

Cardiovascular Disease (CVD) in Texas

A Surveillance Report
August 2007

Health Promotion Unit
Texas Department of State Health Services



Burden of CVD

- ◆ Leading causes of death in Texas and in the United States
- ◆ 33% of all deaths in Texas in 2004
- ◆ 1,422,000 Texas adults reported that they have had heart disease or stroke in 2005

STRATEGIES

- ◆ Surveillance, Data and Outcome Management
- ◆ Health Education and Outreach
- ◆ Clinical Prevention and Treatment Services
- ◆ Community Policy and Environmental Changes

SURVEILLANCE

CVD SURVEILLANCE SYSTEM

- ◆ Mortality Data
- ◆ Hospital Discharge Data Set
- ◆ Behavioral Risk Factor Survey Data
- ◆ Youth Surveys (YRBS)
- ◆ Health Plan Employer Data and Information Set (HEDIS)
- ◆ Texas EMS/Trauma Registry Data
- ◆ Medicaid Data

MORTALITY DATA

Mortality Data

- ◆ **Death certificate data** were compiled and tabulated by the Statistical Services Division of the Texas Vital Statistical Unit (VSU)
- ◆ **Sex-, race- and age-specific mortality data** were computed for 1999 through 2004
- ◆ All death rates are age-adjusted using the 2000 US standard population

Mortality Data ICD Code

Cause of Death	ICD-9 Codes (1969-1998)	ICD-10 Codes (1999-2004)
Ischemic Heart Disease (IHD)	410-414	I20-I25
Stroke	430-438	I60-I69
Congestive heart failure (CHF)	428	I50

MAPS

- ◆ This publication also includes maps of selected chronic disease death rates for the state as a whole and at the county level.
- ◆ The maps allow the reader to identify areas in the state with high rates and areas with low rates.

MAPS

- ◆ Although county rates provide a high degree of specificity, rates in counties with small populations and few deaths for a specific condition can be unstable

MAPS

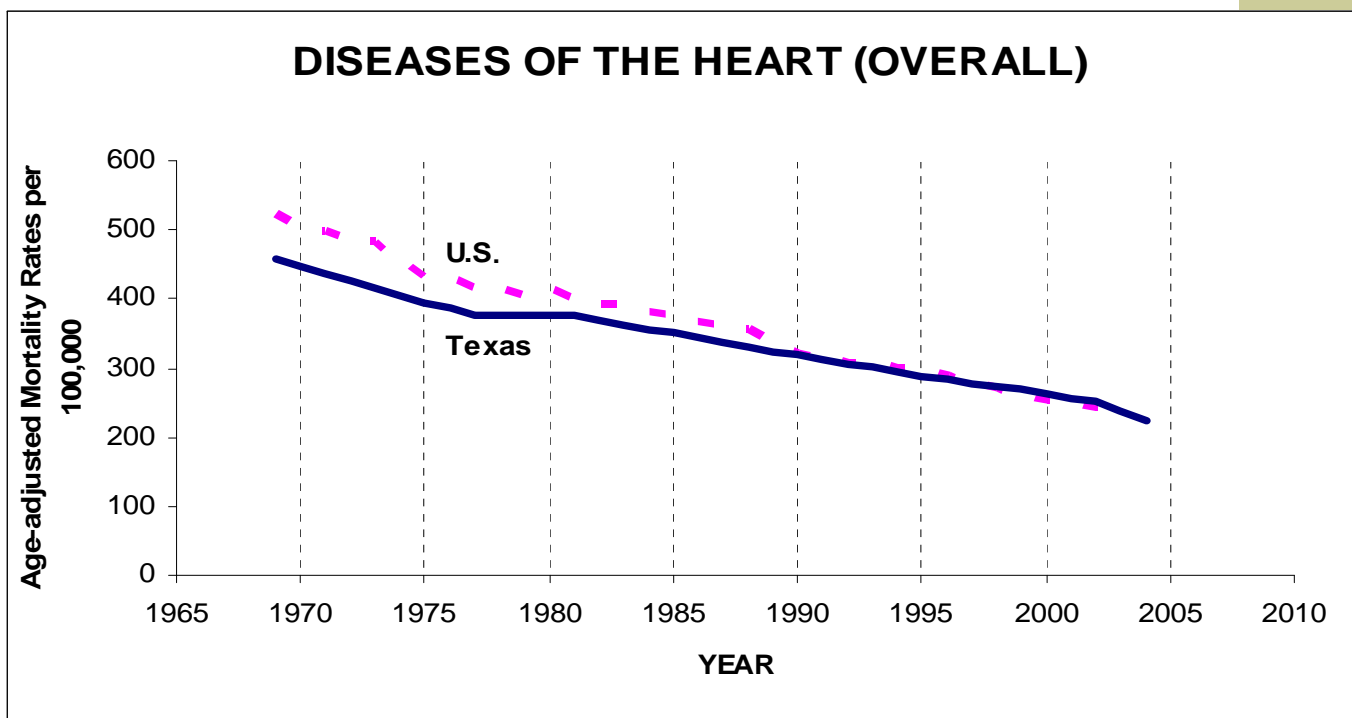
- ◆ For each map, county specific rates were ranked from highest to lowest and then categorized into quartiles
- ◆ The maps also use a graded color scheme to differentiate each quartile, with the darkest color representing counties with the highest rates and the lightest color representing areas with the lowest rates

Mortality Data Trends

Changes in Mortality Data Reporting

- ◆ ICD 9 to ICD 10
- ◆ New population standard was used for age standardization (age adjustment) of death rates. The new standard is based on the year 2000 population and replaces use of the 1940 standard population

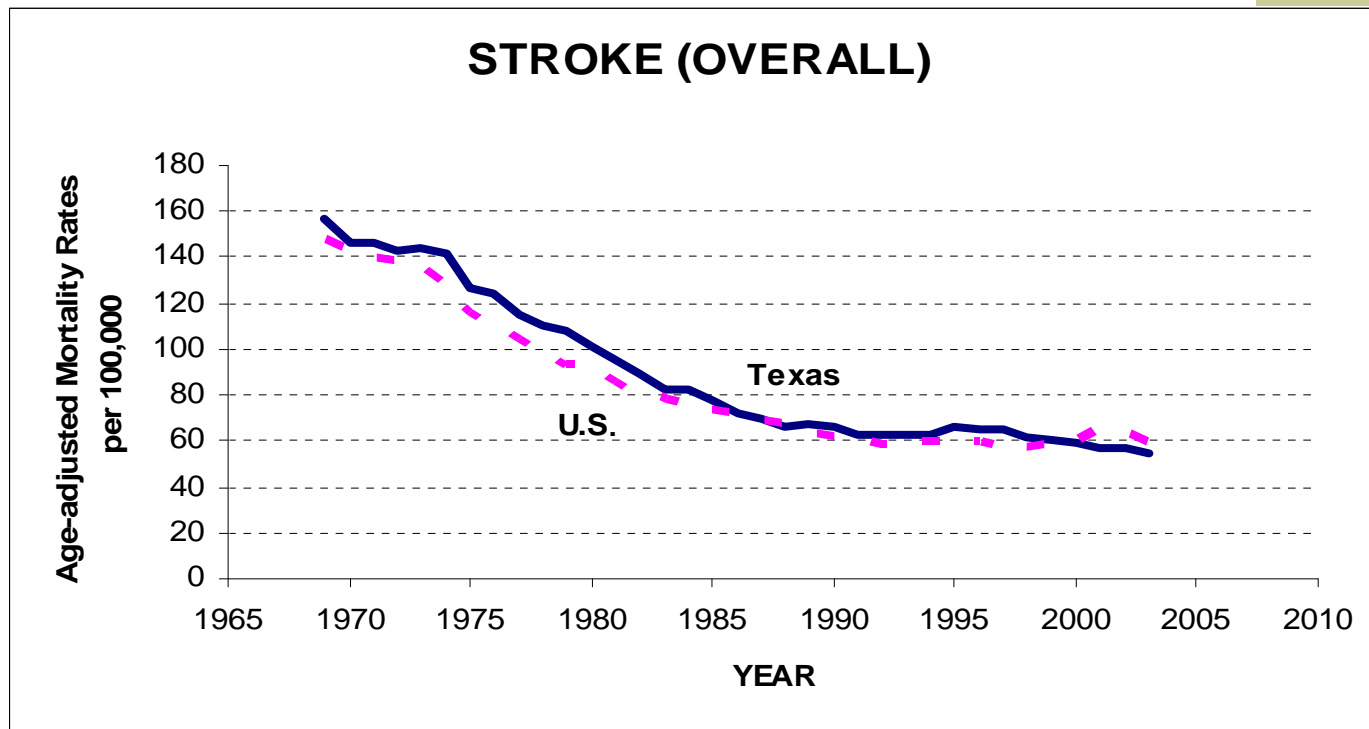
Trends of Heart Disease



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1969-2004



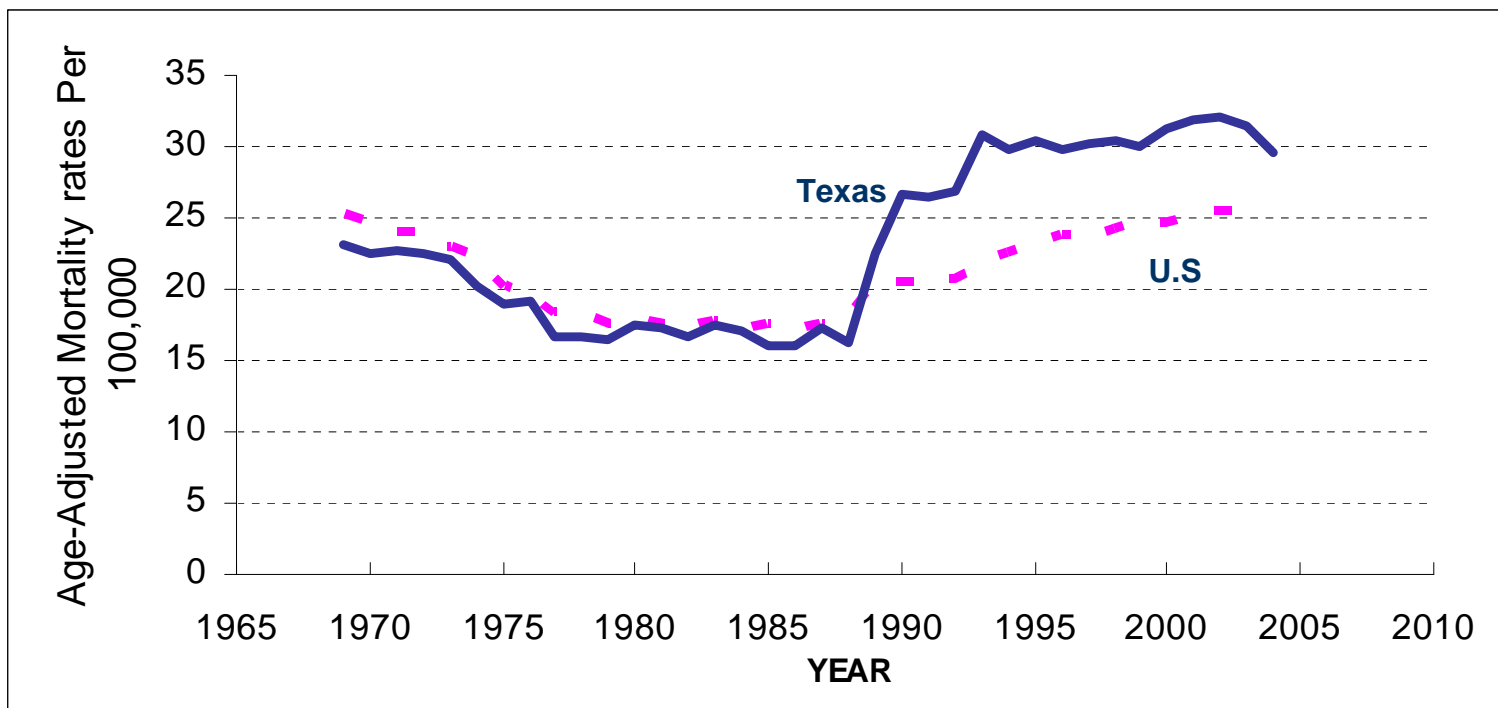
Trends of Stroke



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1969-2004



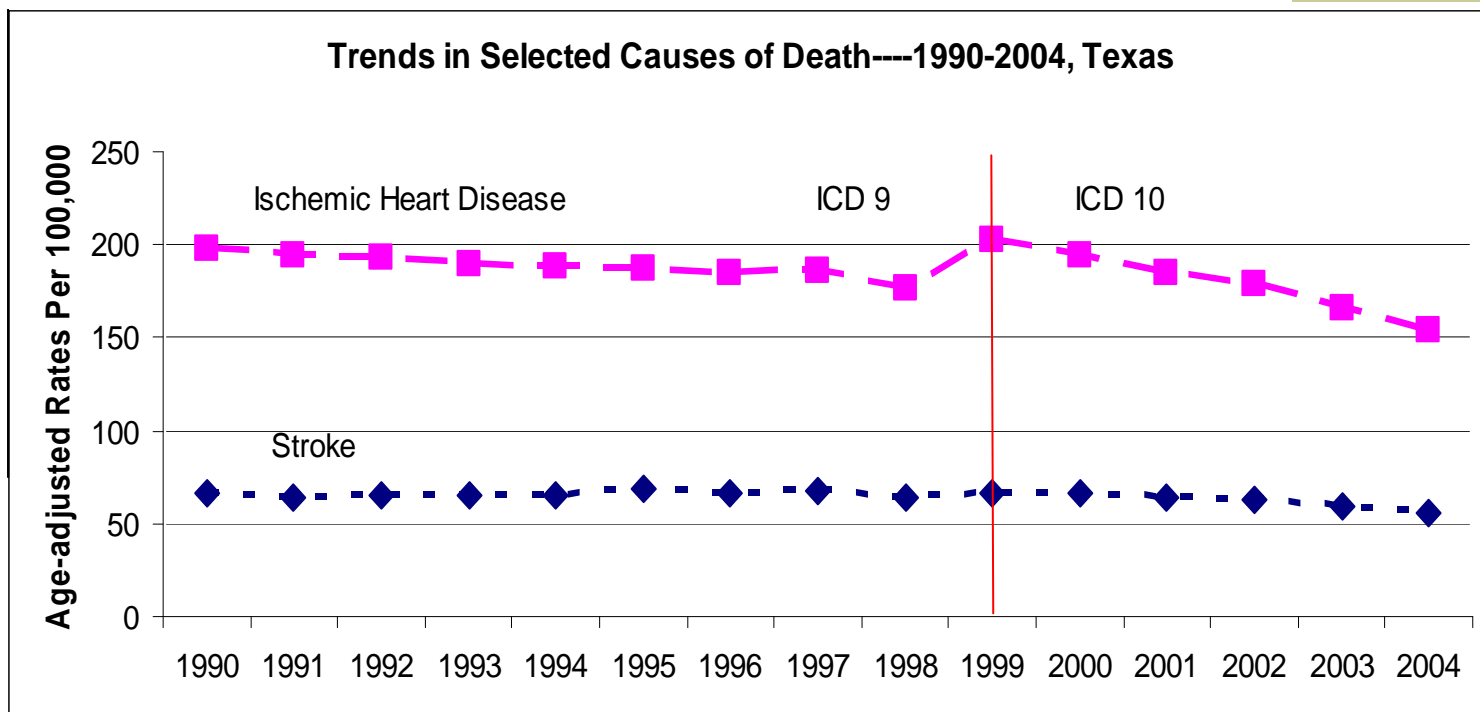
Trends of Diabetes



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1969-2004



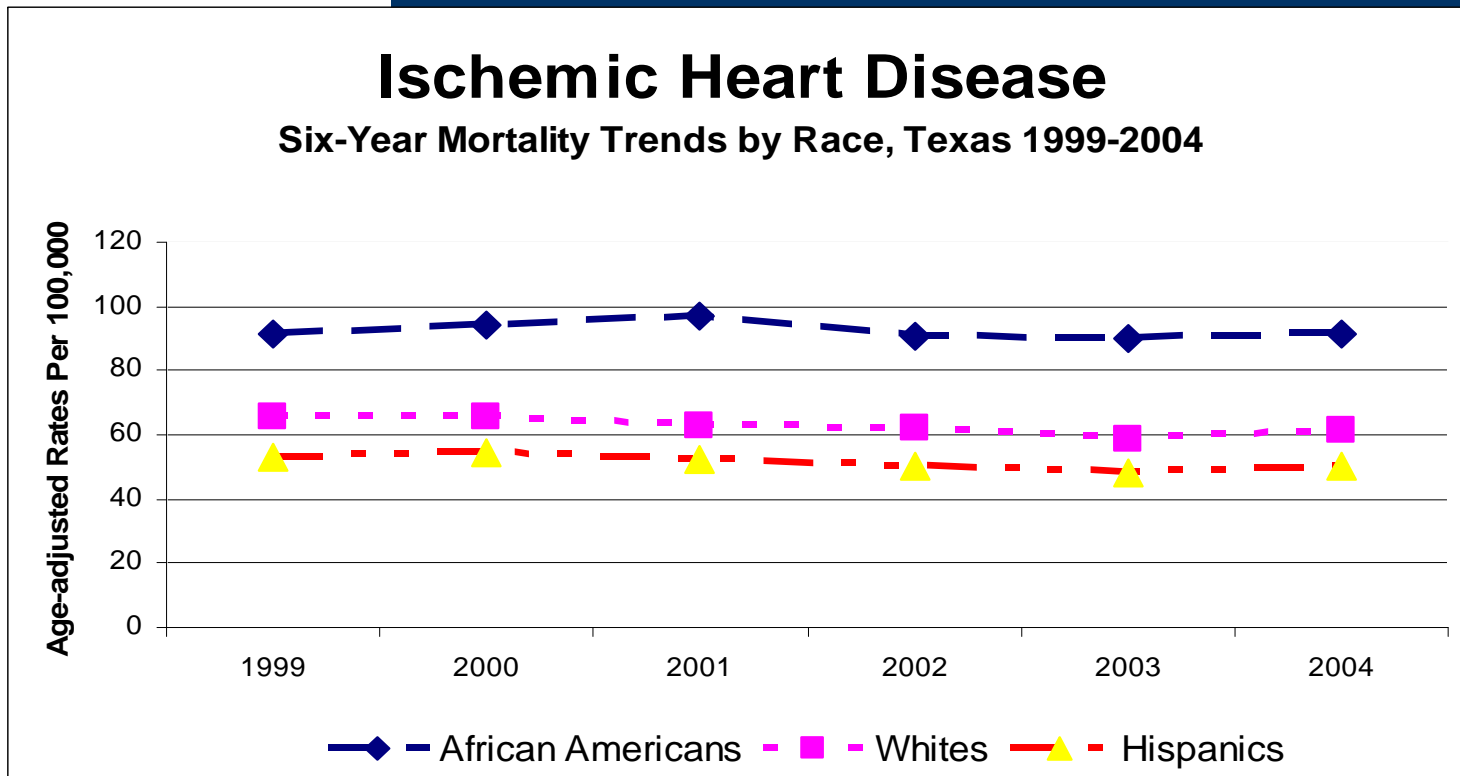
Trends of Cardiovascular Disease



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1990-2004



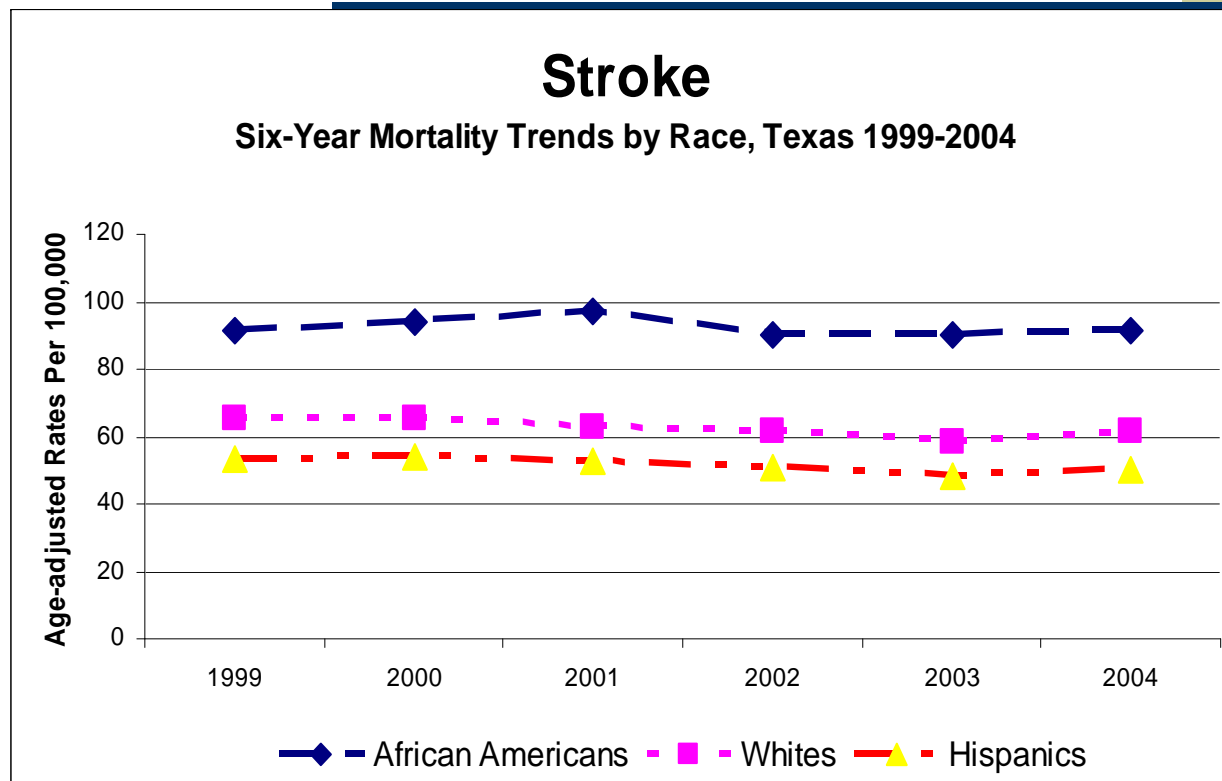
Trends of Ischemic Heart Disease



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004



Trends of Stroke



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004



Overall Cardiovascular Disease Mortality Trends

- ◆ Heart Disease mortality rates in both Texas and U.S. has been steadily declining since the 1970s.
- ◆ Stroke mortality rates in both Texas and U.S declined dramatically from 1975-1985.
- ◆ Diabetes mortality rates in both Texas and U.S increased since late 1970s.

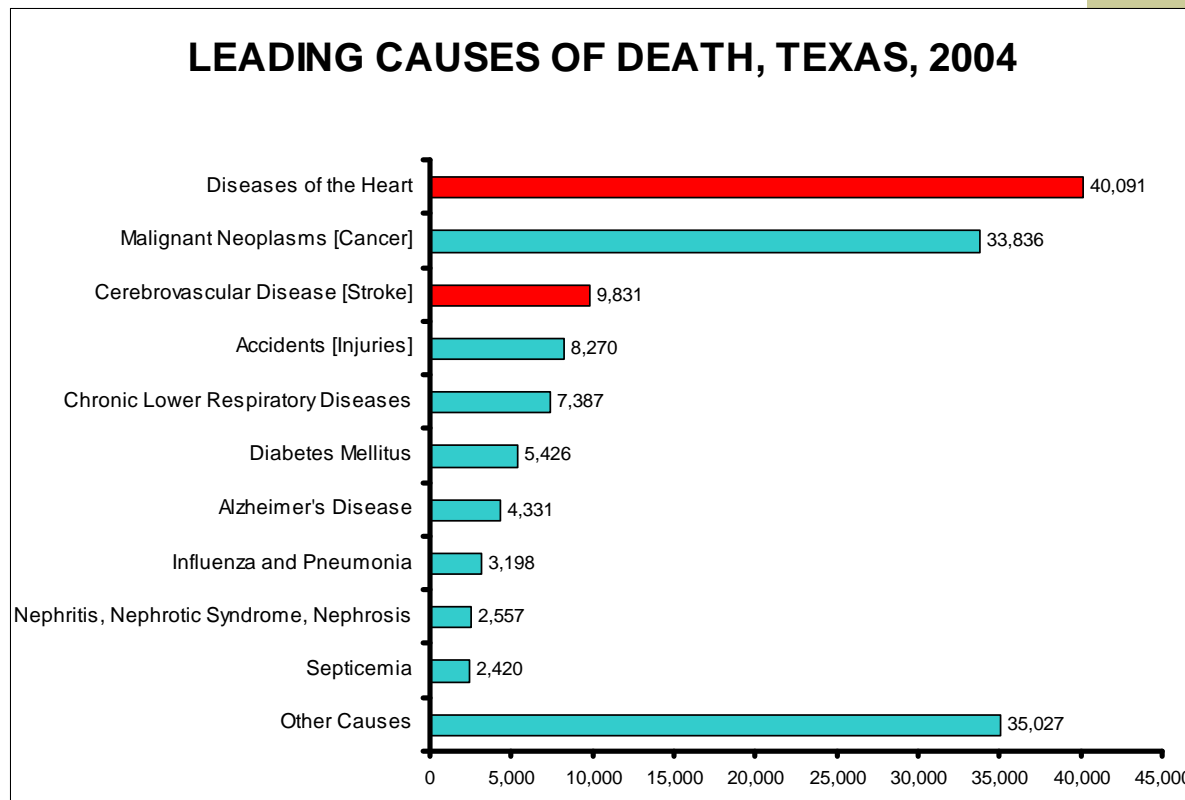
Mortality Data 1999-2004

Leading Causes of Death

Texas
Race Groups



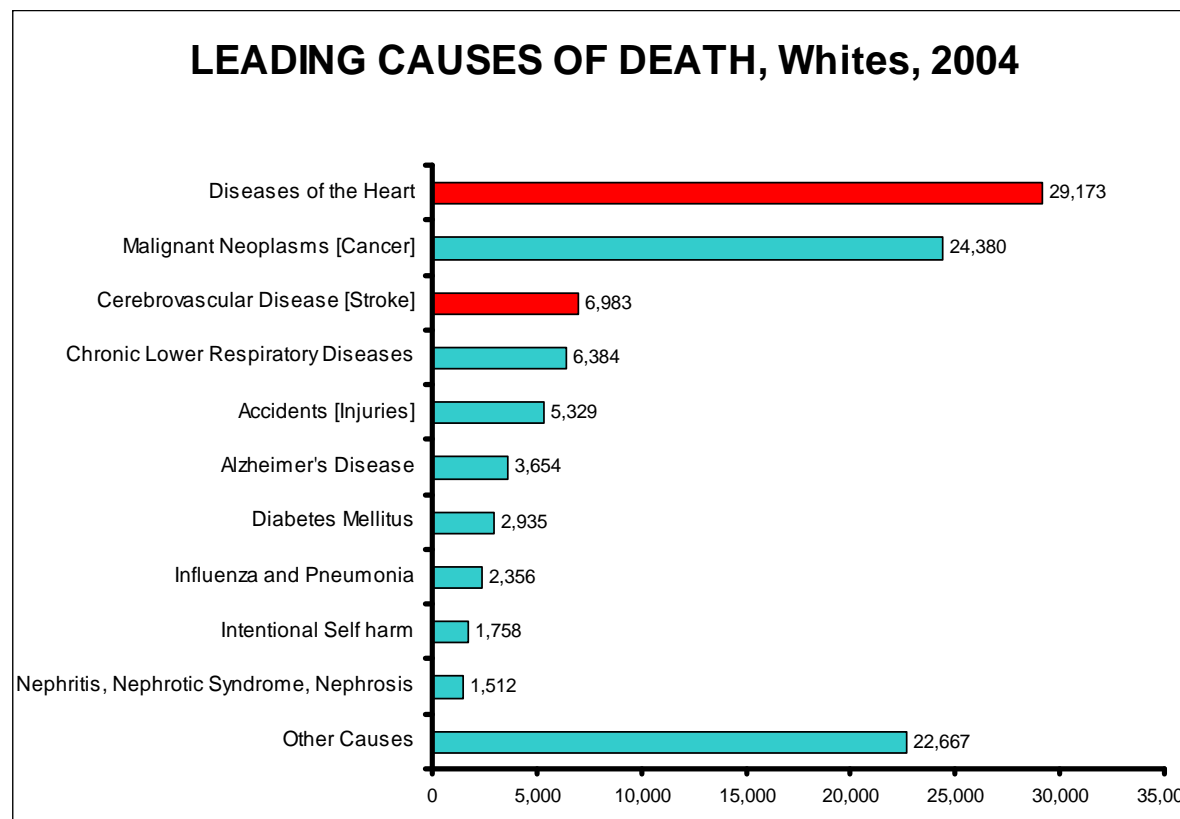
Leading Cause of Death Texas-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2004



