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Davidson County Mortality Report Data for 2010

Metro Public Health
Department of
Nashville/Davidson
County



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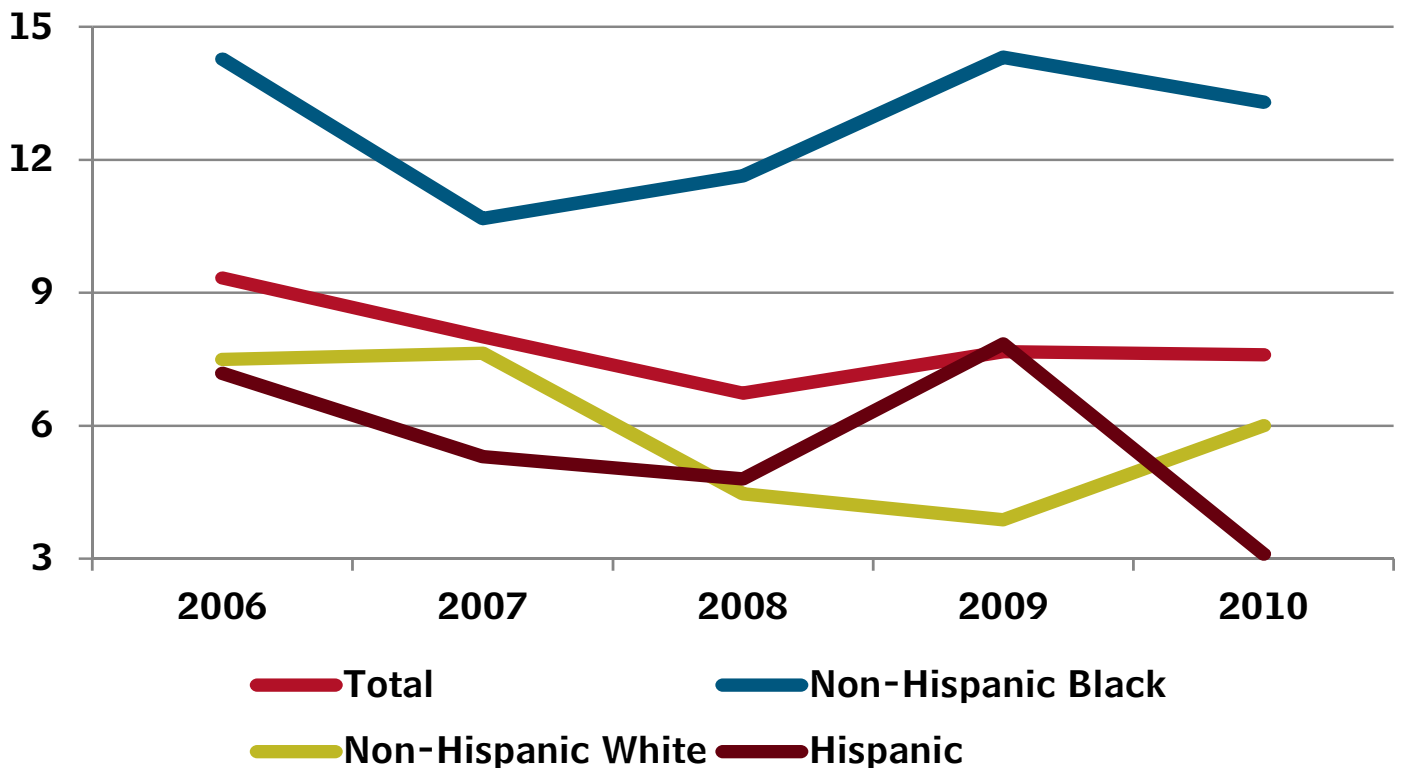
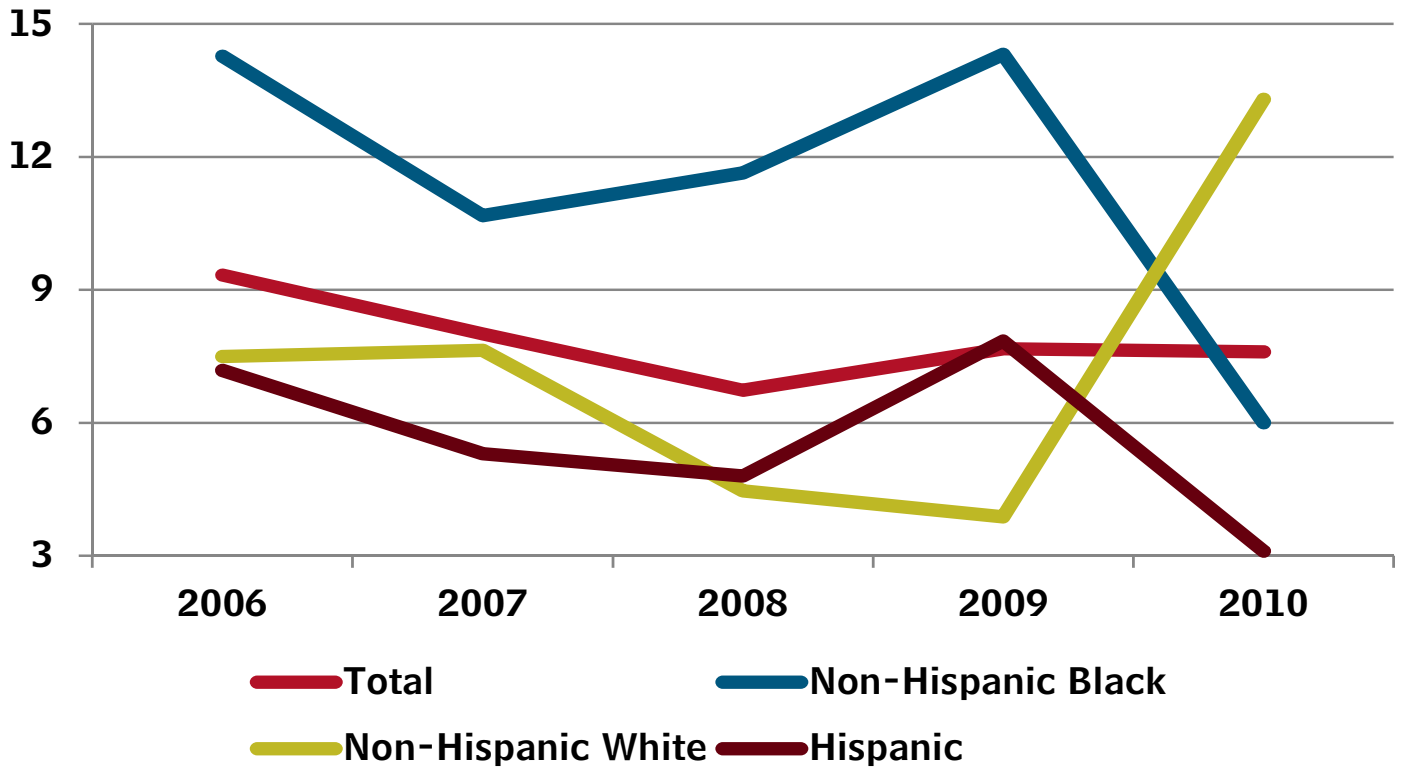
What you will find in this report:

