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**Dayton & Montgomery County**

# Health Profiles

*Special Report*

## An Analysis of Suicide and Homicide Deaths in Montgomery County, OH

Public Health - Dayton & Montgomery County  
Epidemiology Section

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## Introduction

This special report was prepared to present data associated with homicide and suicide deaths of residents of Montgomery County, Ohio. All data collected and analyzed in this report were collected from death certificate files provided by the Ohio Department of Health.

In the suicide death portion of this report, these data present the trends in suicide deaths and characteristics of the residents who committed suicide (i.e. marital status, gender, race, age, and level of education). To compare Montgomery County to recent national suicide reports, suicides among those aged 35 to 64 are highlighted. The suicide section concludes with a comparison of suicide methods between males and females.

The second section of this report, homicide deaths, also provides data on homicide death rate trends as well as the characteristics of homicide victims in Montgomery County. This report focuses on the trend in homicide deaths of those aged 10 to 24. Also included in the homicide data is a breakdown of homicide victims by race and gender and whether or not a firearm was used.

Information in this report can be used to help guide decision making for programs and policies pertaining to violence and suicide prevention. Additionally, this report is available to provide data needed for grants as well as to university students and the general public who have a need for or interest in data related to homicide and suicide deaths of Montgomery County residents.

**Please note:** These data were provided by the Center for Public Health Statistics and Informatics, Ohio Department of Health. The Department specifically disclaims responsibility for any analyses, interpretations, or conclusions.

## Definitions

Age-adjusted death rate - a statistical process used to eliminate the effect of different age distributions so that a rate can be compared in a population over time or with different populations.

Cause of death - official determination of conditions resulting in a human's death. This cause is listed on the death certificate.

Homicide - the act of a human killing another human

Mortality - occurrence of death in a population

Suicide - intentional self-harm resulting in death

## Suicide Deaths in Montgomery County, Ohio

Table 1. Characteristics of suicide deaths, Montgomery County, OH 2007-2011\*

	2007		2008		2009		2010		2011	
	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths
<b>Total</b>	61	1.1	79	1.4	77	1.4	90	1.6	88	1.6
	#	% of Suicides	#	% of Suicides	#	% of Suicides	#	% of Suicides	#	% of Suicides
<b>Age</b>										
<b>1-24</b>	8	13.1	8	10.1	8	10.4	13	14.4	10	11.4
<b>25-44</b>	22	36.1	40	50.6	26	33.8	28	31.1	32	36.4
<b>45-64</b>	22	36.1	22	27.8	29	37.7	42	46.7	35	39.8
<b>65 and older</b>	9	14.8	9	11.4	14	18.2	7	7.8	9	10.2
<b>Marital Status</b>										
<b>Separated</b>	0	0.0	1	1.3	1	1.3	0	0.0	1	1.1
<b>Married</b>	19	31.1	24	30.4	24	31.2	28	31.1	24	27.3
<b>Single</b>	16	26.2	32	40.5	25	32.5	31	34.4	35	39.8
<b>Divorced</b>	19	31.1	16	20.3	1	1.3	26	28.9	20	22.7
<b>Widowed</b>	6	9.8	5	6.3	5	6.5	5	5.6	6	6.8
<b>Gender</b>										
<b>Male</b>	55	90.2	60	75.9	60	77.9	69	76.7	68	77.3
<b>Female</b>	6	9.8	19	24.1	17	22.1	21	23.3	18	20.5
<b>Race</b>										
<b>White</b>	57	93.4	64	81.0	68	88.3	80	88.9	76	86.4
<b>Black</b>	4	6.6	15	19.0	9	11.7	10	11.1	8	9.1

\* Due to incomplete death certificate reporting, there are missing data values.

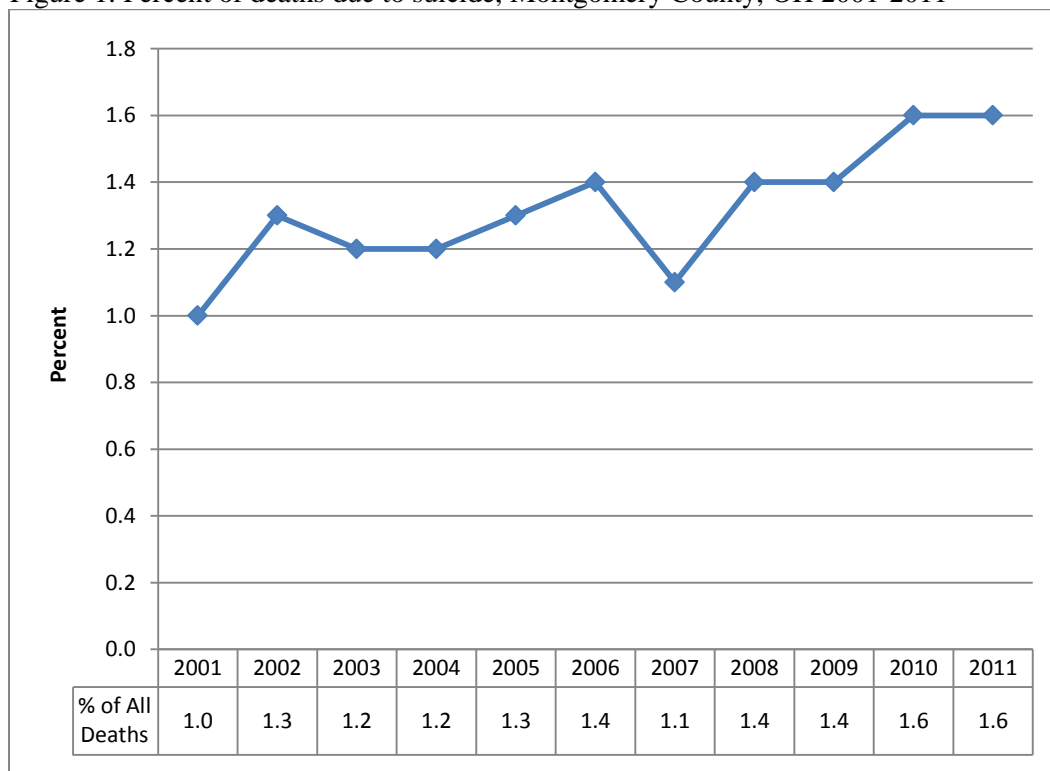
The majority of all suicides were committed by White males. In 2011, 65.9% of suicides were committed by White males (White females 20.5%, Black males 9.1%, and Black females 0%).

