

Violent Deaths in Kentucky 2005-2014

A Statewide Statistical Summary of Homicides,
Suicides and Unintentional Firearm Fatalities



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The Kentucky Injury Prevention and Research Center is a partnership between the Kentucky Department for Public Health and the University of Kentucky, College of Public Health

VIOLENT DEATHS IN KENTUCKY 2005-2014

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TABLE OF CONTENTS

Acknowledgements	2
Project Overview	5
KVDRS Partners/Data Providers	6
Statistical Measures	9
Definitions	10
2005-2014 Statistical Summary	11
Suicide	14
Homicide	17
Firearm-related	21
Child, Youth and Young Adult Violent Death	24
Toxicology	32
Suicide and Homicide Trends	34

PROJECT OVERVIEW

Recognized by the Centers for Disease Control and Prevention (CDC), violence is a nationwide health problem. More than 42,000 people died by suicide in the United States in 2014 and 16,000 by homicide.^{1,2} In order to better understand why violent deaths occur, the CDC has developed the National Violent Death Reporting System (NVDRS), a nationwide state-based surveillance system designed to track trends and characteristics of violent deaths, with the goal of reducing these deaths. The CDC has modeled the NVDRS after the Fatality Analysis Reporting System (FARS), which combines data from fatal traffic crash investigations and has the goal of reducing the rate of motor vehicle-related deaths.³

In anticipation of becoming part of the CDC's NVDRS, and with the financial support of the Kentucky Department for Public Health (KDPH), a statewide Violent Death Reporting System for Kentucky was initiated in January 2002. Kentucky joined the NVDRS September 1, 2004 as one of 17 funded states; 40 states are now funded along with the District of Columbia and Puerto Rico.² All participating states are required to collect information about violent deaths from the following investigating agencies: police departments, coroners, medical examiners, forensic crime laboratories and toxicology laboratories.

In Kentucky, information related to homicides, suicides and firearm-related deaths has, in the past, remained inaccessible, scattered and unusable. The coroner system is not centralized, and while police and forensic laboratory data are centralized and available, they are not collected and combined with additional investigative information for violent death research purposes. By integrating multiple data sources in incidents of homicide, suicide and firearm-related fatalities to form the Kentucky Violent Death Reporting System (KVDRS), formerly disparate pieces of information can now be compiled and analyzed.

Each of Kentucky's 120 county coroners use a standard set of procedures and adhere to the same protocol during a death investigation, although not all coroners record the investigation in the same manner. Almost all of the 120 counties use a standardized reporting form to document the investigation. To improve coroner reporting The Coroner Investigation Reporting System (CIRS) form has been designed, developed and distributed to almost 93% of county coroners. This system is the first step in centralizing coroner investigation reports in the Commonwealth and benefits not only the KVDRS, but many other research activities as well (i.e. the system now includes an overdose

1 Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2016) [cited 2017 (Jan) 06]. Available from URL: www.cdc.gov/injury/wisqars

2 Additional information on the NVDRS can be found at <https://www.cdc.gov/violenceprevention/nvdrs/index.html>. Accessed on January 4, 2017.

3 Fatality Analysis Reporting System (FARS). National Highway Traffic Safety Administration, United States Department of Transportation. <https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars>. Accessed on January 4, 2017

module). The rollout of a statewide coroner web-based reporting system continues with plans to encourage counties to incorporate a web-based system into their death investigations.⁴

In addition to adult data, the KVDRS collects information on child deaths, through the CIRS, and provides data to the division of Adult and Child Health Improvement within the KDPH for the state Child Fatality Review (CFR) Team process. The goal of the state CFR is to ensure that each potential case of violent death in a child undergoes a full CFR by a multi-disciplinary, multi-agency local CFR team.

Combining previously fragmented investigative pieces into the KVDRS gives a more complete account of violent death in Kentucky. This is critical for surveillance and injury/death prevention efforts.

⁴ Walsh S, Dignan M, Caldwell G. The PAPM, Diffusion Theory, and Violent Death Surveillance. *Am J Health Behav.* TM 2007;31(5):451-461.

KVDRS PARTNERS/DATA PROVIDERS

Information is collected from death certificates, coroner/medical examiner reports, police reports, crime laboratory reports, and toxicology reports, and then combined into the KVDRS database. After all information is stripped of personal identifying information, it is sent to the national database to be combined with information from other funded states. Together, this information provides a more complete picture of violent death in the Commonwealth and our nation. Without these pieces, the problem of violent death cannot be accurately explained or ultimately prevented.

The **Office of Vital Statistics** provides a weekly electronic death certificate file of cases meeting the CDC's definition of a violent death. A case is identified using the International Statistical Classification of Diseases and Related Health Problems: Tenth Revision (ICD-10), and includes homicides, suicides and firearm-related fatalities. More information is then requested of the remaining data providers.¹

Coroners in Kentucky investigate the cause and manner of all deaths that are defined as a coroner's case by Kentucky Revised Statute 72.405. There are 120 county coroners' offices in the Commonwealth (one in each county).²

¹ <http://chfs.ky.gov/dph/vital/deathcert.htm>

² <http://coroners.ky.gov/>

The Kentucky **Medical Examiners** assist Kentucky coroners in all aspects of death investigations, when requested by the coroner, by determining the cause and manner of death and the identity of the deceased. There are four medical examiner facilities located in Louisville, Frankfort, Madisonville and Ft. Thomas.³

The Kentucky State Police (KSP) Criminal Identification & Records Branch

is responsible for receiving, analyzing and maintaining records of traffic accidents, law enforcement activities, criminal cases and statistics, criminal history and identification. The KSP provides information on homicide investigations to the KVDRS. The KSP also provides information on suicides when they are involved in the investigation.⁴

The **Kentucky State Police Forensic Laboratory System (KSPFLS)** is the only forensic laboratory within the Commonwealth of Kentucky. The KSP laboratory system consists of a central laboratory in Frankfort, and five regional laboratories located throughout the state. Evidence collected by Kentucky's law enforcement agencies is submitted to the KSP Central Laboratory or to a regional laboratory. The KSPFLS provides the KVDRS with weapon information on homicides. Ballistic testing is performed in three labs: The Eastern Regional Laboratory in Ashland, The Jefferson Regional Laboratory in Louisville and The Central Laboratory in Frankfort.⁵

Kentucky Revised Statute 211.680 was passed by the Kentucky General Assembly in 1996 to create a **Child Fatality Review System** for the purpose of reducing the number of child deaths in Kentucky. This system is designed to learn from the child fatalities and develop strategies to prevent childhood deaths in the future. The local team composition, similar to that of the state team, includes multidisciplinary representation. Members are drawn from the medical, legal and consumer fields along with social and child protection services, law enforcement, mental health counseling and other key community organizations focusing on child safety issues. The KVDRS provides death investigation information on child deaths through the web-based Coroner Investigation Reporting System (CIRS).⁶

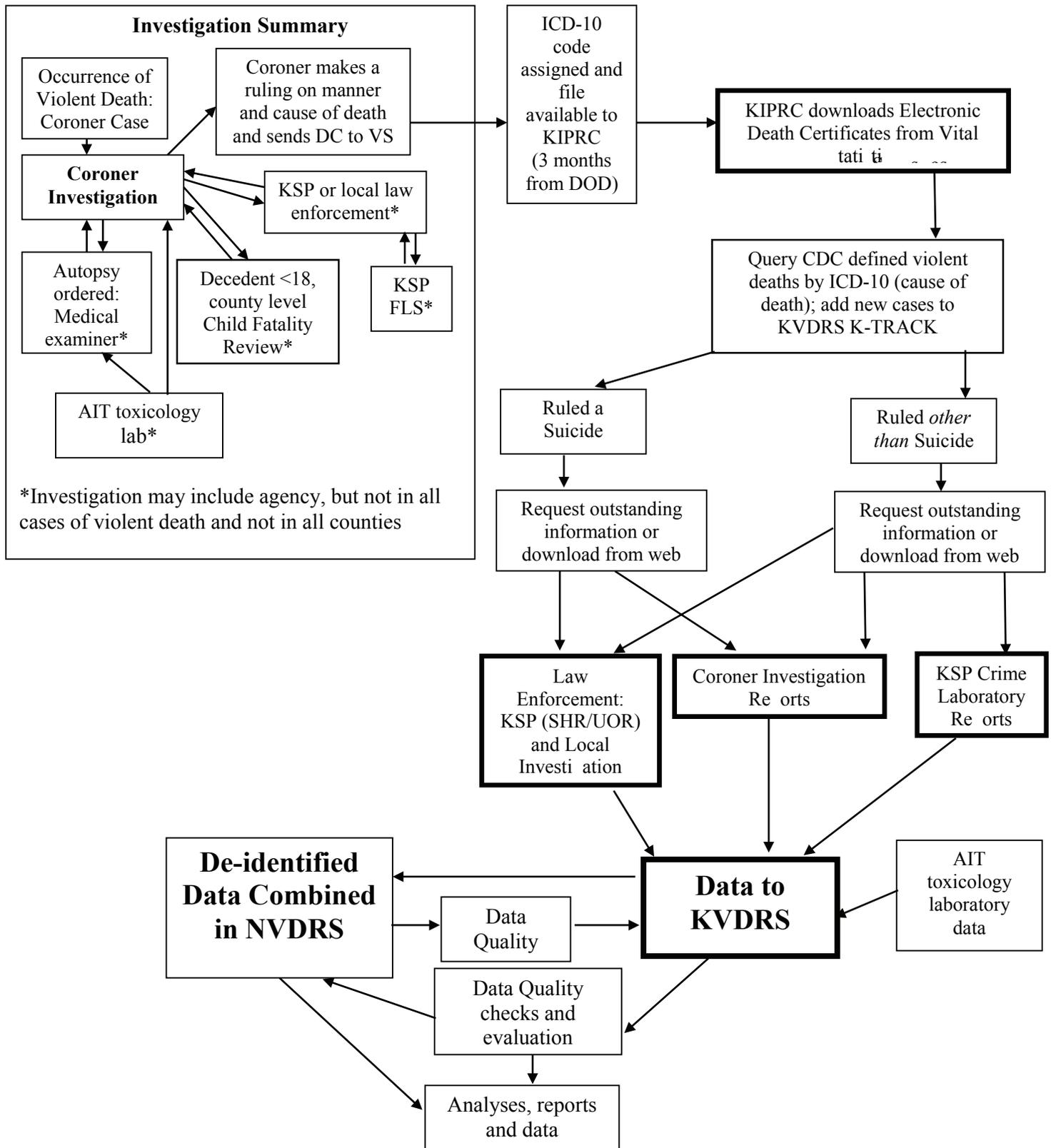
3 <http://www.justice.ky.gov/departments/me/>

4 <http://kentuckystatepolice.org/>

5 http://www.firearmsid.com/A_labsys.htm

6 <http://chfs.ky.gov/dph/ach/>

KVDRS Flow Chart for Data Linkage



STATISTICAL MEASURES

The following statistical summary includes incidents in which an individual has died within Kentucky whether he/she is a Kentucky resident or a resident of another state. The incidents reported here represent all violent deaths occurring in Kentucky between 2005 and 2014. The counts of suicides, homicides and unintentional firearm-fatalities in this report will differ from the Office of Vital Statistics and the National Center for Health Statistics, who report on Kentucky residents regardless of where the death occurred. These differences are the result of several factors including; variations in case definitions from NVDRS, and by including only those cases that occurred in Kentucky, regardless of residency.