- ▶ Number of Deaths by Sex, Race/Ethnicity, and Age
- ▶ Crude Death Rates by Sex, Race/Ethnicity, and Age
- ▶ Infant Mortality
- ▶ Leading Causes of Death
- ▶ Years of Potential Life Lost
- ▶ Comparison to National Objectives
- ▶ Spotlight on Heart Disease

Corrigenda

February 13, 2013, Page 5

The graph immediately below should be replaced with the graph following it at the bottom of this page. The Infant Mortality Rates for non-Hispanic blacks and non-Hispanic whites in 2010 were mistakenly reversed in the original publication of this document.



Executive Summary

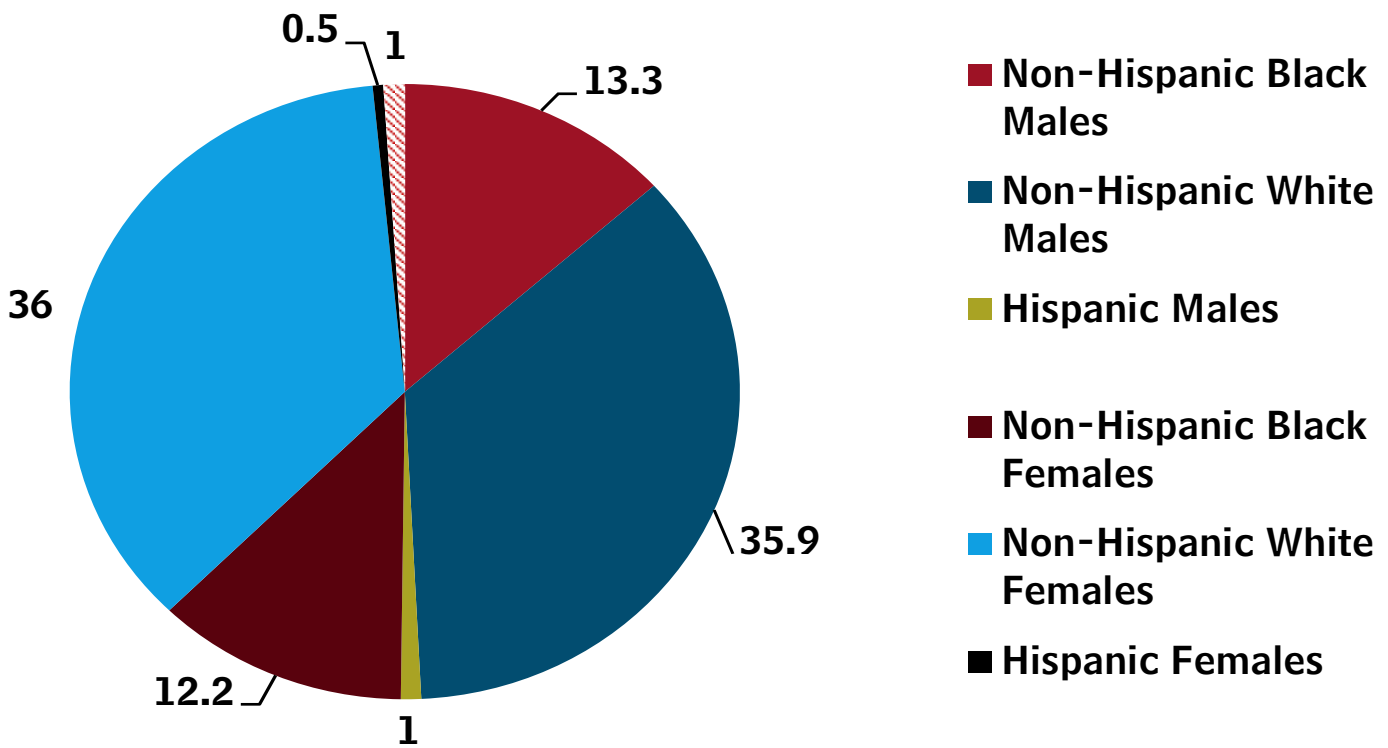
- ▶ 4,954 Davidson County, TN residents died in 2010.
- ▶ 73.3% of deaths were among non-Hispanic whites and 1.3% were among Hispanics when racial/ethnic identity could be determined.
- ▶ 73 infants died in 2010 producing an infant mortality rate of 7.6 per 1,000 live births.
- ▶ The age-adjusted death rate from all causes was 869.7 per 100,000.
- ▶ The highest death rate was among non-Hispanic black men, who experienced an age-adjusted death rate of 1,323 per 100,000.
- ▶ Heart disease (n=1,122) and cancer (n=1,114) were the most common causes of death in 2010. These two causes accounted for 45.1% of all the deaths in Davidson County.
- ▶ The top ten leading causes of death accounted for 31,506 years of potential life lost by Davidson County residents.
- ▶ The Healthy People 2010 objectives for the leading causes of death in Davidson County were only met for stroke and diabetes.
- ▶ HIV deaths were found in each age category beginning with those 25–34 years old. HIV deaths among younger residents may be an indication that residents are not being tested or are not receiving the most advanced care available.
- ▶ The young age distribution of the local Hispanic population accounts for differing leading causes of death in this group, including causes early in life, and for the absence of rates for countywide leading causes of death such as Alzheimer’s disease and influenza and pneumonia.
- ▶ An average of 1,173 Davidson County residents die from heart disease annually.
- ▶ The age-adjusted mortality rate from heart disease decreased 28% from 2000 to 2010.
- ▶ In Davidson County, the age-adjusted mortality rate for heart disease is typically 1.4 to 1.8 times higher among males than females.
- ▶ The age-adjusted mortality rate from heart disease among non-Hispanic blacks is 1.2 to 1.5 times higher than the same rate for non-Hispanic whites.
- ▶ The heart disease age-adjusted mortality rates in non-Hispanic black females decreased 40.2% from 2000 to 2010.
- ▶ The rates of heart disease in Davidson County are driven primarily by non-Hispanic black males.