Table 2. Ten leading causes of death, Montgomery County, OH 2010-2011\*

Rank		#	Age-adjusted rate
	All Causes	11,297	853.3
1	Cancer	2559	193.5
2	Heart Disease	2375	175.6
3	Accidents	677	58.2
4	Chronic Lower Respiratory Diseases	665	49.8
5	Alzheimer's Disease	544	38.0
6	Stroke	537	39.6
7	Diabetes	433	32.3
8	Nephritis	183	13.4
9	Suicide	179	16.1
10	Septicemia	162	9.0

\* Due to incomplete death certificate reporting, there are missing data values.

Figure 1. Percent of deaths due to suicide, Montgomery County, OH 2001-2011

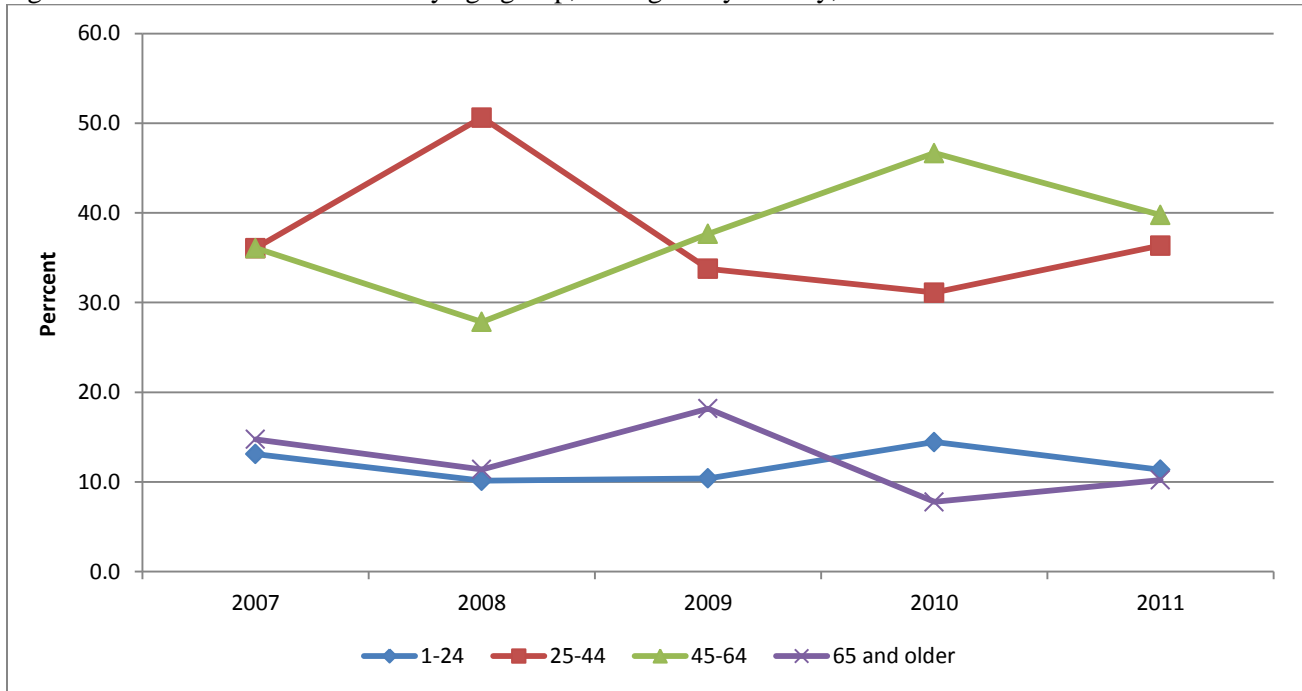


- In 2001, suicide was not one of the top 10 leading causes of death in Montgomery County, but by 2010-11, it was the 9<sup>th</sup> leading cause of death.

- The percent of deaths due suicide increased 60% from 2001 to 2011.

*Suicide and Age*

Figure 2. Percent of suicide deaths by age group, Montgomery County, OH 2007-2011



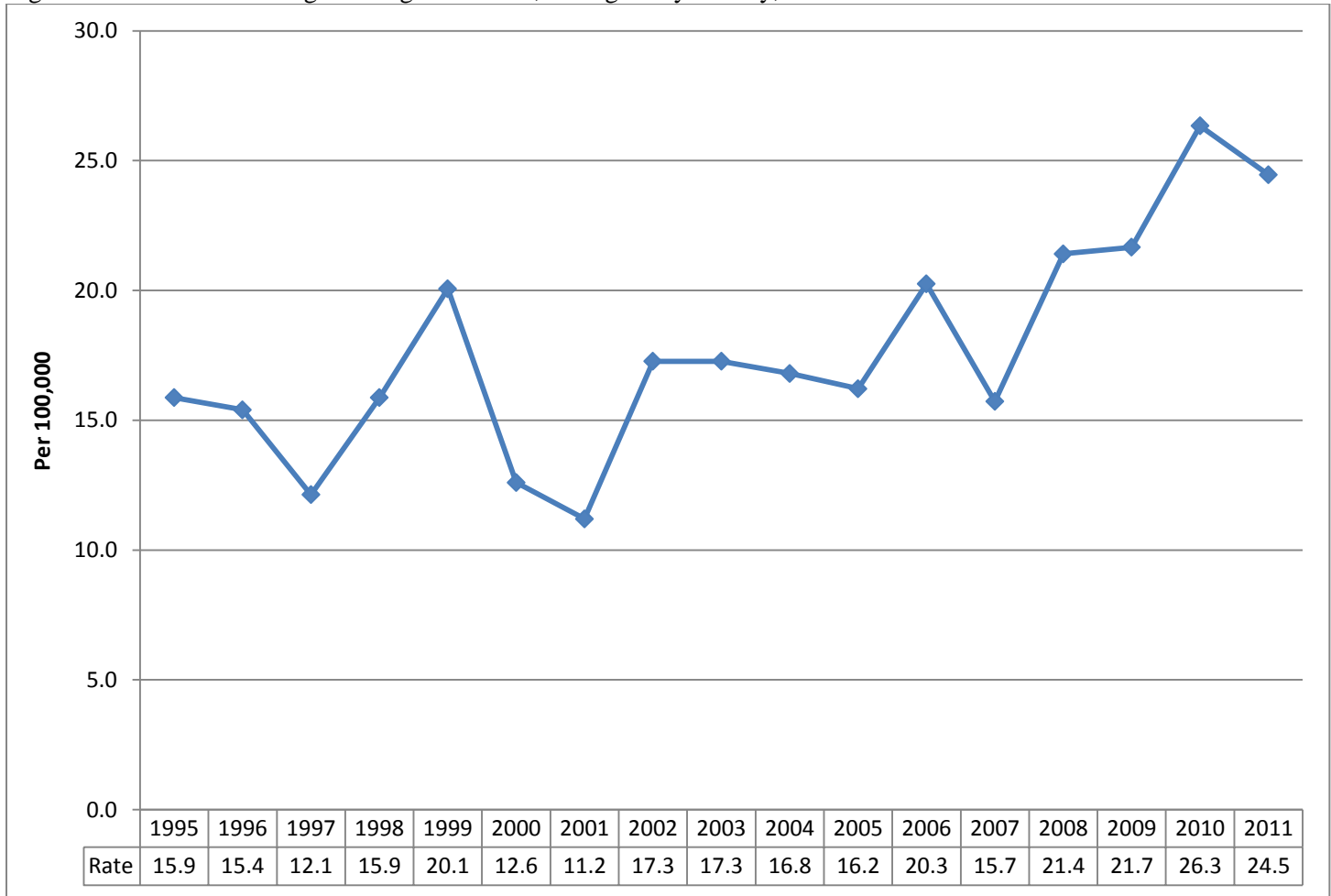
- The greatest percentage of deaths due to suicide occurred among 25 to 44 year olds and 45 to 64 year olds.
- Beginning in 2009, the highest percentage of suicide deaths occurred in the 45 to 64 year old age group rather than in the 25 to 44 year old age group.