Violent deaths are summarized in this report using counts and percentages. Counts and percentages are also used to describe relationships between groups. Of particular interest are comparisons based on gender, race, age and education. Given the small number of deaths occurring in racial groups other than white or black, race is divided into two categories: white and non-white. Additionally, age is classified into minor (less than 18 years old) and adult (18 years or older). Education status (high school diploma) is determined for all individuals who are at least 25 years old. Individuals who are less than 25 years old are not included in educational attainment comparisons. Finally, the county where the violent death occurred is labeled as urban or rural according to Beale codes (0-3: urban, 4-9: rural).

In addition to counts and percentages, violent deaths are described using age-adjusted ratios. In order to facilitate the comparison of Kentucky violent death rates to other states, the US 2000 Census is used in the calculation of the age-adjusted ratios. SAS® software is used to analyze data for this report.¹

¹ 1 SAS software, Version 9.4 of the SAS System. Copyright 2013, SAS Institute Inc. SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc., Cary, NC, USA.

NVDRS DEFINITIONS²

Homicide: A death resulting from the intentional use of force or power, threatened or actual, against another person, group or community. A preponderance of evidence must indicate that the use of force was intentional. The National Center for Health Statistics regards as homicide and includes in the NVDRS definition: (1) arson with no intent to injure a person, and (2) a stabbing with intent unspecified.¹

Suicide: A death resulting from the intentional use of force against oneself. A preponderance of evidence should indicate that the use of force was intentional.

Legal Intervention: A death when the decedent was killed by a police officer or other peace officer (persons with specified legal authority to use deadly force), including military police, acting in the line of duty. In some analysis this category is combined with homicides and is noted in those cases.

Unintentional Firearm: A death resulting from a penetrating injury or gunshot wound from a weapon that uses a powder charge to fire a projectile, when there was a preponderance of evidence that the shooting was not intentionally directed toward the victim. These cases are also referred to as “accidental deaths” in portions of this report to simplify labeling; accident is the recorded manner of death on Kentucky death certificates. Other types of unintentional deaths (i.e. accidental overdose) are not covered here.

Undetermined: A death resulting from the use of force against oneself or another person for which the evidence indicating one manner of death is no more compelling than the evidence indicating another manner of death. Unlike homicide and suicide deaths which can be detected using the ICD-10 codes and reviewing the manner of death on the death certificate, law enforcement report or coroner report, the identification of undetermined deaths involves looking at the ICD-10 codes and reviewing both underlying cause of death and the manner of death on the death certificate, law enforcement or coroner report.²

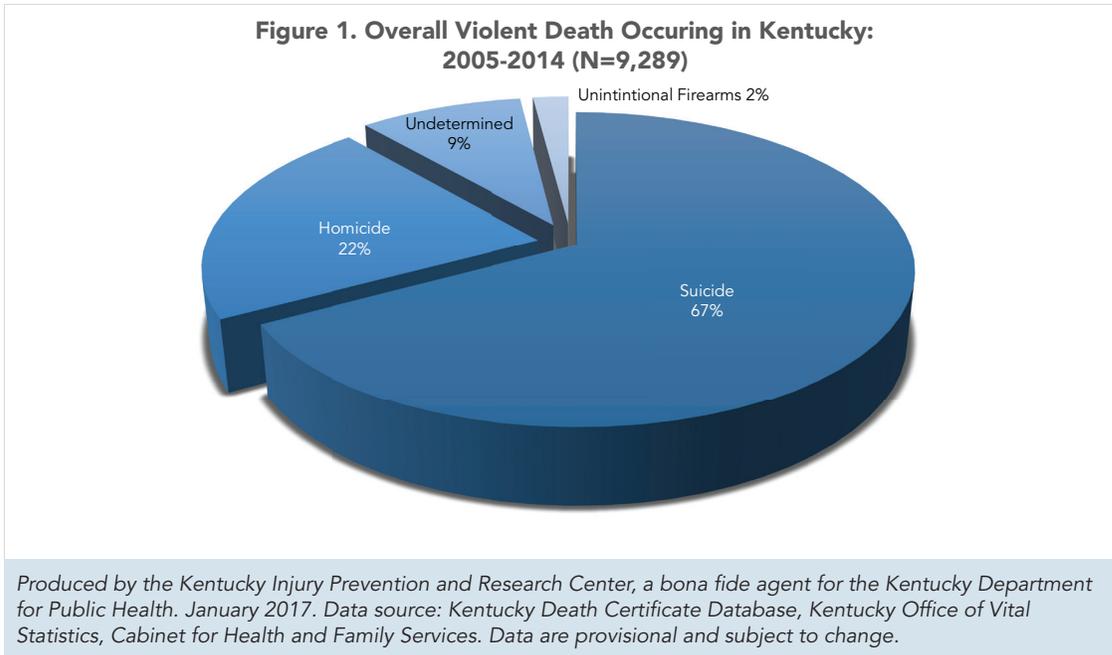
¹ Homicide includes cases of legal intervention (police involvement)

² Centers for Disease Control and Prevention. National Violent Death Reporting System (NVDRS) Coding Manual Revised [Online] 2015 National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). Available from URL: www.cdc.gov/injury

2005-2014 STATISTICAL SUMMARY

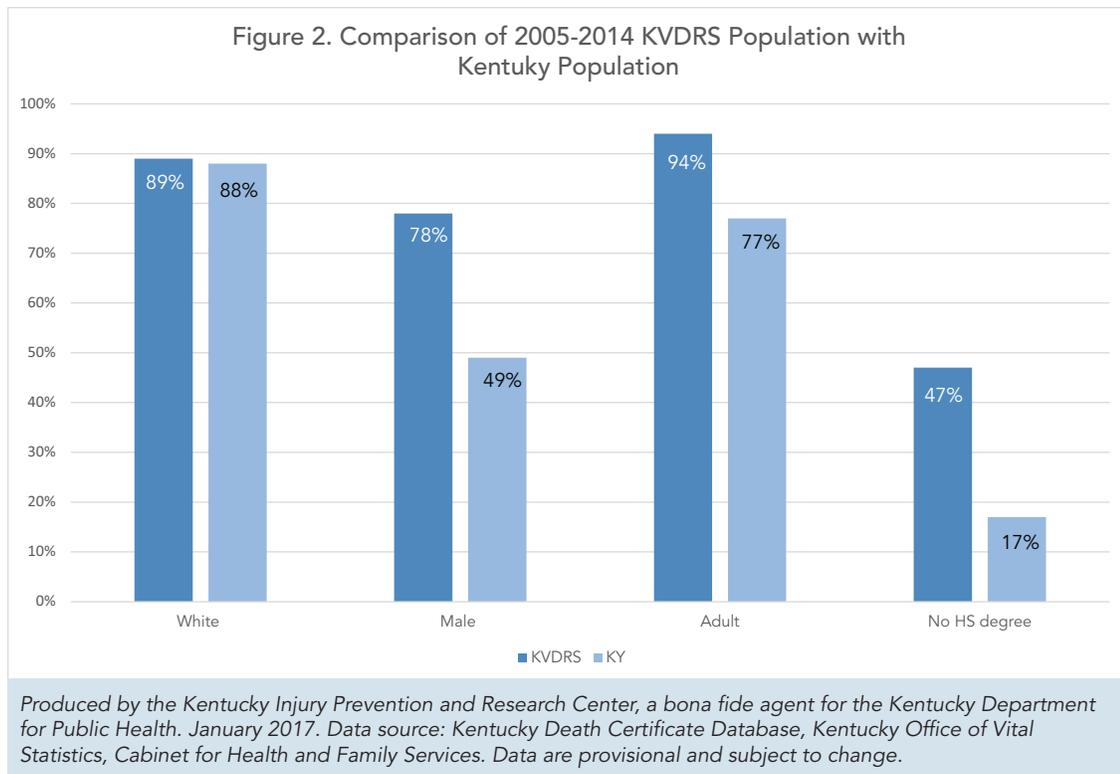
KVDRS POPULATION

Nearly all (89%) violent deaths occurring in Kentucky between 2005 and 2014 are classified as suicide or homicide (Figure 1). Suicide is the most common manner (6,226, 67%) of violent death in Kentucky. Homicide ranks second (2,010, 22%) as a cause for violent death, but comprises less than a quarter of the total percent of violent death. The remaining deaths are attributable to “undetermined cause” (865, 9%) and “unintentional firearm death” (187, 2%).



KVDRS POPULATION DEMOGRAPHICS

The composition of the 2005-2014 KVDRS population is predominantly white (89%), male (49%) and older than 25 years of age (94%). Almost half (47%) of the individuals in the KVDRS population have not obtained a high school diploma. Figure 2 provides a comparison of the 2005-2014 KVDRS population with the results from the 2010 Census. The racial composition of the KVDRS population and the Kentucky population are similar. On the other hand, there is a much larger percentage of male fatalities in the KVDRS population versus Kentucky’s population.(78% male versus 49% male in the KY population). This indicates that there are more male deaths in the KVDRS population than would be expected from the number of male persons residing in Kentucky. There is a much higher percentage of individuals who did not obtain a high school diploma in the violent death population compared to what would be expected from individuals residing in Kentucky (47% vs. 17%). More of the violent death population is also 25 and older, when compared with the state population (94% vs. 77%).