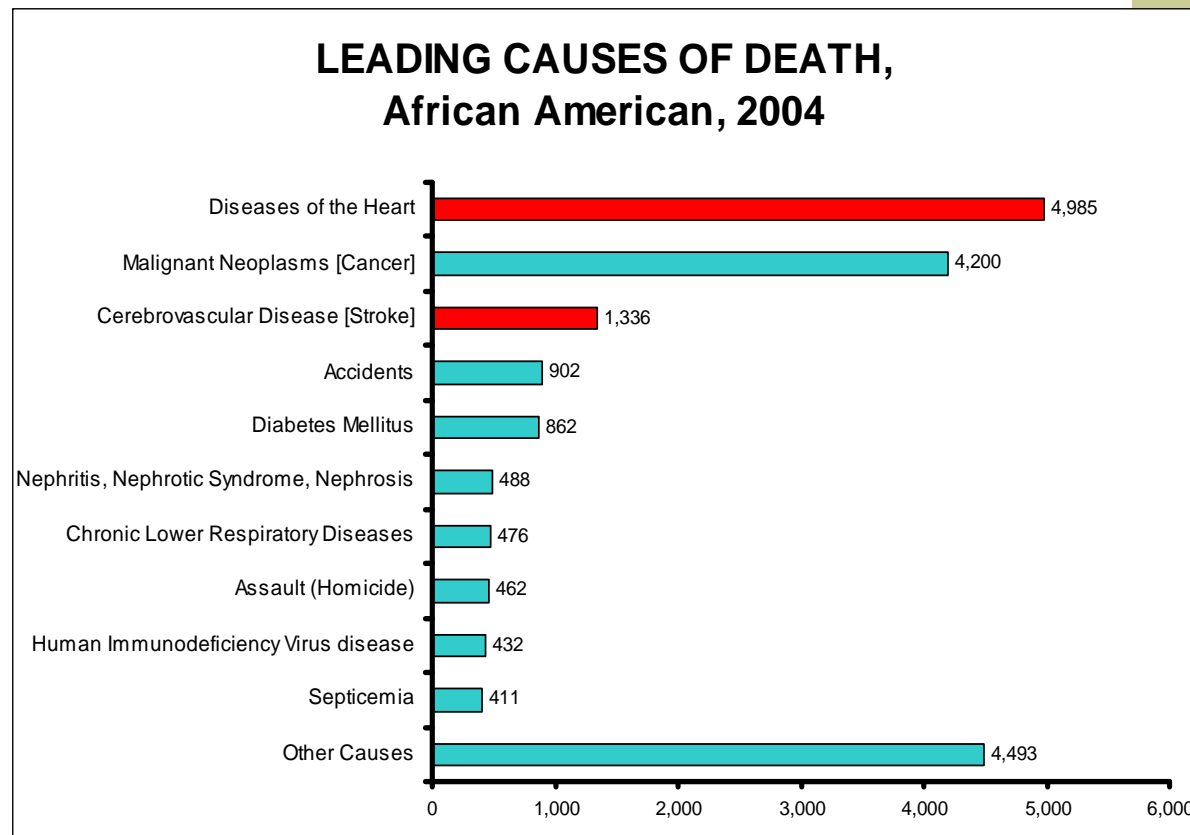
Leading Cause of Death Texas-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2004



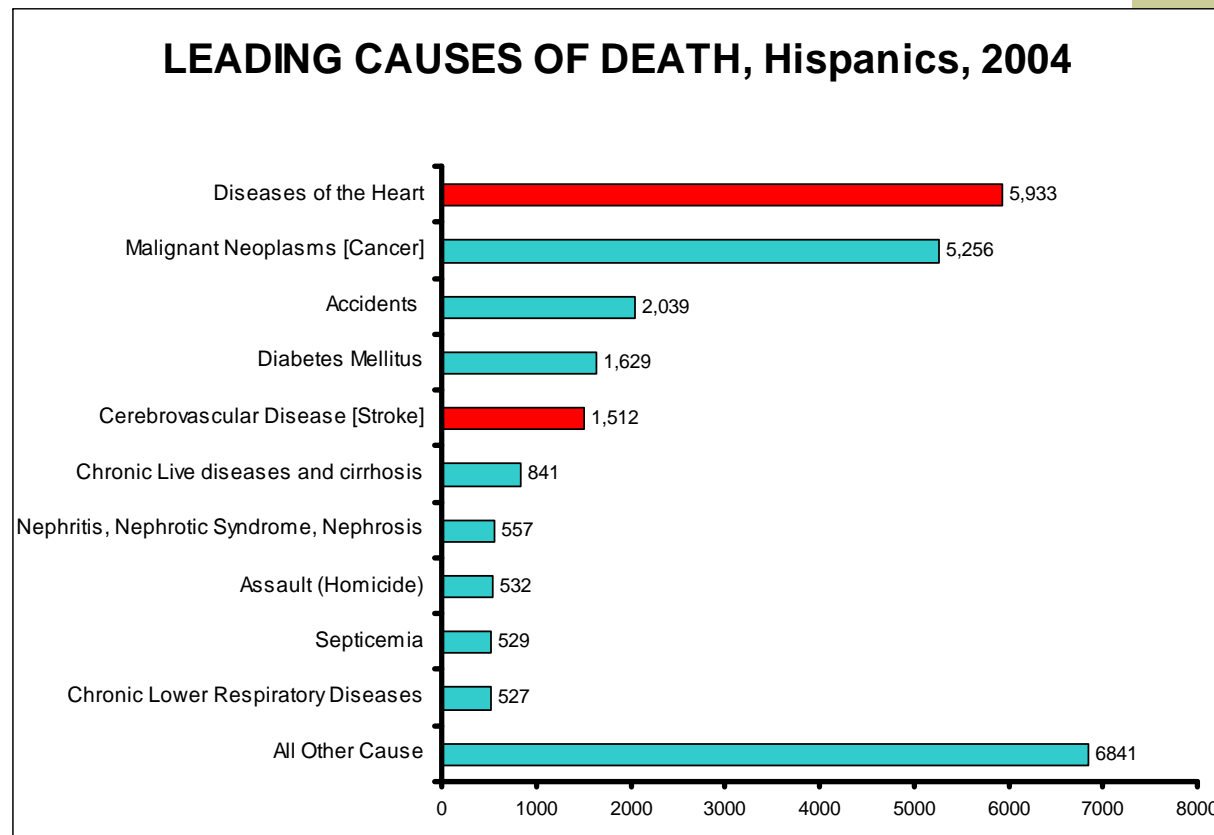
Leading Cause of Death Texas-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2004



Leading Cause of Death Texas-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2004



Overall Leading Cause of Death

- ◆ In 2004, more than 30% of all deaths in Texas were attributed to heart disease and stroke.
- ◆ Heart disease and stroke were the first and third leading causes of death, respectively.

Ischemic Heart Disease

1999-2004

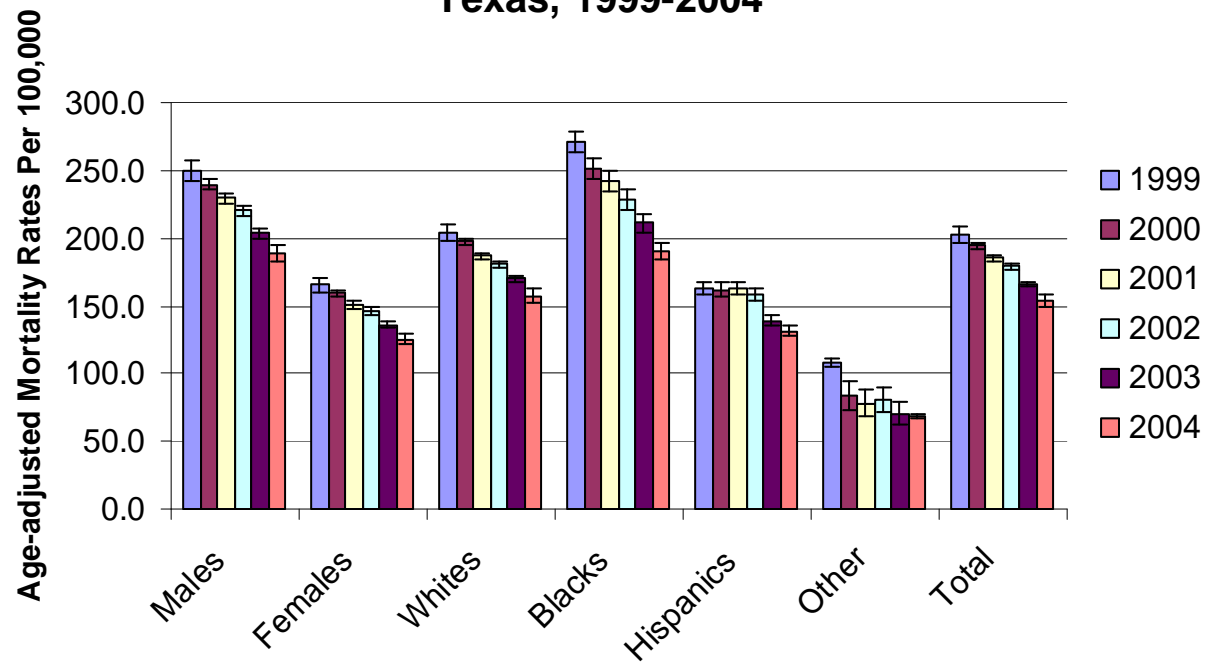


Ischemic Heart Disease

Mortality rate differences by
gender and race groups

Mortality Data-Ischemic Heart Disease

ISCHEMIC HEART DISEASE Texas, 1999-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004



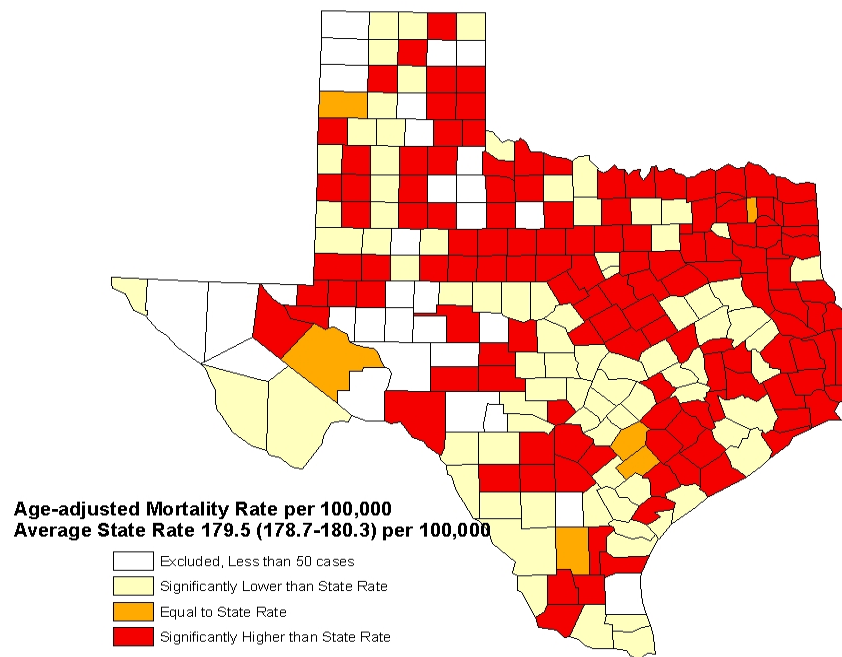
Ischemic Heart Disease

Mortality rate differences at
the **County level**

Mortality Data-Ischemic Heart Disease

Ischemic Heart Disease

6 Year Average Age-Adjusted Mortality Rates, 1999-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004

Stroke

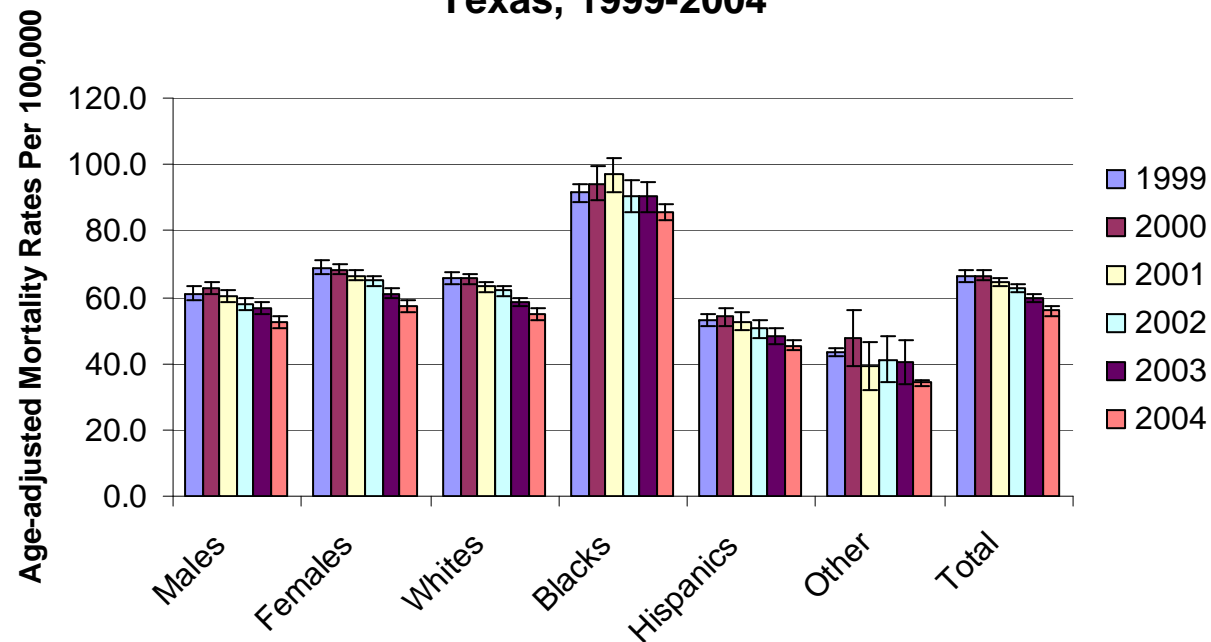
1999-2004

Stroke

Mortality rate differences by
gender and race groups

Mortality Data-Stroke

STROKE Texas, 1999-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004



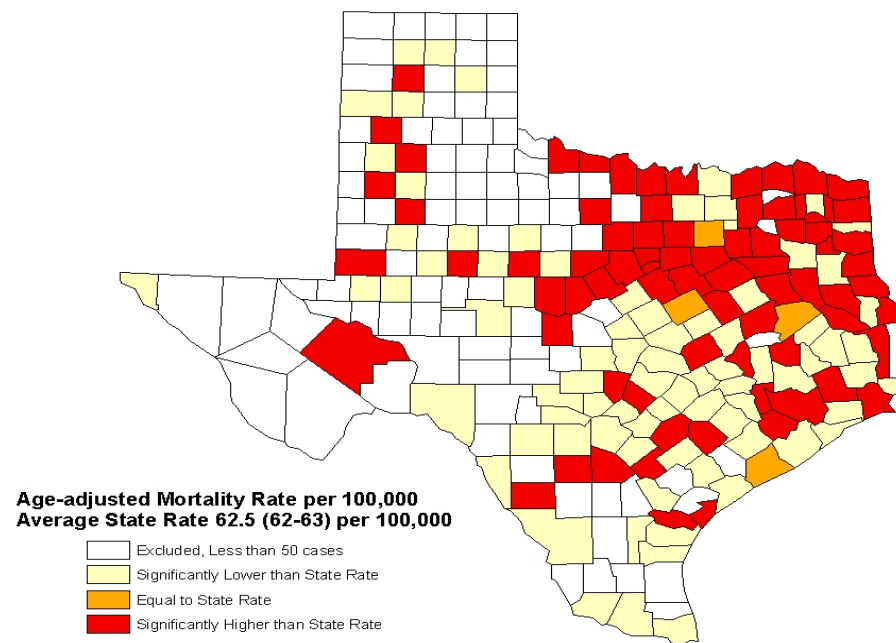
Stroke

Mortality rate differences at
the **County level**

Mortality Data-Stroke

Stroke

6-Year Average Age-Adjusted Mortality Rates, 1999-2004



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 1999-2004



Disparities Mortality in Texas

- ◆ The overall age-adjusted mortality rate (AAMR) for ischemic heart disease (IHD) and stroke declined from 1999.
- ◆ Texas males had a higher risk of dying from IHD than females.
- ◆ Texas females had a higher risk of dying from stroke than males.
- ◆ African Americans had a higher risk of dying from IHD and stroke than Whites, Hispanics and Others.

Hospital Discharge Data

2001 - 2005

Hospital Discharge Data

- ◆ **Hospital discharge data** were compiled and tabulated by the Texas Health Care Information Collection (THCIC). They are required to provide public use data file (PUDF) for computer-to-computer access.
- ◆ **The PUDF contains patient level information for inpatient hospital stays**

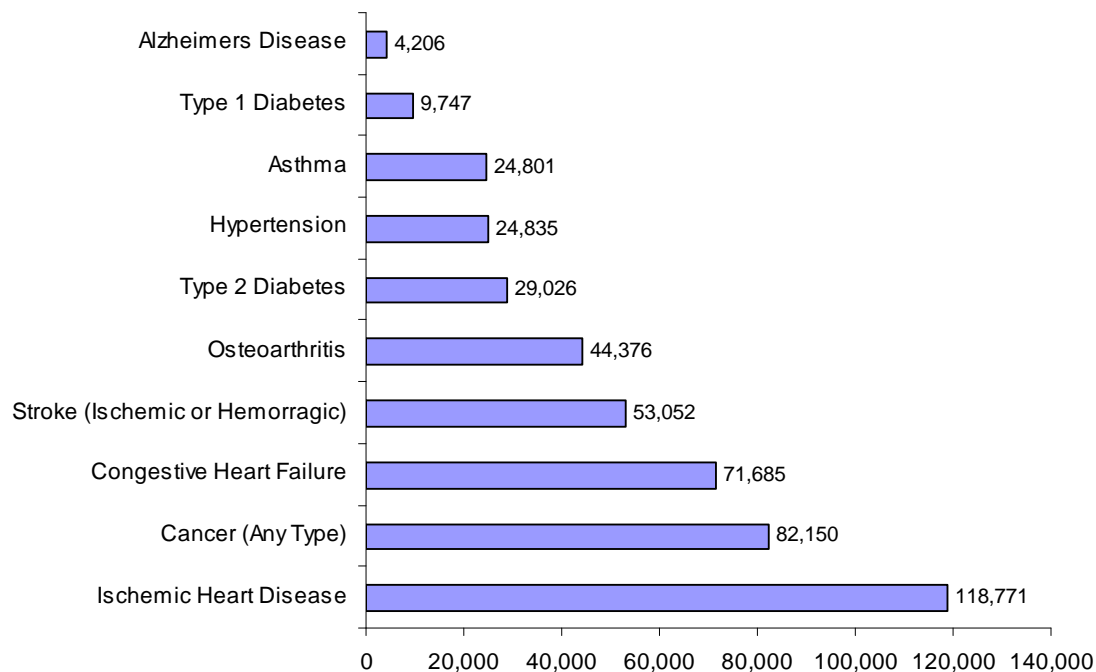
Hospital Discharge Data

Classes of Diagnoses (ICD-9 code):

- ◆ **Ischemic Heart Disease (ICD-9 codes 410-414)**
- ◆ **Ischemic Stroke (ICD-9 codes 430-432)**
- ◆ **Hemorrhagic Stroke (ICD-9 codes 433-438)**
- ◆ **Congestive Heart Failure (ICD-9 code 428)**

Hospital Discharge Data

Number of Selected First-List Hospital Discharges--2005

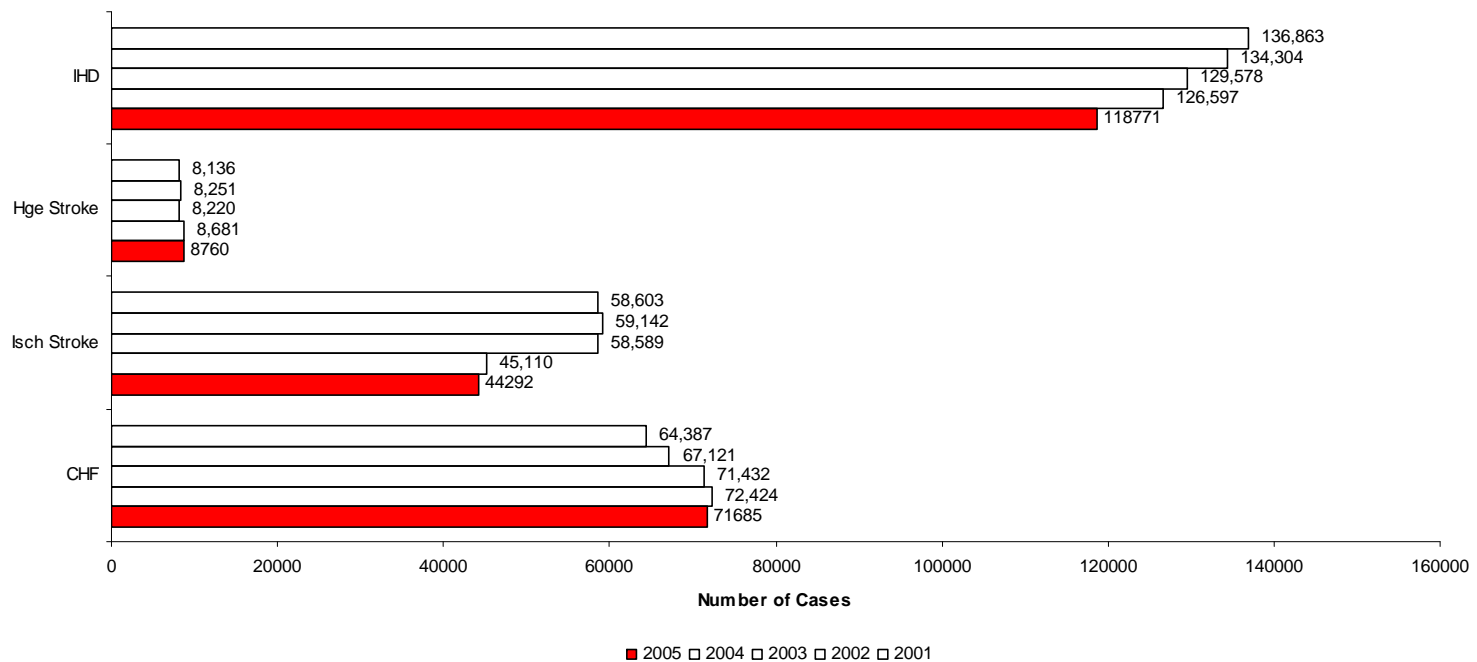


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005



Hospital Discharge Data

Number of Selected First-Listed Diagnoses for Hospital Discharges
Texas 2001-2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2001-2005



