

# Burden of Cardiovascular Disease (CVD) in Texas

A Surveillance Update  
February 4, 2012

Cardiovascular Disease and Stroke Program  
Adult Health and Chronic Disease Branch  
Health Promotion and Chronic Disease Prevention Section  
Division for Prevention and Preparedness  
Texas Department of State Health Services



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# Burden of CVD

- Heart disease and stroke were the first and fourth leading causes of death in Texas, respectively, in 2009<sup>1</sup>
- 31.0% of all deaths in Texas in 2009 due to CVD<sup>1</sup>
- An estimated 1.5 million Texan adults reported that they have had heart disease or stroke in 2010<sup>2</sup>



<sup>1</sup>Data Source: Texas Vital Statistics, Center for Health Statistics, Texas Department of State Health Services.

<sup>2</sup>Data Source: Texas Behavioral Risk Factor Surveillance System, Center for Health Statistics, Texas Department of State Health Services. US Census.

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# Texas Plan to Reduce CVD 2008

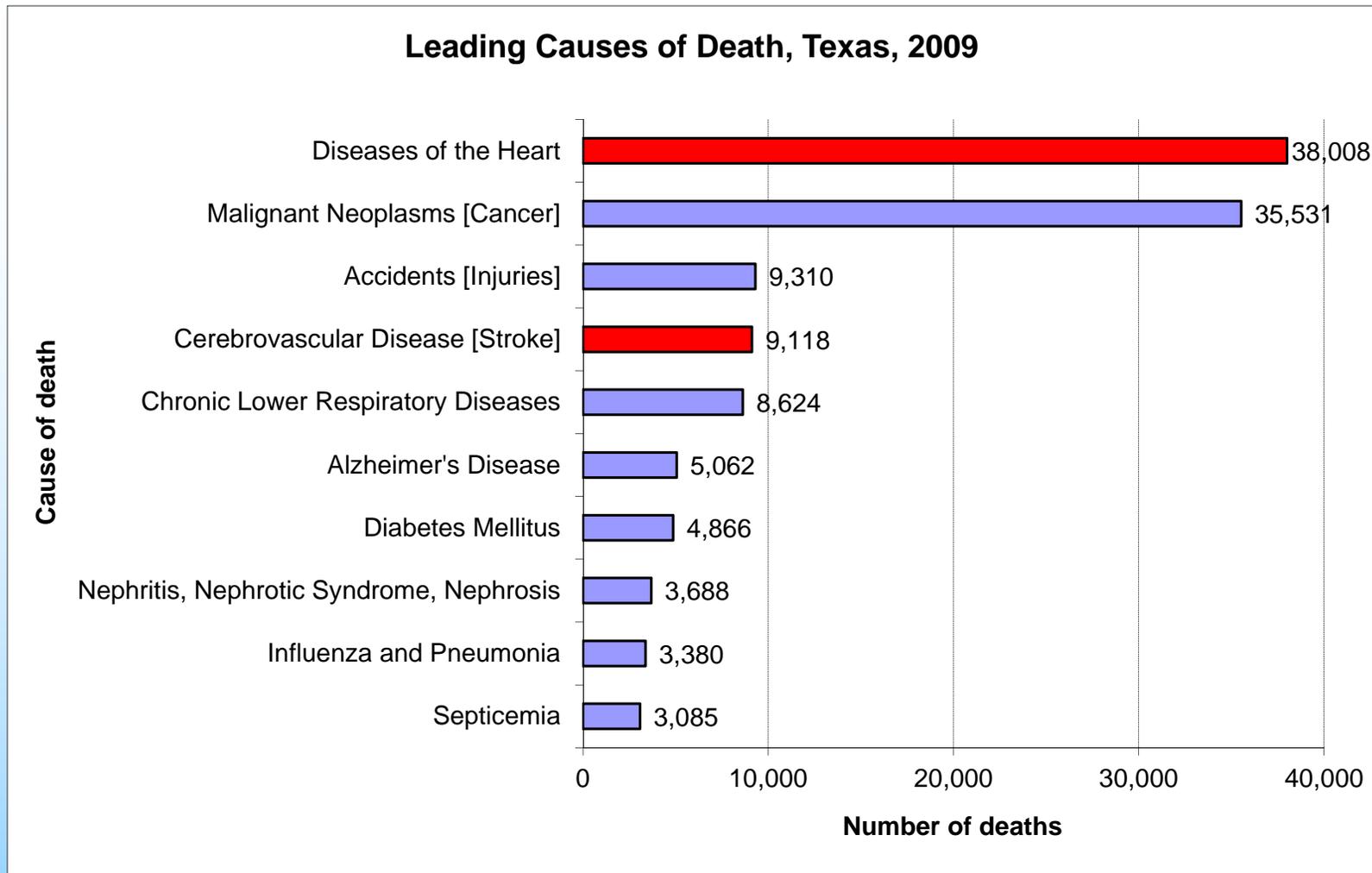
- 31 objectives specific to heart disease and stroke identified as priorities for Texas
- Reflecting Healthy People 2010 objectives
- Measurable using existing surveillance data



Data Source: Texas Plan to Reduce Cardiovascular Disease and Stroke 2008.

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# Leading Causes of Death, Texas, 2009

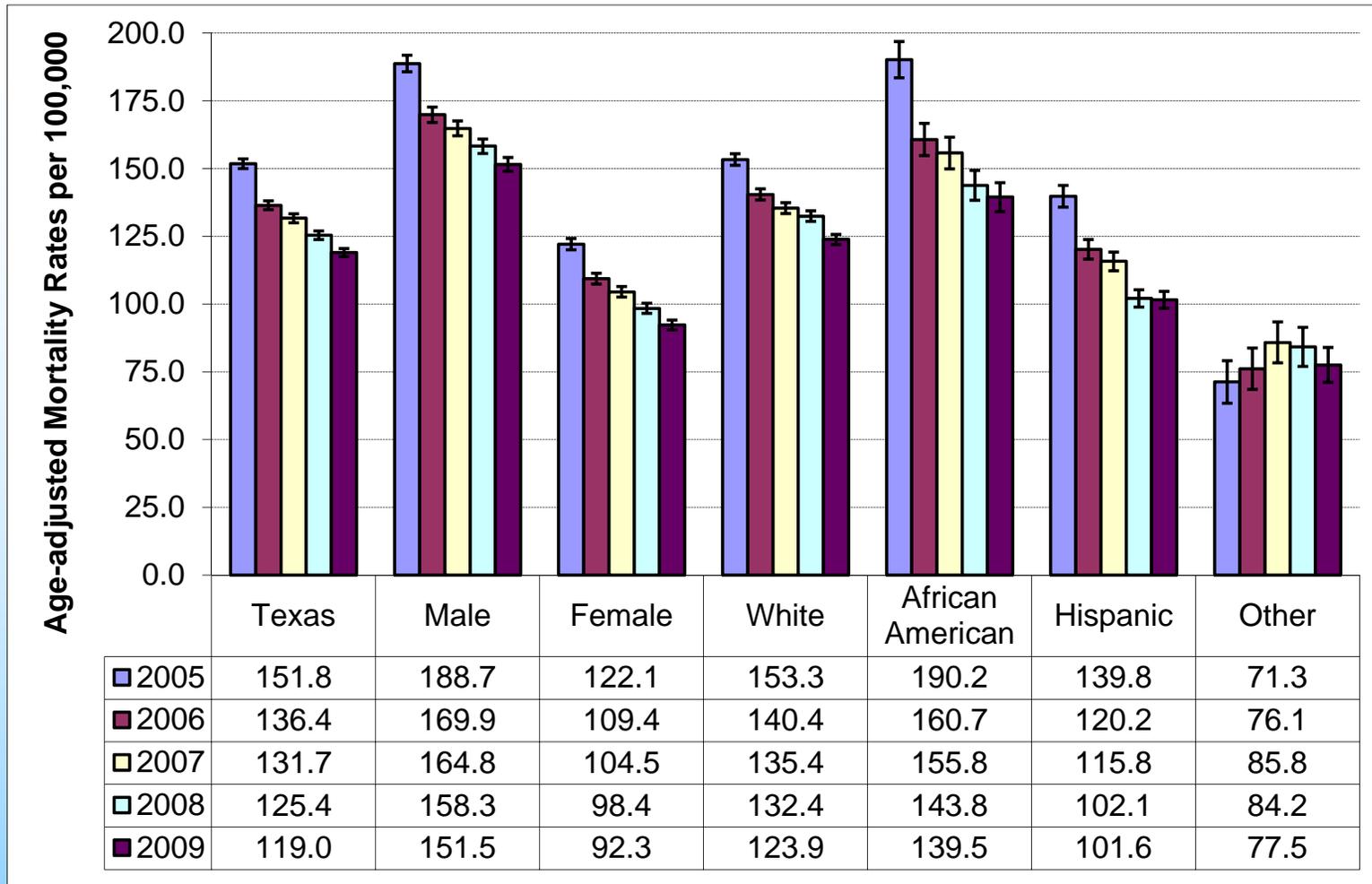


Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2009



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# Age-adjusted Mortality Rates for Ischemic Heart Disease by Demographic, Texas 2005-2009

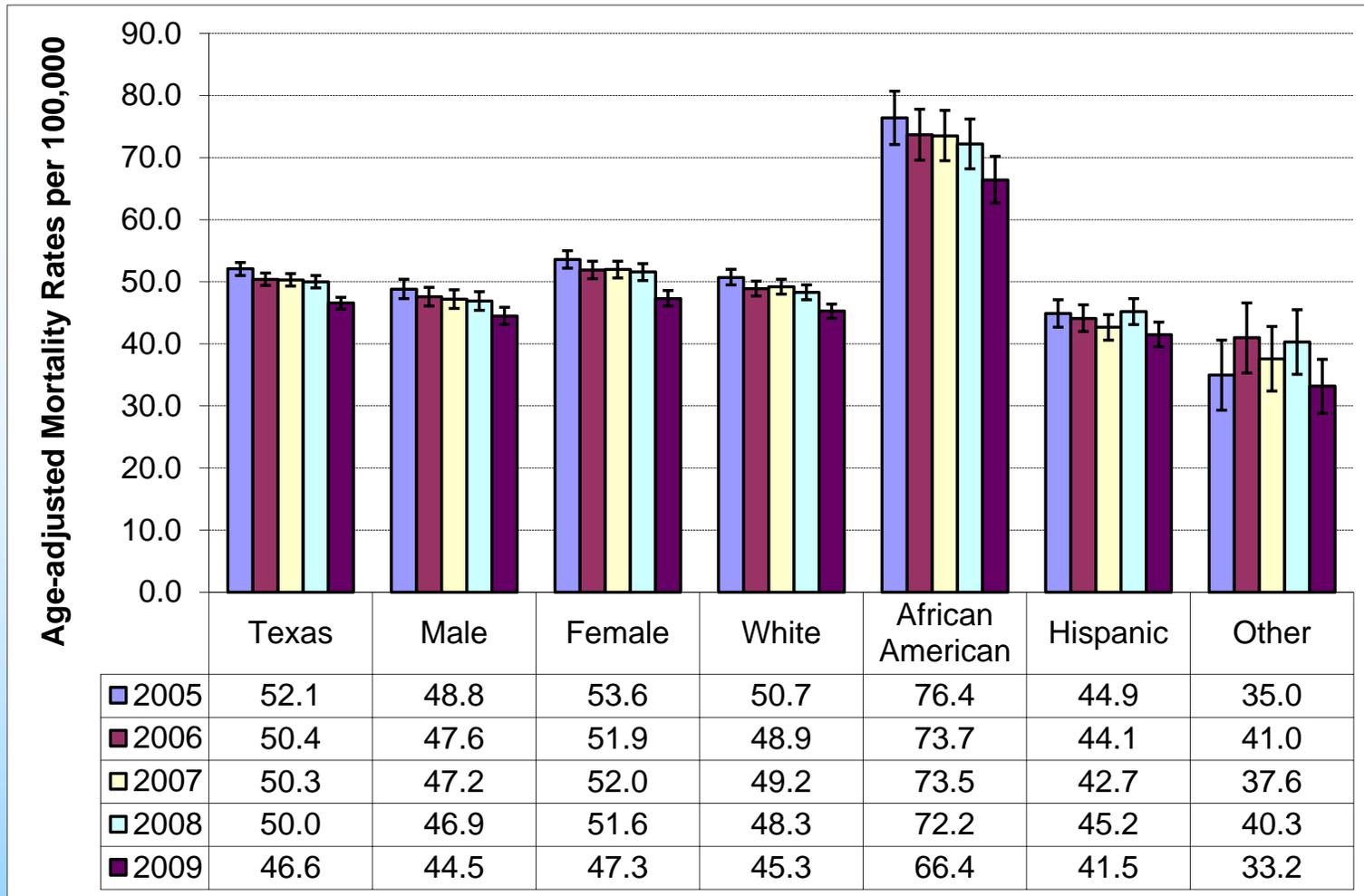


Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2005-2009



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# Age-adjusted Mortality Rates for Stroke by Demographic, Texas 2005-2009



Data Source: Texas Vital Statistical Unit (VSU), Texas Department of State Health Services, 2005-2009



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# Disparities in Heart Disease and Stroke Mortality in Texas

- African Americans continue to have a significantly higher AAMR due to IHD, heart attack, and stroke as compared to Whites, Hispanics, and Others in 2009.
- Males continue to have a significantly higher AAMR due to Ischemic Heart Disease (IHD) and heart attack as compared to females in 2009.
- Females continue to have a significantly higher AAMR due to stroke as compared to males in 2009.



