

Davidson County Mortality Report 2009



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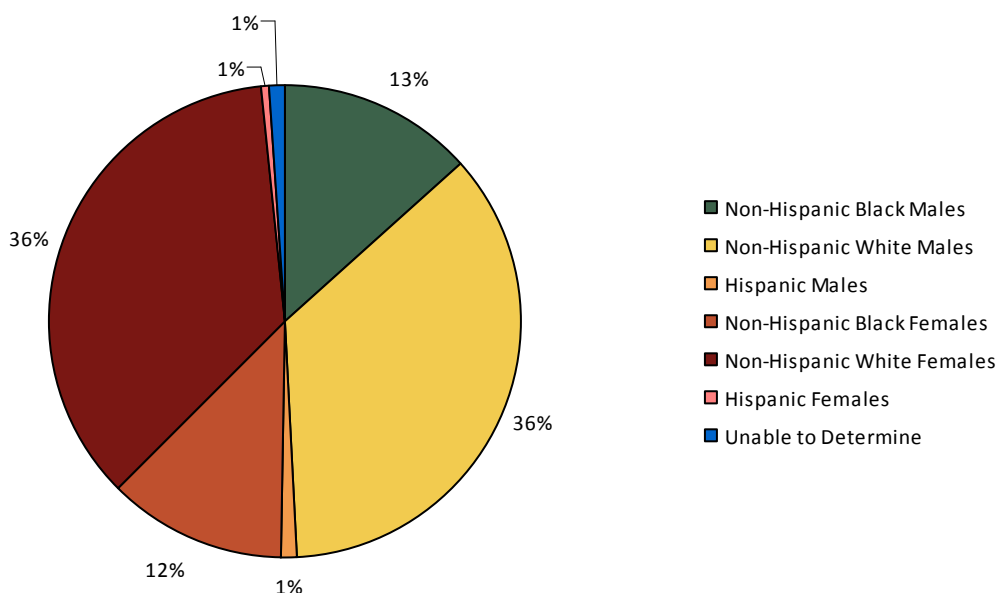
Executive Summary

- 4,921 deaths occurred among Davidson County, TN residents in 2009.
- Males accounted for slightly more deaths (50.8%) than would be expected based on the community's population profile.
- 71.9% of deaths were among non-Hispanic whites and 1.5% were among Hispanics.
- 75 infants died in 2009 producing an infant mortality rate of 7.7 per 1,000 live births.
- The age-adjusted death rate from all causes was 816.8 per 100,000.
- The highest death rate was among non-Hispanic black men, who experienced an age-adjusted death rate of 1,343.5 per 100,000.
- Cardiovascular disease and cancer were by far the most common causes of death in 2009. These 2 causes accounted for 45.4% of all the deaths in Davidson County.
- The top 10 leading causes of death accounted for 34,927 years of potential life lost by Davidson County residents.
- HIV deaths were found in each age category beginning with those 15–24 years old. HIV deaths among younger residents may be an indication that residents are not getting 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, and for there not being rates calculated for some of the county-wide leading causes of death such as Alzheimer's Disease and Influenza and Pneumonia.
- The Healthy People 2010 objectives for the leading causes of death in Davidson County were only met for stroke and diabetes.