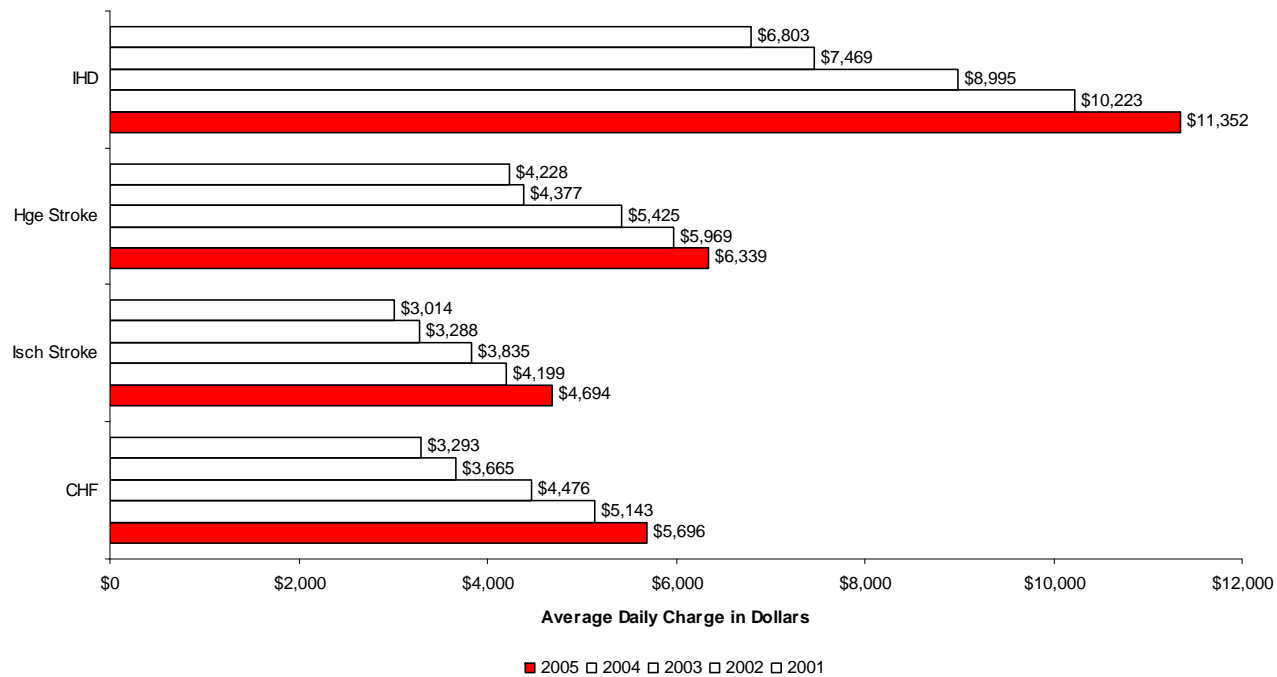
Estimated Hospital Charges



Hospital Discharge Data

Estimated Average Hospital Charge Per Day for Selected CVD Diagnoses

Texas 2001-2005

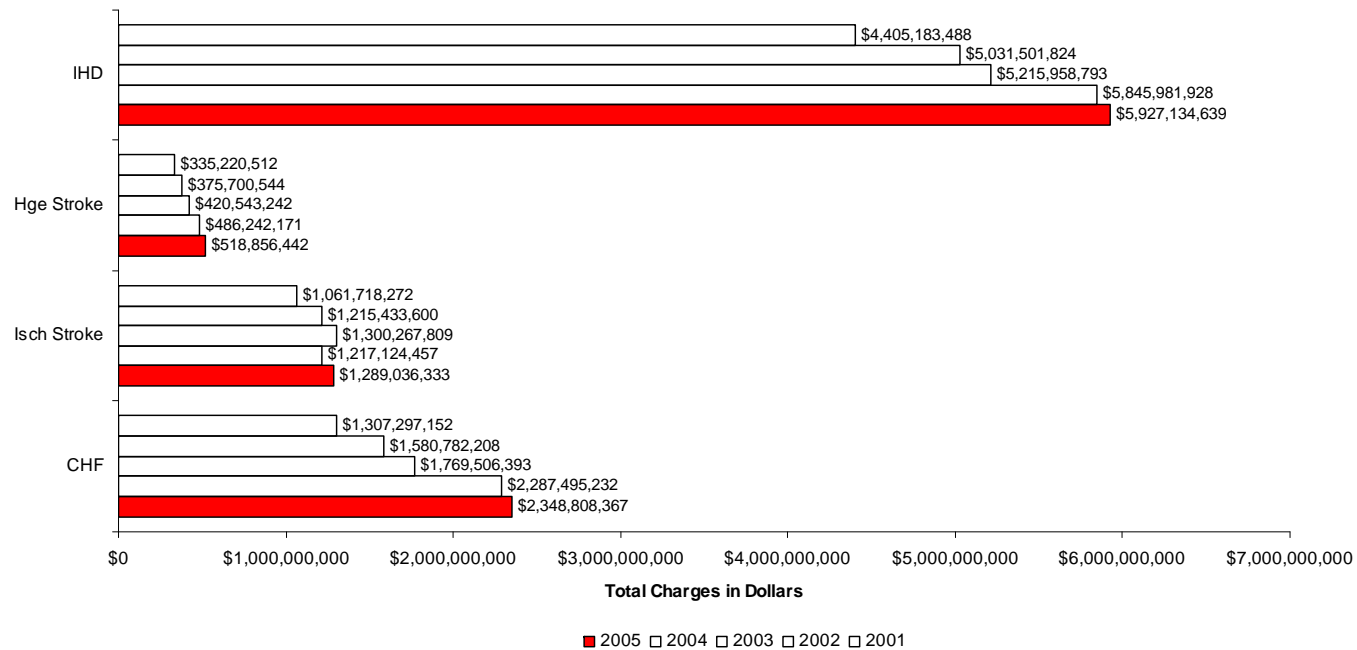


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2001-2005



Hospital Discharge Data

**Total Hospital Charges for Selected CVD Diagnoses
Texas 2001-2005**

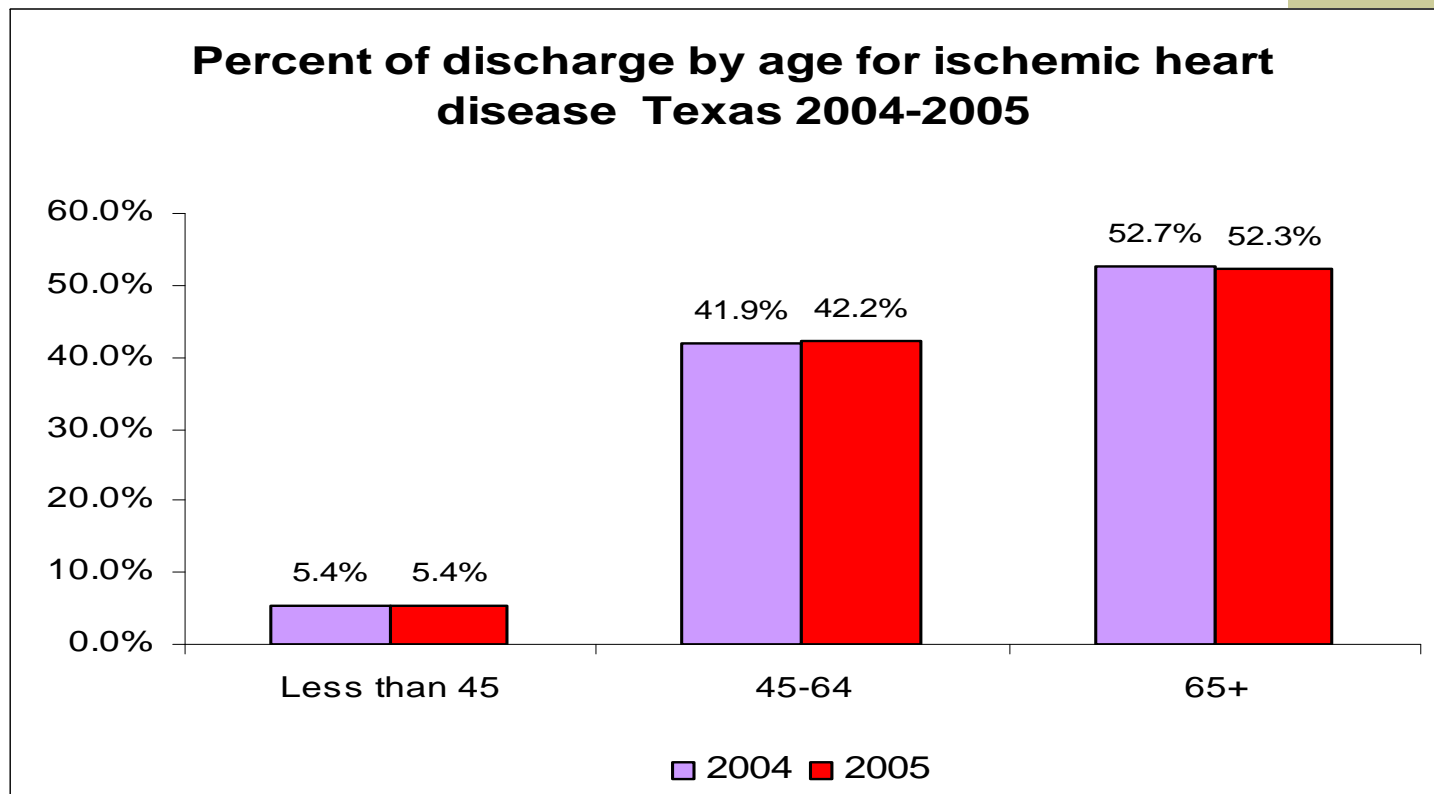


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2001-2005



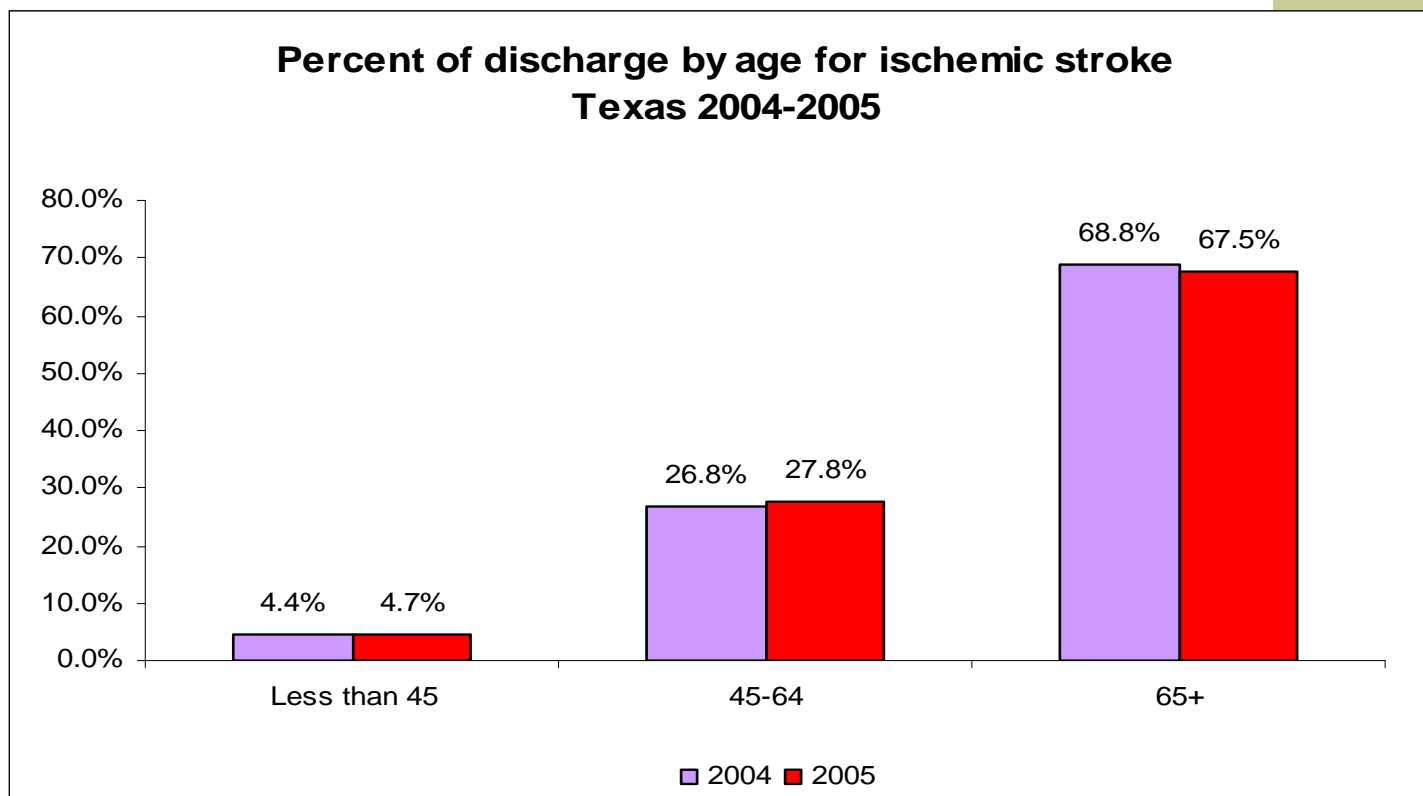
% Distribution by Age Groups

Hospital Discharge Data



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2004-2005

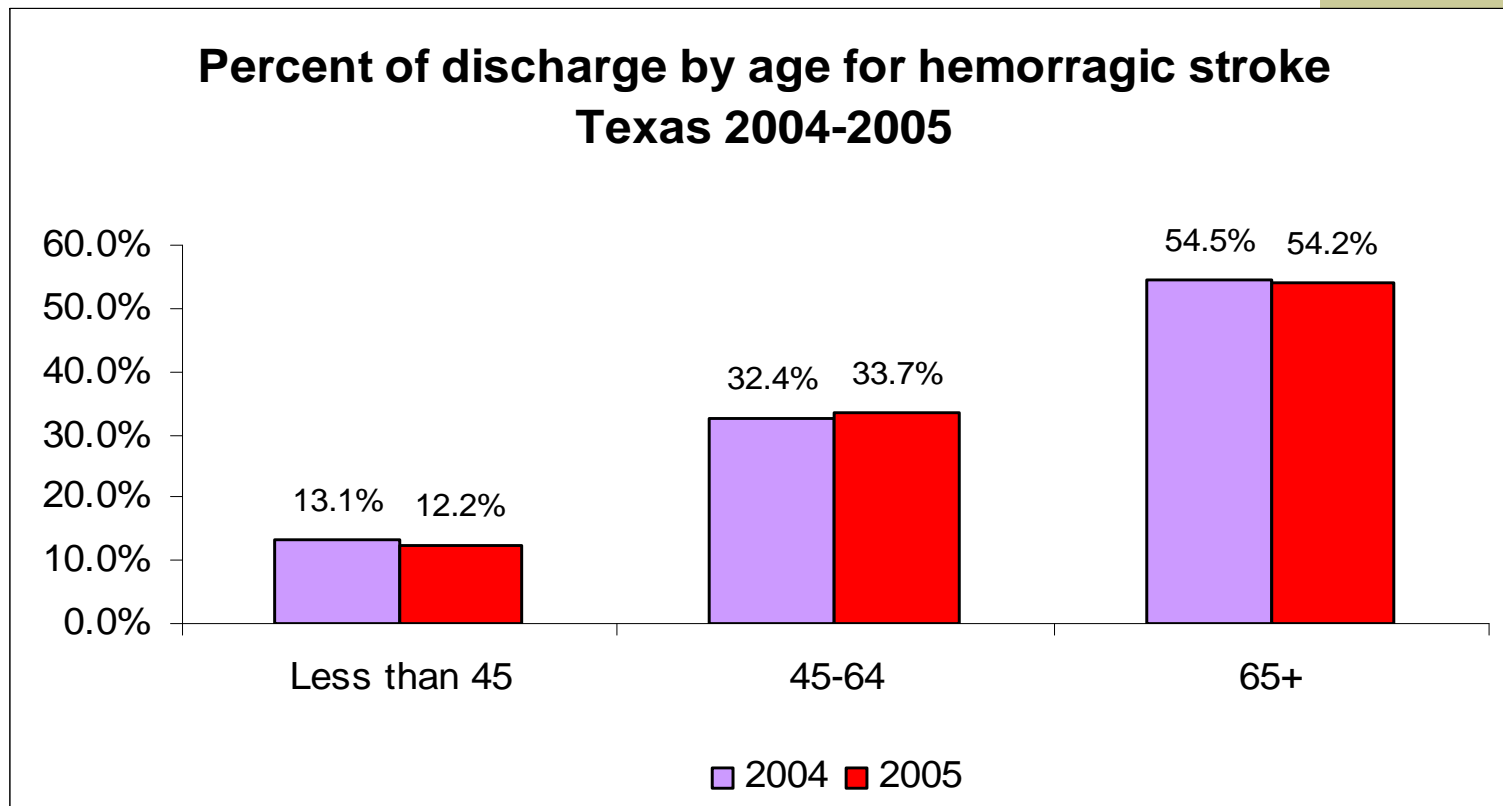
Hospital Discharge Data



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2004-2005



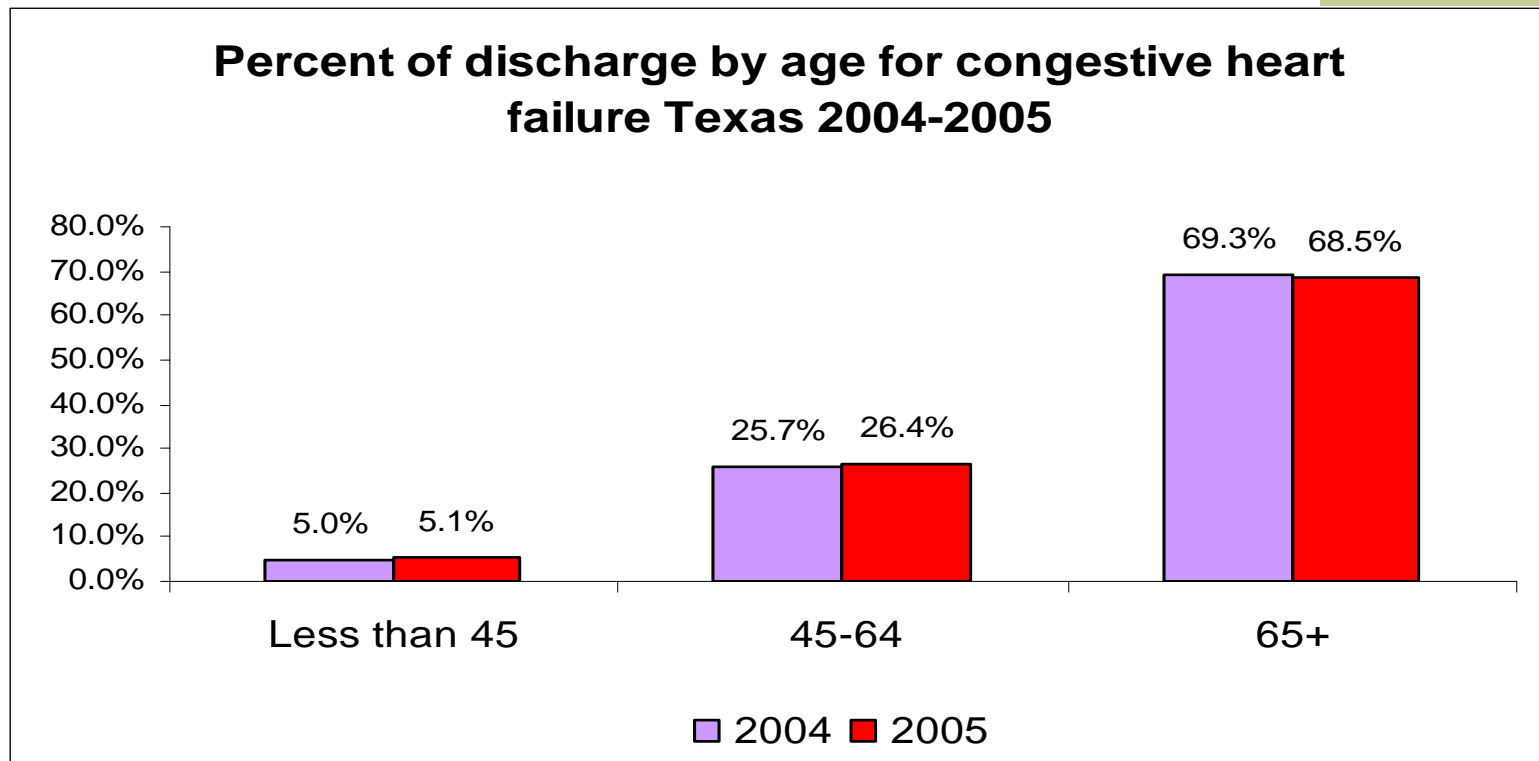
Hospital Discharge Data



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2004-2005



Hospital Discharge Data



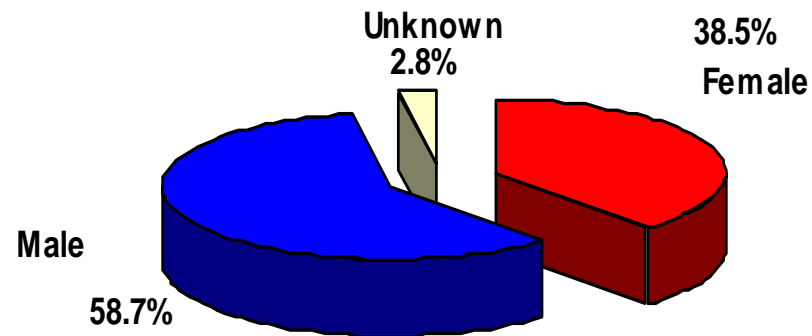
Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2004-2005



% Distribution by Sex

Hospital Discharge Data

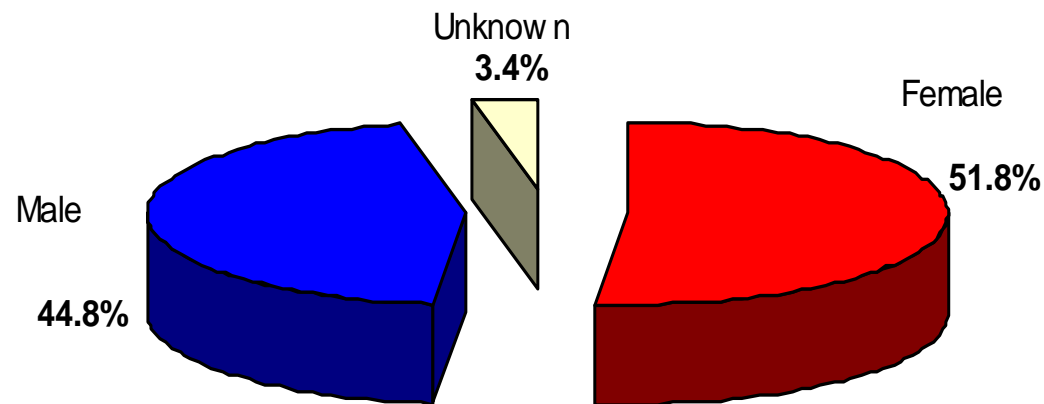
ISCHEMIC HEART DISEASE Texas 2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

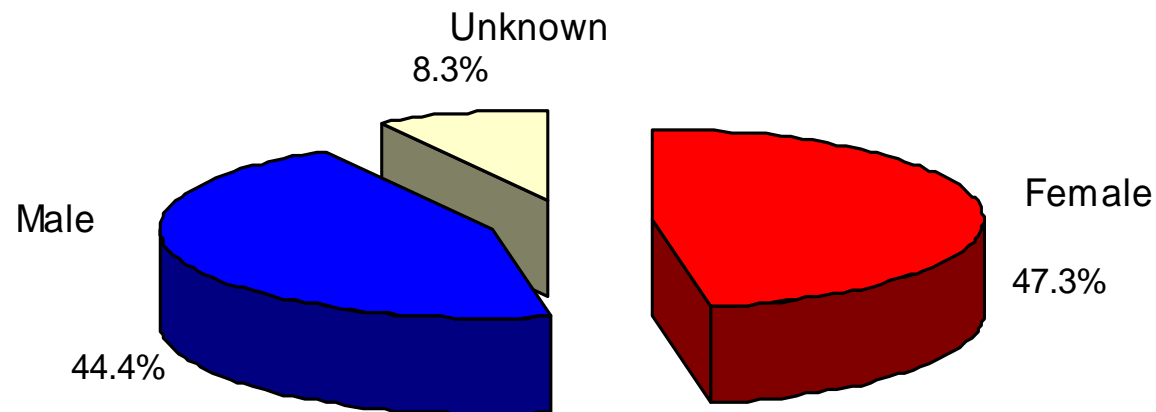
ISCHEMIC STROKE Texas 2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

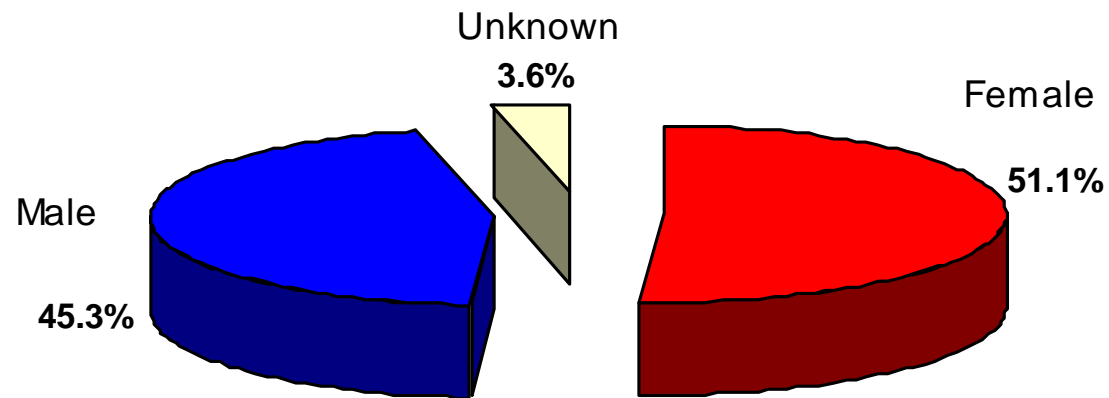
HEMORRAGIC STROKE Texas 2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

CONGESTIVE HEART FAILURE Texas 2005

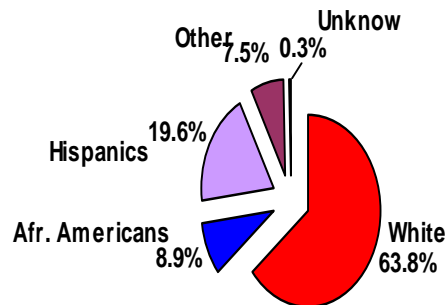


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

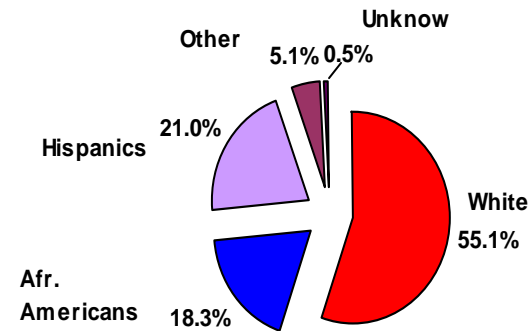
% Distribution by Race

Hospital Discharge Data

ISCHEMIC HEART DISEASE Texas 2005



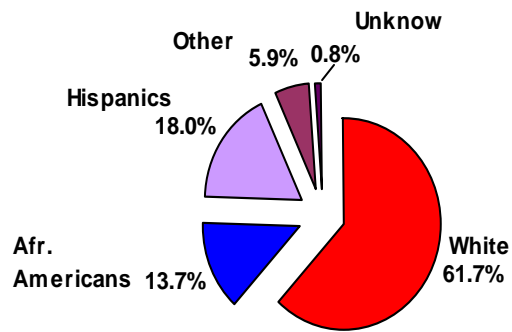
CONGESTIVE HEART FAILURE Texas 2005



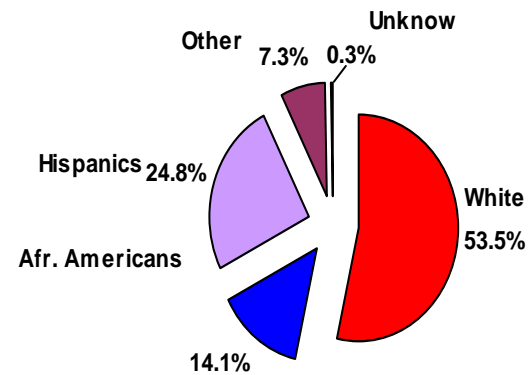
Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

ISCHEMIC STROKE Texas 2005



HEMORRAGIC STROKE Texas 2005

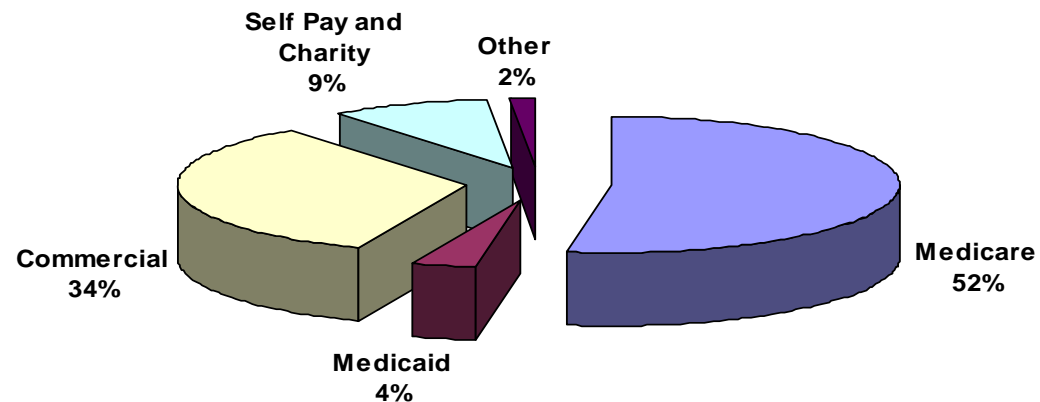


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

% Distribution by Payer

Hospital Discharge Data

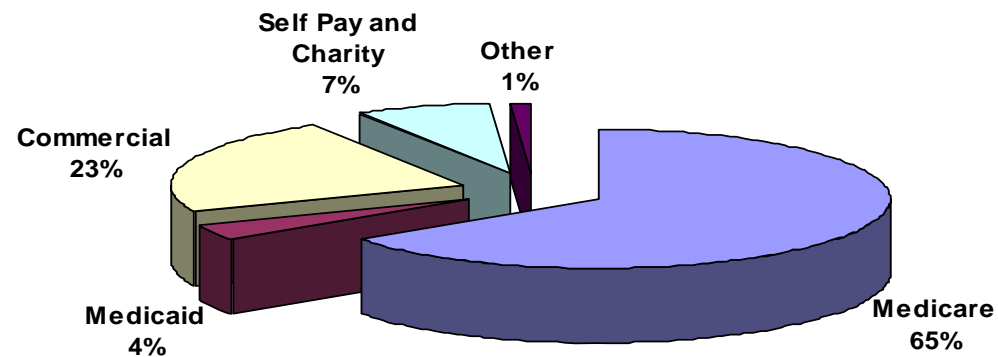
Primary Payment for Ischemic Heart Disease--2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

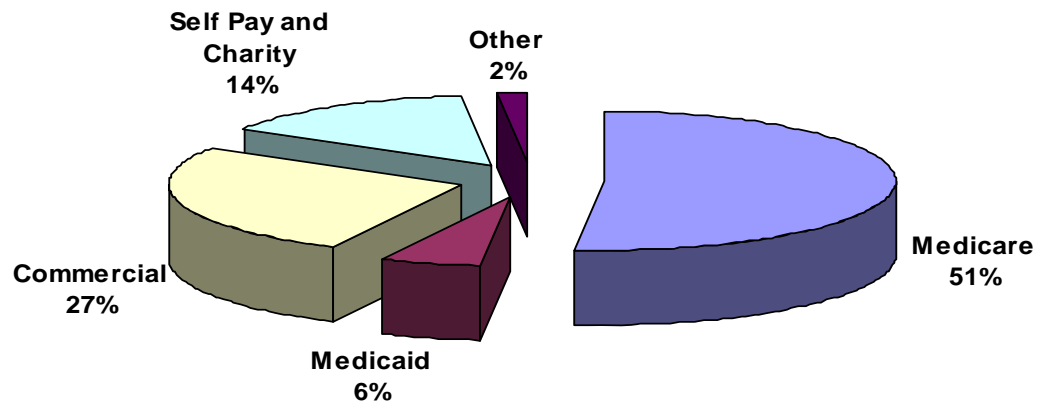
Primary Payment for Ischemic Stroke--2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

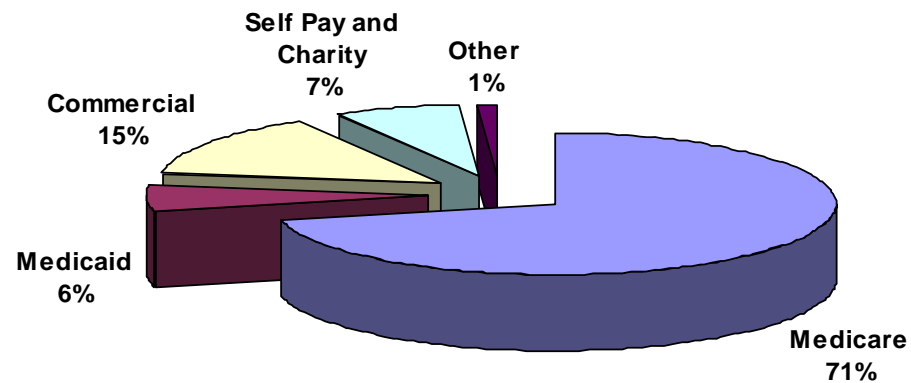
Primary Payment for Hemorrhagic Stroke--2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Hospital Discharge Data

Primary Payment for Congestive Heart Failure--2005



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005

Overall Hospital Discharge Data

- ◆ In 2005, ischemic heart disease had the highest number of discharges for chronic disease hospitalizations, followed by cancer, stroke and congestive heart failure.
- ◆ Estimated average hospital charges per day for selected CVD diagnoses have increased each year from 2001 to 2005.
- ◆ The number of discharges have steadily declined since 2001.