National Trends:

The CDC reported that nationally, the suicide rate for 35 to 64 year olds increased 28.4% from 1999 to 2010 (CDC, 2013b). The suicide rate in Montgomery County increased 30.8% in this age group during this same time period.

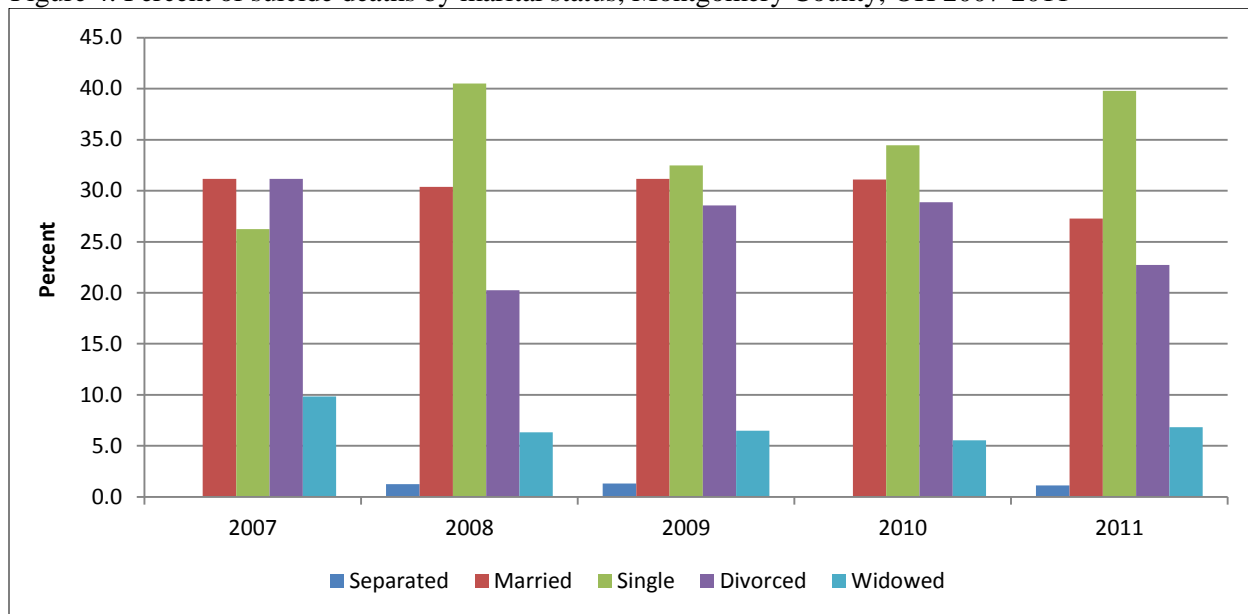
Figure 3. Suicide rate among those aged 35 to 64, Montgomery County, OH 1995-2010



- Suicide rates spiked in 1999 to 20.1 per 100,000, but dropped 37.3% in 2000.
- Rates peaked at 26.3 per 100,000 in 2010, but decreased slightly in 2011 to 24.5 per 100,000.