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

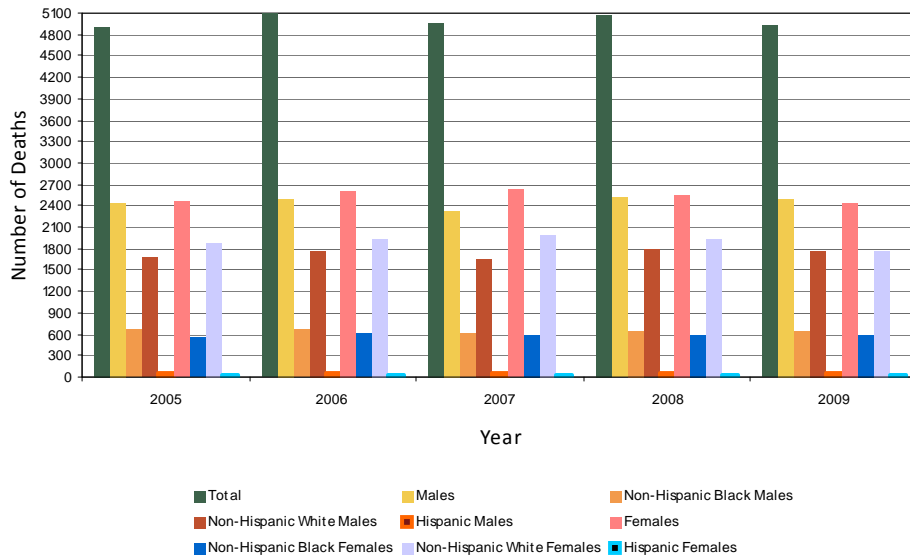
In 2009, there were 4,921 deaths among Davidson County residents. Slightly more males died (n=2,498, 50.8%) than females (n=2,422, 49.2%). The sex of 1 person was not reported. By race\ethnicity, non-Hispanic whites accounted for 3,540 (71.9%) of the deaths compared to non-Hispanic blacks who represented 1,257 (25.5%), while the corresponding number for Hispanics was 73 (1.5%). The remaining 51 (1%) of people represented other racial minorities or did not have their race recorded. Deaths among people ages 65 and older accounted for 65.4% of all resident deaths in 2009. There were 75 deaths (1.5%) among infants (less than 1 year old) in 2009.

Figure 1: Percent of Deaths by Race/Ethnicity and Sex, Davidson County, TN 2009



The distribution of deaths in 2009 as presented above closely parallels the population estimates provided by the U.S. Census Bureau's 2009 American Community Survey. During 2009, the total population of Davidson County was estimated to be 635,710. This survey shows a sex distribution of county residents as 48.5% males and 51.5% female. Given these population statistics, there were slightly more deaths among males than would have been expected in 2009. Conversely, there were fewer deaths than might be anticipated among females. The population distribution by race/ethnicity was reported to be 59.8% non-Hispanic white, 26.7% non-Hispanic black, and 8.7% Hispanic. Taking this distribution into account, 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.

Figure 2: Number of Deaths by Race/Ethnicity and Sex, Davidson County, TN 2005-2009

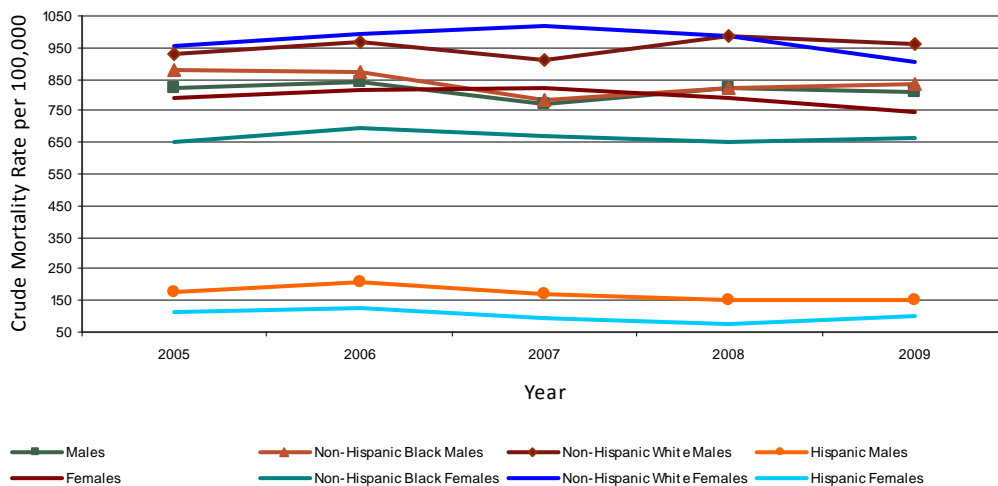


Crude Death Rates by Sex, Race/Ethnicity and Age

Crude death rates are simply the mortality rate from all causes of death for a population. It is calculated as the number of deaths in a given population in a given year per 100,000 people. Therefore, in a community of 20,000 people with 100 deaths, the crude mortality rate would be calculated as $(100/20,000) * 100,000$.

