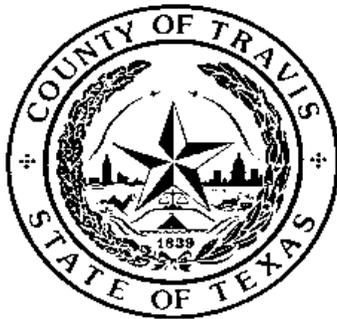


# CHRONIC DISEASE IN TRAVIS COUNTY

A Surveillance Report of Disease Indictors

Austin/Travis County Health and Human Services Department

August 2016



Prepared by:  
Sarah Seidel, DrPH  
Research Analyst  
Austin/Travis County Health & Human Services Department

Heather Cooks-Sinclair, MS  
Epidemiologist  
Austin/Travis County Health & Human Services Department

Philip Huang, M.D., MPH  
Health Authority/Medical Director  
Austin/Travis County Health & Human Services Department

The authors would like to thank the following:

John Luke Irwin, MPH for his help in obtaining mortality data for Travis County

Center for Health Statistics, Texas Department of State Health Services

Texas DSHS Behavioral Risk Factor Surveillance System, 2011-2014

Sandra Lackey at Austin/Travis County Health and Human Services Office of Vital Records for her help in obtaining tobacco-related death data for Austin

COLOR GRAPHICS HAVE BEEN DESIGNED TO PRINT CLEARLY IN BLACK AND WHITE OR  
GRAYSCALE

## INTRODUCTION

---

This report was prepared by the Austin/Travis County Health and Human Services Department (A/TCHHSD), Chronic Disease Prevention Unit to monitor outcomes for certain chronic diseases and conditions and their associated medical and behavioral risk factors. This report updates the chronic disease data reported in the 2015 Critical Health Indicators Report by incorporating 2013 and 2014 data in the Behavioral Risk Factor Surveillance System (BRFSS) prevalence estimates.

Chronic diseases and conditions are the major cause of illness, disability, death and associated health care costs in Austin/Travis County, as well as in Texas and the United States. Chronic diseases are defined by the Centers for Disease Control and Prevention (CDC) as diseases that are of long duration (months and years), that do not resolve quickly, and that cause persistent and recurring health problems.\* The Austin/Travis County Health and Human Services Department monitors chronic disease burden in deaths, disabilities, and costs, the modifiable behavioral risk factors (lack of physical activity, poor nutrition, and tobacco use) that are largely responsible, and the health disparities (differences in prevalence, deaths, and burden of disease) that exist among specific population groups.

Mortality data and prevalence data for the following chronic diseases and conditions are presented in this report: asthma, arthritis, cancer, cardiovascular diseases (heart diseases and stroke), chronic pulmonary obstructive disease (COPD), depression, diabetes, high cholesterol, hypertension (high blood pressure), kidney disease, overweight/obesity, and poor self-rated physical and mental health.

Sociodemographic characteristics as well as behavioral or lifestyle factors associated with an increased risk of chronic disease conditions are also reported.

The report is organized as follows:

1. Mortality Data (Center for Health Statistics at Texas Department of State Health Services)
2. Prevalence of Chronic Disease & Risk Behaviors (BRFSS 2011-2014)
3. Hospital Discharge Data (Texas Health Care Information Collection)

---

\* See Goodman RA, Posner SF, Huang ES, Parekh AK, Koh HK. Defining and Measuring Chronic Conditions: Imperatives for Research, Policy, Program, and Practice. *Prev Chronic Dis* 2013;10:120239, and Thrall JH. Prevalence and costs of chronic disease in a health care system structured for treatment of acute illness. *Radiology* 2005;235(1):9–12.

## DATA SOURCES & METHODOLOGY

---

### ***Mortality Data***

Mortality data were obtained from Department of State Health Services (DSHS) Center for Health Statistics (CHS) online query system for the years 1999-2013. Leading causes of death are presented by counts as well as rates (deaths per 100,000 population). Age-adjustment uses the United States 2000 standard population. ICD-10 codes used in this report for mortality data are as follows:

Accidents: V01-X59	Ischemic heart disease I20-I25
Fire X00-X09	Stroke: I60-I69
Narcotics (Crack, Heroin, Cocaine): X42	
Alzheimer's disease: G30	Chronic Liver Disease and Cirrhosis: K70
Arthritis: M00-M25	Chronic Lower Respiratory Diseases: J40-J47
Asthma: J45	Diabetes Mellitus: E10-E14
Cancers (Malignant Neoplasms): C00-C97	HIV/AIDS: B20-B24
Cervical cancer: C53	Homicide: X85-Y09, Y87.1
Colorectal cancer: C18-C21	Kidney Disease: N00-N07, N17-N19, N25-N27
Female breast cancer: C50	Suicide: X60-X84, Y87.0
Lung cancer: C34	
Prostate Cancer: C61	
Cardiovascular Diseases: I00-I99	
Congestive heart failure: I50	
Disease of the heart (I00-I09, I11 I13, I20-51)	
Hypertension: I10-I15	

*Preventable (Actual) Causes of Death* are those causes which are associated with behavioral and lifestyle factors, as well as the environment in which individuals live and work. Preventable causes of death mortality data are obtained from DSHS CHS (tobacco, suicide, homicide, crack, heroin, cocaine, HIV/AIDS and fire), the National Traffic Safety Administration (motor vehicle accidents), and CDC's Alcohol-Related Disease Impact 2006-2010 online tool (alcohol). City of Austin tobacco-related deaths are obtained from Austin/Travis County Health and Human Services Registrar of Vital Records.

### ***Chronic Disease Data***

Chronic disease prevalence estimates and data for associated sociodemographic and behavioral risk factors were obtained from the Behavioral Risk Factor Surveillance System (BRFSS) for the years 2011-2014. The BRFSS is a national telephone survey conducted of randomly selected adults 18 years of age and older. No oversamples of the Travis County population were taken until 2011, and in 2013 an oversample of Travis County was not conducted, thus limiting comparability between individual years. Most data are presented as combined years 2011-2014. Additionally, the sampling methods used by the BRFSS changed beginning 2011. Thus, previous data for Travis County are not comparable to earlier data. Trend lines including data prior to 2011 are separated by a vertical line to mark the change in methodology.

### ***Hospital Discharge Data***

Hospital discharge data are a rich source of information patterns of chronic disease inpatient care, associated inpatient care costs, and insurance (payer) for care. Hospital discharge data from 2009-2013 were obtained from the Texas Health Care Information Collection (THCIC), which collects discharge data from all state licensed hospitals except those statutorily exempt from the reporting requirement. There are 24 facilities in Austin/Travis County that collect and report this information.

## EXECUTIVE SUMMARY

---

Chronic diseases and conditions such as cancer, heart disease, chronic lung disease, stroke, diabetes and obesity are among the most common, costly and preventable of all health problems in Travis County. This report summarizes key findings related to chronic diseases in Travis County.

### **Chronic Disease Mortality**

The five leading causes of death – cancer, heart disease, accidents, chronic lung disease and stroke accounted for 57% of the deaths in 2013. In Travis County, cancer surpassed heart disease as the leading cause of death in 2007, and has remained the leading cause of death since that time. In contrast, heart disease is still the leading causes of death in Texas and the nation, and has been so since 1950. The change in Travis County may be related to significant reductions seen in cigarette smoking.

Despite improvements, disparities in mortality rates still exist among racial/ethnic groups. The mortality rates for cancer, heart disease, stroke and diabetes are highest among African-Americans. The highest mortality rate for chronic lung disease is among Whites. Hispanics have lower mortality rates than African-Americans for the five chronic diseases, but higher mortality rates than Whites for diabetes and stroke.

### **Chronic Disease and Risk Factor Prevalence**

Data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that the prevalence of diabetes and smoking decreased from 2011 to 2014, while the prevalence of obesity increased. As of 2014, it is estimated that 7.2% of Travis County adults (approximately 82,000 adults) have been diagnosed with diabetes, 20.5% (236,000 adults) are obese, and 10.7% (123,000 adults) currently smoke. Dramatic reductions in smoking rates have been seen in Travis County, and 2014 prevalence rates are comparable to the lowest rates in the nation (Utah). Yet tobacco use still remains the leading cause of preventable death in Travis County.

Differences in the prevalence of obesity, diabetes, and smoking exist by race/ethnicity. The highest prevalence of obesity, diabetes, and smoking is found among African-Americans. Whites have a higher prevalence of smoking than Hispanics, but Hispanics have a higher prevalence of obesity and diabetes than Whites.

### **Hospitalizations Due to Chronic Disease**

In 2013 there were 12,185 hospitalizations in Travis County due to chronic diseases, accounting for \$702.2 million in charges. Cancer accounted for 19.2% of chronic disease hospitalizations, costing \$195.8 million, and heart disease (ischemic heart disease and congestive heart failure) accounted for 30.5% of hospitalizations totaling \$210.6 million.

## TABLE OF CONTENTS

Introduction.....	1
Data Sources & Methodology.....	2
Executive Summary.....	4
Table of Contents.....	5
Mortality Data.....	8
Mortality Data – All-Cause Mortality Rate by Race/Ethnicity.....	9
Mortality Data – Leading Causes of Death.....	10
Mortality Data – Leading Causes of Death.....	11
Mortality Data – Top Five Leading Causes of Death Mortality Rate Trends.....	12
Mortality Data – Other Leading Causes of Death Mortality Rate Trends.....	13
Mortality Data – Preventable (Actual) Causes of Death.....	14
Tobacco-Attributable Deaths (as a percentage of all deaths).....	15
Tobacco-Attributable Deaths.....	16
Mortality Data – Leading Causes of Death by Race/Ethnicity.....	17
Mortality Data – Leading Causes of Death among Whites.....	18
Mortality Data – Leading Causes of Death among African-Americans.....	19
Mortality Data – Leading Causes of Death among Hispanics.....	20
Mortality Data – Mortality Rates by Specific Causes.....	21
Mortality Data - Cancer Mortality Rate by Race/Ethnicity.....	22
Mortality Data – Cancer Mortality Rate by Type of Cancer.....	23
Mortality Data – Heart Disease Mortality Rate by Race/Ethnicity.....	24
Mortality Data – Heart Disease Mortality Rate by Gender.....	25
Mortality Data – Heart Disease by Type of Heart Disease.....	26
Mortality Data - Diabetes Mortality Rate by Race/Ethnicity.....	27
Cancer Incidence Rates – Five Most Common Sites.....	28
Behavioral Risk Factor Surveillance System, 2011-2014.....	29

Chronic Disease Prevalence.....	30
Prevalence of Arthritis .....	31
Prevalence of Asthma .....	32
Prevalence of Ever Having Been Diagnosed with Cancer.....	33
Prevalence of Cardiovascular Disease <sup>+</sup> .....	34
Prevalence of Chronic Pulmonary Obstructive Disease .....	35
Prevalence of Depression.....	36
Prevalence of Diabetes.....	37
Prevalence of High Blood Pressure .....	38
Prevalence of Obesity .....	39
Prevalence of Overweight/Obesity in Adults by Race/Ethnicity .....	40
Nutrition & Physical Activity Indicators .....	41
Prevalence of Fair to Poor Self-Rated General Health .....	42
Percent Reporting Five or More Days per month Physical Health Not Good .....	43
Percent Reporting Five or More Days per MONTH Mental Health Not Good.....	44
Smoking Prevalence in Adults.....	45
Smoking Prevalence in Adults by Age Group .....	46
Trends in Chronic Disease .....	47
Change in Diabetes Prevalence.....	48
Change in Obesity Prevalence .....	49
Change in Smoking Prevalence .....	50
Change in Depression & Self-rated Overall, Physical, & Mental Health.....	51
Change in Past Year Health Screening & Vaccinations .....	52
Smoking Prevalence Trend in Travis County and Texas.....	53
Co-Morbidities in Chronic Disease.....	54
Prevalence of Diabetes by Body Mass Index.....	55
Prevalence of Cardiovascular Disease by Body Mass Index .....	56

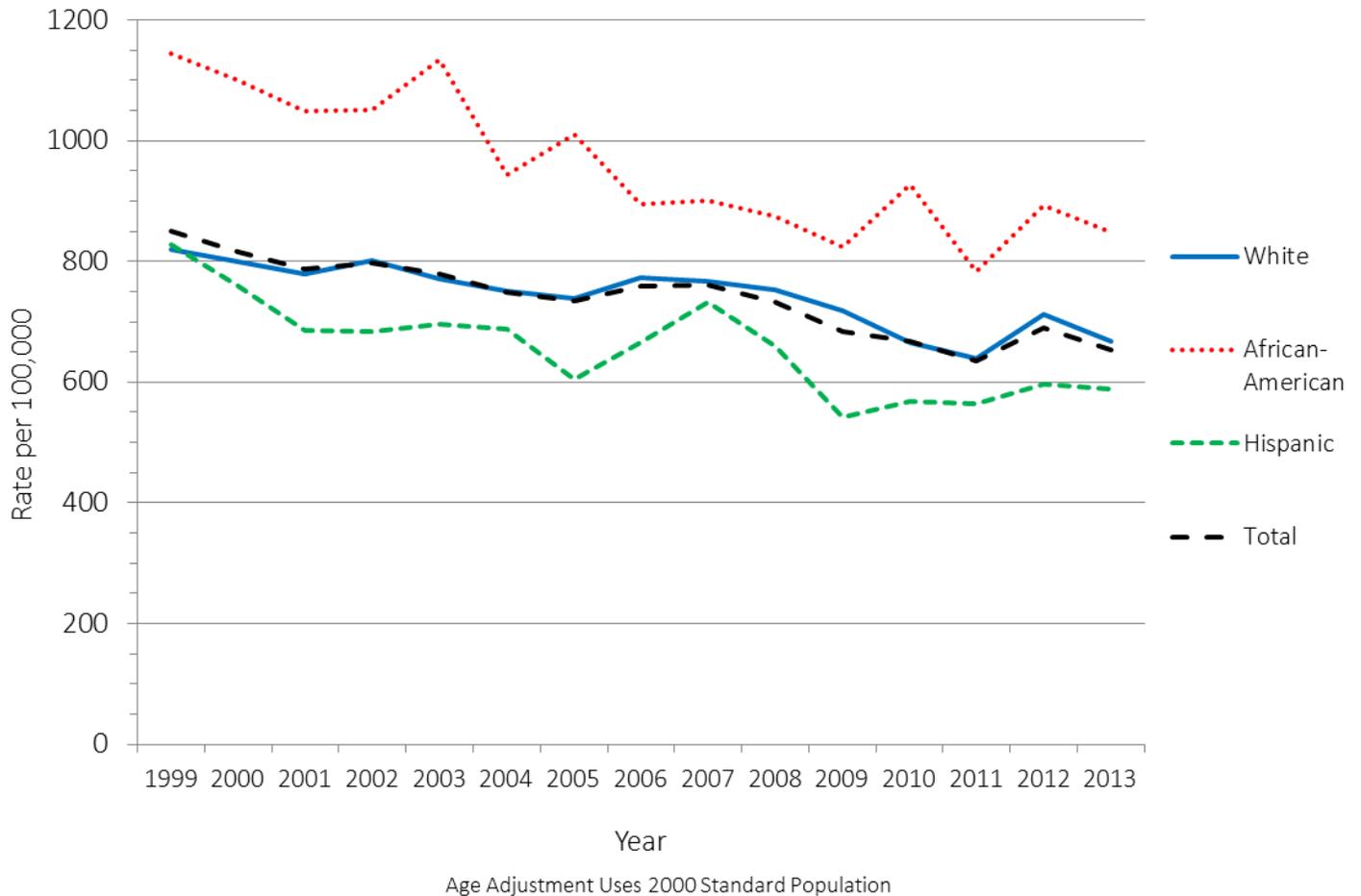
Prevalence of Overweight/Obesity in Adults by Diabetes Diagnosis.....	57
Prevalence of Selected Chronic Disease in Adults by Diabetes Diagnosis .....	58
Disease Prevalence by Socio-Economic Indicators .....	59
Disease Prevalence by Income Level.....	60
Disease Prevalence by Education Level .....	61
Disease Prevalence by Employment Status .....	62
Disease Prevalence by Health Insurance Status (Adults <65 Years).....	63
Healthcare Seeking Behavior in Adults .....	64
Percent adults aged 18-64 Who Received A Flu Shot in the Past Year.....	65
Percent Reporting Routine Check Up in Past Year .....	66
Texas Health Care Information Collection - Hospital Discharge Data, 2009-2013 .....	67
Number of Hospital Discharges by Primary Diagnosis .....	68
Distribution of Hospital Discharges by Age Group .....	69
Top Five Payment Sources for Chronic Disease Hospitalizations.....	70
Total Hospital Charges by Primary Diagnosis.....	71
Total Hospital Charges for Cancer by Cancer Type .....	72
Primary Payment Source for Selected Cardiovascular Disease Diagnoses .....	73
Primary Payment Source for Selected Chronic Disease Diagnoses.....	74
Average Hospital Charge per Day for Selected Chronic Disease Diagnoses .....	75
Average Hospital Charge per Day for Selected Cardiovascular Disease Diagnoses .....	76
Average Hospital Charge per Day for Selected Cancer Diagnoses .....	77

---

# MORTALITY DATA

---

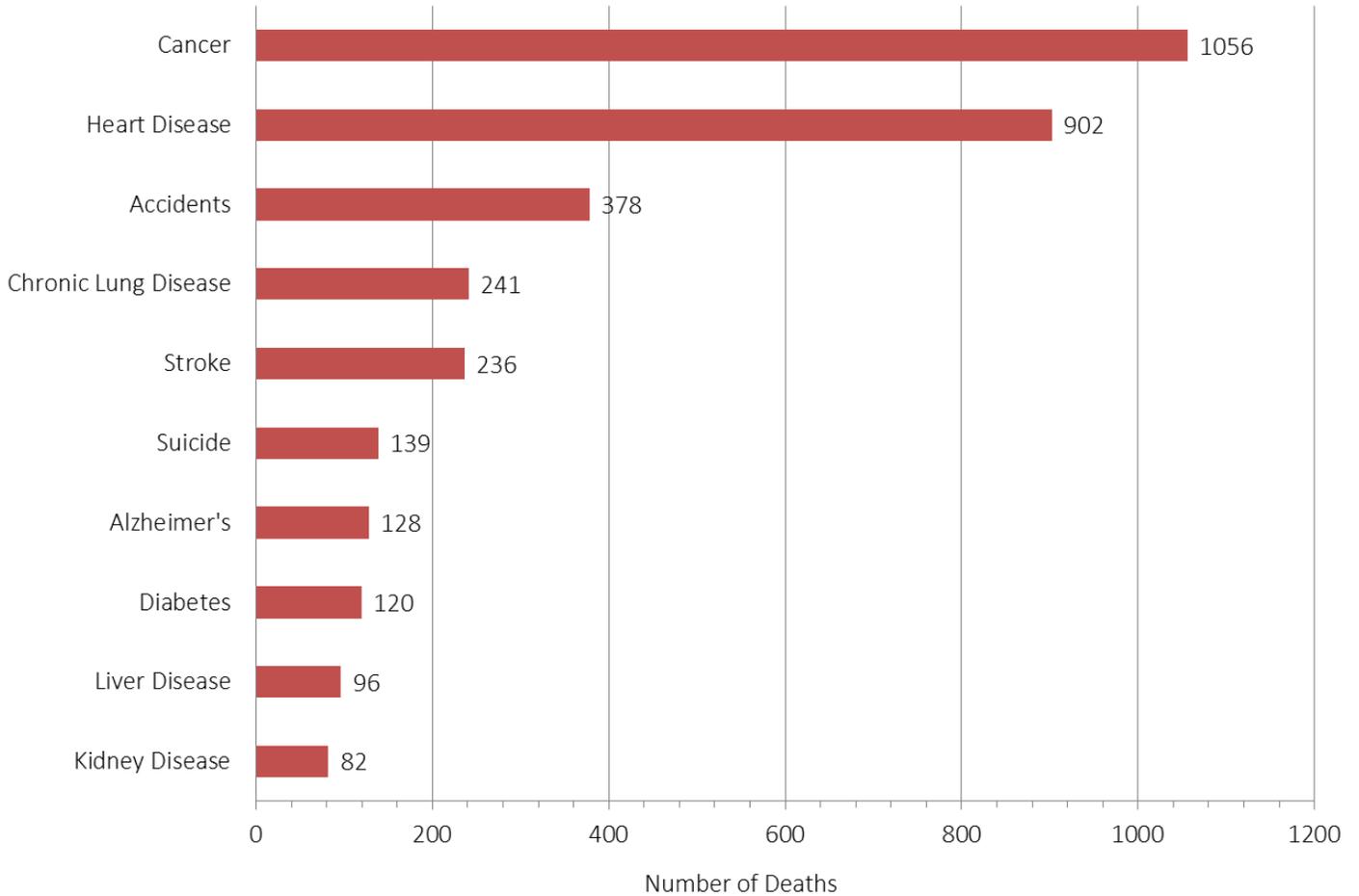
MORTALITY DATA – ALL-CAUSE MORTALITY RATE BY RACE/ETHNICITY  
TRAVIS COUNTY, 1999-2013



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Total age-adjusted mortality rates in Travis County have been declining since 1999 for all race/ethnicities.
- African-Americans experience the highest mortality rate from all causes. Hispanics experience the lowest all-cause mortality rate. Whites experience an all-cause mortality rate roughly equal to that of all races combined.

MORTALITY DATA – LEADING CAUSES OF DEATH  
TRAVIS COUNTY, 2013

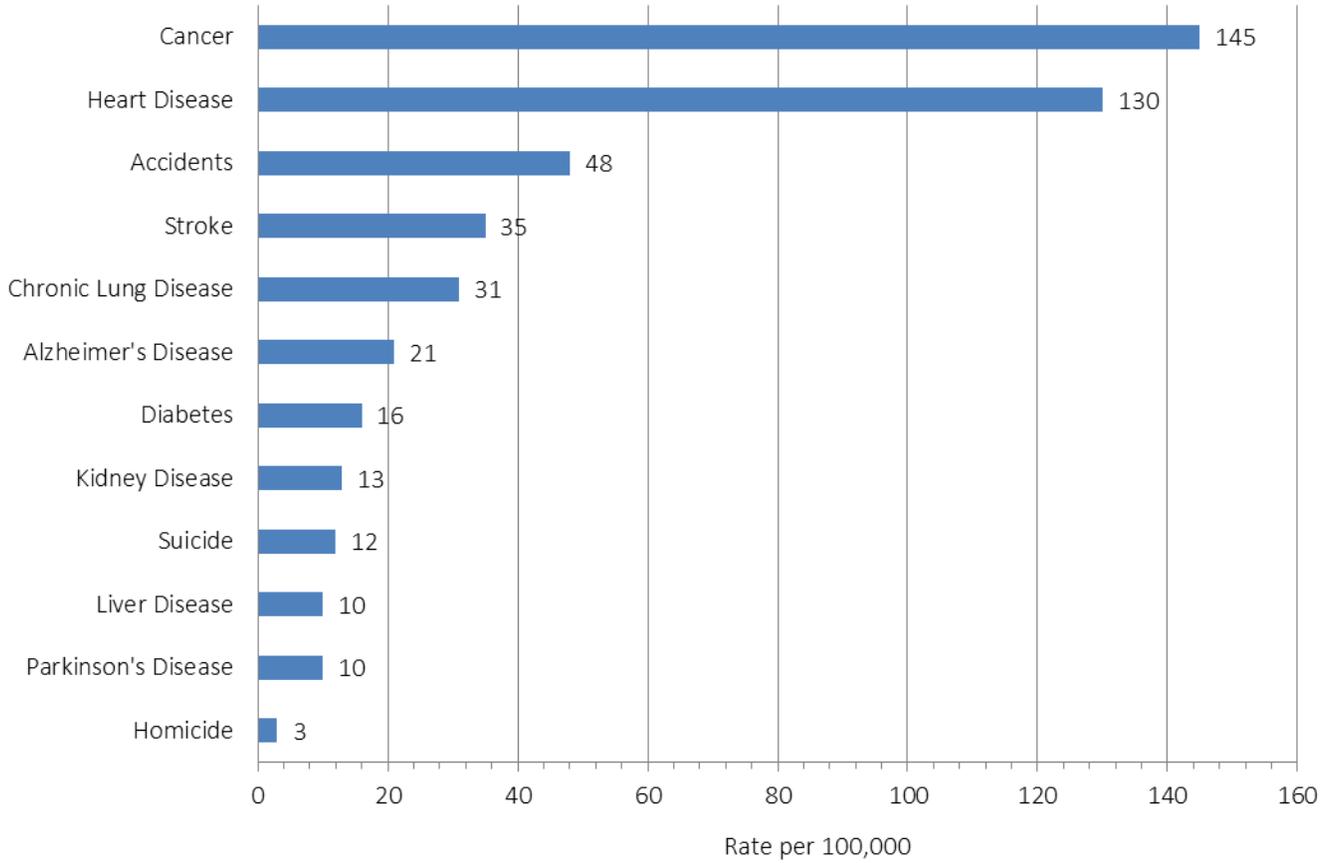


Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2013

- There were 4,962 deaths from all causes in 2013.
- The highest number of deaths was from cancer (1,056 deaths).
- Cancer accounted for 21% of all deaths, and heart disease accounted for 18% of deaths.
- The five leading causes of death – cancer, heart disease, accidents, chronic lung disease and stroke accounted for 57% of the deaths in 2013.

MORTALITY DATA – LEADING CAUSES OF DEATH  
TRAVIS COUNTY, 2009-2013

---



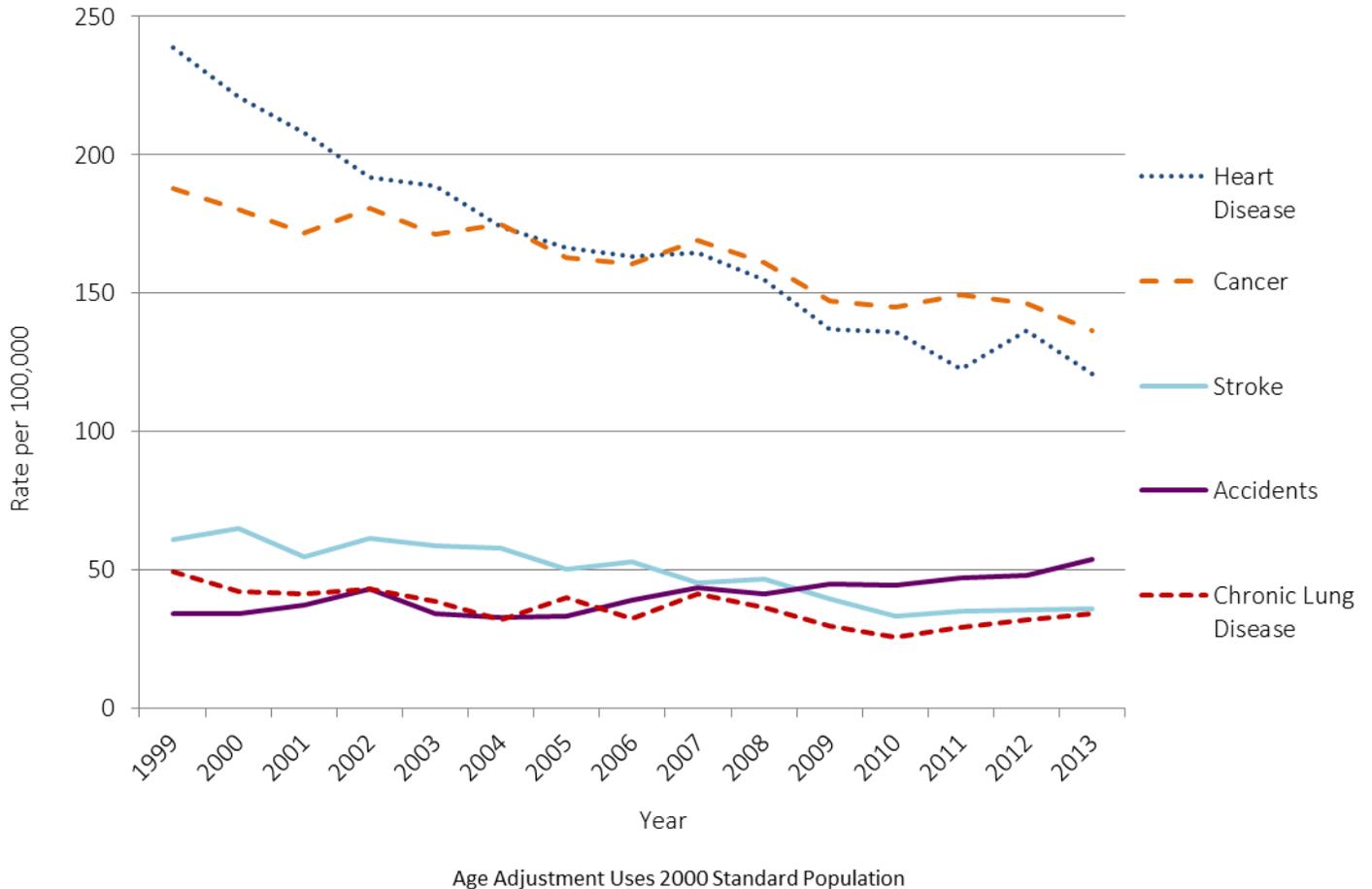
Age Adjustment uses 2000 Standard Population

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2009-2013

---

- The highest mortality rate in Travis County is due to cancer. There are approximately 145 deaths per 100,000 people from cancer each year.
- The five highest mortality rates are for cancer, followed by heart disease, accidents (including motor vehicle accidents), stroke, and chronic lung disease.

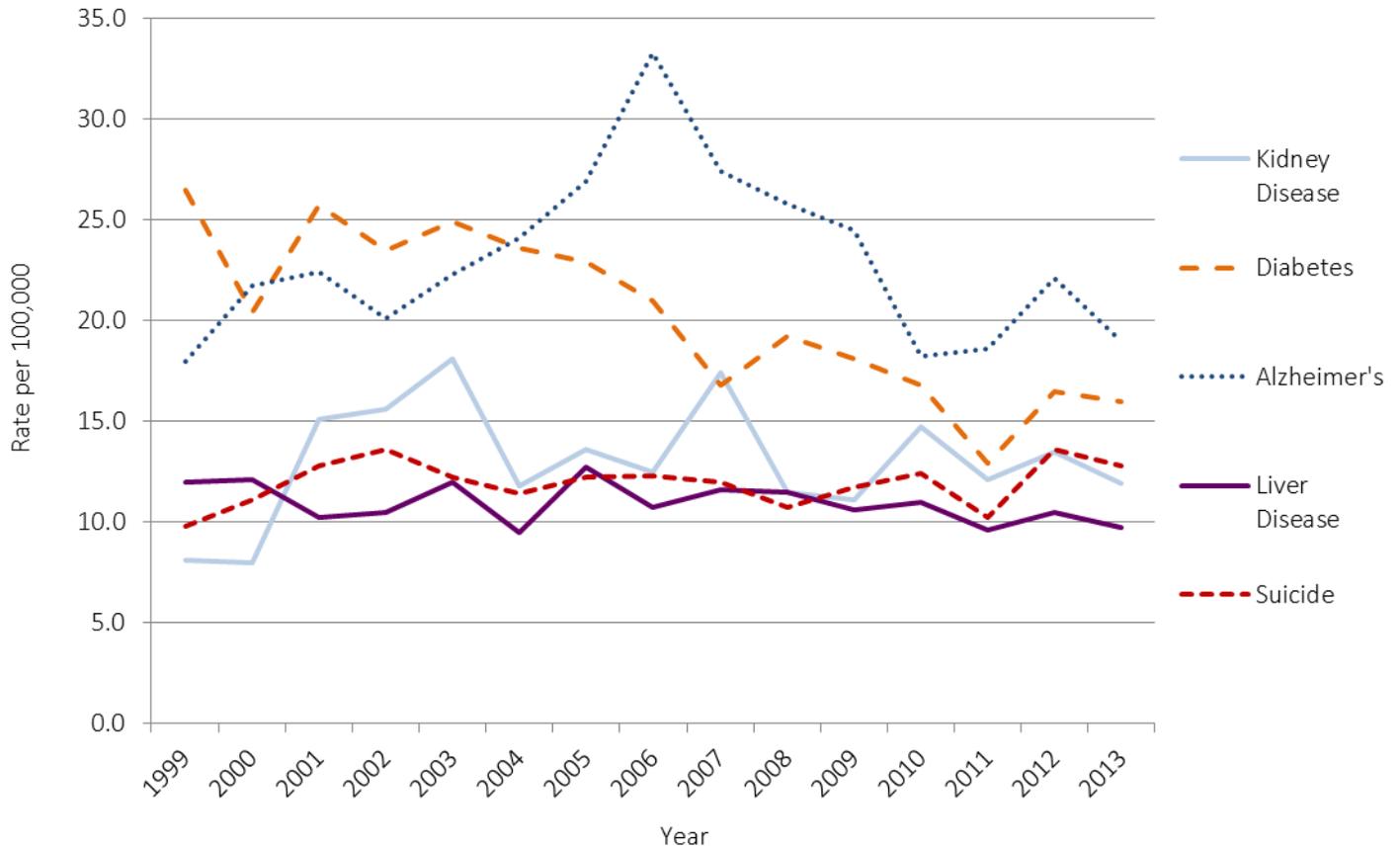
MORTALITY DATA – TOP FIVE LEADING CAUSES OF DEATH MORTALITY RATE  
TRENDS, TRAVIS COUNTY, 1999-2013



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Cancer is currently the leading cause of death in Travis County.
- Cancer became the leading cause of death in 2007.
- Mortality rates from heart disease, cancer, stroke, and chronic lung disease have been declining since 1999.
- The mortality rate from accidents (including car accidents) has risen since 1999.