MANNER OF DEATH

Table 1 provides a summary of groups of interest in terms of manner of death. Suicide and homicide comprise the majority of violent death regardless of gender, age, race or education. White individuals have higher percentages of suicide (72%) compared to other manners of death; non-white individuals have higher percentages of homicides (63%).

While almost 50% of the individuals 25 years and older in the KVDRS population did not obtain a high school diploma/GED; they were less likely to die by suicide than those with a high school degree (64% vs. 73%). Of the minors in the 2005-2014 KVDRS population, almost the same percentage died by homicide (42%) as died by suicide (40%). More than four times the percentage of unintentional firearm deaths were minors compared to adult (7.3% vs. 1.8%). Surprisingly, the distribution of manner of death is similar for both urban and rural areas, with the exception of undetermined deaths where the urban percentage was two times that of rural.

TABLE 1. 2005-2014 MANNER OF DEATH

Manner of Death	Gender				Age				Race			
	Males		Females		Minor		Adult		Non White		White	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	7,221		2,066		400		8,889		1,037		8,252	
Suicide	5,056	70.0%	1,169	56.6%	162	40.5%	6,064	68.2%	317	30.6%	5,909	71.6%
Homicide	1,430	19.8%	508	24.6%	159	39.8%	1,779	20.0%	653	63.0%	1,285	15.6%
Accidental Gun Death	150	2.1%	37	1.8%	29	7.3%	158	1.8%	16	1.5%	171	2.1%
Undetermined	515	7.1%	349	16.9%	49	12.3%	817	9.2%	41	4.0%	824	10.0%
Legal Intervention	69	1.0%	**	**	**	**	71	0.8%	10	1.0%	62	0.8%

Manner of Death	Education				Urban/Rural			
	No HS		HS		Rural		Urban	
	N	%	N	%	N	%	N	%
Total	4,128		4,497		3,790		5,499	
Suicide	2,636	63.9%	3,262	72.5%	2,714	71.6%	3,512	63.9%
Homicide	960	23.3%	766	17.0%	721	19.0%	1,217	22.1%
Accidental Gun Death	95	2.3%	60	1.3%	107	2.8%	80	1.5%
Undetermined	406	9.8%	375	8.3%	211	5.6%	654	11.9%
Legal Intervention	31	0.8%	34	0.8%	37	1.0%	35	0.6%

* Counts greater than zero but less than five were suppressed.

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SUICIDE

The KVDRS Analyst downloads the electronic death certificate file weekly. A subset of cases is then generated using ICD-10 Codes, meeting the CDC's definition of suicide.

A detailed description of the mechanisms of death for those who died by suicide, as determined by ICD-10 Codes, is provided in Table 2. The mechanism of death in most suicides (69%) are attributed to the use of a firearm.

While the majority of suicides involve a firearm, poisoning is a more common mechanism of suicide in women than in men (30% versus 8%). Hanging is more common in minors versus adults (37% versus 18%) and in nonwhites versus whites (32% versus 17%). Surprisingly, women died by suicide using a firearm 50% of the time, only 30% were poisoning deaths and 15% hanging. There is

TABLE 2. 2005-2014 CAUSE OF DEATH FOR SUICIDE

Cause of Death	Gender				Age				Race			
	Males		Females		Minor		Adult		Non White		White	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	4,995		1,153		161		5,988		312		5,837	
Firearm	3,430	68.7%	579	50.2%	87	54.0%	3,922	65.5%	153	49.0%	3,857	66.1%
Hanging	949	19.0%	167	14.5%	60	37.3%	1,056	17.6%	99	31.7%	1,017	17.4%
Poisoning	394	7.9%	341	29.6%	12	7.5%	723	12.1%	30	9.6%	705	12.1%
Other	222	4.4%	66	5.7%	**	**	287	4.8%	30	9.6%	258	4.4%

Cause of Death	Education				Urban/Rural			
	No HS		HS		Rural		Urban	
	N	%	N	%	N	%	N	%
Total	2,622		3,204		2,672		3,477	
Firearm	1,732	66.1%	2,080	64.9%	1,959	73.3%	2,050	59.0%
Hanging	464	17.7%	566	17.7%	404	15.1%	712	20.5%
Poisoning	316	12.1%	386	12.0%	236	8.8%	499	14.4%
Other	110	4.2%	172	5.4%	73	2.7%	216	6.2%

* Counts greater than zero but less than five were suppressed.

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a higher ratio of firearm-related suicide deaths in rural areas, while hanging, poisoning and other causes of death are more common in urban areas. White decedents more often use firearms and poisoning while non-white decedents more often use hanging and other means.

Kentucky's Coroner Investigation Report (CIR, and Coroner Investigation Reporting System or CIRS) includes a suicide incident section and lists contributing suicide factors; the investigator can check all factors that apply to the incident. There is also a narrative component that allows the investigator to elaborate on the case history.¹ Coroner reports provide additional information not available through Electronic Death Certificates alone.²

Women were more than twice as likely to have attempted suicide prior to the completed suicide as men (15% vs 7%). Women were also more likely to be experiencing mental health issues (35% vs 23%) and to be in treatment (26% vs 17%), though both men and women were nearly equal in their reporting of a depressed mood at the time of the suicide. Women more often left a suicide note (18% vs 12%), but men more often disclosed their intent to commit suicide to a friend or family member prior to taking their lives (13% vs. 11%). Men were more often reported to be experiencing a crisis within the two weeks prior to the suicide, were experiencing or perpetuating intimate partner problems/violence and more often suffered from job, financial and/or recent criminal legal problems. More summaries of the circumstances related to suicide between 2005 and 2014 are provided in Table 3.

1 Of all violent deaths 71% have a known LE or CME circumstances.

2 Walsh S, Dignan M, Caldwell G. The PAPM, Diffusion Theory, and Violent Death Surveillance. *Am J Health Behav.* TM 2007;31(5):451-461.

TABLE 3. 2005-2014 CIRCUMSTANCES FOR SUICIDE

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	6,226		5,056		1,169	
Current depressed mood	2,094	33.6%	1,644	32.5%	450	38.5%
Current mental health problem	1,558	25.0%	1,146	22.7%	412	35.2%
Intimate partner problem	1,160	18.6%	980	19.4%	180	15.4%
Ever treated for mental illness	1,155	18.6%	849	16.8%	306	26.2%
Current treatment for mental illness	1,147	18.4%	844	16.7%	303	25.9%
Physical health problem	939	15.1%	745	14.7%	194	16.6%
Other substance problem	794	12.8%	608	12.0%	186	15.9%
Alcohol problem	600	9.6%	501	9.9%	99	8.5%
Crisis in past two weeks	526	8.4%	445	8.8%	81	6.9%
Job problem	407	6.5%	360	7.1%	47	4.0%
Financial problem	383	6.2%	324	6.4%	59	5.0%
Recent criminal legal problem	341	5.5%	308	6.1%	33	2.8%
Other relationship problem	318	5.1%	250	4.9%	68	5.8%
Other death of friend or family	236	3.8%	183	3.6%	53	4.5%
Argument	228	3.7%	178	3.5%	50	4.3%
History of suicide ideation	170	2.7%	133	2.6%	37	3.2%
Other legal problem	113	1.8%	98	1.9%	15	1.3%
Precipitated by another crime	113	1.8%	101	2.0%	12	1.0%
Perpetrator of interpersonal violence past month	94	1.5%	87	1.7%	7	0.6%
Suicide of friend or family in past	92	1.5%	67	1.3%	25	2.1%
Eviction	53	0.9%	44	0.9%	9	2.0%
School problem	38	0.6%	31	0.6%	7	1.6%
Other Addiction	37	0.6%	25	0.5%	12	1.0%
First other crime in progress	20	0.3%	20	0.4%	0	0.0%
Anniversary of traumatic event	19	0.3%	12	0.2%	7	1.6%
Victim of interpersonal violence past month	11	0.2%	**	**	9	2.0%
Disclosed intent to commit suicide	800	12.8%	669	13.2%	131	11.2%
Person left a suicide note	807	13.0%	592	11.7%	215	18.4%
History of suicide attempts	528	8.5%	348	6.9%	180	15.4%

* More than one circumstance can apply.

** Counts greater than zero but less than five were suppressed.

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HOMICIDE

The KVDRS Analyst downloads an Electronic Death Certificate file weekly. A subset of data is then generated using ICD-10 Codes, which meet the CDC's definition of homicide. The mechanism of death, as determined by ICD-10 Codes, are provided in Table 4. The mechanism of death in most homicides (68%) is attributed to a firearm.

Male and female victims have similar mechanisms of death, although women tend to be victims of hanging/strangulation/suffocation more often than men (9% vs 2%). For white homicide victims, the most common mechanism of death is firearm (63%). The percentage of homicides with a firearm as the mechanism is even higher for non-whites (78%). The manner of death is similar with respect to education, with sharp instrument being used more often in homicide victims

TABLE 4. 2005 - 2014 MECHANISM OF DEATH FOR HOMICIDE

Mechanism of Death	Gender				Age				Race			
	Males		Females		Minor		Adult		Non White		White	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	1,420		504		158		1,766		649		1,275	
Firearm	1,009	71.1%	303	60.1%	62	39.2%	1,250	70.8%	507	78.1%	805	63.1%
Sharp instrument	162	11.4%	68	13.5%	16	10.1%	214	12.1%	66	10.2%	164	12.9%
Blunt instrument	98	6.9%	32	6.3%	24	15.2%	106	6.0%	18	2.8%	112	8.8%
Hanging	32	2.3%	45	8.9%	11	7.0%	66	3.7%	17	2.6%	60	4.7%
Personal weapons	22	1.5%	10	2.0%	5	3.2%	27	1.5%	9	1.4%	23	1.8%
Other	97	6.8%	46	9.1%	40	25.3%	103	5.8%	32	4.9%	111	8.7%

Mechanism of Death	Education				Urban/Rural			
	No HS		HS		Rural		Urban	
	N	%	N	%	N	%	N	%
Total	958		756		716		1,208	
Firearm	670	69.9%	548	72.5%	472	65.9%	840	69.5%
Sharp instrument	128	13.4%	81	10.7%	99	13.8%	131	10.8%
Blunt instrument	58	6.1%	41	5.4%	53	7.4%	77	6.4%
Hanging	34	3.5%	29	3.8%	28	3.9%	49	4.1%
Personal weapons	16	1.7%	11	1.5%	9	1.3%	23	1.9%
Other	52	5.4%	46	6.1%	83	11.6%	88	7.3%

* Counts greater than zero but less than five were suppressed.