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# Prevalence



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# Prevalence

Prevalence measures the frequency of disease at a given point in time. The measure is defined as follows:

$$\text{Prevalence} = \left( \frac{\text{Number of persons ill}}{\text{population}} \text{ at a given time} \right) \%$$

(Usually expressed as a % of the population at a given time)



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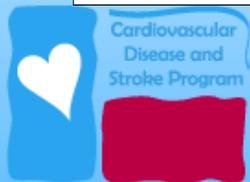
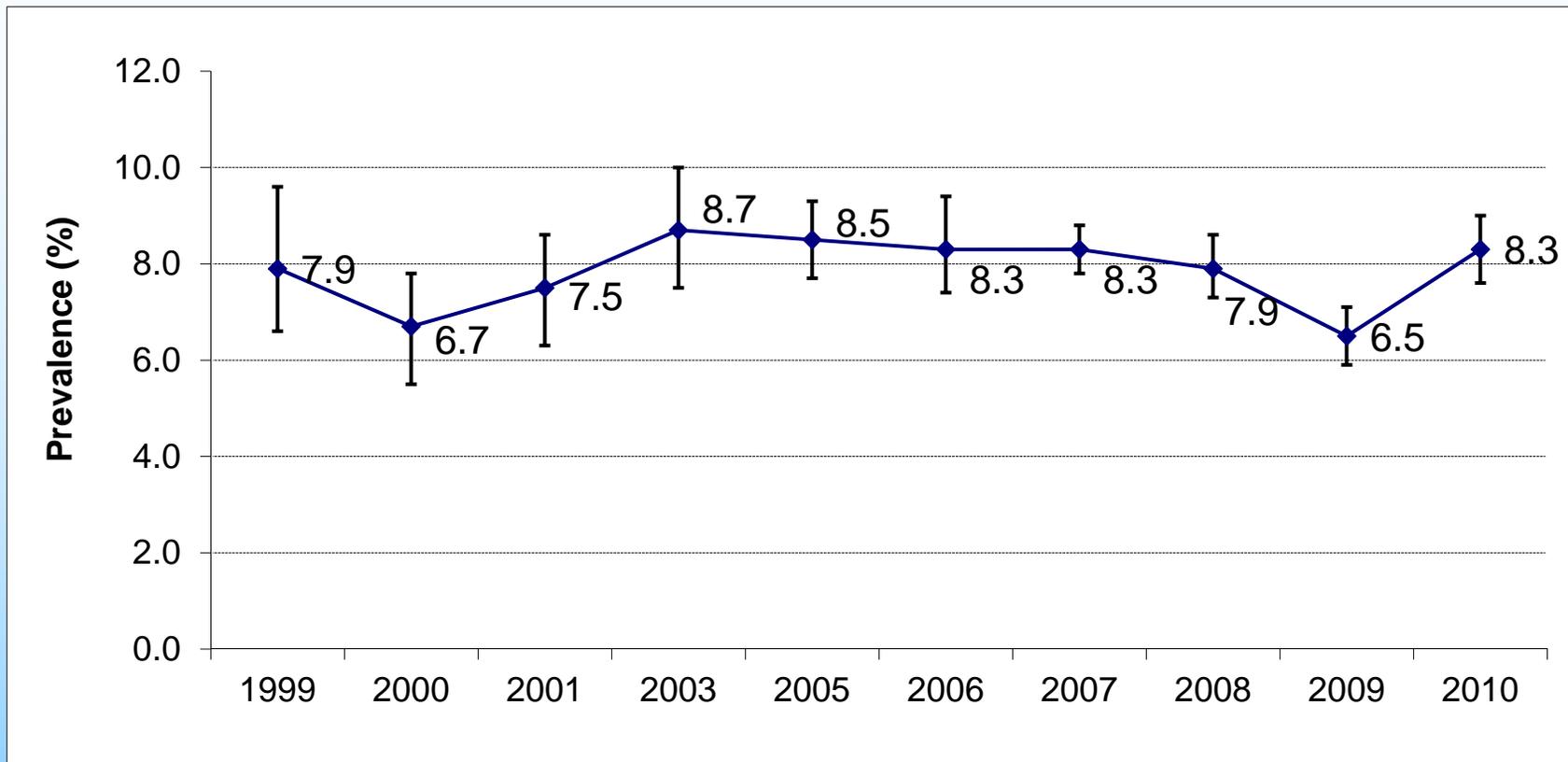
# Prevalence Questions for CVD

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



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# Prevalence of Cardiovascular Disease (CVD), Texas Adults, 1999-2010

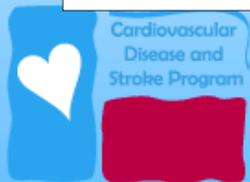
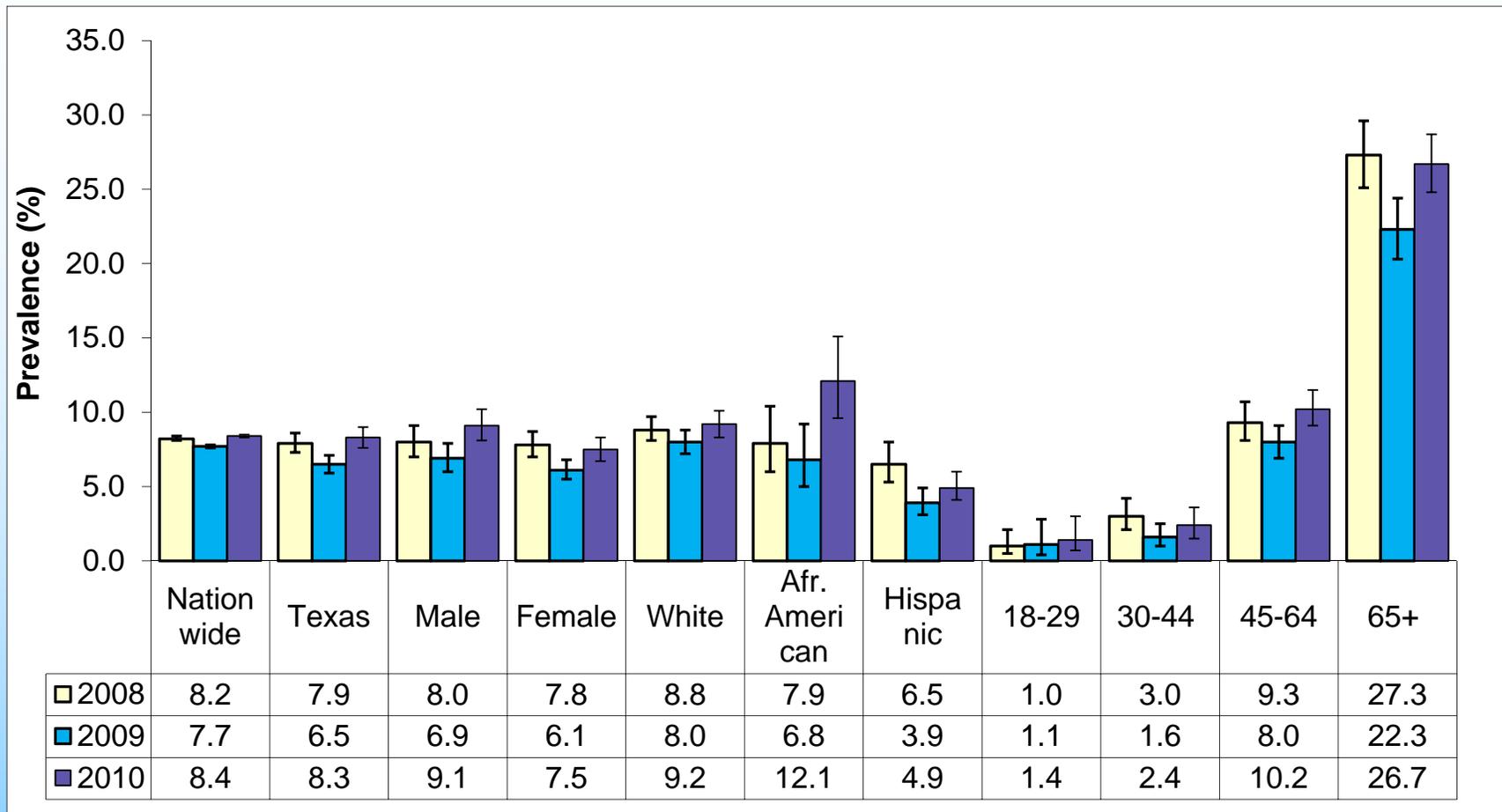


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2010

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# Prevalence of CVD

## by Demographic, Texas Adults, 2008-2010

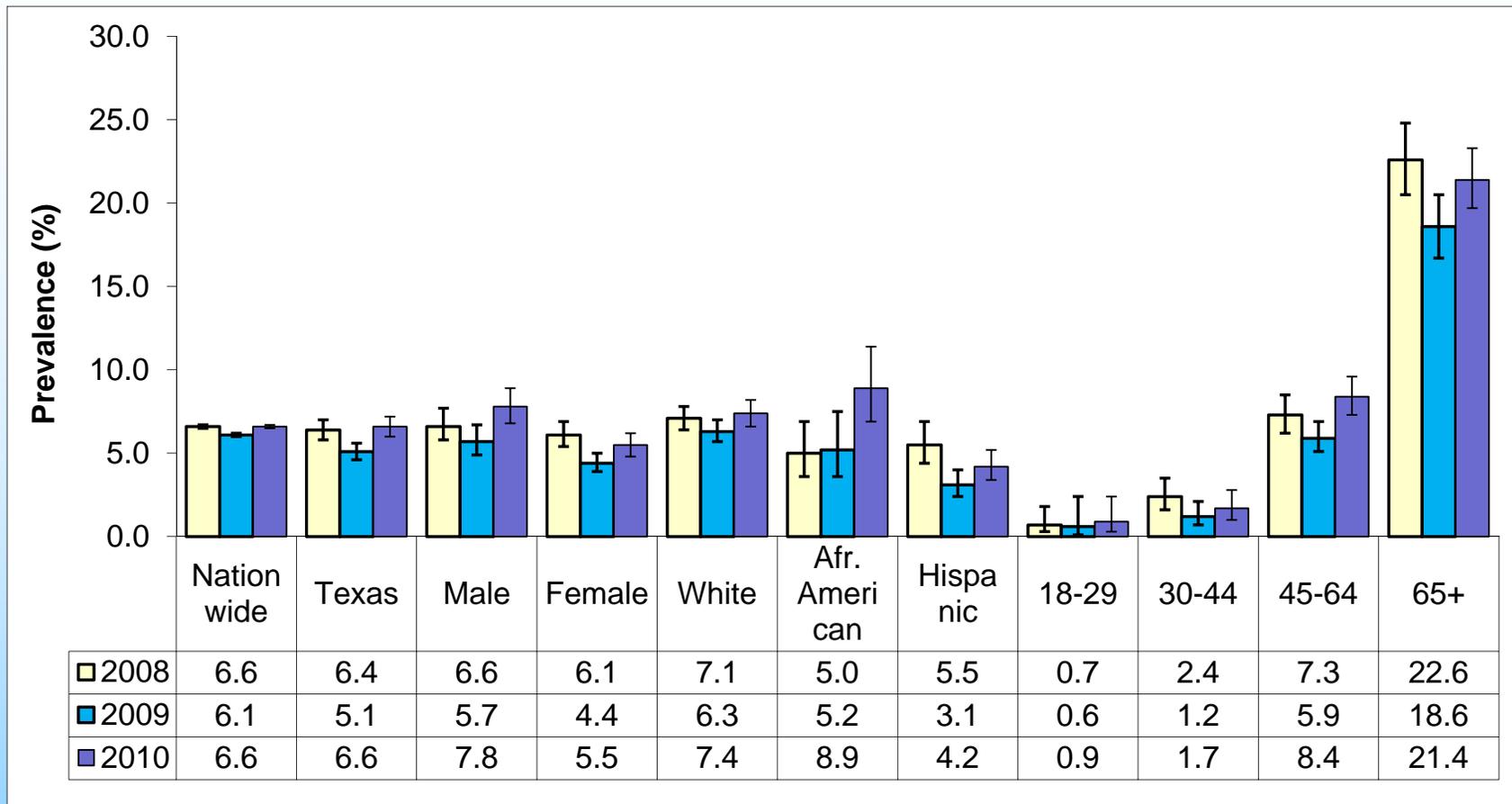


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2008 - 2010

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# Prevalence of Heart Disease