Number of Deaths by Sex, Race/Ethnicity, and Age

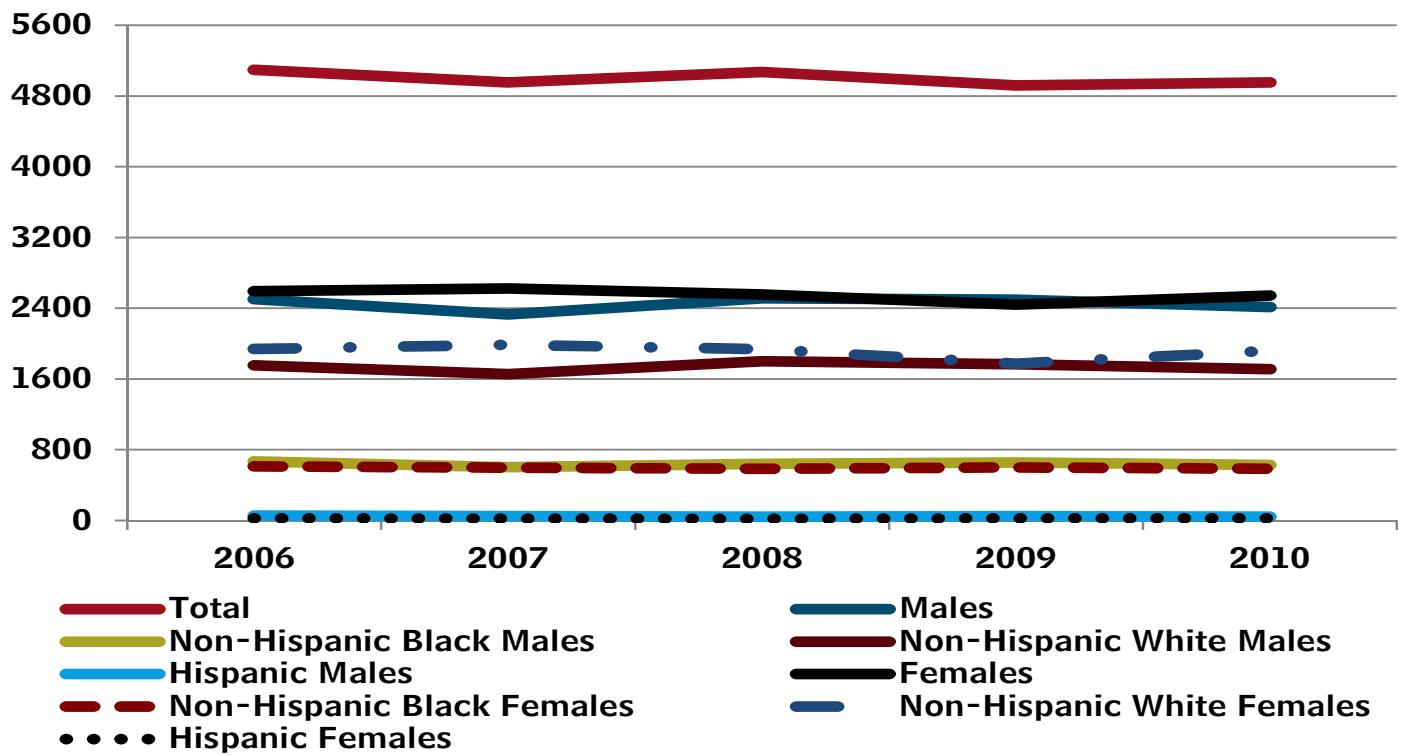
In 2010, 4,954 Davidson County residents died. Slightly more females died (n=2,542, 51.3%) than males (n=2,412, 48.7%). The gender distribution of 2010 deaths closely parallels the population estimates provided by the 2010 U.S. Census. During 2010, the gender distribution of county residents was 48.4% male and 51.6% female.

By race/ethnicity, non-Hispanic whites accounted for 73.3% of the deaths, non-Hispanic blacks represented 24.5%, while Hispanics represented 1.3%. The remaining 1% of deaths represented other racial/ethnic minorities or did not have this information recorded. The population distribution by race/ethnicity was reported to be 57.4% non-Hispanic white, 27.5% non-Hispanic black, and 9.8% Hispanic. The number of deaths among non-Hispanic blacks is close to what would be expected while that among non-Hispanic whites is much higher and the corresponding number for Hispanics is considerably lower than might be anticipated.

Deaths among people aged 65 and older (n=3,342) accounted for 67.9% of all resident deaths in 2010. There were 73 infant (less than 1 year old) deaths in 2010, accounting for 1.5% of all deaths.



Percent of Deaths by Sex and Race/Ethnicity Davidson County, TN, 2010



Number of Deaths in Davidson County, TN, 2006–2010

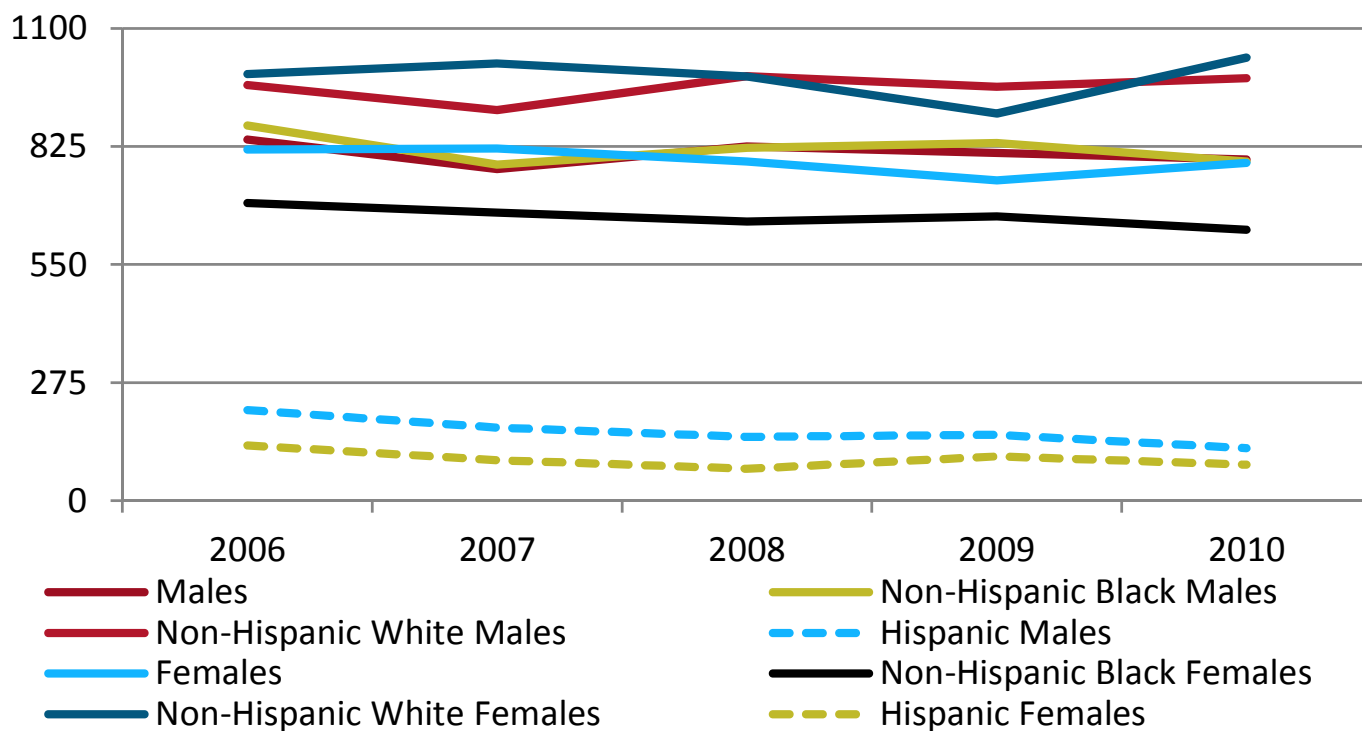
Crude Death Rates by Sex, Race/Ethnicity, and Age