The overall crude death rate in Davidson County, TN for 2009 was 774.1 per 100,000 population. The crude death rate among males (809.9 per 100,000) was slightly higher than among females (746.2 per

Figure 3: Crude Mortality Rates by Race/Ethnicity and Sex, Davidson County, TN 2005-2009



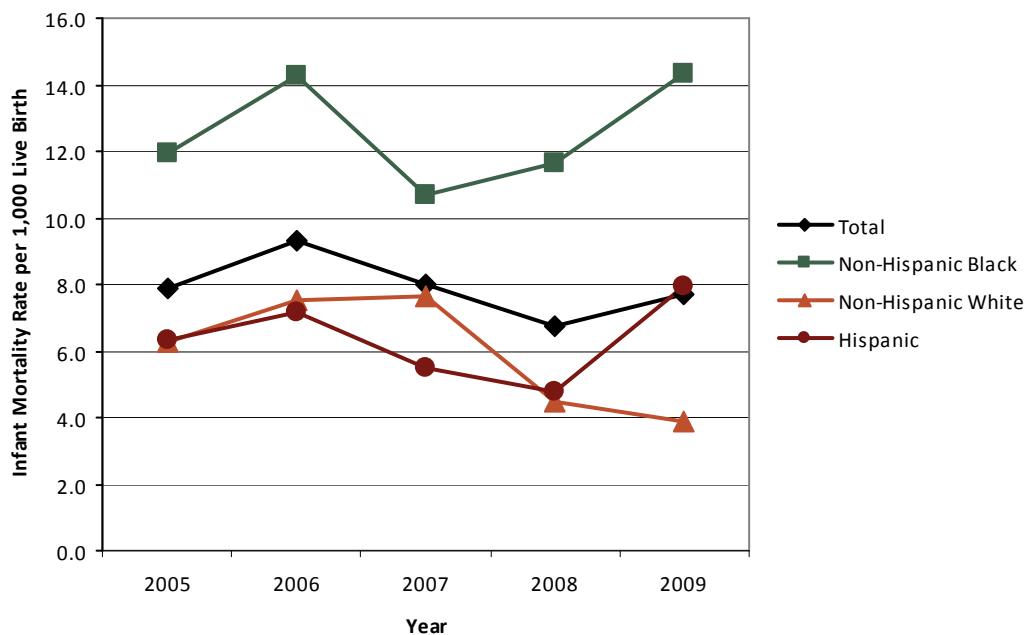
100,000). The crude death rates for non-Hispanic whites, non-Hispanic blacks, and Hispanics were 931.7, 741.2, and 131.2 per 100,000 respectively.

The crude death rate by gender and race/ethnicity was highest among non-Hispanic white males at 963.7 per 100,000 followed by non-Hispanic white females at 901.8 per 100,000 and non-Hispanic black males at 832.7 per 100,000. Three groups, Hispanic males ages 65–74, and Hispanic females ages 5–14 and 45–54 experienced no deaths in 2009.

Infant Mortality

In 2009, 75 infants died before reaching their first birthday. This produced an infant mortality rate of 7.7 per 1,000 live births. Over half of the infants who died (n=43, 57.3%) were non-Hispanic blacks. Compared to 2008, when the infant mortality rate was 6.7 per 1,000 live births, the 2009 rate reflects a 14.9% increase. This increase is attributed to the rise seen in non-Hispanic black and Hispanic residents as the infant mortality rate among non-Hispanic whites declined from 4.5 to 3.9 per 1,000 live births during this period.

Figure 4: Infant Mortality Rate by Race/Ethnicity, Davidson County, TN 2005-2009



Leading Causes of Death

Table 1 presents the 10 leading causes of death in Davidson County in order of frequency. The rates presented are age-adjusted rates reported per 100,000 population. Age-adjustment of mortality rates uses a statistical computation that allows for the comparison of groups of people with different age distributions, or between causes of death that vary in frequency by age. It doesn't 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 total experienced within the county for that condition.

Disease/Condition	Number	Rate	YPLL
Cardiovascular Disease	1,134	187.9	7,294
Cancer	1,100	187.1	9,652
Accidents	303	47.9	6,394
Stroke	269	44.9	1,729
Chronic Lower Respiratory Disease	268	45.4	1,616
Diabetes	168	28.3	1,610
Alzheimer's Disease	149	24.9	61
Influenza and Pneumonia	96	16.1	862
Suicide	82	12.6	2,578
Homicide	74	11.5	3,131

The 10 overall leading causes of death accounted for 34,927 years of potential life lost (See Table 1.) The most years of potential life lost were a result of cancer related deaths, followed by deaths attributed to cardiovascular disease, accidents, and homicide. Not surprisingly, the leading causes of death differ by age:

- Of the 75 deaths among infants, 2 causes of death account for nearly three-quarters of 75 infant deaths: perinatal conditions (n=34) and birth defects (n=21).
- Only 7 deaths occurred among children 1-4 years old with accidents being the most frequent cause.
- Over half of the 17 deaths among those 5–14 years old were attributed to 4 causes: birth defects, suicide, homicide, and abnormal clinical findings.
- Among those 15-24 years old, 83 deaths occurred. The leading causes were homicide (n=29), accidents (n=21), suicide (n=10), and cancers (n=6).