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TABLE 5. 2005-2014 HOMICIDE CIRCUMSTANCES

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	1,938		1,430		508	
Other argument, abuse, conflict	566	29.2%	454	31.7%	112	22.0%
Precipitated by another crime	472	24.4%	359	25.1%	113	22.2%
Intimate partner violence related	288	14.9%	112	7.8%	176	34.6%
First other crime in progress	286	14.8%	222	15.5%	64	12.6%
Drug involvement	208	10.7%	176	12.3%	32	6.3%
Intimate partner problem	123	6.3%	48	3.4%	75	14.8%
Other substance problem	101	5.2%	76	5.3%	25	4.9%
Victim used weapon	90	4.6%	88	6.2%	**	**
Other relationship problem	83	4.3%	51	3.6%	32	6.3%
Justifiable self-defense/law enforcement	77	4.0%	69	4.8%	8	1.6%
Fight between 2 people	66	3.4%	58	4.1%	8	1.6%
Jealousy (lover's triangle)	56	2.9%	39	2.7%	17	3.3%
Recent risis	46	2.4%	31	2.2%	15	3.0%
Random violence	39	2.0%	26	1.8%	13	2.6%
Brawl (mutual physical fight)	34	1.8%	34	2.4%	0	0.0%
Drive-by shooting	27	1.4%	22	1.5%	**	**
Alcohol problem	25	1.3%	19	1.3%	6	1.2%
Victim was a bystander	22	1.1%	12	0.8%	10	2.0%
Current mental health problem	18	0.9%	12	0.8%	6	1.2%
Abuse led to death	18	0.9%	10	0.7%	8	1.6%
Victim of interpersonal violence past month	13	0.7%	6	1.7%	7	1.4%
Perpetrator of interpersonal violence past month	12	0.6%	11	0.8%	**	**
Ever treated for mental illness	10	0.5%	**	**	6	1.2%
Current treatment for mental illness	10	0.5%	7	0.5%	**	**
Hate crime	10	0.5%	9	0.6%	**	**
Walk-by assault	10	0.5%	9	0.6%	**	**

* More than one circumstance can apply.

** Counts greater than zero but less than five were suppressed.

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with no high school diploma. Triple the percentage of white versus non-white individuals were killed with a blunt instrument.

The CIR includes a homicide incident section and lists contributing/precipitating circumstances; the investigator can check all circumstances that apply to the incident. Descriptions of these circumstances are provided in Table 5. There is also a narrative component; the investigator can elaborate on the case history.¹ Most homicides leading to homicide were resulted from arguments (30%), abuse and conflicts (24%), and being precipitated by another crime or a crime was in progress (15%). Of the female homicides 35% were intimate partner violence-related compared to 8% of male homicides; intimate partner problems were noted in 15% of cases of female homicide and 4% males. After criminal activity, intimate partner violence is the second leading cause of homicide. Drugs were involved in 11% of homicides; two times more in males than females (12% and 6%). Drugs and other substances were in the top ten precipitating circumstances.

Comparing homicide to suicide, Table 6 shows that, most homicides (32%) and suicides (60%) occurred at a house or apartment, including driveway, porch and yard; 32% of homicides occurred in a hospital, as well as 16% of suicides. As shown in Table 7, in cases of suicide, 74% of the time the location where the injury occurred was the decedent's place of residence while in cases of homicide, only 31% occurred in the decedent's place of residence; 11% on the street/road, sidewalk or alley.

TABLE 6. 2005-2014 PLACE OF DEATH

Place of Death	Suicide		Homicide	
	N	%	N	%
Total	6,222		1,936	
House, apartment, including driveway, porch, yard	3,732	60.0%	622	32.1%
Hospital	986	15.8%	617	31.9%
Other place	1,402	22.5%	675	34.9%
Unknown	102	1.6%	22	1.1%

* Counts greater than zero but less than five were suppressed.

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¹ Of all violent deaths 71% have a known LE or CME circumstances.

TABLE 7. 2005-2014 LOCATION OF INJURY

Location of Injury	Total		Suicide		Homicide	
	N	%	N	%	N	%
Total	8,164		6,226		1,938	
House, apartment	5,778	70.8%	4,630	74.4%	1,148	59.2%
Unknown	733	9.0%	581	9.3%	152	7.8%
Street/road, sidewalk, alley	295	3.6%	88	1.4%	207	10.7%
Motor vehicle	230	2.8%	141	2.3%	89	4.6%
Natural area	177	2.2%	142	2.3%	35	1.8%
Other	168	2.1%	113	1.8%	55	2.8%
Industrial or construction areas	138	1.7%	74	1.2%	64	3.3%
Parking lot/public parking garage	93	1.1%	47	0.8%	46	2.4%
Hotel/motel	76	0.9%	68	1.1%	8	0.4%
Farm	68	0.8%	57	0.9%	11	0.6%
Jail, prison, detention facility	62	0.8%	56	0.9%	6	0.3%
Office building	61	0.7%	48	0.8%	13	0.7%
Park, playground, public use area	51	0.6%	38	0.6%	13	0.7%
Other commercial establishment	46	0.6%	17	0.3%	29	1.5%
Hospital, medical facility or nursing home	37	0.5%	28	0.4%	9	0.5%
Highway, freeway	26	0.3%	18	0.3%	8	0.4%
Railroad tracks	25	0.3%	21	0.3%	**	**
Supervised residential facility	24	0.3%	18	0.3%	6	0.3%
Sports or athletic area	19	0.2%	14	0.2%	5	0.3%
Public transportation or station	17	0.2%	9	0.1%	8	0.4%
Service Station	15	0.2%	6	0.1%	9	0.5%
Bar, nightclub	13	0.2%	0	0.0%	13	0.7%
Bridge	12	0.1%	12	0.2%	0	0.0%

* Counts greater than zero but less than five were suppressed.

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FIREARM-RELATED

The distribution of death related to firearms is provided in Tables 8 -10. Suicide is the most common manner of death, where a firearm is involved, regardless of gender, age and education. Regarding race, firearm deaths are almost opposite for homicides and suicides. White decedents used a firearm in 78% of suicides and 16% of homicides—five , five times greater. Non-white decedents used a firearm in 22% of suicides and 74% of homicides—three , three times greater. As shown in table 9, Mmost of the homicidessuicides (50%) and homicidessuicides (33%) involved short guns, while more accidental deaths involved long guns. Short guns or handguns include pistols (bolt action, derringer, single shot and semi-automatic) and revolvers. Long guns include rifles (automatic, bolt action, lever action, pump action, semi-automatic and single shot), shotguns (combination, automatic, bolt action, double barrel, pump action, semi-automatic and single shot). In cases of homicide short guns were used three times more than long guns (50% vs 16%).

Women died by suicide using a firearm 50% of the time, only 30% were poisoning deaths and 15% hanging (Table 2). Women more often used firearms as a way to die by suicide as opposed to poison. According to the Centers for Disease Control and Prevention's Web-based Injury Statistics Query and Reporting System, Kentucky woman more often use a firearm to die by suicide than women nationally (Crude Rate per 100,000; KY 2000=2.18, KY 2014=3.25; U.S. 2000=1.49, U.S, 2014=1.90). Notice that in 2000, Kentucky women dying by suicide, using a firearm, were already one and a half times greater than the nation and by 2015 over one and a half times greater.¹

¹ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2016) [cited 2017 (Jan) 06]. Available from URL: www.cdc.gov/injury/wisqars

TABLE 8. 2005-2014 FIREARM

Manner of Death	Gun Related	
	N	%
Total	5,632	
Accident	164	2.91%
Suicide	4,009	71.18%
Homicide	1,312	23.30%
Undetermined	80	1.42%
Legal Intervention	67	1.19%

* Counts greater than zero but less than five were suppressed.
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TABLE 9. 2005-2014 FIREARM TYPE

Firearm Type	Accident		Suicide		Homicide		Undetermined		Legal Intervention	
	N	%	N	%	N	%	N	%	N	%
Total	120		3,375		1,151		53		62	
Handgun	10	8.3%	553	16.4%	244	21.2%	9	17.0%	8	12.9%
Handgun, Pistol-Semi-automatic	14	11.7%	556	16.5%	333	28.9%	12	22.6%	33	53.2%
Handgun, Revolver	12	10.0%	734	0.0%	154	0.0%	**	**	**	**
Rifle	23	19.2%	272	8.1%	79	6.9%	6	11.3%	**	**
Shotgun	17	14.2%	412	12.2%	101	8.8%	6	11.3%	**	**
Other	**	**	40	1.2%	11	1.0%	**	**	**	**
Unknown	40	33.3%	799	23.7%	228	19.8%	17	32.1%	13	21.0%

* Counts greater than zero but less than five were suppressed.
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TABLE 10. 2005-2014 MANNER OF DEATH FOR FIREARM VICTIMS

Manner of Death	Gender				Age				Race			
	Males		Females		Minor		Adult		Non White		White	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	4,690		940		181		5,451		686		4,946	
Accident	138	2.9%	26	2.8%	27	14.9%	137	2.5%	14	2.0%	150	3.0%
Suicide	3,429	73.1%	579	61.6%	87	48.1%	3,922	72.0%	153	22.3%	3,856	78.0%
Homicide	1,009	21.5%	303	32.2%	62	34.3%	1,250	22.9%	507	73.9%	805	16.3%
Undetermined	50	1.1%	29	3.1%	**	**	76	1.4%	**	**	77	1.6%
Legal Intervention	64	1.4%	**	**	**	**	66	1.2%	9	1.3%	58	1.2%

Manner of Death	Education				Urban/Rural			
	No HS		HS		Rural		Urban	
	N	%	N	%	N	%	N	%
Total	2,545		2,749		2,600		3,032	
Accident	82	3.2%	53	1.9%	101	3.9%	63	2.1%
Suicide	1,732	68.1%	2,080	75.7%	1,959	75.3%	2,050	67.6%
Homicide	670	26.3%	548	19.9%	472	18.2%	840	27.7%
Undetermined	34	1.3%	34	1.2%	33	1.3%	47	1.6%
Legal Intervention	27	1.1%	34	1.2%	35	1.3%	32	1.1%

* Counts greater than zero but less than five were suppressed.

