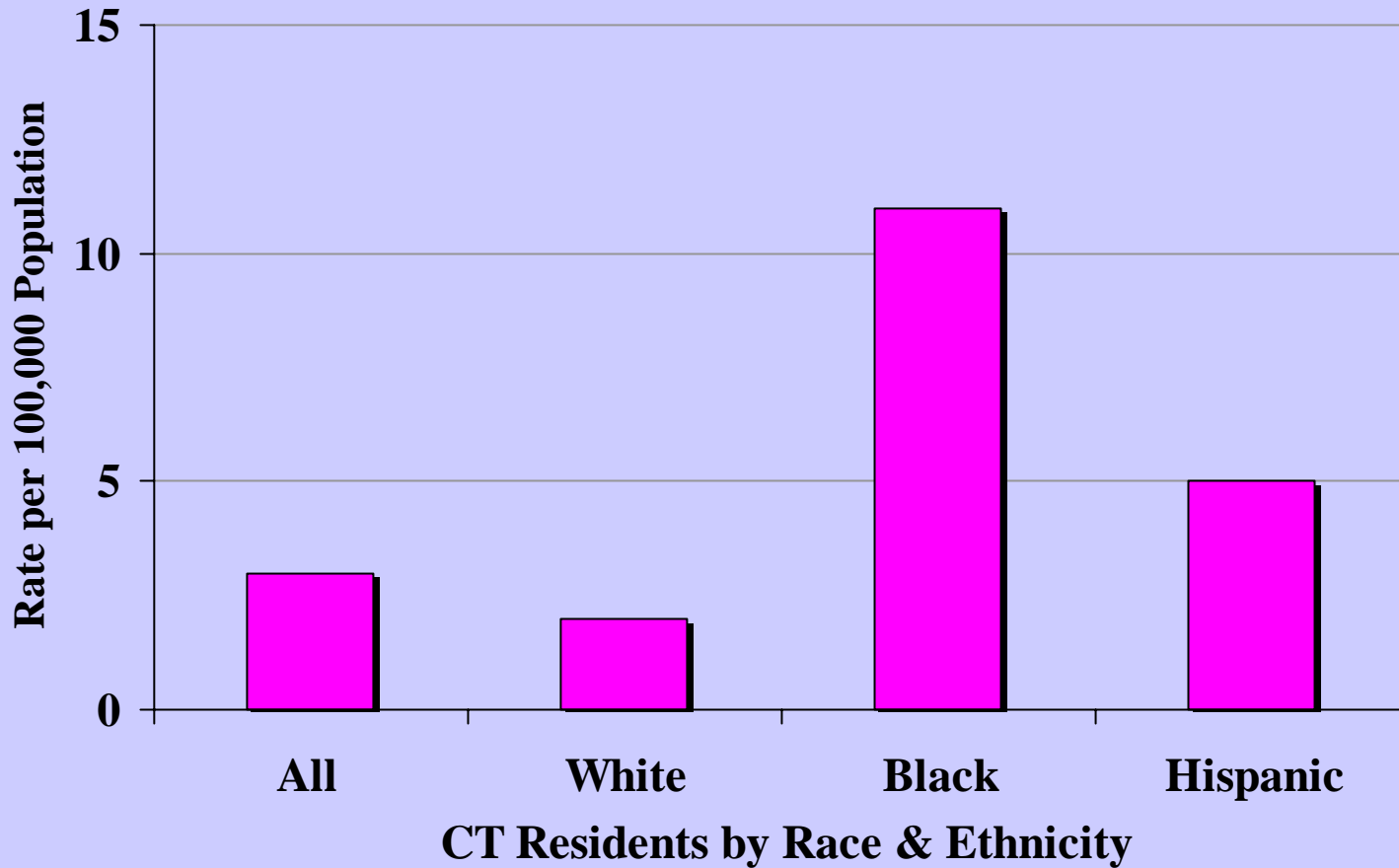
Source: CT Department of Public Health, *Mortality and Its Risk Factors in Connecticut* (2004)