MORTALITY DATA – OTHER LEADING CAUSES OF DEATH MORTALITY RATE  
TRENDS, TRAVIS COUNTY, 1999-2013



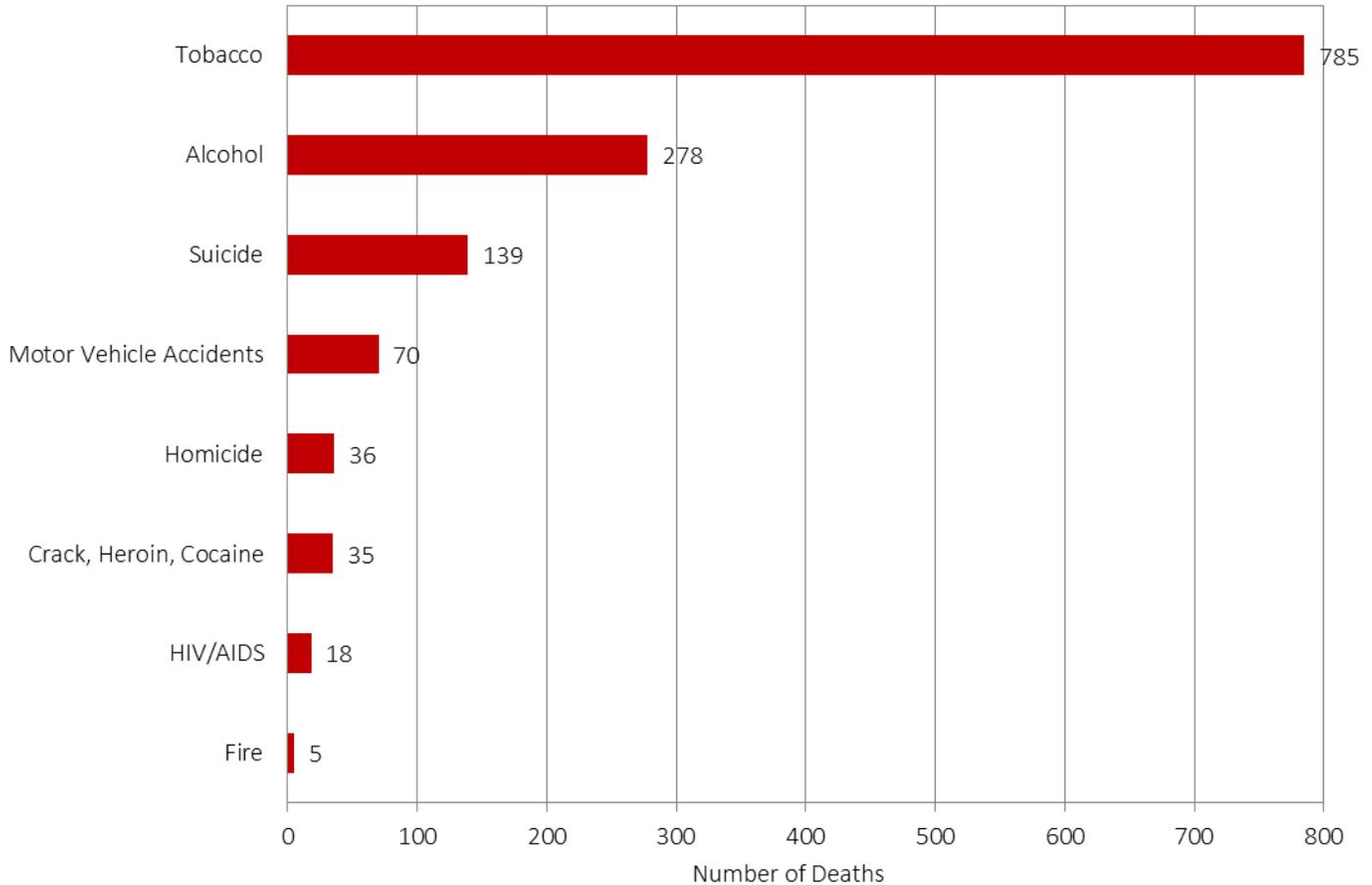
Age Adjustment Uses 2000 Standard Population

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- The mortality rates for diabetes and liver disease have fallen since 1999.
- The mortality rate for Alzheimer’s disease rose until 2006 and has been falling since then.
- The mortality rate for suicide rose from 9.8 per 100,000 in 1999 to 12.8 per 100,000 in 2013.
- The mortality rate for kidney disease rose from 8.1 per 100,000 in 1999 to 11.9 per 100,000 in 2013.

MORTALITY DATA – PREVENTABLE (ACTUAL) CAUSES OF DEATH  
TRAVIS COUNTY, 2013

---



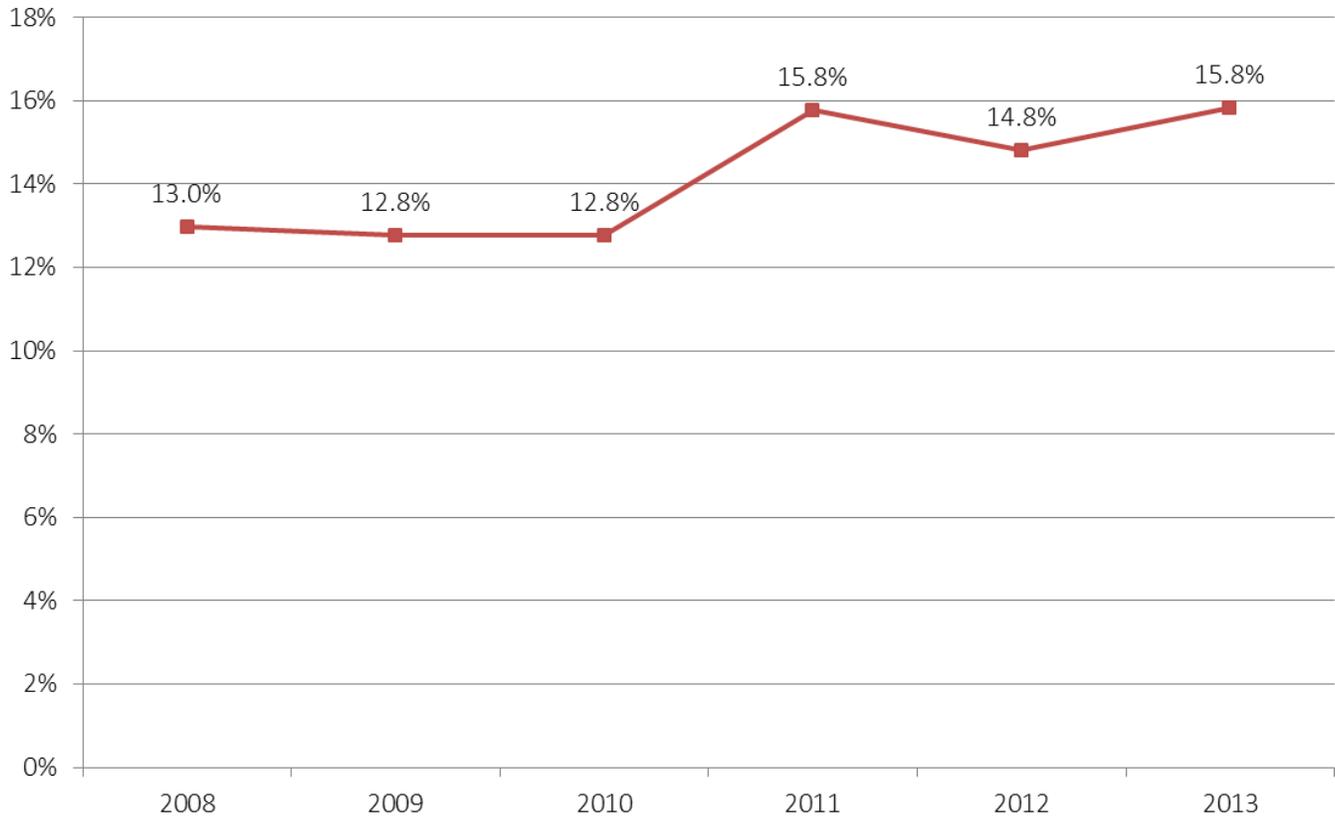
Data Sources: Texas Vital Statistics, Texas Department of State Health Services Tobacco Checkbox, 2013; National Highway Traffic Safety Administration, 2013; Centers for Disease Control and Prevention, Alcohol Related Disease Impact, 2006-2010

---

- Tobacco is the leading preventable cause of death in Travis County
- In 2013, tobacco (785 deaths) caused more deaths in Travis County than alcohol, suicide, car accidents, homicide, crack, heroin, cocaine, HIV/AIDS and fire combined (571).

TOBACCO-ATTRIBUTABLE DEATHS (AS A PERCENTAGE OF ALL DEATHS)  
TRAVIS COUNTY, 2008-2013

---



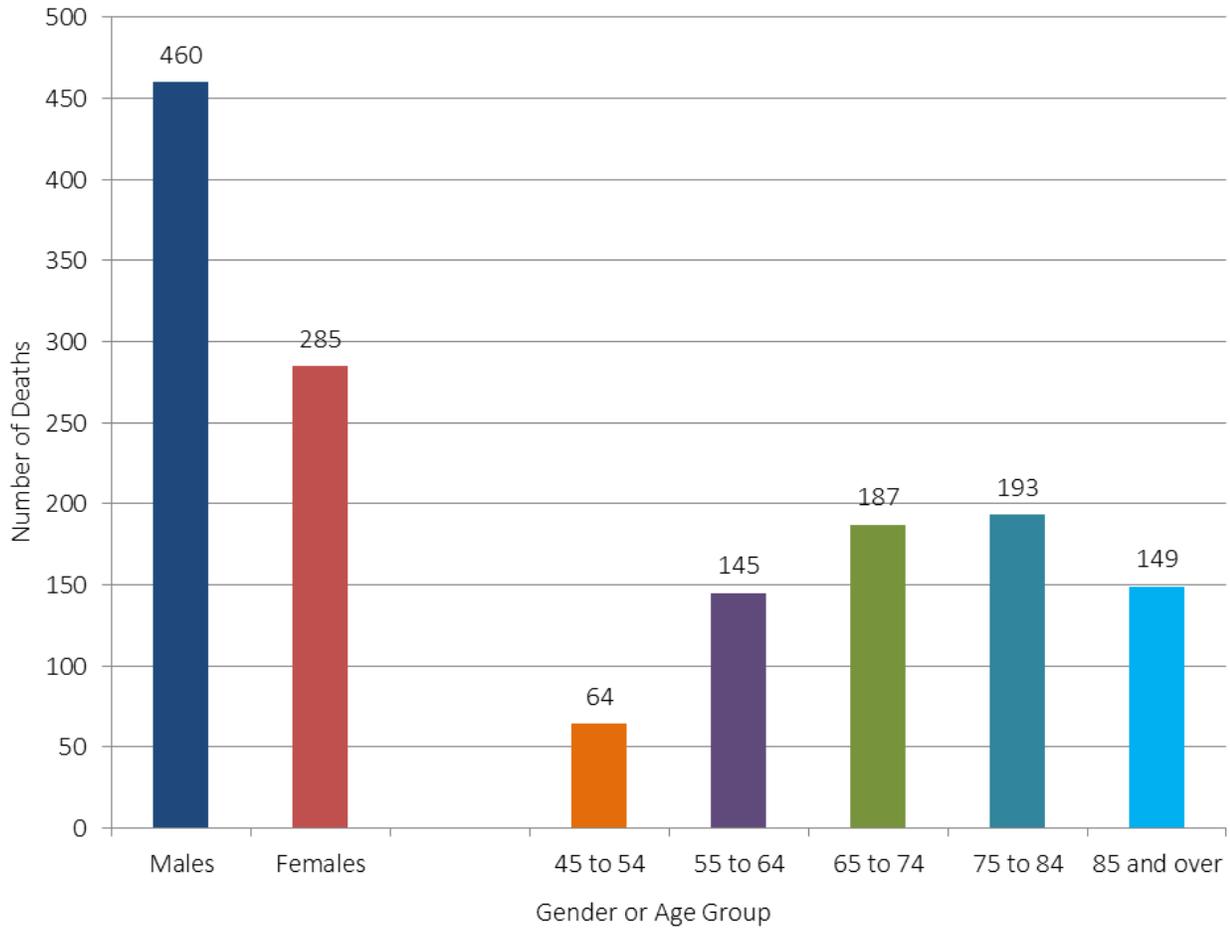
Data Source: Texas Vital Statistics, Texas Department of State Health Services Tobacco Checkbox, 2013

---

- Tobacco has accounted for an increasing percentage of all deaths in Travis County since 2008.
- The percent increase in deaths attributable to tobacco (as a percent of all deaths) from 2008 to 2013 was 22%.

## TOBACCO-ATTRIBUTABLE DEATHS CITY OF AUSTIN, 2014

---

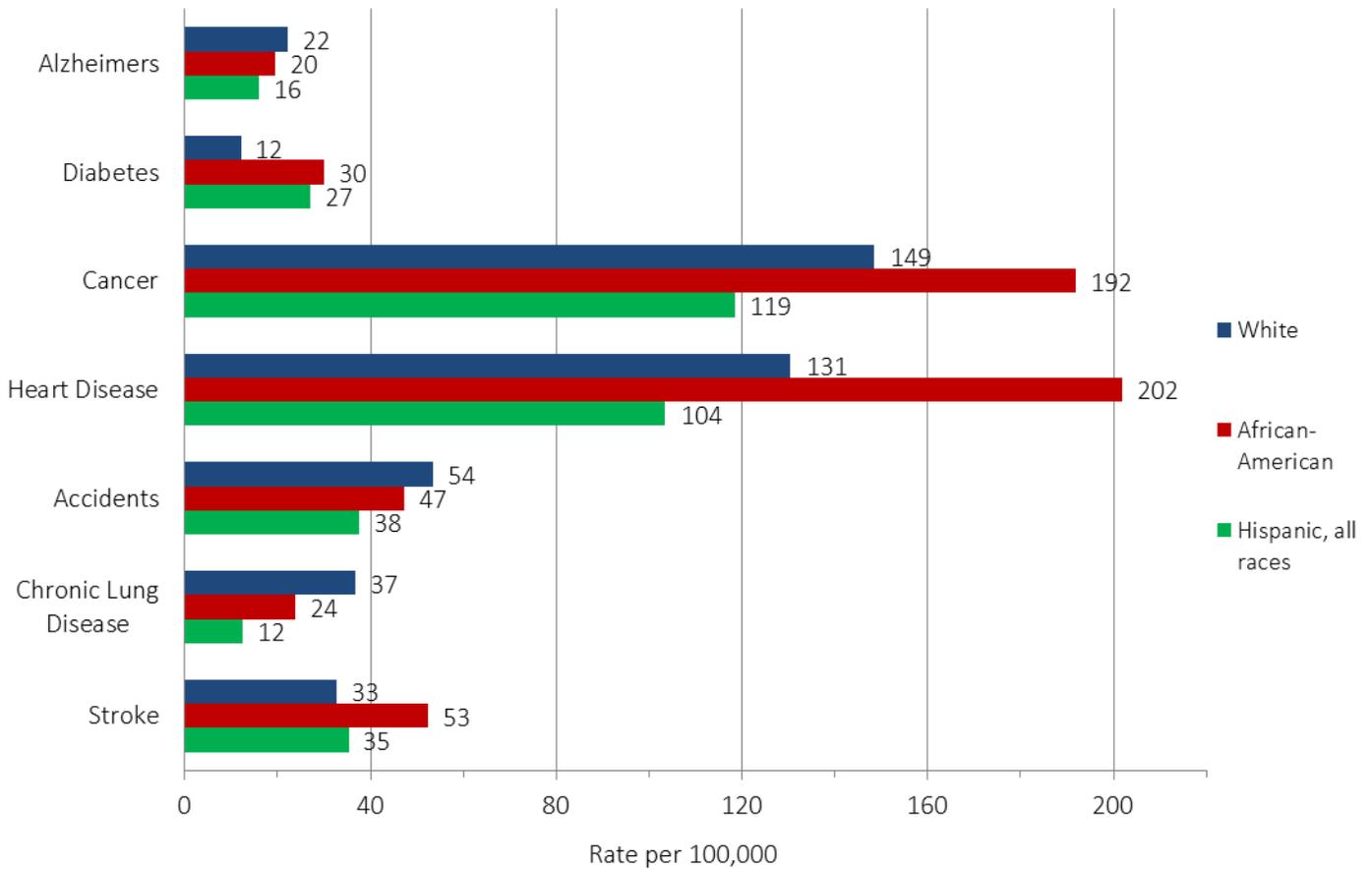


Data Source: City of Austin Office of Vital Records, Tobacco Checkbox, 2014

---

- Tobacco accounted for 745 deaths in the City of Austin in 2014.
- Tobacco accounted for more male deaths than female deaths.
- Most deaths attributable to tobacco were in adults over age 55.

MORTALITY DATA – LEADING CAUSES OF DEATH BY RACE/ETHNICITY  
TRAVIS COUNTY, 2009-2013



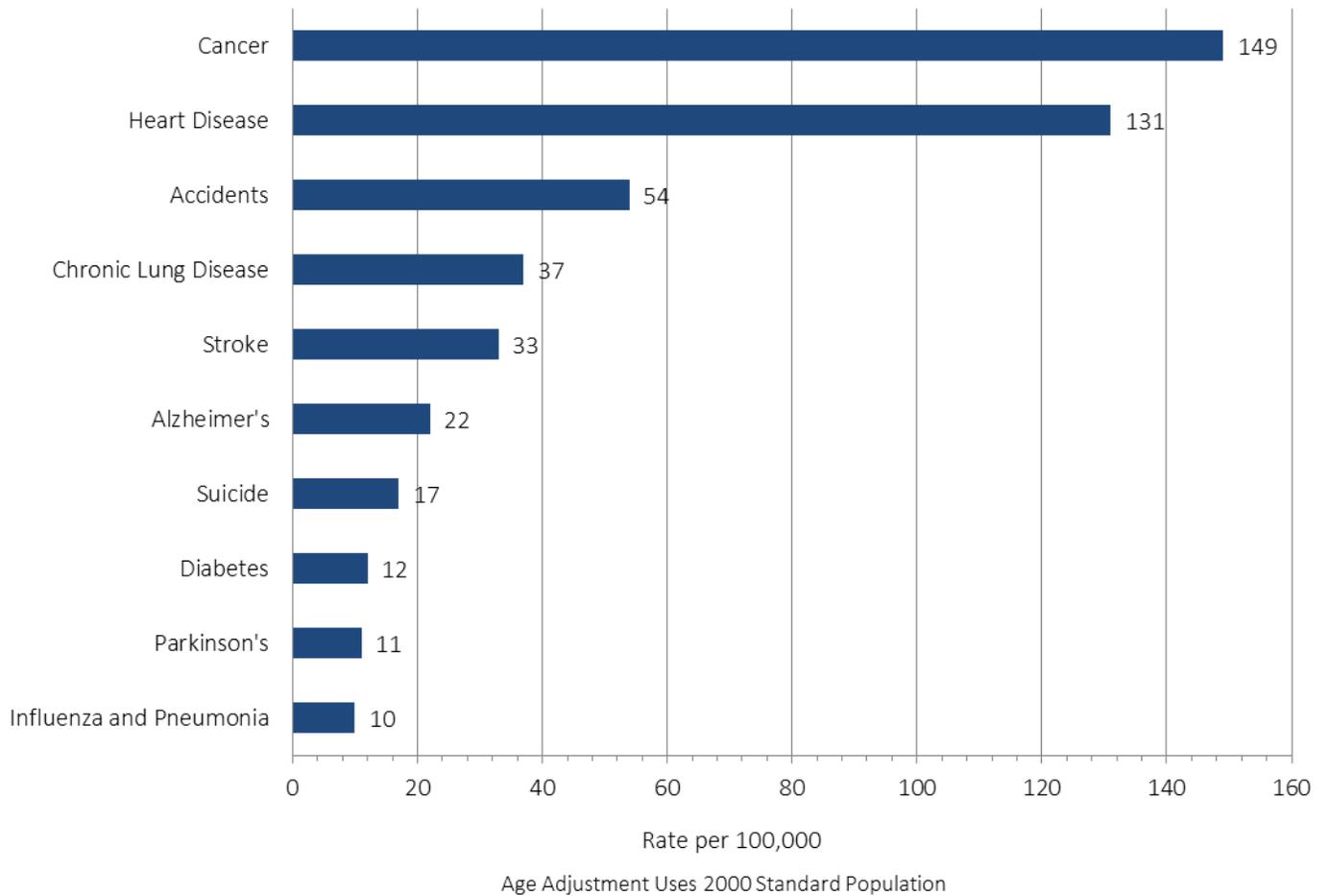
Age Adjustment Uses 2000 Standard Population

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2009-2013

- The five leading causes of death are shown by race/ethnicity.
- Of all races/ethnicities, African-Americans have the highest age-adjusted mortality rates due to cancer, heart disease, diabetes, and stroke. Whites have the highest mortality rates due to accidents and chronic lung disease.
- Mortality rates due to cancer and heart disease are the highest for all races/ethnicities.

MORTALITY DATA – LEADING CAUSES OF DEATH AMONG WHITES  
TRAVIS COUNTY, 2009-2013

---



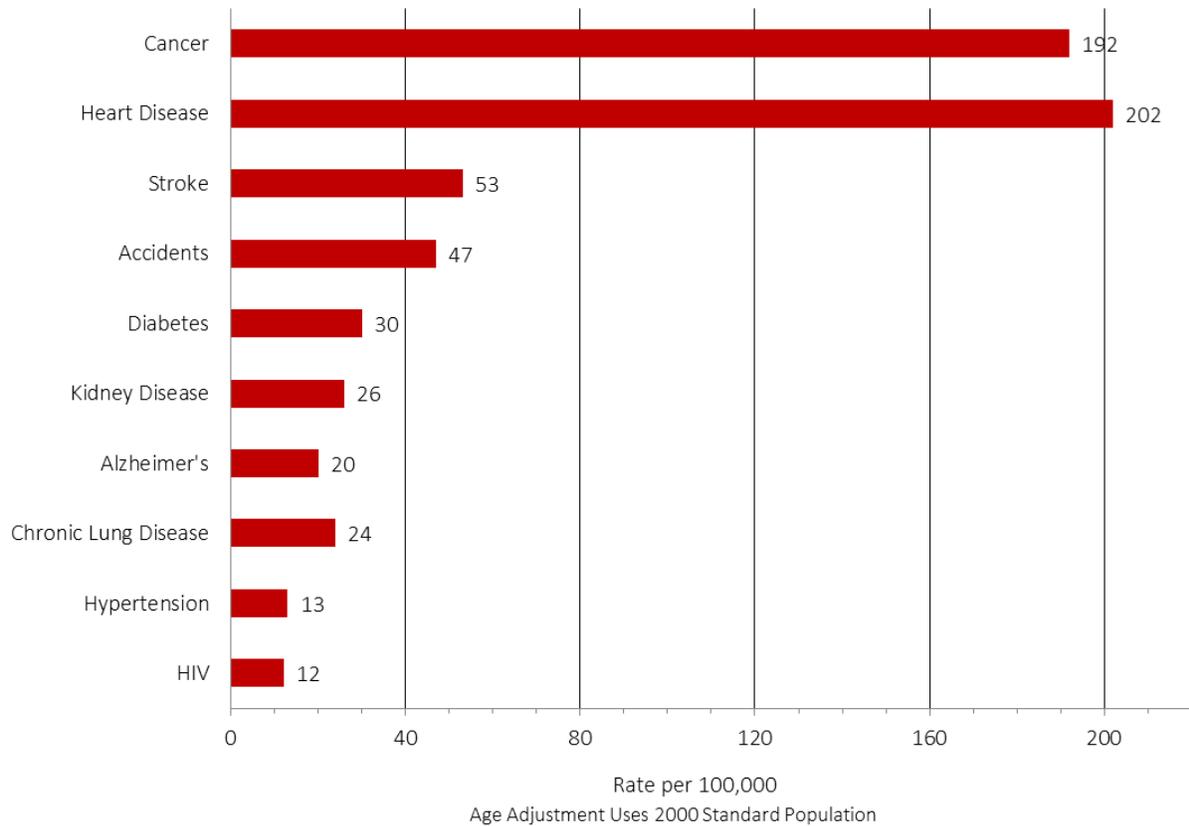
Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2009-2013

---

- Among Whites, cancer and heart disease are the leading causes of death.
- Among Whites, cancer and heart disease accounted for 42% of all deaths from 2009-2013.

MORTALITY DATA – LEADING CAUSES OF DEATH AMONG AFRICAN-AMERICANS†  
TRAVIS COUNTY, 2009-2013

---



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2009-2013

---

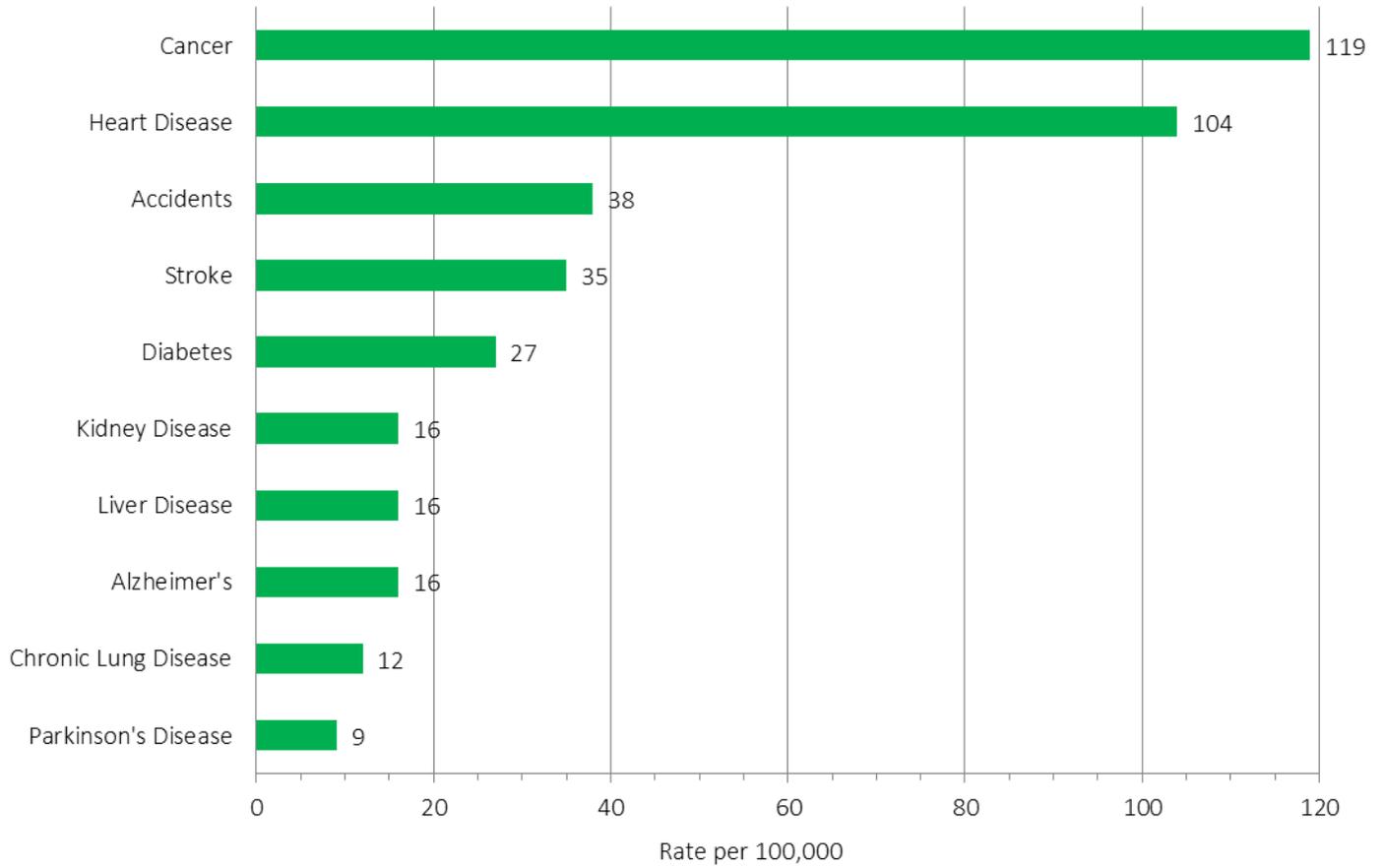
- Among African-Americans, heart disease and cancer are the leading causes of death.
- From 2009-2013, cancer and heart disease accounted for 46% of all deaths in African-Americans.
- Diabetes is among the five leading causes of death for African-Americans.

---

†Until 2010 the DSHS mortality data, race/ethnicity category “Blacks” (African-Americans) included Black Hispanics and Black Non-Hispanics. After 2010, anyone identifying as Hispanic was classified as Hispanic, and anyone of mixed race was classified under the single multi-race category “Other”. After 2010, “Blacks” only includes non-Hispanic single-race Blacks.

MORTALITY DATA – LEADING CAUSES OF DEATH AMONG HISPANICS  
TRAVIS COUNTY, 2009-2013

---



Age Adjustment Uses 2000 Standard

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 2009-2013

---

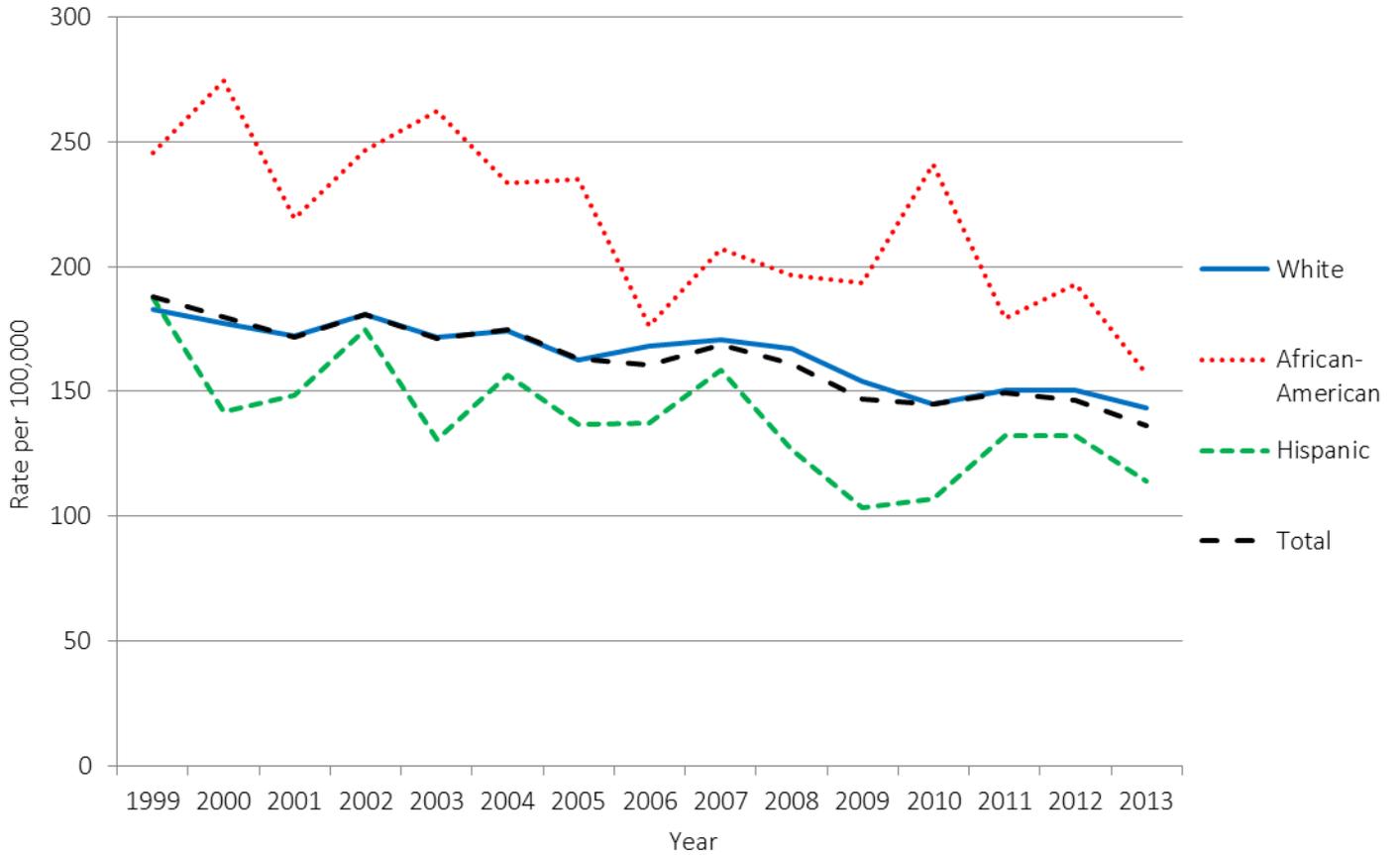
- Among Hispanics, cancer and heart disease are the leading causes of death.
- Among Hispanics, cancer and heart disease accounted for 36% of all deaths.
- Diabetes is among the five leading causes of death for Hispanics.