Risk Factor Surveillance

Medical and Behavioral Risk Factor Data

- ◆ The percentage of population (prevalence) that reported a type of behavioral risk factor (e.g., smoking) and utilized clinical preventive services (e.g., mammography) are **estimates** from the **Texas Behavioral Risk Factor Surveillance System (BRFSS)** for Texas residents at least 18 years of age.

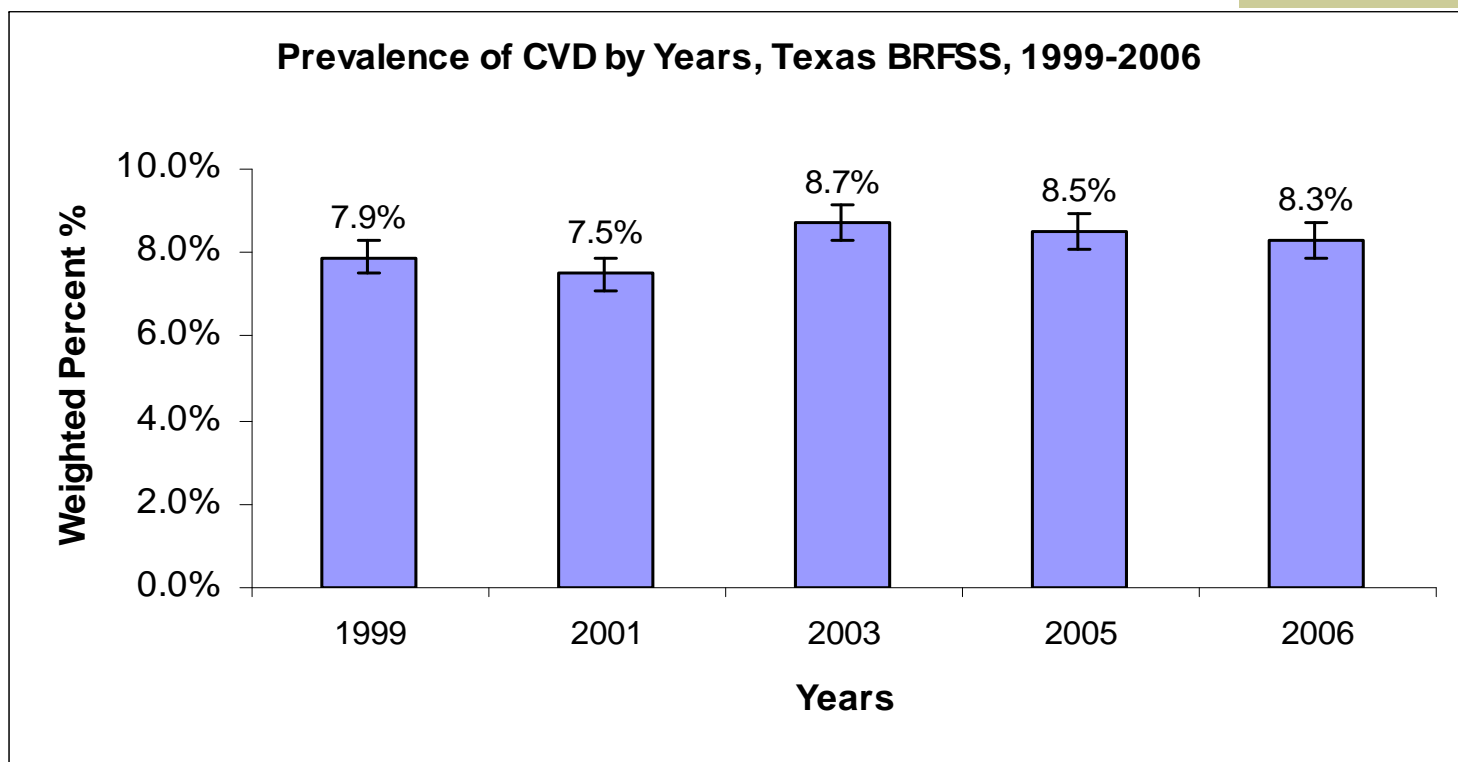
BRFSS

- ◆ Ongoing telephone survey sponsored by DSHS in partnership with CDC
- ◆ Conducted on a monthly basis of 500 randomly selected Texans 18 years or older are asked questions about their health habits

BRFSS

- ◆ Prevalence of CVD
- ◆ Behavioral Risk Factors
- ◆ Medical Risk Factors
- ◆ Preventive Health Practices

Prevalence of Cardiovascular Disease (CVD*)



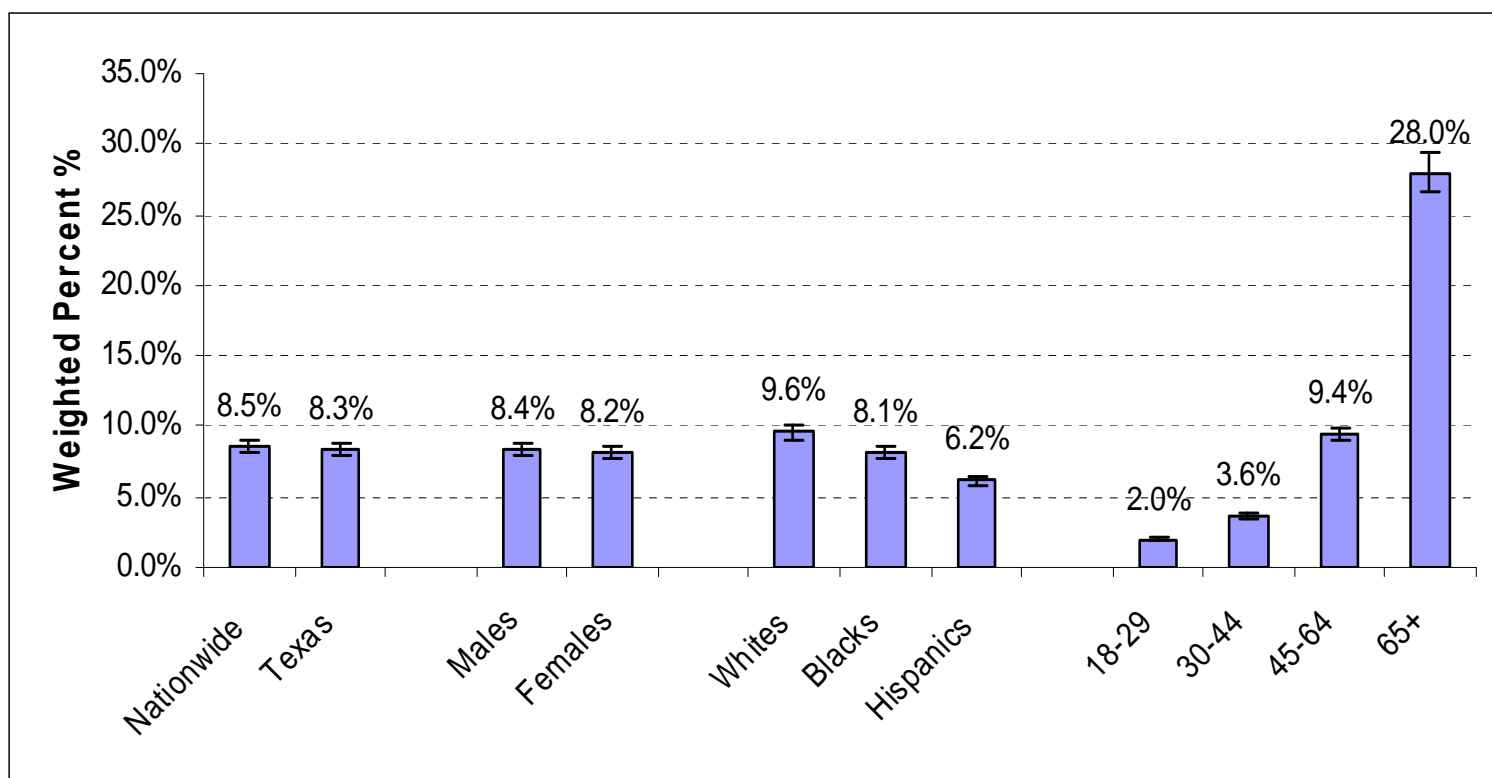
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2006

* Respondents 18 years and older who report that they have been diagnosed as having had a Heart Attack, Myocardial Infarction, Angina, Coronary Heart Disease, or Stroke



Prevalence of CVD

Texas Adults---2006



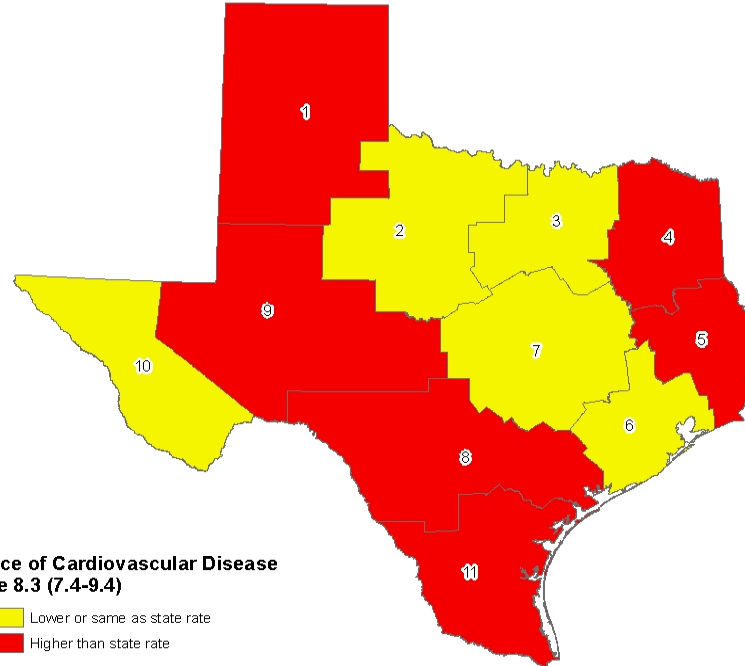
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

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Prevalence of CVD

Health Service Region---2006

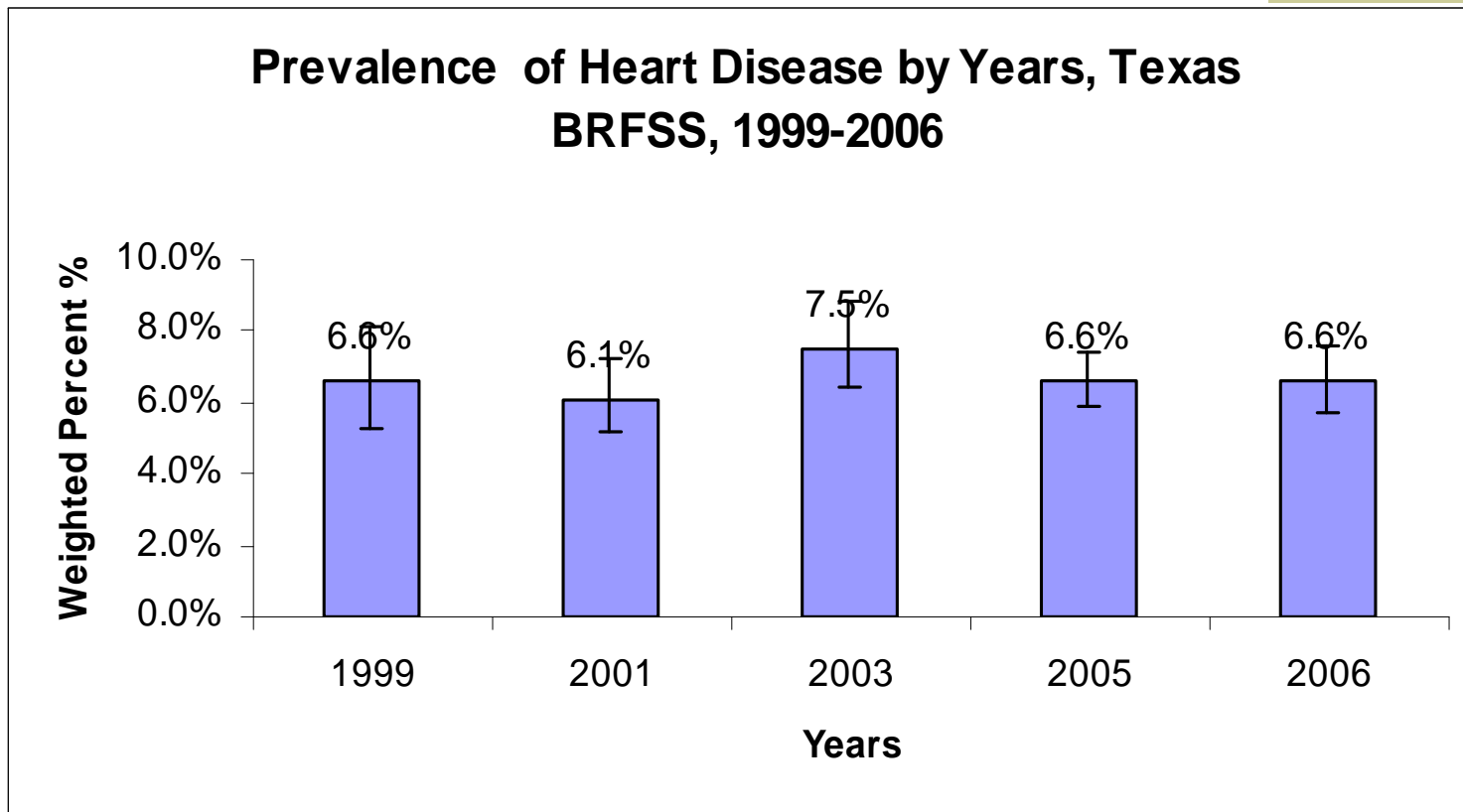


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

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Prevalence of Heart Disease*

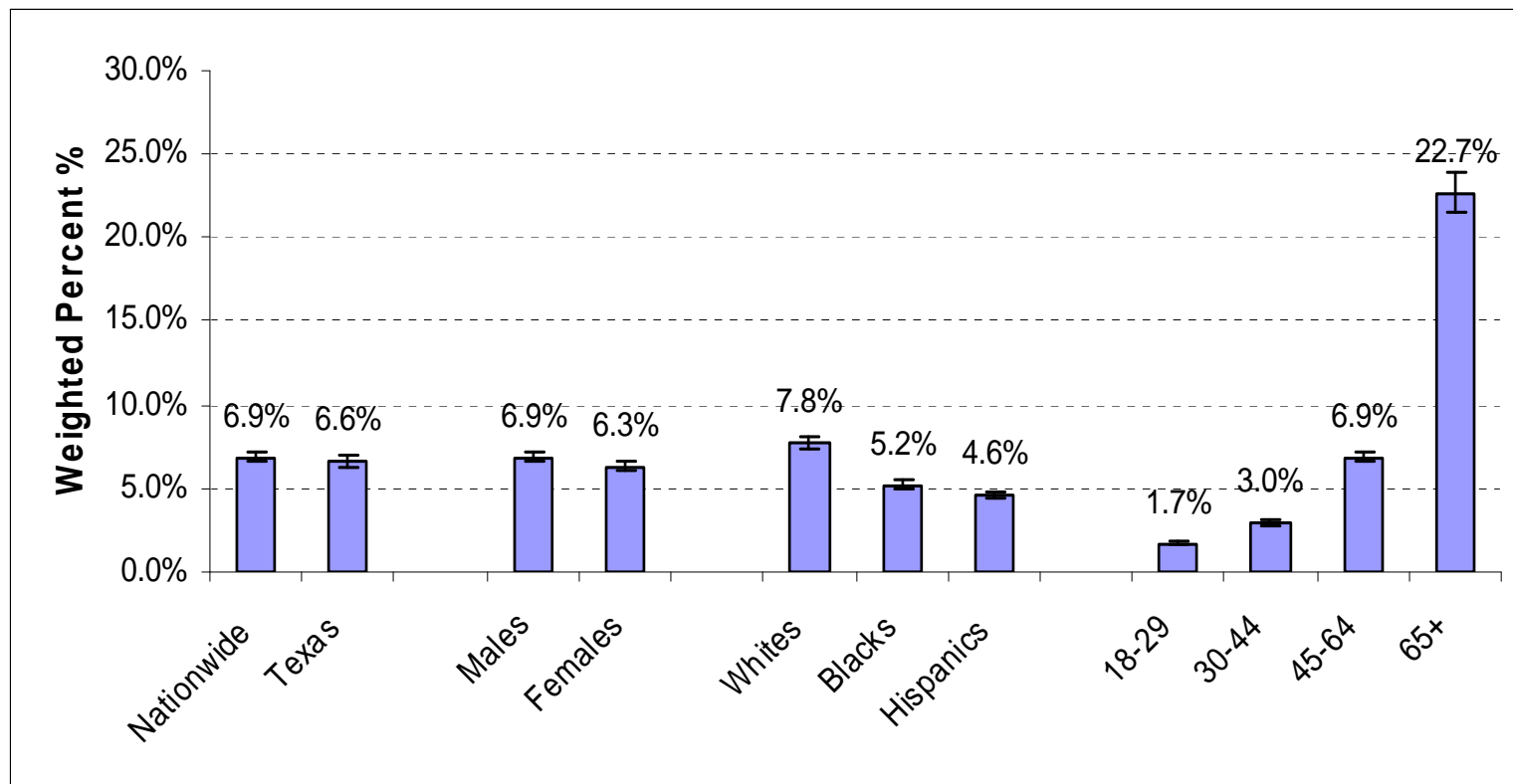


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2006

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Prevalence of Heart Disease

Texas Adults-2006

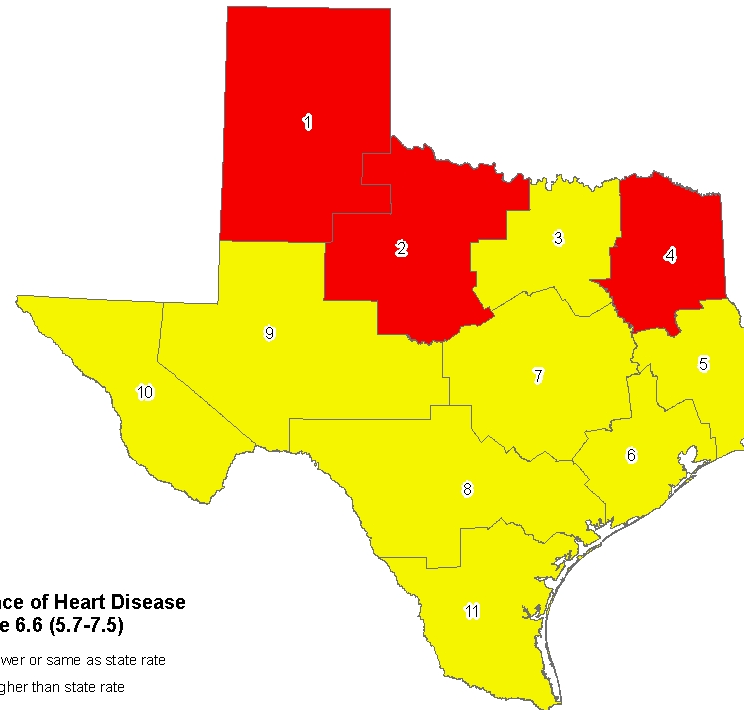


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Prevalence of Heart Disease

Health Service Region---2006

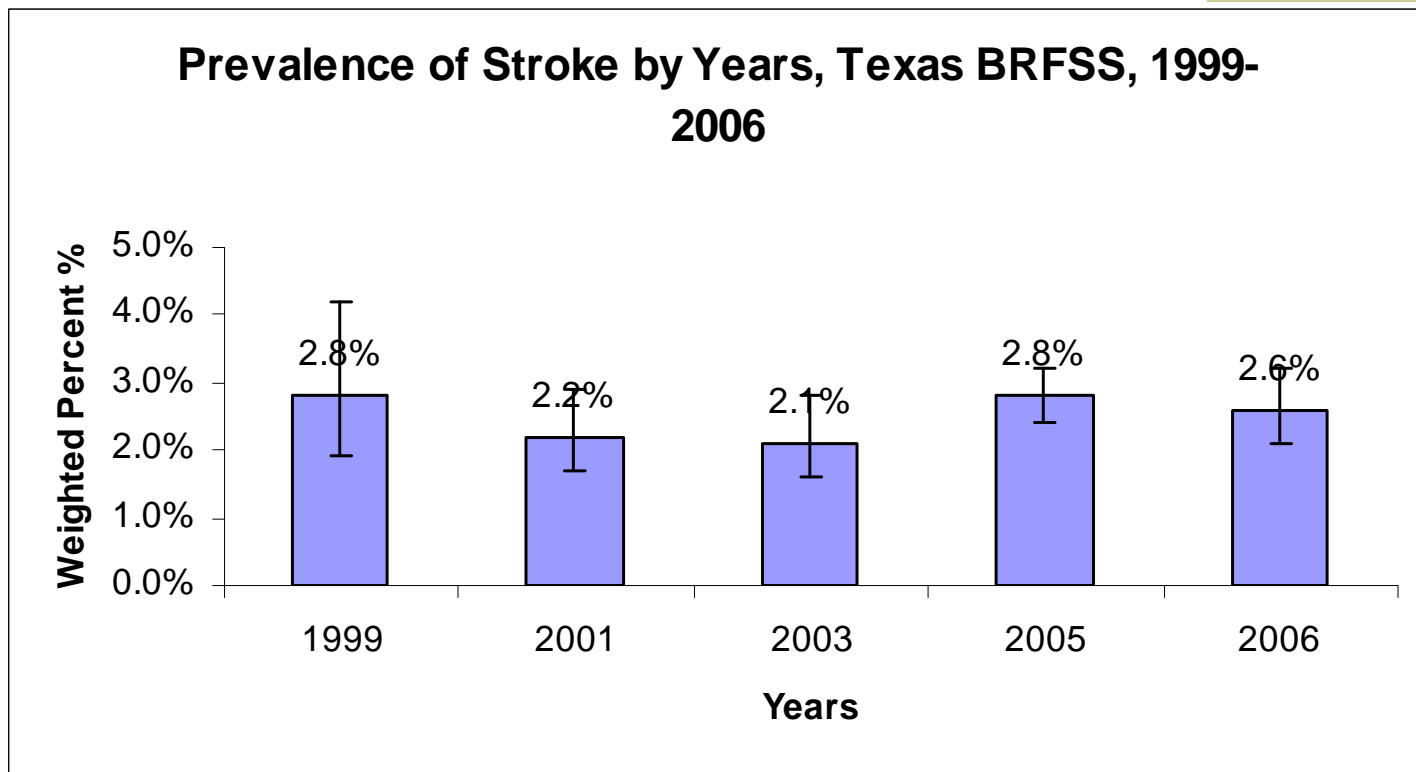


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

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Prevalence of Stroke



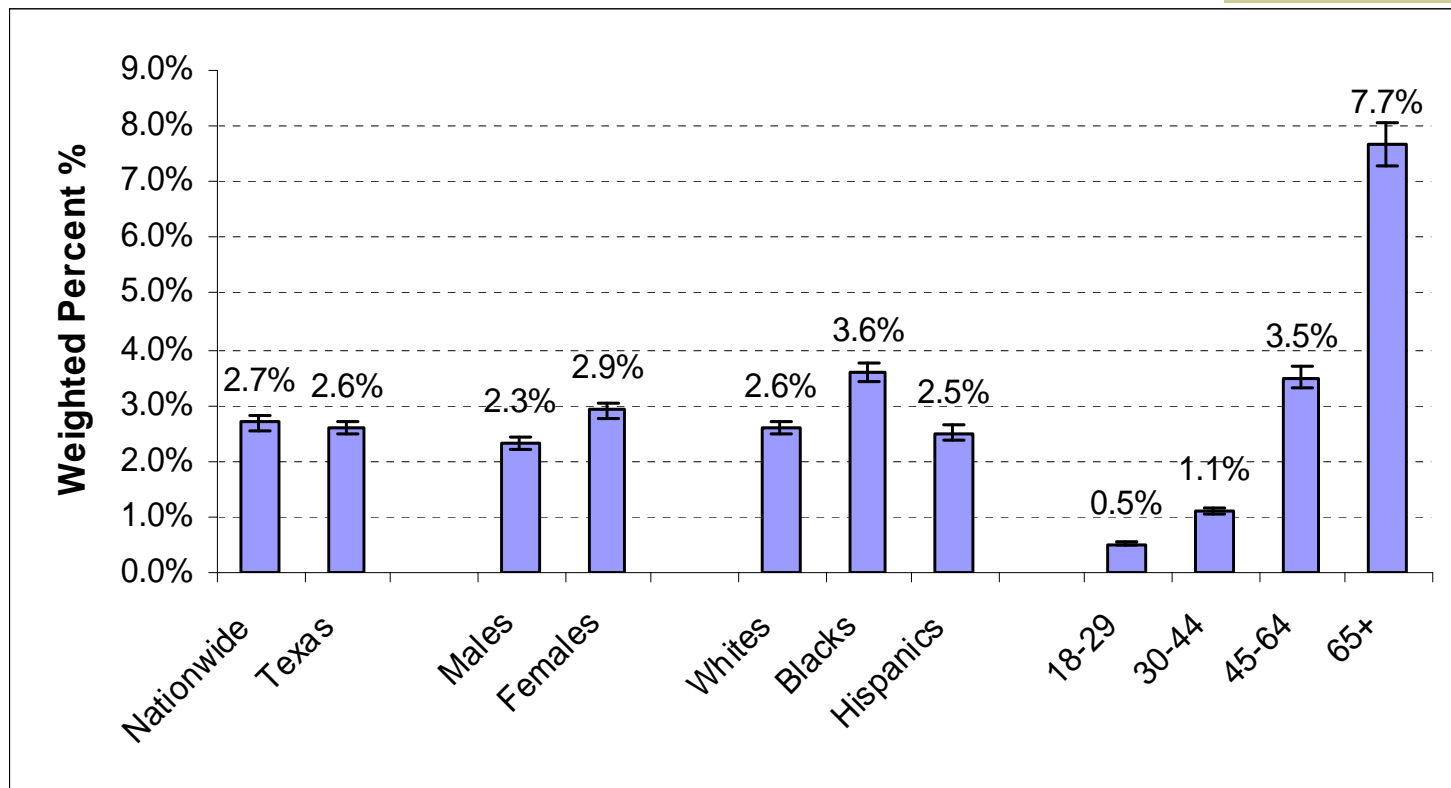
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2006

* Respondents 18 years and older who report that they have been diagnosed as having had a Stroke.