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CHILD, YOUTH AND YOUNG ADULT VIOLENT DEATH

Of the total violent deaths in Kentucky from 2005-2014, 370 (4%) were children and youth 17 and under; 14% were under the age of one; 14% were 1-4 years old; 7% were 5-9 years old; 16% were 10-14 and the majority (50%) were 15-17 with suicide being the highest manner of death (59%). As children (age <1-9) became youth, homicide numbers dropped and suicide numbers increased (from 73% homicides in 5-9 to 29% homicides in 10-14).

TABLE 11. 2005-2014 MANNER OF DEATH BY AGE GROUP

Manner of Death	<1 year		1-4 years		5 -9 years		10-14 years		15 -17 years		18-24 years	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	53		50		26		59		182		985	
Suicide	0	0.0%	0	0.0%	0	0.0%	29	49.2%	116	63.7%	552	56.0%
Homicide	34	64.2%	38	76.0%	19	73.1%	17	28.8%	47	25.8%	333	33.8%
Accidental firearm death	**	**	**	**	5	19.2%	7	11.9%	12	6.6%	27	2.7%
Undetermined	18	34.0%	8	16.0%	**	**	6	10.2%	6	3.3%	68	6.9%
Legal intervention	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**	**	5	0.5%

Manner of Death	25 -34		35 -44		45 -54		55 -59		60+		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	1,634		1,841		1,912		697		1,820		9,259	
Suicide	1,006	61.6%	1,236	67.1%	1316	68.8%	518	74.3%	1,436	78.9%	6,209	67.1%
Homicide	461	28.2%	359	19.5%	323	16.9%	91	13.1%	212	11.6%	1,934	20.9%
Accidental firearm death	19	7.9%	19	1.0%	34	11.8%	7	1.0%	52	2.9%	187	2.0%
Undetermined	129	1.2%	203	11.0%	225	11.8%	75	10.8%	117	6.4%	857	9.3%
Legal intervention	19	1.2%	24	1.3%	14	0.7%	6	0.9%	**	**	72	0.8%

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SUICIDES (9-17 YEAR OLDS)

Between 2005 and 2014 there were 145 KVDRS suicide cases (9-17 age group). Table 12 is a list of precipitating suicide circumstances and the frequency distribution by sex. As with adults, males more often disclosed their intent and females more often left a note and had a history of suicide attempts. For both sexes, mental illnesses stood out as the most frequent circumstance for suicide, followed by school and intimate partner problems. There was a difference of 18% between males and females in regard to previous attempts, with females having more previous attempts (23% v 5%). Males showed slightly higher percentages of school problems and intimate partner problems than females. The largest gap was females having an argument that led to their death; their percentages were over double that of males (20% vs 8%).

TABLE 12. 2005 - 2014 SUICIDE CIRCUMSTANCES (9-17 YEARS OLD)

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	145		110		35	
Current mental health problem	38	26.2%	29	26.4%	9	25.7%
Current depressed mood	37	25.5%	27	24.5%	10	28.6%
Current treatment for mental illness	33	22.8%	26	23.6%	7	20.0%
Ever treated for mental illness	32	22.1%	26	23.6%	6	17.1%
School problem	25	17.2%	20	18.2%	5	14.3%
Intimate partner problem	23	15.9%	18	16.4%	5	14.3%
Crisis in past two weeks	20	13.8%	17	15.5%	**	**
Other relationship problem	17	11.7%	13	11.8%	**	**
Argument	16	11.0%	9	8.2%	7	20.0%
Other substance problem	11	7.6%	7	6.4%	**	**
Recent criminal legal problem	5	3.4%	**	**	**	**
Person left a suicide note	24	16.6%	16	14.5%	8	22.9%
Disclosed intent to commit suicide	19	13.1%	15	13.6%	**	**
History of suicide attempts	13	9.0%	5	4.5%	8	22.9%

* Counts greater than zero but less than five were suppressed.

** More than one circumstance can apply.

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In children and youth who died by suicide, most were males (76%) and the most commonly used mechanism was firearm (56%). Surprisingly, females used a firearm 51% (18 cases) of the time and there were less than five self-poisoning cases. (Table 14). As with adults the rate of Kentucky females, ages 9-17, using firearms is greater than the national rate for the same age group. Between 2000 and 2015 the Crude Rate (per 100,000) in the U.S. was 0.37 while the Crude Rate for Kentucky was 0.63.¹

¹ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2016) [cited 2017 (Jan) 06]. Available from URL: www.cdc.gov/injury/wisqars

TABLE 13. 2005 - 2014 MECHANISM OF SUICIDE DEATH (9-17 YEARS OLD)

Mechanism	All		Male		Female	
	N	%	N	%	N	%
Total	144		109	75.7%	35	24.3%
Firearm	79	54.9%	61	56.0%	18	51.4%
Hanging	57	39.6%	14	12.8%	14	40.0%
Poisoning	6	4.2%	**	**	**	**

* Counts greater than zero but less than five were suppressed.

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SUICIDES (18-24 YEAR OLDS)

Shown in table Table 14, depressed mood and mental health issues were the leading circumstances surrounding associated with death by suicide in young adults aged 18 to 24. In the young adult age group the second area of concern for males was intimate partner problems (19%) and, in females, physical health problems (18%). The third area of concern that emerged was substance and alcohol problems (13% substance abuse problems and 10% alcohol problems). As with adults and youth, females more often left suicide notes while males more often disclosed their intent to die by suicide. Firearms were the most common method of suicide in the young adult group, as shown in table Table 15.

TABLE 14. 2005 - 2014 SUICIDE CIRCUMSTANCES (18-24 YEARS OLD)

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	5,420		4,386		1,033	
Current depressed mood	1,854	34.2%	1,454	33.2%	400	38.7%
Current mental health problem	1,345	24.8%	979	22.3%	366	35.4%
Current treatment for mental illness	1,345	24.8%	979	22.3%	366	35.4%
Ever treated for mental illness	992	18.3%	718	16.4%	274	26.5%
Intimate partner problem	976	18.0%	824	18.8%	151	14.6%
Physical health problem	911	16.8%	723	16.5%	188	18.2%
Other substance problem	685	12.6%	523	11.9%	168	16.3%
Alcohol problem	552	10.2%	460	10.5%	92	8.9%
Crisis in past two weeks	451	8.3%	381	8.7%	70	6.8%
Job problem	372	6.9%	328	7.5%	44	4.3%
Financial problem	359	6.6%	303	6.9%	56	5.4%
Recent criminal legal problem	291	5.4%	262	6.0%	29	2.8%
Other and or family relationship problem	250	4.6%	191	4.4%	59	5.7%
Other death of friend or family	213	3.9%	166	3.8%	47	4.5%
Argument led to death	176	3.2%	135	3.1%	41	4.0%
Other legal problem	103	1.9%	88	2.0%	15	1.5%
Precipitated by other crime	95	1.8%	86	2.0%	9	2.5%
Perpetrator of interpersonal violence past month	77	1.4%	71	1.6%	6	1.6%
Suicide of friend or family in past	74	1.4%	51	1.2%	23	2.2%
Eviction	49	0.9%	42	1.0%	7	1.9%
Other addiction	32	0.6%	22	0.5%	10	1.0%
Traumatic anniversary	17	0.3%	11	0.3%	6	1.6%
Other crime in progress	17	0.3%	17	0.4%	0	0.0%
Fight between 2 people	10	0.2%	9	0.9%	**	**
Person left a suicide note	704	13.0%	515	11.7%	189	18.3%
Disclosed intent to die by suicide	691	12.7%	575	13.1%	116	11.2%
History of suicide attempts and or ideation	587	10.8%	407	9.3%	180	17.4%

* Counts greater than zero but less than five were suppressed.

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TABLE 15. 2005 - 2014 MECHANISM OF SUICIDE DEATH (18-24 YEARS OLD)

Weapon	All		Male		Female	
	N	%	N	%	N	%
Total	5,351		4,330		1,020	
Firearm	3,560	66.5%	3,038	70.2%	521	51.1%
Hanging	848	15.8%	726	16.8%	122	12.0%
Poisoning	681	12.7%	366	8.5%	315	30.9%
Other	262	4.9%	200	4.6%	62	6.1%

* Counts greater than zero but less than five were suppressed.

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HOMICIDES

Between 2005 and 2014, 155 (8%) of homicides were children and youth 0-17 (Table 1). As shown in Table 16, the most common circumstance was an argument followed by precipitated by another crime and intimate partner violence. Females were more than twice as likely to be killed by an intimate partner and their deaths were more often related to abuse. When examining the suspects of youth homicides (Table 17), females were killed by parents almost three times more often than males (76% vs. 28%). Males were more likely to be killed by a boyfriend/girlfriend of the victim's parent (19% vs. 0%).

TABLE 16. 2005 - 2014 HOMICIDE CIRCUMSTANCES (0-17 YEARS OLD)

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	162		100		62	
Argument	30	18.5%	18	18.0%	12	19.4%
Precipitated by another crime	24	14.8%	14	14.0%	10	16.1%
Intimate partner violence related	18	11.1%	8	8.0%	10	16.1%
Death was directly related to abuse	17	10.5%	9	9.0%	8	12.9%
First other crime in progress	14	8.6%	9	9.0%	5	8.1%
Abused as a Child	7	4.3%	5	5.0%	**	**
Bystander	6	3.7%	**	**	**	**
Family Relationship Problems	6	3.7%	5	5.0%	**	**
Victim was a bystander	6	3.7%	**	**	**	**
Drug involvement	5	3.1%	**	**	**	**

* Counts greater than zero but less than five were suppressed.