by Demographic, Texas Adults, 2008-2010



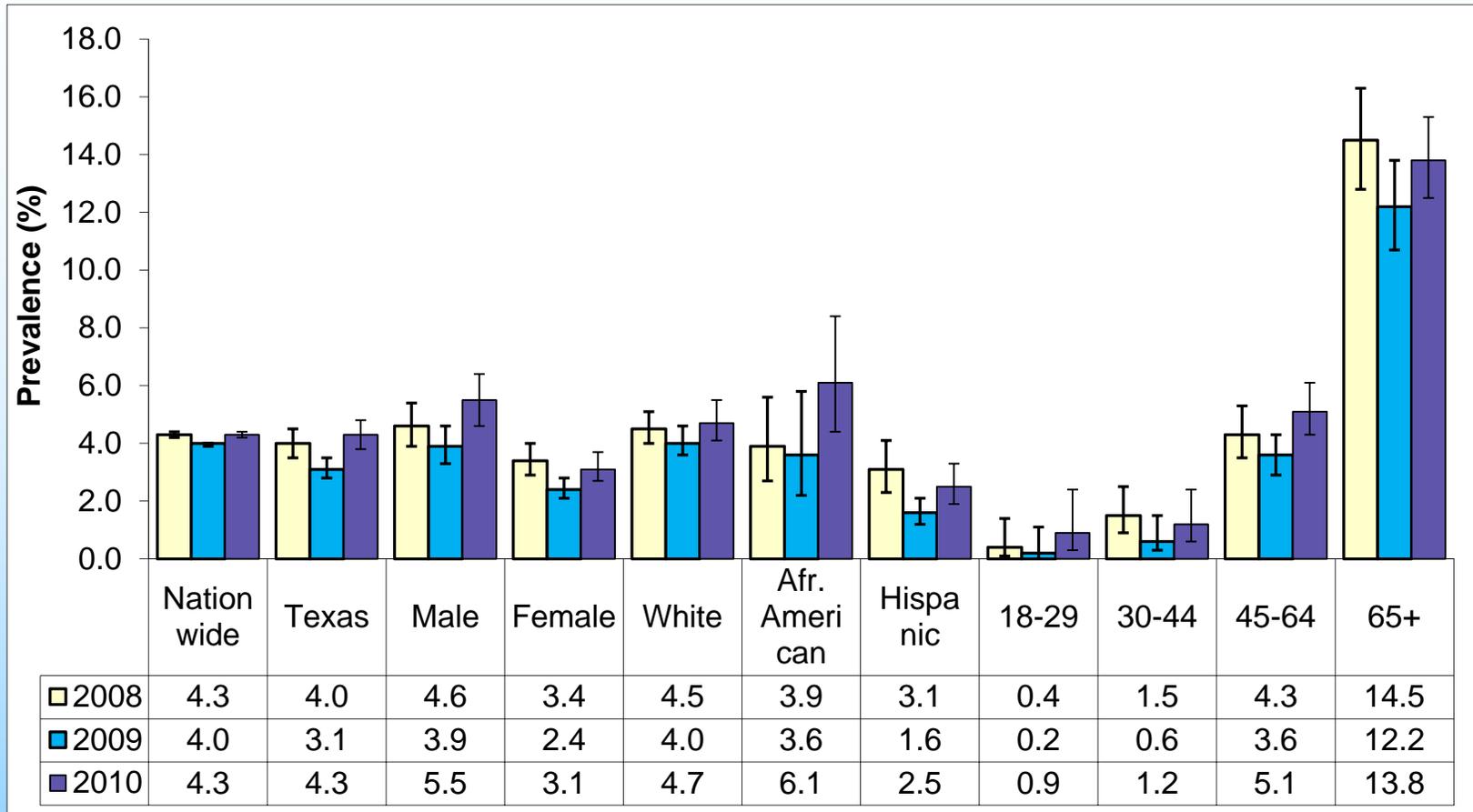
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2008 - 2010



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# Prevalence of Heart Attack

by Demographic, Texas Adults, 2008-2010

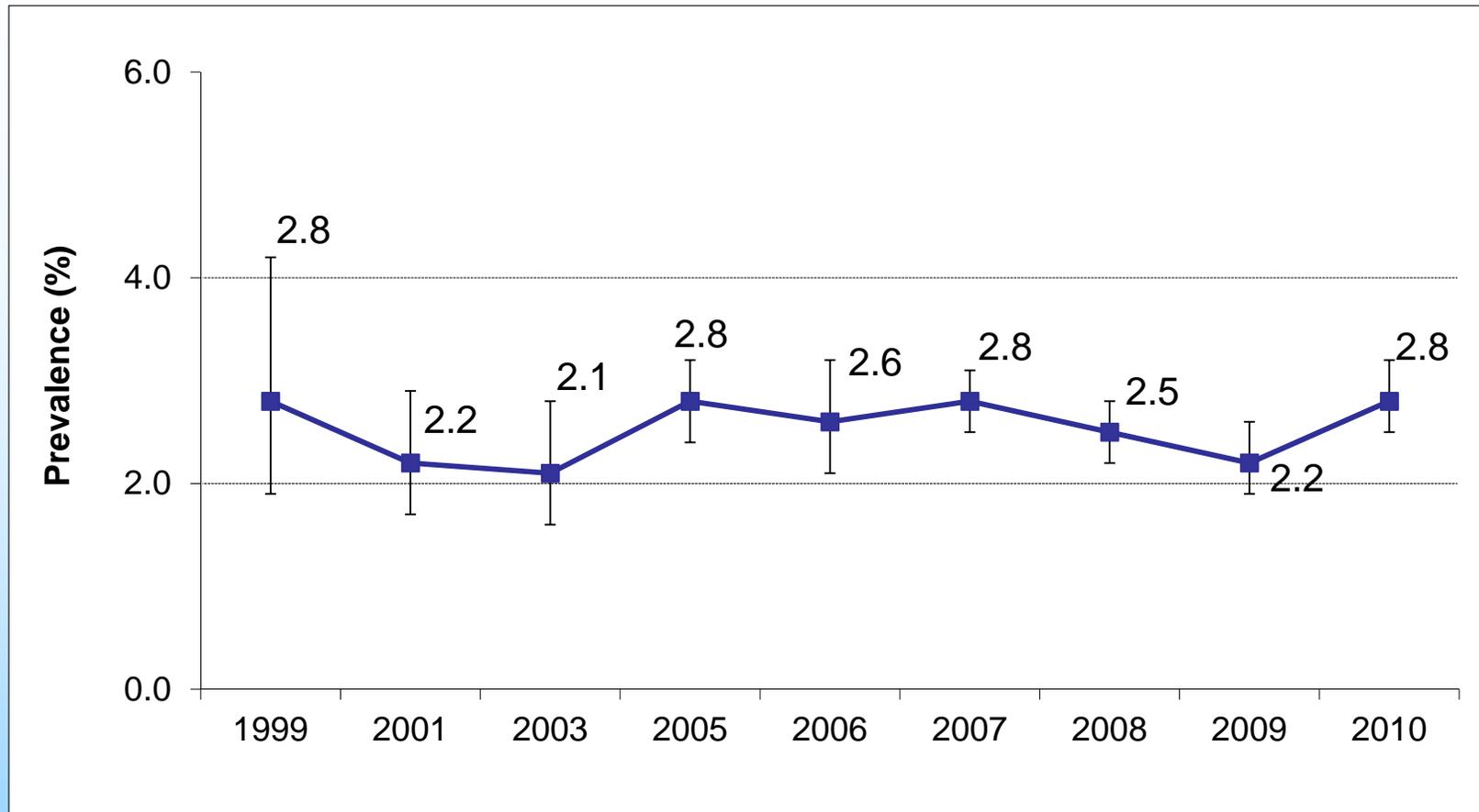


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2008 - 2010



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# Prevalence of Stroke, Texas Adults, 1999-2010



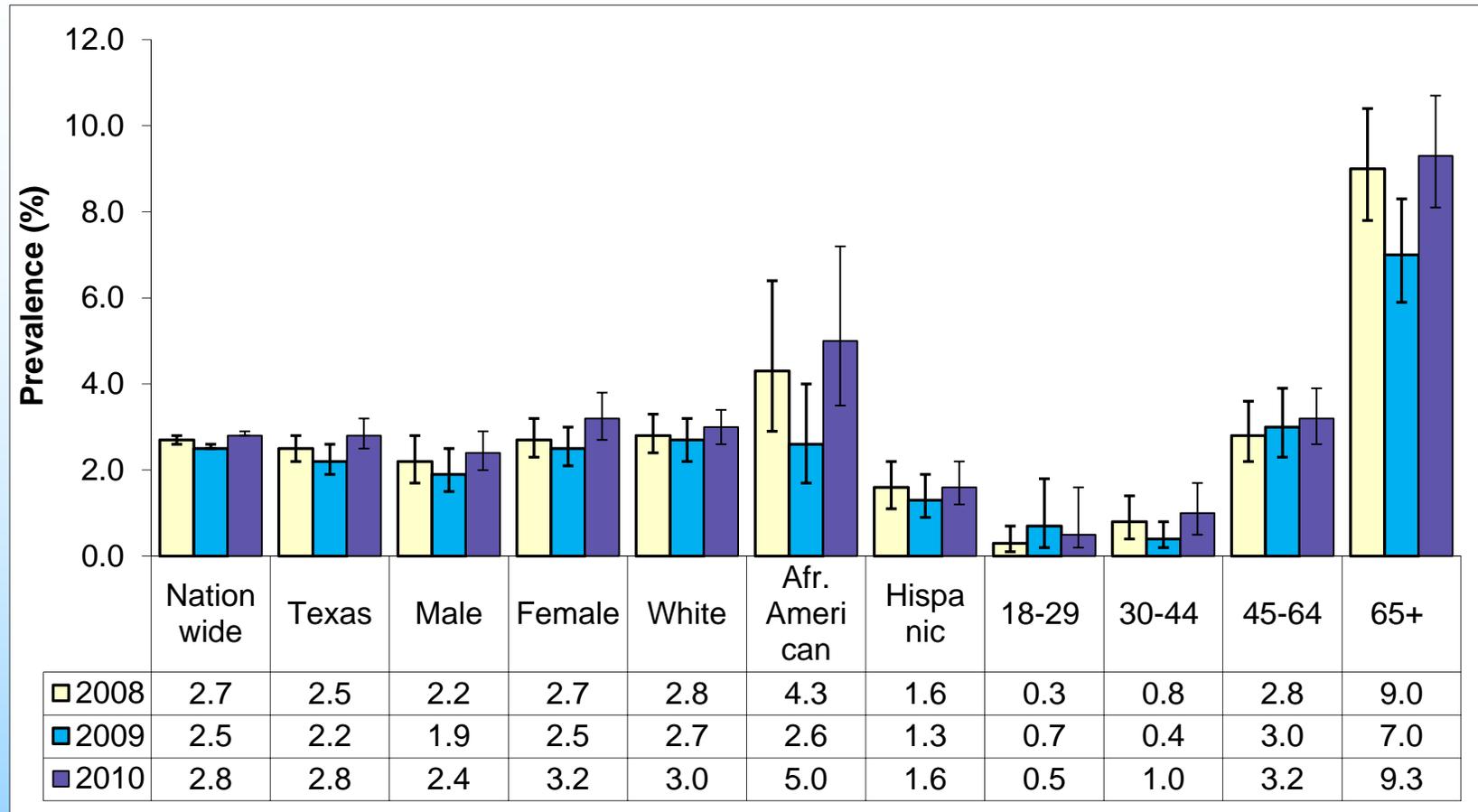
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2010