---

# MORTALITY DATA – MORTALITY RATES BY SPECIFIC CAUSES

---

MORTALITY DATA - CANCER MORTALITY RATE BY RACE/ETHNICITY  
TRAVIS COUNTY, 1999-2013

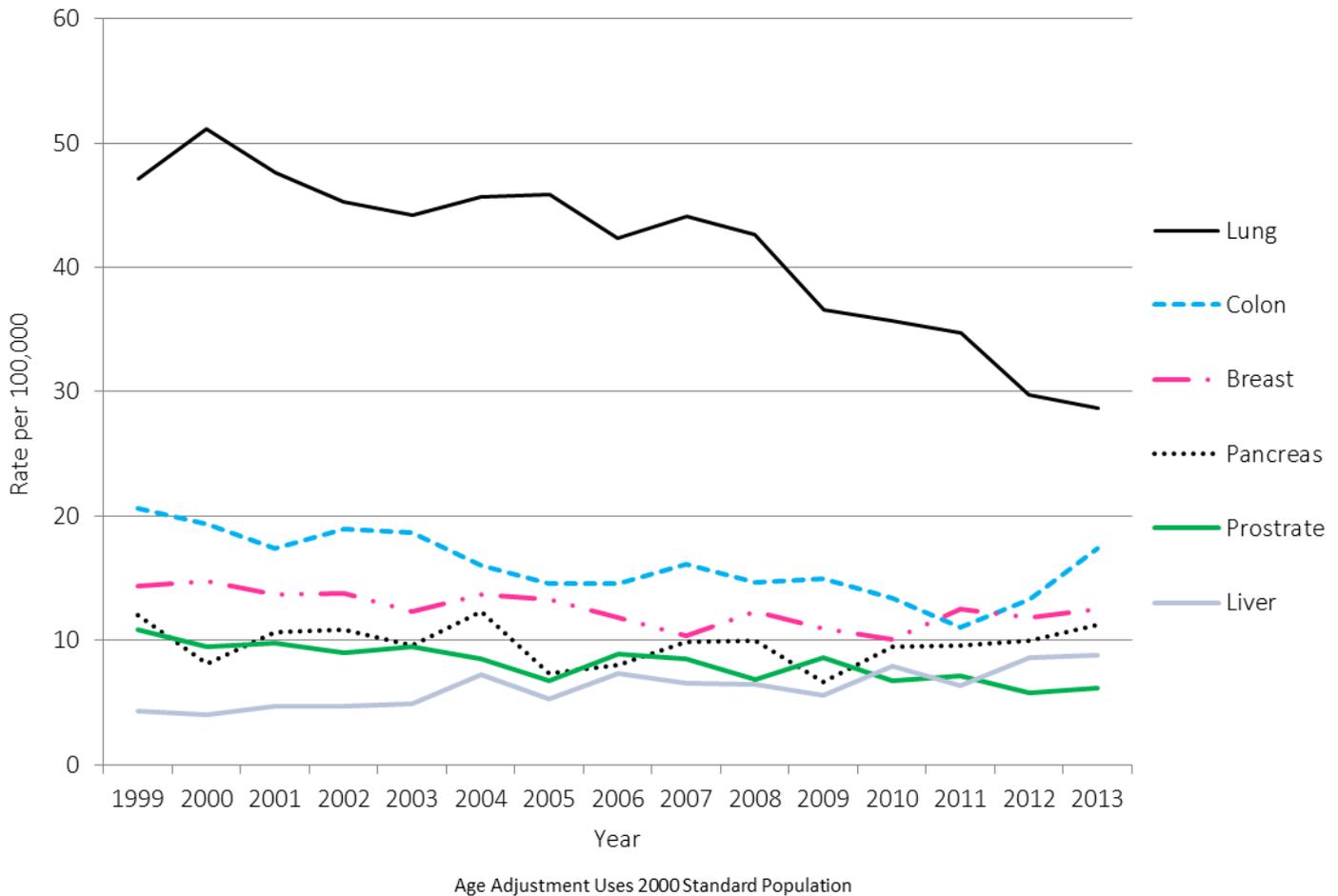


Age Adjustment Uses 2000 Standard Population

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Cancer mortality rates have declined since 1999 for all races/ethnicities.
- African-Americans have the highest mortality rates due to cancer. Hispanics have the lowest mortality rates due to cancer.

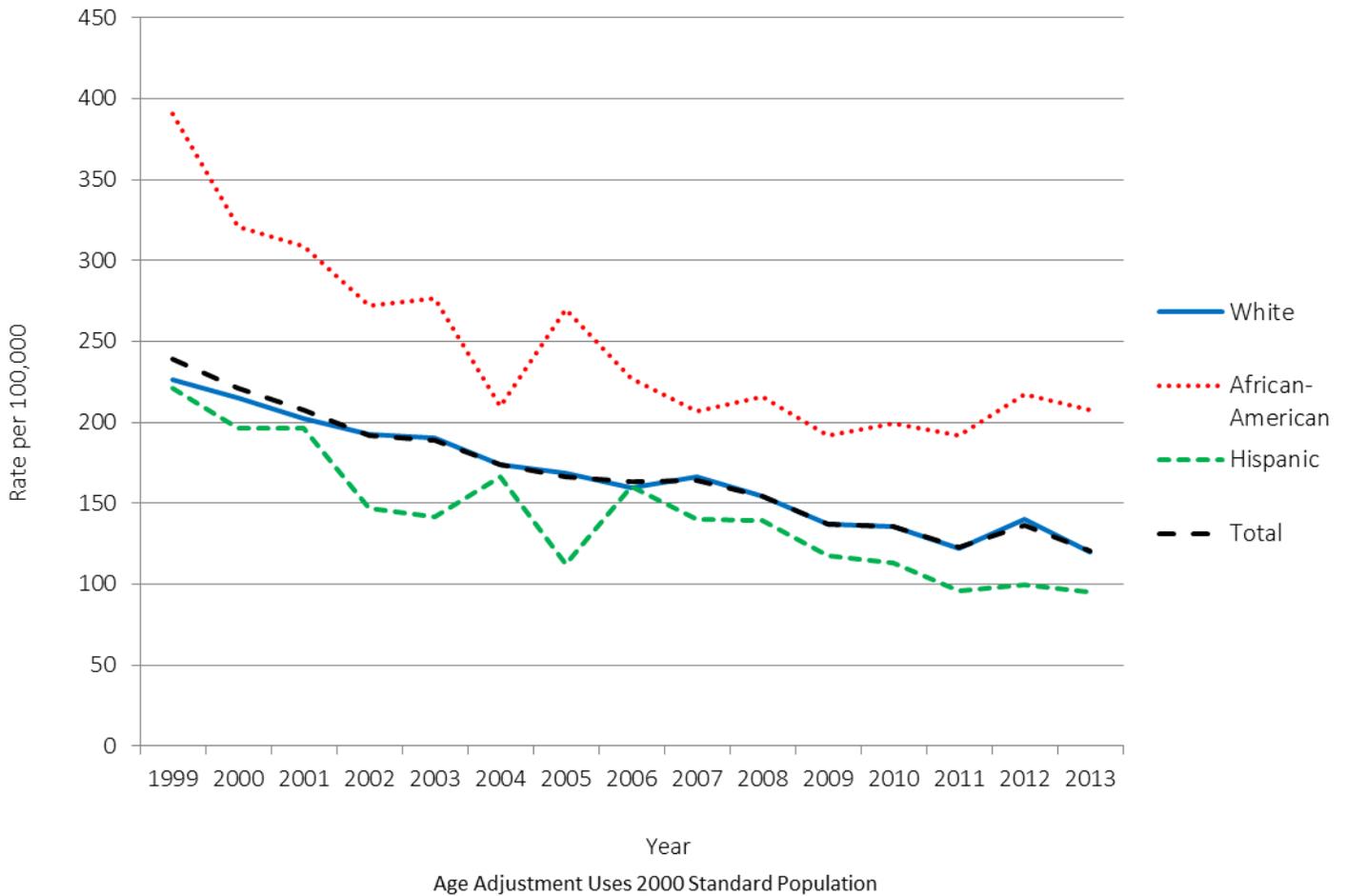
MORTALITY DATA – CANCER MORTALITY RATE BY TYPE OF CANCER  
TRAVIS COUNTY, 1999-2013



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Age-adjusted mortality rates for lung cancer have been declining since 1999.
- Lung cancer mortality rates remain higher than all other cancer mortality rates.
- Mortality rates from colon cancer and prostate cancer have declined since 1999.
- Breast and pancreas cancer mortality rates have remained steady during the 15-year period.
- Liver cancer mortality rates have increased since 1999.

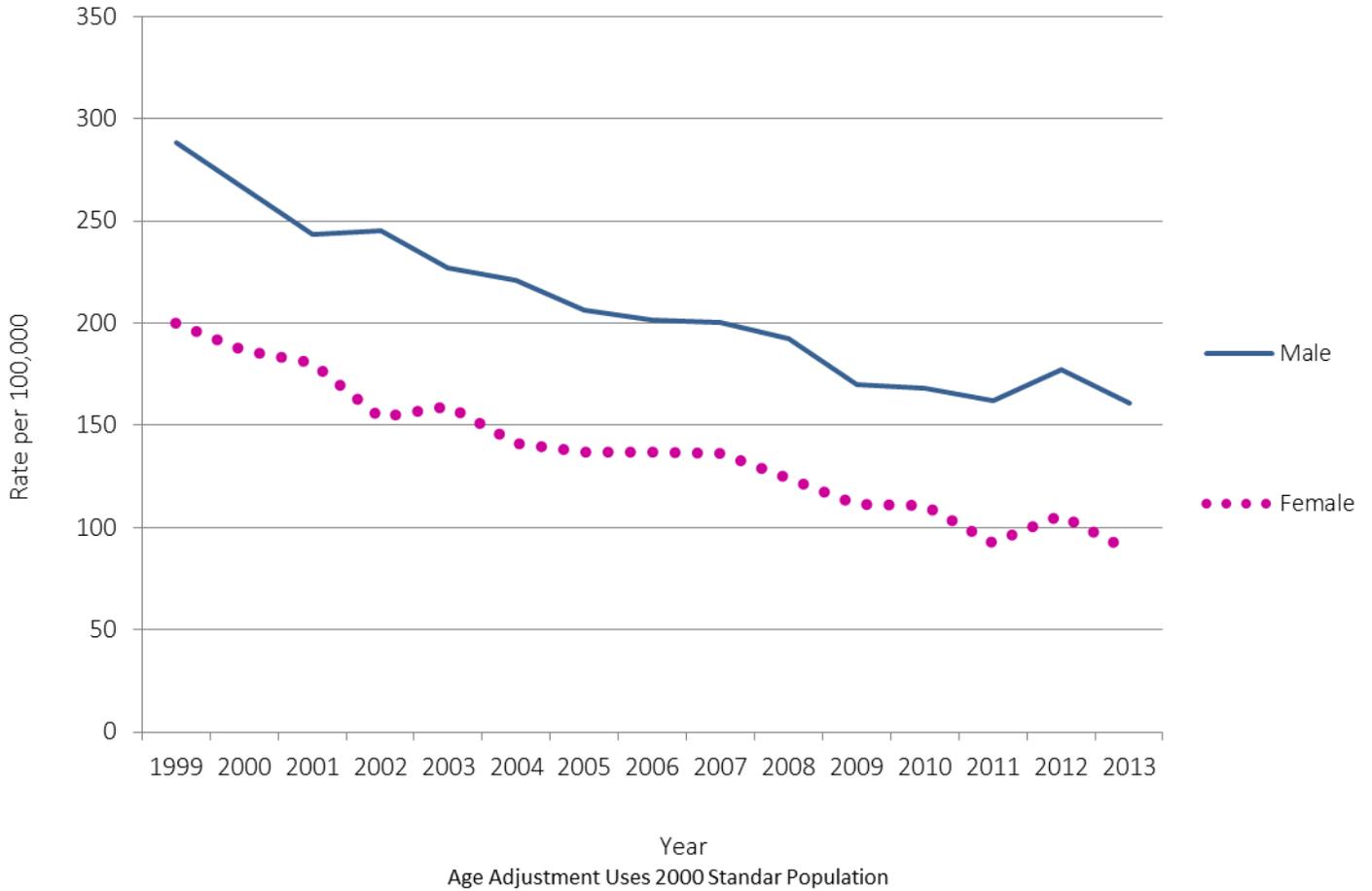
## MORTALITY DATA – HEART DISEASE MORTALITY RATE BY RACE/ETHNICITY TRAVIS COUNTY, 1999-2013



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Heart disease mortality rates have declined since 1999 for all races/ethnicities.
- African-Americans have the highest mortality rates due to heart disease. Hispanics have the lowest mortality rates due to heart disease.

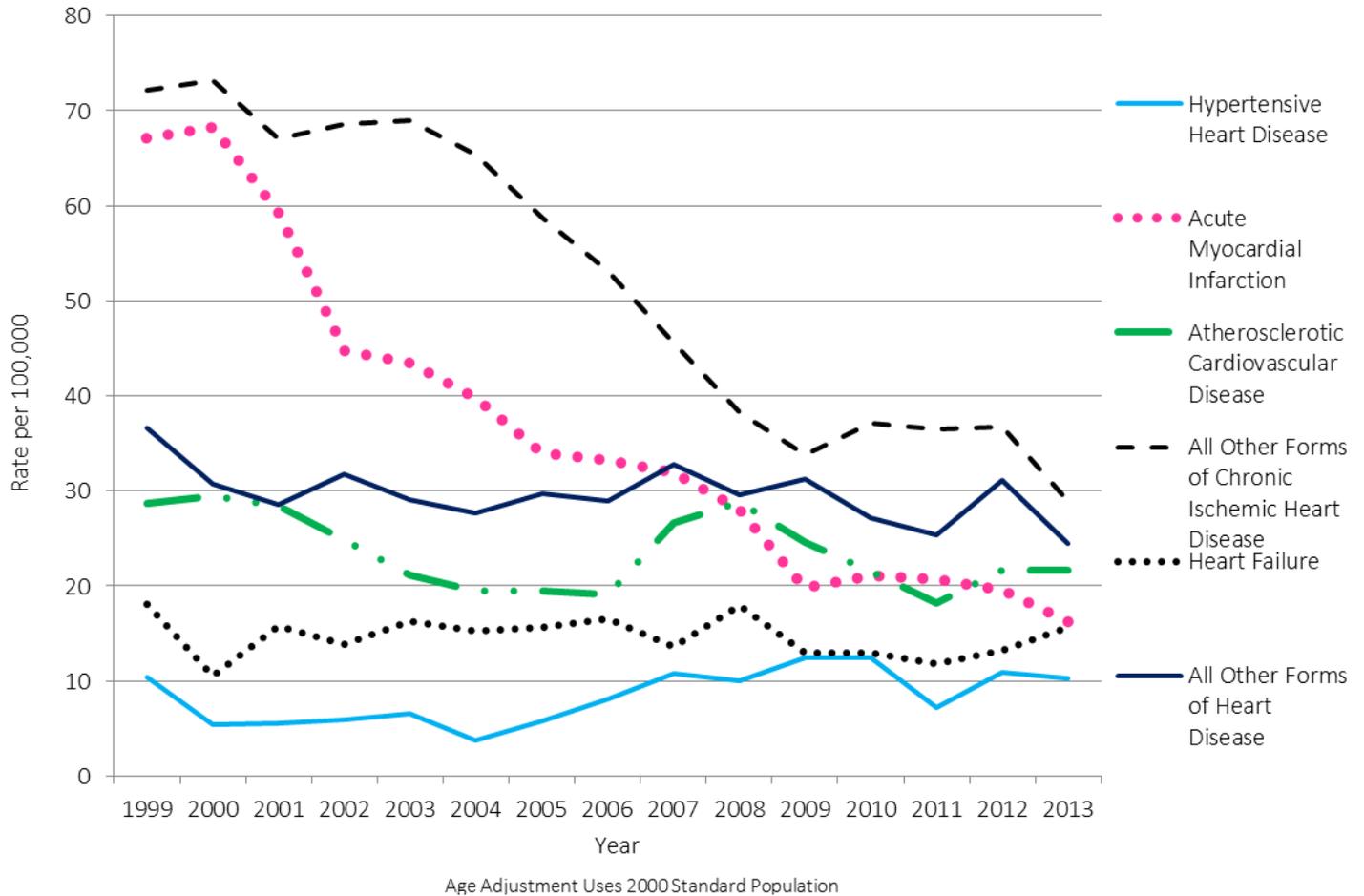
MORTALITY DATA – HEART DISEASE MORTALITY RATE BY GENDER  
TRAVIS COUNTY, 1999-2013



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Heart disease mortality rates have been declining in both males and females since 1999.
- Mortality rates rose between 2011 and 2012 in both genders.
- Males have a higher mortality rate due to heart disease than females.

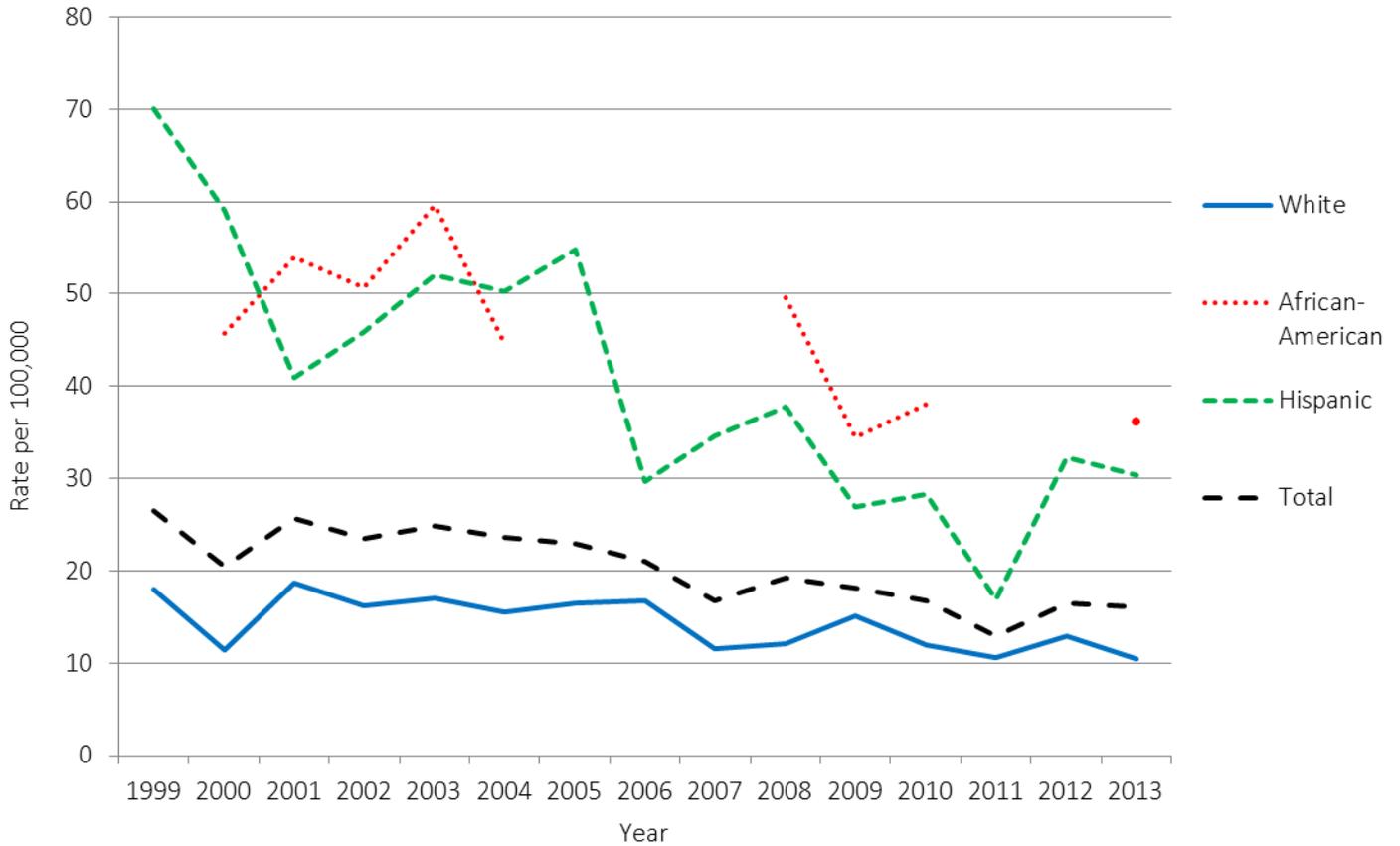
**MORTALITY DATA – HEART DISEASE BY TYPE OF HEART DISEASE  
TRAVIS COUNTY, 1999-2013**



Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Mortality rates due to acute myocardial infarction (MI) and chronic ischemic heart disease have fallen since 1999. These rates fell dramatically from 2000-2009 and have remained fairly constant since then.
- Mortality rates due to chronic ischemic heart disease, atherosclerotic cardiovascular disease, and all other forms of heart disease are currently higher than rates due to acute MI.
- Mortality rates to due heart failure and hypertensive heart disease have remained fairly constant since 1999.

MORTALITY DATA - DIABETES MORTALITY RATE BY RACE/ETHNICITY  
TRAVIS COUNTY, 1999-2013



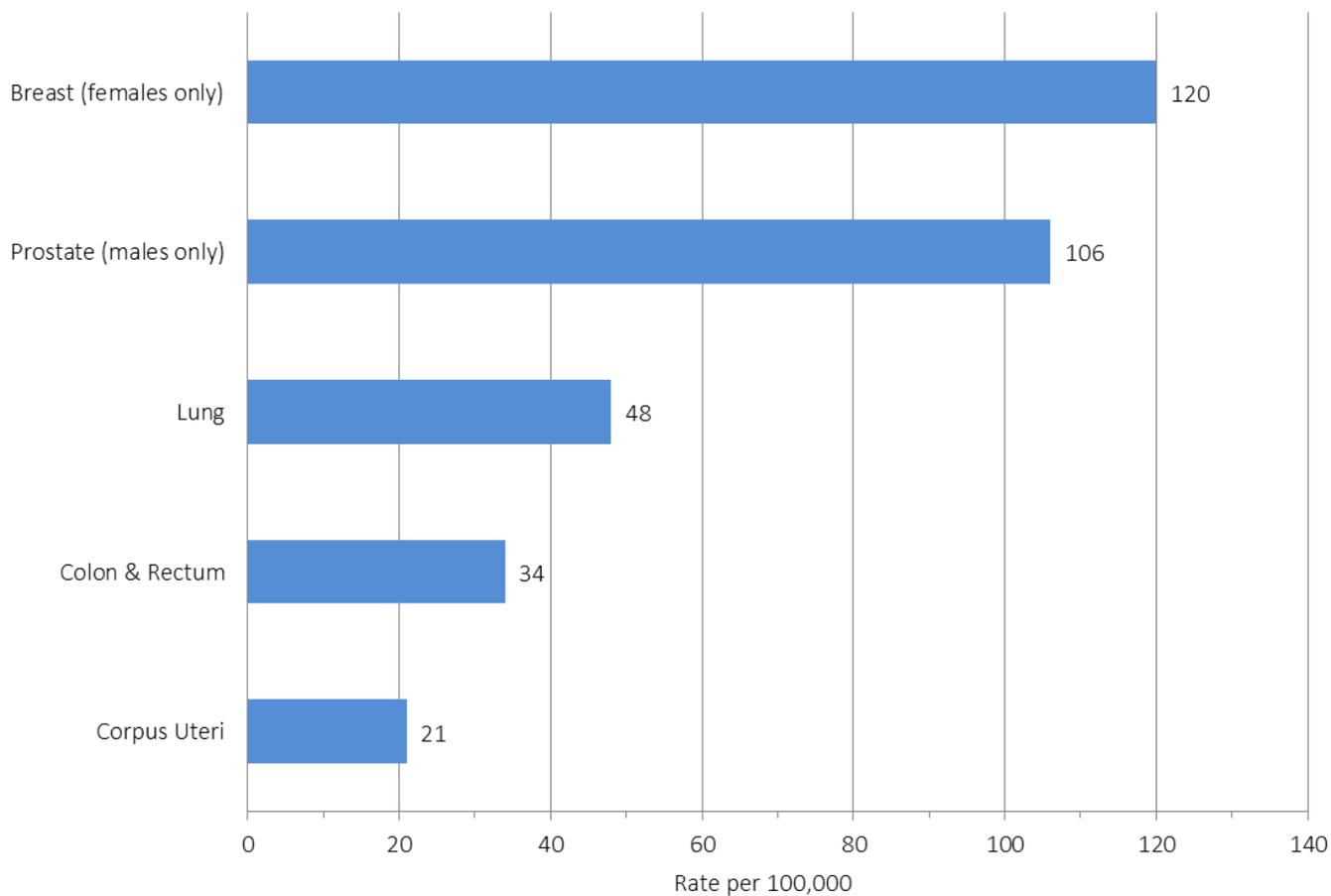
Age Adjustment Uses 2000 Standard Population

Data Source: Texas Vital Statistics, Texas Department of State Health Services, 1999-2013

- Age-adjusted mortality rate data for African-Americans are not reported in 1999, 2005-2007, 2011-2012 due to unstable estimates (small number of cases).
- Diabetes mortality rates have declined since 1999 for all races/ethnicities.
- African-Americans currently have the highest mortality rate due to diabetes, while Whites have the lowest.

CANCER INCIDENCE RATES – FIVE MOST COMMON SITES  
TRAVIS COUNTY, 2008-2012

---



Data source: Texas Cancer Registry Cancer Mortality File, 2008-2012

---

- The highest incidence rates are for breast cancer (females only) and prostate cancer (males only).
- Lung cancer has the third highest incidence rate, but the highest mortality rate (see page 23).

---

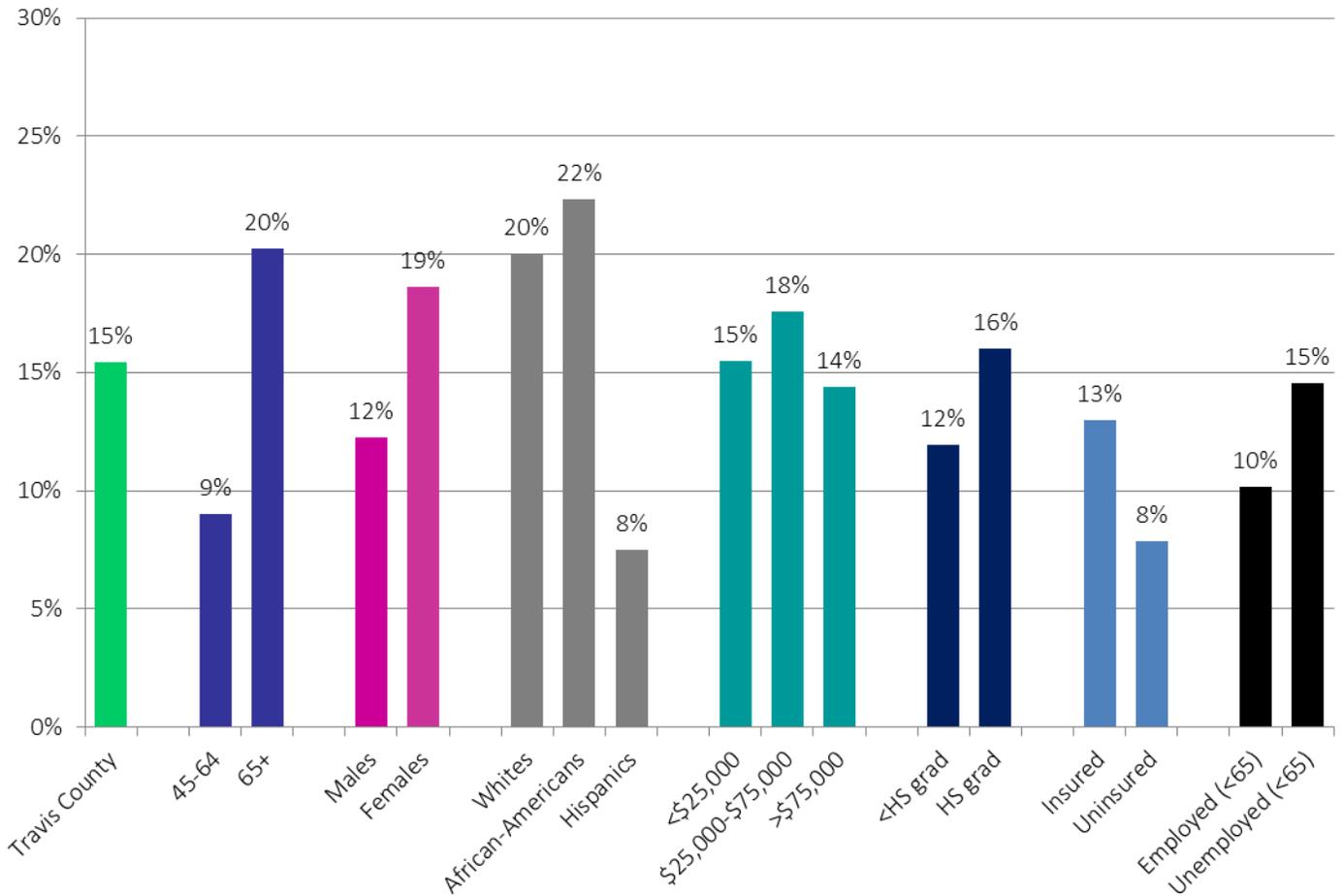
BEHAVIORAL RISK FACTOR SURVEILLANCE  
SYSTEM, 2011-2014

---

# CHRONIC DISEASE PREVALENCE

---

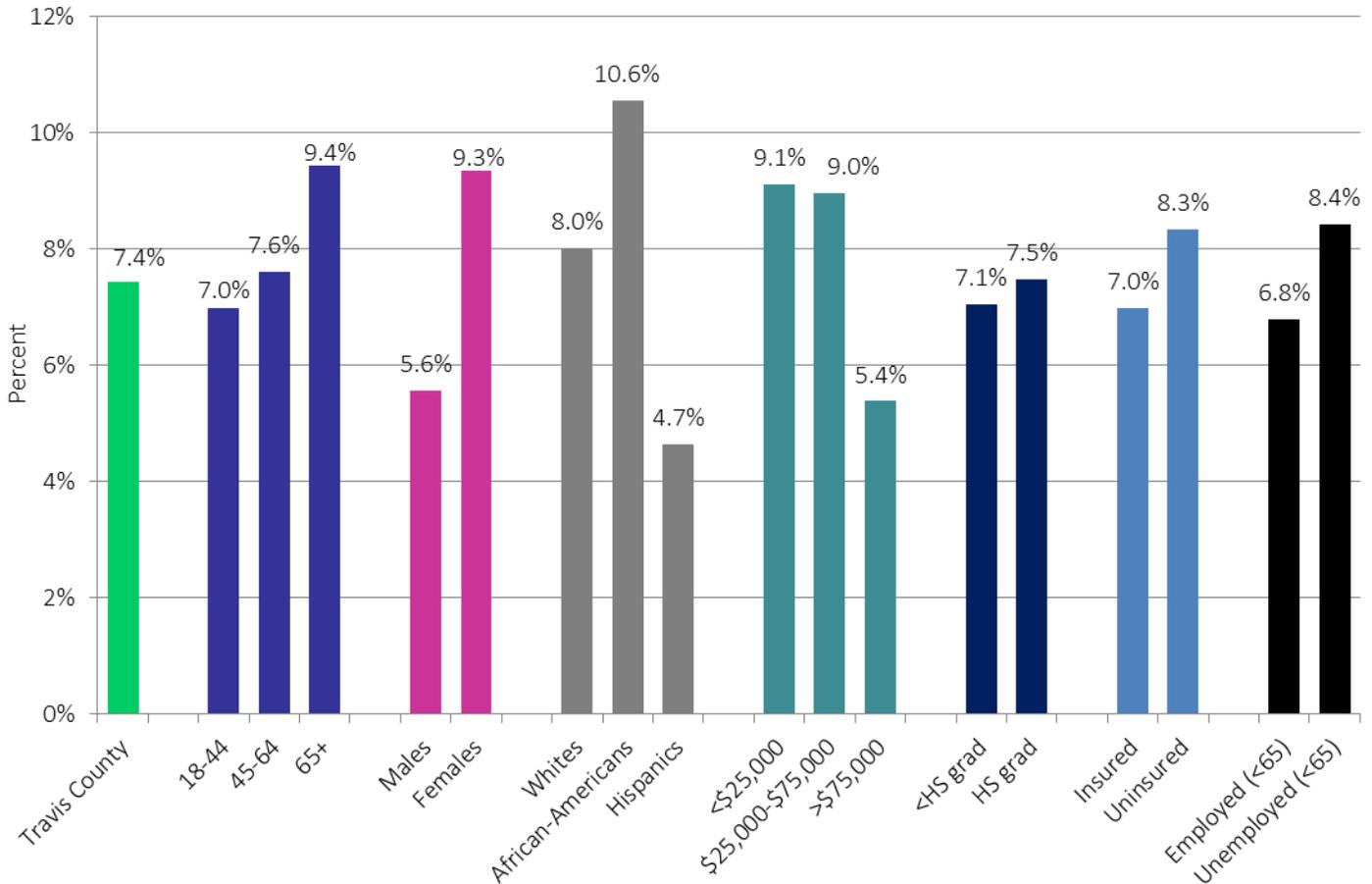
PREVALENCE OF ARTHRITIS  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Older adults, females, Whites, African-Americans, adults who have a high school diploma, adults with insurance and adults who are unemployed have a higher prevalence of arthritis.
- African-Americans have the highest percent of adults reporting that a doctor has diagnosed them with arthritis (22%).
- Hispanics have the lowest percent of adults reporting that a doctor has diagnosed them with arthritis (8%).