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TABLE 17. 2005 - 2014 HOMICIDE SUSPECT INFORMATION (AGE 0-17)

Suspect	All		Male		Female		Unknown	
	N	%	N	%	N	%	N	%
Total	162		103	63.6%	21	13.0%	38	23.5%
Parent	46	28.4%	29	28.2%	16	76.2%	**	**
Boyfriend/girlfriend of victim's parent	20	12.3%	20	19.4%	0	0.0%	0	0.0%
Relationship unknown	29	17.9%	20	19.4%	**	**	8	21.1%
Other person, known to victim	41	25.3%	36	35.0%	13	61.9%	11	28.9%

* Counts greater than zero but less than five were suppressed.

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Circumstances precipitating homicide for young adults resemble both youth homicides and adult homicides. The most common precipitating circumstances for homicide are arguments, crime, abuse, conflict and intimate partner violence related (Table 18). Drug related homicide and intimate partner violence also emerge as important circumstantial information for this age group. Females were over four times more often killed by their intimate partner than males (38% vs. 9%). Males were more often killed by an acquaintance, other person known to the victim, parent and friend while females were killed by their spouse or girlfriend/boyfriend. Males were more often killed by strangers (7% vs. 4%).

TABLE 18. 2005 - 2014 TOP TEN HOMICIDE CIRCUMSTANCES (18-24 YEARS OLD)

Circumstances	All		Male		Female	
	N	%	N	%	N	%
Total	1,394		1,011		383	
Argument	424	30.4%	338	33.4%	86	22.5%
Precipitated by another crime	344	24.7%	263	26.0%	81	21.1%
Intimate partner violence related	239	17.1%	92	9.1%	147	38.4%
Other crime in progress	204	14.6%	158	15.6%	46	12.0%
Drug involvement	140	10.0%	119	11.8%	21	5.5%
Other substance problem	80	5.7%	59	5.8%	21	5.5%
Victim used weapon	66	4.7%	65	6.4%	1	0.3%
Fight between 2 people	54	3.9%	47	4.6%	7	1.8%
Justifiable self-defense/law enforcement	52	3.7%	48	4.7%	4	1.0%
Jealousy (lover's triangle)	42	3.0%	27	2.7%	15	3.9%
Recent Crisis	35	2.5%	25	2.5%	10	2.6%
Random violence	27	1.9%	17	1.7%	10	2.6%
Brawl (mutual physical fight)	25	1.8%	25	2.5%	0	0.0%
Alcohol problem	24	1.7%	18	1.8%	6	1.6%
Other relationship problem	23	1.6%	10	1.0%	13	3.4%
Family problem	23	1.6%	15	1.5%	8	2.1%
Drive by shooting	16	1.1%	11	1.1%	5	1.3%
Current mental health problem	16	1.1%	10	1.0%	6	1.6%
Victim was a bystander	10	0.7%	8	0.8%	2	0.5%
Current treatment for mental illness	10	0.7%	7	0.7%	3	0.8%
Perpetrator of interpersonal violence past month	9	0.6%	9	0.9%	0	0.0%
Ever treated for mental illness	9	0.6%	4	0.4%	5	1.3%
Victim of interpersonal violence past month	8	0.6%	3	0.3%	5	1.3%
Mercy Killing	7	0.5%	6	0.6%	1	0.3%
Hate Crime	5	0.4%	4	0.4%	1	0.3%
Walk by assault	5	0.4%	4	0.4%	1	0.3%

* Counts greater than zero but less than five were suppressed.

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TABLE 19. 2006 - 2014 HOMICIDE SUSPECT INFORMATION (AGE 18 - 24)

Suspect	All		Male		Female		Unknown	
	N	%	N	%	N	%	N	%
Total	1,562		988	63.3%	130	8.3%	444	28.4%
Acquaintance	145	9.3%	113	11.4%	11	8.5%	21	4.7%
Spouse	123	7.9%	88	8.9%	34	26.2%	**	**
Girlfriend or boyfriend	58	3.7%	34	3.4%	20	15.4%	**	**
Parent	34	2.2%	31	3.1%	**	**	0	0.0%
Friend	27	1.7%	25	2.5%	**	**	0	0.0%
Child	20	1.3%	18	1.8%	**	**	0	0.0%
Sibling	18	1.2%	16	1.6%	0	0.0%	**	**
Other family member	18	1.2%	14	1.4%	**	**	**	**
Girlfriend or boyfriend unspecified wheter current or ex	15	1.0%	12	1.2%	**	**	**	**
In-law	12	0.8%	10	1.0%	**	**	**	**
Ex-spouse	12	0.8%	10	1.0%	**	**	0	0.0%
Ex-girlfriend or boyfriend	10	0.6%	10	1.0%	0	0.0%	0	0.0%
Other person known to the victim	158	10.1%	138	14.0%	14	10.8%	6	1.4%
Stranger	92	5.9%	73	7.4%	5	3.8%	14	3.2%
Relationship Unknown	411	26.3%	317	32.1%	19	14.6%	75	16.9%

* Counts greater than zero but less than five were suppressed.

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TOXICOLOGY

Specimens are collected for toxicologic analysis by the medical examiner during autopsy or by the coroner/deputy during postmortem examination. Samples are then sent for analysis. If an autopsy has not been requested, but there is suspicion of drug/alcohol involvement, the coroner/deputy performs a blood/urine collection at the scene for analysis. Toxicology screening includes alcohol and other volatiles, a large number of prescription medications, over-the-counter medications and illicit drugs.

Toxicology results are based on substances found in the victims; suspect toxicology results are not included in this report. If toxicology analysis reveals that there is more than one substance found, there is overlap between substance categories. For instance, if alcohol and cocaine both test positive then those results are added to both categories though reporting on only one decedent.

Figures 3-5 provide the toxicology results with respect to sex (Figure 3), age (Figure 4) and manner of death (homicide/suicide; Figure 5). Women are more than two times more likely to test positive for antidepressants when dying violently than men. While men more often had alcohol in their system at the time of their death, women had opiates. Minors and adults, interestingly, had the same percentage of marijuana and amphetamines present. Antidepressants and benzodiazepines were found more often in suicides than homicides, whereas cocaine and marijuana was found more than double in homicides than in suicides. Homicide and suicide victims had similar ratios of alcohol, opiates and amphetamines.

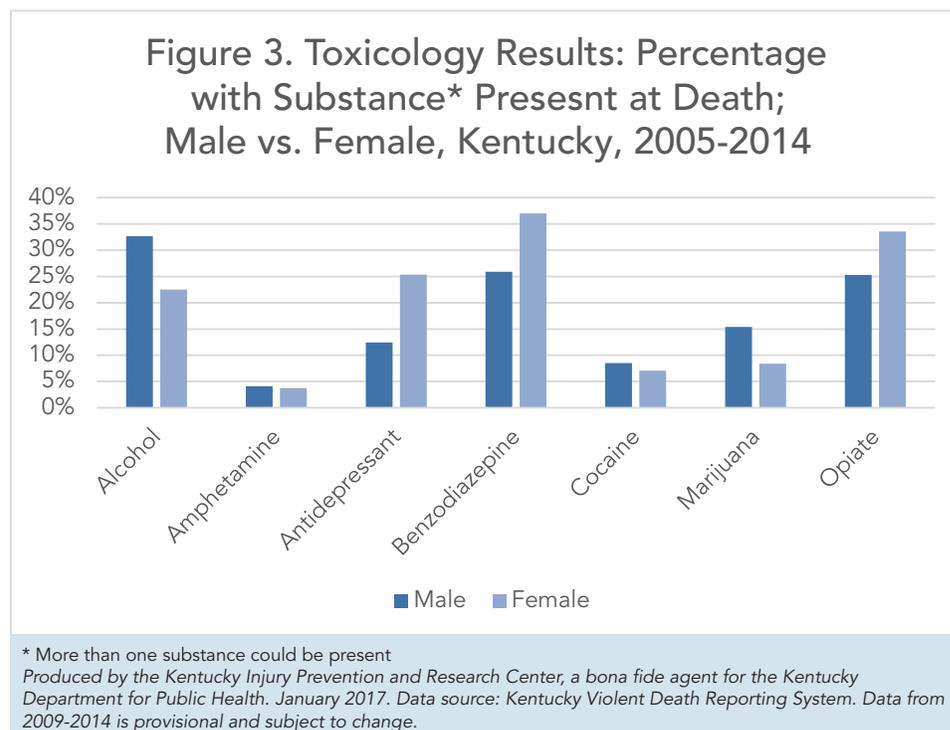
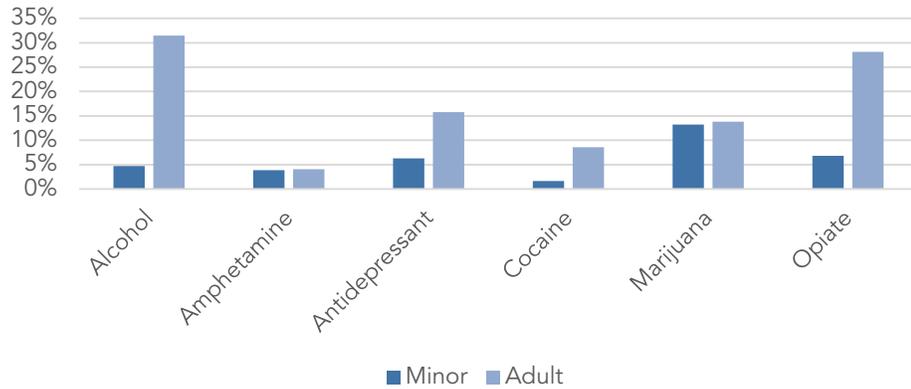


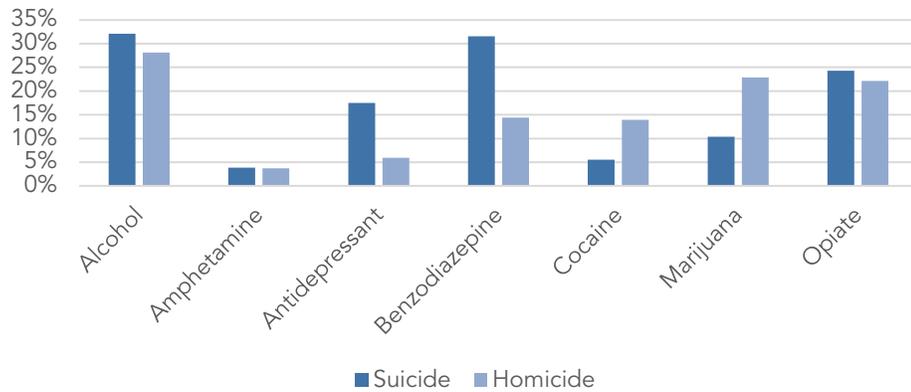
Figure 4. Toxicology Results: Percent with Substance* Present at Death by Age Group, Kentucky, 2005-2014