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# Prevalence of Stroke

by Demographic, Texas Adults, 2008-2010



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2008- 2010



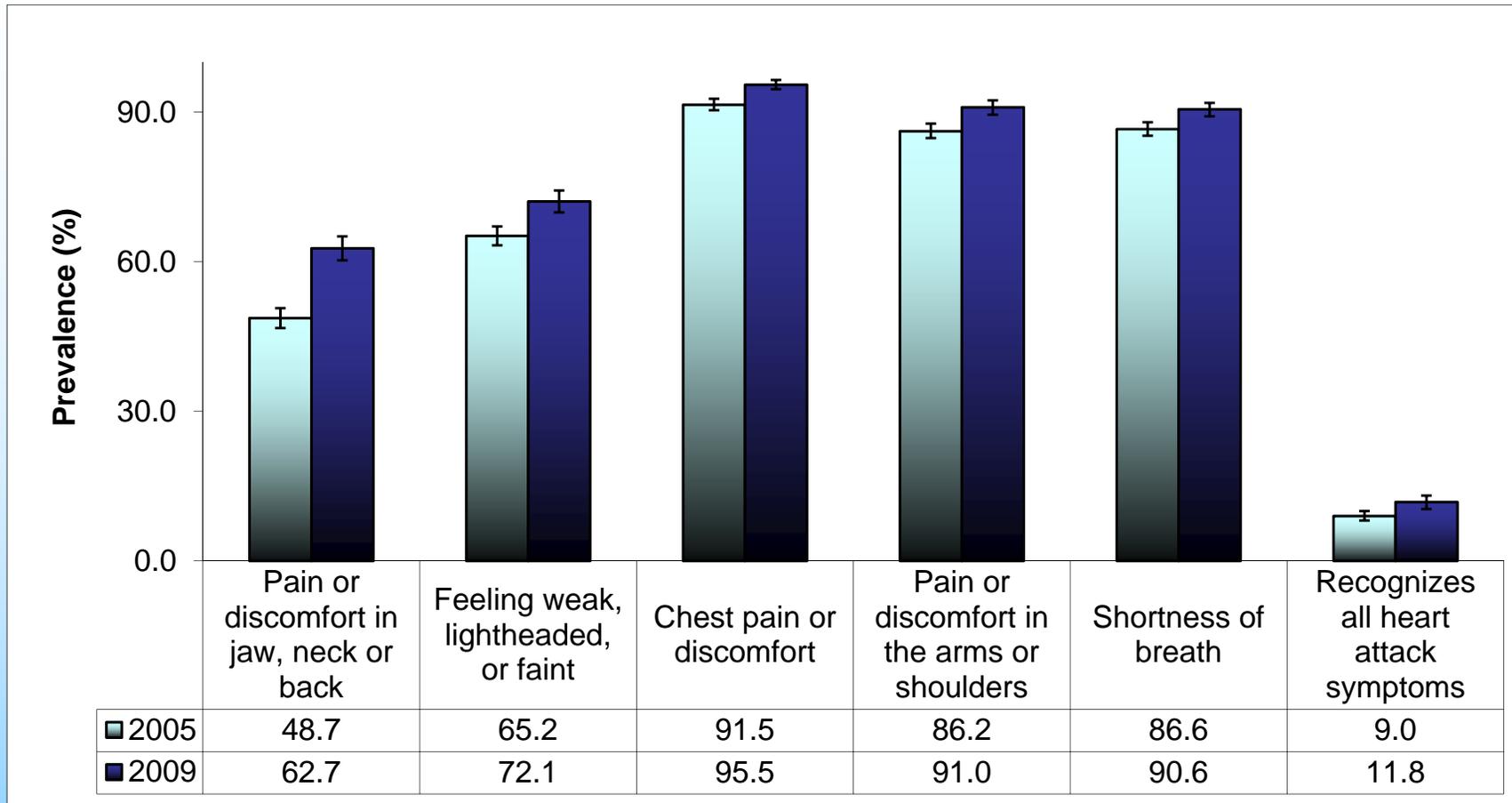
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# **Recognition of Heart Attack & Stroke Symptoms, Texas 2005 & 2009**



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# Prevalence of Adults Recognizing Heart Attack Signs & Symptoms, Texas, 2005 & 2009

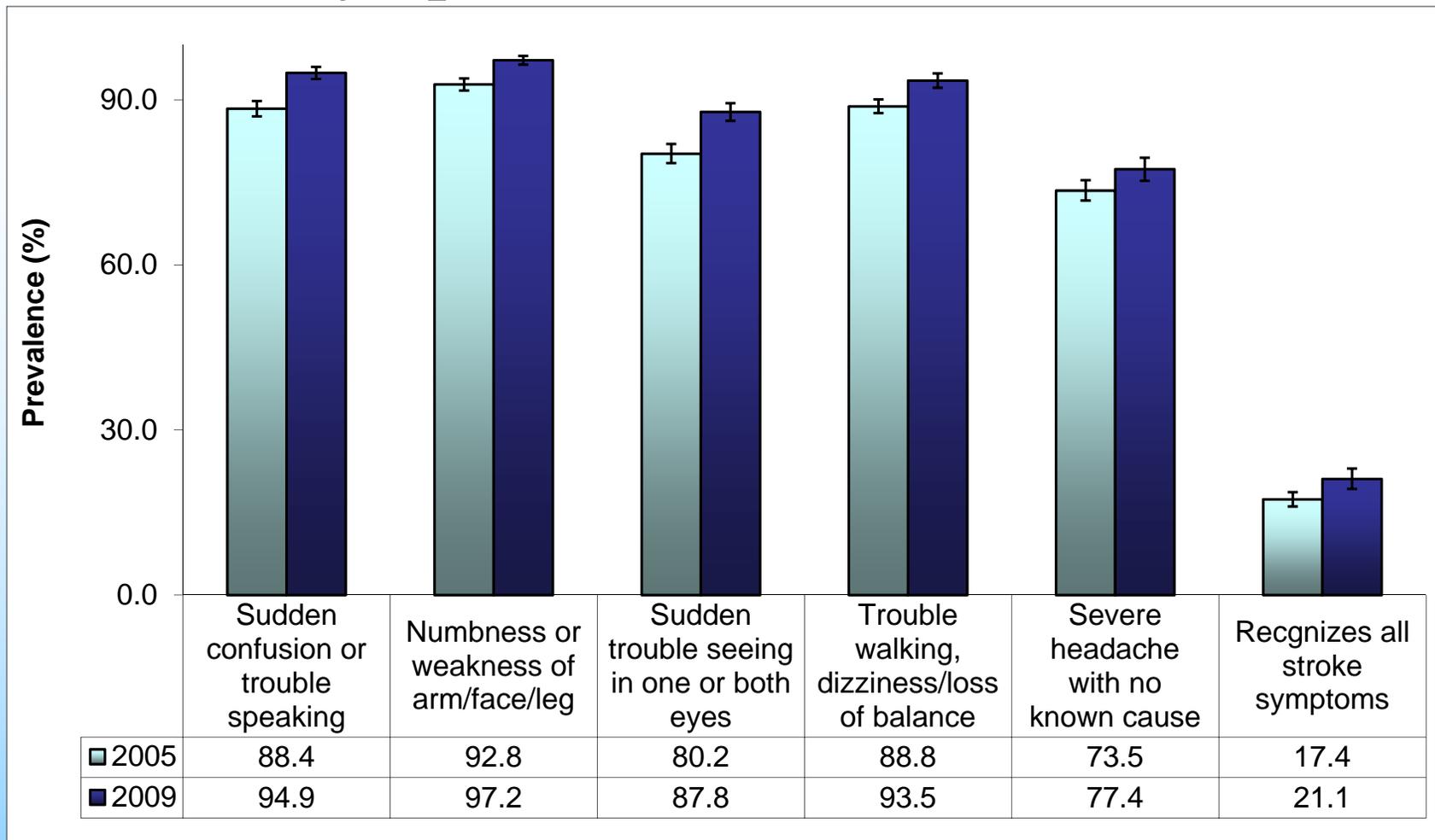


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005 & 2009



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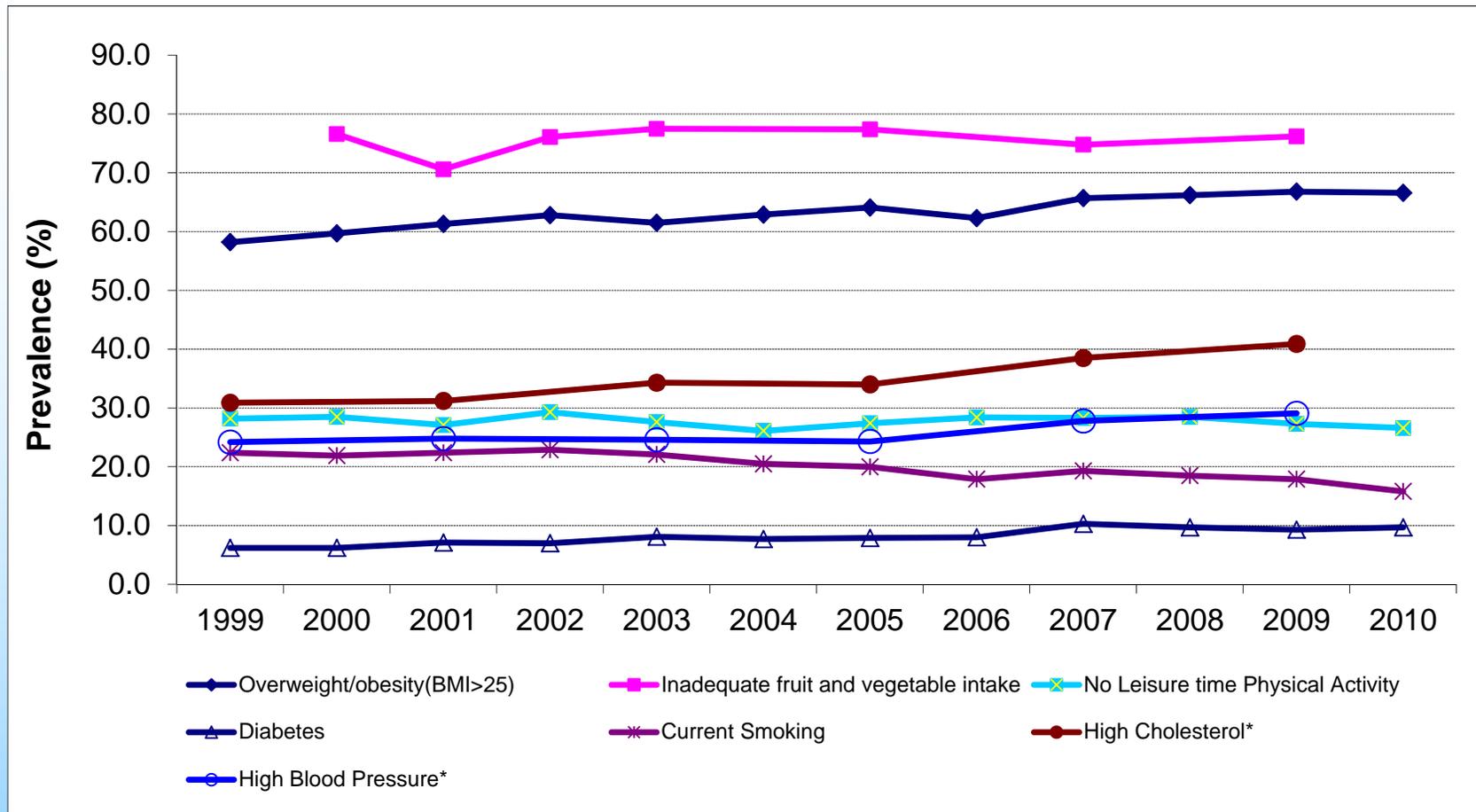
# Prevalence of Adults Recognizing Stroke Signs & Symptoms, Texas, 2005 & 2009