### Suicide and Marital Status

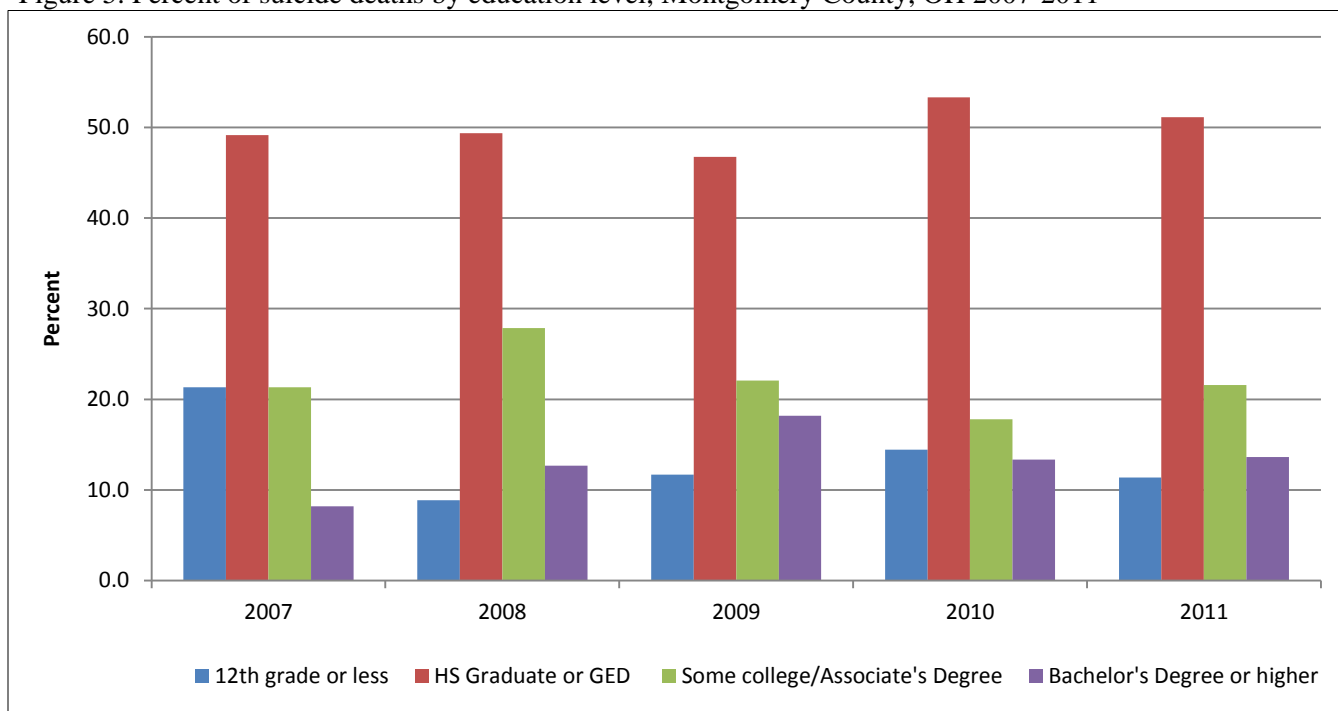
Figure 4. Percent of suicide deaths by marital status, Montgomery County, OH 2007-2011



With the exception of the year 2007, the majority of suicides over the past 5 years (2007-2011) were committed by individuals who were single followed by those individuals who were married.

### Suicide and Education Level

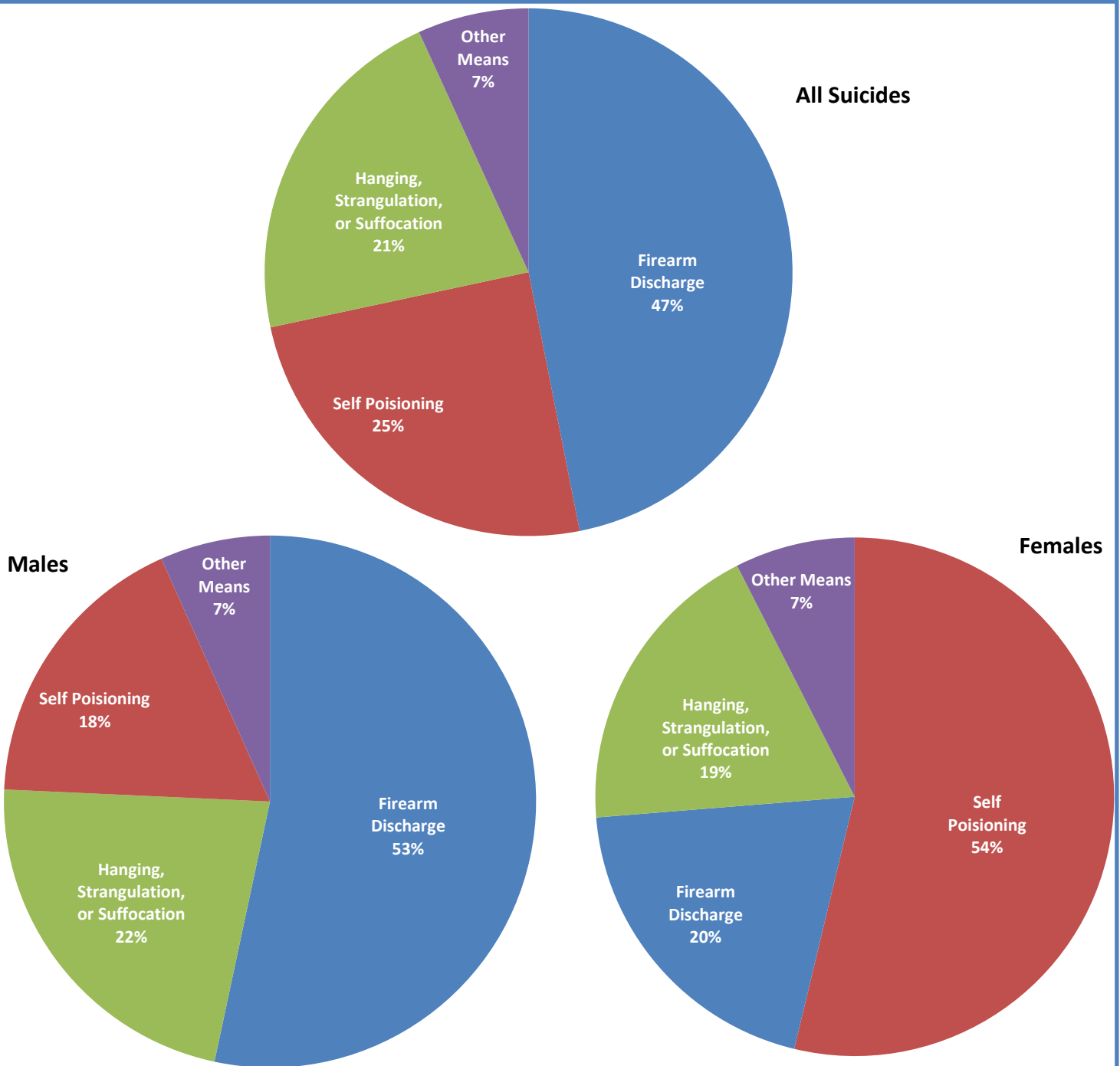
Figure 5. Percent of suicide deaths by education level, Montgomery County, OH 2007-2011



From 2007 to 2011, on average 50% of suicides were committed by individuals whose highest level of education was a high school diploma or GED.