Crude death rates are the mortality rates from all causes of death for a population. It is calculated as the number of deaths in a population in a given time period per 100,000 people.

The overall crude death rate in Davidson County for 2010 was 790.5 per 100,000 population. The crude death rate for males (794.6 per 100,000) was slightly higher than for females (786.7 per 100,000). The crude death rates for non-Hispanic whites, non-Hispanic blacks, and Hispanics were 1008.7, 704.3, and 104.7 per 100,000 respectively.

The crude death rate by gender and race/ethnicity was highest among non-Hispanic white females at 1,031.8 per 100,000 followed by non-Hispanic white males at 983.9 per 100,000 and non-Hispanic black males at 790 per 100,000.

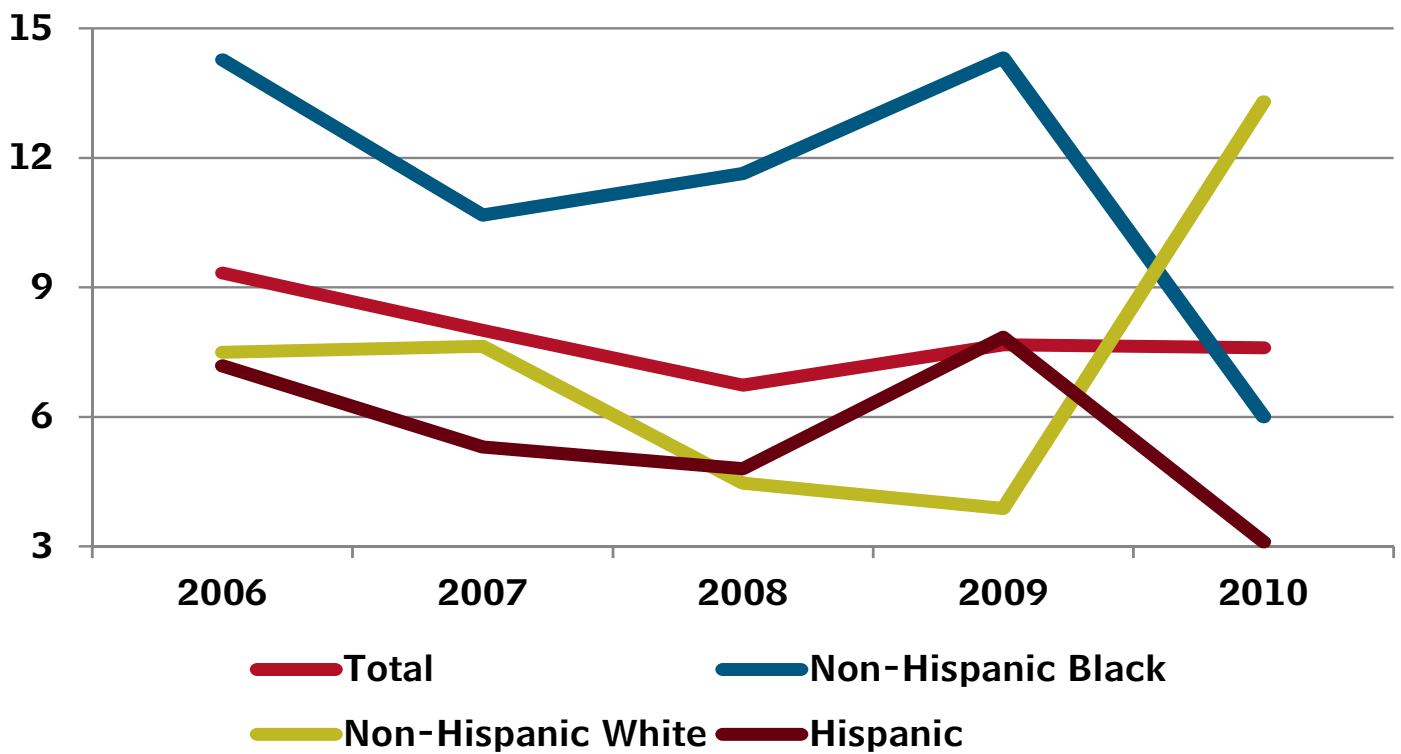
Five racial/ethnic age groups experienced no deaths in 2010: Hispanic females ages 1–4; Hispanic males, Hispanic females, and non-Hispanic white males ages 5–14; and Hispanic males ages 85+.



Crude Death Rates per 100,000 by Sex, Race/Ethnicity, Davidson County, TN, 2006–2010

Infant Mortality

In 2010, 73 infants died before reaching their first birthday. This produced an infant mortality rate of 7.6 per 1,000 live births. Over half of the infants who died (n=38, 52.1%) were non-Hispanic blacks, 38.4% (n=28) were non-Hispanic whites, and 6.8% (n=5) were Hispanic. Compared to 2008, when the infant mortality rate was 6.7 per 1,000 live births, the 2010 rate reflects a 13.4% increase. This increase is attributed to the increase seen in non-Hispanic whites, as the infant mortality rate among non-Hispanic blacks declined from 14.3 to 13.3 per 1,000 live births during this period.



Infant Mortality Rate (per 1,000 Live Births), Davidson County, TN, 2006–2010

Leading Causes of Death

Age-adjustment of mortality rates use a statistical computation that allows for comparison of groups of people with different age distributions, or between causes of death that vary in frequency by age. It does not represent the actual number of deaths in that group.

Years of Potential Life Lost (YPLL) are presented as the sum of the difference between each person's age at death and age 75. For example, if someone died of cancer at age 55, he/she would contribute 20 YPLL to the county total for that condition. Table 1 shows the ten leading causes of death in Davidson County in order of frequency. The rates presented are age-adjusted rates per 100,000 population. The ten leading causes of death accounted for 31,506 years of potential life lost (See Table 1.) The most years of potential life lost were a result of cancer, followed by heart disease, accidents, and suicide.