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2005 & 2009

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# Prevalence of Risk Factors for CVD and Stroke, Texas Adults, 1999-2010



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2010  
 \* Prevalence of high blood pressure and high cholesterol not available for 2000, 2002, 2004, 2006, 2008, 2010



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# Risk Factors for Adults, BRFSS Measures

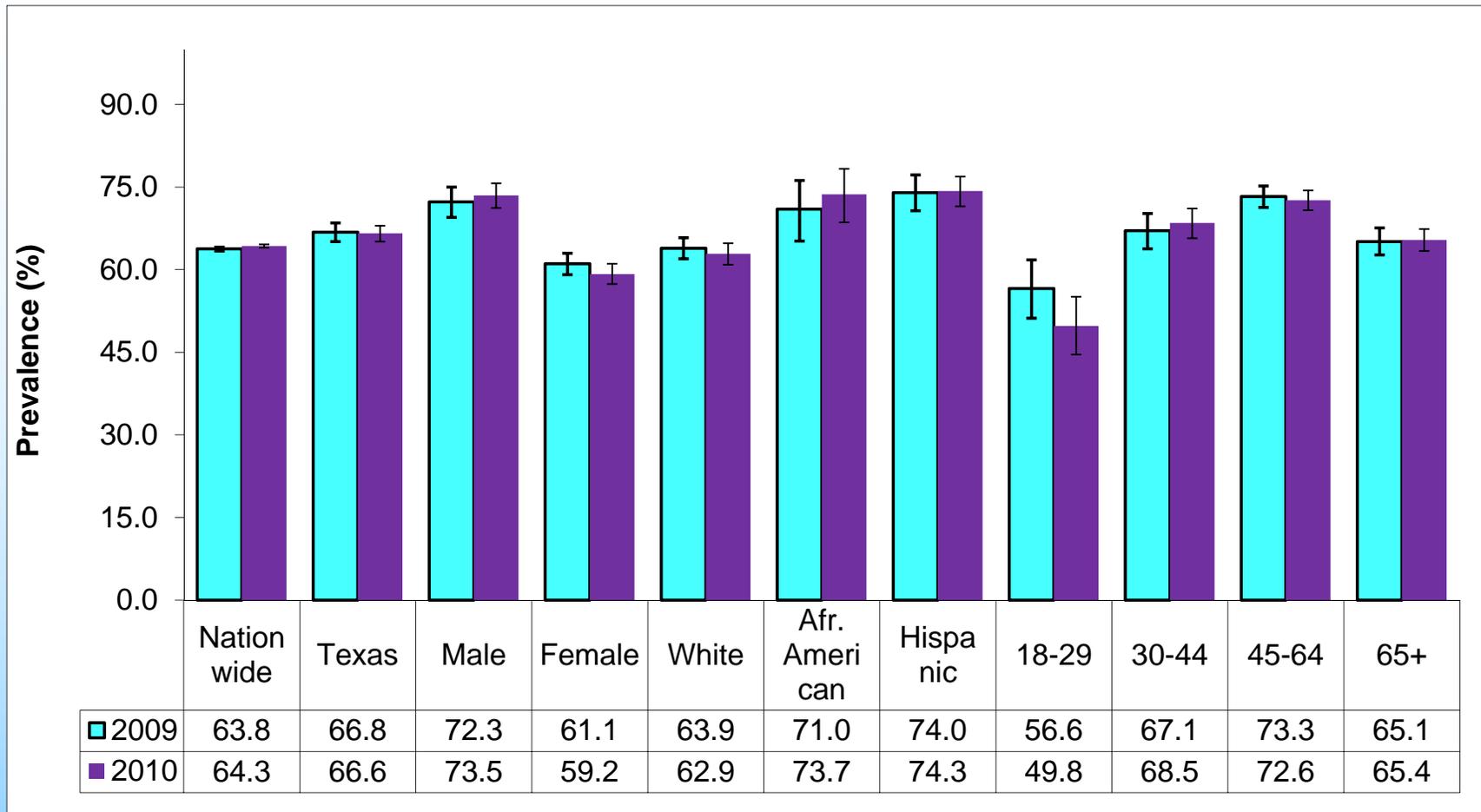
## % of Adults who reported:

- **High Blood Pressure** – have been diagnosed as having high blood pressure, but not those diagnosed while pregnant
- **High Cholesterol** – have ever been tested and diagnosed with high blood cholesterol
- **Diabetes** – have been diagnosed as having diabetes, but not those diagnosed while pregnant
- **Obesity** - BMI of 30 or greater
- **Overweight & Obesity** - BMI of 25 or greater
- **No Physical Activity** – have had no leisure-time physical activity during the past month outside of work
- **Smoked 100 in Lifetime** - have smoked 100 cigarettes or more at any time in their life
- **Current Smoking** - have smoked 100 cigarettes in their lifetime and now smoke every day or some days
- **Inadequate Fruit and Vegetable Intake** - eating fewer than 5 servings of fruit, fruit juices, and vegetables per day



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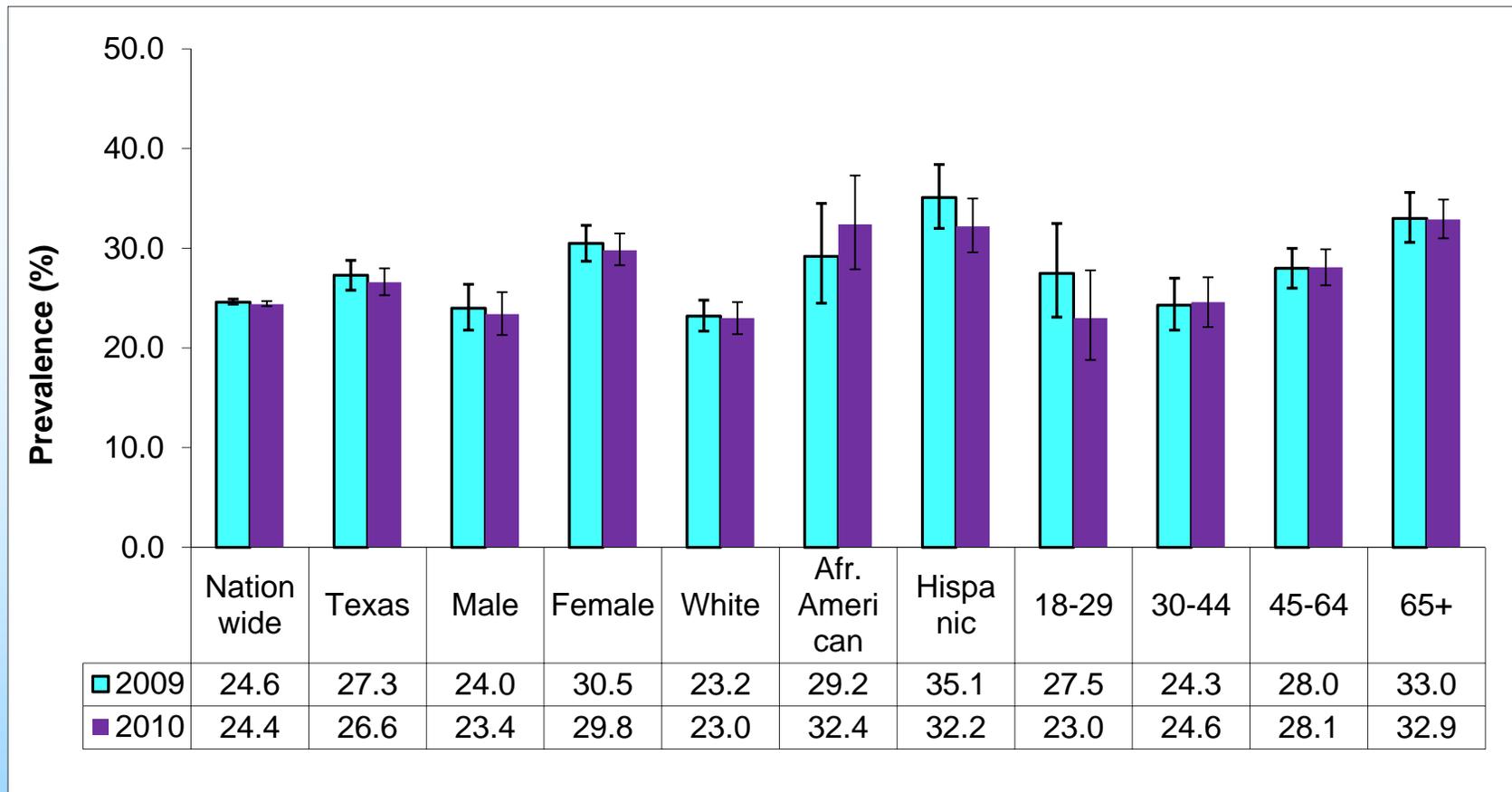
# Prevalence of Overweight or Obesity by Demographic, Texas Adults, 2009 & 2010



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2009 & 2010

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# Prevalence of No Leisure Time Physical Activity, by Demographic, Texas Adults, 2009 & 2010



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2009 & 2010



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# Behavioral Risk Factors

- Texas (66.6%, 95% CI 65.1-68.0) prevalence of overweight or obesity was significantly higher than the national average (64.3%, 95% CI 64.0-64.6) in 2010
- Texas (26.6%, 95% CI 25.3-28.0) prevalence of no leisure time physical activity was significantly higher than the national average (24.4%, 95% CI 24.2-24.7) in 2010
- About 76% of Texas adults consumed fewer than 5 servings of fruits & vegetables per day in 2009



# Medical Risk Factors

Diabetes

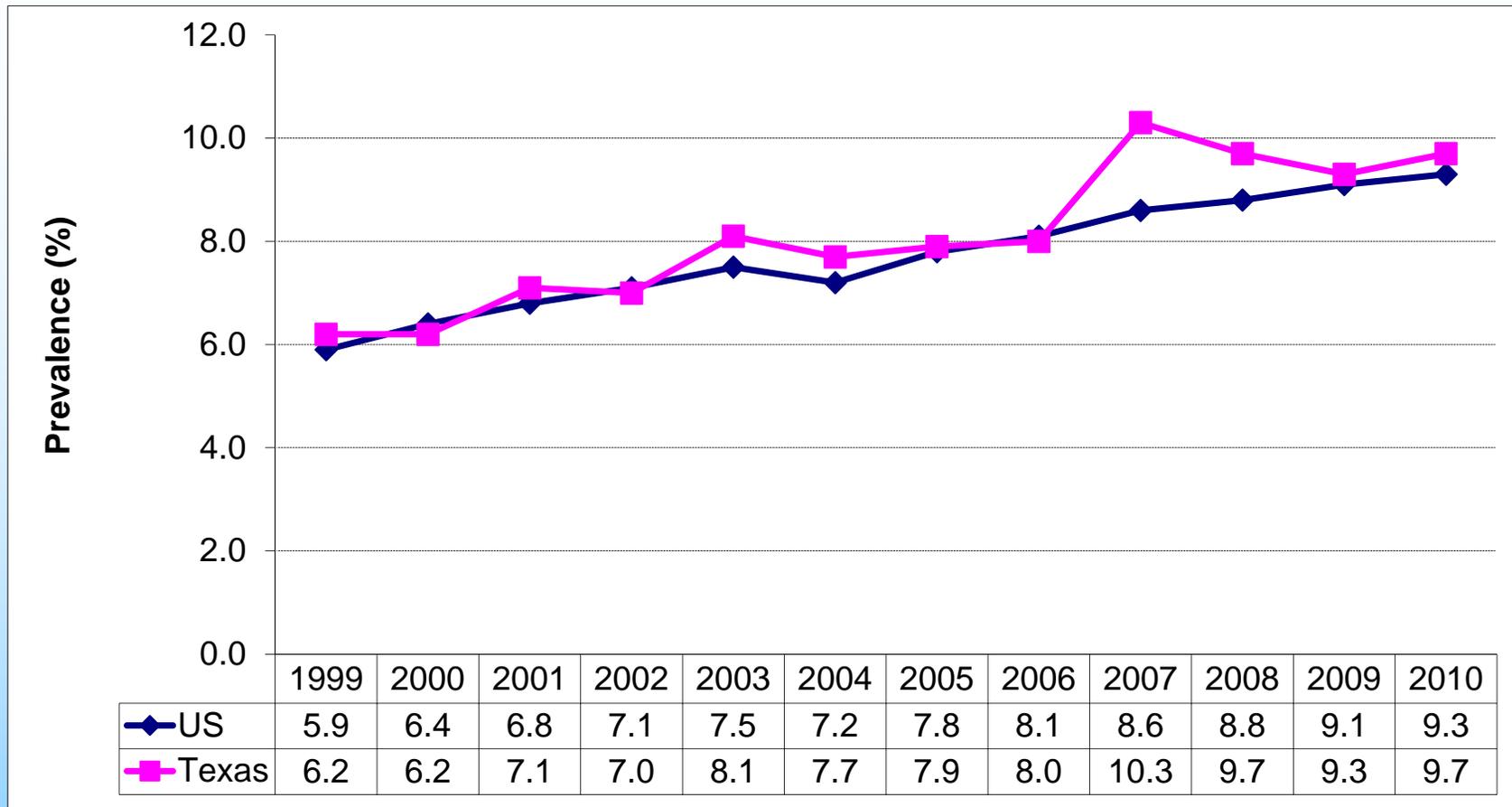
High Cholesterol

High Blood Pressure



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# Prevalence of Diabetes, Texas and US Adults, 1999-2010