*Methods of Suicide*

Figure 6. Percent distribution of the top 3 methods of suicide by gender, Montgomery County, OH 2007-2011



- Males more often used a firearm (53%) to commit suicide and females chose to use drugs or gases (54%).

- The majority of suicides committed in Montgomery County from 2007-2011 were by firearm discharge (47%). Most suicides were committed by males (79%).

## Homicide Deaths in Montgomery County, Ohio

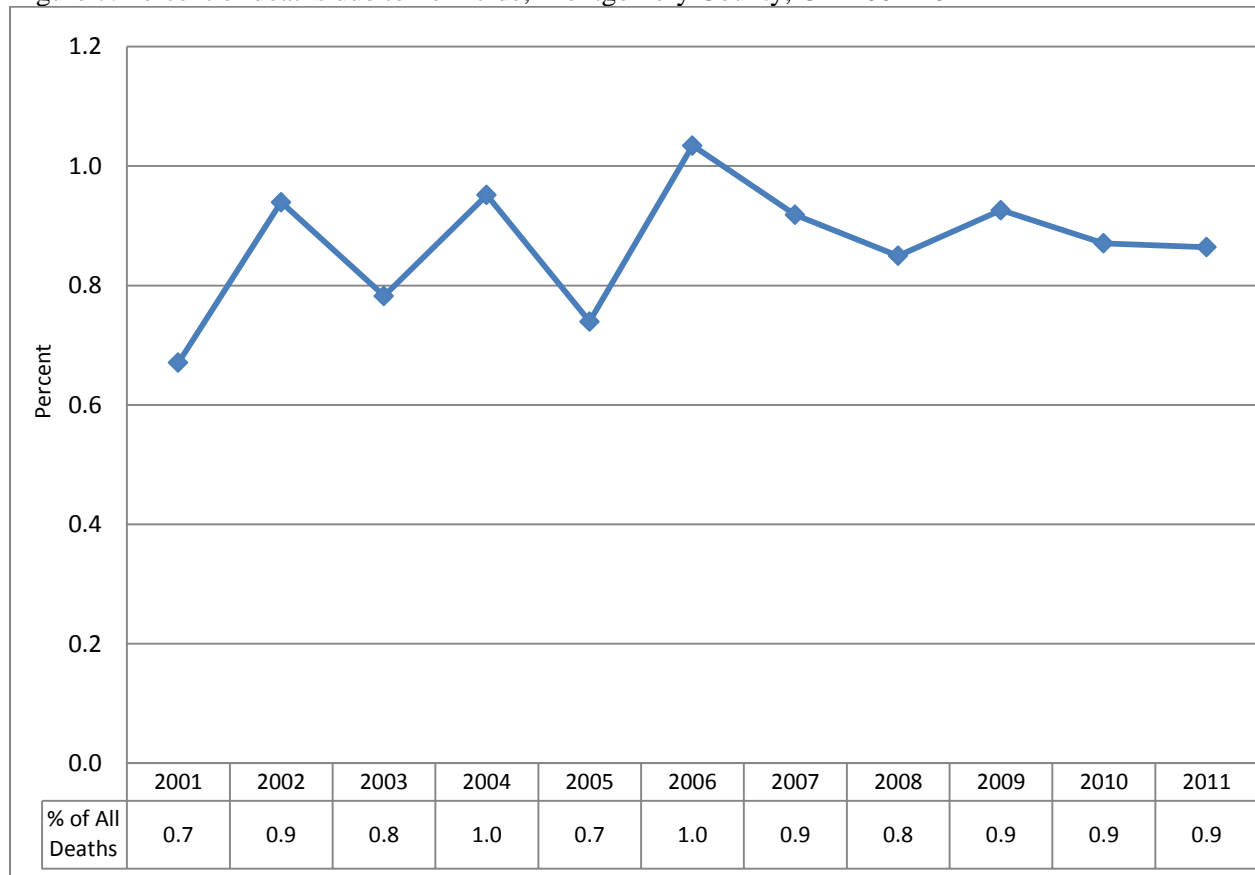
Table 3. Characteristics of homicide deaths, Montgomery County, OH 2007-2011\*

	2007		2008		2009		2010		2011	
	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths	#	% of All Deaths
<b>Total</b>	49	0.9	49	0.8	50	0.9	49	0.9	49	0.9
	#	% of All Homicides	#	% of All Homicides	#	% of All Homicides	#	% of All Homicides	#	% of All Homicides
<b>Age</b>										
<b>under 9</b>	1	2.0	1	2.0	1	2.0	1	2.0	3	6.1
<b>10-24</b>	13	26.5	12	24.5	13	26.5	12	24.5	11	22.4
<b>25-44</b>	22	44.9	26	53.1	23	46.9	22	44.9	22	44.9
<b>45-64</b>	10	20.4	9	18.4	11	22.4	12	24.5	8	16.3
<b>65-84</b>	3	6.1	1	2.0	1	2.0	2	4.1	4	8.2
<b>85 and older</b>	0	0.0	0	0.0	1	2.0	0	0.0	1	2.0
<b>Gender</b>										
<b>Male</b>	43	87.8	39	79.6	46	92.0	38	77.6	35	71.4
<b>Female</b>	6	12.2	10	20.4	4	8.0	11	22.4	14	28.6
<b>Race</b>										
<b>White</b>	18	36.7	17	34.7	15	30.0	11	22.4	11	22.4
<b>Black</b>	31	63.3	32	65.3	35	70.0	37	75.5	37	75.5
<b>Race/Gender</b>										
<b>White male</b>	13	26.5	12	24.5	11	22.0	5	10.2	5	10.2
<b>White female</b>	5	10.2	5	10.2	4	8.0	6	12.2	6	12.2
<b>Black male</b>	30	61.2	27	55.1	35	70.0	32	65.3	30	61.2
<b>Black female</b>	1	2.0	5	10.2	0	0.0	5	10.2	7	14.3

\* Due to incomplete death certificate reporting, there are missing data values.

- From 2007 to 2011, males were the victim of the majority of homicides (81.7%).
- Black males were the victim of 62.6% of homicides from 2007 to 2011.

Figure 7. Percent of deaths due to homicide, Montgomery County, OH 2001-2011



- Since 2001, the percent of deaths due to homicide have increased 28.6%.
- The percentage of deaths has been below 1% for the last 5 years (2007-2011).