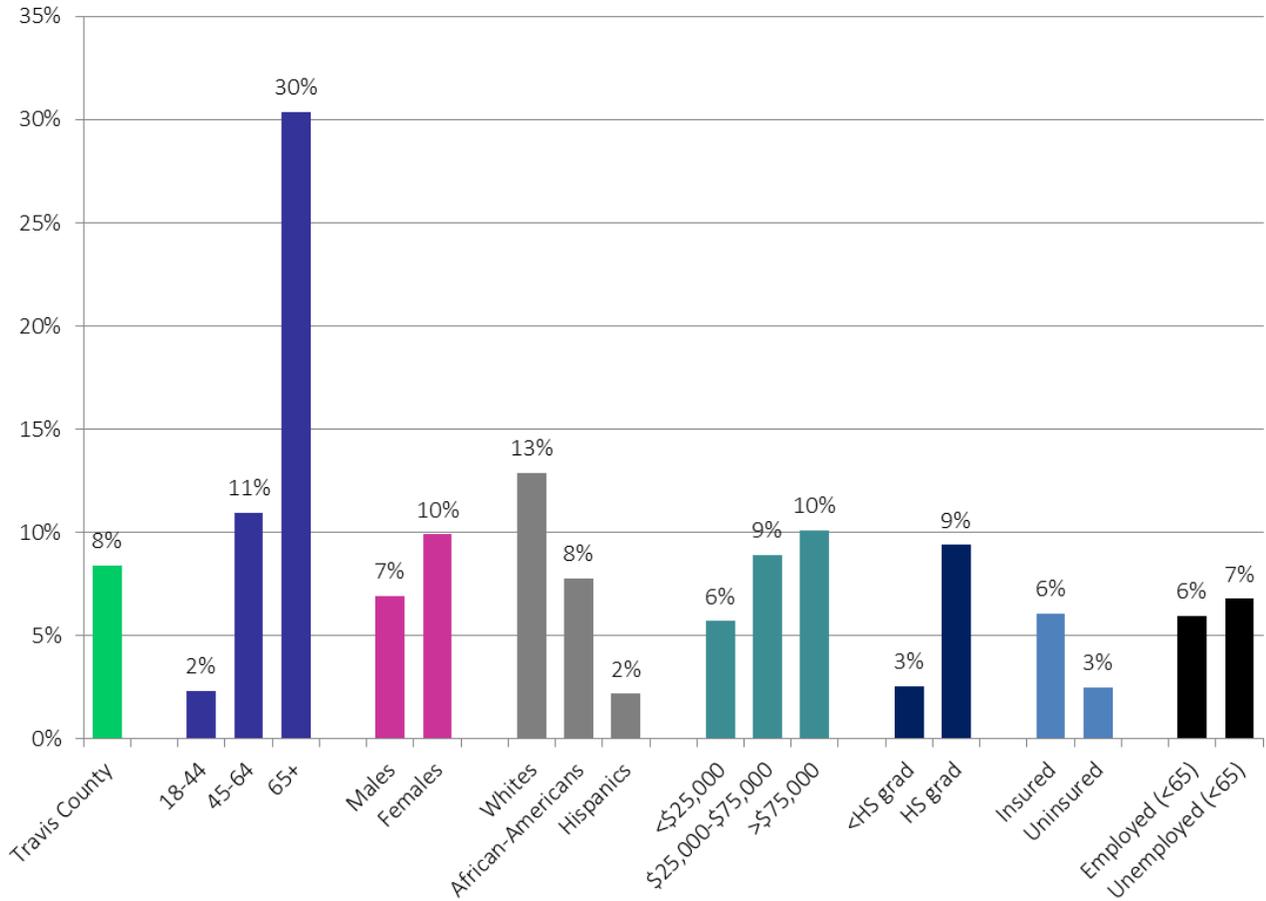
PREVALENCE OF ASTHMA  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The prevalence of asthma in Travis County overall is 7.4%.
- Older adults, females, African-Americans, lower income adults, uninsured adults, and unemployed adults have the highest prevalence of asthma.
- African-Americans have the highest percent of adults (10.6%) reporting that a doctor has diagnosed them with asthma.
- Hispanics have the lowest percent of adults (4.7%) reporting that a doctor has diagnosed them with asthma.

PREVALENCE OF EVER HAVING BEEN DIAGNOSED WITH CANCER  
TRAVIS COUNTY, 2011-2014

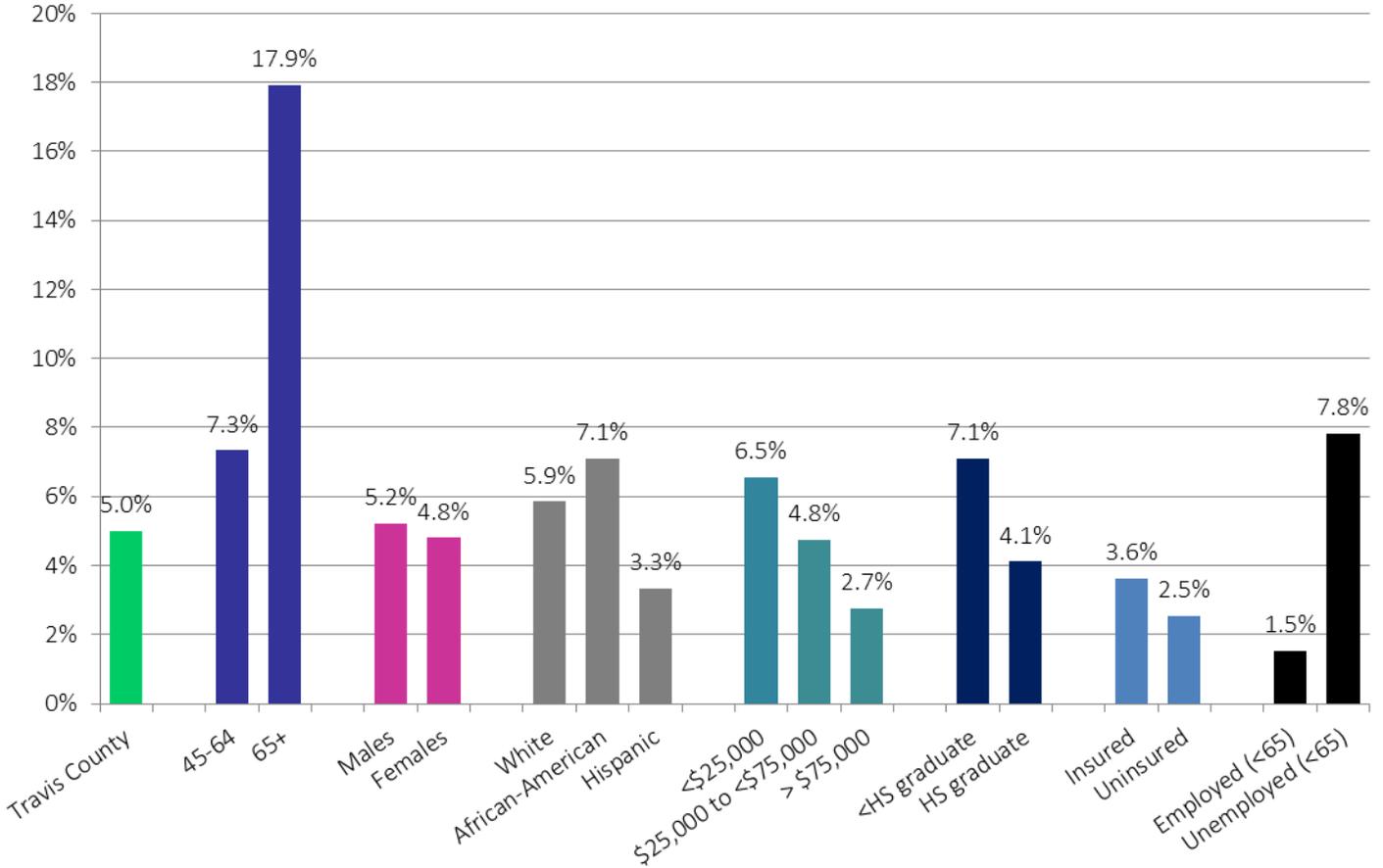


Data source: Texas Department of State Health Services BRFSS 2011-2014

- Eight percent of Travis County adults have been diagnosed with cancer at some point.
- The highest prevalence of ever having been diagnosed with cancer is among adults 65 years and older.
- Females, Whites, higher income adults, adults with a high school diploma, insured adults, and unemployed adults have a higher prevalence of ever having been diagnosed with cancer.

**PREVALENCE OF CARDIOVASCULAR DISEASE<sup>+</sup>**  
**TRAVIS COUNTY, 2011-2014**

---

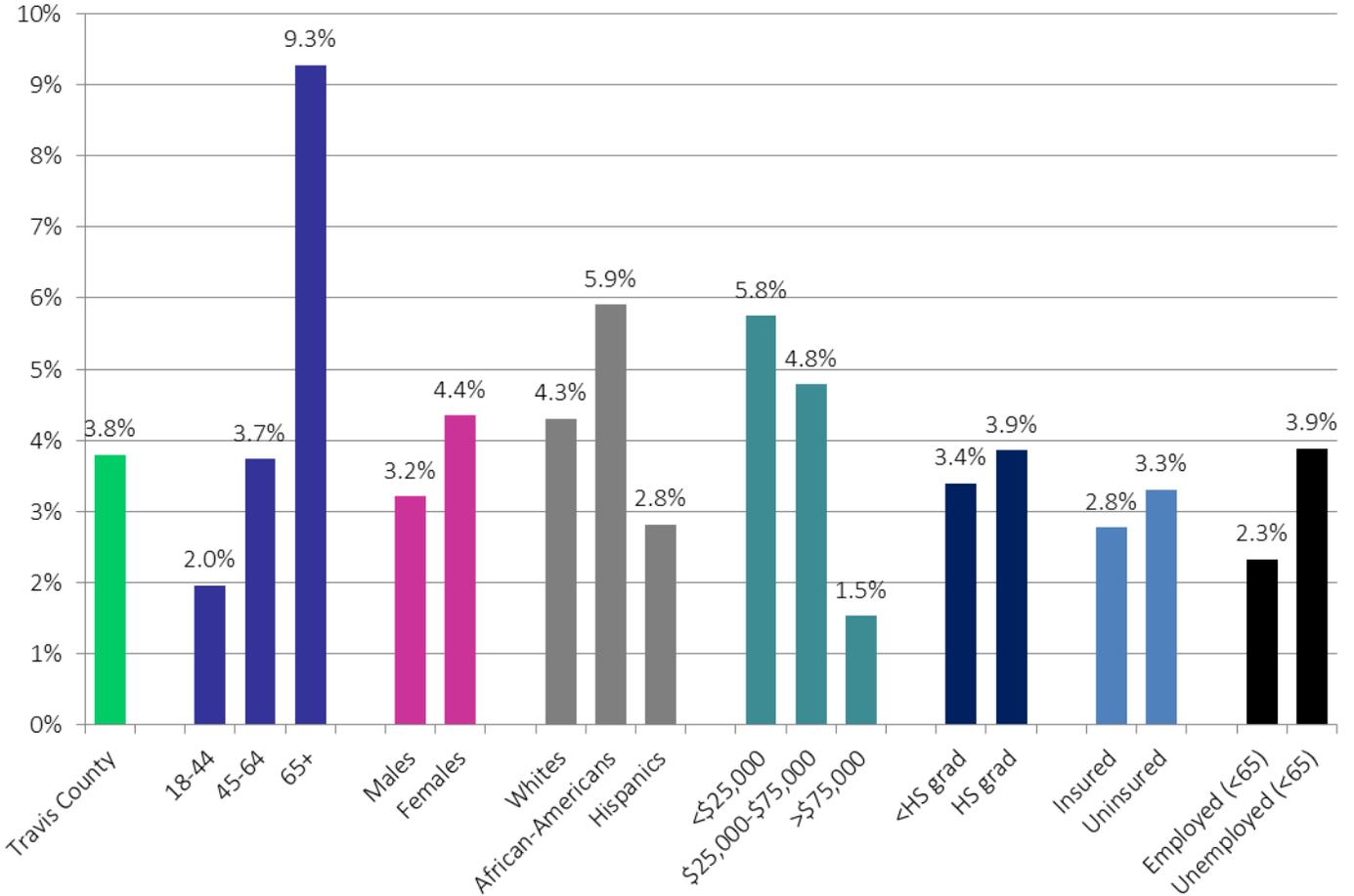


Data source: Texas Department of State Health Services BRFSS 2011-2014

<sup>+</sup>Cardiovascular disease includes both heart disease and stroke

- The highest prevalence of CVD is in adults 65 years and older
- African-Americans have a higher prevalence of CVD than Whites or Hispanics.
- Lower income adults, adults without a high school diploma, insured adults, and unemployed adults have a higher prevalence of CVD.

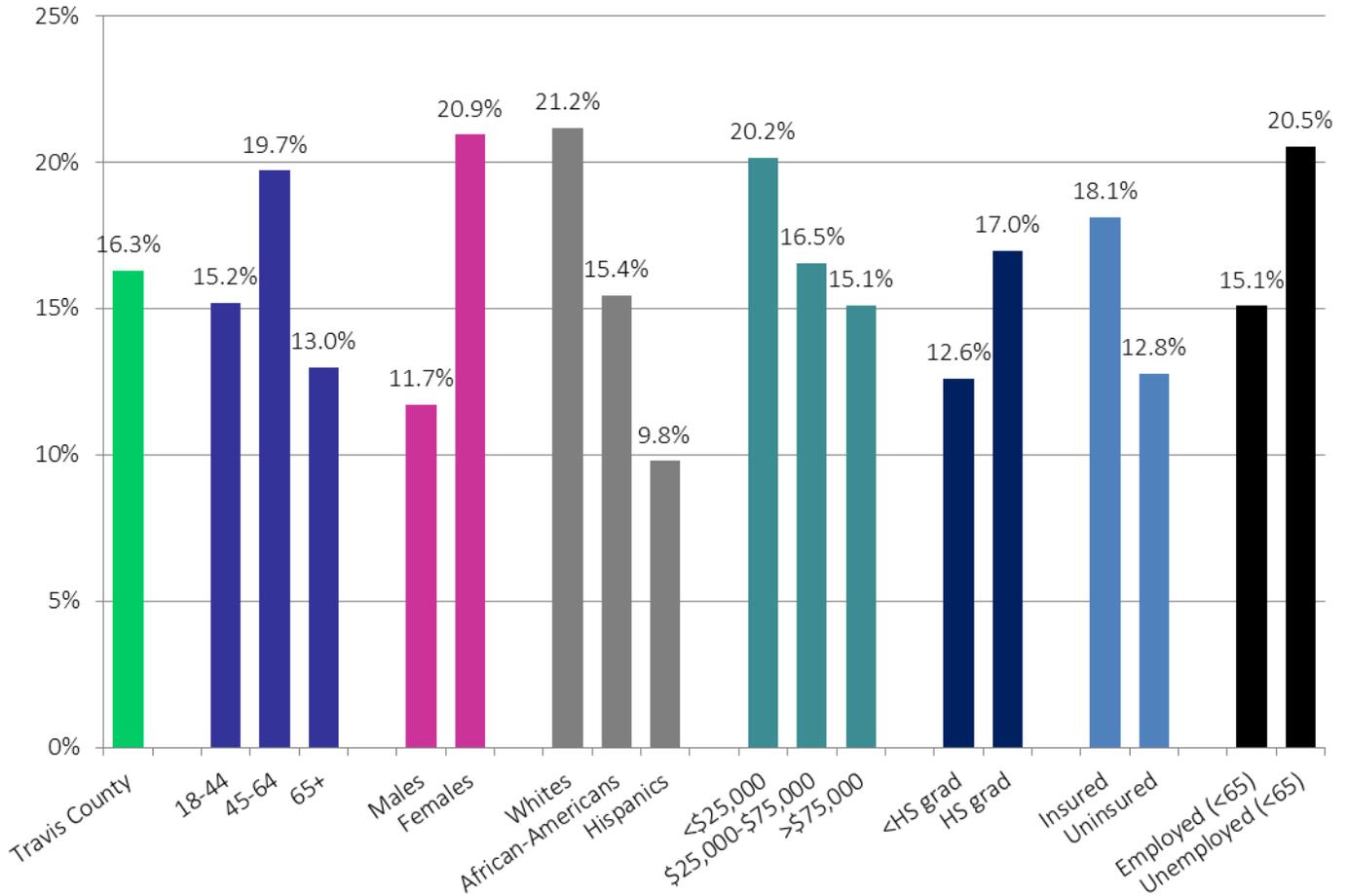
PREVALENCE OF CHRONIC PULMONARY OBSTRUCTIVE DISEASE  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The highest prevalence of COPD is in adults 65 years and older.
- Females, African-Americans, lower income adults, uninsured adults, and unemployed adults (<65 years of age) have a higher prevalence of COPD.

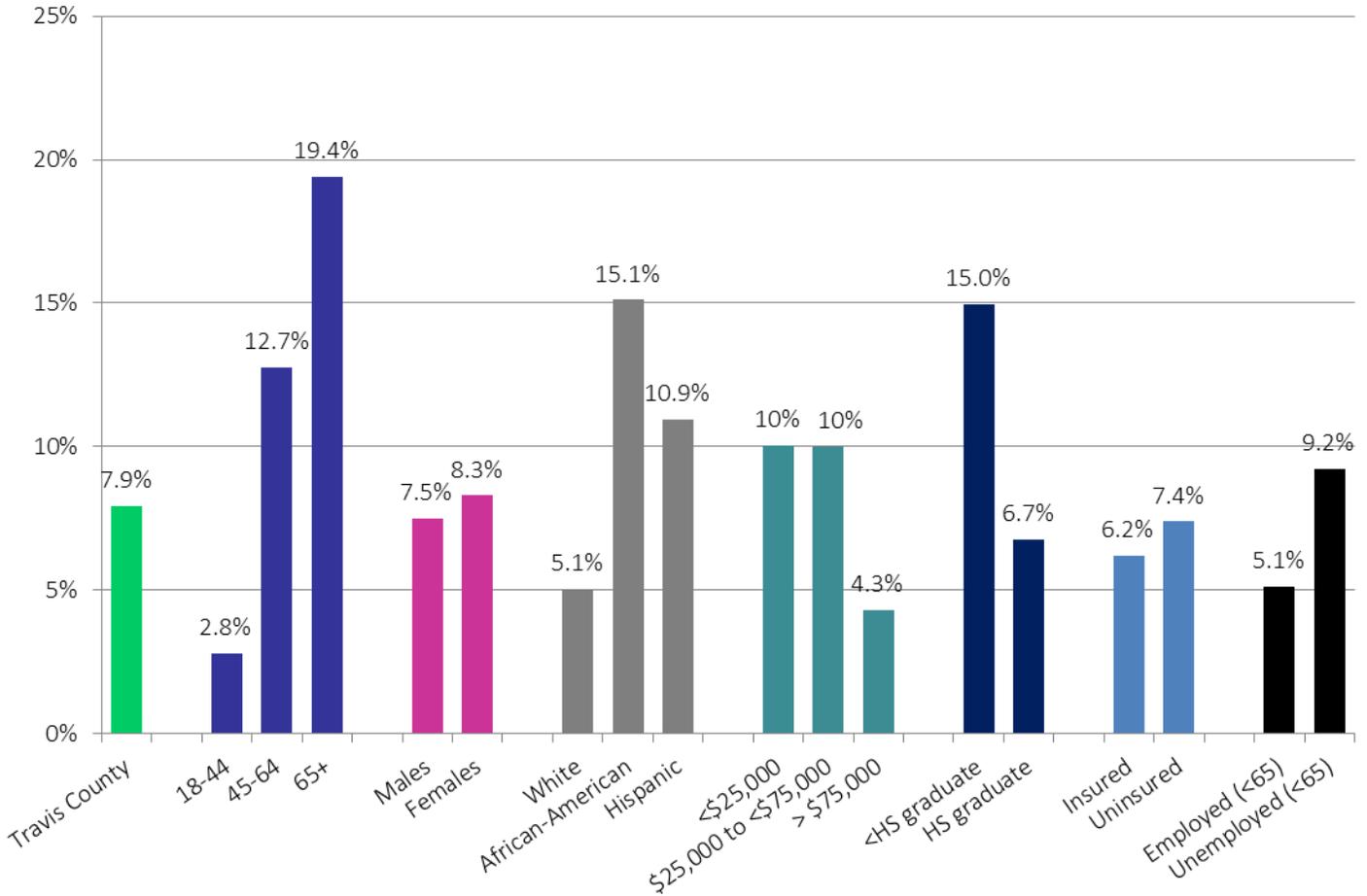
PREVALENCE OF DEPRESSION  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The prevalence of depression in Travis County adults is 16.3%. This equates to more than 187,000 adults in Travis County with depression (US Census estimate 2014).
- The highest prevalence of depression is in adults aged 45-64, Whites, females, lower income adults, high school graduates, insured adults and adults who are unemployed.

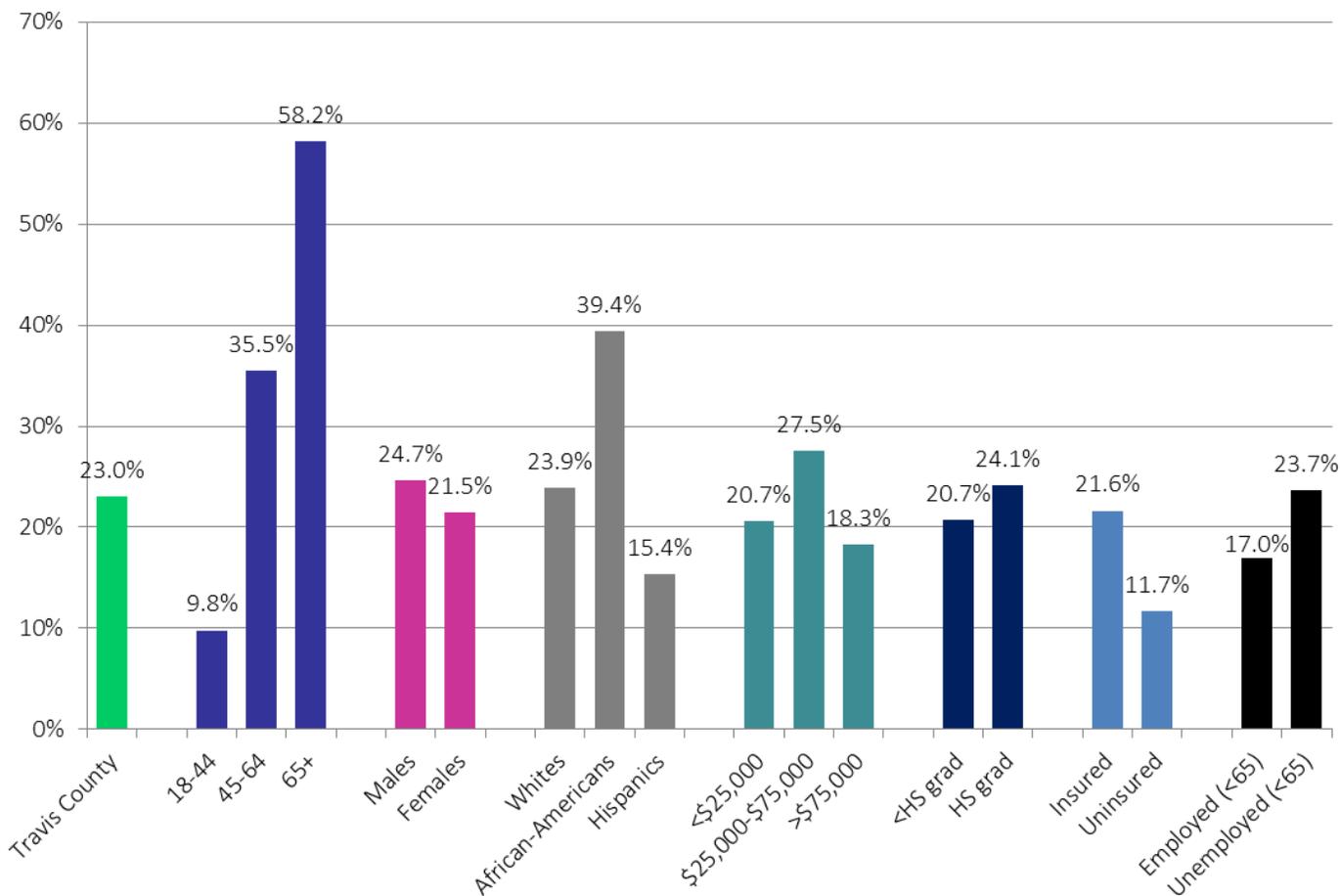
PREVALENCE OF DIABETES  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Females have a higher prevalence of diabetes than males.
- The highest prevalence of diabetes is in adults 65 years and older.
- African-American adults have the highest prevalence of diabetes, followed by Hispanics and Whites.
- Diabetes prevalence is higher in lower income adults, adults without a high school diploma, uninsured adults, and unemployed adults.

PREVALENCE OF HIGH BLOOD PRESSURE  
TRAVIS COUNTY, 2011-2013\*

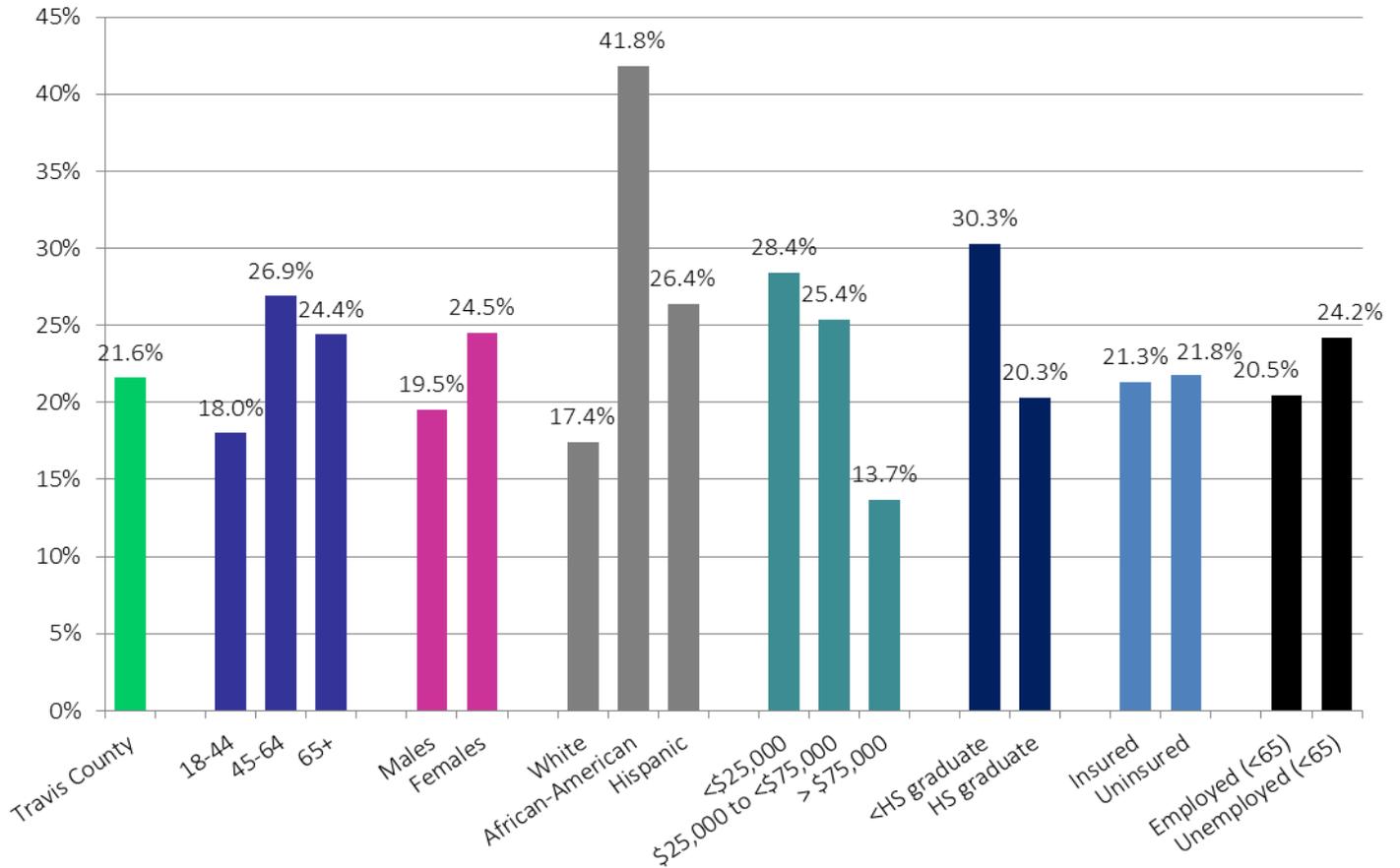


Data source: Texas Department of State Health Services BRFSS 2011-2013

\*This question was not asked in 2014

- The highest prevalence of high blood pressure is in adults 65 and older.
- Adults 45-64, 65 years and older, males, African-Americans, adults with lower and middle incomes, adults with a high school diploma, insured adults, and unemployed adults (<65 years of age) have a higher prevalence of high blood pressure.

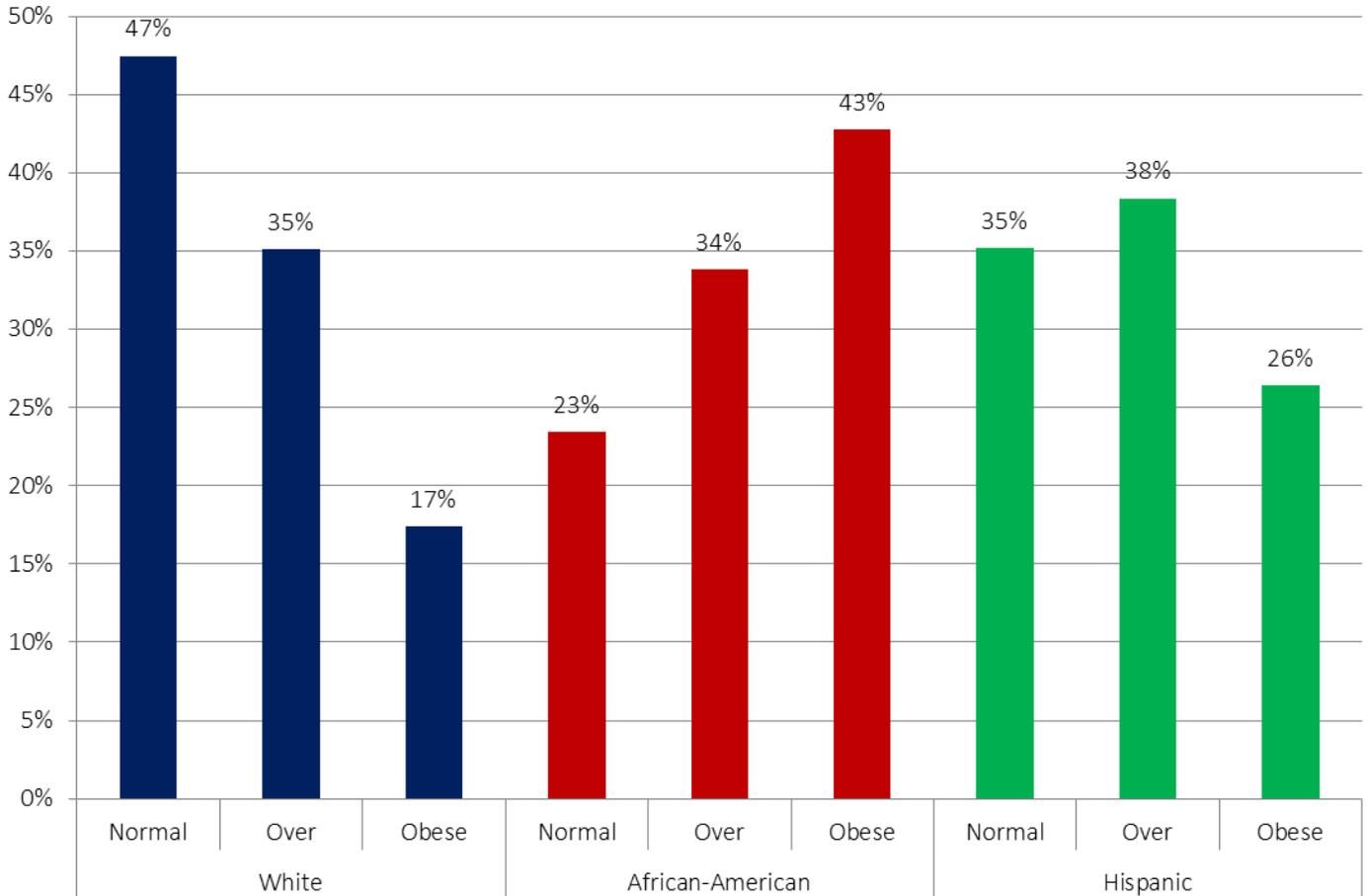
PREVALENCE OF OBESITY  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- African-Americans have the highest prevalence of obesity, followed by Hispanics and Whites.
- There is a higher prevalence of obesity in females than in males.
- Older adults (age >45 years) have a higher prevalence of obesity than adults under the age of 45.
- Adults with an annual income <\$75,000, adults without a high school diploma, and unemployed adults have a higher prevalence of obesity.