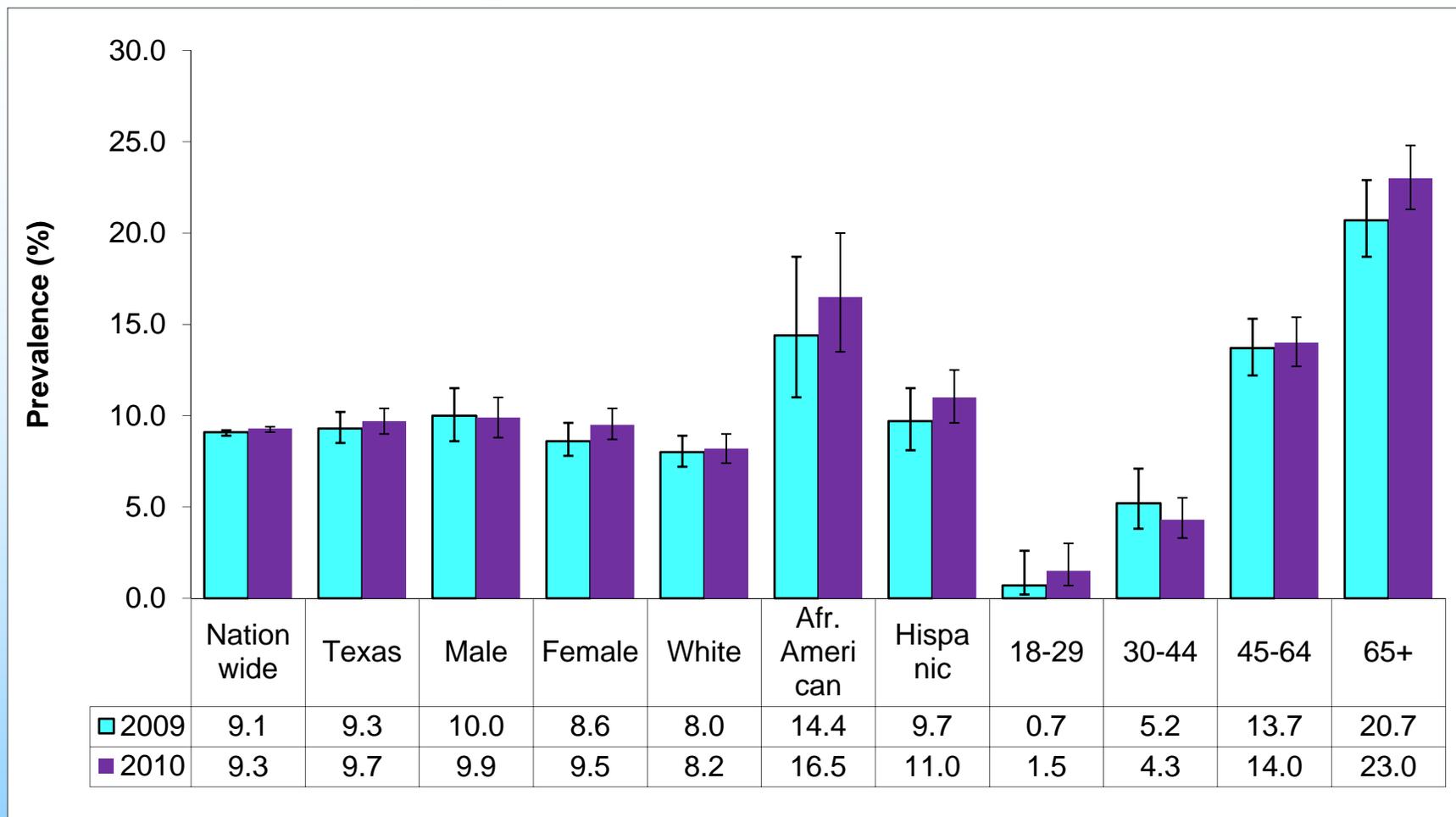
Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2010



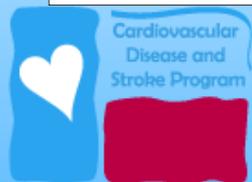
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# Prevalence of Diabetes,

by Demographic, Texas Adults, 2009 & 2010

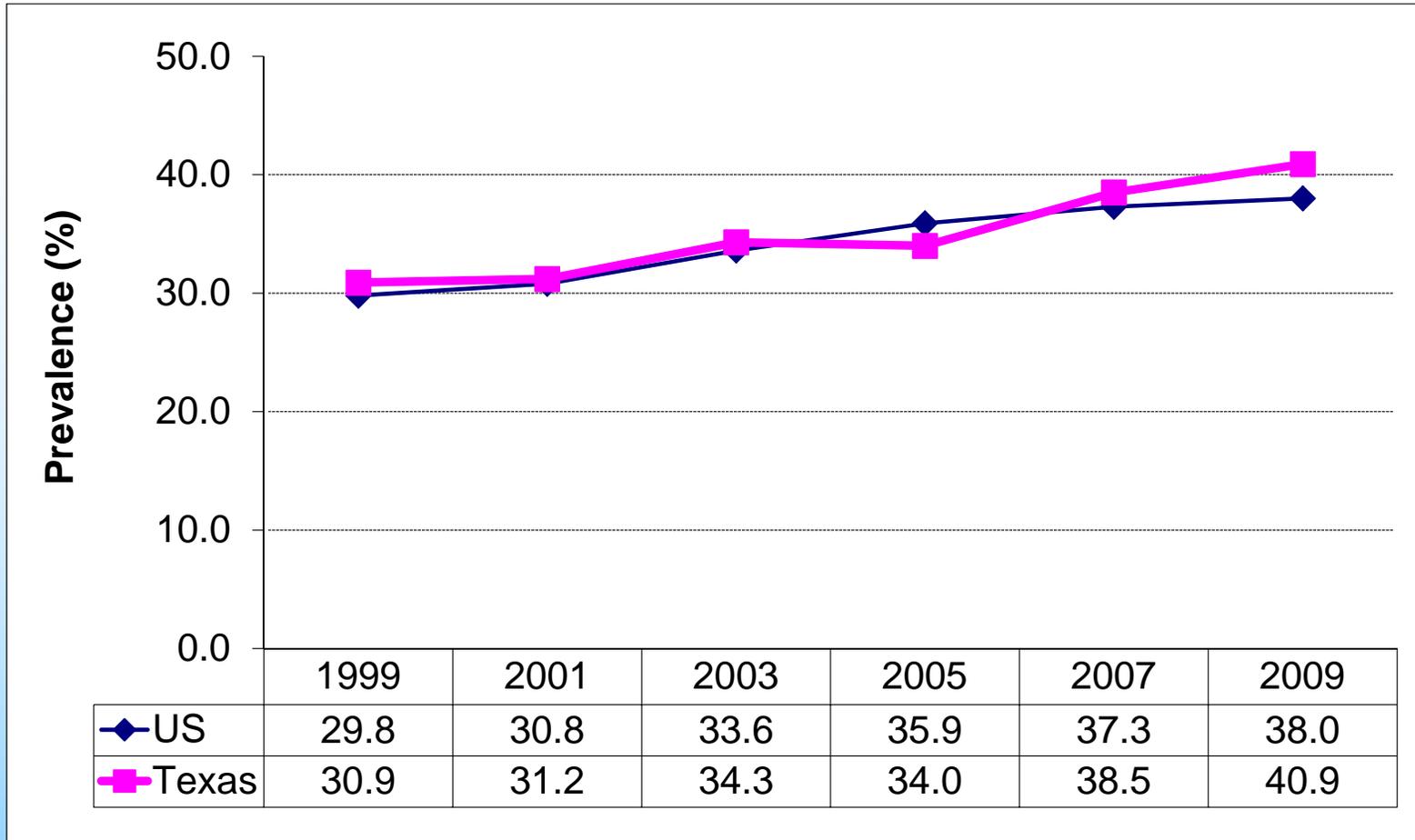


Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2009 & 2010



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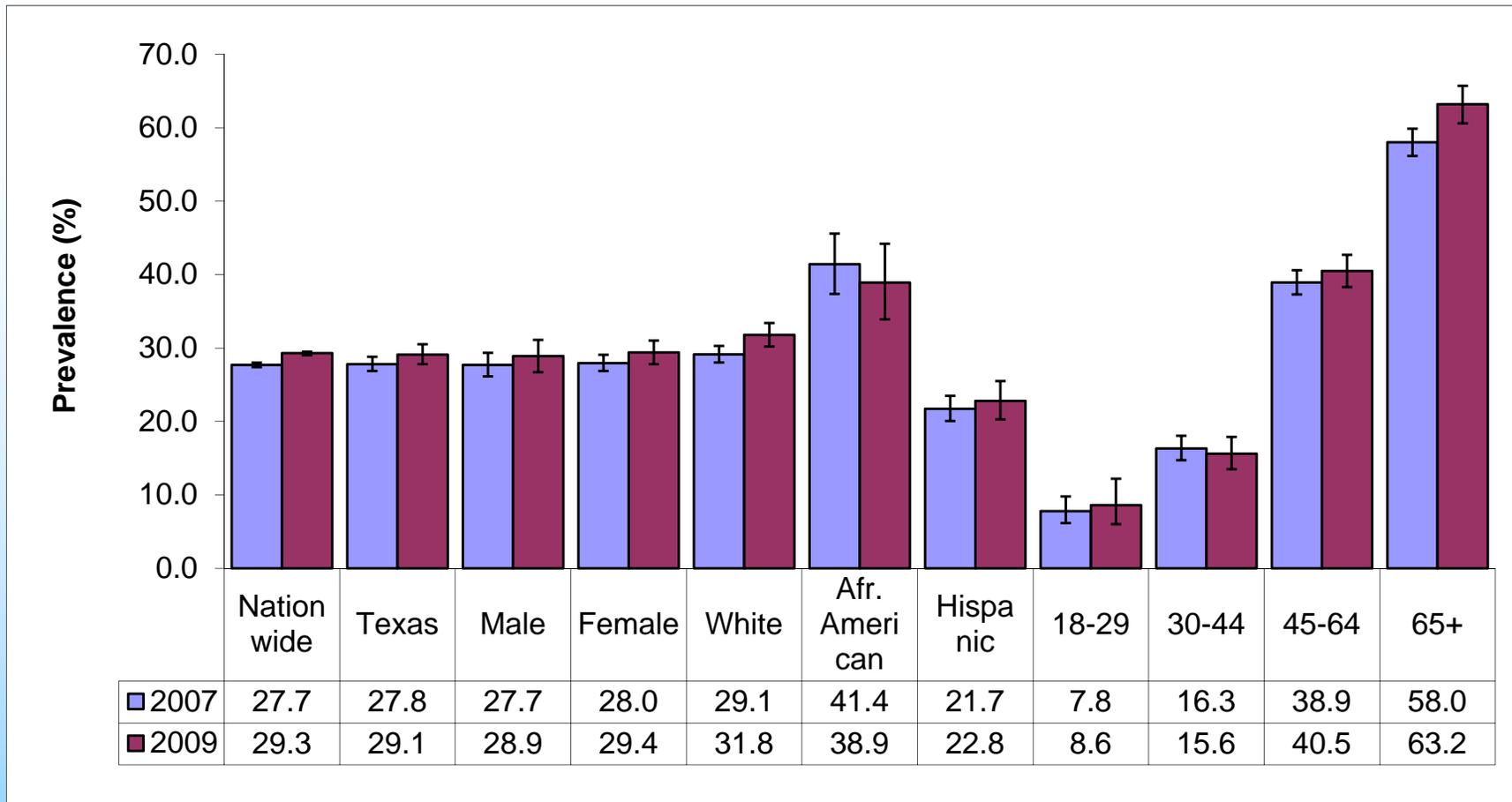
# Prevalence of High Cholesterol, Texas and US Adults, 1999-2009