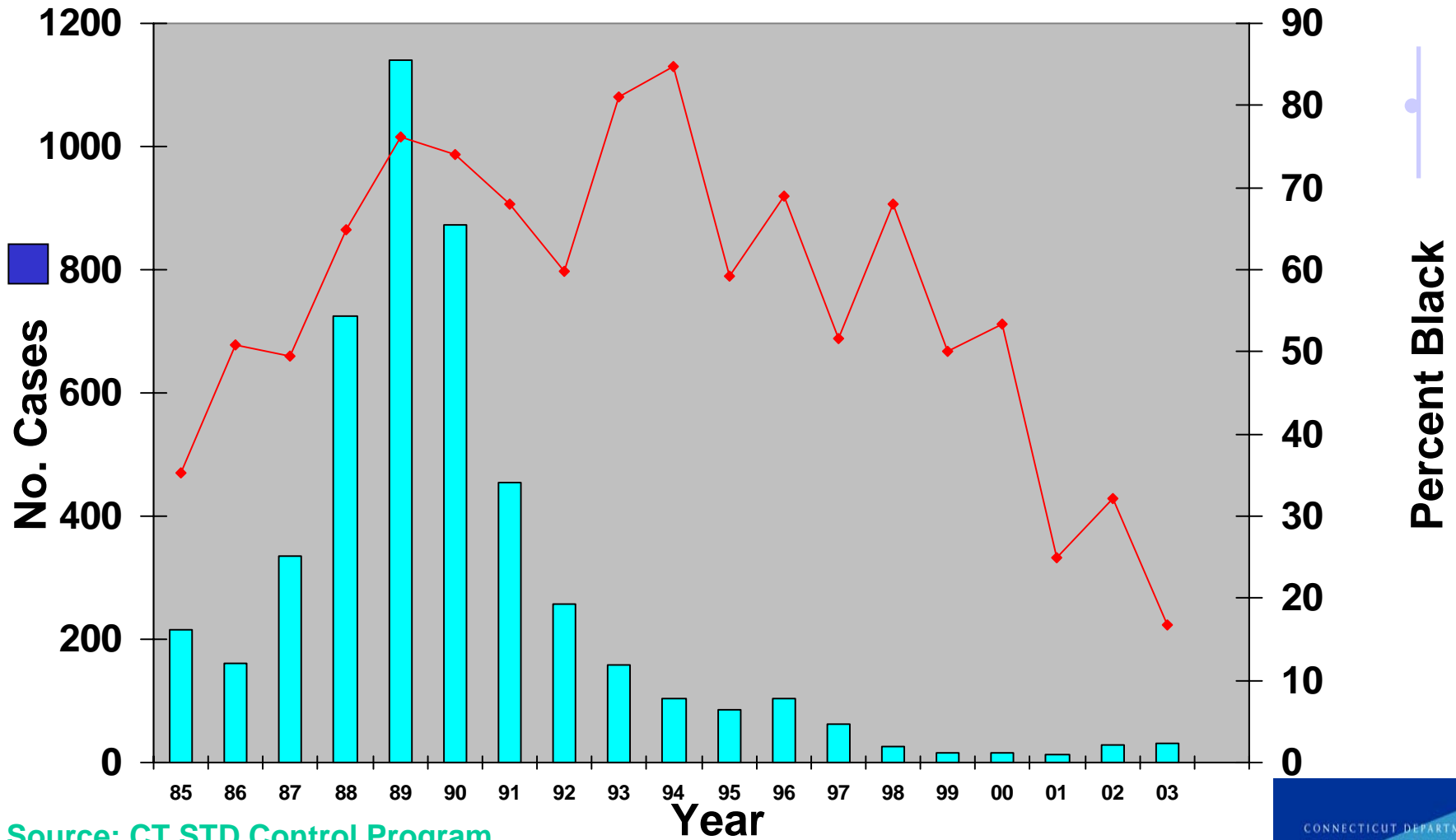
*Infectious and Sexually
Transmitted Diseases*

P&S Syphilis Incidence Rates

Connecticut Residents, 1999 -2003