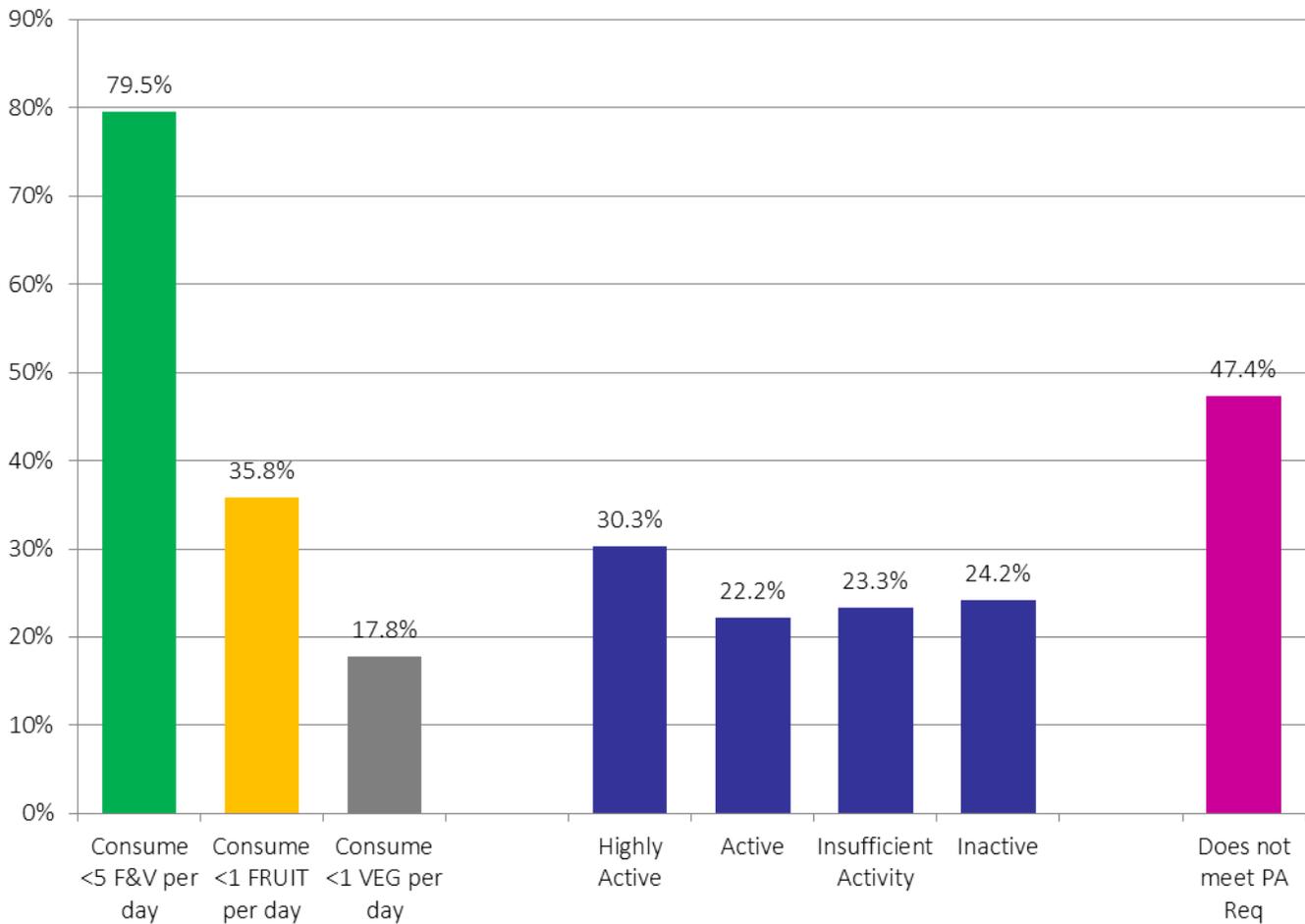
PREVALENCE OF OVERWEIGHT/OBESITY IN ADULTS BY RACE/ETHNICITY  
 TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- African-Americans have the highest prevalence of obesity (43%), as well as the highest prevalence of overweight and obesity (77%).
- Twenty-six percent of Hispanics are obese, and 64% of Hispanics are overweight or obese.
- Fifty-two percent of Whites are obese or overweight. Whites have the lowest prevalence of overweight and obesity combined

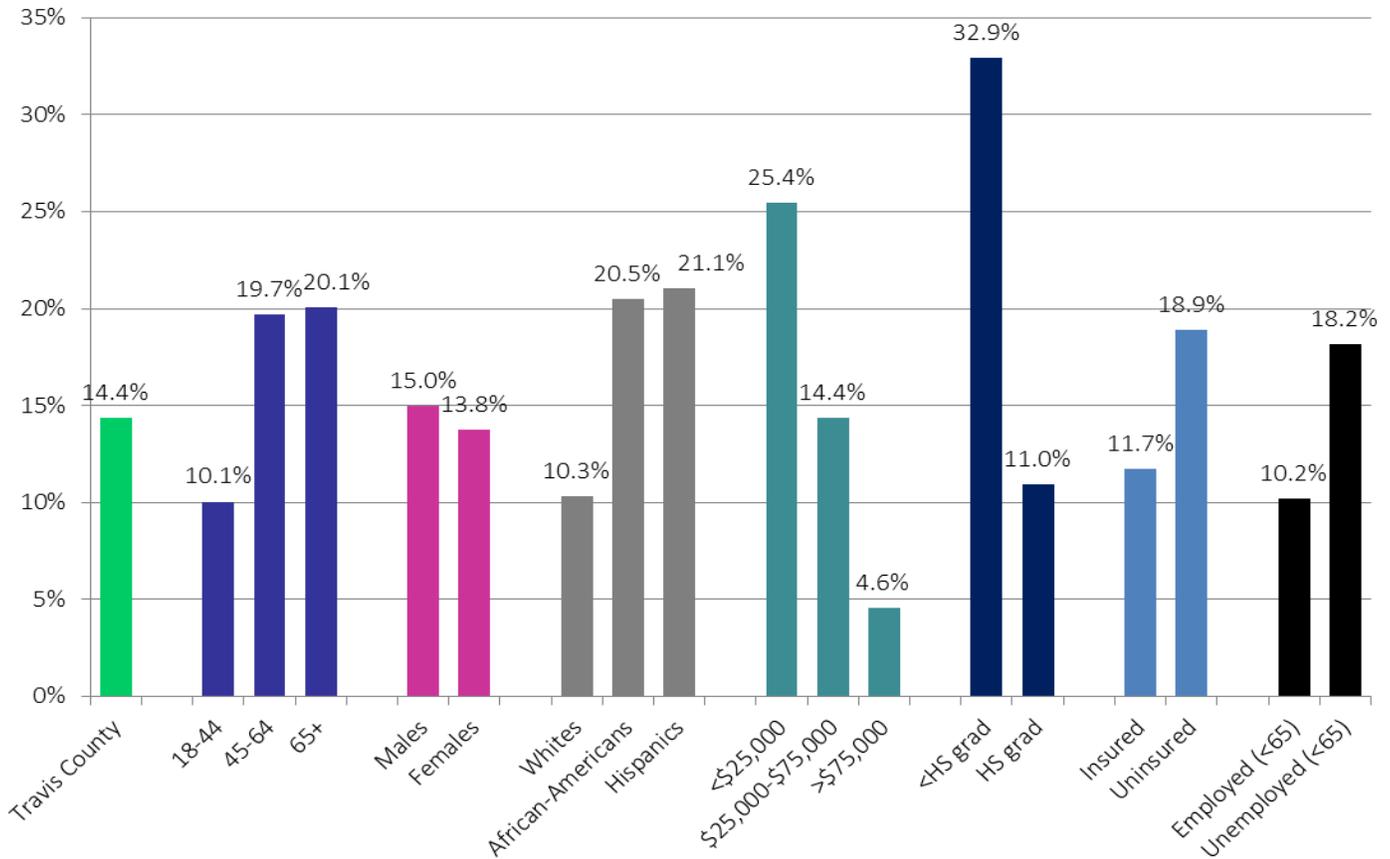
**NUTRITION & PHYSICAL ACTIVITY INDICATORS  
TRAVIS COUNTY, 2011 & 2013**



Data source: Texas Department of State Health Services BRFSS 2011&2013

- Almost 80% of Travis County residents consume less than the recommended five servings of fruits and vegetables per day. Approximately 36% percent consume less than one serving of fruits, and approximately 18% consume less than 1 serving of vegetables per day.
- Only 52.5% of Travis County residents are meeting the recommended physical activity requirements of 150 minutes of moderate to vigorous physical activity per week.

**PREVALENCE OF FAIR TO POOR SELF-RATED GENERAL HEALTH  
TRAVIS COUNTY, 2011-2014**

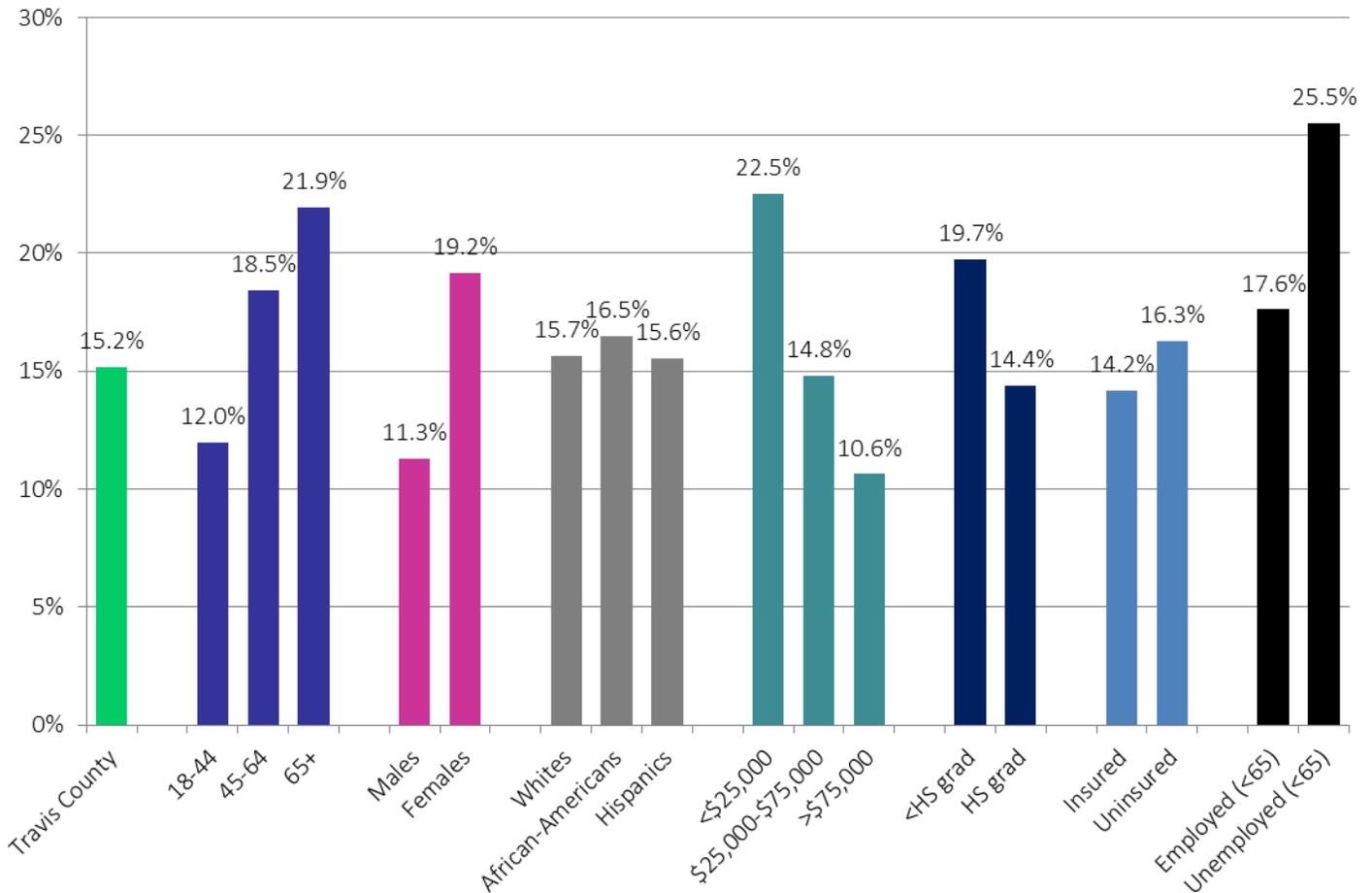


Data source: Texas Department of State Health Services BRFSS 2011-2014

- Fair to poor self-rated general health is highest in older adults, males, and in African-Americans, Hispanics, low income residents, residents with less than a high school diploma, residents who are uninsured and unemployed residents.
- Hispanics & African Americans have a prevalence of fair to poor self-rated general health that is 50% higher than the Travis County population as a whole.
- Lower income residents (<\$25,000) have a prevalence of fair to poor self-rated general health that is five times higher than higher income residents (>\$75,000).
- Poor self-rated health is a strong predictor of mortality. Persons with poor self-rated health have a mortality risk that is twice as high as persons who rate their health as excellent.<sup>‡</sup>

<sup>‡</sup> DeSalvo KB, Bloser N, Reynolds K, He J, Muntner P. Mortality Prediction with a Single General Self-Rated Health Question: A Meta-Analysis. *Journal of General Internal Medicine*. 2006; 21(3):267-275.

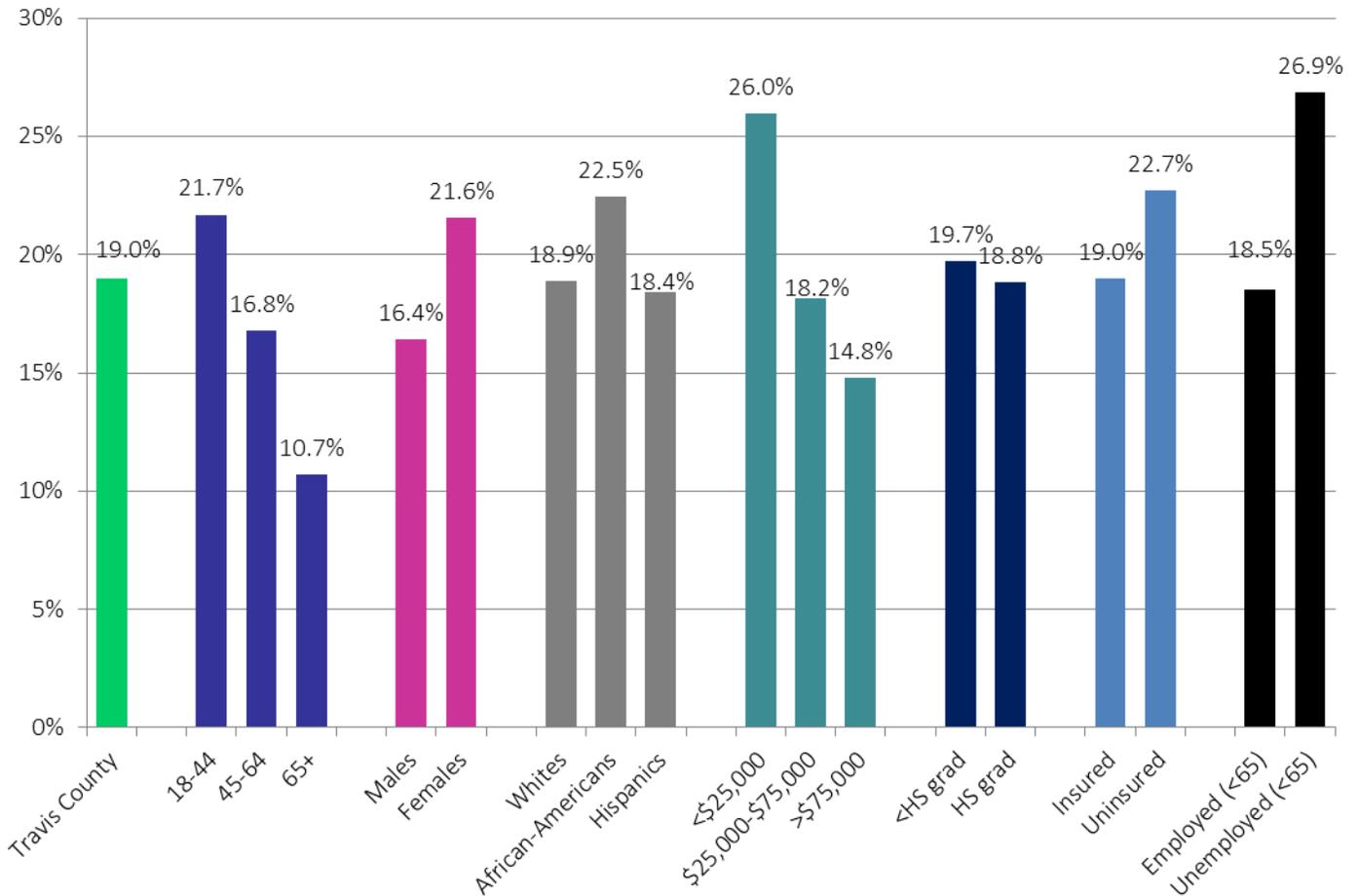
PERCENT REPORTING FIVE OR MORE DAYS PER MONTH PHYSICAL HEALTH NOT GOOD  
TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- A higher percentage of older adults, females, low income residents, adults without a high school diploma, adults who are uninsured, and adults who are unemployed report five or more days per month that their physical health is not good.
- Each of these groups has a higher prevalence of reporting 5 or more days of poor physical health than the population of Travis County as a whole (15.2%).
- Whites, African-Americans, and Hispanics have a higher prevalence of reporting 5 or more days of poor physical health per month than the population of Travis County as a whole. Other races (not shown) have a lower prevalence (9.2%).

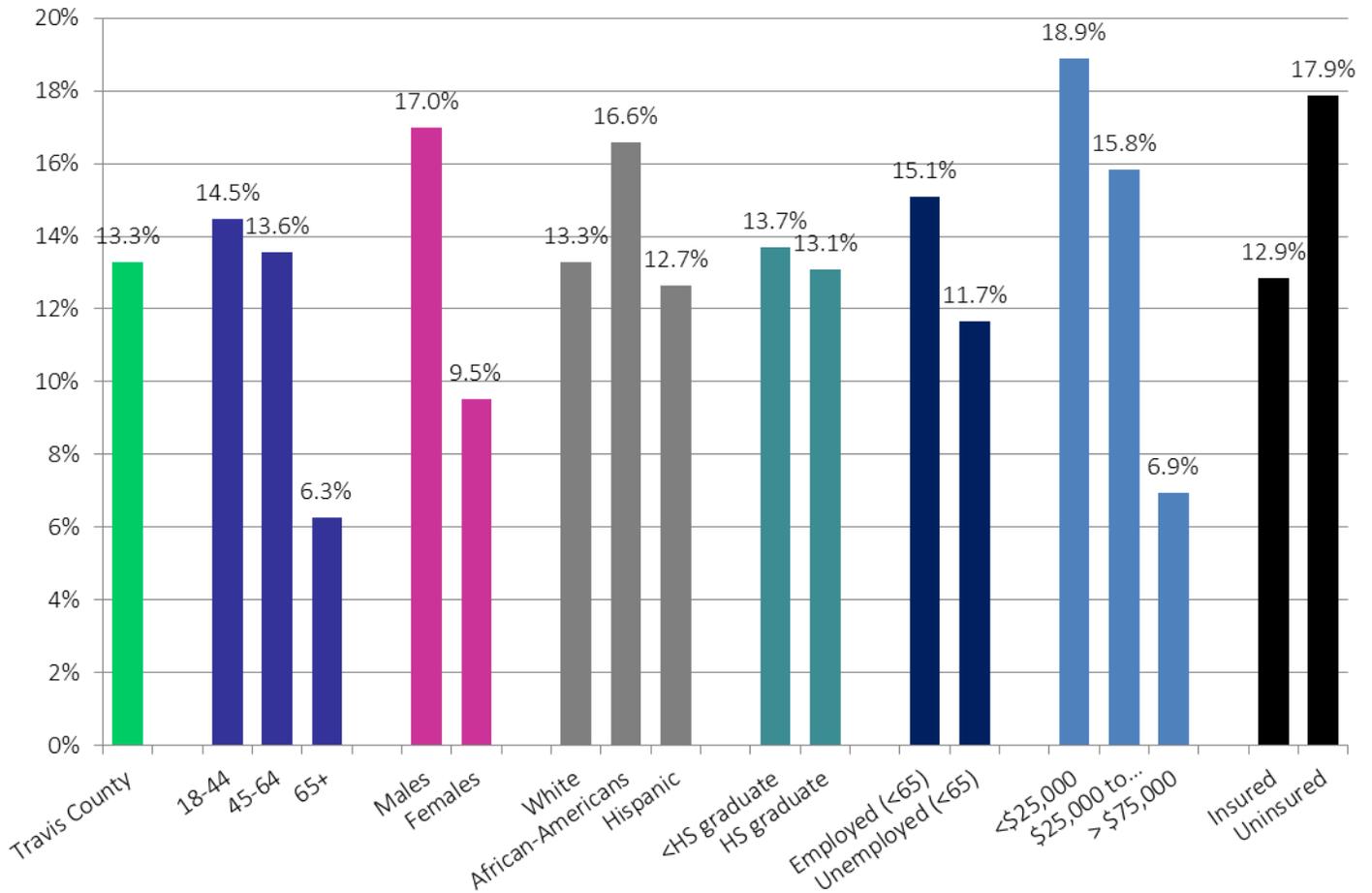
PERCENT REPORTING FIVE OR MORE DAYS PER MONTH MENTAL HEALTH NOT GOOD  
 TRAVIS COUNTY, 2011-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- A higher percentage of younger adults, females, African-Americans, low income residents, adults with less than a high school diploma, adults who are uninsured, and adults who are unemployed report five or more days per month that their mental health is not good.
- Each of these groups has a higher prevalence of reporting 5 or more days of poor mental health per month than the population of Travis County as a whole (20%).

**SMOKING PREVALENCE IN ADULTS  
TRAVIS COUNTY, 2011-2014**

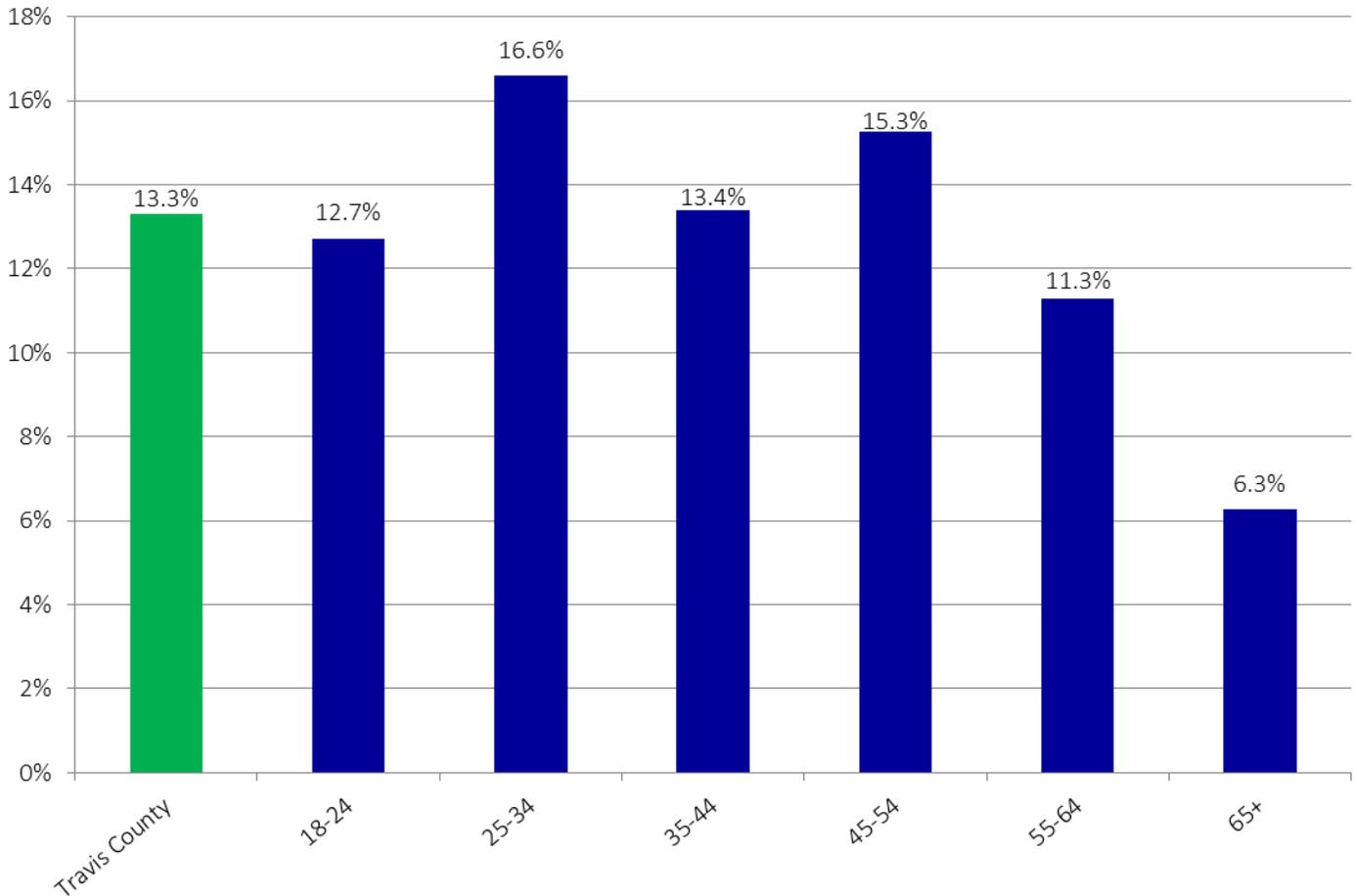


Data source: Texas Department of State Health Services BRFSS 2011-2014

- A higher percent of males are current smokers than females.
- The highest prevalence of smoking is among adults 18-44 years of age.
- African-Americans have the highest smoking prevalence (16.6%), followed by Whites (13.3%) and Hispanics (12.7%).
- Higher prevalence of smoking exists among adults without a high school diploma, employed adults, low income adults, and uninsured adults.

SMOKING PREVALENCE IN ADULTS BY AGE GROUP  
TRAVIS COUNTY, 2011-2014

---



Data source: Texas Department of State Health Services BRFSS 2011-2014

---

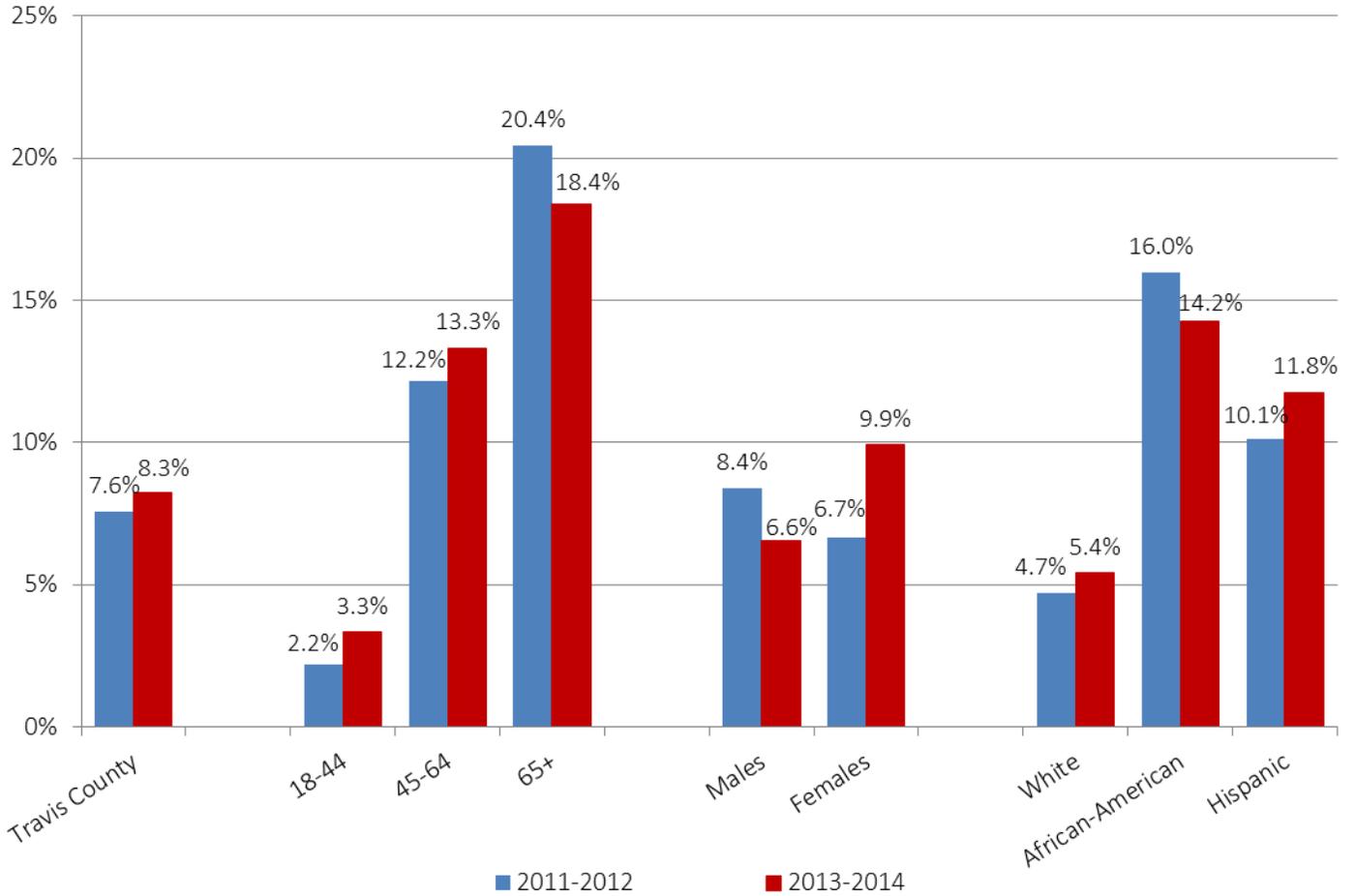
- Adults aged 25-34 have the highest prevalence of smoking (16.6%), and adults aged 65 and older have the lowest prevalence of smoking (6.3%).
- Adults aged 25-34, 35-44, and 45-54 have higher smoking prevalence than Travis County as a whole.

---

# TRENDS IN CHRONIC DISEASE

---

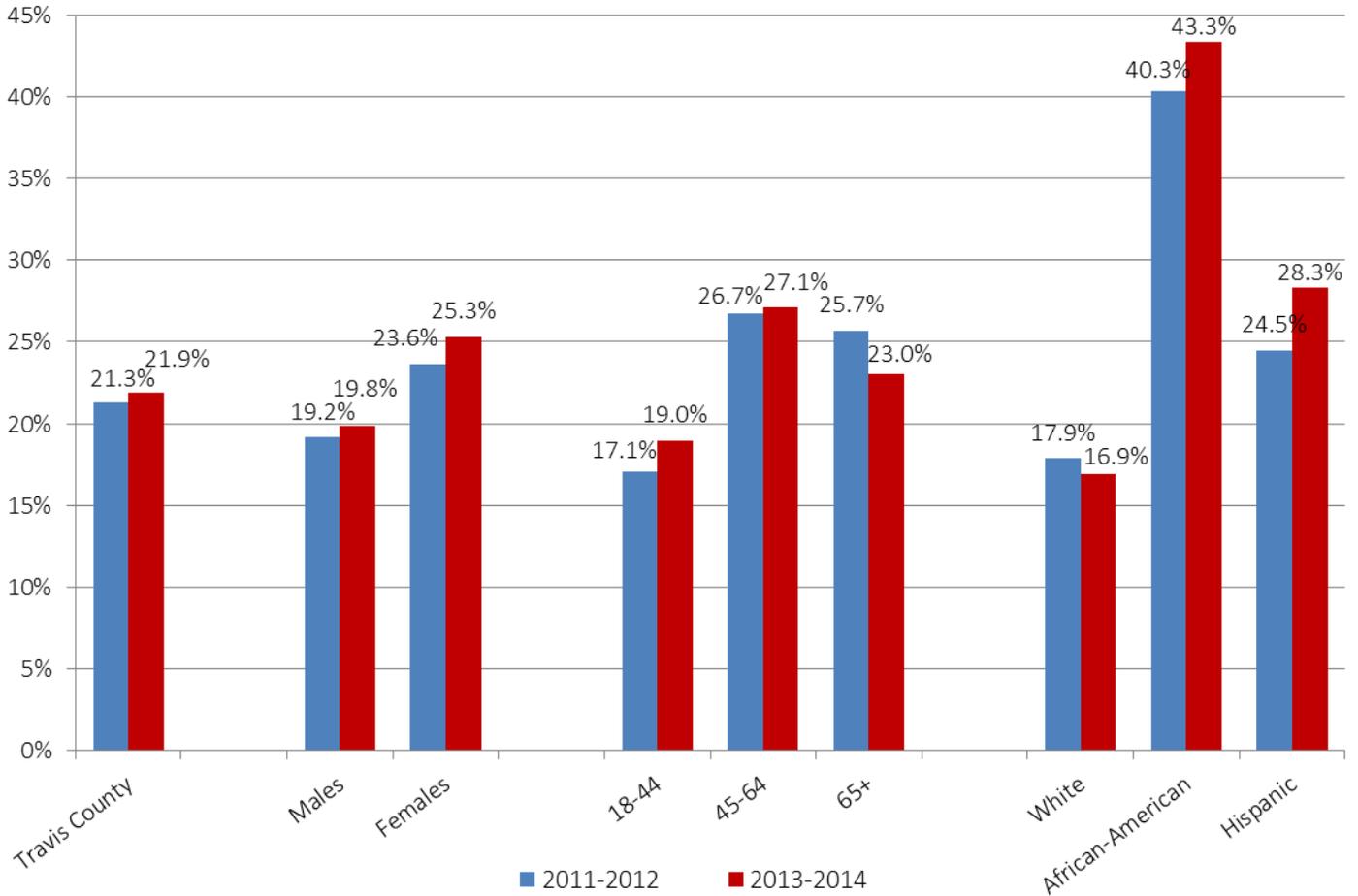
**CHANGE IN DIABETES PREVALENCE  
TRAVIS COUNTY, 2011-2012 & 2013-2014**



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The prevalence of diabetes in Travis County adults rose between 2011 and 2014.
- Diabetes prevalence increased among adults age 18-44 and 45-64, females, Whites and Hispanics.
- Among adults aged 65+, males, and African-Americans, diabetes prevalence decreased.