- In the 25–44 year old age group, the leading causes of death were: accidents (n=62), heart disease (n=39), cancers (n=35), HIV disease (n=24), suicide (n=24), and homicide (n=21). These 6 causes accounted for over 70% of the 656 deaths in this age group.
- Among residents 45–64 years old, 3 causes of death accounted for over half of the 1,232 deaths for this group. The leading causes were: cancers (n=331), heart disease (n=252), and accidents (n=106).
- In the oldest age group, those 65 years old and older, heart disease and cancers were the most common with 840 and 726 cases each followed by stroke and chronic lower respiratory disease with 203 and 202 cases, respectively.

It is significant to note that HIV deaths occurred among residents in each age category beginning with residents 15–24 years old. With the advances in HIV treatment over the past decade, these deaths may be an indication of residents not getting tested or not receiving the most advanced care available.

It is also worth noting that some residents died due to complications during pregnancy and/or childbirth. Like with HIV, it is difficult to accept such deaths in a community where the most advanced medical interventions are readily available.

By race/ethnicity, heart disease, cancer, stroke, diabetes, and accidents were reported as the top five leading causes of death among non-Hispanic blacks. Heart disease, cancer, accidents, chronic lower respiratory disease, and stroke were the leading causes among non-Hispanic whites. Among Hispanic residents, accidents, heart disease, cancer, and birth defects claimed the top spots as the leading causes of death followed by a 3-way tie for 5th place among homicide, stroke, and perinatal conditions. The young age distribution of the Hispanic population is most likely the driving force behind causes such as birth defects and perinatal conditions being among the leading causes of death within this segment of the population. Deaths during the perinatal period are an indication of the overall health and well being of a community.

The leading causes of death for each sex are similar. Heart disease, cancer, accidents, chronic lower respiratory disease, stroke are the top causes among men. The same conditions are also the leaders among women, with the relative positioning of accidents and strokes being reversed.

From Table 2, one can see that without exception, cardiovascular disease or cancer claimed the top spot with each racial/ethnic and sex category. Again, 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 and Influenza and Pneumonia, as neither of these was

found to be in the top 10 causes of death among Hispanic residents. Diabetes, suicide, or homicide were not among the top 10 leading causes for Hispanic females.

Figure 5: All-Cause, Age-Adjusted Mortality Rates by Race/Ethnicity and Sex, Davidson County, TN, 2005-2009

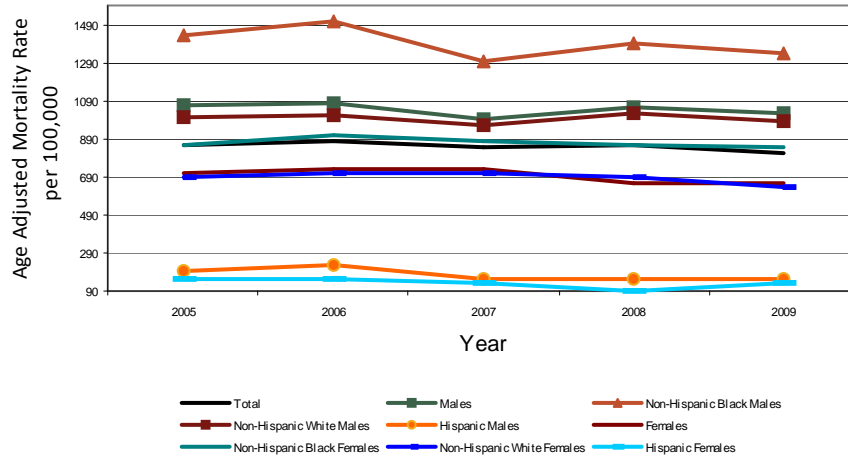


Table 2. Age-Adjusted Mortality Rates for 10 Overall Leading Causes of Death Ranked by Frequency for Racial/Ethnic and Sex Groups, Davidson County, TN 2009