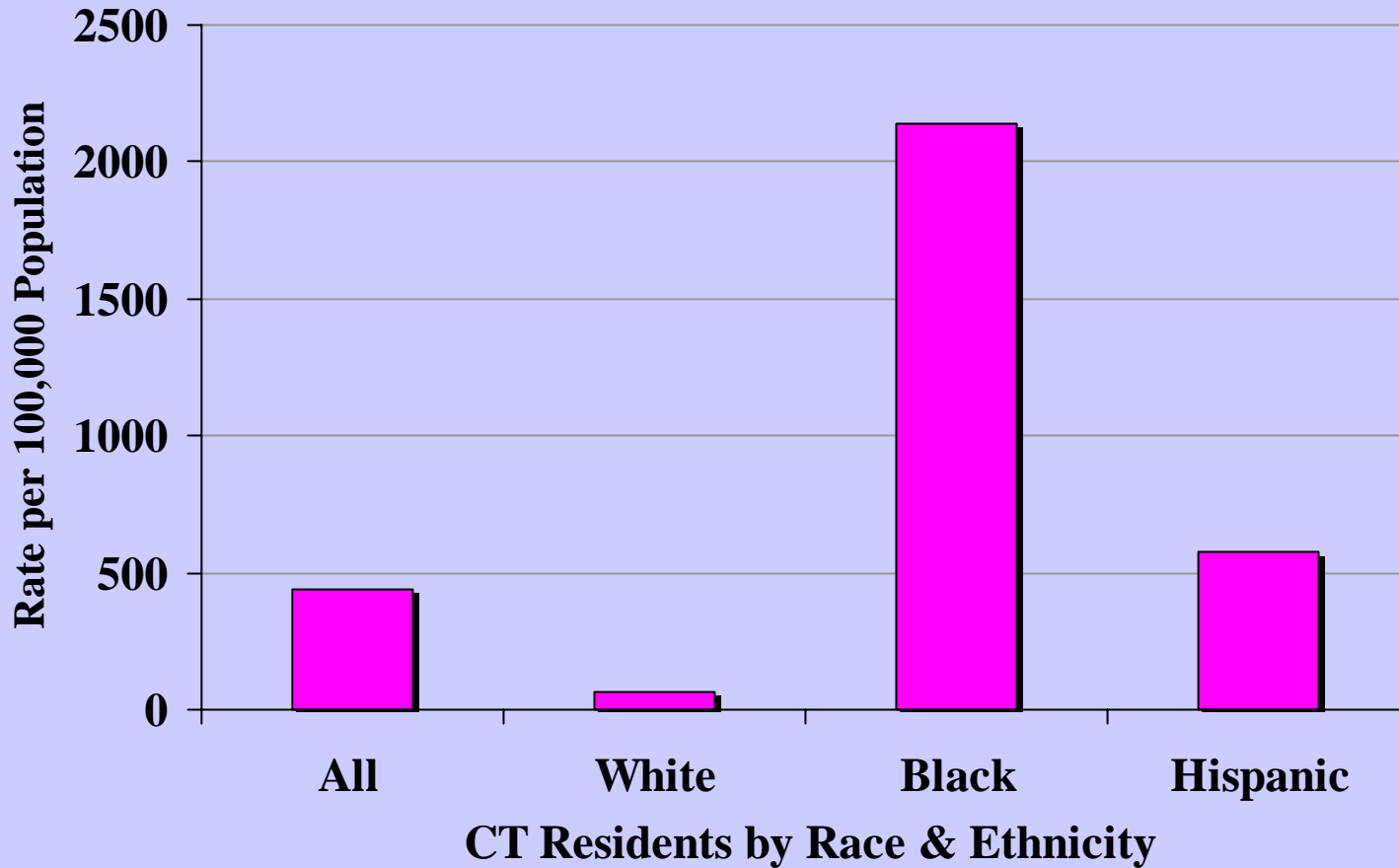
Primary & Secondary Syphilis Cases Overall and Among Blacks, CT 1985 - 2003