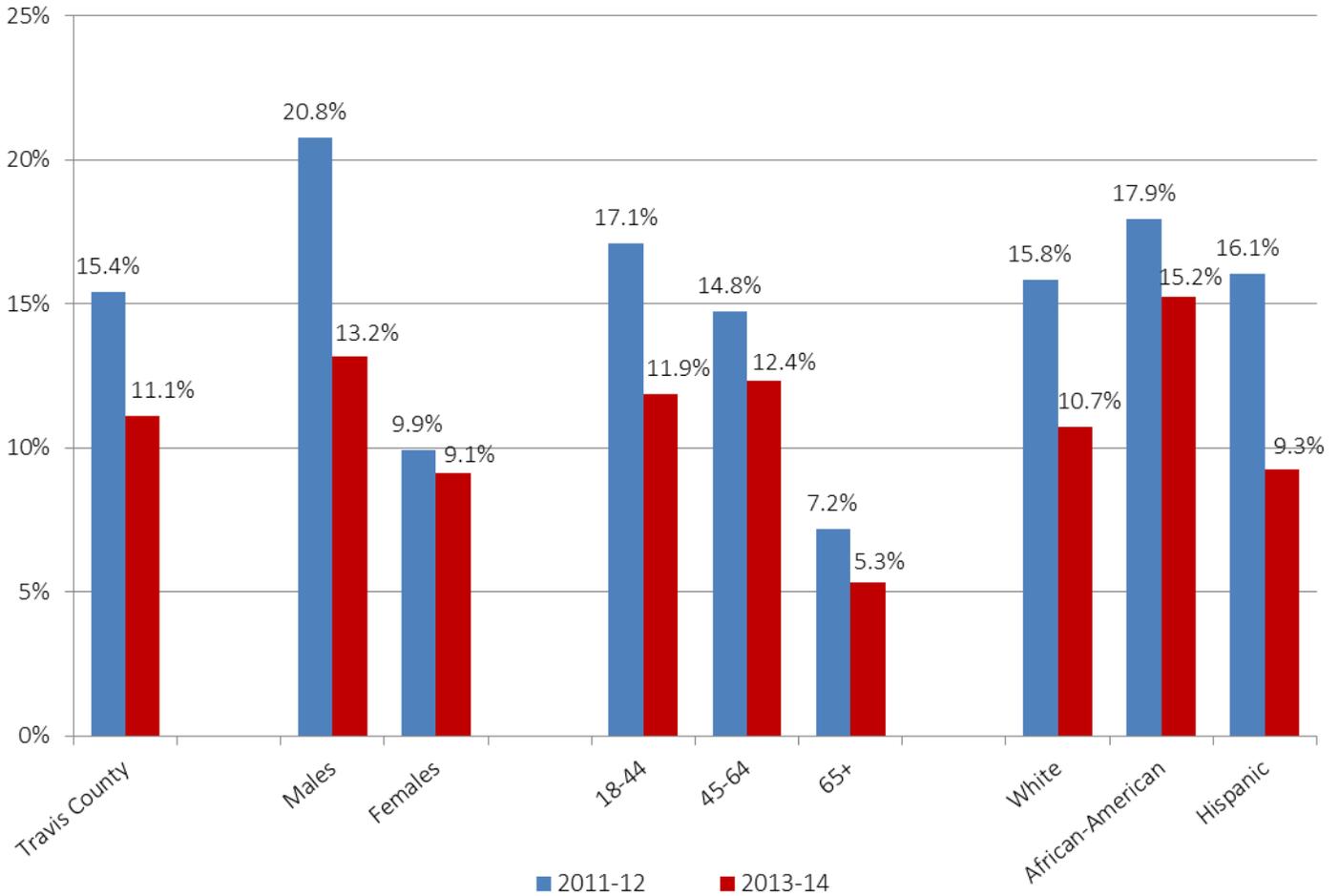
**CHANGE IN OBESITY PREVALENCE  
TRAVIS COUNTY, 2011-2012 & 2013-2014**



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The prevalence of obesity in Travis County adults rose between 2011 and 2014.
- Obesity prevalence decreased among adults aged 65+ and Whites.
- The greatest increase in obesity prevalence was among Hispanics (15.5%).

**CHANGE IN SMOKING PREVALENCE  
TRAVIS COUNTY, 2011-2012 & 2013-2014**

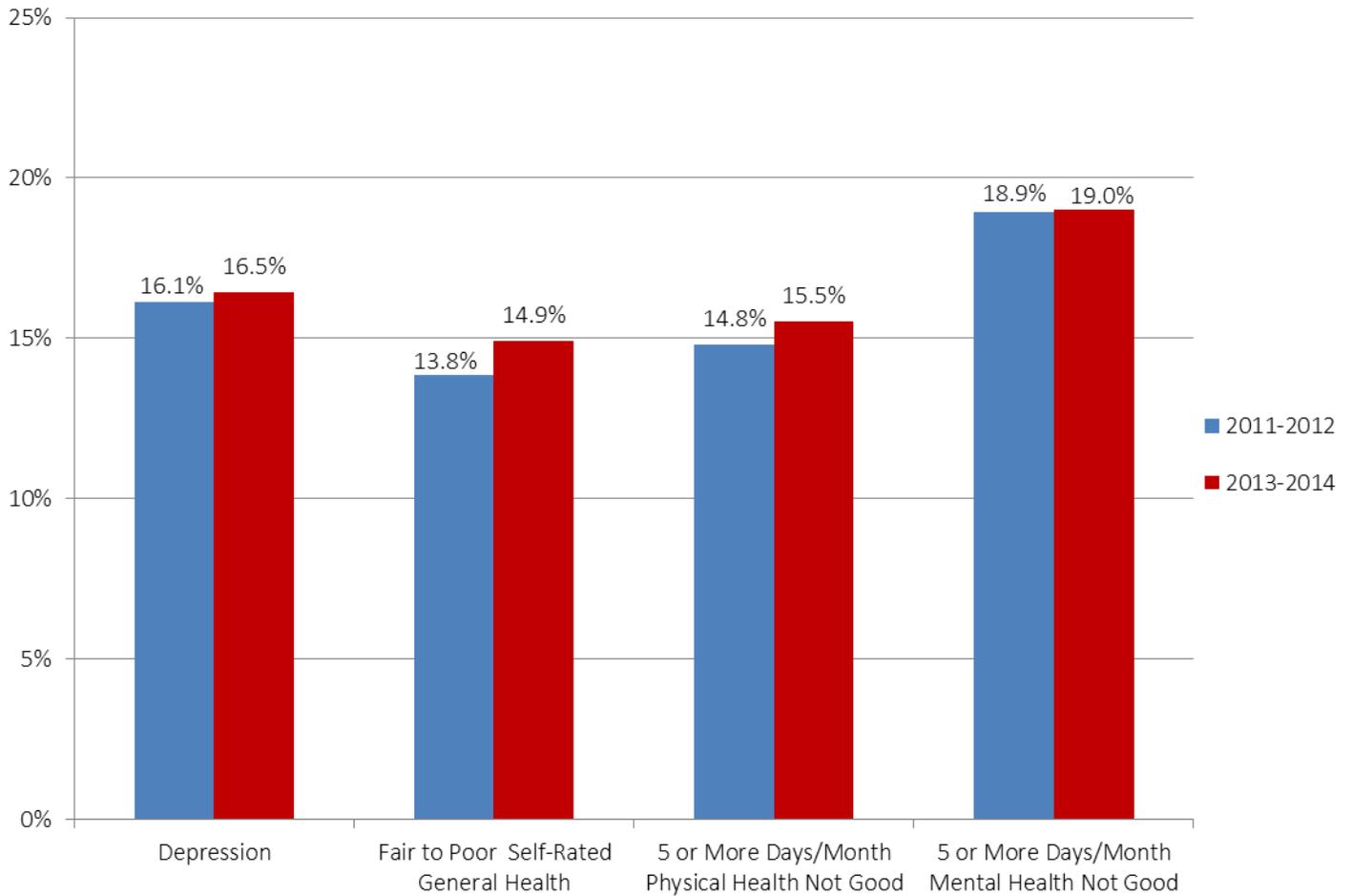


Data source: Texas Department of State Health Services BRFSS 2011-2014

- The prevalence of smoking in Travis County adults decreased between 2011 and 2014.
- Smoking prevalence decreased among men, women, all age groups, and all races/ethnicities.
- The largest decrease in smoking prevalence was among Hispanics (42.2%) and among males (36.5%)

CHANGE IN DEPRESSION & SELF-RATED OVERALL, PHYSICAL, & MENTAL HEALTH  
TRAVIS COUNTY, 2011-2012 & 2013-2014

---

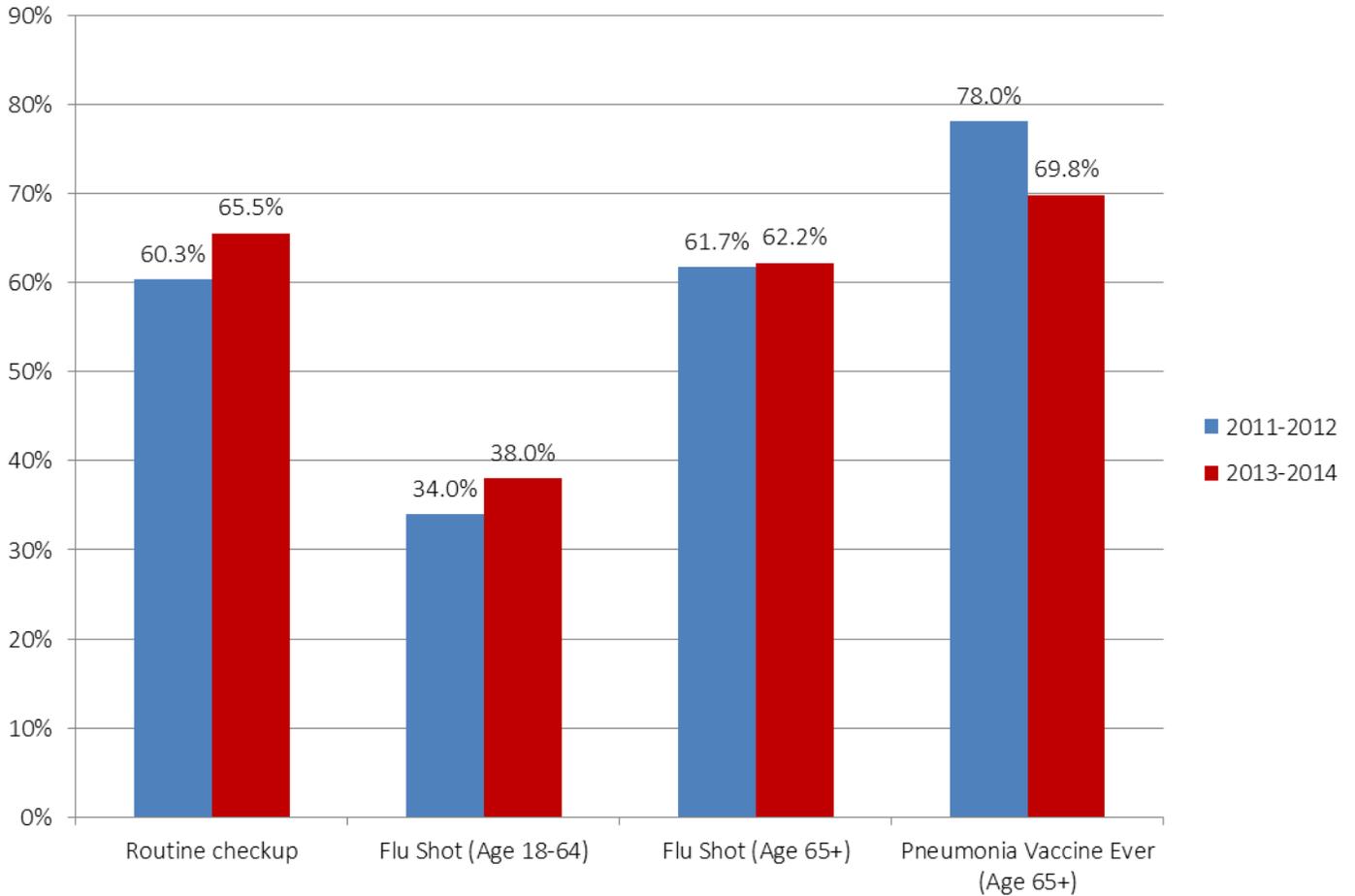


Data source: Texas Department of State Health Services BRFSS 2011-2014

---

- The prevalence of depression and poor self-rated overall and physical health rose between 2011 and 2014.

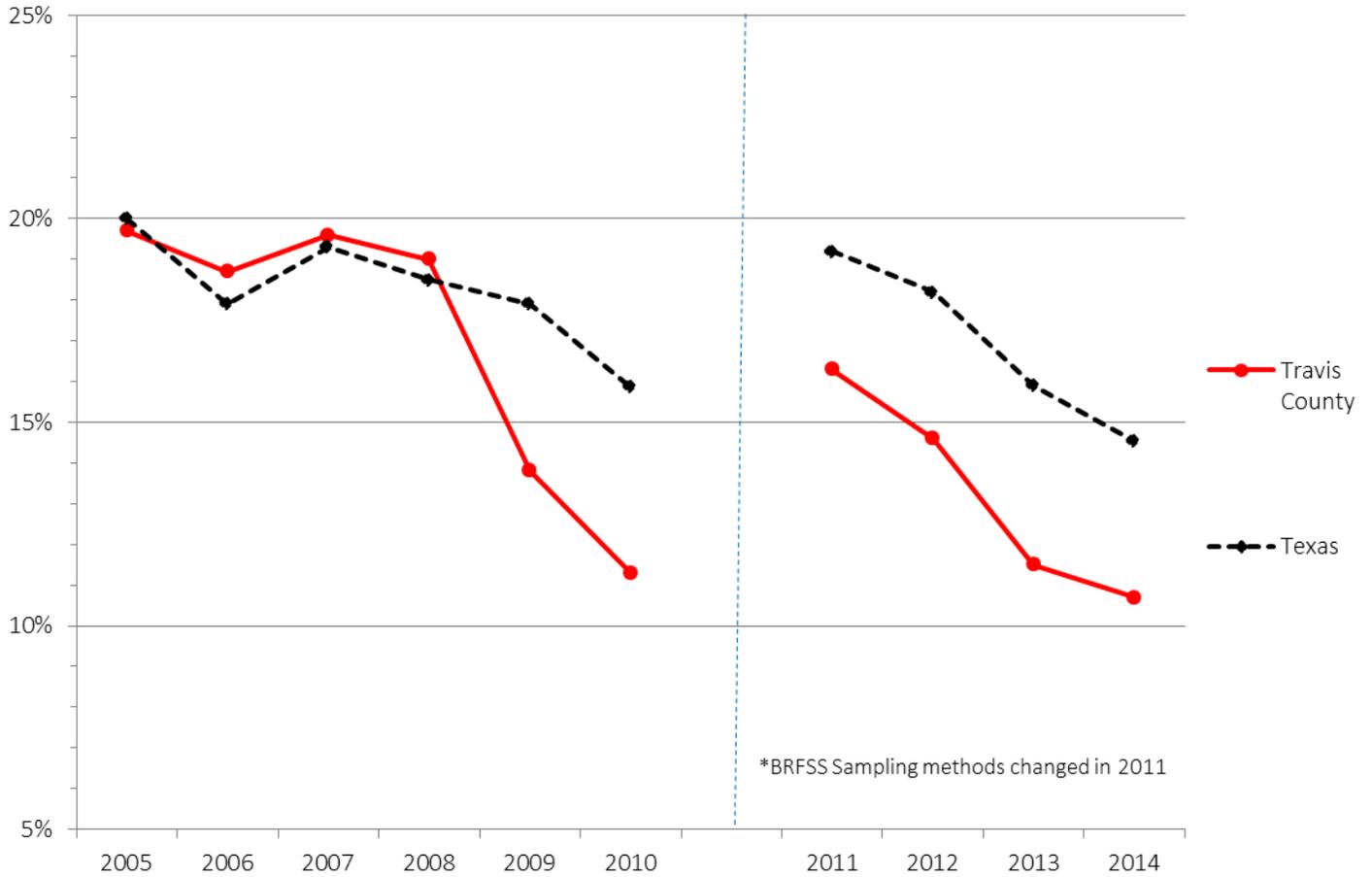
CHANGE IN PAST YEAR HEALTH SCREENING & VACCINATIONS  
TRAVIS COUNTY, 2011-2012 & 2013-2014



Data source: Texas Department of State Health Services BRFSS 2011-2014

- The percent of adults receiving a yearly routine check-up increased from 2011-2014.
- The percent of adults 18-64 and 65+ receiving a flu shot in the previous year increased from 2011-2014.
- The percent of adults age 65+ who have ever received the pneumonia vaccine decreased by over 8.2% between 2011-2012 and 2013-2014.

SMOKING PREVALENCE TREND IN TRAVIS COUNTY AND TEXAS  
TRAVIS COUNTY, 2005-2014



Data source: Texas Department of State Health Services BRFSS 2005-2014

- Smoking prevalence is lower in Travis County than in Texas.
- Smoking prevalence decreased from 2005-2010 and from 2011-2014 in Travis County.

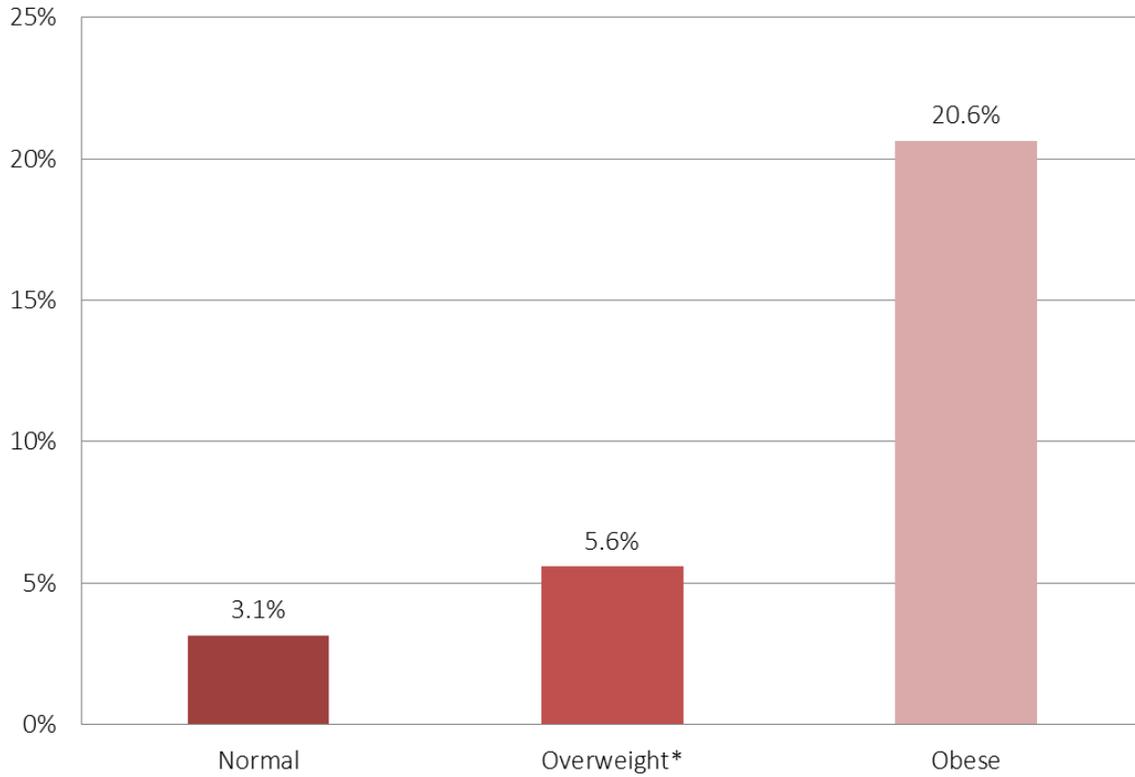
---

# CO-MORBIDITIES IN CHRONIC DISEASE

---

PREVALENCE OF DIABETES BY BODY MASS INDEX  
TRAVIS COUNTY, 2011-2014

---



Data source: Texas Department of State Health Services BRFSS 2011-2014

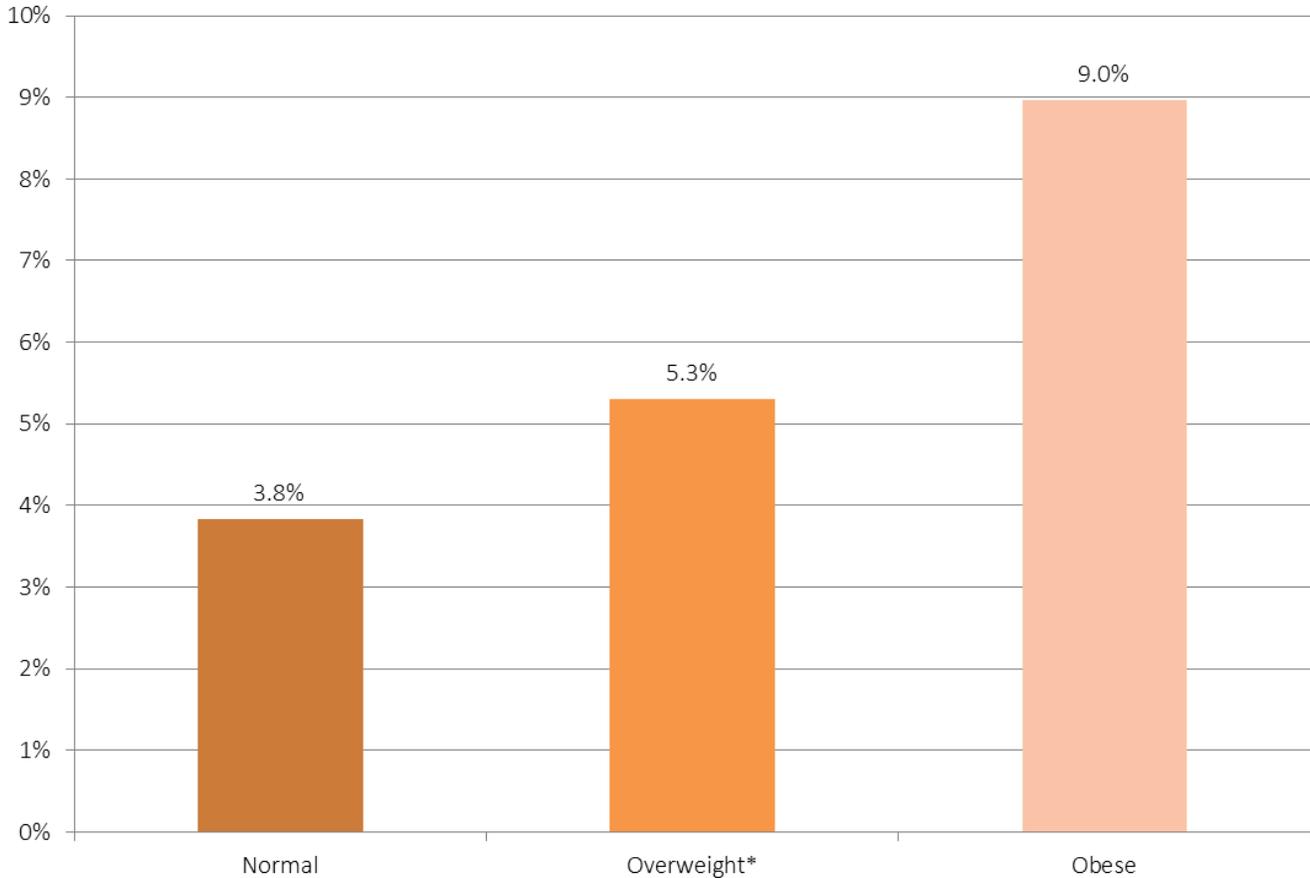
\*Overweight does not include individuals classified as obese

---

- The highest prevalence of diabetes is in adults with BMI greater than 30.
- Adults classified as overweight (BMI >25, but excluding those classified as obese) have a higher prevalence of diabetes than adults with normal body mass index.

PREVALENCE OF CARDIOVASCULAR DISEASE BY BODY MASS INDEX  
TRAVIS COUNTY, 2011-2014

---



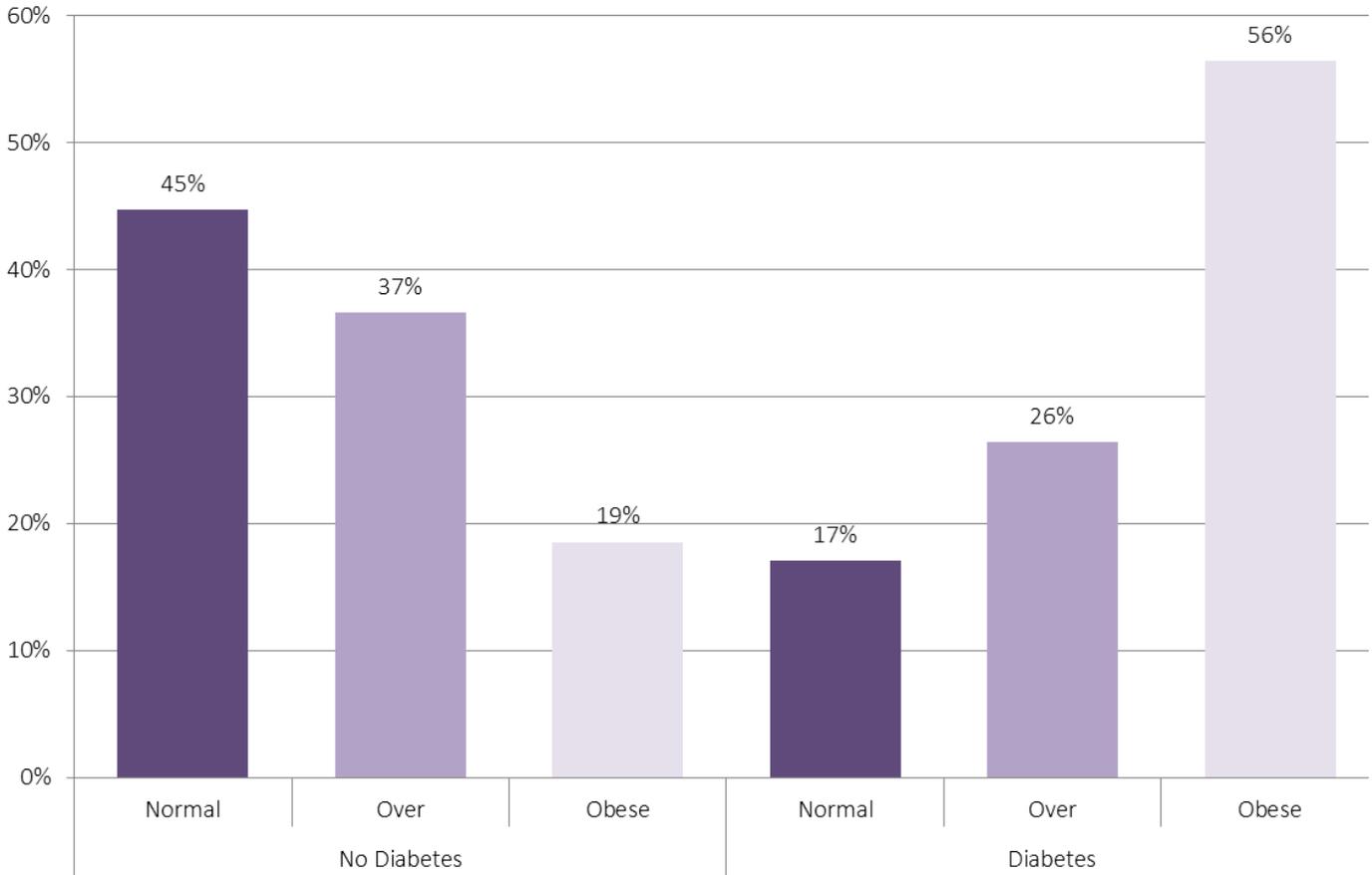
Data source: Texas Department of State Health Services BRFSS 2011-2014

\*Overweight does not include individuals classified as obese

- 
- The highest prevalence of cardiovascular disease (CVD) is in adults with BMI greater than 30.
  - Adults classified as overweight (BMI >25, but excluding those classified as obese) have a higher prevalence of CVD than adults with normal body mass.

**PREVALENCE OF OVERWEIGHT/OBESITY IN ADULTS BY DIABETES DIAGNOSIS  
TRAVIS COUNTY, 2011-2014**

---

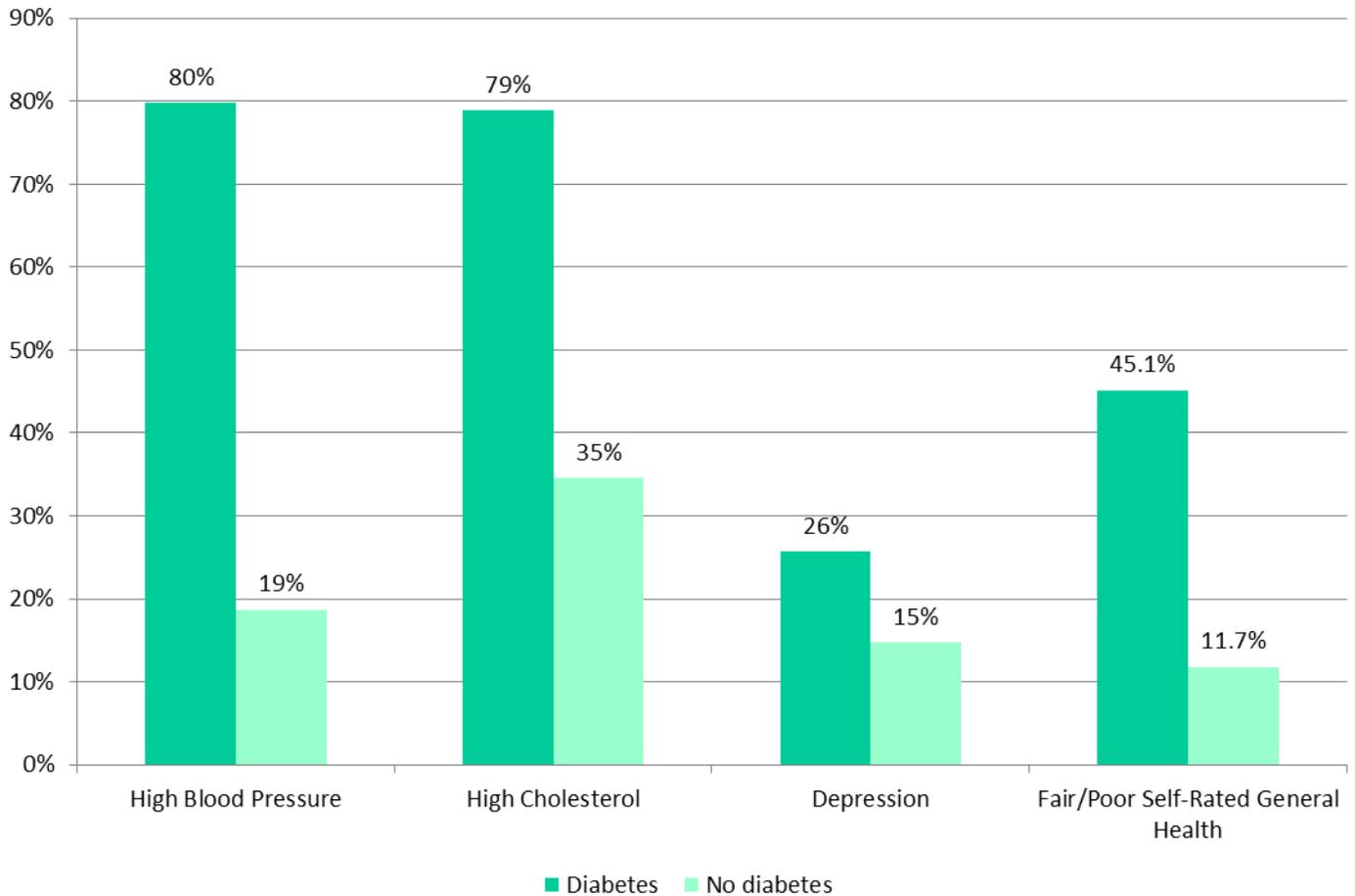


Data source: Texas Department of State Health Services BRFSS 2011-2014

- Adults who have diabetes have a higher prevalence of obesity (56% vs. 19%) than adults who do not have diabetes.
- Adults who have diabetes have a higher prevalence of overweight and obesity combined (82% vs. 56%) than adults who do not have diabetes.
- Of adults who have diabetes, 56% are obese, 26% are overweight (but not obese), and 17% are normal weight.
- Of adults who do not have diabetes, 19% are obese, 37% are overweight (but not obese), and 45% are normal weight.