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 1999-2009

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# Prevalence of High Blood Pressure, by Demographic, Texas Adults, 2007 & 2009



Data Source: Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services, 2007 & 2009



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# Medical Risk Factors

- The prevalence of diabetes was significantly higher among African Americans (16.5%, 95% CI 13.5-20.0) as compared to Hispanics (11.0%, 95% CI 9.6-12.5) and Whites (8.2%, 95% CI 7.4-9.0) in 2010
- Texas (40.9%, 95% CI 39.2-42.6) prevalence of high cholesterol was significantly higher than the national average (38.0%, 95% CI 37.7-38.4) in 2009
- More than 29% of adult Texans reported being diagnosed with high blood pressure in 2009



# Gender Disparities

- Males
  - Significantly higher prevalence of heart disease, heart attack, smoking, overweight or obesity, and inadequate fruits and vegetables intake
- Females
  - Significantly higher prevalence of stroke and no leisure time physical activity



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# Race/ethnic Disparities

- African Americans
  - Had significantly higher prevalence of stroke, overweight or obesity, no leisure time physical activity, diabetes, and high blood pressure than **Whites** in 2010
  - Had significantly higher prevalence of stroke, diabetes, and high blood pressure than **Hispanics** in 2010
- Hispanics
  - Had significantly higher prevalence of overweight or obesity, no leisure time physical activity, and diabetes than **Whites** in 2010



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# Geographic Disparities

- PHR 4
  - Significantly higher age-adjusted prevalence of no leisure time physical activity and inadequate fruit and vegetable intake diabetes than Texas.
- PHR 5
  - Significantly higher age-adjusted prevalence of no leisure time physical activity, inadequate fruit and vegetable intake, and diabetes than Texas.
- PHR 11
  - Significantly higher age-adjusted prevalence of no leisure time physical activity and diabetes than Texas.



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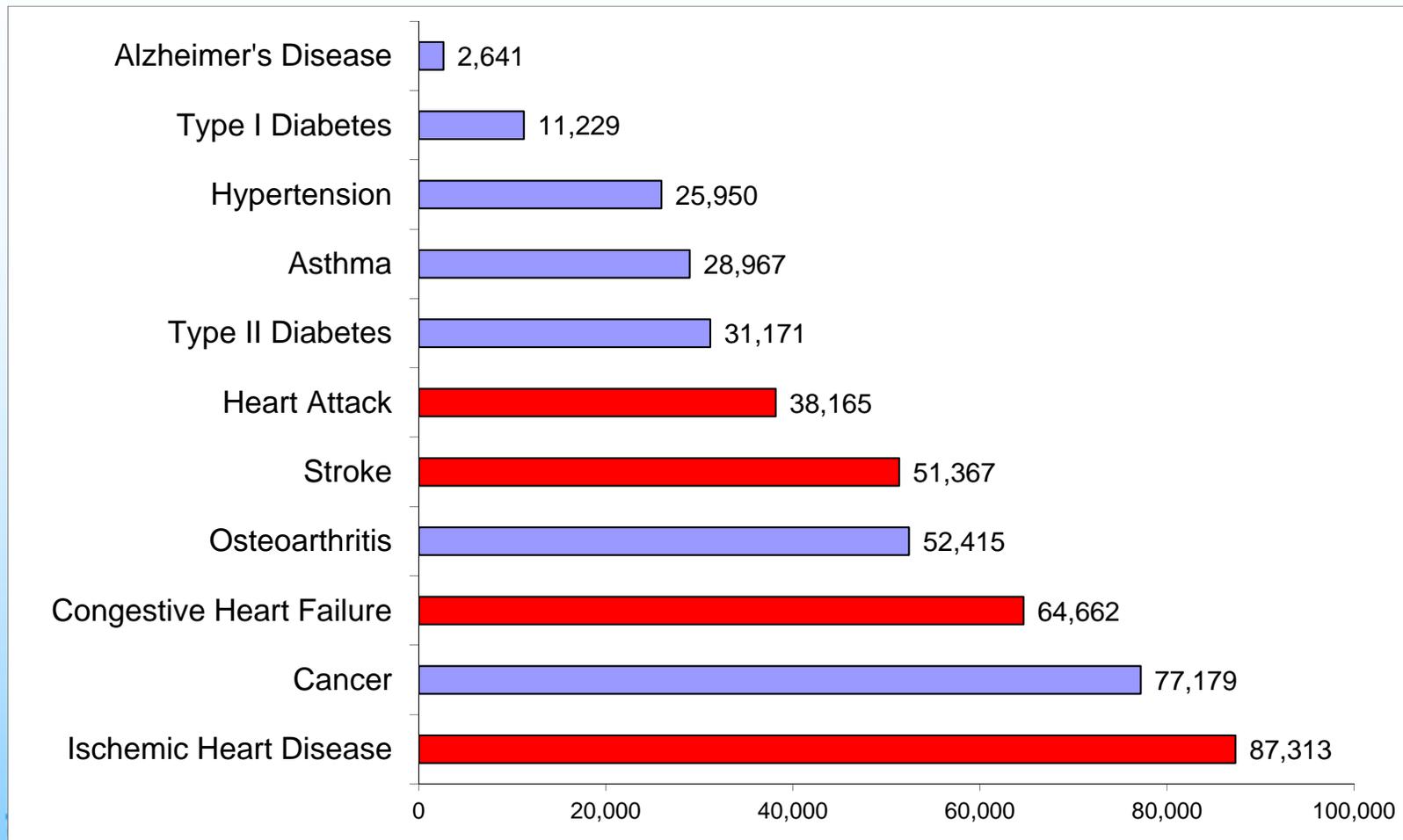
# Disparities

- Income
  - Prevalence of CVD, heart disease, heart attack, stroke, no leisure time physical activity, and diabetes were inversely proportional to annual household income.
- Education
  - Adults with a college degree have significantly lower prevalence of CVD, heart disease, heart attack, stroke, no leisure time physical activity, inadequate fruit and vegetable intake, and diabetes than those who had no HS diploma, HS graduates, and some college education.



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# Number of Selected Hospital Discharge by Primary Diagnoses, Texas, 2009

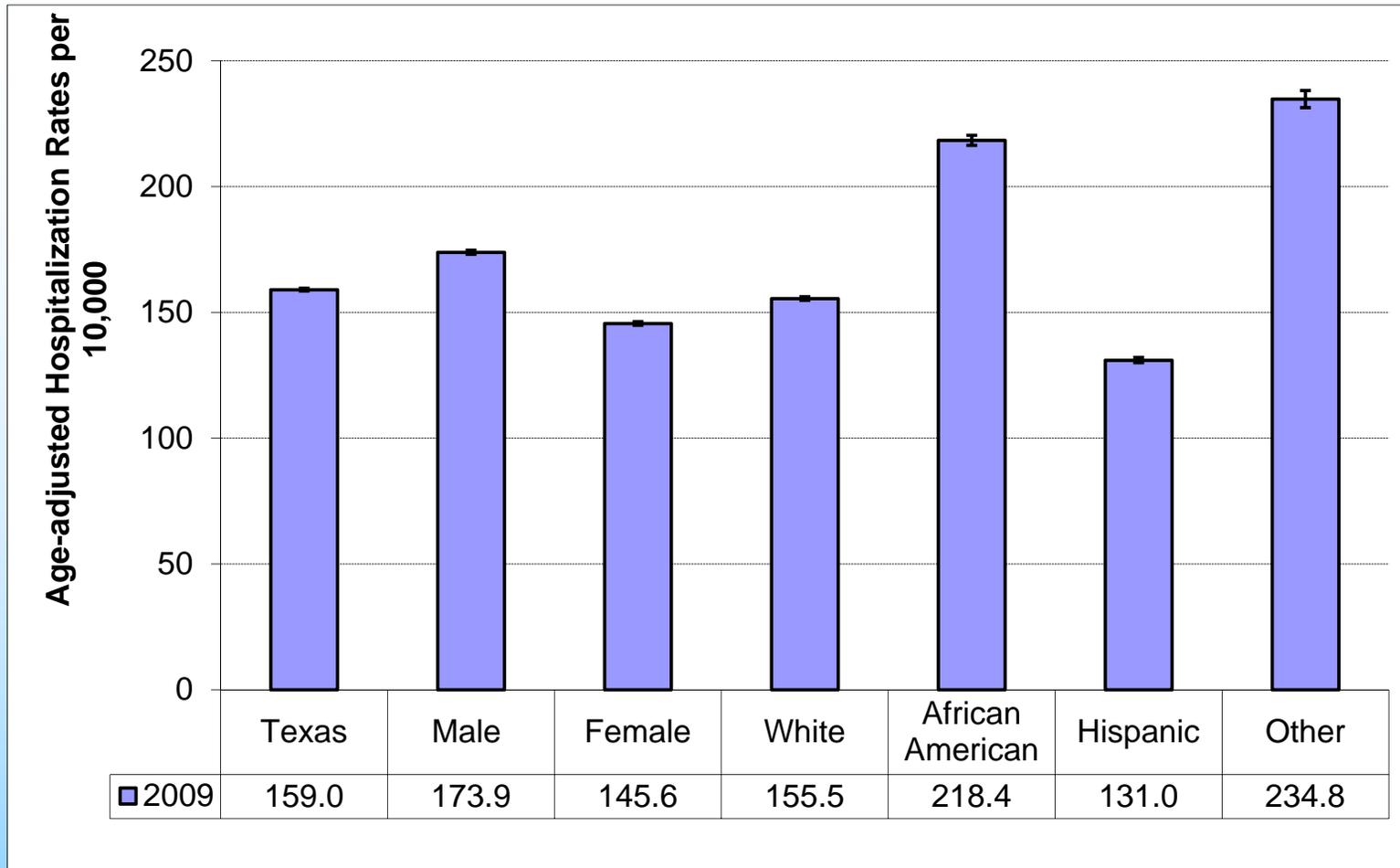


Disease and  
Stroke Program

Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2009

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# Age-adjusted Hospitalization Rates per 10,000 for CVD by Gender and Race/Ethnicity, Texas, 2009