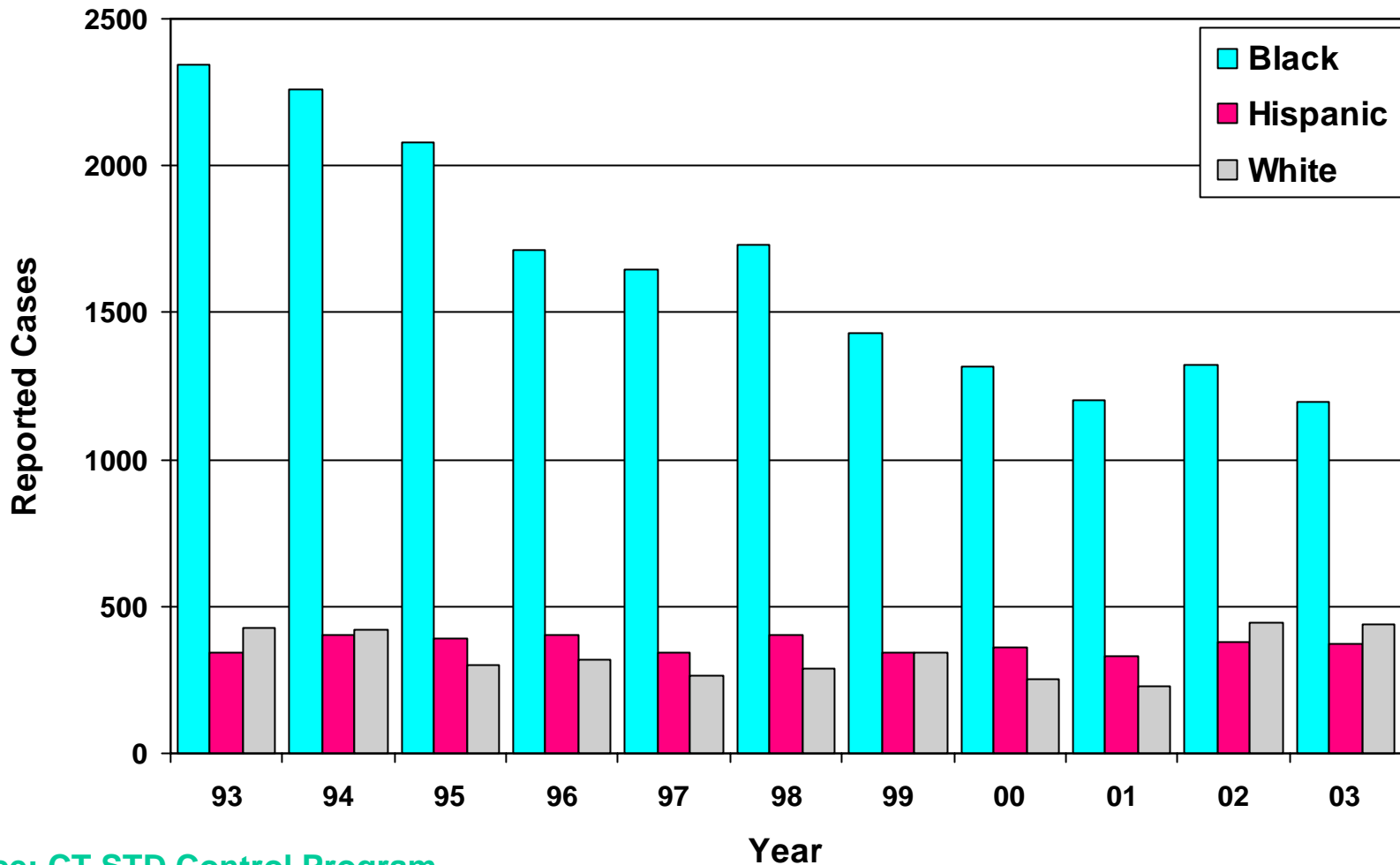
Source: CT STD Control Program

Gonorrhea Incidence Rates

Connecticut Residents, 1999 -2003



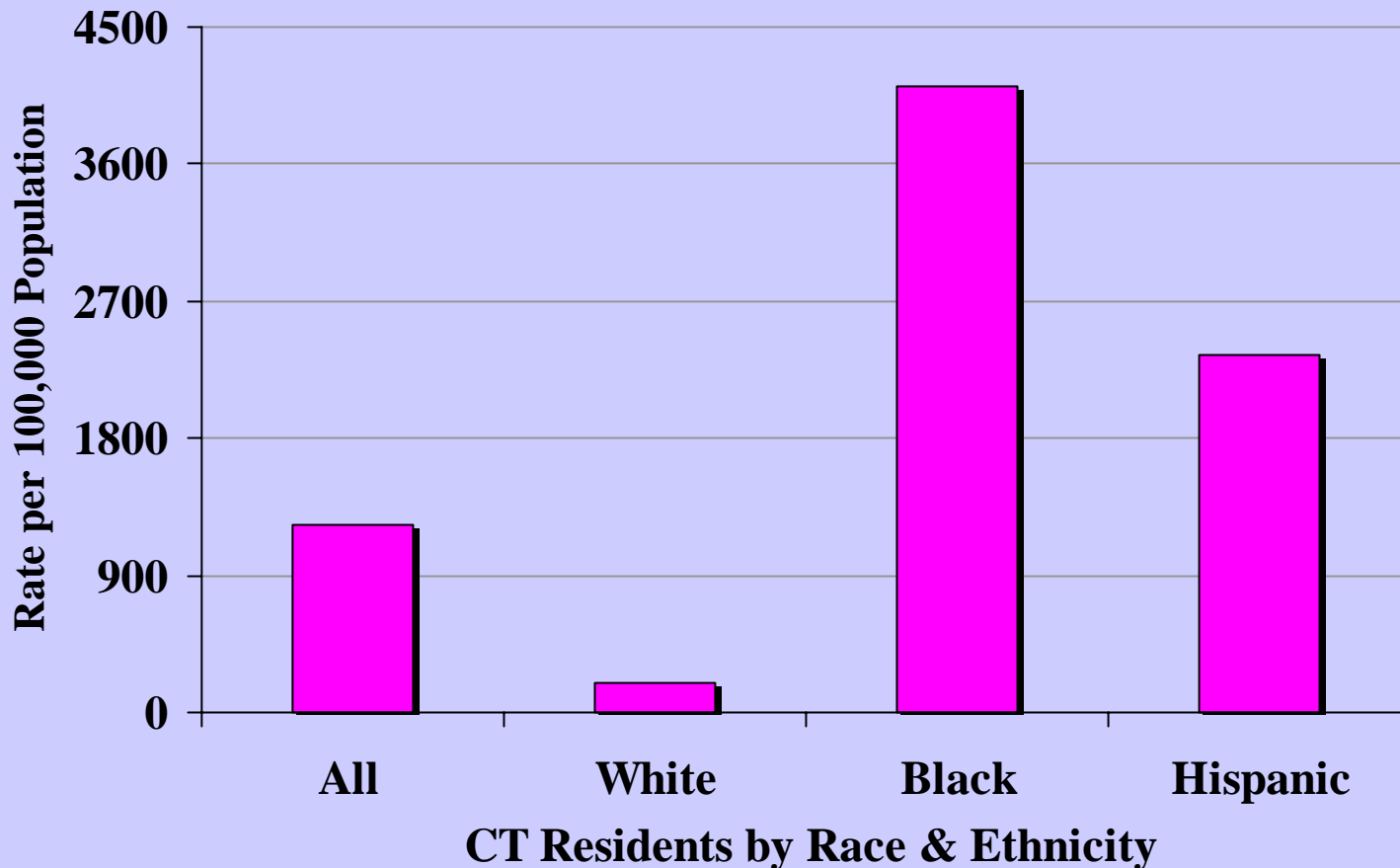
Connecticut: Reported Gonorrhea Cases By Race/Ethnicity, 1993 - 2003