Prevalence of Stroke

Texas Adults-2006



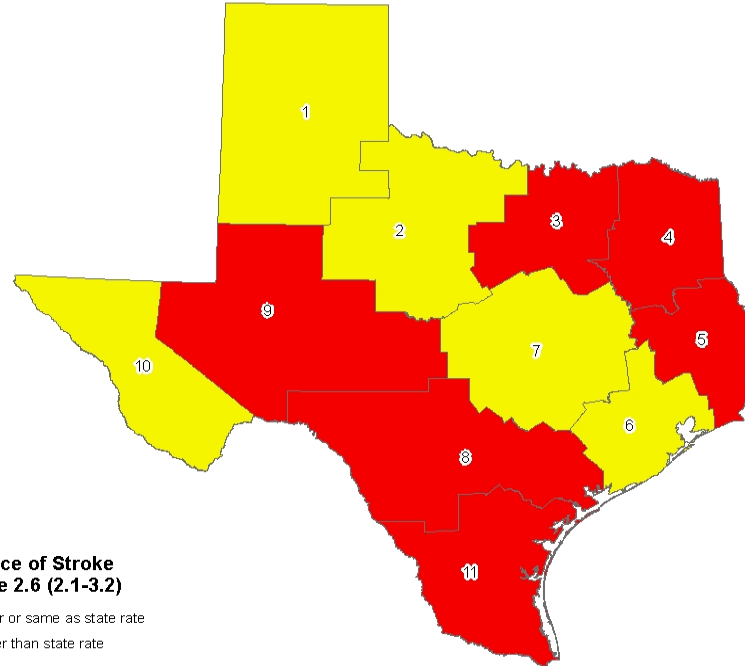
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

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Prevalence of Stroke

Health Service Region--- 2006

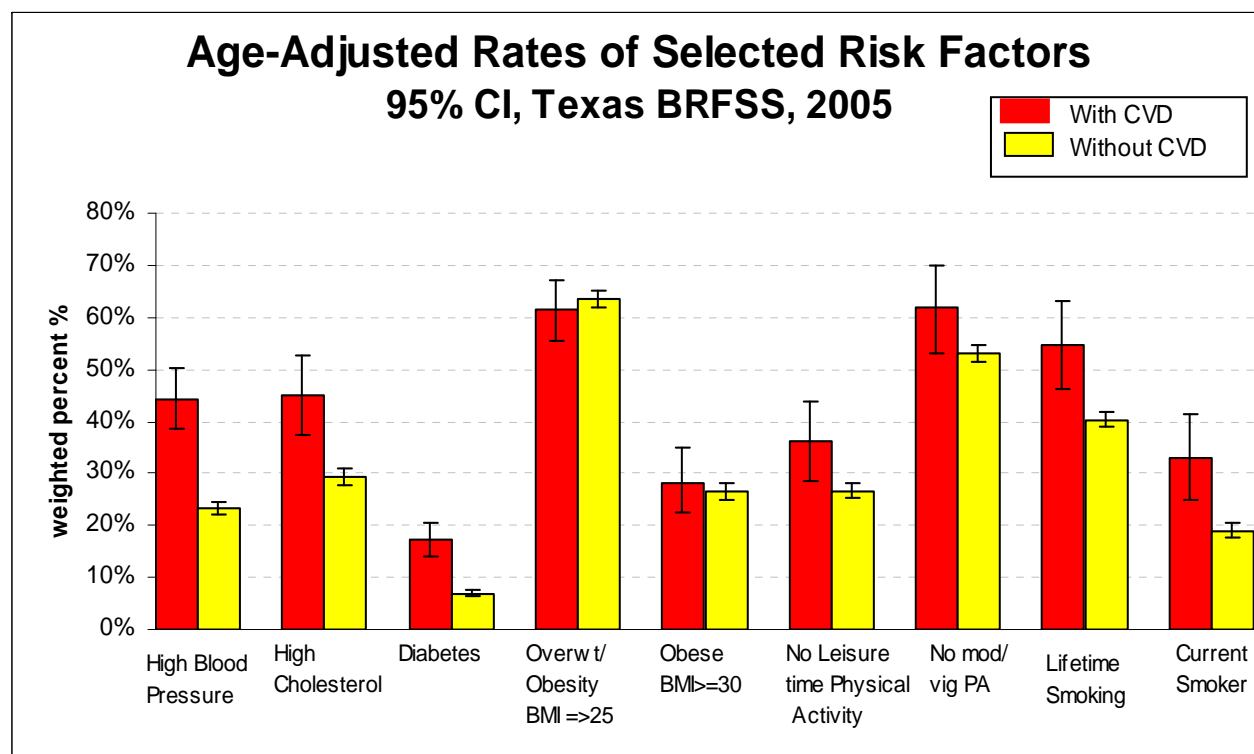


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006
* Respondents 18 years and older who report that they have been diagnosed as having had a Stroke.



Risk Factors for CVD

Texas Adults --- 2005



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

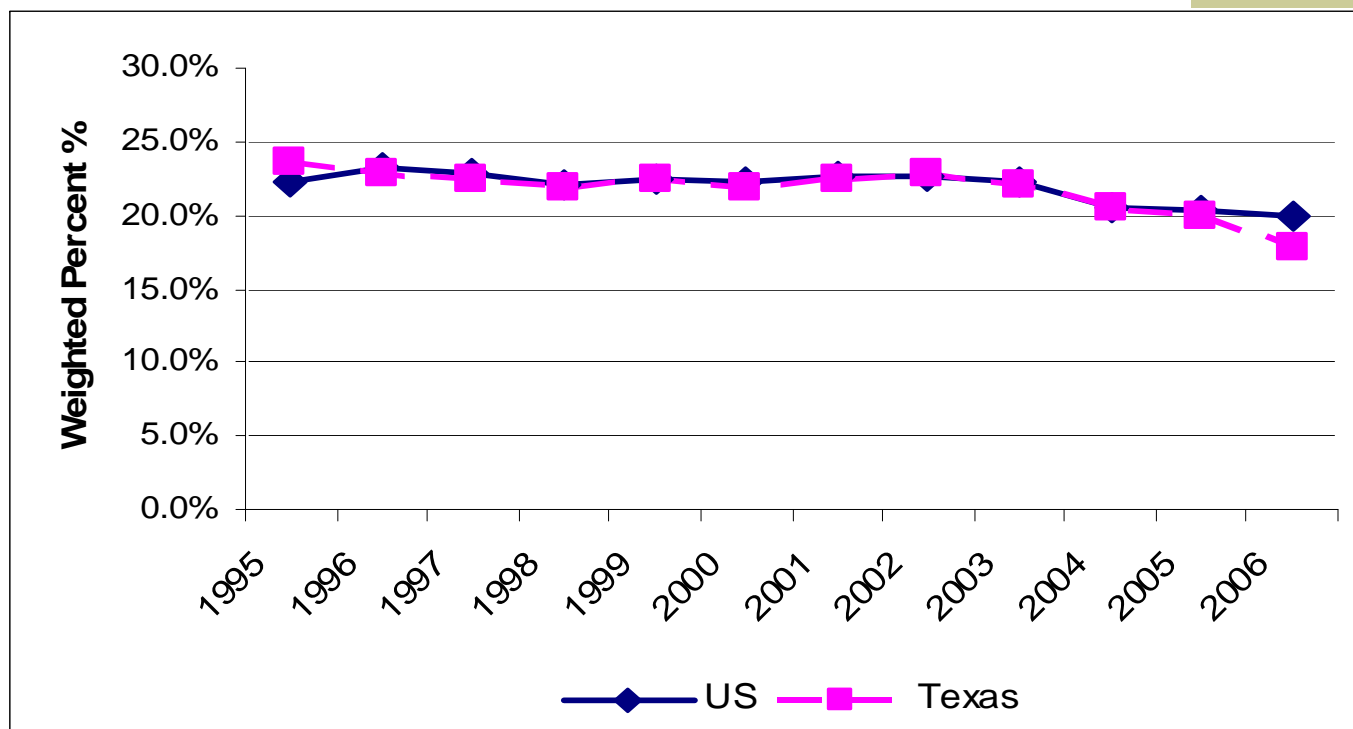


Behavioral Risk Factors

- ◆ Cigarette Smoking
- ◆ Overweight/Obesity
- ◆ Lack of Physical Activity
- ◆ Poor Nutrition

Adult Cigarette Smoking

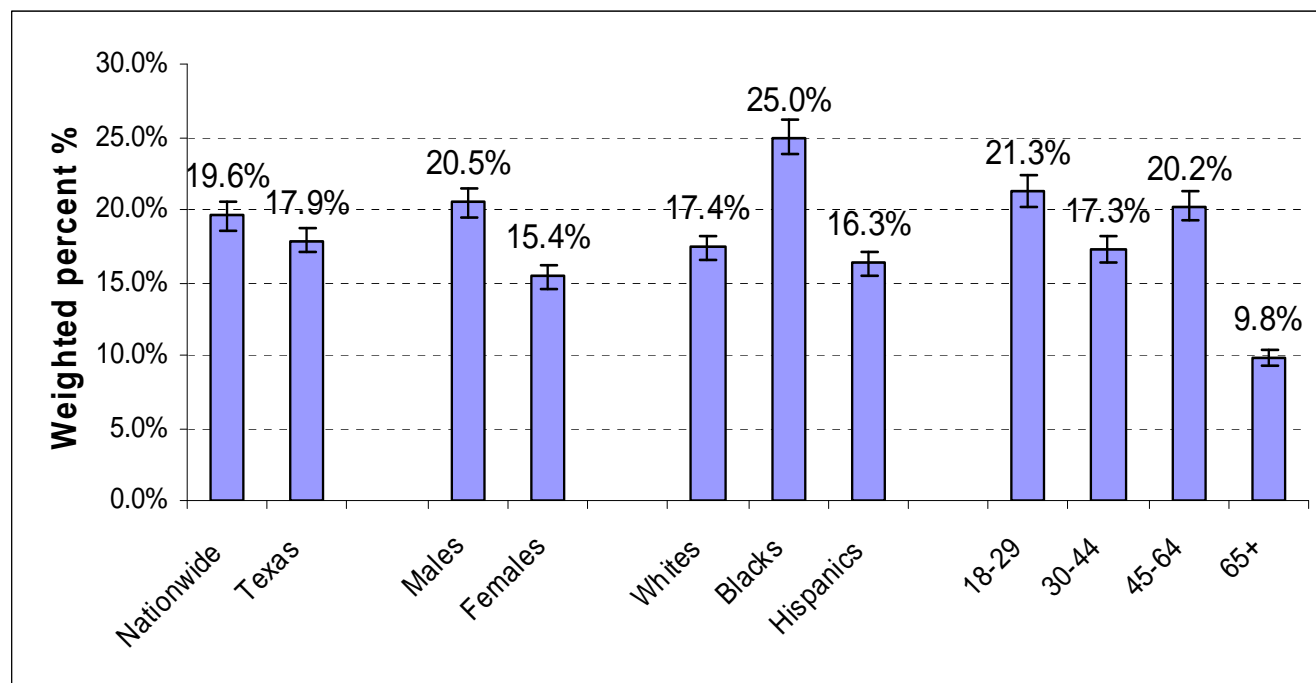
Texas and US Adults, 1995-2006



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2006



Adult Cigarette Smoking Prevalence – 2006

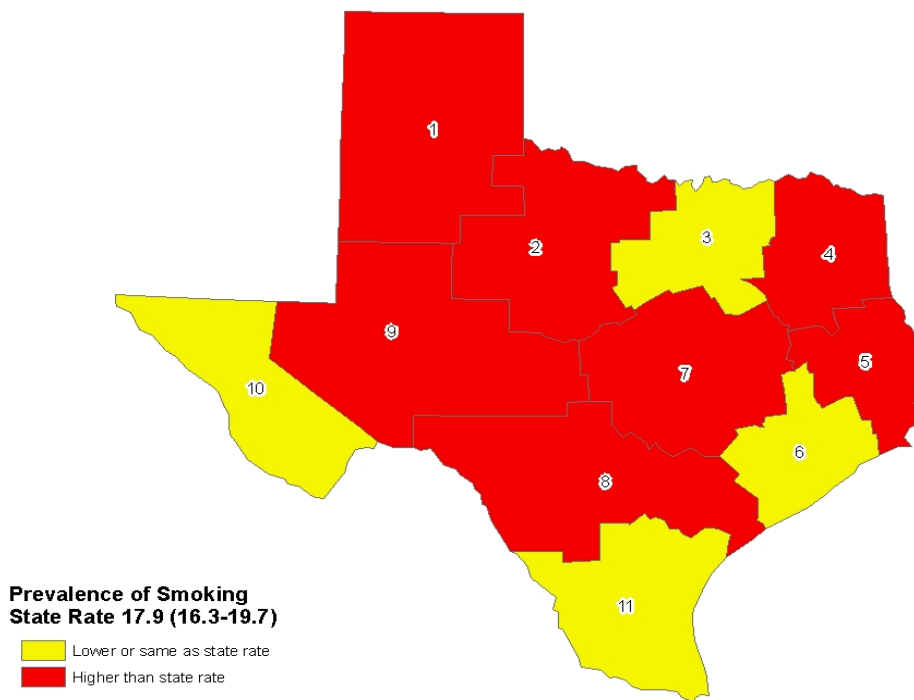


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



Adult Cigarette Smoking

Health Service Region – 2006

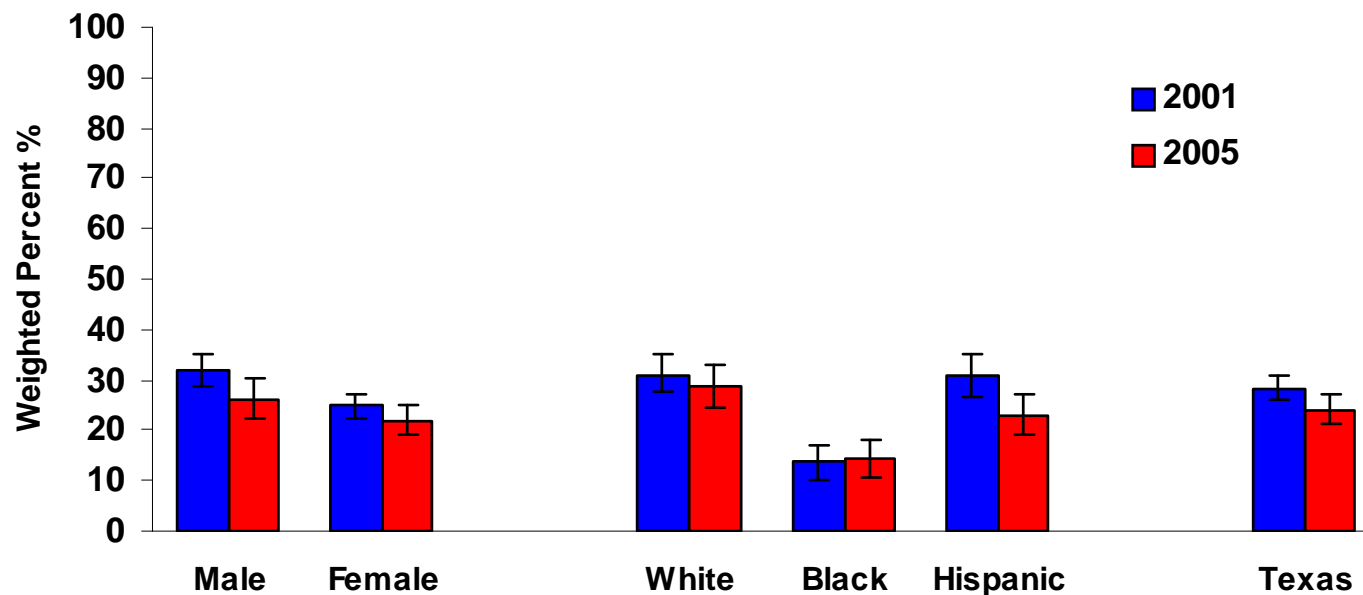


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



Cigarette Smoking Among Youth – 2001 & 2005

Percent of Students Who Smoked One or More Cigarettes in the Past 30 Days



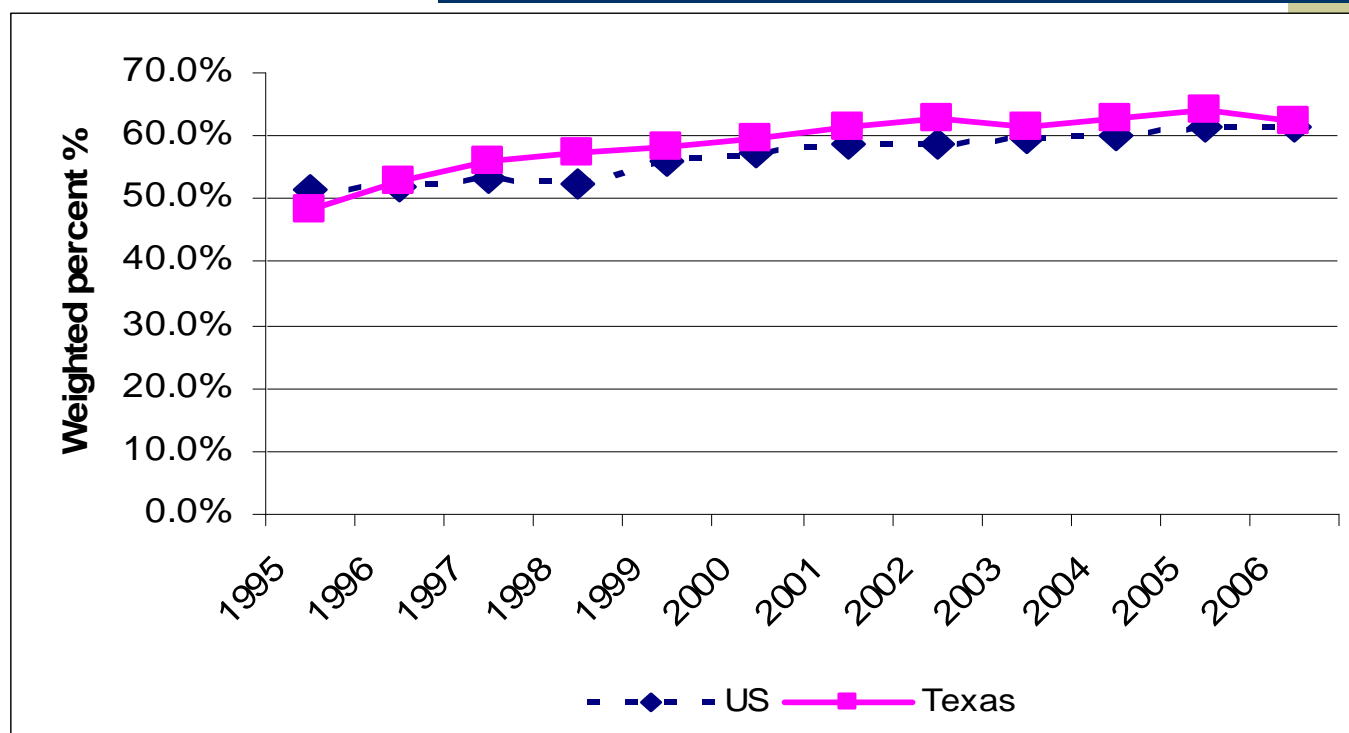
Data Source: Texas Youth Risk Behavior Surveys (YRBS), Texas Department of State Health Services, 2001, 2005
(Excluding Houston ISD) High School Survey



Overweight/Obesity

Overweight or Obesity

Texas and US Adults, 1995-2006

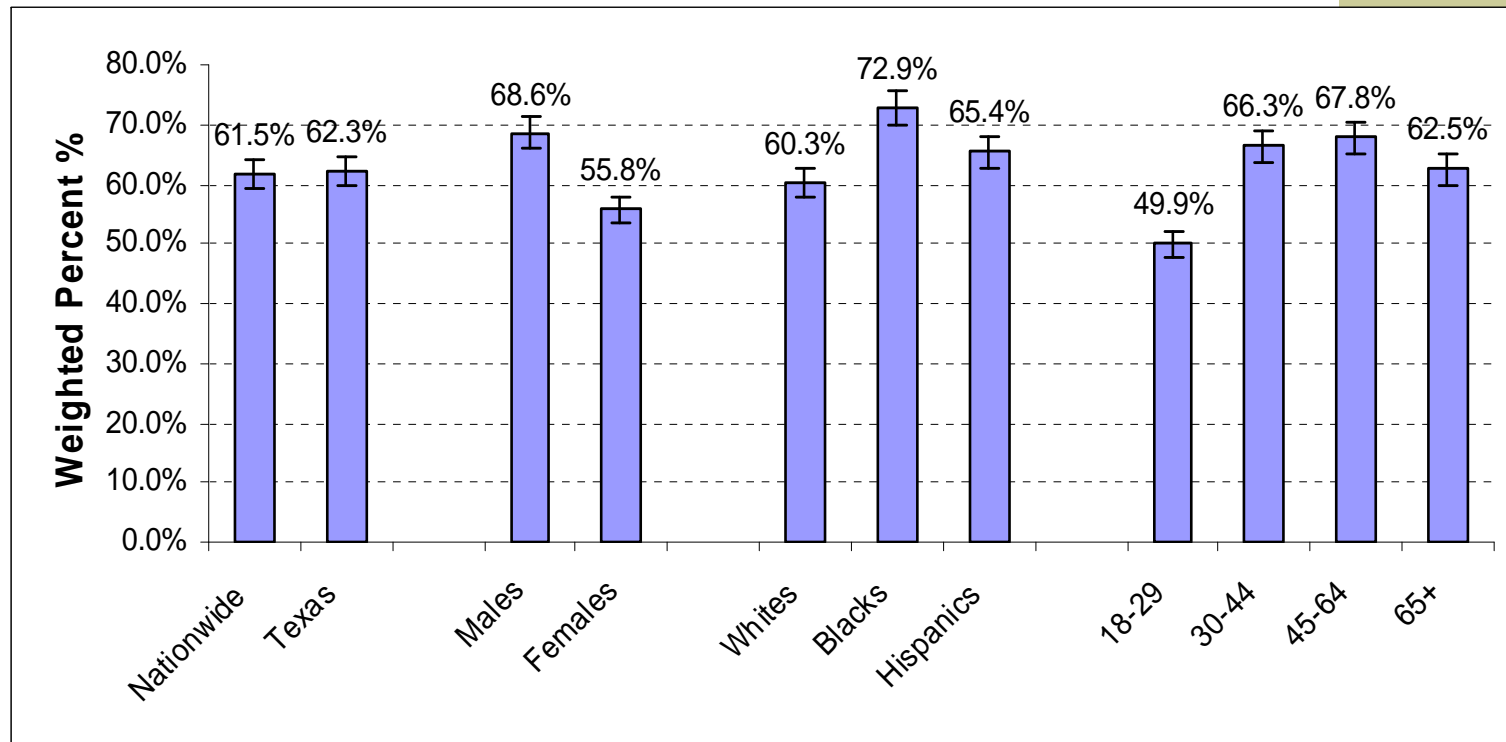


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Overweight or Obesity

Texas, BRFSS, - 2006

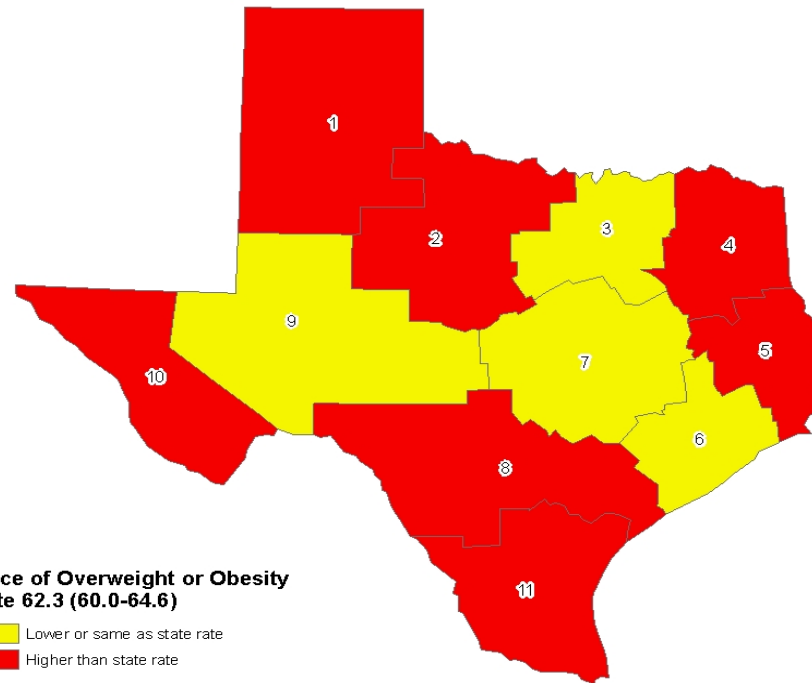


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Overweight or Obesity

Health Service Region-2006

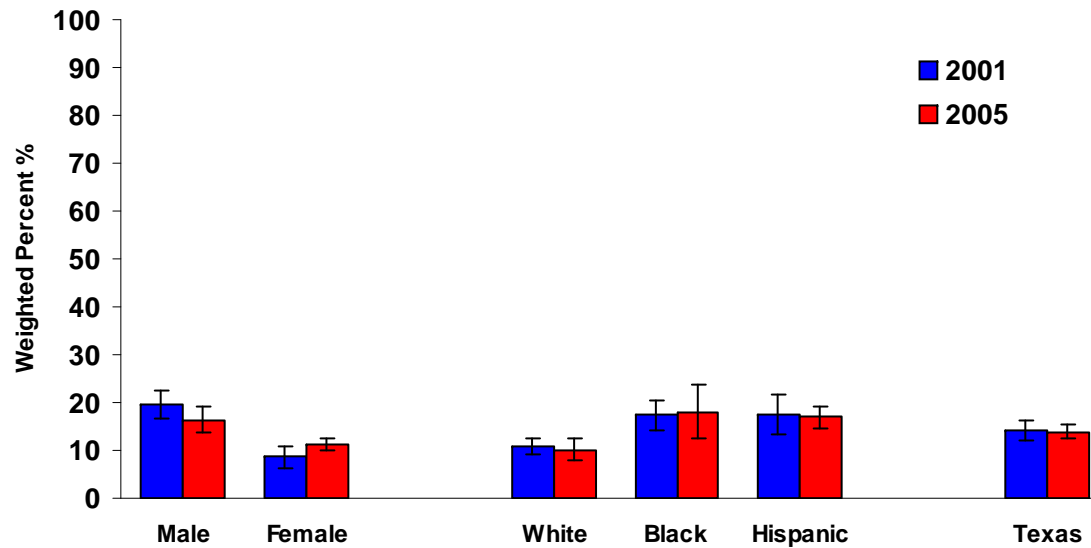


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



Overweight among Youth Prevalence – 2001 & 2005

Overweight



Data Source: Texas Youth Risk Behavior Surveys (YRBS), Texas Department of State Health Services, 2001, 2005
(Excluding Houston ISD) High School Survey

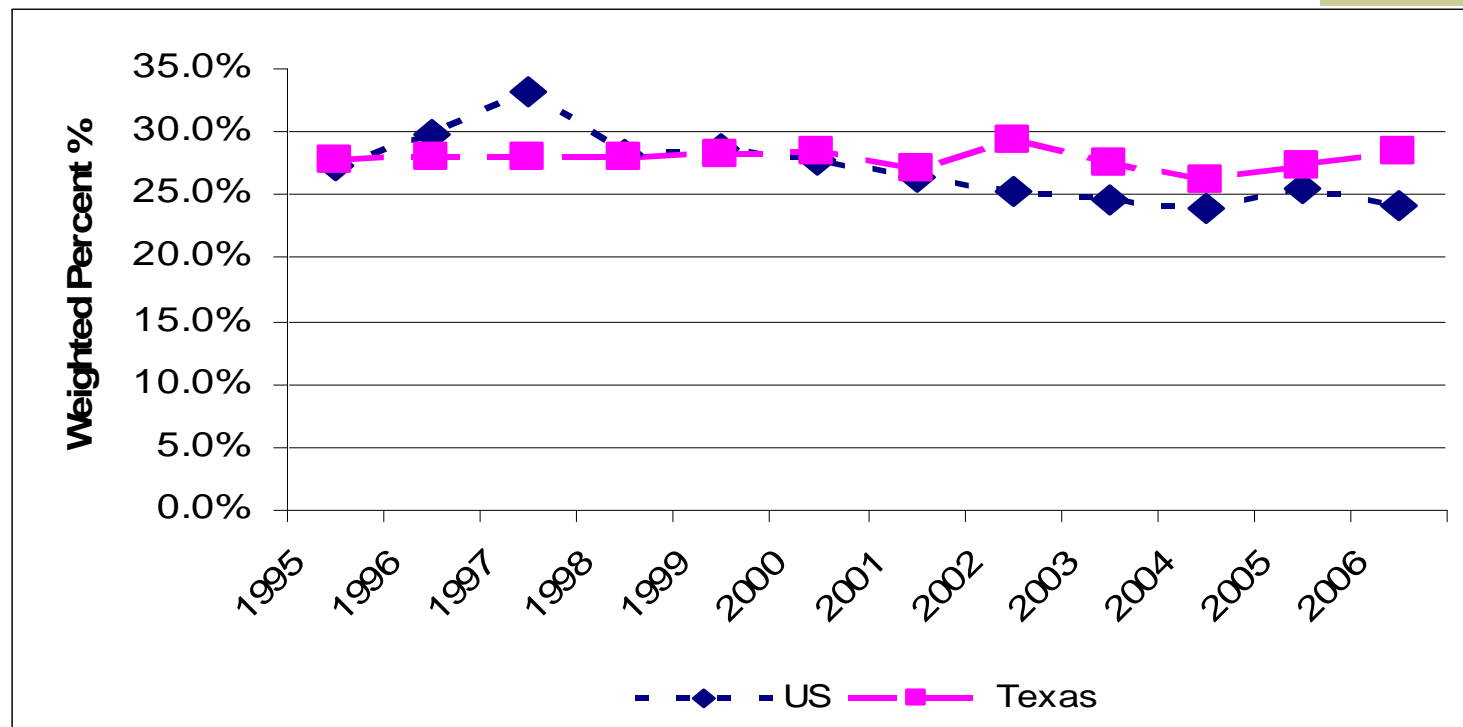


Lack of Physical Activity

- ◆ Regular physical activity greatly reduces a person's risk of dying from heart disease and decreases the risk for colon cancer, diabetes and high blood pressure