*Homicide and Age*

Figure 8. Percent of homicide deaths by age group, Montgomery County, OH 2007-2011

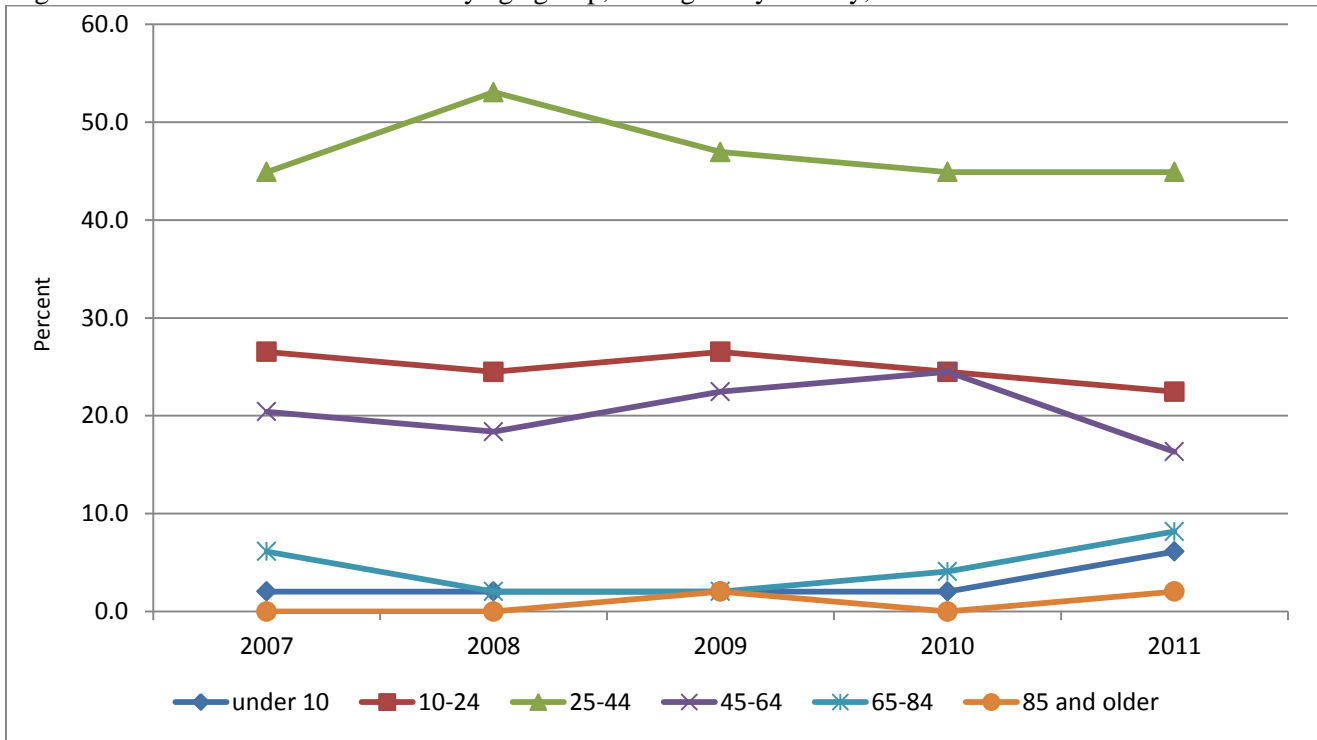
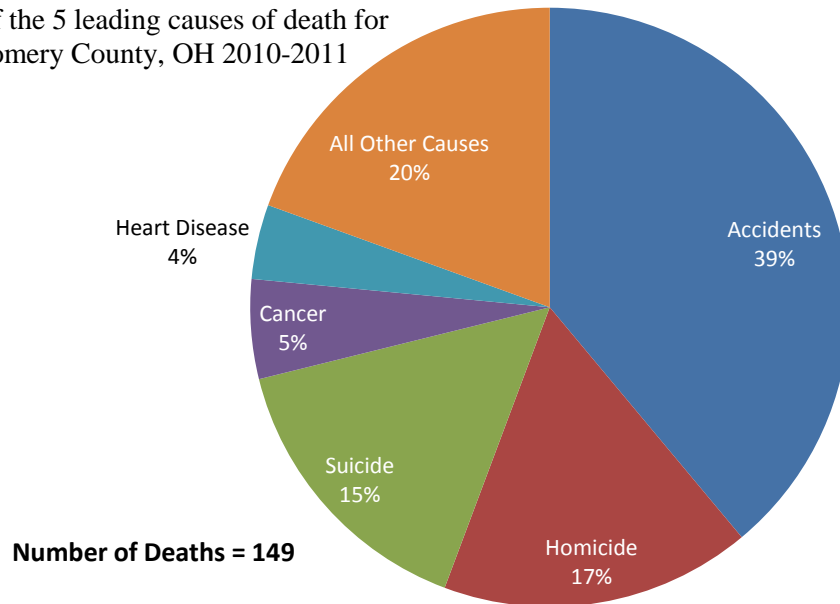


Figure 9. Percent distribution of the 5 leading causes of death for 1-24 year olds, Montgomery County, OH 2010-2011