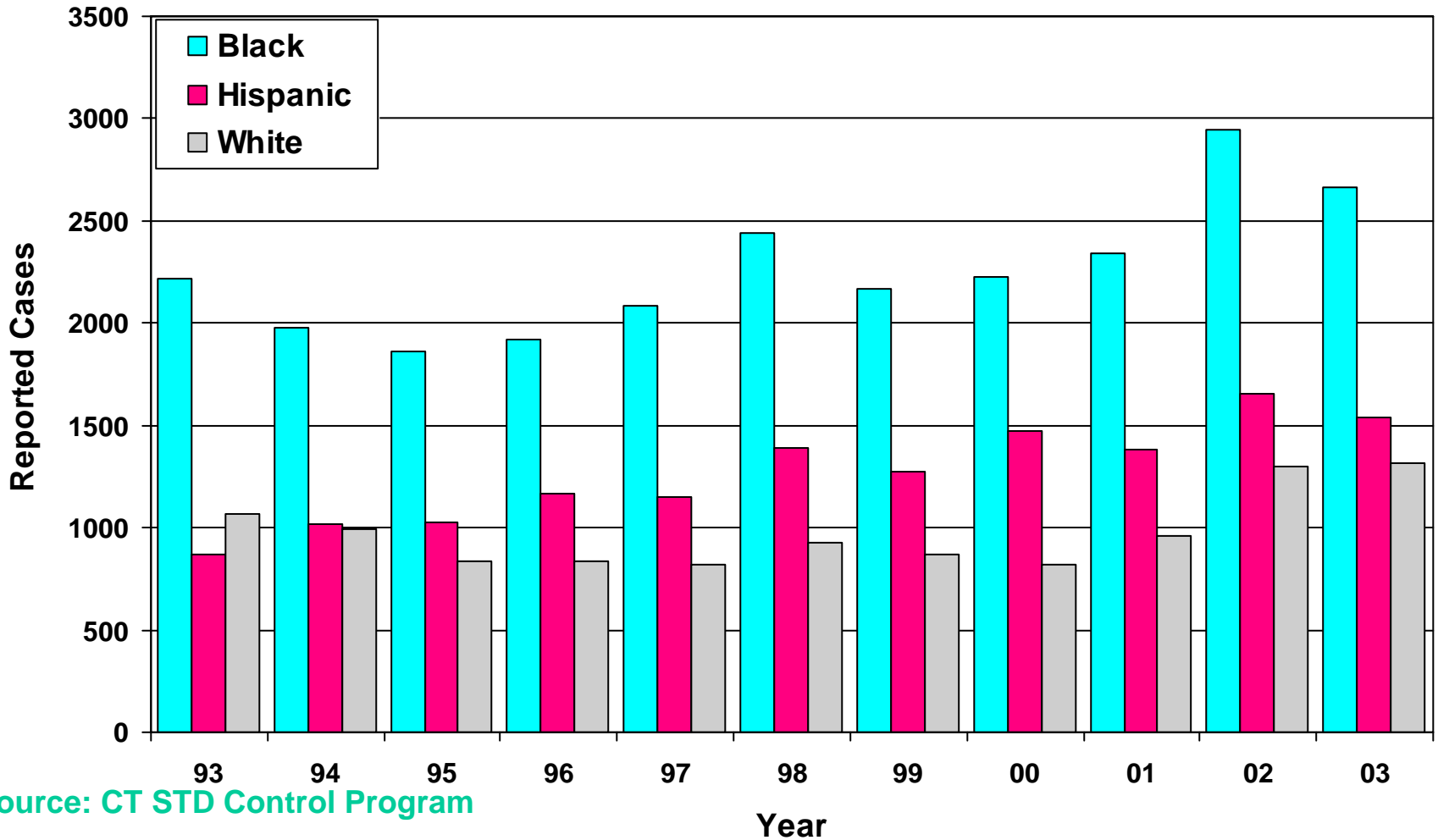
Source: CT STD Control Program

Chlamydia Incidence Rates

Connecticut Residents, 1999 -2003

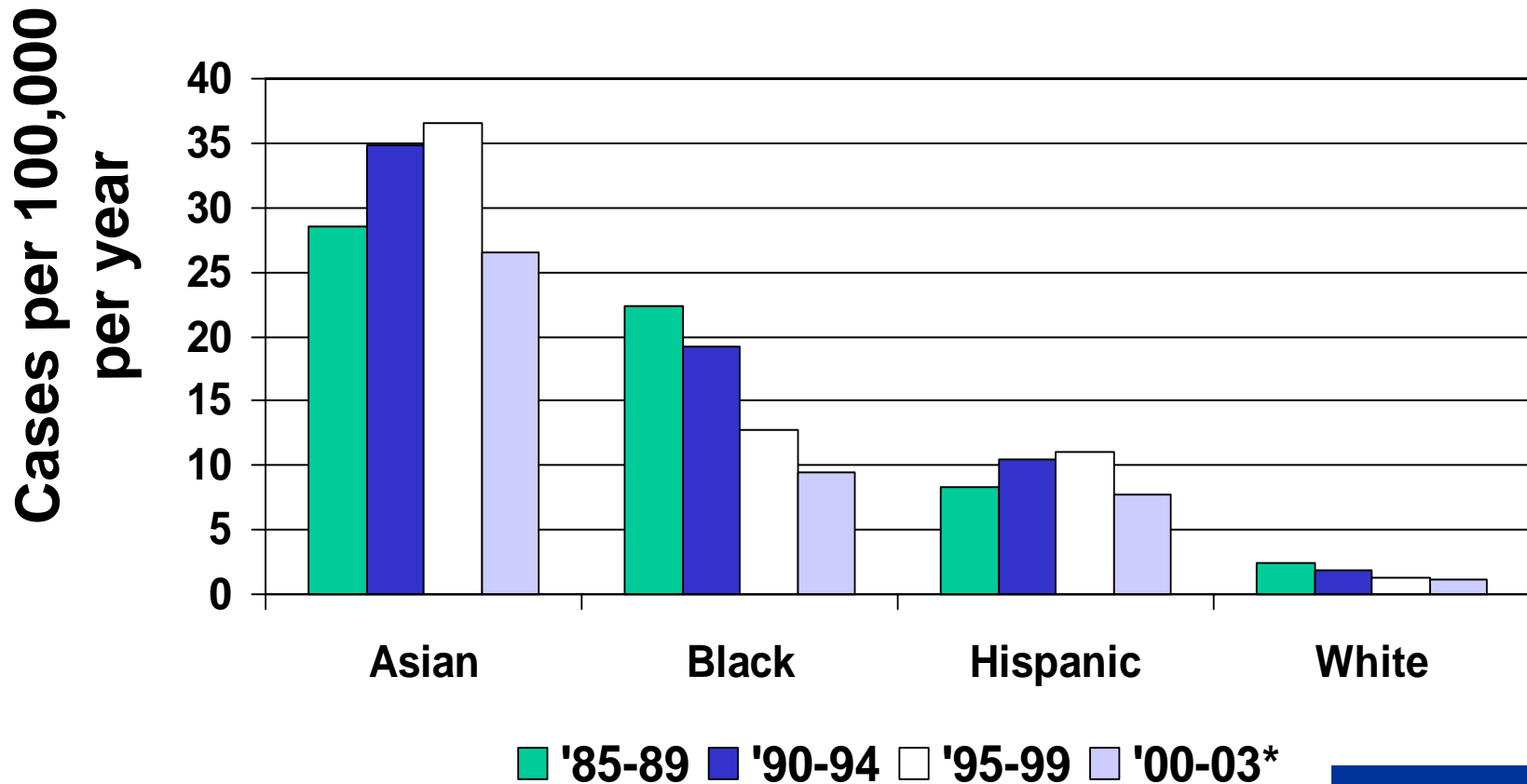


Connecticut: Reported Chlamydia Cases By Race/Ethnicity, 1993 - 2003