Lack of Physical Activity*

Texas & US Adults, 1995-2006



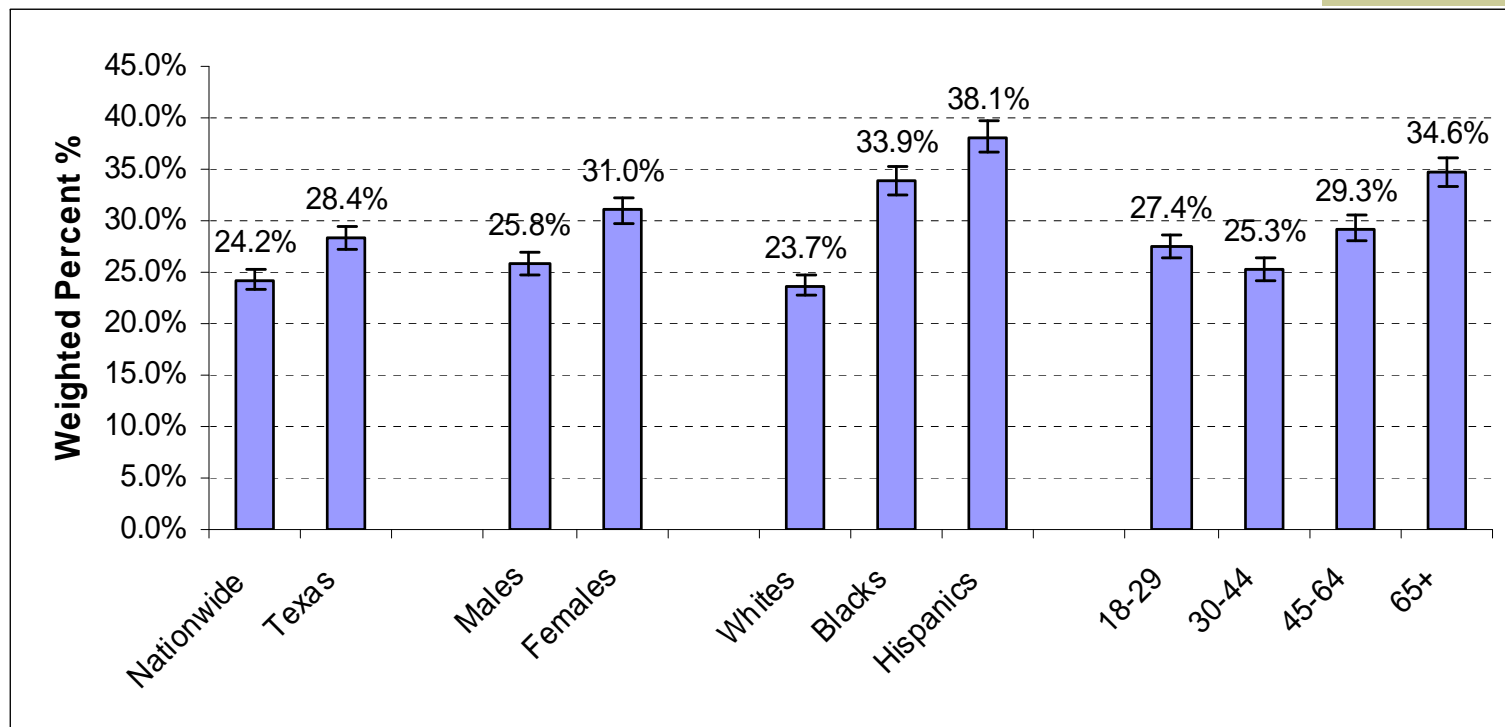
* During the past 30 days, did you participate in any physical activities or exercise?
% of adults who did not participate in any physical activities during the past 30 days

Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2006



Lack of Physical Activity*

Adults, Prevalence – 2006



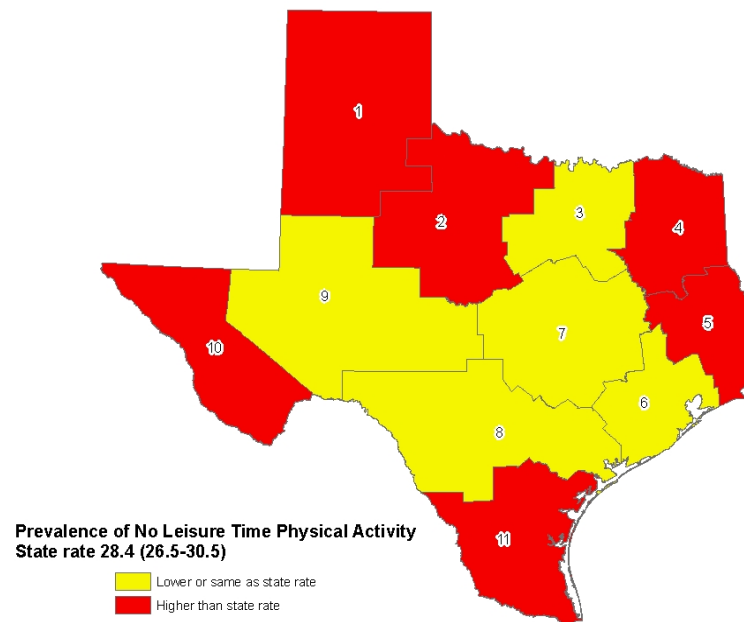
* During the past 30 days, did you participate in any physical activities or exercise?
% of adults who did not participate in any physical activities during the past 30 days

Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



Lack of Physical Activity*

Adults, Prevalence – 2006



* During the past 30 days, did you participate in any physical activities or exercise?
% of adults who did not participate in any physical activities during the past 30 days

Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006

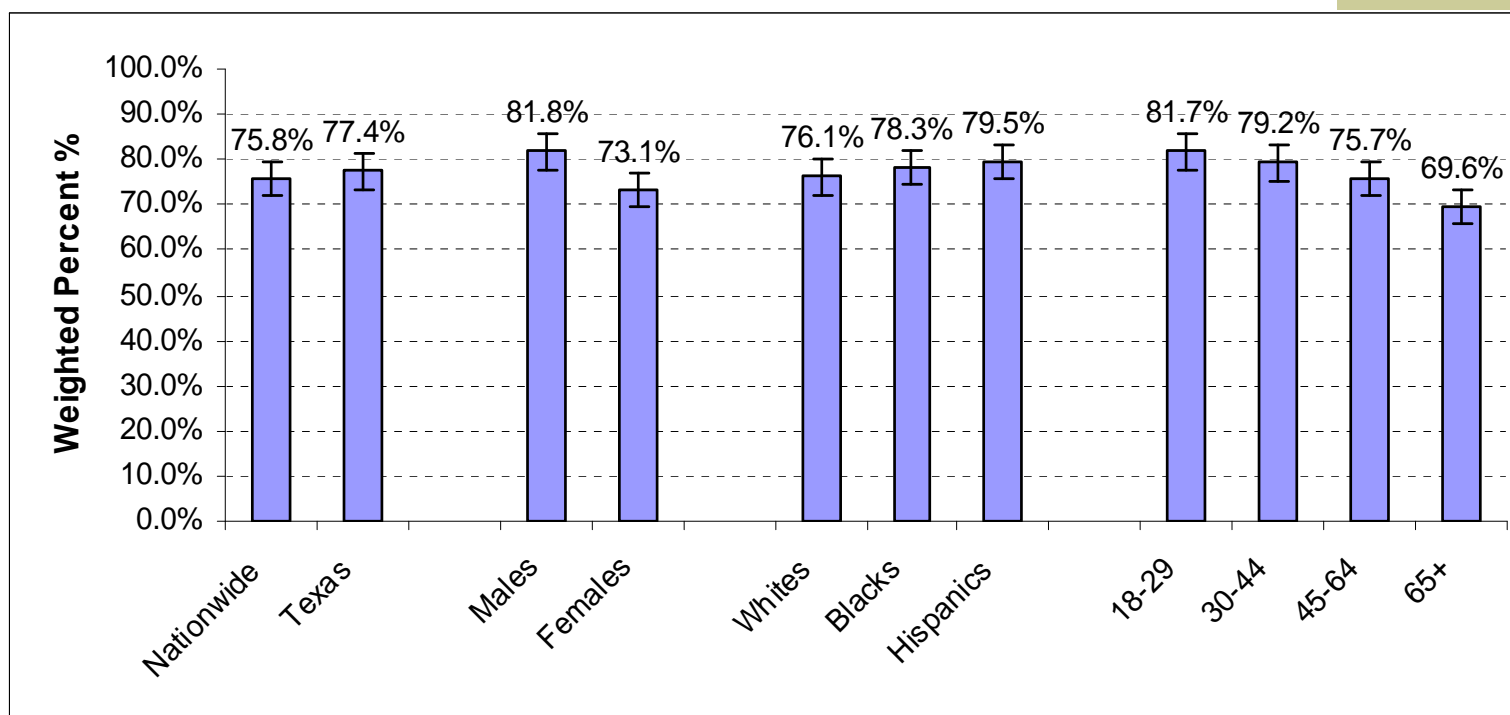


Poor Nutrition

- ◆ Good nutrition, including a diet that is low in saturated fats and contains five or more servings of fruits and vegetables each day, plays a key role in maintaining good health
- ◆ Improving the American diet could extend the productive life span of Americans and reduce the occurrence of chronic diseases

Poor Nutrition*

Adults, Prevalence – 2005



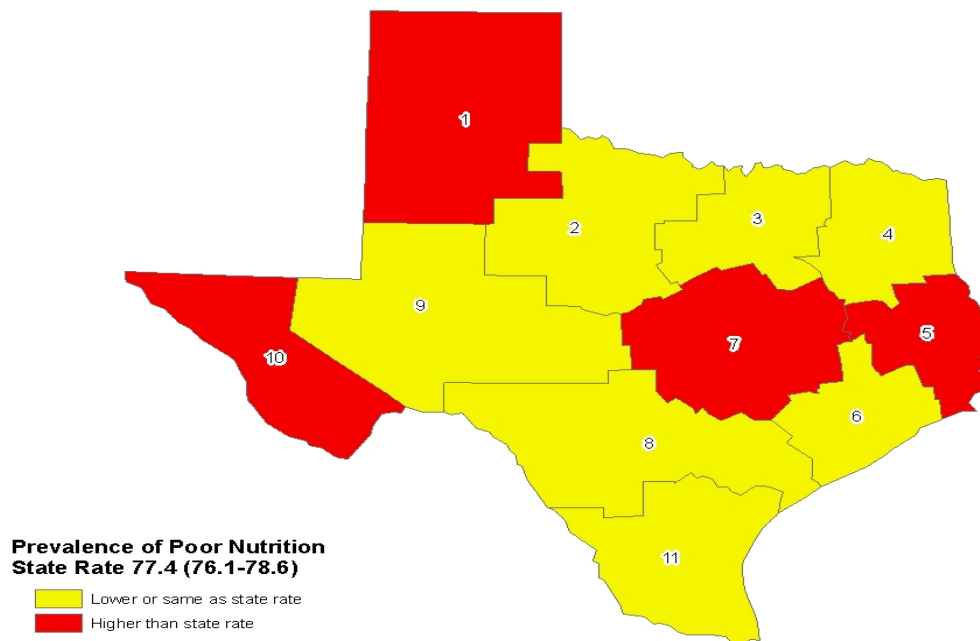
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005

- *% of adults who reported eating fewer than 5 servings of fruits and vegetables per day



Poor Nutrition*

Health Service Region – 2005



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005

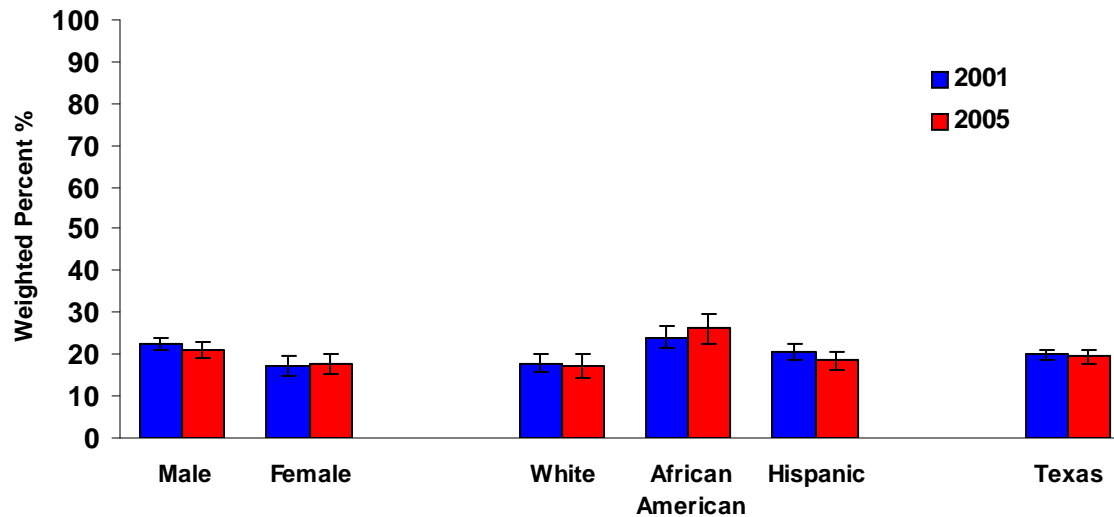
- *% of adults who reported eating fewer than 5 servings of fruits and vegetables per day



Poor Nutrition*

Public High School Students – 2001, 2005

Ate 5 or More Servings of Fruits or Vegetables
in Past 7 Days



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005

- *% of adults who reported eating fewer than 5 servings of fruits and vegetables per day