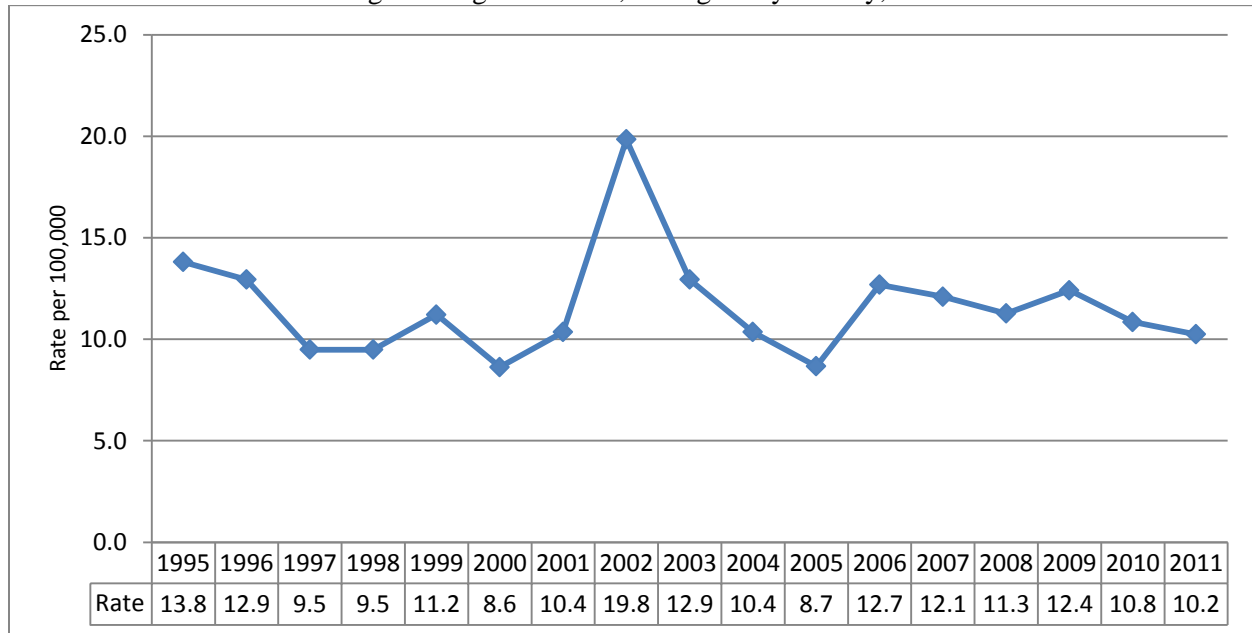


- In 2010-2011, homicide was the 2<sup>nd</sup> leading cause of death among 1 to 24 year olds.
- The greatest percentage of homicides occurred among 25 to 44 year olds and 10 to 24 year olds.

## National Trends:

In the United States, homicide consistently ranks in the top three causes of death among 10 to 24 year olds. A review of national homicide death rates in the 10 to 24 age group indicated a 41% decrease in the overall rate from 1994 to 1999. From 2000 to 2010, the rate continued to decrease but at a slower rate; 1% a year. The lowest homicide death rate nationally was 7.5 per 100,000 in 2010 (CDC, 2013a).

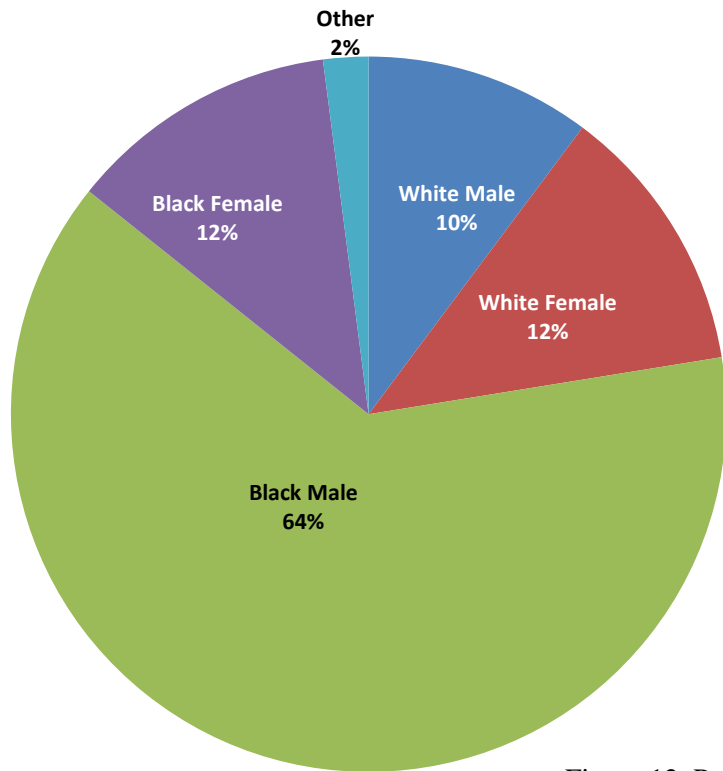
Figure 10. Homicide death rate among those aged 10 to 24, Montgomery County, OH 1995-2011



- The homicide death rate for those aged 10 to 24 years old fluctuated between 1995 and 2011. The highest rate of 19.8 occurred in 2002.
- After increasing 46% from 2005 to 2006, the overall rate remained below 12.7 per 100,000 for this age group.

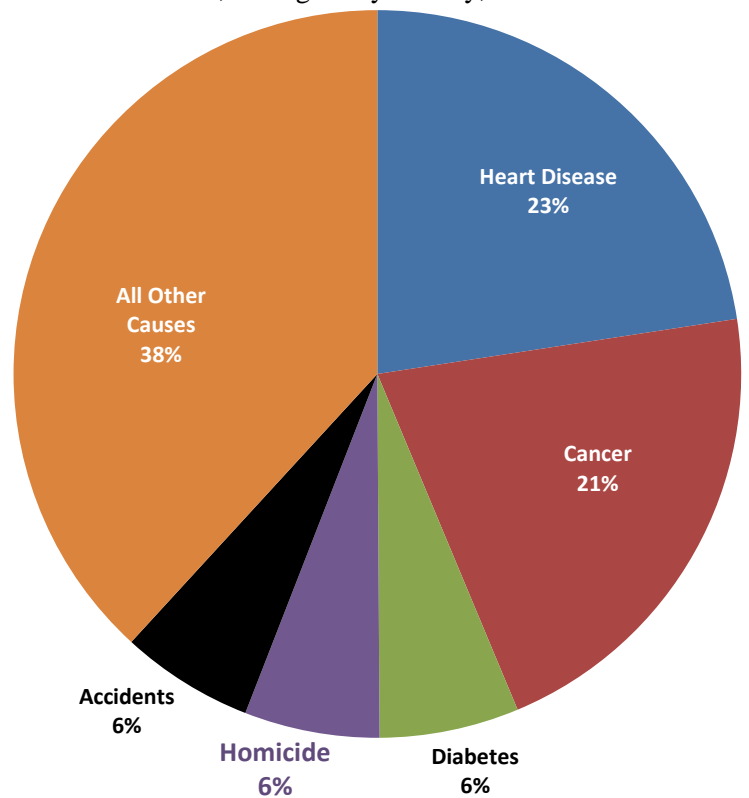
*Homicide and Race and Gender*

Figure 11. Percent distribution of homicide deaths by race and gender, Montgomery County, OH 2010-2011



Black males were victims of the majority of homicides (64%).