Source: CT STD Control Program

5-Year Annual Average TB Case Rates by Race-ethnicity, CT 1985-2003



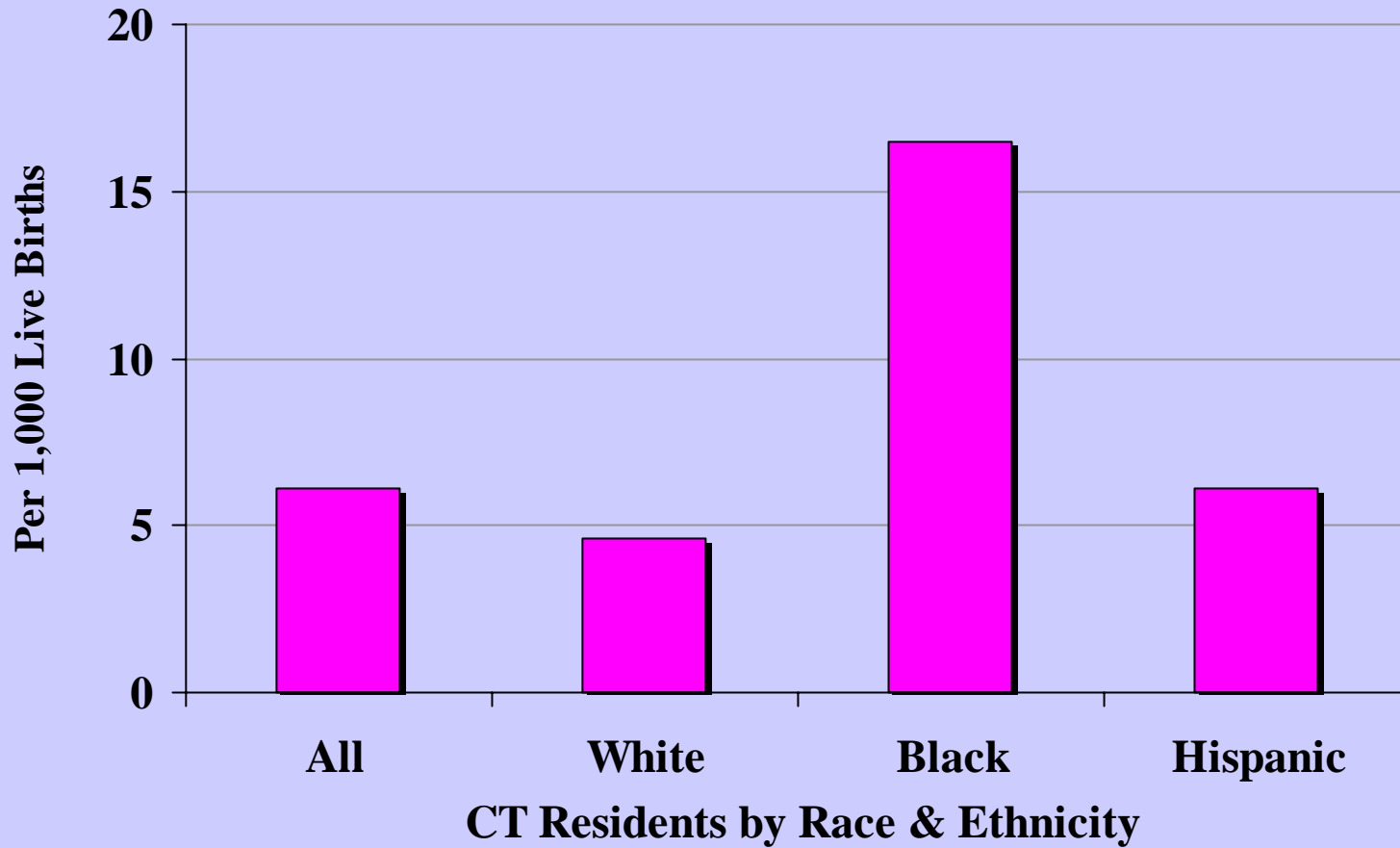
* Projected thru '04 based on '00-03 annual average