Disease/Condition	Race/Ethnicity			Gender	
	NHW	NHB	Hispanic	Female	Male
Cardiovascular Disease	175.7	256.8	75.2	141.7	250.7
Cancer	181.4	240.6	34.7	153.8	243.5
Accidents	54.6	35.4	32.1	33.6	63.3
Stroke	39.8	63.3	22.3	41.2	49.7
Chronic Lower Respiratory Disease	49.5	35.2	15.7	40.6	54.3
Diabetes	22.5	56	5.1	22.9	35.6
Alzheimer's Disease	27.5	16.9	--	24.9	25.1
Influenza and Pneumonia	16	19.7	--	14.4	19.8
Suicide	17.3	4.7	1.9	6	19.9
Homicide	4.3	26.9	12	4.1	19

Disease/Condition	Race/Ethnicity and Gender					
	NHWM	NHWF	NHBM	NHBF	HM	HF
Cardiovascular Disease	232.4	133.3	368.7	186	40.5	34.8
Cancer	238.4	148	310.7	200.8	24.2	10.5
Accidents	71.5	39	52.4	22	21.7	10.4
Stroke	47.2	33.9	64.1	64.6	7.1	15.2
Chronic Lower Respiratory Disease	58.1	45.2	45.1	31.1	4.4	11.3
Diabetes	28.4	18.4	73.1	45.4	5.1	--
Alzheimer's Disease	26.6	28	21.7	14.3	--	--
Influenza and Pneumonia	20.4	13.9	21.3	18.5	--	--
Suicide	27.8	7.6	4.5	4.8	1.9	--
Homicide	6.5	2.1	48.5	8.3	12	--

Years of Potential Life Lost

Previously, it was stated that a total of 34,924 years of potential life were lost due to the 10 overall leading causes of death. Overall, due to the 4,921 resident deaths in Davidson County, there were a total of 51,677 years of potential life lost. That is the equivalent of losing the lifelong contributions of nearly 690 people who would have lived 75 years each. Table 3 lists the top 5 contributors of YPLL for each racial/ethnic group and sex and the top 3 contributors for each racial/ethnicity/sex group.

Table 3. Top Contributors to Years of Potential Life Lost by Racial/Ethnic and Sex Groups, Davidson County, TN 2009		
Non-Hispanic Black	Non-Hispanic White	Hispanic
Cancers Heart Disease Stroke HIV Disease Birth Defects	Heart Disease Suicide Cirrhosis Diabetes Birth Defects	Accidents Birth Defects Perinatal Conditions Homicide Cancers
Male	Female	
Heart Disease Cancers Accidents Birth Defects Diabetes	Cancers Heart Disease Accidents Birth Defects Chronic Lower Respiratory Disease	
NHWM	NHWF	
Accidents Heart Disease Cancers	Cancers Heart Disease Chronic Lower Respiratory Disease	
NHBM	NHBF	
Heart Disease Homicide Cancers	Cancers Heart Disease Perinatal Conditions	
HM	HF	
Accidents Homicide Birth Defects	Perinatal Conditions Birth Defects Whooping Cough	

Comparison to National Objectives

Healthy People 2010, is a list of national health objectives which are used as targets which health jurisdictions seek to achieve. Seven of the top 10 leading causes of death in Davidson County had a corresponding objective. Table 4 presents the national objective, the Davidson County status in 2009, and the percent difference. Davidson County had only achieved the national objective for stroke and diabetes. The largest difference is seen in homicides which were 283.3% higher than the 2010 objective.

Disease/Condition	Healthy People 2010	Davidson County Rate	% Difference
Cardiovascular Disease	166	187.9	13.2
Cancer	159.9	187.1	17
Accidents	17.5	47.9	173.7
Stroke	48	44.9	-6.5
Chronic Lower Respiratory Disease	--	45.4	--
Diabetes	45	28.3	-37.1
Alzheimer's Disease	--	24.9	--
Influenza and Pneumonia	--	16.1	--
Suicide	5	12.6	152
Homicide	3	11.5	283.3
Infant Mortality	4.5	7.7	71.1