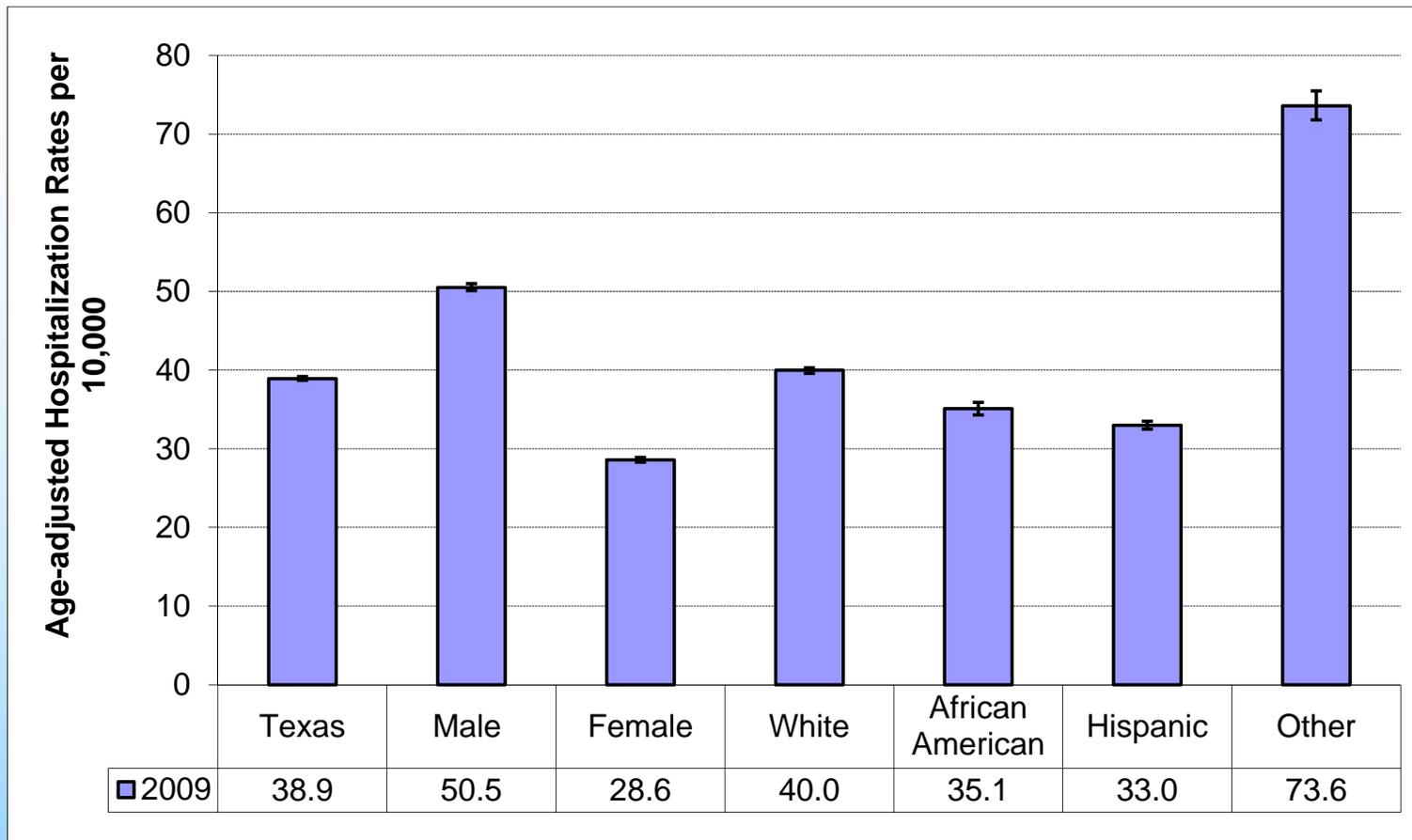


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2009



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# Age-adjusted Hospitalization Rates per 10,000 for Ischemic Heart Disease by Gender and Race/Ethnicity, Texas, 2009

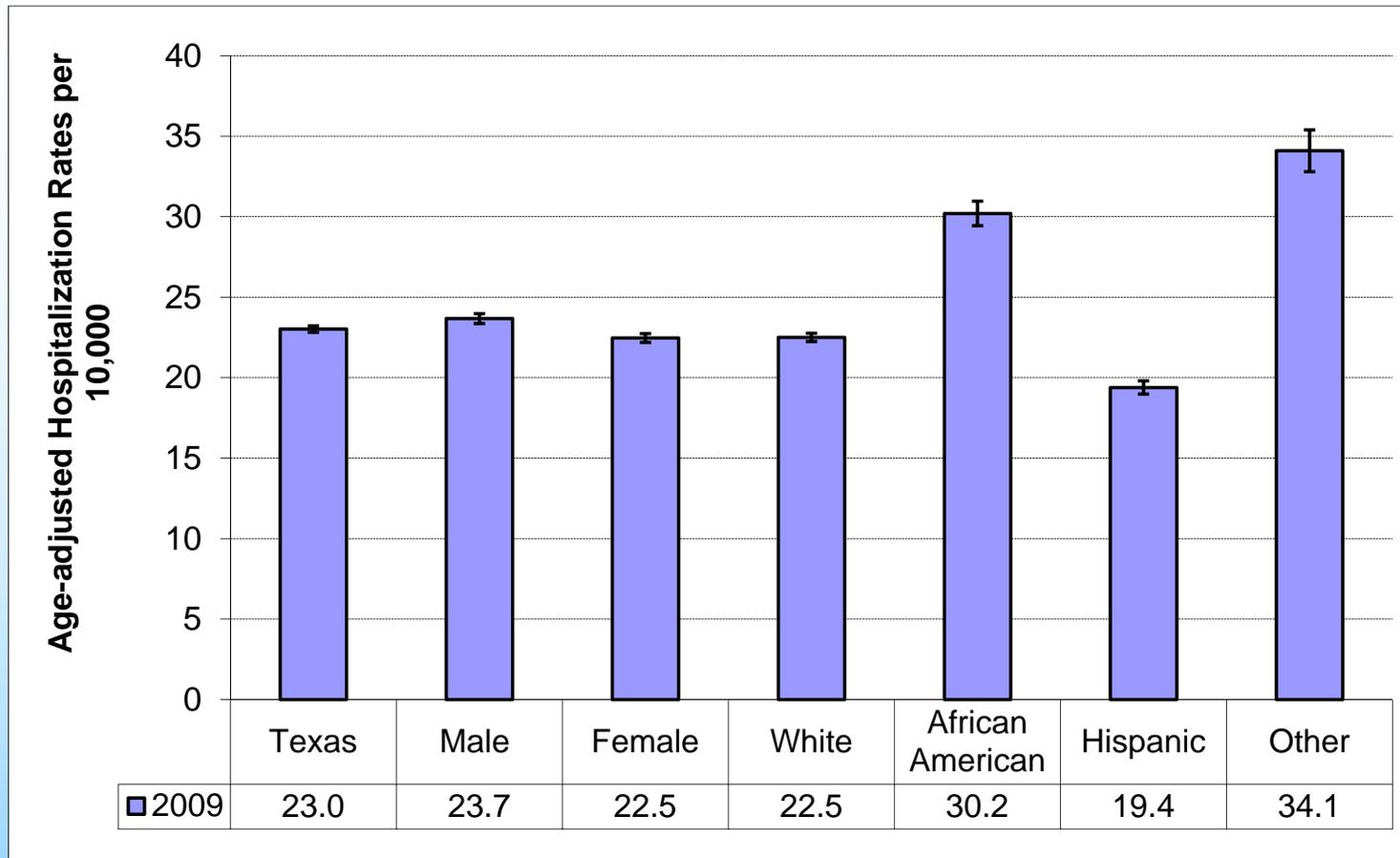


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2009



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# Age-adjusted Hospitalization Rates per 10,000 for Stroke by Gender and Race/Ethnicity, Texas, 2009

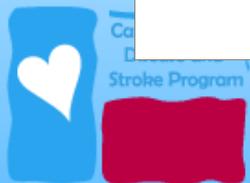
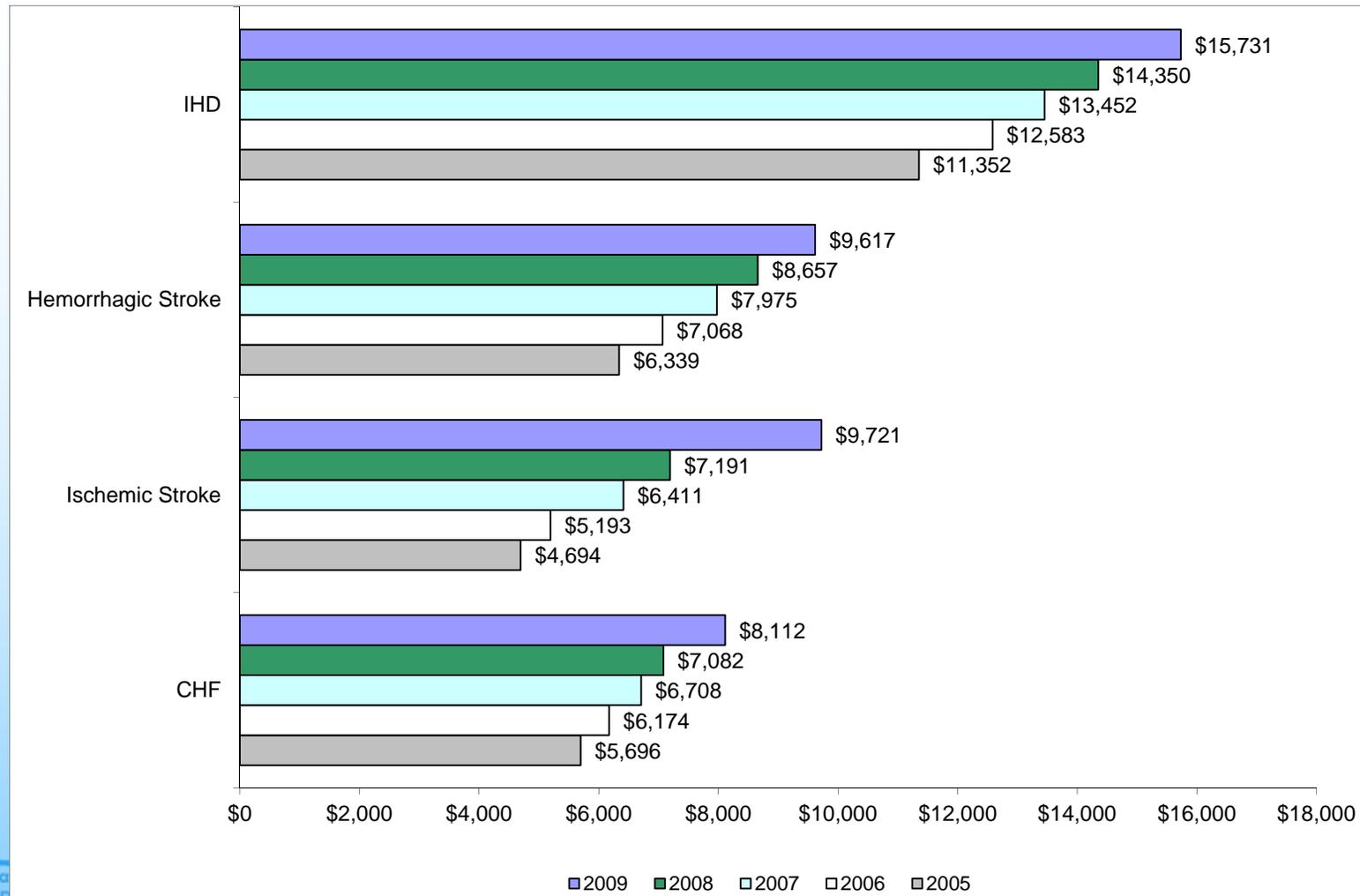


Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2009



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# Estimated Average Hospital Charge per Day for selected CVD Diagnosis, Texas 2005-2009



Data Source: Texas Health Care Information Collection (THCIC), Department of State Health Services, 2005-2009

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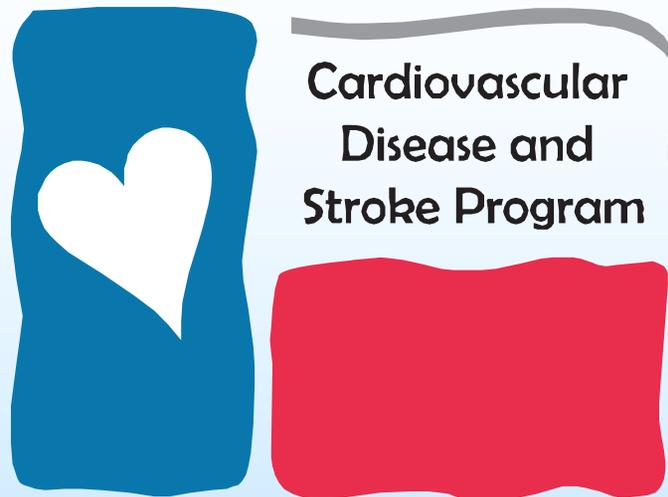
# Hospital Discharge Data

- Males had a significantly higher age-adjusted hospitalization rate due to CVD, IHD, or stroke as compared to females
- The Other\* race/ethnicity group had the highest age-adjusted hospitalization rate due to CVD, IHD, and stroke as compared to Whites, Blacks, and Hispanics.
- Estimated average hospital charges per day for selected CVD diagnoses have increased each year from 2005 to 2009.



\*Other race/ethnicity group includes individuals who reported their race as Asian or Pacific Islander, American Indian/Eskimo/Aleut, or Other and their ethnicity as non-Hispanic.

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<http://www.dshs.state.tx.us/wellness>

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