Leading Causes of Death Ranked by Frequency with the Corresponding Age-Adjusted Mortality Rates and Years of Potential Life Lost, Davidson County, TN 2010

Disease	Number	Rate	YPLL
Heart Disease	1,122	198.4	7,606
Cancer	1,114	196.3	9,027
Accidents	336	55	7,415
Stroke	259	46.8	1,229
Chronic Lower Respiratory Disease	254	46.2	1,442
Diabetes	167	29.5	1,508
Alzheimer's Disease	164	30.4	127
Influenza and Pneumonia	96	17.4	478
Nephritis, Nephrotic Syndrome & Nephrosis	74	13.4	599
Suicide	69	10.8	2,075

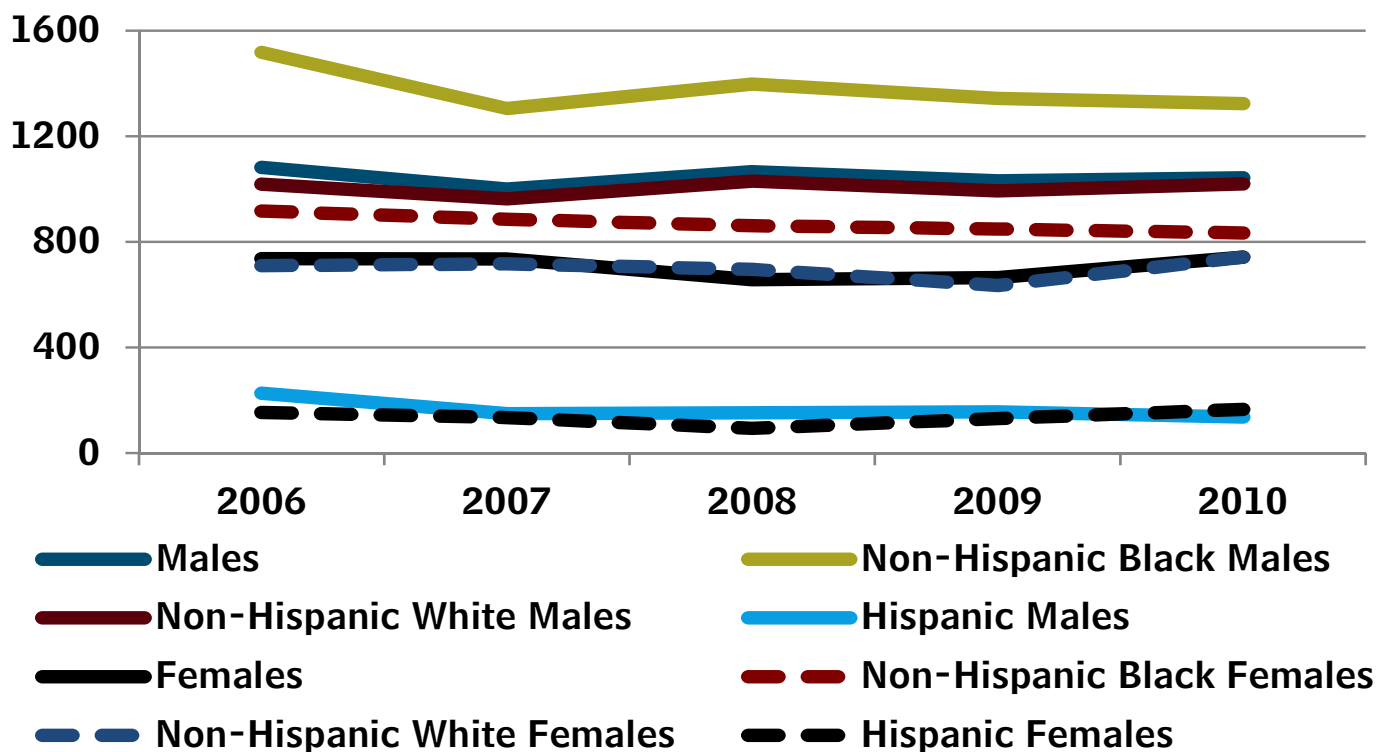
Not surprisingly, the leading causes of death differ by age.

- ▶ Two causes of death account for nearly two-thirds of infant deaths: perinatal conditions (n=26) and birth defects (n=21).
- ▶ Only ten deaths occurred among children 1–4 years old with accidents being the most frequent cause.
- ▶ Half of the twelve deaths among those 5–14 years old were attributed to accidents and homicide.
- ▶ Among those 15–24 years old, the leading causes were accidents (n=27), homicide (n=18), and suicide (n=7).
- ▶ In the 25–44 year old age group, the leading causes of death were accidents (n=70), heart disease (n=39), homicide (n=25), suicide (n=25), and cancer (n=25). These 5 causes accounted for 63.7% of the deaths in this age group.

- ▶ Among residents 45–64 years old, three causes of death accounted for over half of the deaths for this group. The leading causes were cancers (n=336), heart disease (n=254), and accidents (n=101).
- ▶ In persons 65 years old and older, heart disease and cancers were the most common causes of death, followed by stroke and chronic lower respiratory disease.

By race/ethnicity, heart disease, cancer, and diabetes were reported as the top three causes of death among non-Hispanic blacks. Heart disease, cancer, and accidents were the leading causes among non-Hispanic whites. Among Hispanics, cancer, heart disease, and nephritis/nephrotic syndrome/nephrosis claimed the top spots as the leading causes of death.

The leading causes of death among males in 2010 were cancer, heart disease and accidents. Among females, the leading causes were heart disease, cancer and stroke.



All Cause Age-Adjusted Mortality Rates per 100,000, Davidson County, TN, 2006–2010

In table 2, one can see that without exception, heart disease or cancer claimed the top spot within each racial/ethnic and sex category. The impact of the younger age distribution of the local Hispanic population is seen where rates were not available for disease and conditions associated with older people such as Alzheimer's disease. According to the 2010 American Community Survey 1-Year Estimates, the median age of all Davidson County residents was 34.0 years. By race and ethnicity, the same survey found the median age of non-Hispanic whites to be 37.6, non-Hispanic blacks to be 31.2, and the median age of Hispanic residents of Davidson County to be 25.5. In contrast to other groups, diabetes, suicide, and homicide were not among the top 10 leading causes for Hispanic females.