* More than one substance could be present

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Figure 5. Toxicology Results: Percent with Substance* Present at Death; Suicide vs. Homicide, Kentucky, 2005-2014

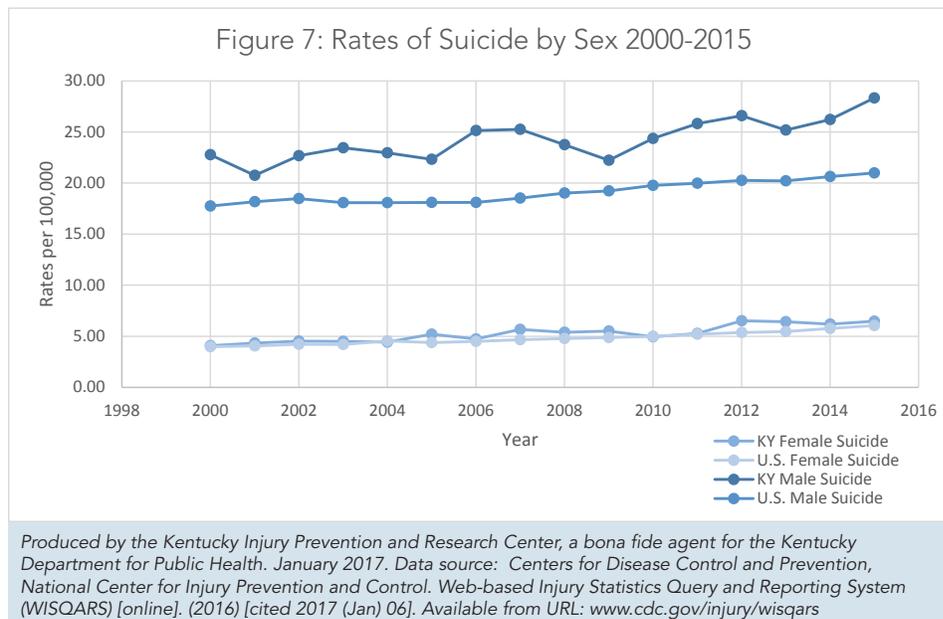
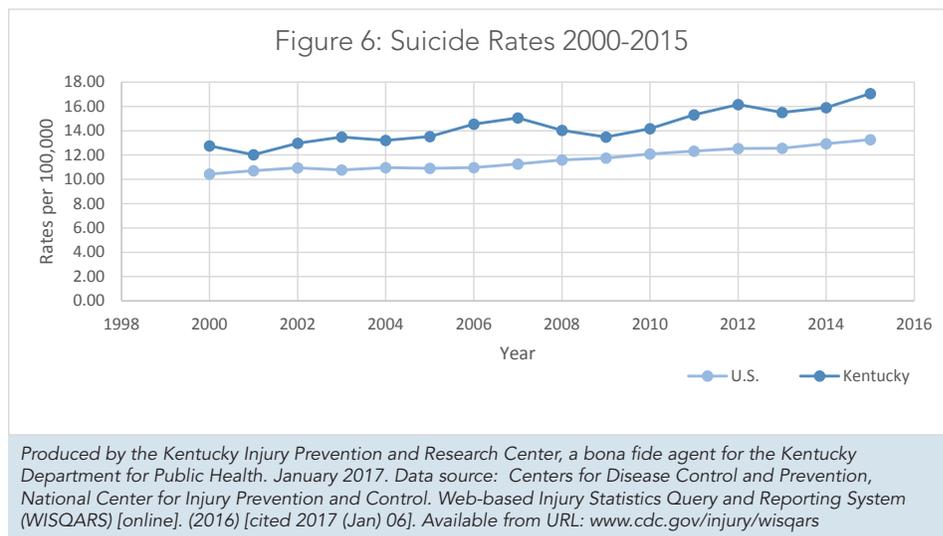


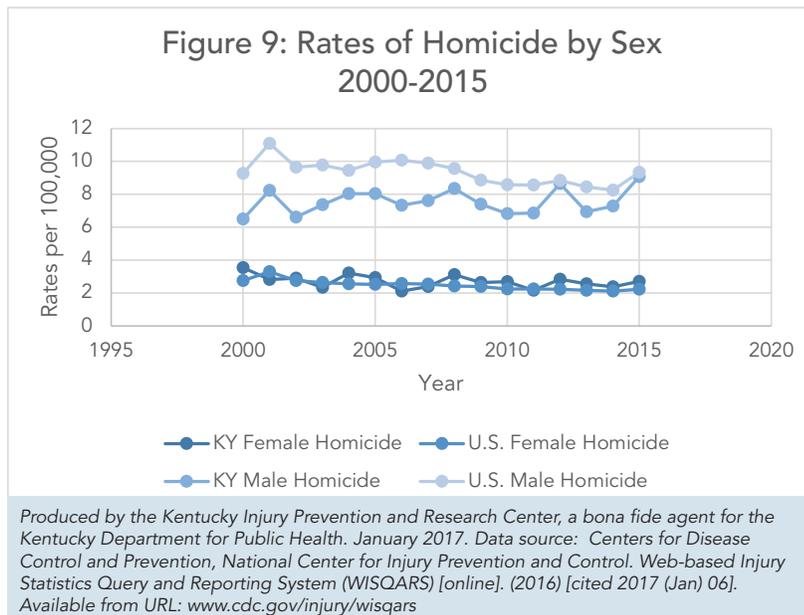
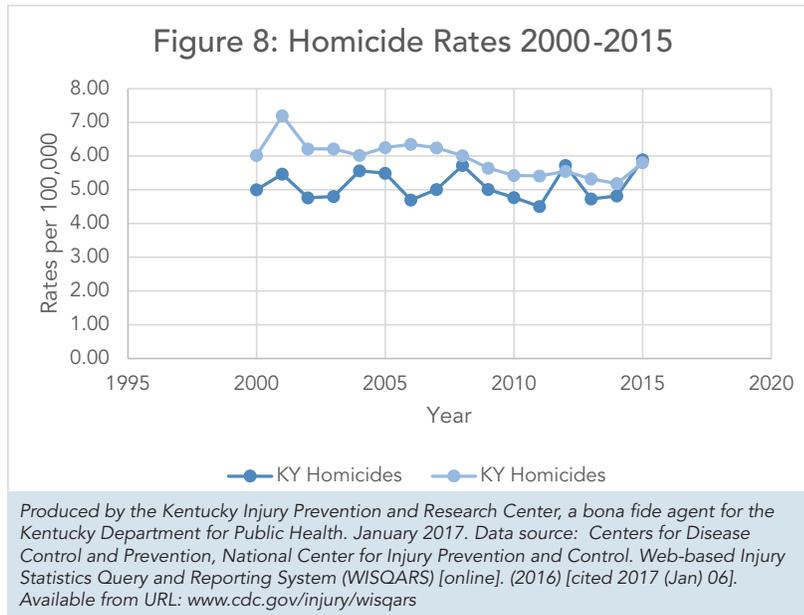
* More than one substance could be present

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SUICIDE AND HOMICIDE TRENDS

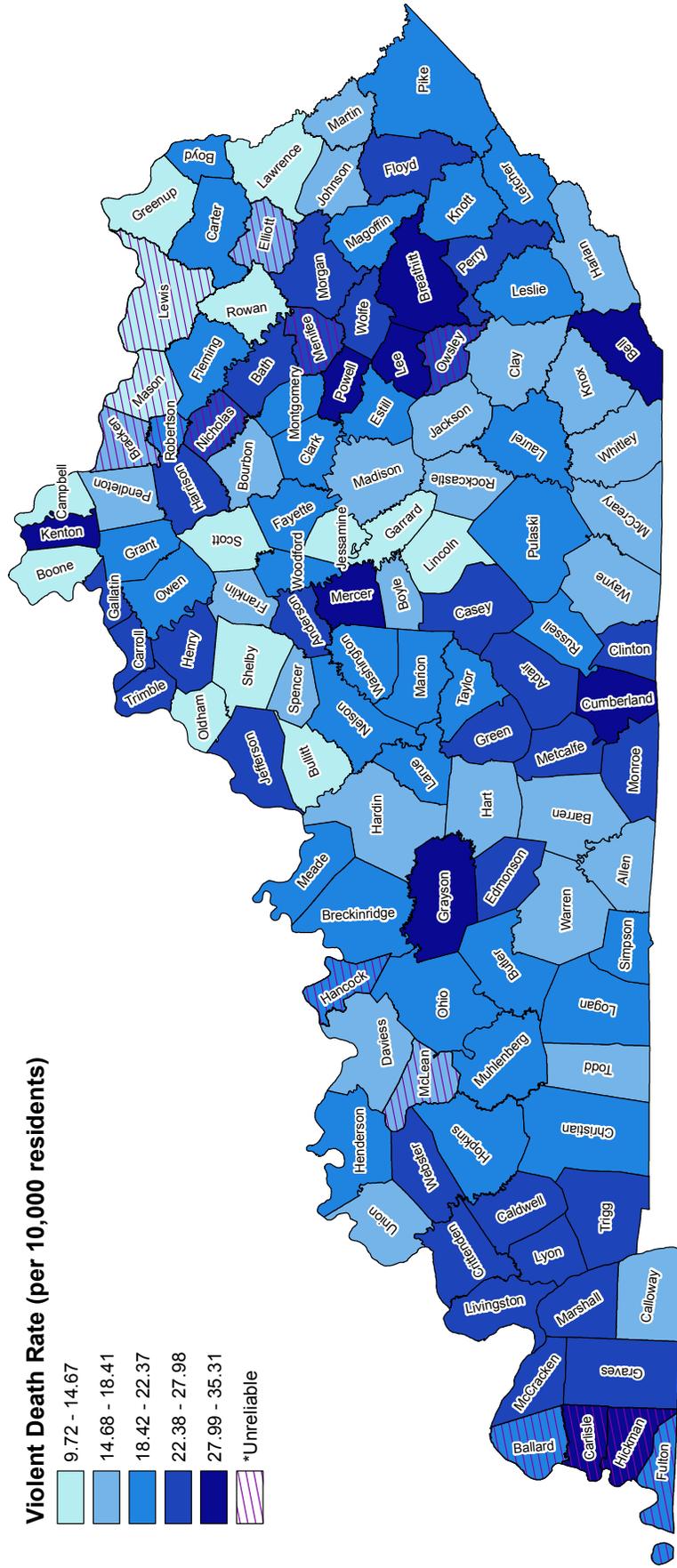
Suicide data are available from 2000-2015 for Kentucky residents* and the nation. Figure 6 depicts the age-adjusted rates of suicide during this time period. The rate of suicide in Kentucky is considerably higher than the U.S. Comparing the suicide rates in the U.S. to the rates in Kentucky by sex reveals that female violent deaths are essentially the same in Kentucky compared to the nation, while the rates for male suicides in Kentucky are higher than the nation (Figure 7). The Kentucky overall rate of homicide is consistently lower than the nation (Figure 8). Kentucky men, show homicide rates consistently lower than the national rate, compared to women who are similar to U.S. rates for women (Figure 9).