PREVALENCE OF SELECTED CHRONIC DISEASE IN ADULTS BY DIABETES DIAGNOSIS  
TRAVIS COUNTY, 2011-2014

---



Data source: Texas Department of State Health Services BRFSS 2011-2014

---

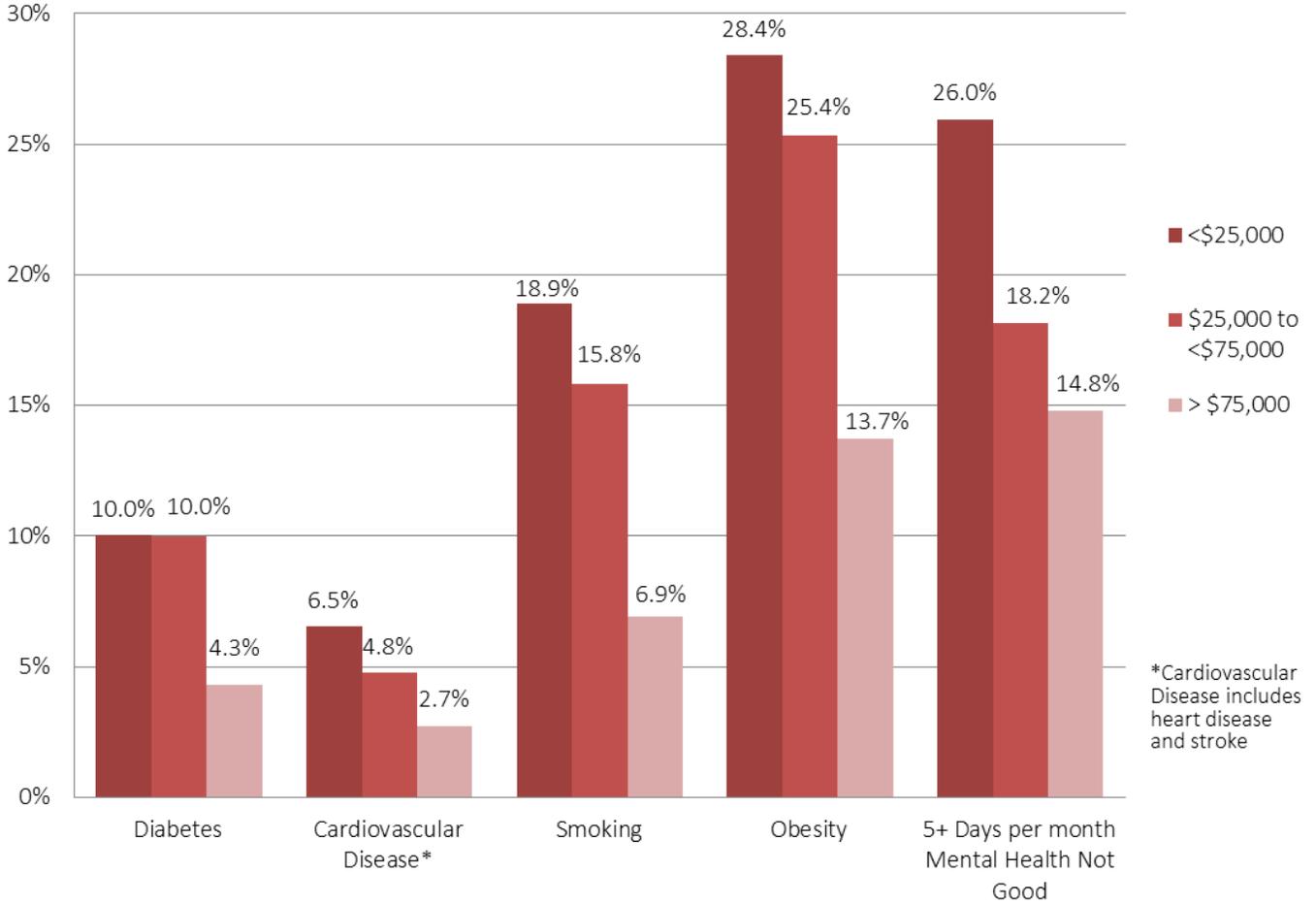
- Adults who have diabetes have a higher prevalence of high blood pressure, high cholesterol, depression, and fair to poor self-rated general health.
- Co-morbidities of diabetes and other chronic diseases or conditions present an additional burden to individuals trying to manage their diabetes.

---

# DISEASE PREVALENCE BY SOCIO-ECONOMIC INDICATORS

---

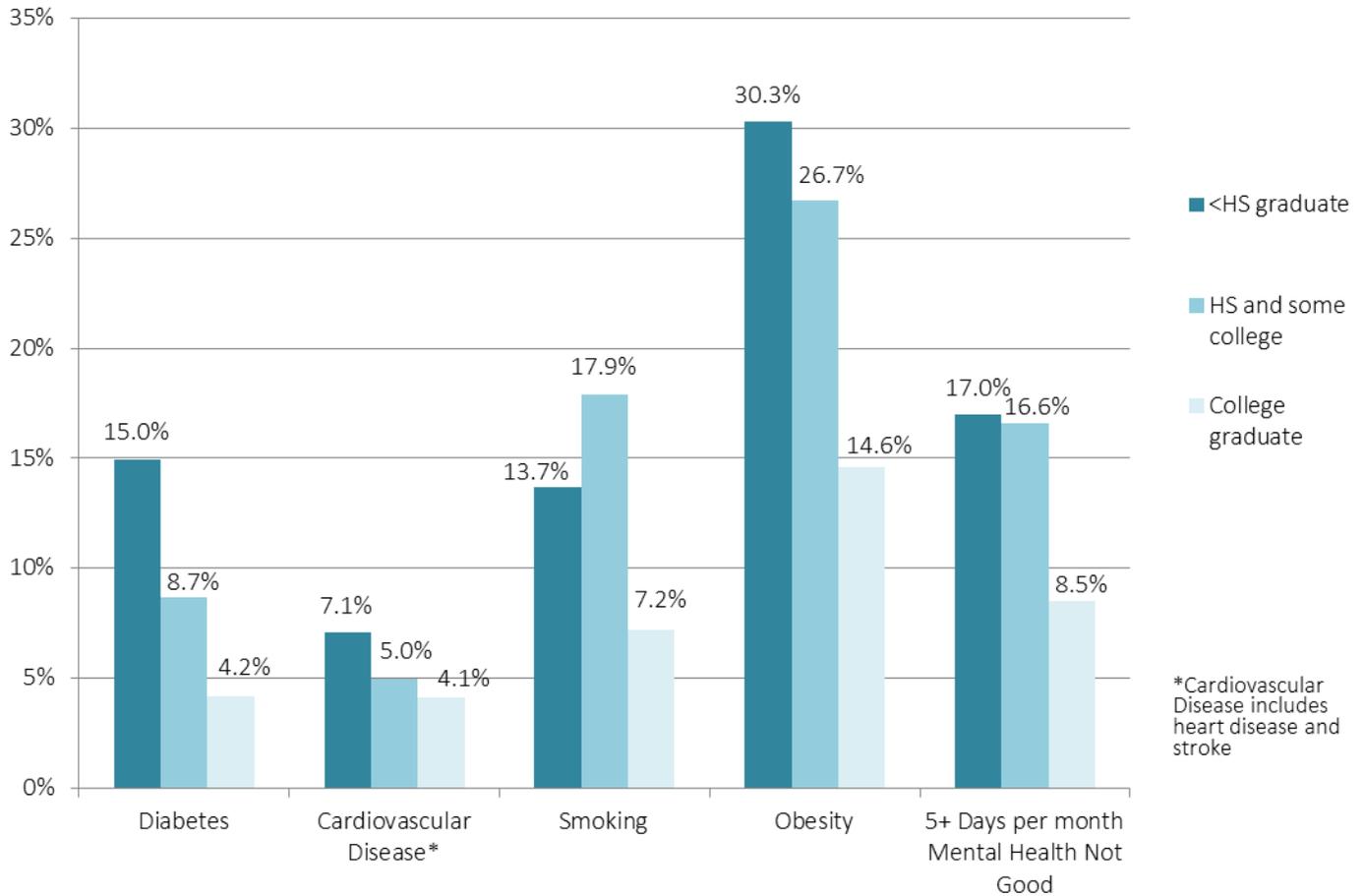
**DISEASE PREVALENCE BY INCOME LEVEL  
TRAVIS COUNTY, 2011-2014**



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Adults with the lowest income level have the highest prevalence of obesity, CVD, smoking, and poor mental health.
- Adults in the two lower income categories have the highest prevalence of diabetes.

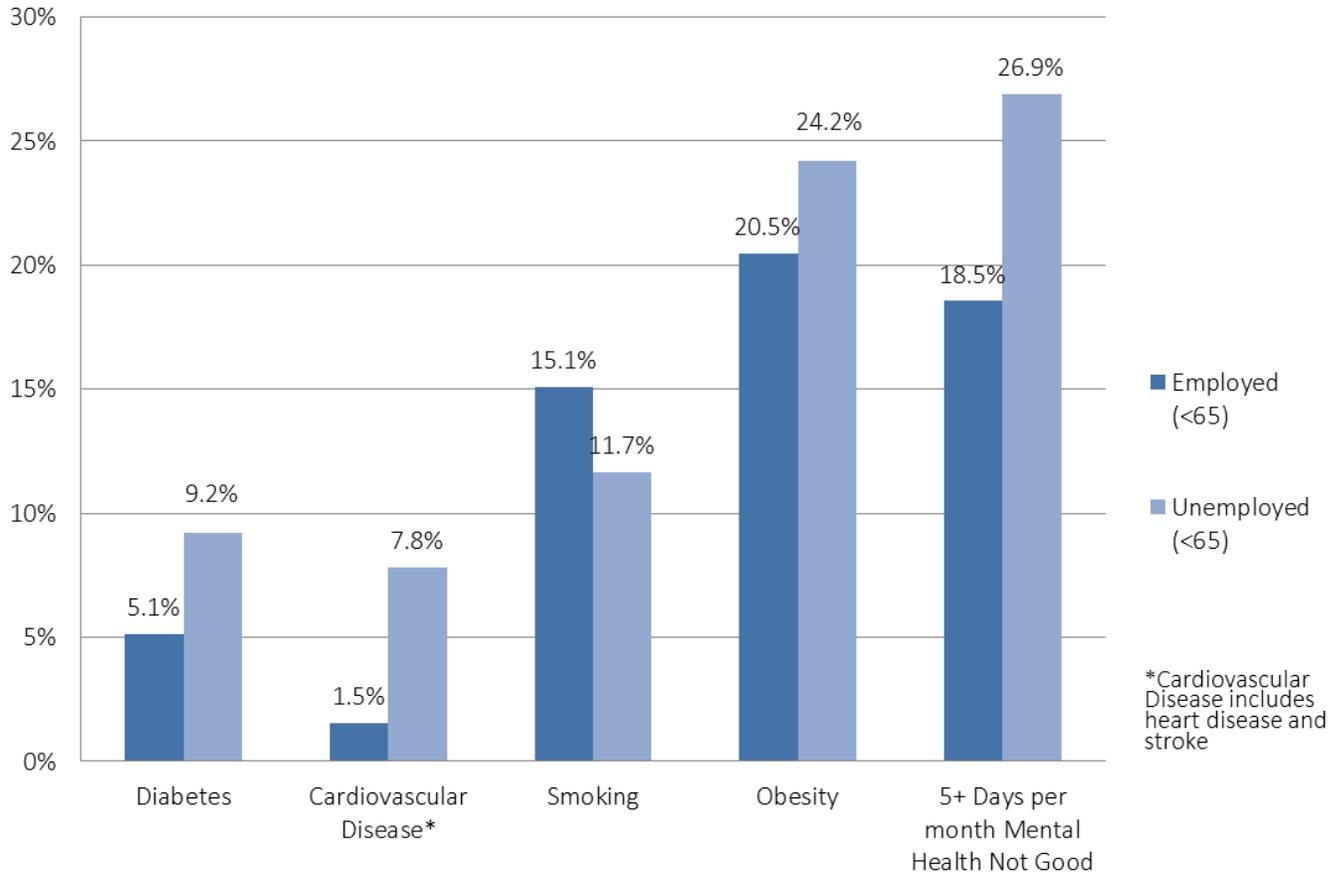
**DISEASE PREVALENCE BY EDUCATION LEVEL  
TRAVIS COUNTY, 2011-2014**



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Adults with the lowest education level have the highest prevalence of diabetes (15%), CVD (7.1%), obesity (30.3%), and poor mental health (17.0%)
- Adults with high school diplomas and some college have the highest prevalence of smoking (17.9%).
- Adults who have graduated from college have the lowest prevalence of diabetes, cardiovascular disease, obesity, poor mental health, and smoking.

**DISEASE PREVALENCE BY EMPLOYMENT STATUS  
TRAVIS COUNTY, 2011-2014**

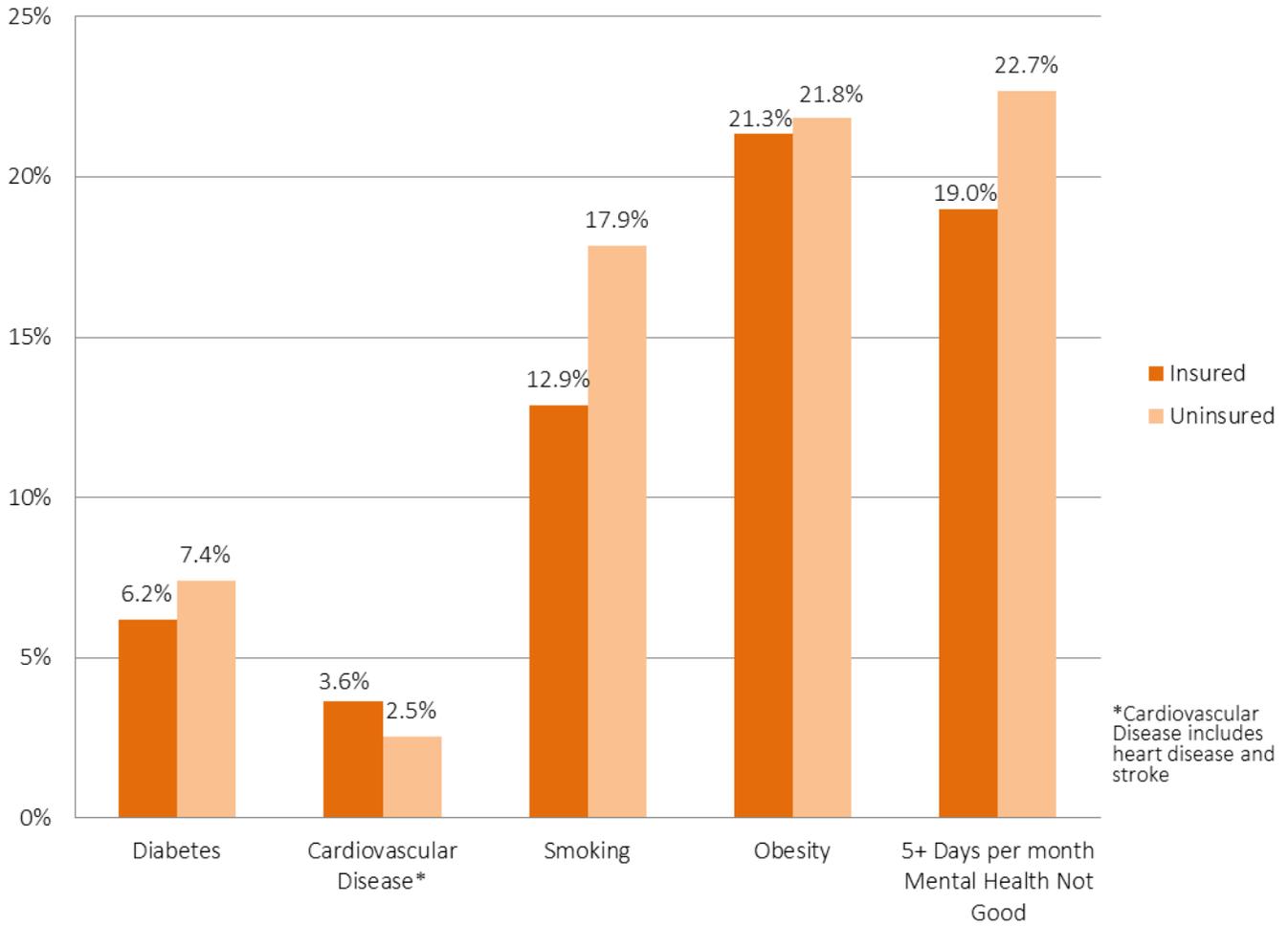


Data source: Texas Department of State Health Services BRFSS 2011-2014

- Adults who are unemployed have the highest prevalence of diabetes, CVD, obesity, and poor mental health.
- Adults who are employed have a higher prevalence of smoking than those who are unemployed.

**DISEASE PREVALENCE BY HEALTH INSURANCE STATUS (ADULTS <65 YEARS)<sup>§</sup>**  
**TRAVIS COUNTY, 2011-2014**

---



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Adults who are uninsured have a higher prevalence of diabetes, obesity, smoking, and poor mental health.
- Adults who are insured have a higher prevalence of CVD (Note: these prevalence estimates do not include adults aged 65+)

---

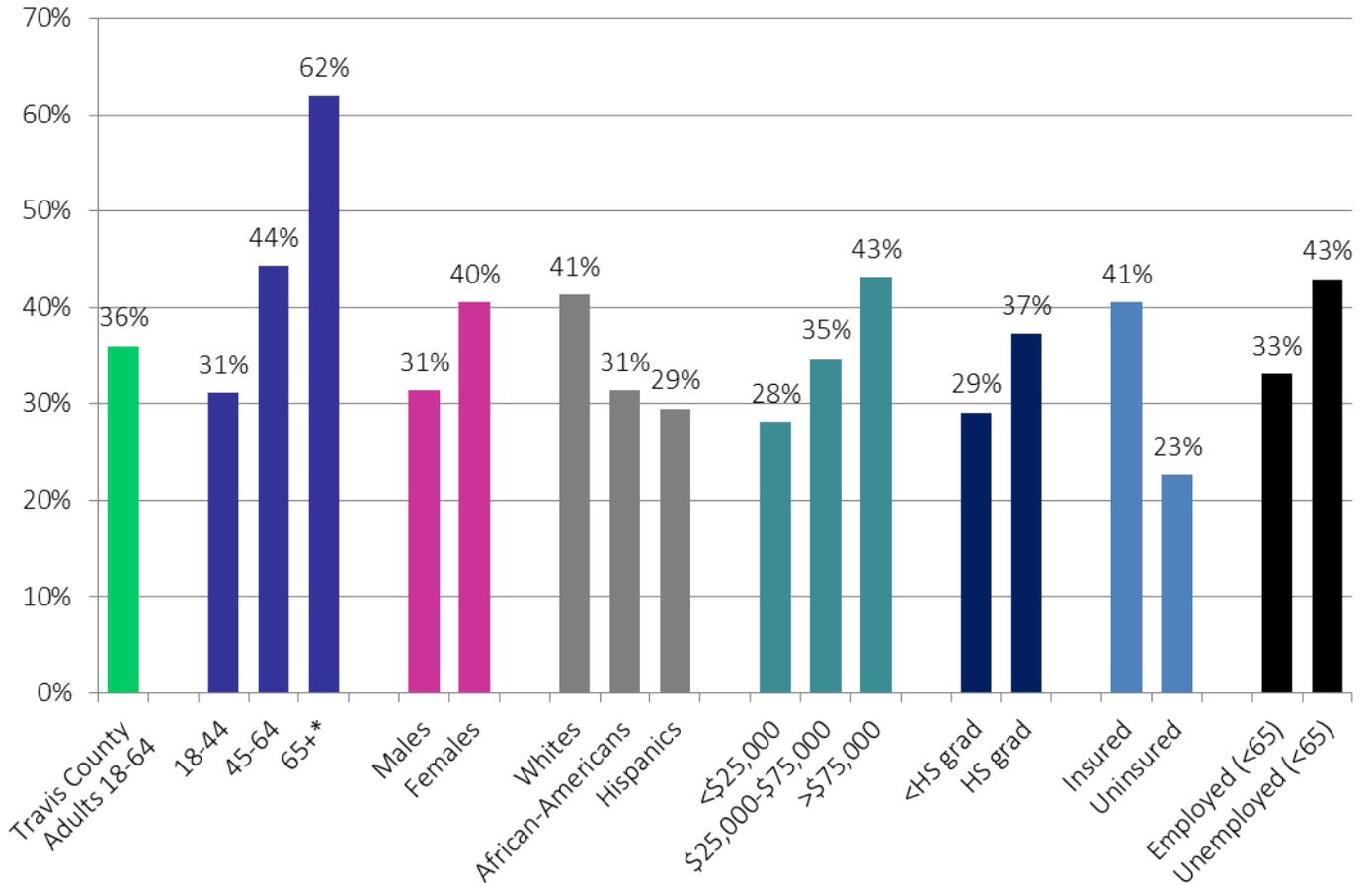
<sup>§</sup> Insurance status only includes adults <65 years of age. Adults 65 and older are assumed to be insured due to Medicare.

---

# HEALTHCARE SEEKING BEHAVIOR IN ADULTS

---

PERCENT ADULTS AGED 18-64 WHO RECEIVED A FLU SHOT IN THE PAST YEAR  
TRAVIS COUNTY, 2011-2014



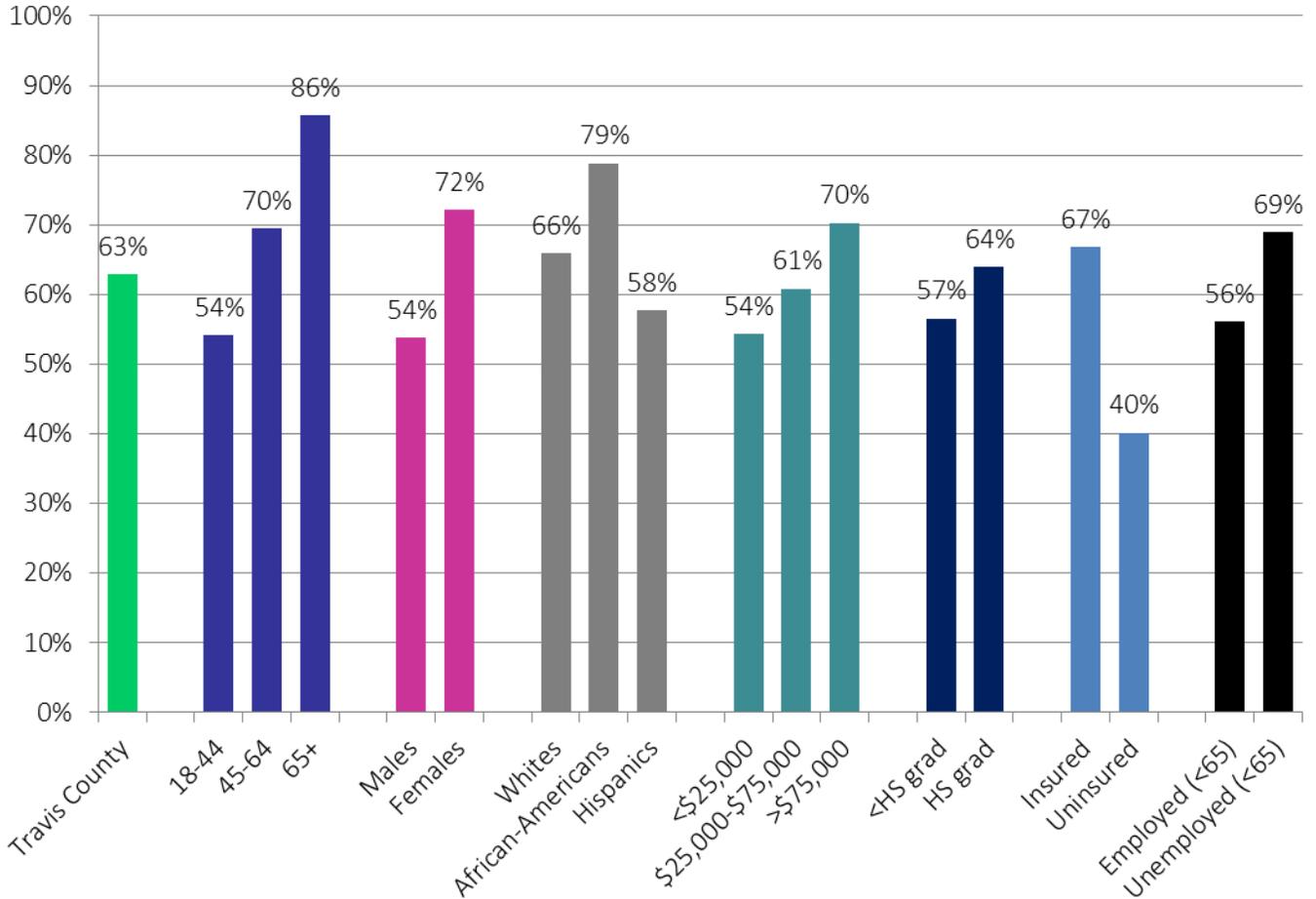
Data source: Texas Department of State Health Services BRFSS 2011-2014

\*Percentage of adults over age 65 is calculated from a different variable

- Thirty-six percent of adults aged 18-64 reported receiving a flu shot in the past year.
- Sixty-two percent of adults aged 65+ reported receiving a flu shot in the past year.
- Adults aged 18-44, males, Hispanic and African American adults, low income adults, adults without a high school diploma, uninsured adults, and employed adults had a lower prevalence of having received a flu shot in the past year.

PERCENT REPORTING ROUTINE CHECK UP IN PAST YEAR  
TRAVIS COUNTY, 2011-2014

---



Data source: Texas Department of State Health Services BRFSS 2011-2014

- Sixty-three percent of adults in Travis County reported receiving a routine check-up from a medical professional in the past year.
- Older adults (65+) had the highest prevalence (86%), while uninsured adults had the lowest (40%).
- Younger adults (18-44), males, Hispanics, lower income adults, adults without a high school diploma, uninsured adults, and employed adults had a lower prevalence of having received a routine check-up in the past year.

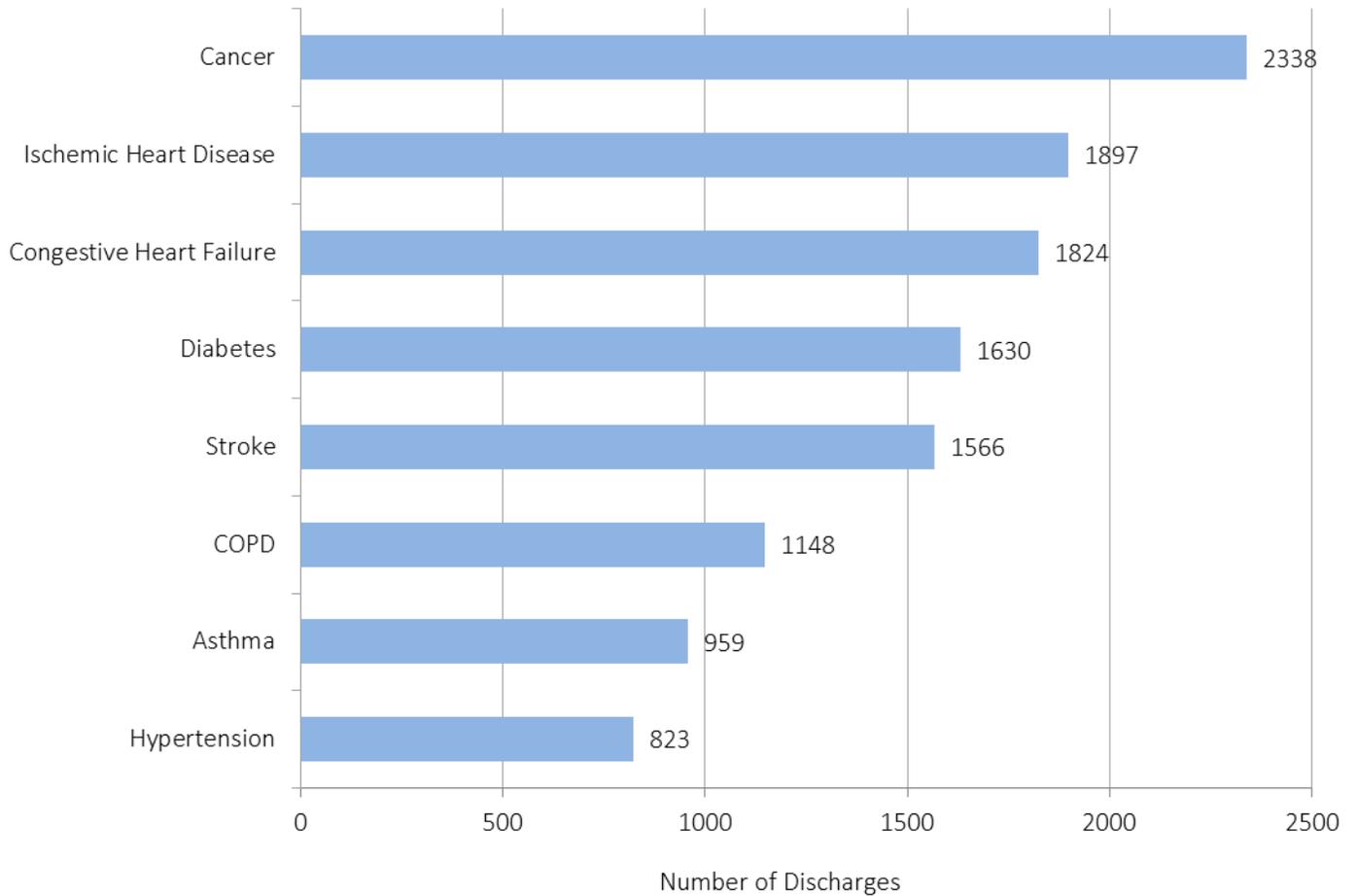
---

TEXAS HEALTH CARE INFORMATION  
COLLECTION - HOSPITAL DISCHARGE  
DATA, 2009-2013

---

NUMBER OF HOSPITAL DISCHARGES BY PRIMARY DIAGNOSIS  
TRAVIS COUNTY, 2013

---

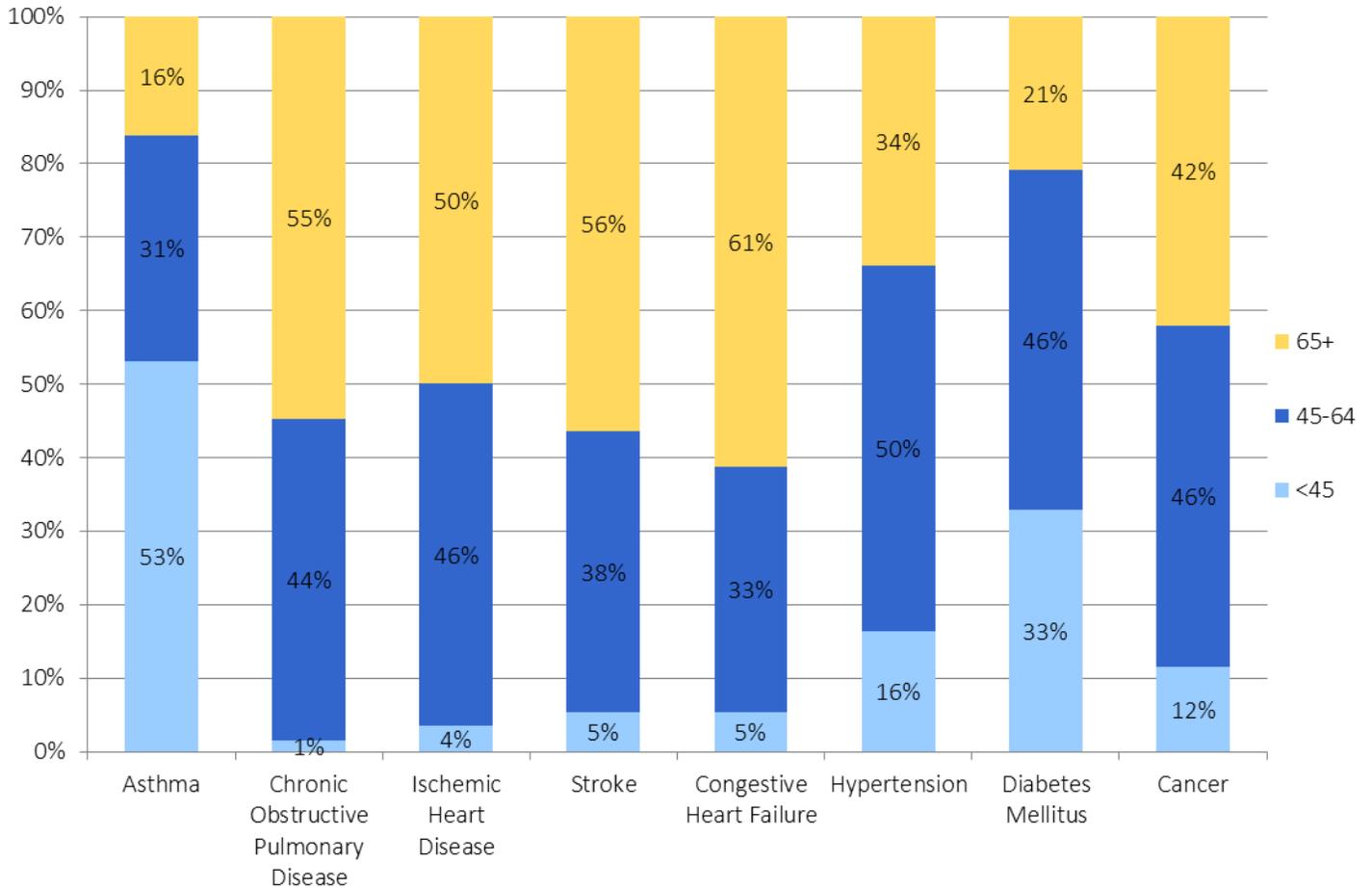


Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

---

- Cancer accounted for the greatest number of hospital discharges, followed by ischemic heart disease, congestive heart failure, diabetes and stroke.
- Diseases of the heart (ischemic heart disease and congestive heart failure) combined (3,721) accounted for more hospital discharges than cancer (2,338).