Age-Adjusted Mortality Rates for 10 Overall Leading Causes of Death Ranked by Frequency for Racial/Ethnic and Sex Groups, Davidson County, TN 2010

Disease/Condition	Race/Ethnicity			Gender		
	NHW	NHB	Hispanic	Female	Males	
Cardiovascular Disease	195.6	238.6	43.2	164	245.1	
Cancer	194.1	237.3	91.6	162.3	248.8	
Accidents	59.5	49.4	24.7	40.8	72.4	
Stroke	45.4	54.5	19.6	46.5	46.1	
Chronic Lower Respiratory Disease	49	40.2	--	42.3	53.3	
Diabetes	22.9	59.6	12.7	26.4	33.2	
Alzheimer's Disease	31.3	32.2	--	29.4	31.7	
Influenza and Pneumonia	19.1	12.4	16.9	14.4	22.5	
Nephritis, Nephrotic Syndrome & Nephrosis	9.5	25.4	40.3	13.4	14.4	
Suicide	14.4	3.9	1.8	3.4	19.1	
Race/Ethnicity and Gender						
Disease/Condition	NHWM	NHWF	NHBM	NHBF	HM	HF
Cardiovascular Disease	241.4	161.6	308.8	189.9	4.4	38.8
Cancer	243.3	161.3	323.2	190.7	50	41.6
Accidents	75.6	46.5	68.5	34.8	21.2	3.5
Stroke	46.3	44.3	45.9	57.8	10	9.6
Chronic Lower Respiratory Disease	57.4	44	44.4	39	--	--
Diabetes	28.3	17.9	63.7	57.1	--	12.7
Alzheimer's Disease	27.5	33	63.4	18.2	--	--
Influenza and Pneumonia	23.8	16.6	18.1	8.7	--	16.9
Nephritis, Nephrotic Syndrome & Nephrosis	10.1	10.1	30.5	23.5	4.8	35.5
Suicide	24.8	5	7.4	1.1	1.8	--

It is not only important to understand what the leading causes of death in a community are, but it is paramount that we consider why such deaths are occurring and what they tell us about the health of the community. In the 2009 Mortality Report, it was noted that residents as young as 15-24 were dying due to HIV disease. It was pointed out that this might be an indication that residents were not being tested or not receiving the most advanced treatment and care. In 2010, there were no HIV deaths in anyone under 25. Perhaps this is an indication of earlier detection or better access to care.

As in previous years, some residents died due to complications during pregnancy and/or childbirth. These deaths are difficult to accept in a community where the most advanced medical interventions are readily available. These deaths are a strong indication of healthcare access and utilization issues.

Years of Potential Life Lost

Previously, it was stated that a total of 31,506 years of potential life were lost due to the 10 overall leading causes of death. For all causes of death, there were a total of 49,151 years of potential life lost. That is the equivalent of losing the lifelong contributions of over 655 people who would have lived 75 years each. The table below lists the top five contributors of YPLL for each racial/ethnic/sex group.

Top Contributors to Years of Potential Life Lost by Racial/Ethnic and Sex Groups, Davidson County, TN 2010

Non-Hispanic Black	Non-Hispanic White	Hispanic
Cancer	Cancer	Accidents
Heart Disease	Heart Disease	Homicide
Accidents	Accidents	Cancer
Diabetes	Birth Defects	Heart Disease
HIV Disease	Chronic Lower Respiratory Disease	Perinatal Conditions
Male	Female	
Heart Disease	Cancer	
Cancer	Heart Disease	
Accidents	Accidents	
Diabetes	Chronic Lower Respiratory Disease	
HIV Disease	Diabetes	
NHWM	NHWF	Due to small numbers, more detailed analysis cannot be performed for Hispanic residents at this time.
Cancer	Cancer	
Heart Disease	Heart Disease	
Birth Defects	Chronic Lower Respiratory Disease	
Diabetes	Birth Defects	
Perinatal Conditions	Cirrhosis	
NHBM	NHBF	
Heart Disease	Cancer	
Cancer	Heart Disease	
Perinatal Conditions	Accidents	
Birth Defects	Perinatal Conditions	
HIV Disease	Diabetes	
HM	HF	
Accidents	Accidents	
Homicide	Perinatal Conditions	
Heart Disease	Cancers	
Cancer	Birth Defects	
Suicide	Heart Disease	

Comparison to National Objectives

Healthy People 2010 is a list of national health objectives that are used as targets that health jurisdictions seek to achieve. Six of the top ten leading causes of death in Davidson County had a corresponding objective. Table 3 presents the national objective, the Davidson County status in 2010, and the percent difference. Davidson County had only achieved the national objective for stroke and diabetes. The largest difference was seen in accidents, which was 214.3% higher than the 2010 objective.

Percent Difference in Age-Adjusted Mortality Rates for Leading Causes of Death and Infant Mortality in Davidson County, TN in 2010 Compared to the Health People 2010 Objectives

Disease/Condition	Healthy People 2010	Davidson County Rate	% Difference
Cardiovascular Disease	166	198.4	19.5
Cancer	159.9	196.3	22.8
Accidents	17.5	55	214.3
Stroke	48	46.8	-2.5
Chronic Lower Respiratory Disease	--	46.2	
Diabetes	45	29.5	-34.4
Alzheimer's Disease	--	30.4	
Influenza and Pneumonia	--	17.4	
Nephritis, Nephrotic Syndrome & Nephrosis	--	13.4	
Suicide	5	10.8	116.0
Infant Mortality	4.5	7.6	68.9

Spotlight on Heart Disease

Beginning with this edition of the annual mortality report for Davidson County, TN, we are highlighting a specific cause of death that impacts local residents. The selection of the disease we choose to highlight may be based on significant trends, newly emerging causes, or innovative and promising programs within the community directed at a particular disease.

This year, we have chosen to focus on a disease that is consistently one of the top leading causes of death of Davidson County residents, heart disease. It is estimated that nearly \$109 billion is spent in the U.S. each year in relation to heart disease. Nationally, heart disease is the number one cause of death among both males and females. Roughly, 600,000 people die annually from heart disease nationwide¹. From 2000-2010, an average of 1,173 Davidson County residents died from heart disease annually.