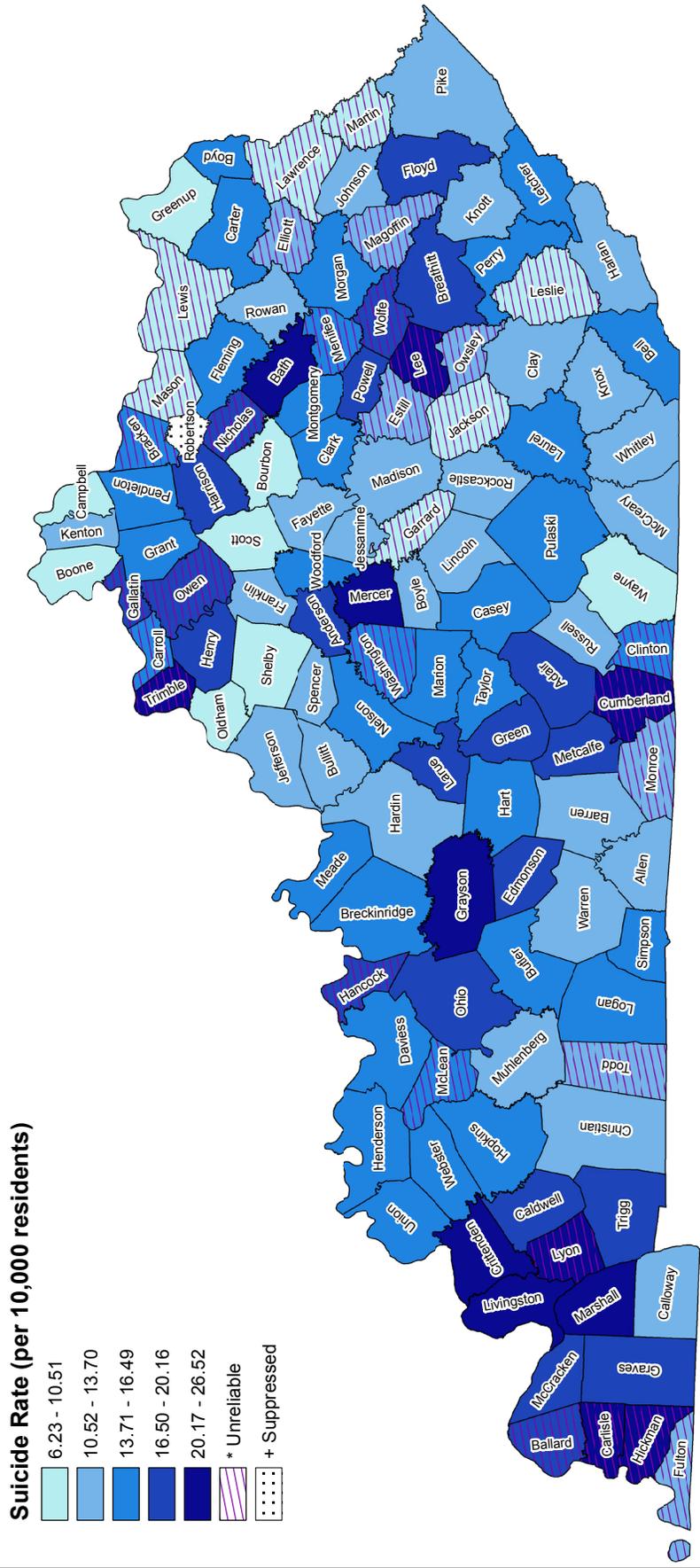
Figures 10-12 map the rates of all violent deaths (Figure 10), rates of suicides (Figure 11), and rates of homicides (Figure 12) in Kentucky, 2005-2014. Shown in the map of rates of violent deaths in each county across the state, 10 counties show rates greater than 28 per 10,000 population with the highest rates in Breathitt (35.31 per 10,000) and Lee (34.23 per 10,000). Shown in Figure 11, 13 counties have rates greater than 20 per 10,000. The counties with high rates of suicide closely reflect, in most cases, high rates of all violent deaths. One fourth of counties in Kentucky have had less than 5 homicides, with only 12 experiencing more than 20 homicides which resulted in a number of unreliable rates. Shown in Figures 10-12, Kenton County, in northern Kentucky, has seen a distribution of homicide rates and suicide rates that does not reflect their high rates of violent deaths, indicating high rates of death via another manner defined as a violent death.

Figure 10: Rate of Violent Deaths in Kentucky, Per 10,000 Population, 2005-2014



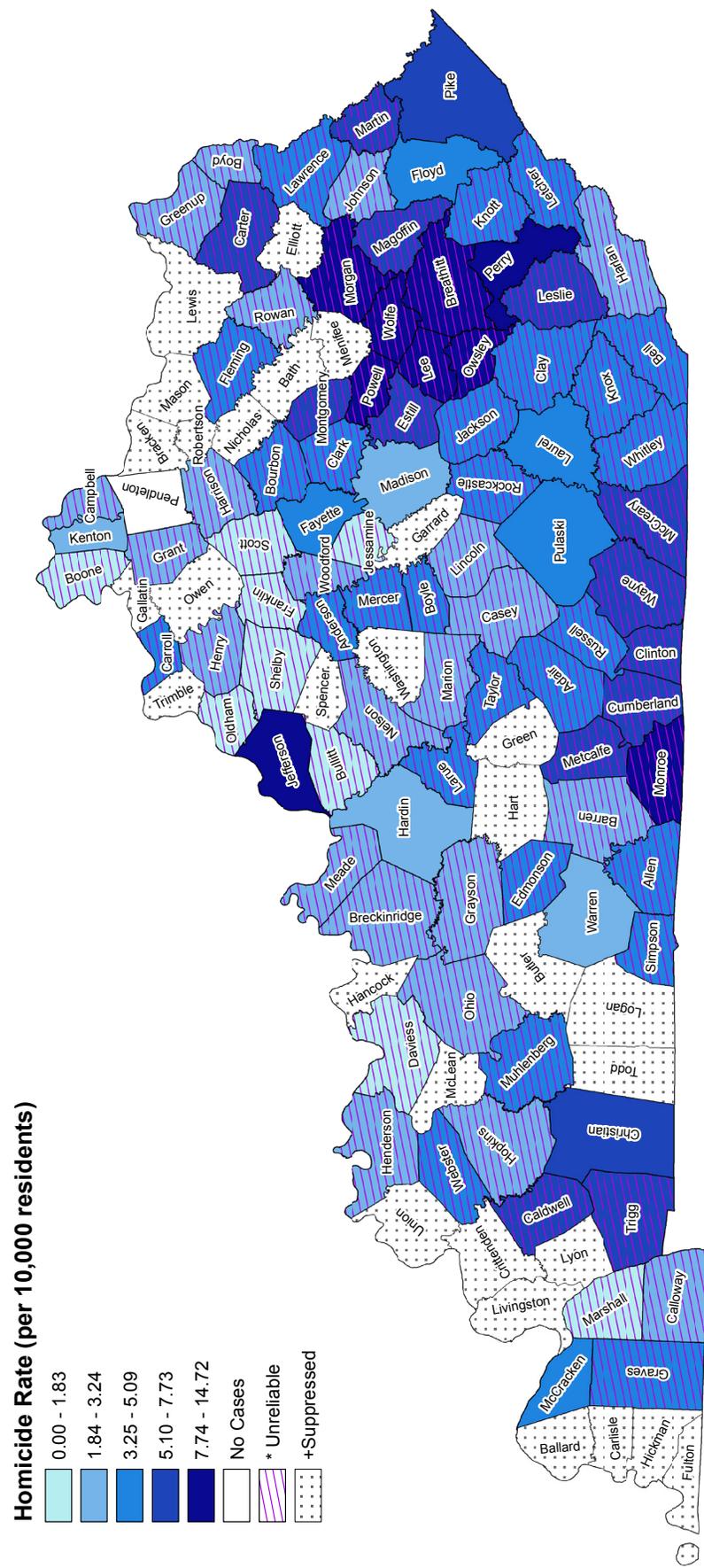
Population data is from the US Census Bureau's 2010 Census.
 Violent death data is from the National Violent Death Reporting System. Data from 2009-2014 is preliminary.
 * Rates based on counts less than 20 are unreliable, and should be interpreted with caution.
 + Rates based on less than 5 were suppressed according to the state release policy.

Figure 11: Rate of Suicides in Kentucky, Per 10,000 Population, 2005-2014



Population data is from the US Census Bureau's 2010 Census.
 Violent death data is from the National Violent Death Reporting System. Data from 2009-2014 is preliminary.
 * Rates based on counts less than 20 are unreliable, and should be interpreted with caution.
 + Rates based on less than 5 were suppressed according to the state release policy.

Figure 12: Rate of Homicides in Kentucky, Per 10,000 Population, 2005-2014



Population data is from the US Census Bureau's 2010 Census.
 Violent death data is from the National Violent Death Reporting System. Data from 2009-2014 is preliminary.
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