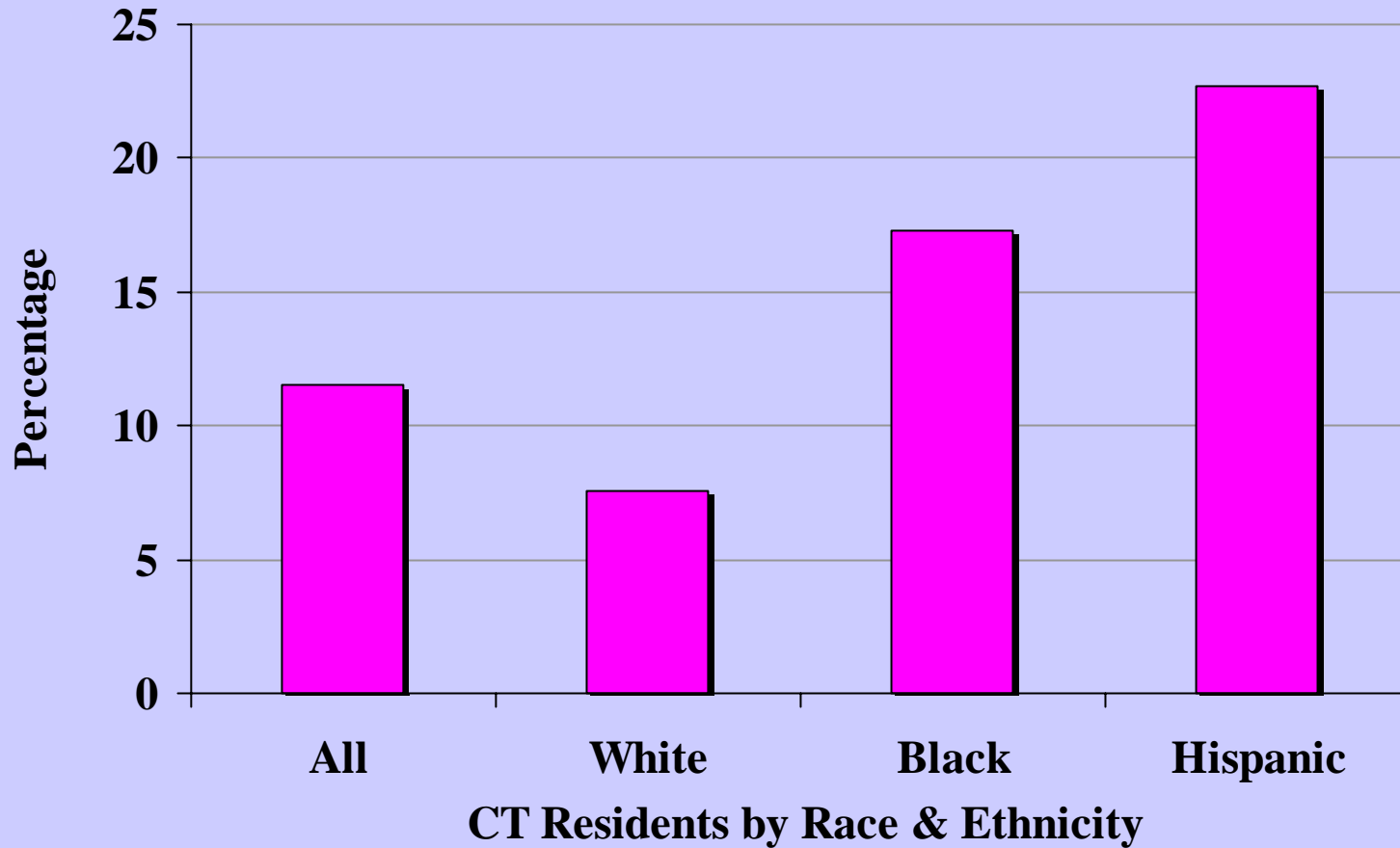
Birth Outcomes

Infant Death Rate

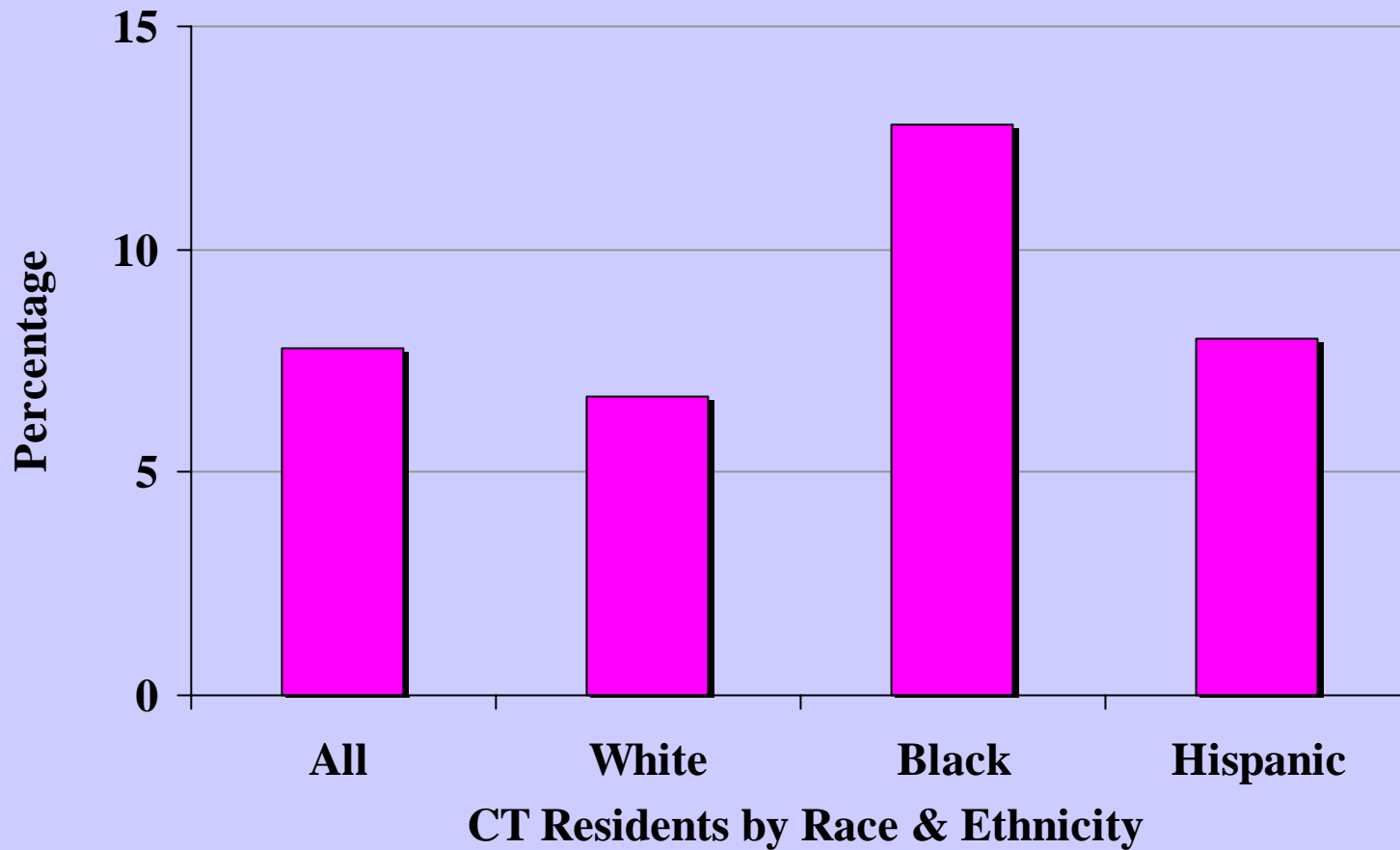
Connecticut Residents, 2001



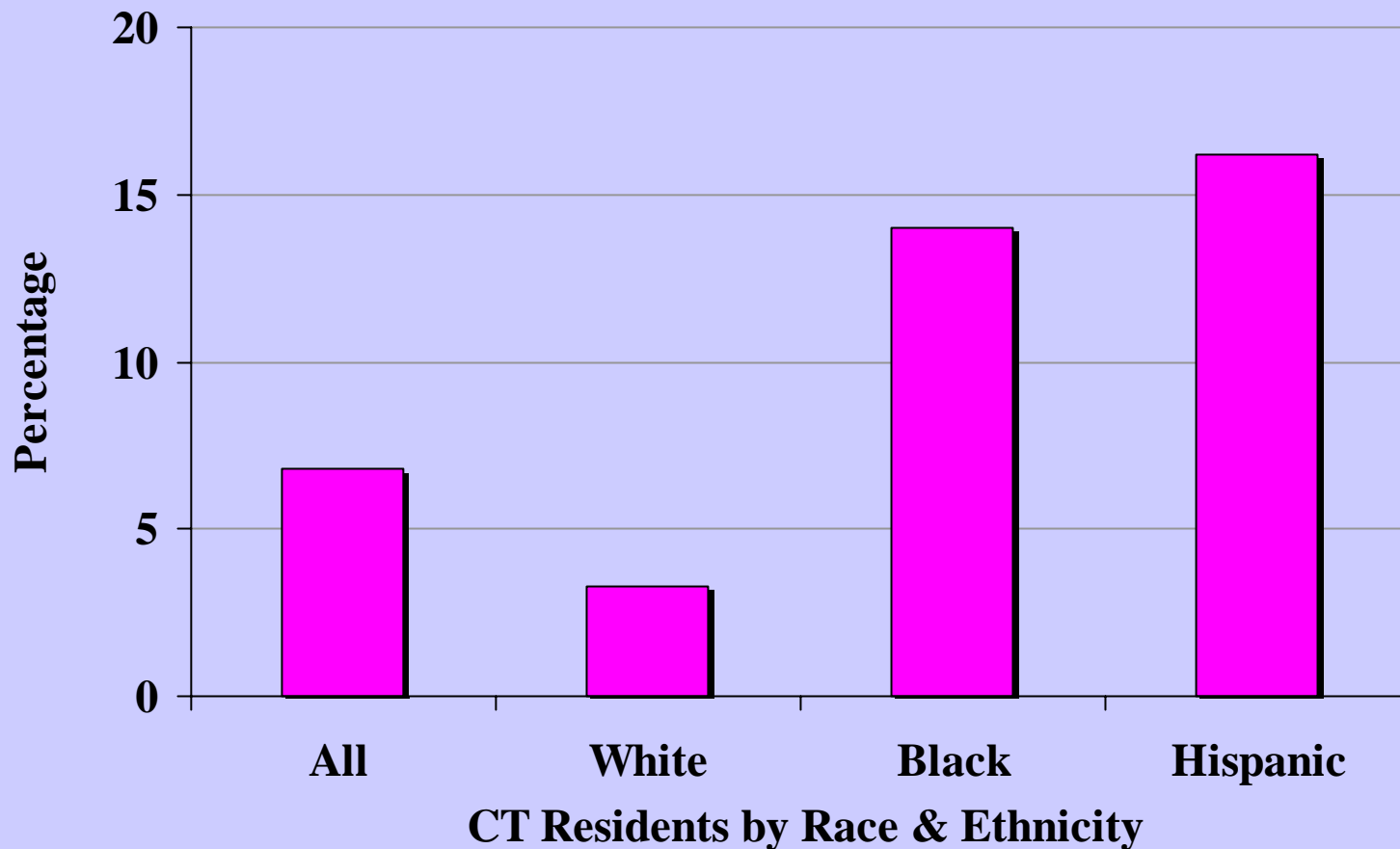
Late or No Prenatal Care Connecticut Residents, 2002



Low Birthweight Births *Connecticut Residents, 2002*



Teen Births (Under 20 Years of Age) Connecticut Residents, 2003



Challenges for Communities

- Conduct community health inventories
- Identify emerging health issues
- Advocate for community-based health needs by:
 - *organizing at the neighborhood level;*
 - *gathering relevant data;*
 - *encouraging legislative action;*
 - *partnering with public and private sector;*



Challenges for the CT DPH

- On-going surveillance of health needs and status of ethnic and cultural communities in CT
- Support community-based efforts to identify and eliminate disparities by:
 - *meeting with community groups to elicit needs;*
 - *provide relevant data;*
 - *provide technical assistance;*
 - *collaborating in support of community-based programming;*



*For Programs, Publications & Statistics go to:
www.dph.state.ct.us*



CONNECTICUT DEPARTMENT OF
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J. Robert Galvin, M.D., M.P.H.

Commissioner