Figure 12. Percent distribution of the 5 leading causes of death of Black males, Montgomery County, OH 2010-2011

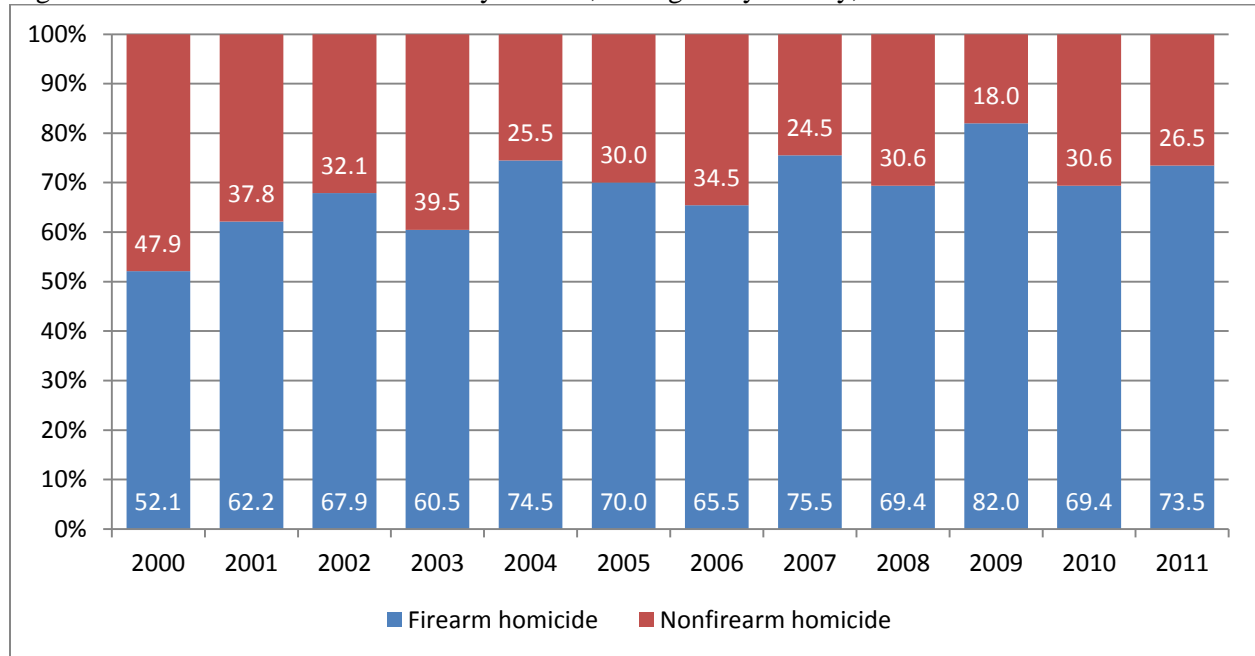


Homicide was one of the 5 leading causes of death of Black males. The homicide death rate for Black males in 2010-2011 was 63.5 per 100,000.



*Homicide and Firearms*

Figure 13. Percent of homicide deaths by method, Montgomery County, OH 2000-2011



- Since 2000, firearms have been the primary weapon used in homicide deaths.
- The use of firearms in homicides has risen since 2000 from 52.1% to 73.5% in 2011; a 41.1% increase.

## Conclusion

A review of Table 2 (page 6) demonstrates that chronic disease, accidents, and Alzheimer's disease are the leading causes of death in Montgomery County's residents. Of note, suicide is the ninth leading cause of death in Montgomery County; contributing to 1.6% of all deaths. Although not a top ten cause of death, homicide contributes to roughly 1% of all deaths. The data in this health profile clearly indicates populations most at risk for being a victim of homicide or committing suicide.

As the suicide rates continue to increase nationwide, research is focused on understanding possible contributing factors to this disturbing trend. Studies have suggested that the recent economic downturn and increased availability to prescription opioids may be contributing to the rise in rates of those aged 35 to 64 years. With more than two-thirds of suicides being committed by middle-aged White males, it is important that prevention efforts address the needs of this population.

One of the leading causes of death among adolescents and young adults is homicide. Although homicide death rates have fluctuated among 10 to 24 year olds over the last 15 years, there has been a slow decline in rates in Montgomery County over the past few years. Violence prevention efforts within this population have been successful, but they must continue to be supported and evaluated to realize sustained reductions in homicide deaths. In their evaluation efforts, it is vital that violence prevention strategies are reaching Black males since they are the majority of population dying as a result of violent acts.

## Technical Notes

### Age-adjusted death rate calculation

Age-specific rates calculated for multiple age groups are multiplied against age-specific weights (derived from the year 2000 standard population) and then summed to yield the age-adjusted rate. This report used 2010 U.S. Census population counts for Montgomery County unless otherwise noted in the report. *All rates were age-adjusted except for death rates for specific age groups.*

The aspects of rate calculation that are subject to variation are:

1. Numerator (case) definition
2. Denominator (population-at-risk) definition
3. Choice of age-groups to use in calculation age-specific rates
4. Population age-group weights (age standard)

Table 4. Master list: 2000 standard U.S. population and age adjustment weights

Age	Population in thousands	Adjustment weight
All ages	274,634	1.000000
Under 1 year	3,795	0.013818
1 year	3,759	0.013687
2-4 years	11,433	0.041630
5 years	3,896	0.014186
6-8 years	11,800	0.042966
9 years	4,224	0.015380
10-11 years	8,258	0.030069
12-14 years	11,799	0.042963
15-17 years	11,819	0.043035
18-19 years	8,001	0.029133
20-24 years	18,257	0.066478
25-29 years	17,722	0.064530
30-34 years	19,511	0.071044
35-39 years	22,180	0.080762
40-44 years	22,479	0.081851
45-49 years	19,806	0.072118
50-54 years	17,224	0.062716
55-59 years	13,307	0.048454
60-64 years	10,654	0.038793
65-69 years	9,410	0.034264
70-74 years	8,726	0.031773
75-79 years	7,415	0.027000
80-84 years	4,900	0.017842
85 years and over	4,259	0.015508

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“Homicide” <http://en.wikipedia.org/wiki/Homicide>