**DISTRIBUTION OF HOSPITAL DISCHARGES BY AGE GROUP  
TRAVIS COUNTY, 2013**

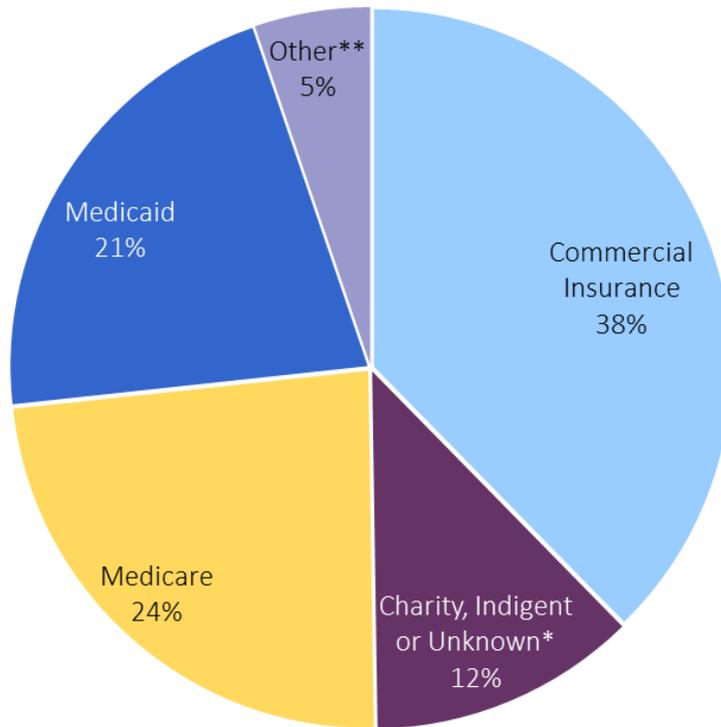


Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

- Patients under 45 years of age account for the greatest percentage of hospital discharges for asthma.
- Older adults (65+) account for the greatest percentage of discharges for COPD and cardiovascular diseases (stroke, ischemic heart disease, and congestive heart failure).
- Adults aged 45-64 account for the greatest percentage of discharges for cancer, diabetes mellitus, and hypertension.

TOP FIVE PAYMENT SOURCES FOR CHRONIC DISEASE HOSPITALIZATIONS  
TRAVIS COUNTY, 2013

---



\*Charity or Indigent payment refers to the unreimbursed cost of care to financially indigent individuals (uninsured or underinsured).

\*\*Other payment sources: self-pay, automobile medical, liability medical, disability, Veteran's Administration, Title V, CHAMPUS (Tricare), and other federal and other non-federal programs

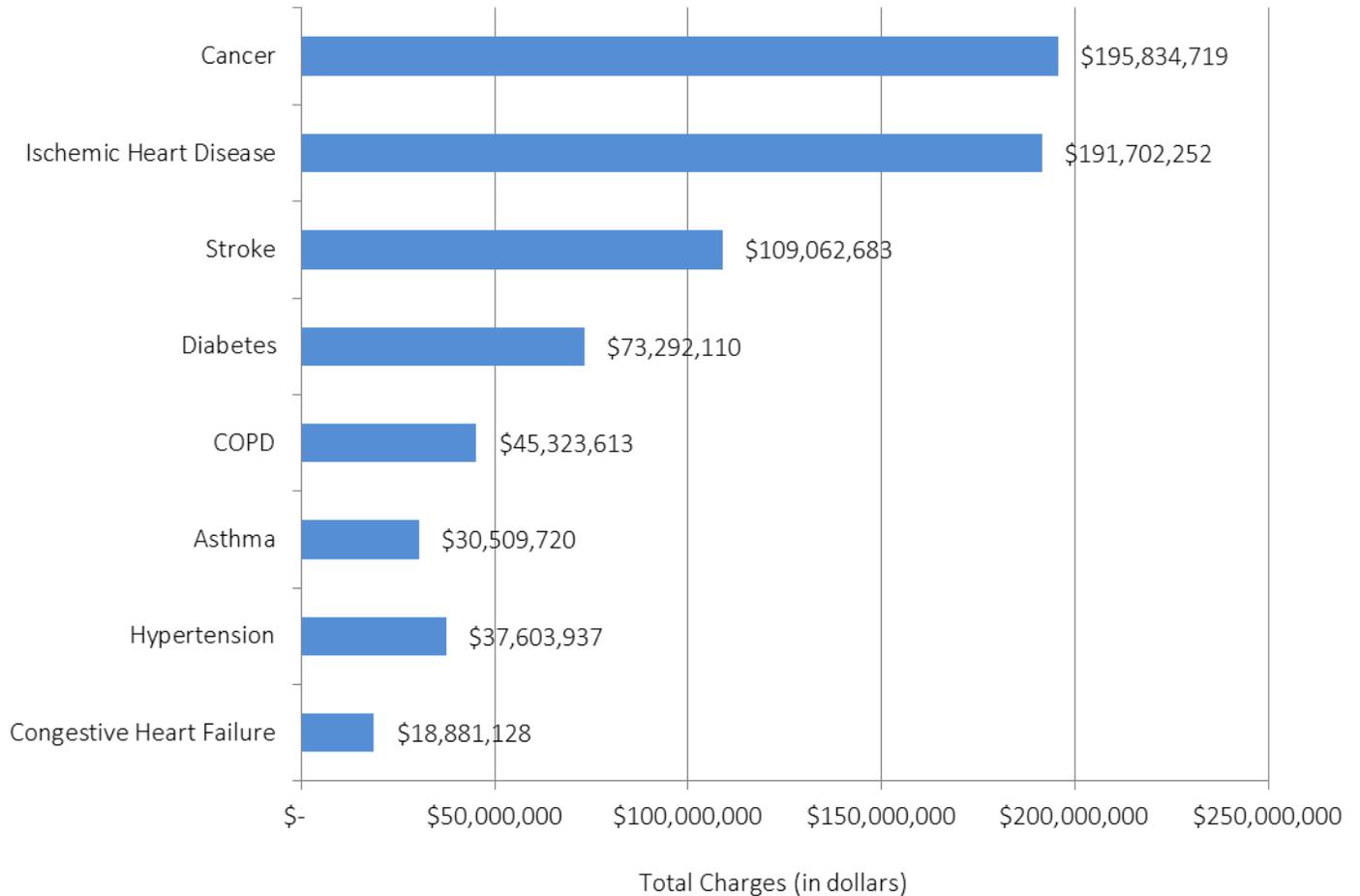
Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

---

- Medicare Part A and Medicaid, payment sources for older adults and lower income adults, respectively, account for 45% of the payments.
- Commercial insurance (Blue Cross/Blue Shield, PPOs, HMOs, EPOs, and POS) accounted for 38% of the payment sources.

**TOTAL HOSPITAL CHARGES BY PRIMARY DIAGNOSIS  
TRAVIS COUNTY, 2013**

---

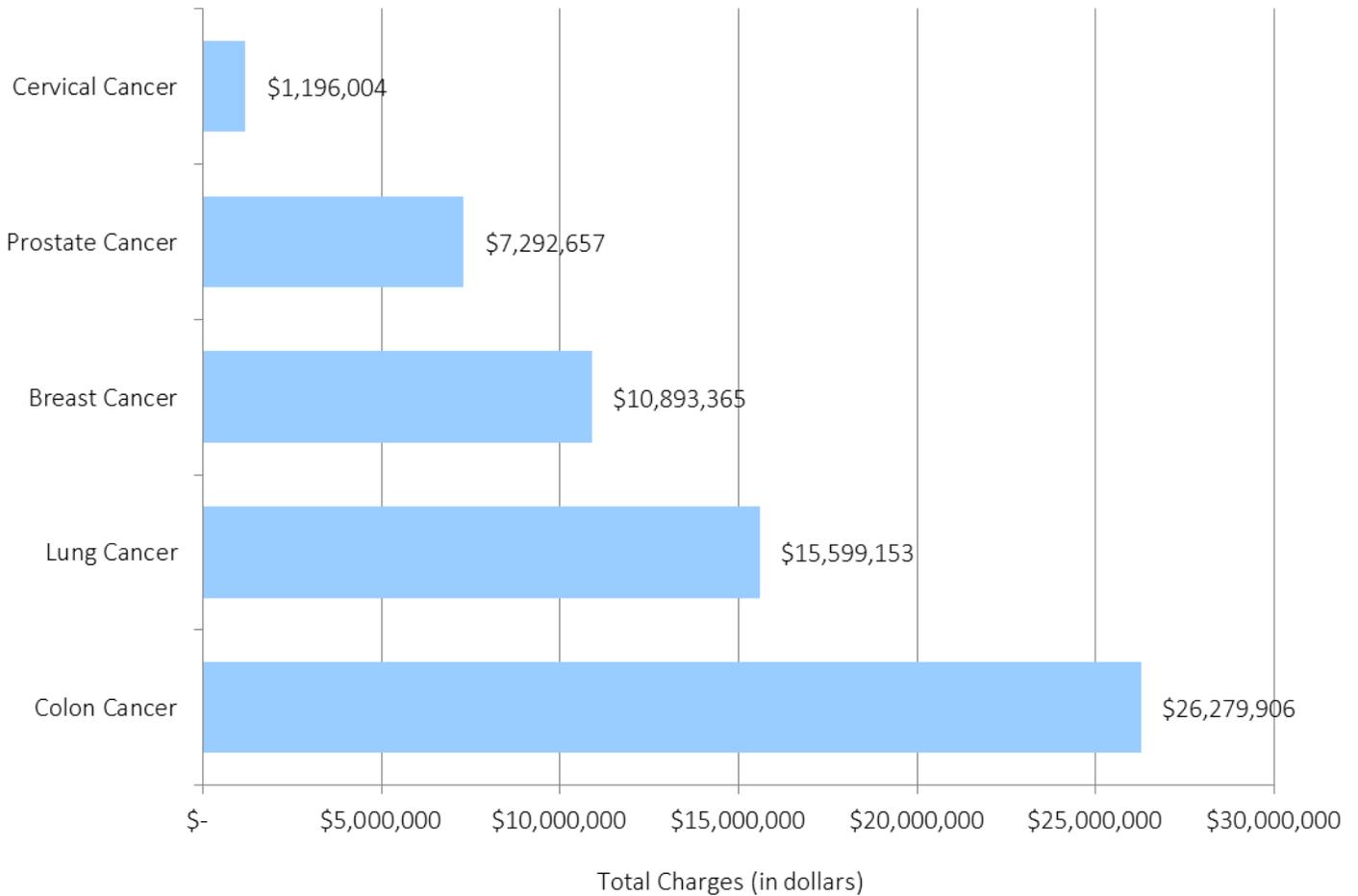


Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

---

- The total charges for hospital care for chronic diseases in Travis County in 2013 was \$702.2 million.
- Cancer accounted for the highest hospital charges (\$195.8 million), followed by ischemic heart disease (\$191.7 million), stroke (\$109.1 million), and diabetes (\$73.3 million).
- Diseases of the heart (ischemic heart disease and congestive heart failure) accounted for \$210.6 million.

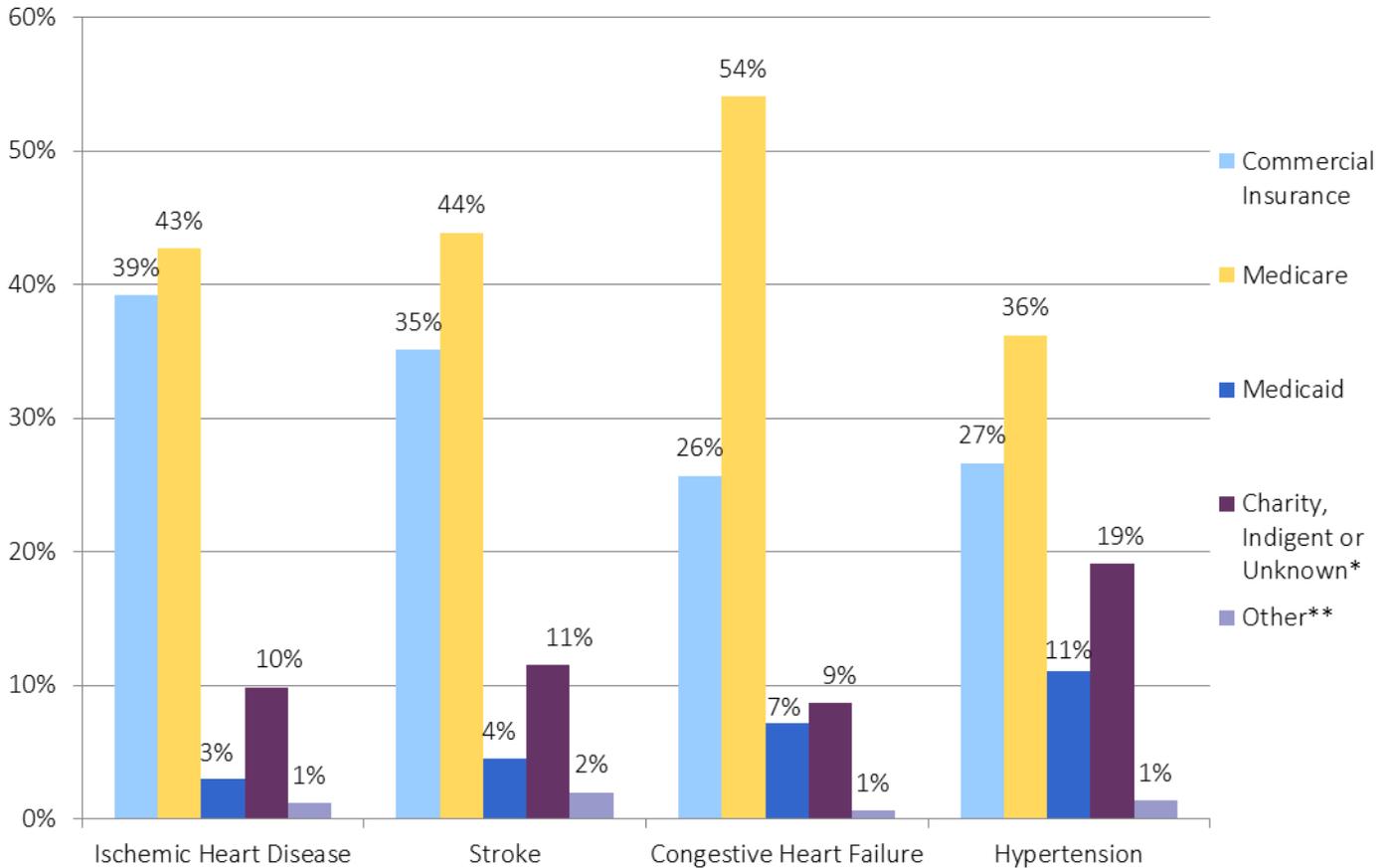
**TOTAL HOSPITAL CHARGES FOR CANCER BY CANCER TYPE  
TRAVIS COUNTY, 2013**



Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

- The total charges of hospitalizations for cancer care in Travis County for 2013 was \$170.7 million.
- These five types of cancer accounted for \$61.2 million (36%) of all charges for cancer.
- Colon cancer (\$26.3 million) accounted for 15.4% of total hospital charges for cancer, lung cancer (\$15.6 million) for 9.1%, and breast cancer (\$10.9 million) for 6.4%.

PRIMARY PAYMENT SOURCE FOR SELECTED CARDIOVASCULAR DISEASE DIAGNOSES  
TRAVIS COUNTY, 2013



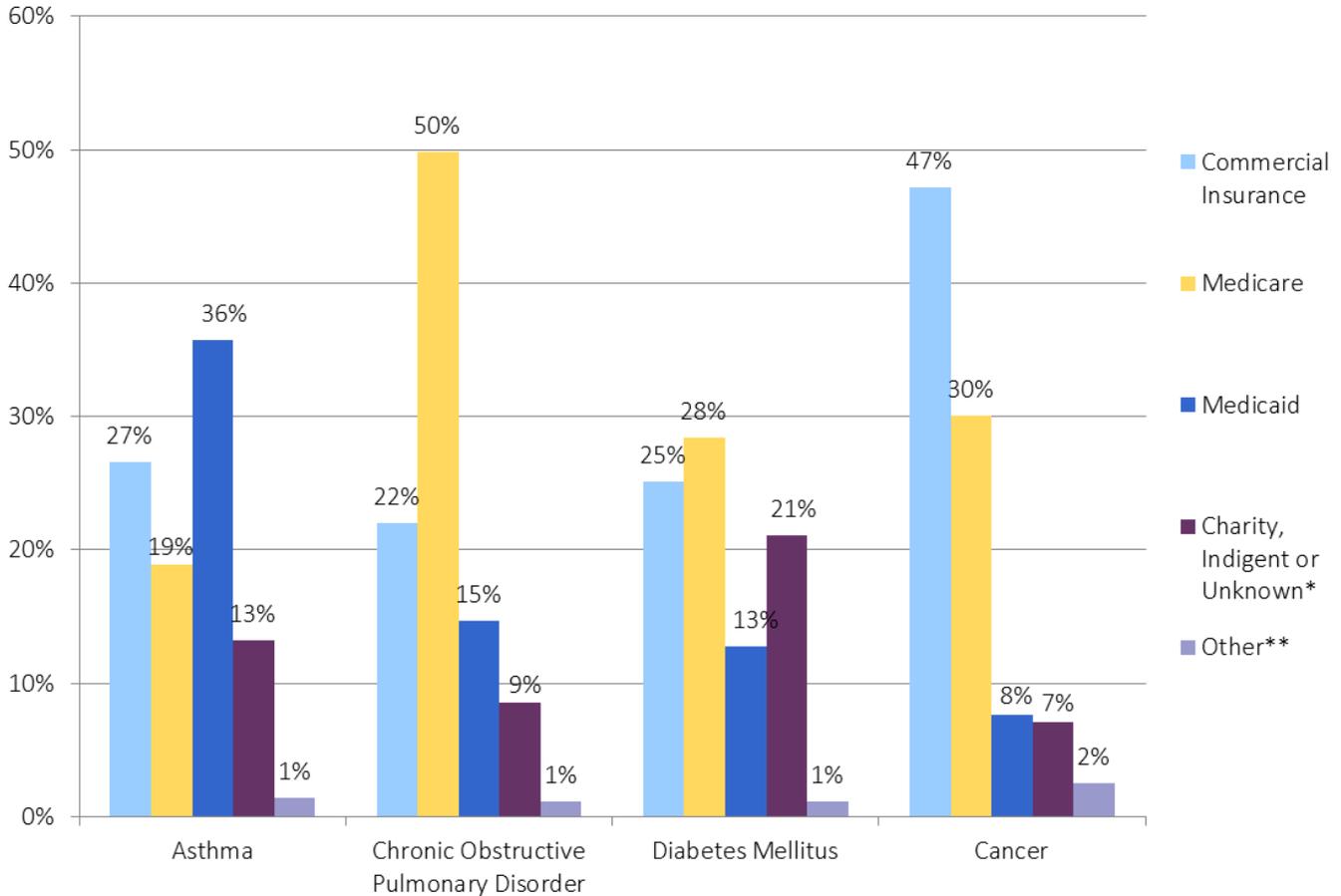
\*Charity or Indigent payment refers to the unreimbursed cost of care to financially indigent individuals (uninsured or underinsured).

\*\*Other payment sources: self-pay, automobile medical, liability medical, disability, Veteran’s Administration, Title V, CHAMPUS (Tricare), and other federal and other non-federal programs

Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

- Medicare was the largest payment source for the four forms of cardiovascular disease (CVD).
- Commercial insurance (e.g. BC/BS, HMO, PPO, EPO, and POS) was the second most common form of payment for the four forms of CVD.
- Charity care accounted for more payments than Medicaid for the four forms of CVD.

**PRIMARY PAYMENT SOURCE FOR SELECTED CHRONIC DISEASE DIAGNOSES  
TRAVIS COUNTY, 2013**



\*Charity or Indigent payment refers to the unreimbursed cost of care to financially indigent individuals (uninsured or underinsured)

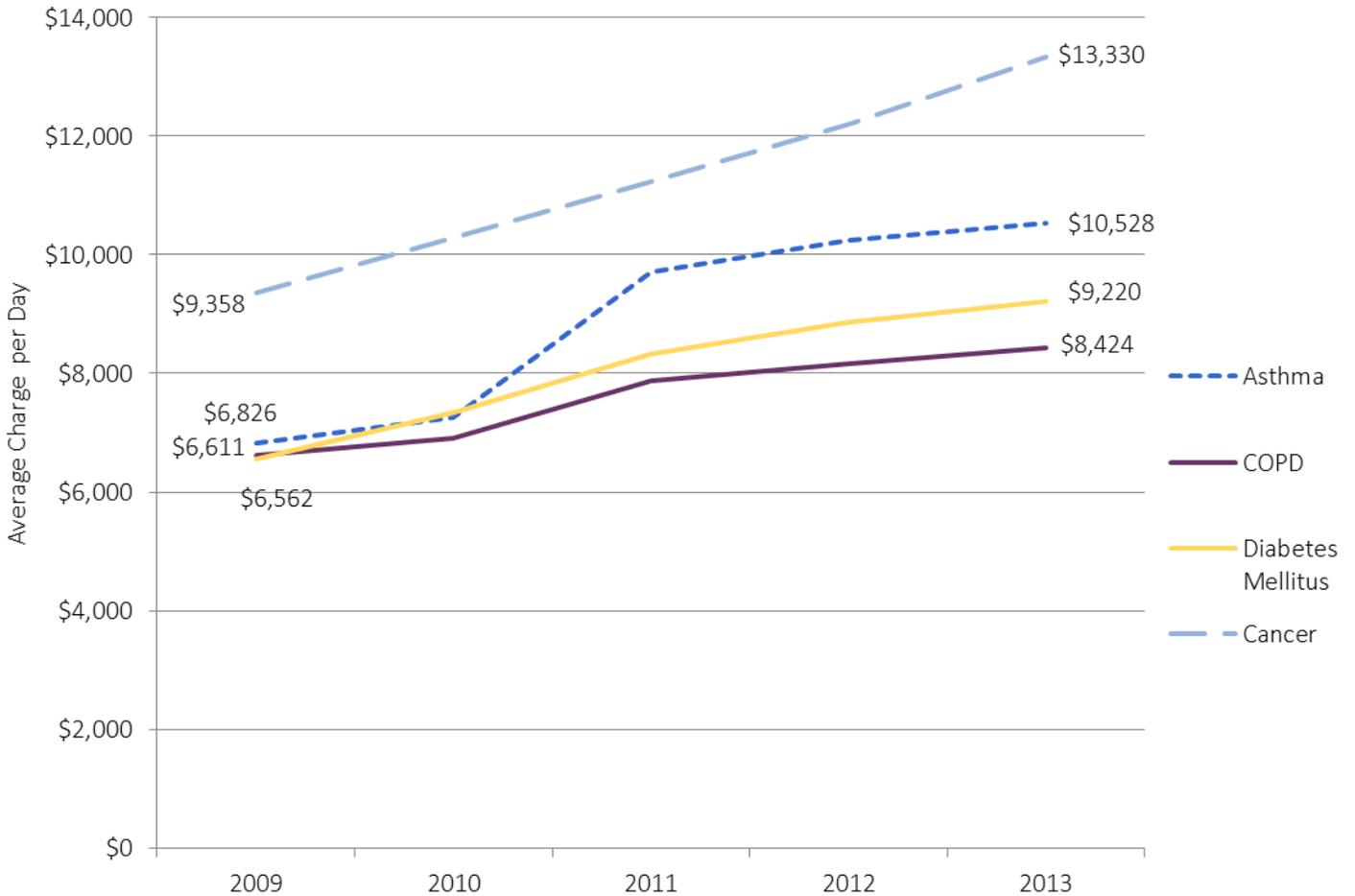
\*\*Other payment sources: self-pay, automobile medical, liability medical, disability, Veteran’s Administration, Title V, CHAMPUS (Tricare), and other federal and other non-federal programs

Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2013

- Medicare was the largest payment source for COPD (50%), with more than twice as many payments than from commercial insurance (22%). It was also the largest payment source for diabetes mellitus (28%).
- Commercial insurance (e.g. BC/BS, HMO, PPO, EPO, and POS) was the largest payment source for cancer (47%).
- Medicaid (includes CHIP) was the largest payment source for asthma (36%).
- For diabetes, charity care (21%) accounted for more payments than Medicaid (13%).

**AVERAGE HOSPITAL CHARGE PER DAY FOR SELECTED CHRONIC DISEASE DIAGNOSES  
TRAVIS COUNTY, 2009-2013**

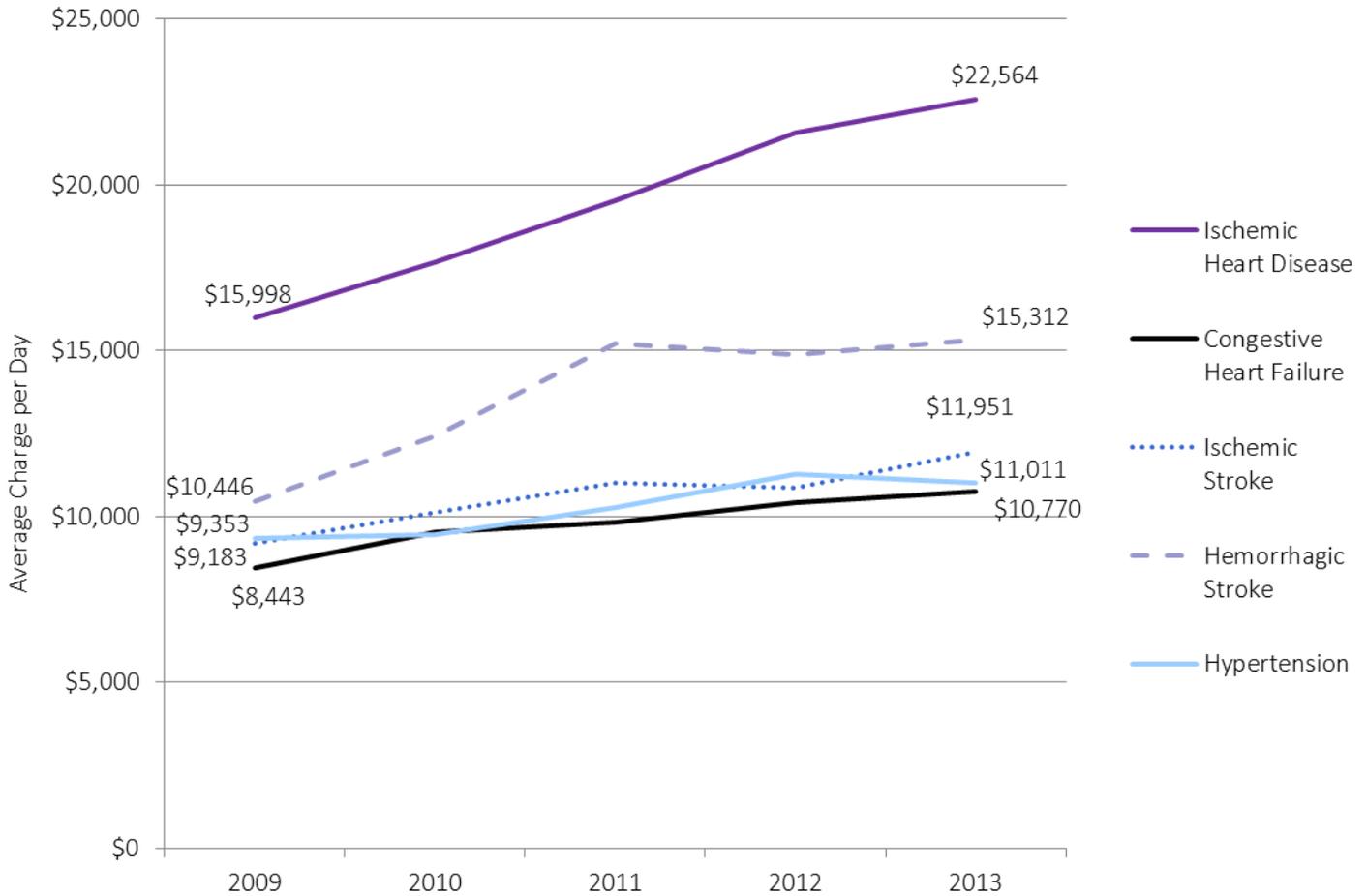
---



Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2009-2013

- Hospital charges per day for all selected chronic diseases have been rising steadily since 2009.
- Hospital charges per day are the highest for cancer. Charge per day for cancer has increased by 43% since 2009.
- Charge per day for asthma has increased the most (by 54%) since 2009. Charge per day for diabetes has increased by 41% and for COPD by 27%.

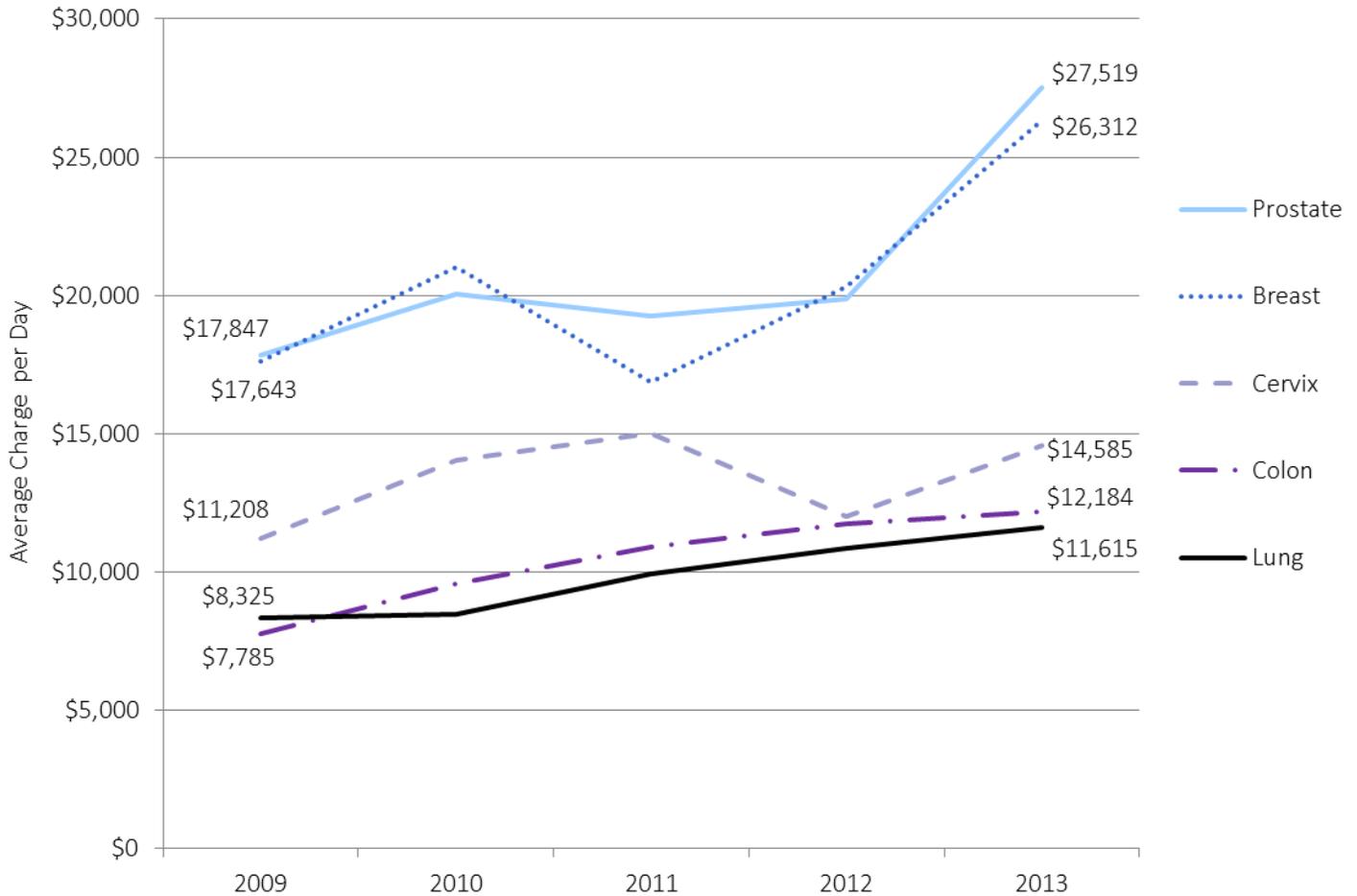
**AVERAGE HOSPITAL CHARGE PER DAY FOR SELECTED CARDIOVASCULAR DISEASE  
DIAGNOSES  
TRAVIS COUNTY, 2009-2013**



Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2009-2013

- Hospital charges per day for all selected cardiovascular diseases have been rising since 2009.
- Hospital charges per day are the highest for ischemic heart disease. Charge per day for ischemic heart disease has increased by 41% since 2009.
- Charge per day has increased for hemorrhagic stroke by 47%, for ischemic stroke by 30%, congestive heart failure by 28%, and hypertension by 18%.

**AVERAGE HOSPITAL CHARGE PER DAY FOR SELECTED CANCER DIAGNOSES  
TRAVIS COUNTY, 2009-2013**



Data source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File 2009-2013

- Hospital charges per day for all selected cancers have been rising since 2009.
- Hospital charges per day are the highest for prostate cancer, followed by breast cancer and cervical cancer.
- Charge per day for colon cancer has increased the most (by 57%) since 2009, followed by prostate cancer (54%), breast cancer (49%), lung cancer (40%), and cervical cancer (30%).