Medical Risk Factors

Diabetes

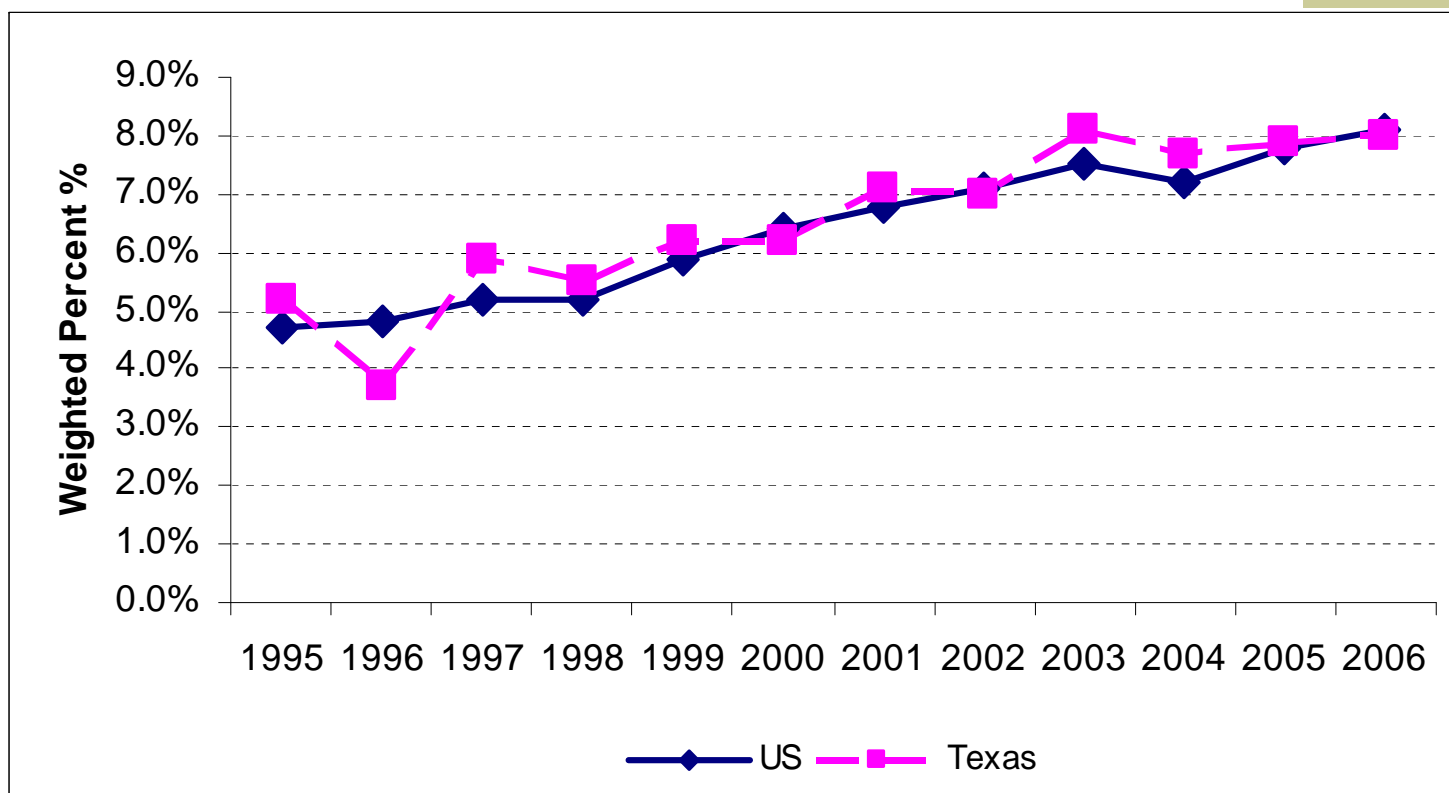
High Cholesterol

High Blood Pressure



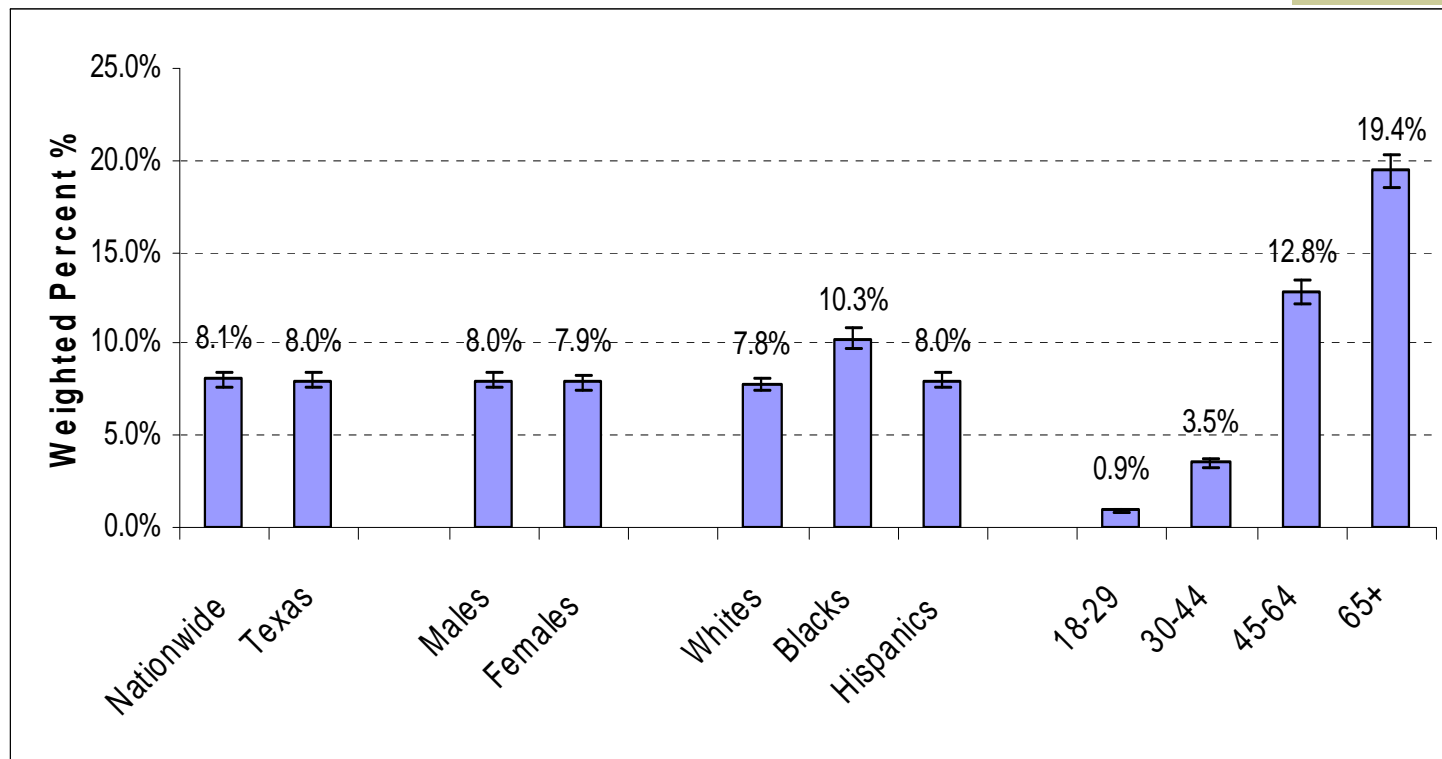
Diabetes

Texas and U.S Adult - 1995-2006



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2006

Diabetes Prevalence - 2006

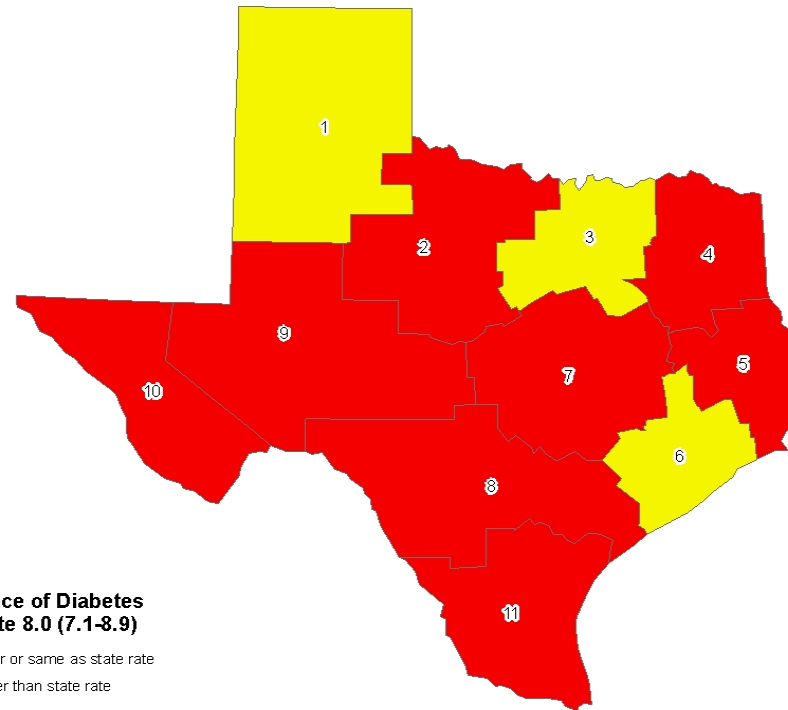


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



Diabetes Prevalence

Health Service Region– 2006

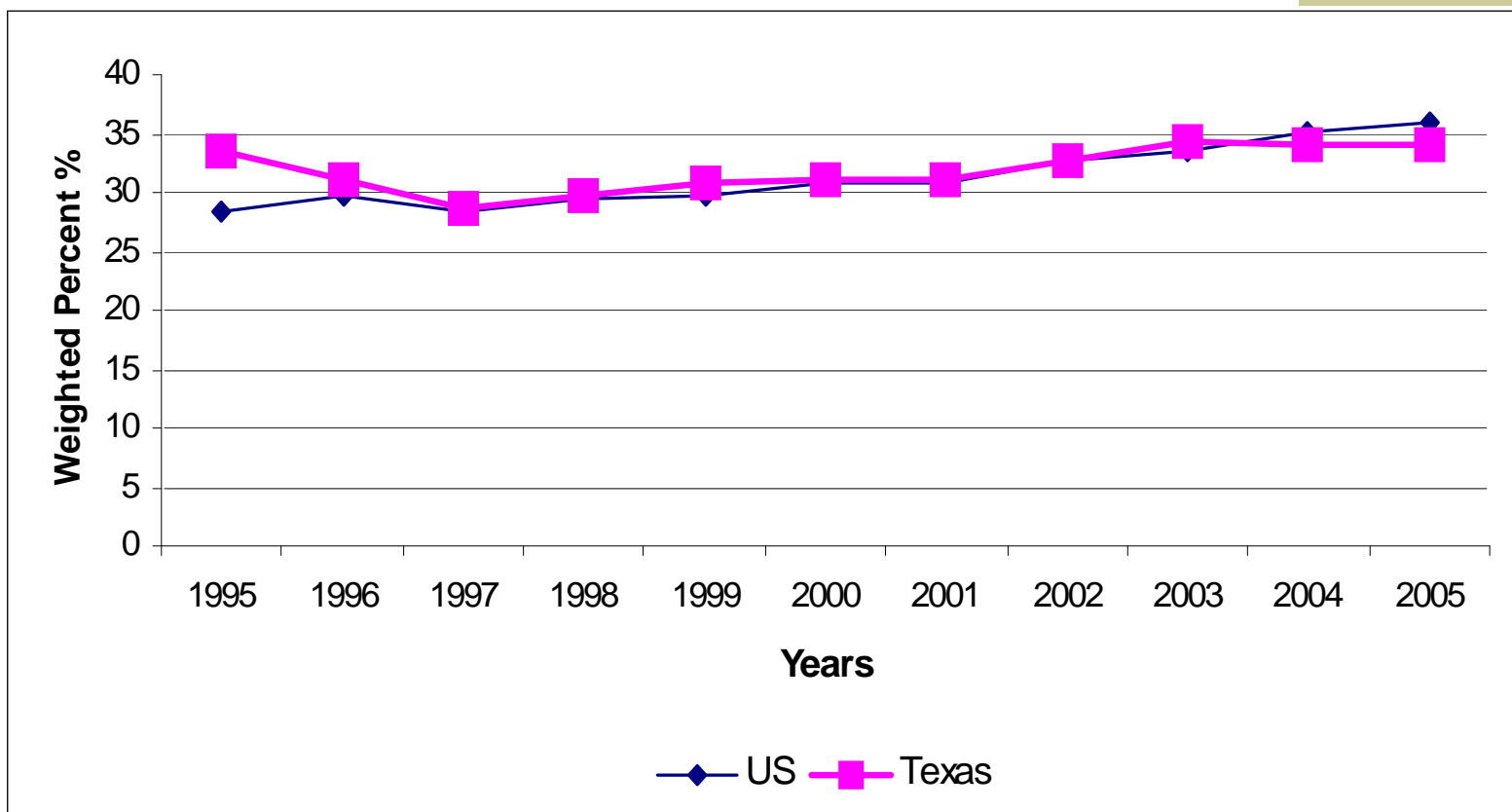


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2006



High Cholesterol

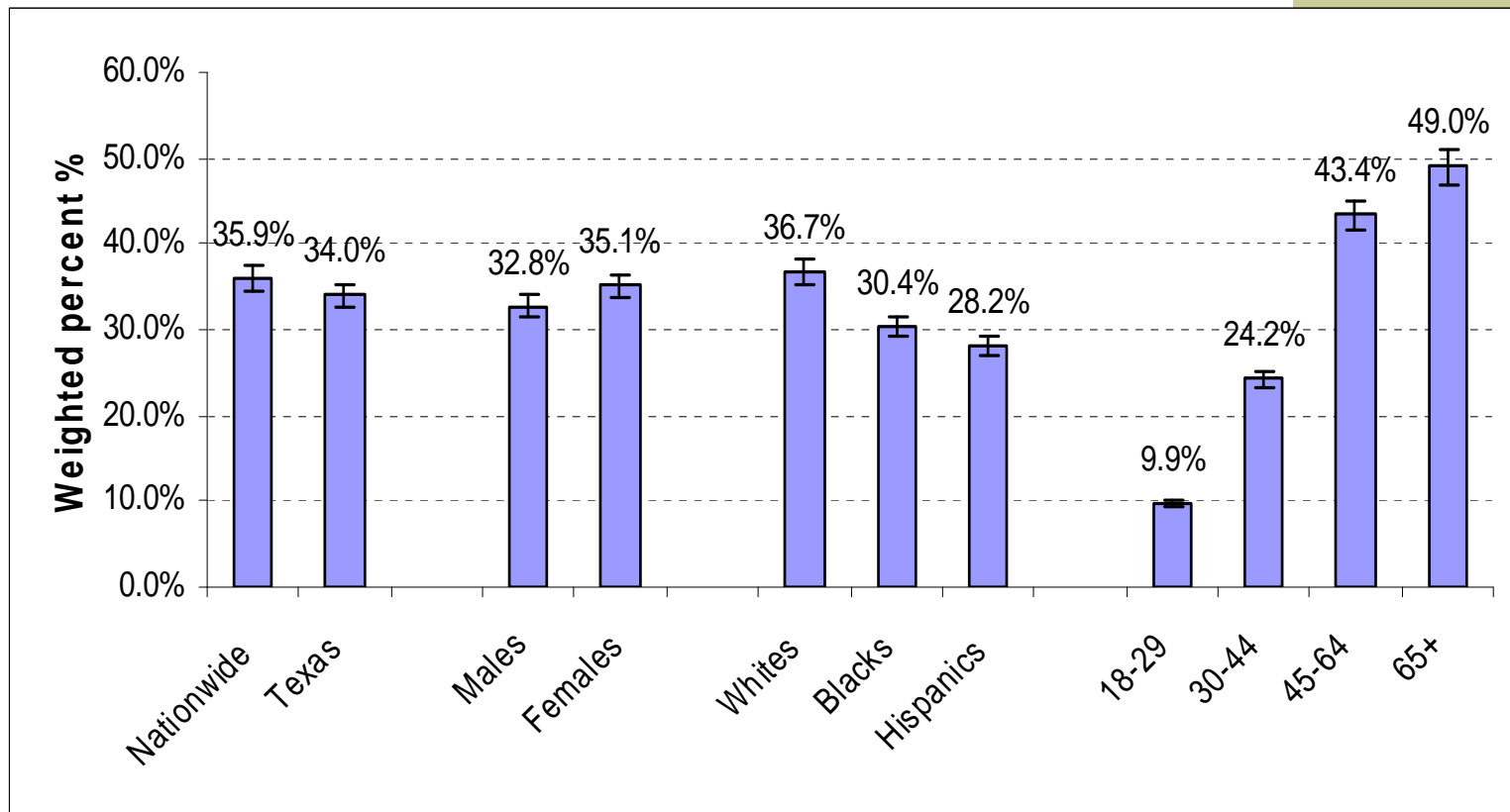
Texas and U.S Adult-1995-2005



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2005



High Cholesterol Prevalence - 2005

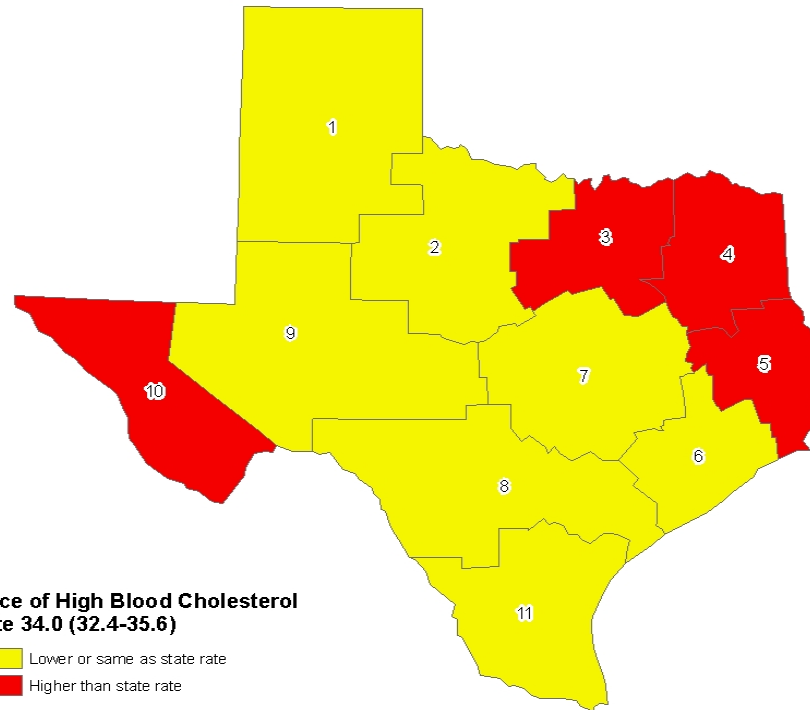


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005



High Cholesterol

Health Service Region– 2005



Prevalence of High Blood Cholesterol
State Rate 34.0 (32.4-35.6)

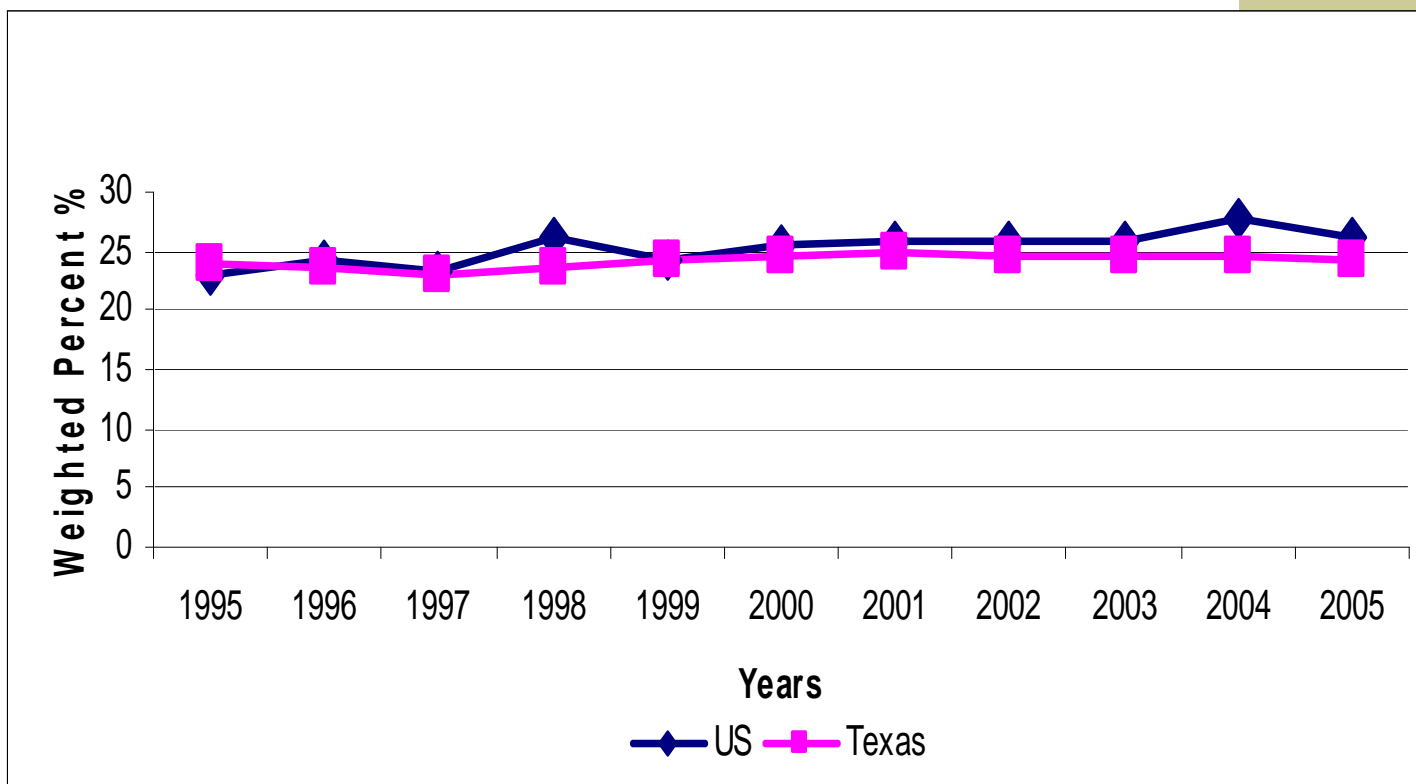
- Lower or same as state rate
- Higher than state rate



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005

High Blood Pressure

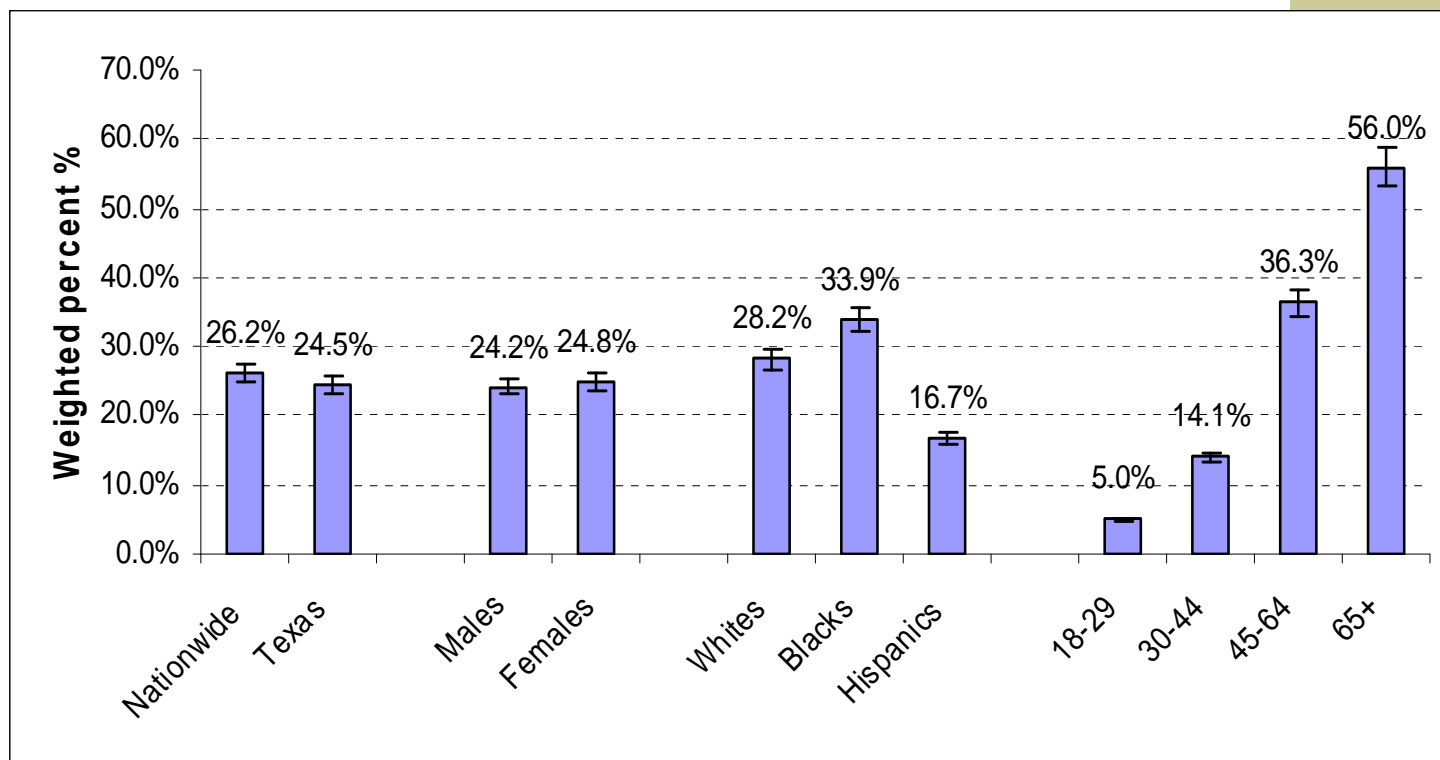
Texas and U.S Adult -1995-2005



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1995-2005



High Blood Pressure Prevalence - 2005

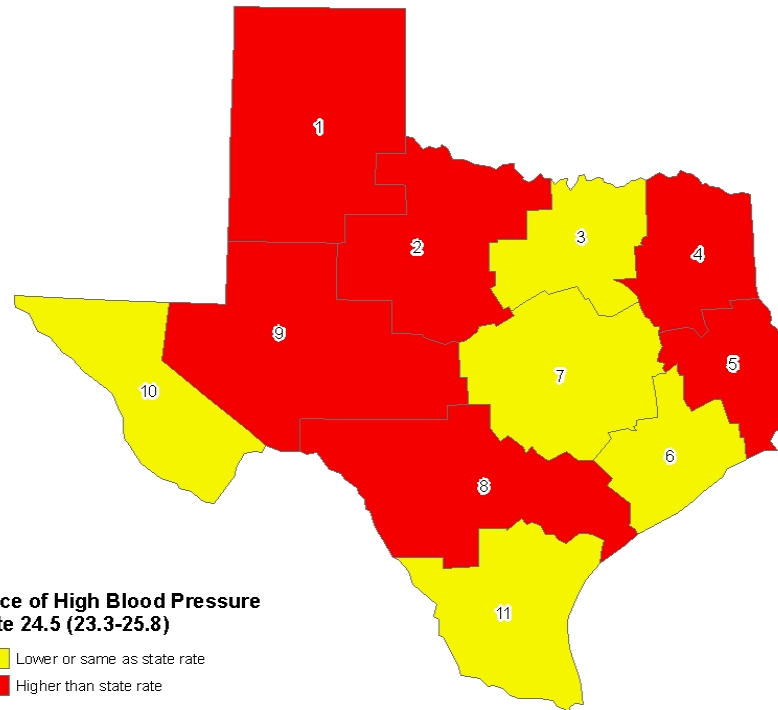


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005



High Blood Pressure

Health Service Region--- 2005



Prevalence of High Blood Pressure
State Rate 24.5 (23.3-25.8)

- Lower or same as state rate
- Higher than state rate



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005

Cardiovascular Risk Factors

- ◆ The risk factors that significantly lead to CVD mortality and morbidity include high blood pressure, high blood cholesterol, diabetes, and smoking
- ◆ Other risk factors that contribute to CVD are overweight and obesity, physical inactivity and unhealthy eating habits.

HEDIS

Health Plan Employer Data and Information Set



HEDIS

- ◆ Standardized performance measures designed for comparing the quality of care of managed care organizations

Result from HEDIS.

Texas, 2001-2006

Measures	2001	2002	2003	2004	2005	2006
Controlling High BP ¹	47.8	50.9	57.9	59.2	64.5	64.5
Beta Blocker Treatment After a Heart Attack ²	NA	90.3	86.9	85.2	83.3	84.3
LDL-C Screening after acute CV event ³	72.4	76.2	77.1	77.9	79.4	75.6
LDL-C Level < 130 mg/dL ⁴		42.6	57.7	56.3	55.8	46.8



Data Source: http://www.opic.state.tx.us/page.php?p_sub_page_id=582001-2006

EMS

Texas EMS/Trauma Registry, Department of State Health Services in Texas 2003 data.



EMS Data

- ◆ Suspected Illness Types include Cardiac Arrest, Cardiac Rhythm Disturbance, and Chest Pain/Discomfort , and stroke
- ◆ Medical-related calls only
- ◆ 911 calls only (no inter-facility transfers)
- ◆ Texas residents only

EMS Response Time (in Minutes) for Cardiac Events-2003

Response Time = (Call Received Time – Time EMS Arrived on Scene)	8.1
Scene Time = (Time EMS Arrived on Scene – Time EMS Departed Scene)	18.2
Transport Time = (Time EMS Departed Scene – Time EMS Arrived at Destination)	13.7
Delivery Time = (Call Received Time – Time EMS Arrived at Destination)	39.4

Data Source: Texas EMS/Trauma Registry, 2003.



EMS Response Time (in Minutes) for Stroke Events-2003

Response Time = (Call Received Time – Time EMS Arrived on Scene)	8.3
Scene Time = (Time EMS Arrived on Scene – Time EMS Departed Scene)	18
Transport Time = (Time EMS Departed Scene – Time EMS Arrived at Destination).	14.3
Delivery Time = (Call Received Time – Time EMS Arrived at Destination)	39.8

Data Source: Texas EMS/Trauma Registry, 2003.



Medicaid Reimbursements for CVD



Medicaid Claims Data

for CVD in Texas, 2003 and 2005

- Data are based on paid Medicaid claims for Fee-For-Service (FFS) and Patient Care Case Management (PCCM) clients.
- Data excludes information on individuals served by Medicaid HMOs or those served by STAR+PLUS.

Medicaid Claims Data

for CVD in Texas, 2003 and 2005

- **Information is derived from paid or partially paid Medicaid claims and does not include data on denied or pending claims.**
- **Reimbursements exclude the portion paid by the Medicare program and other insurance providers**

Cardiovascular Disease (CVD)

Classes of Diagnoses:

Hypertension (ICD-9 codes 401-405)

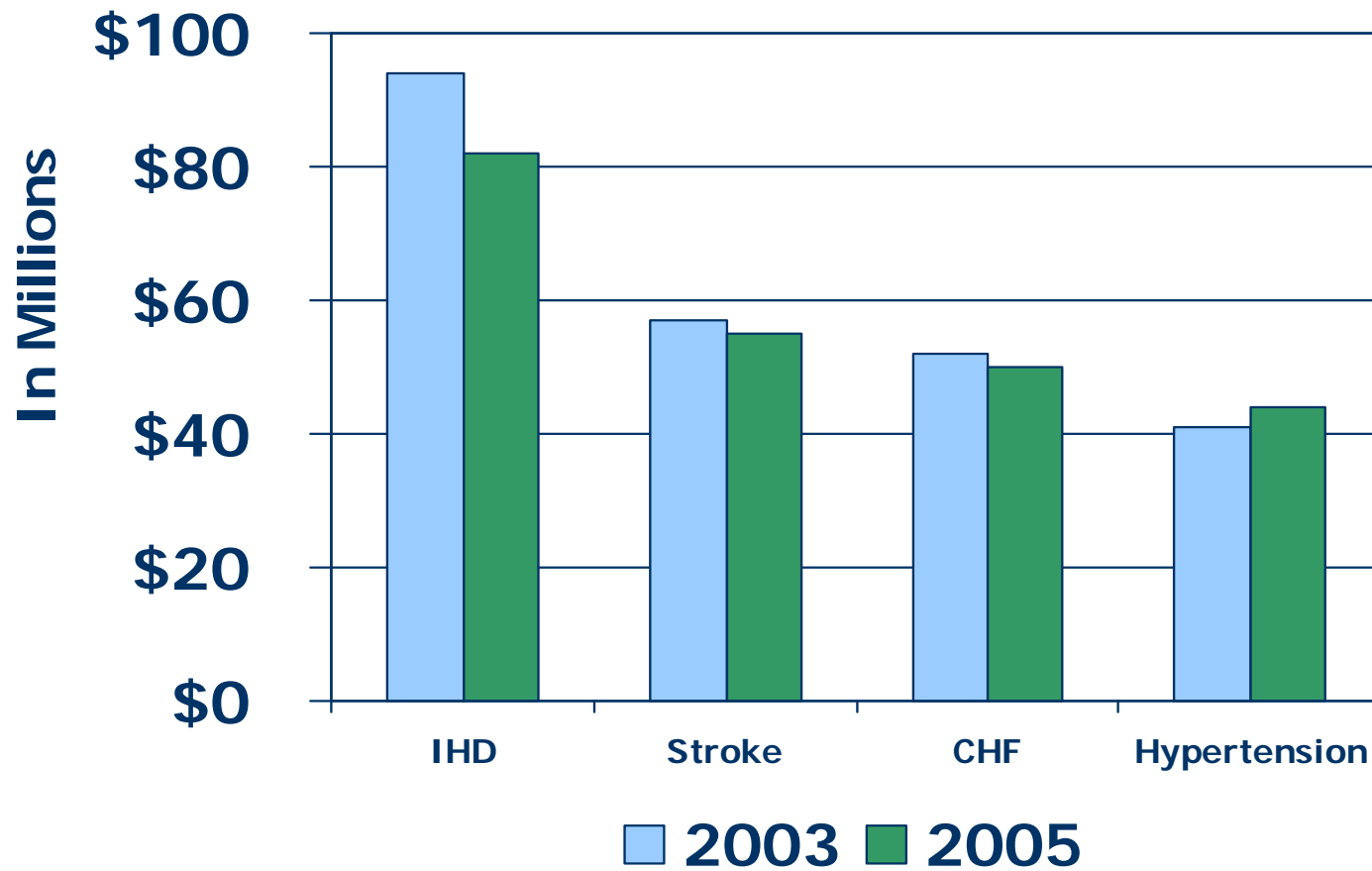
Ischemic Heart Disease (ICD-9 codes 410-414)

Stroke (ICD-9 codes 430-438)

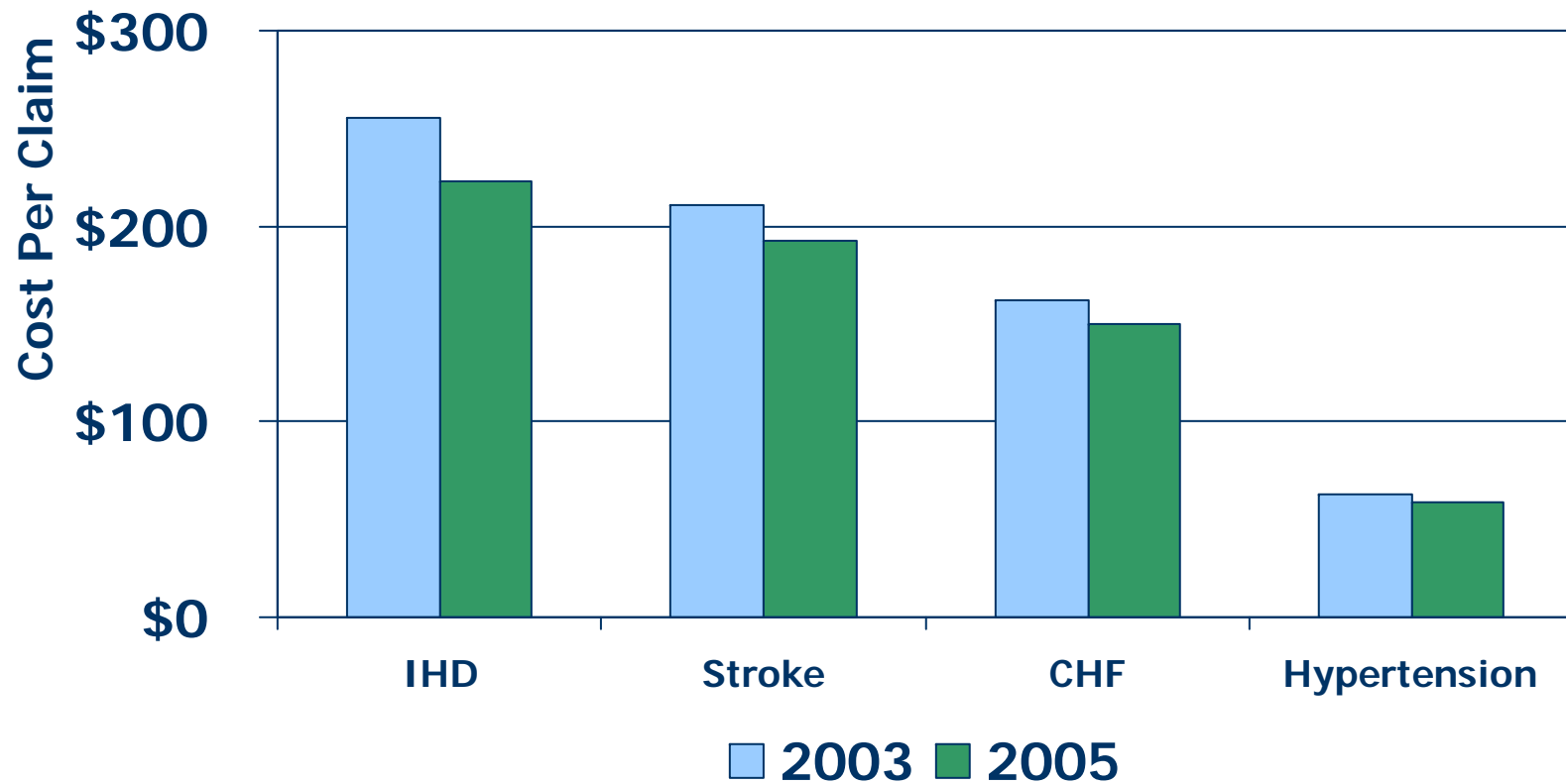
Congestive Heart Failure (ICD-9 code 428)



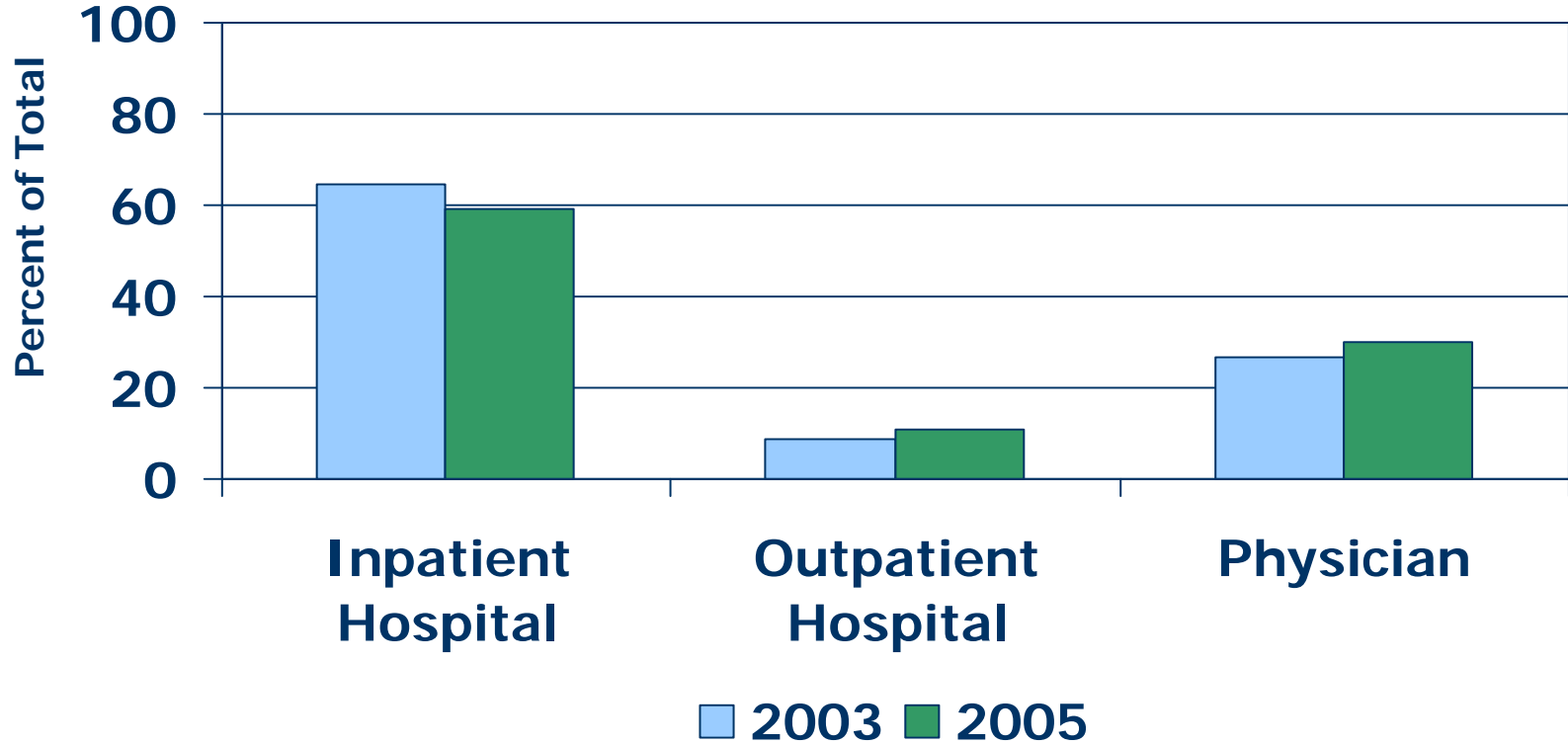
Texas Medicaid Reimbursement Amounts for CVD 2003 and 2005