Nearly half of all Americans have at least one of the major risk factors for heart disease—hypertension, elevated LDL cholesterol, and smoking. Other factors that increase a person's risk of heart disease include diabetes, overweight or obesity, poor diet, lack of physical activity, and excessive alcohol use.¹

While heart disease continues to remain one of the leading causes of death among Davidson County residents, data since 2000 are encouraging. From 2000 until 2010, the age-adjusted mortality rate for heart disease has decreased 28% from a high in 2000 of 275.4 per 100,000 to 198.4 per 100,000 in 2010. The overall trend over these 11 years has been downward with only minor upticks in 2002 and 2008. The largest annual reversal of this overall trend was from 2009 to 2010 when the overall age-adjusted mortality rate increased (5.6%) from 187.9 to 198.4 per 100,000. This general overall declining trend reflects what has been observed nationally. The Centers for Disease Control and Prevention report that heart disease mortality has been steadily declining since 1980.²

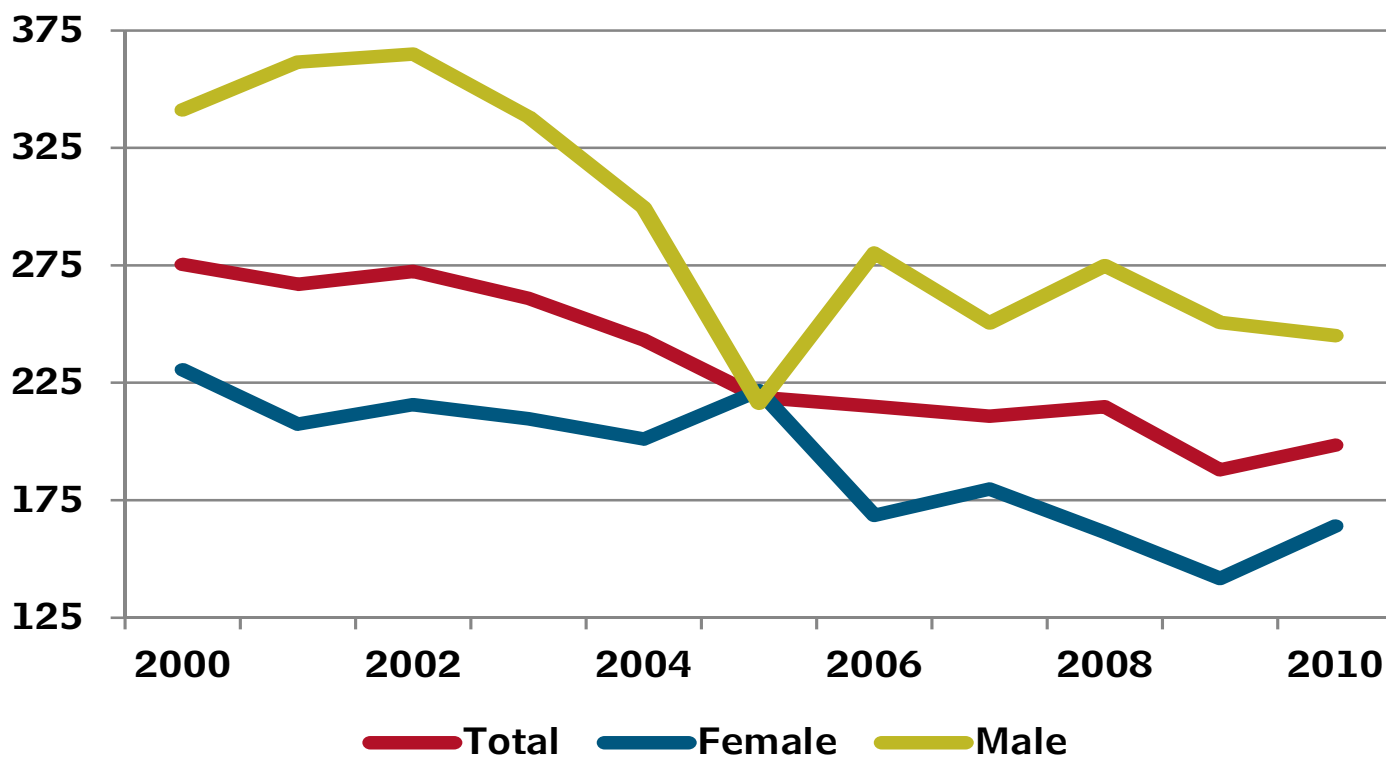
Within our community, heart disease is a much greater issue among males than females. The age-adjusted rate for males has typically been 1.4 to 1.8 times higher than the corresponding rate for females. Both males and females have benefited from the overall rate reductions since 2000. The rates among males are consistently higher, however, with one notable exception. In 2005, due to a sizable decrease in the male rate, coupled with an increase in the female rate, the age-adjusted rate among females (221.6 per 100,000) exceeded the rate among males (216.2 per 100,000). Nationally, heart disease is equally burdensome to both men and women. In 2009, 307,255 men and 292,188 women died from heart disease. That is roughly 25% of both males and female deaths in the United States.^{3,4}

1 Heart Disease Facts Sheet: www.cdc.gov/heartdisease/facts.htm

2 Deaths: Preliminary Data 2011: http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf

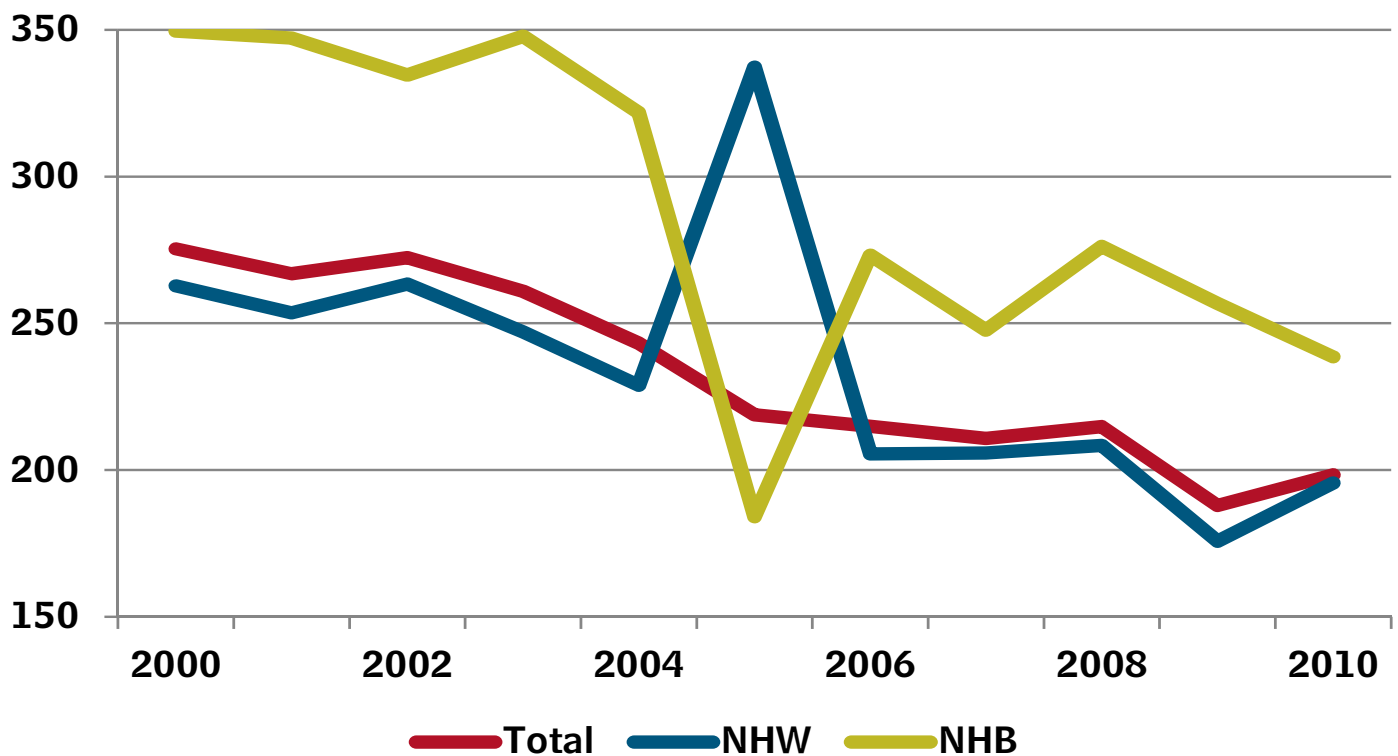
3 Men and Heart Disease Fact Sheet: http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_men_heart.htm

4 Women and Heart Disease Fact Sheet: http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_women_heart.htm



Heart Disease Mortality Rates per 100,000 by Sex, Davidson County, TN, 2000–2010

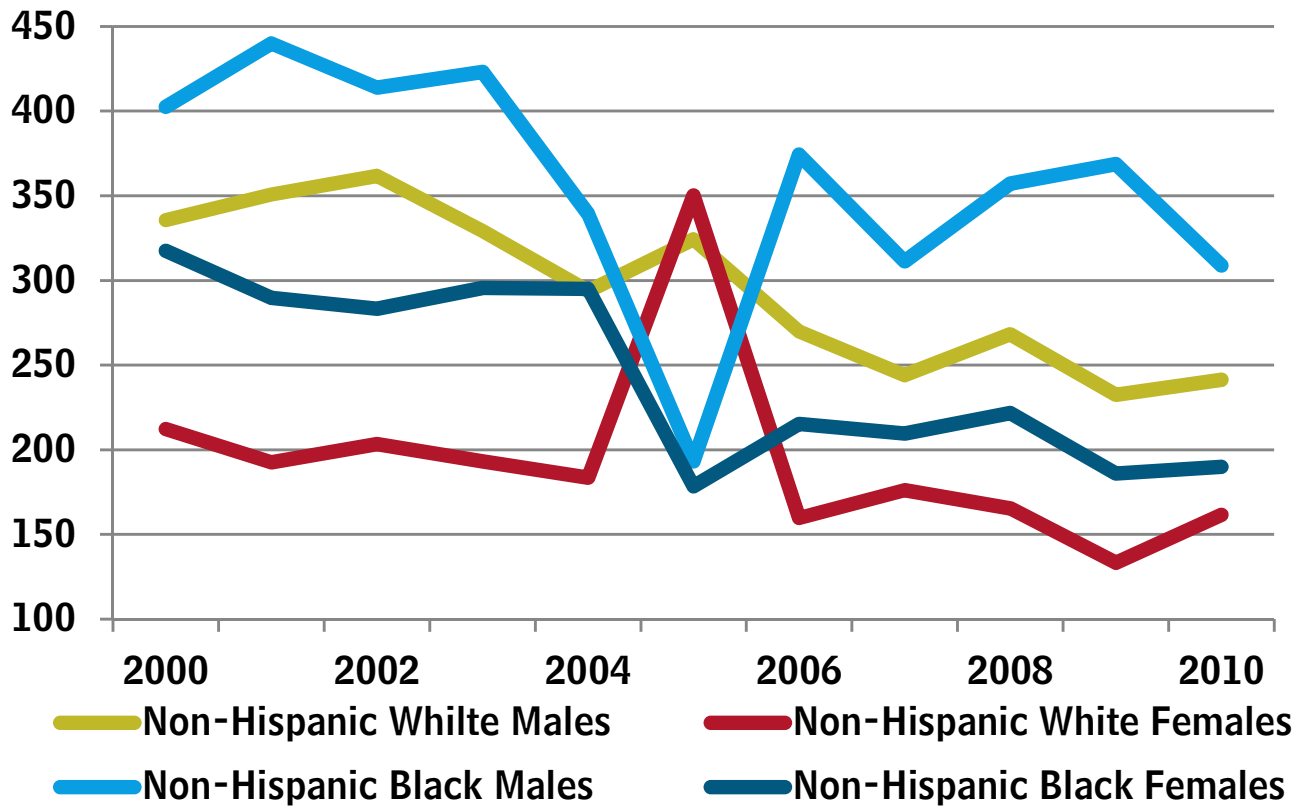
By race/ethnicity, the age-adjusted mortality rate for heart disease is typically higher among non-Hispanic blacks than it is from non-Hispanic whites. The rate among non-Hispanic blacks ranged from 1.2 to 1.5 times that of non-Hispanic whites between 2000 and 2010. The one exception to this was in 2005 when the rate for non-Hispanic whites (337.2 per 100,000) exceeded the rate for non-Hispanic blacks (184.1). This anomaly was the result of a sudden decrease of 43.1% in the age-adjusted rate among non-Hispanic black males and a 39.5% decrease in the same rate for non-Hispanic black females. Unfortunately, these drastic decreases were short lived as the rate for both non-Hispanic males and females increased by 93.8% and 20.6% respectively.



Heart Disease Mortality Rates per 100,000 by Race/Ethnicity , Davidson County, TN, 2000–2010

Due to the small number of heart disease deaths among Hispanic residents in Davidson County, the age-adjusted mortality rates for this segment of the population are unstable and therefore, not presented in this report. As the Hispanic population of Davidson County grows, reports such as this will be able to address this segment of the population in more detail. Based on the actual numbers of heart disease deaths, such a discussion of heart disease among Hispanic residents might be possible within the next 5 years.

Finally, when investigating heart disease deaths by sex, and race/ethnicity categories, the evidence is clear that the overall rate of heart disease is driven by the rate among non-Hispanic black males more so than any other sex/race/ethnicity group. Non-Hispanic white females consistently have the lowest age-adjusted mortality rate attributed to heart disease followed by non-Hispanic black females, and non-Hispanic white males. The greatest progress from 2000 to 2010 was among non-Hispanic black females. The rate for this group dropped from 317.4 per 100,000 to 189.9, a decrease of 40.2% in the 11-year period under review. Other sex/race/ethnicity groups also saw decline during this period: non-Hispanic white males 28.1%, non-Hispanic white females 23.9%, and non-Hispanic black males 23.3%. National trends for by race and sex show declines among all categories, but similar to our local data, black males consistently have the highest rates followed by white males, black females, and white females. While these data did not address ethnicity, there is little reason to think these trends and relationships would change.⁵



Heart Disease Mortality Rates per 100,000 by Race and Sex, Davidson County, TN, 2000–2010