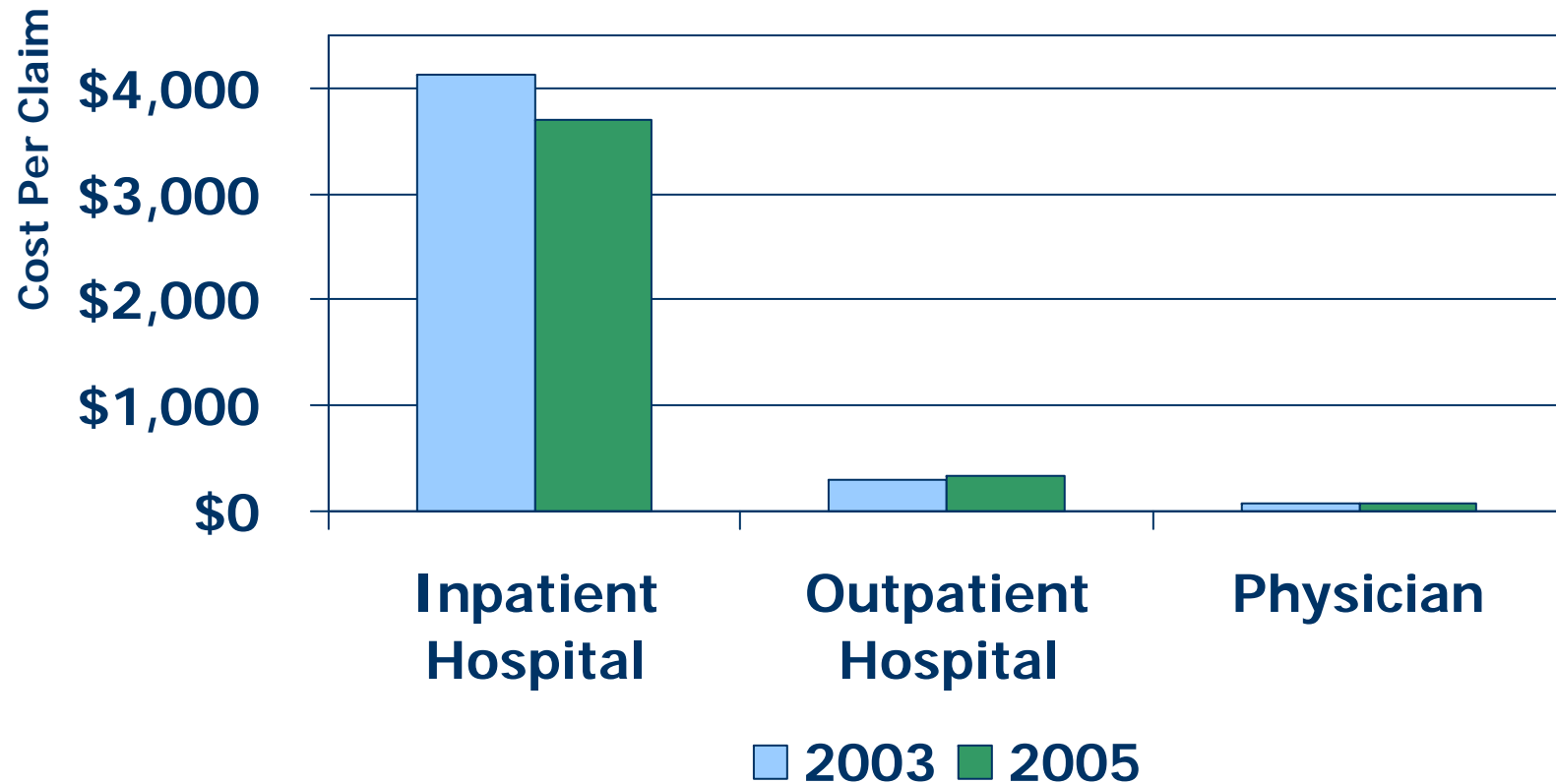
Average Reimbursement Per Claim All Types of Care 2003 and 2005



Ischemic Heart Disease Percent of Medicaid Reimbursements By Type of Care 2003 and 2005

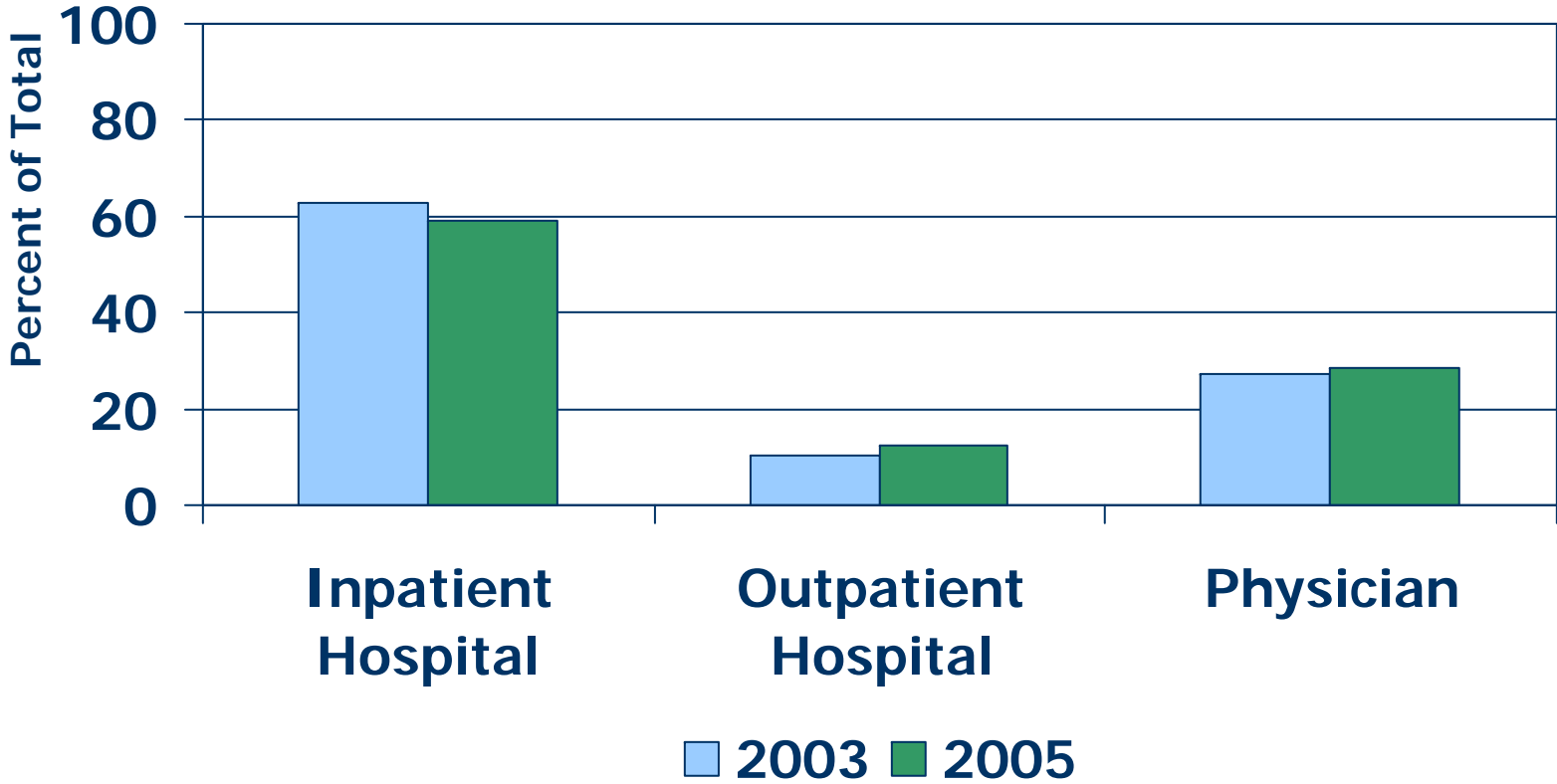


Ischemic Heart Disease Average Reimbursement Per Claim 2003 and 2005



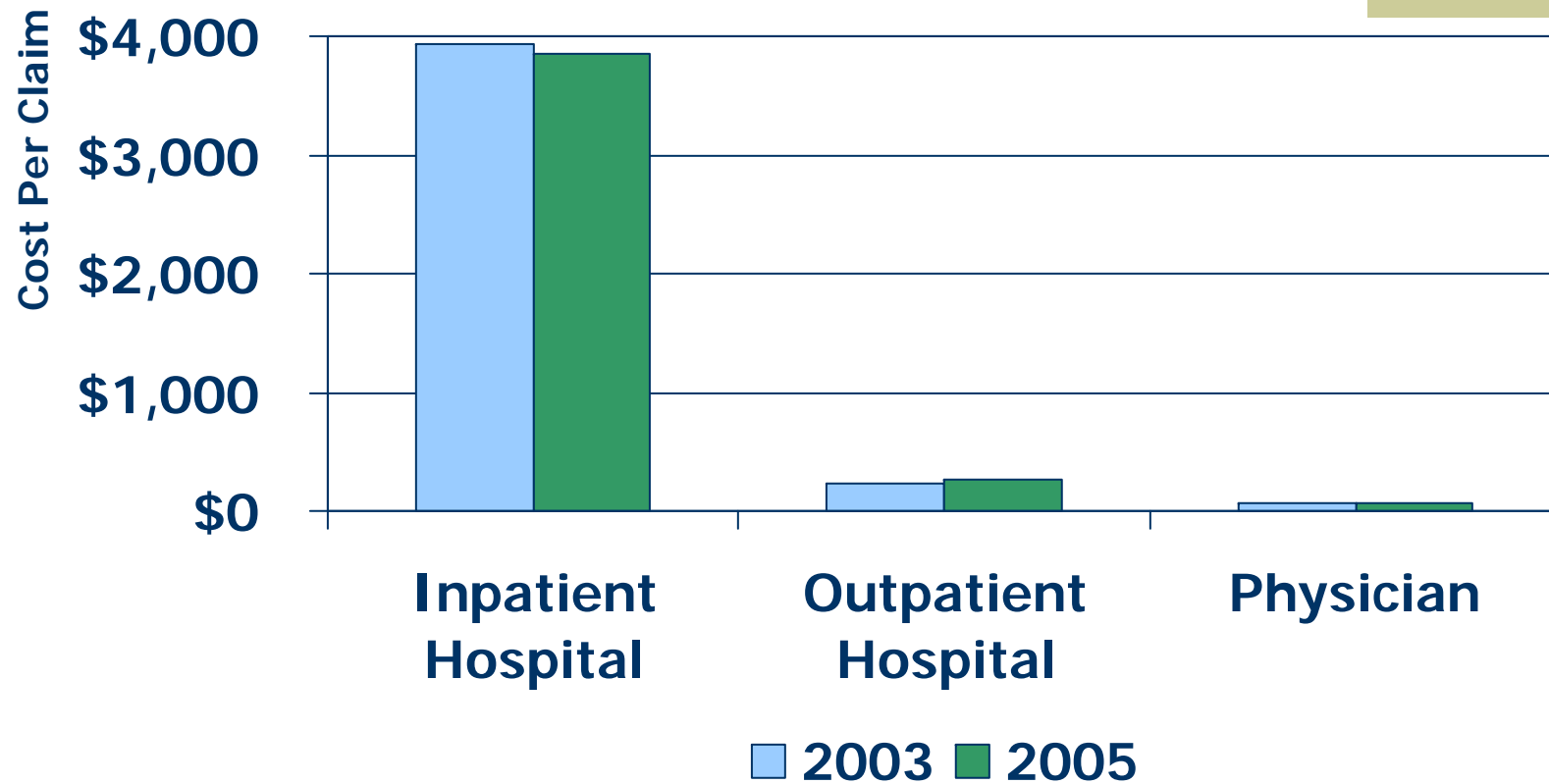
Stroke

Percent of Medicaid Reimbursements By Type of Care 2003 and 2005

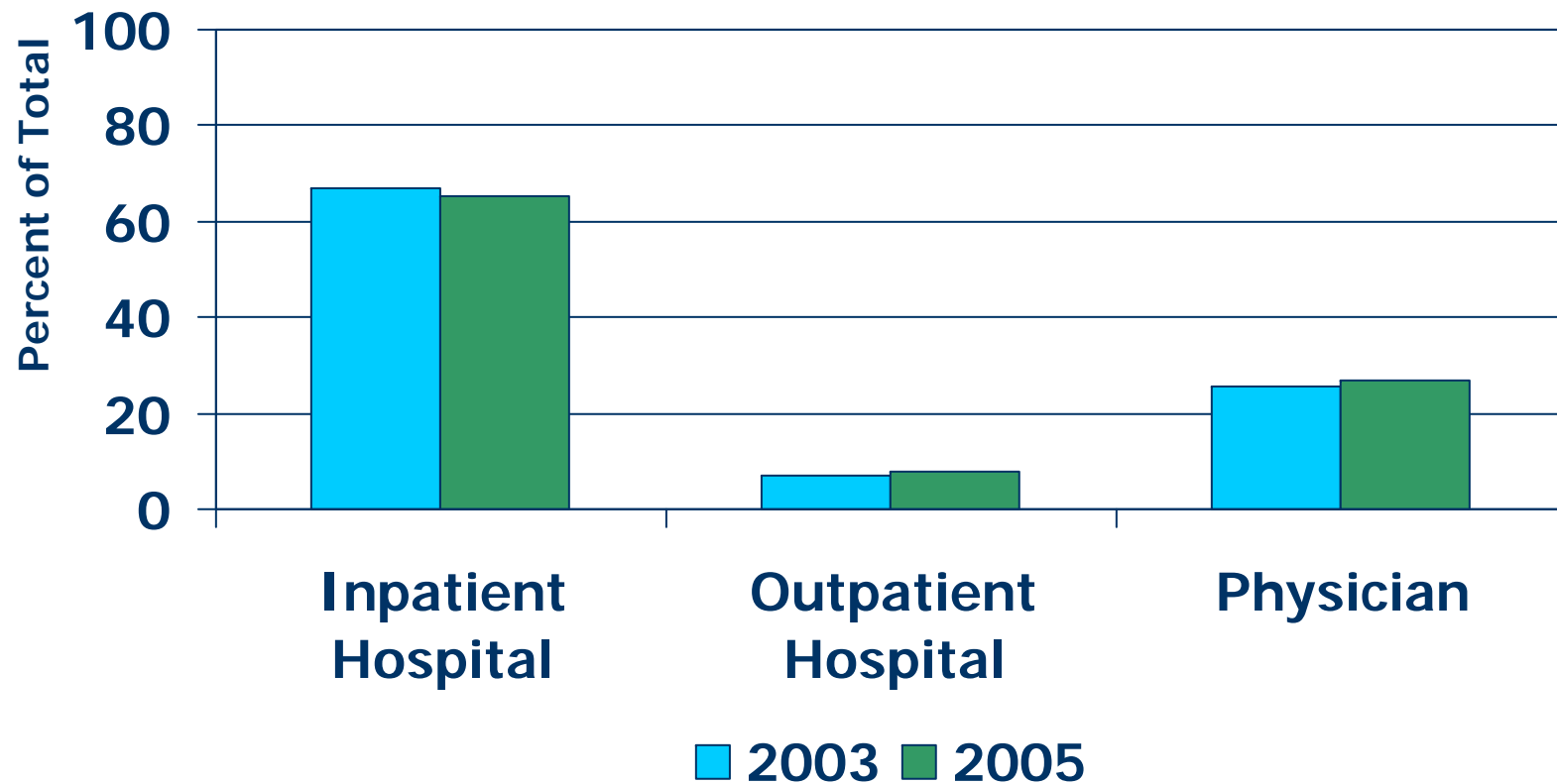


Stroke

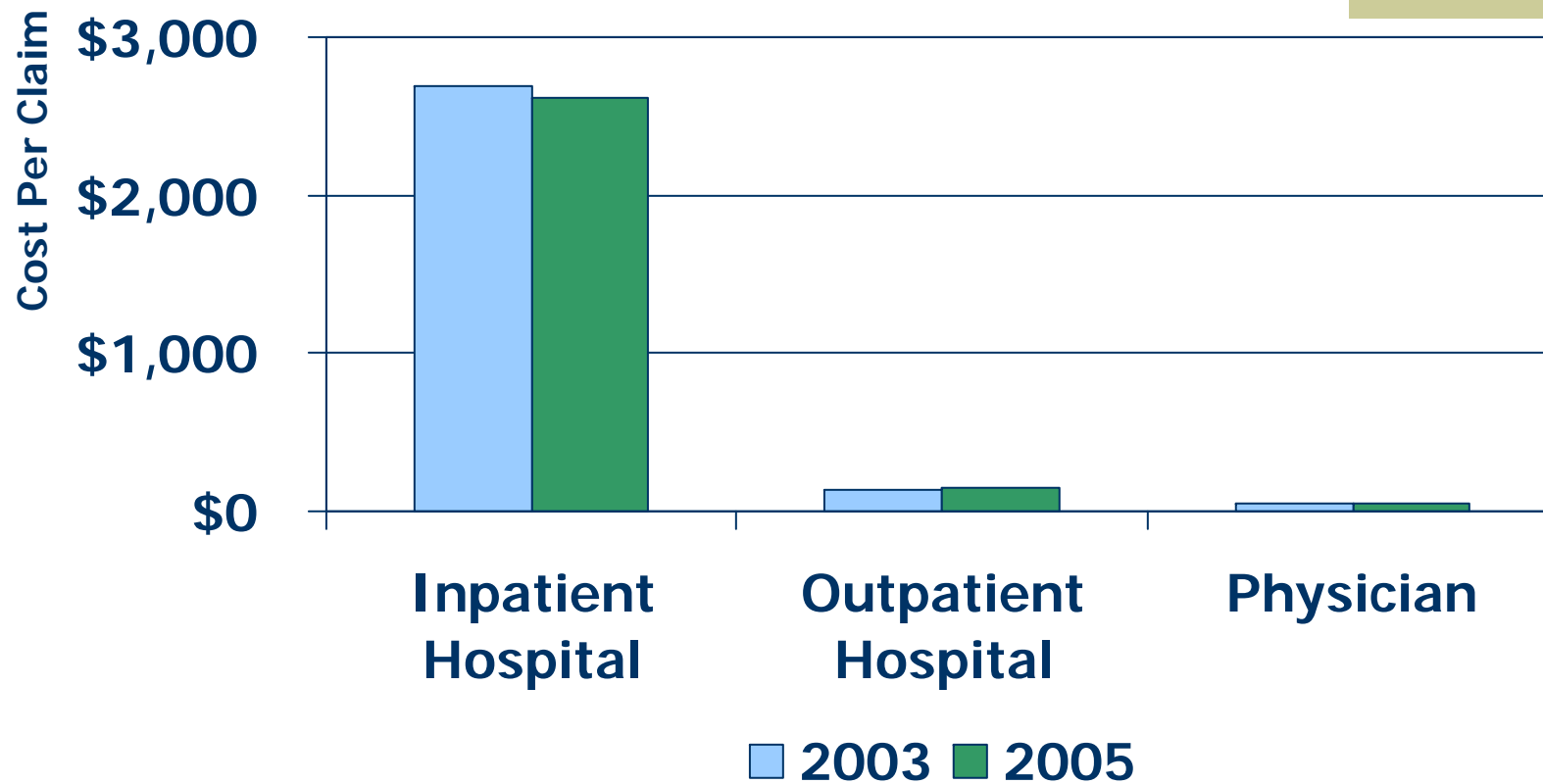
Average Reimbursement Per Claim 2003 and 2005



Congestive Heart Failure Percent of Medicaid Reimbursements By Type of Care 2003 and 2005

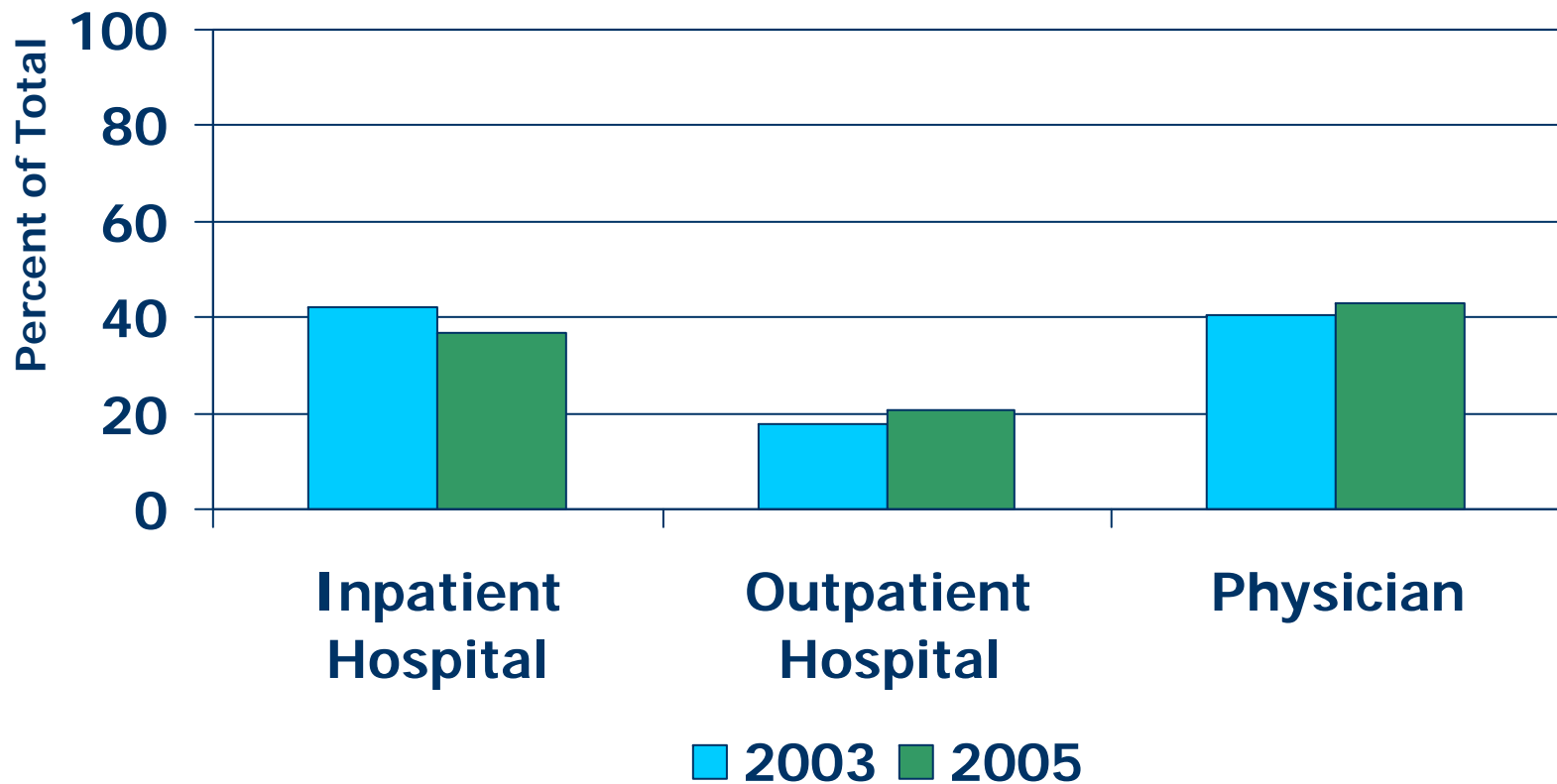


Congestive Heart Failure Average Reimbursement Per Claim 2003 and 2005



Hypertension

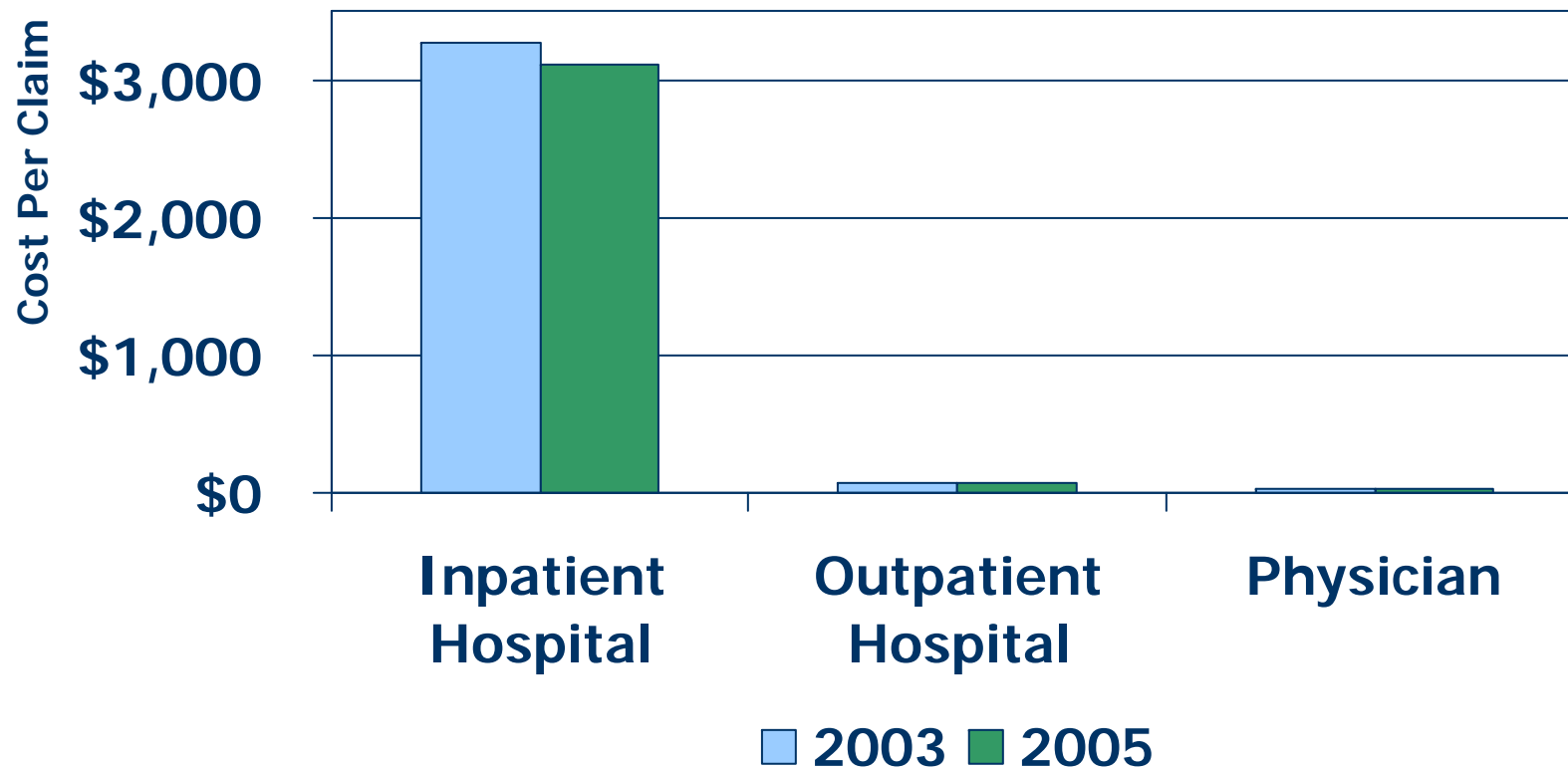
Percent of Medicaid Reimbursements By Type of Care, 2003 and 2005



Hypertension

Average Reimbursement Per Claim

2003 and 2005



Discussion

- For each class of CVD examined, inpatient hospital reimbursements were higher than reimbursements for other levels of care
- Inpatient hospital stays accounted for over 60% of reimbursements for each disease category except hypertension which was approximately 40%

Discussion

- Medicaid reimbursement was highest for ischemic heart disease followed by stroke, congestive heart failure and hypertension
- Persons with acute conditions (ischemic heart disease and stroke) were more likely to be hospitalized than those with chronic conditions (congestive heart failure and hypertension)

Discussion

- ◆ **Physician reimbursements were considerably lower than reimbursements for inpatient or outpatient hospital visits**
- ◆ **Preventive CVD treatment within the setting of a physician's office for congestive heart failure and hypertension would likely reduce the risk of ischemic heart disease and stroke leading to overall savings**