

Examining Suicides in Illinois, 2005-08

Suicide is among the six leading causes of death in Illinois for people between the ages of 15 and 64. The Illinois Violent Death Reporting System (IVDRS) was developed to help prevent these deaths by providing policy makers with timely, complete data.

This CHDL Data Brief uses IVDRS data to examine the demographics and circumstances of suicides in which the injury occurred in Cook, DuPage, Kane, McHenry and Peoria counties from 2005 to 2008. Figure 1 compares annual suicides rates from the five IVDRS counties with the Illinois and U.S. rates, from 2005 to 2008.

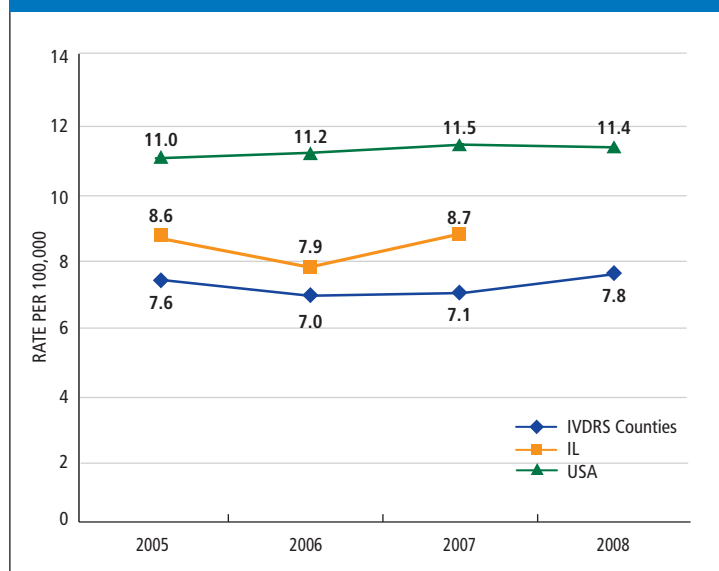
TABLE 1. Suicides by county, rate per 100,000, 2005-08

	Total Rate (n)	2005 Rate (n)	2006 Rate (n)	2007 Rate (n)	2008 Rate (n)
USA	11.4	11.0	11.2	11.5	11.8
ILLINOIS	8.4	8.6	8.0	8.7	na
TOTAL, IVDRS Counties	7.4 (2113)	7.6 (545)	7.0 (496)	7.1 (511)	7.8 (561)
City of Chicago	6.6 (725)	7.3 (196)	5.9 (161)	6.5 (177)	7.0 (191)
Suburban Cook	7.4 (749)	7.0 (180)	7.6 (190)	7.0 (174)	8.2 (205)
DuPage	8.1 (300)	8.1 (75)	7.5 (69)	8.3 (77)	8.5 (79)
Kane	7.9 (154)	9.0 (43)	6.0 (29)	8.5 (42)	7.9 (40)
McHenry	7.0 (87)	7.3 (22)	6.8 (21)	8.3 (26)	5.7 (18)
Peoria	13.4 (98)	15.9 (29)	14.2 (26)	8.2 (15)	15.2 (28)

The overall suicide rate for the IVDRS counties for all years was 7.4 per 100,000; from year to year, the rate ranged from 7.0 to 7.8 per 100,000 (Table 1). The suicide rates for the U.S., Illinois and the IVDRS counties vary little from year to year. More variation over time is seen in the City of Chicago and in the individual counties. Illinois' rate is less than 75% than that of the U.S. Illinois ranks 43rd, 47th and 46th in the nation in 2005, 2006 and 2007, respectively (National Vital Statistics Reports, CDC).

In general, counties with rural areas had higher suicide rates than counties with suburban and urban areas, a phenomenon which has been well documented in the U.S. for some time (Singh GK, Siahpush M. "Increasing rural-urban gradients in US suicide mortality, 1970-1997." *Am J Public Health*. 2002 Jul; 92(7):1161-7). For example, Peoria — a rural county — had the highest suicide rate for three out of four years. Overall, Peoria County's rate was more than double the rate of the City of Chicago.

FIGURE 1. Suicides by year, rate per 100,000, 2005-08



Whites are twice as likely to commit suicide than non-whites

Non-Hispanic whites have the highest rates of suicide, at 10.5 per 100,000 overall (Table 2). It is more than twice that of non-Hispanic blacks and non-Hispanic Asians, 4.4 and 4.7 per 100,000, respectively, and more than three times that of Hispanics, 2.7 per 100,000. Among all racial/ethnic groups there was a decrease in suicide rates from 2005 to 2006, except for non-Hispanic blacks, in which there was an increase from 2005 to 2006. Additionally, the rate of suicide among non-Hispanic whites increased from 2007 to 2008.

TABLE 2. Suicides by race/ethnicity in IVDRS counties, rate per 100,000, 2005-08 (n=2087)

	Total Rate (n)	2005 Rate (n)	2006 Rate (n)	2007 Rate (n)	2008 Rate (n)
White, Non-Hispanic	10.5 (1586)	10.9 (415)	9.8 (369)	9.9 (374)	11.4 (428)
Black, Non-Hispanic	4.4 (255)	4.1 (60)	5.1 (73)	4.6 (374)	3.9 (56)
Asian, Non-Hispanic	4.7 (76)	5.8 (23)	3.7 (15)	4.9 (20)	4.3 (18)
Hispanic	2.7 (159)	2.8 (40)	2.4 (35)	2.8 (41)	2.9 (43)

Middle-age men are most likely to commit suicide

Table 3 examines suicide rates by age and gender. Overall, the highest rates occurred among those aged 35 and older and the rates peaked among 45- to 54-year-olds at 11.3 per 100,000. Rates over time varied little within each age group, but for a few notable exceptions. In 2007, there was an increase in suicide rates among 15- to 24-year-olds; among those aged 45 and older, there was a decrease in 2007 followed by an increase in 2008.

The majority of suicide victims were males; overall, males had a rate of suicide over three times that of females, 11.7 and 3.2 per 100,000, respectively. For all age groups, the male suicide rate was consistently higher than the female rate, and the rates of suicide rose with increasing age in both sexes.

Weapons vary by age, sex and location

The types of weapons used are reviewed in Figures 2-5. The most frequently used weapons were firearms and hanging/strangulation, each occurring for almost one third of all suicides. Twenty percent of suicides resulted from poisoning. The remaining weapon types varied substantially. This proportion holds for all jurisdictions in IVDRS.

Males were more likely to use firearms or hanging/suffocation as weapons, 37.8% and 32.8% of the time, respectively (Figure 2). Females were more likely to use poison (39.0%) or hanging/suffocation (26.0%) as weapons.

Among very young suicide victims, age 10 to 14, hanging/suffocation was overwhelmingly the weapon used most often (80.0%). From ages 15 to 34, hanging/suffocation and firearms were used most often. Ages 35 to 64, firearms and hanging/strangulation were used nearly equally, roughly one-third each, and among those aged 65 and older, a firearm was the weapon used most often (56.4%) (Figure 3).

The weapon type varies appreciably by race/ethnicity. Non-Hispanic whites used firearms and hanging/strangulation equally, approximately one-third each; non-Hispanic blacks used firearms most often (52.5%); Hispanics and non-Hispanic Asians used hanging/strangulation most often (44.4% and 52.5%, respectively) (Figure 4).

TABLE 3. Suicides by age group and sex in IVDRS counties, rate per 100,000, 2005-08 (n=2107)

	Total	2005	2006	2007	2008
AGE GROUP					
15 to 24	6.8	6.4	6.9	8.2	5.5
25 to 34	7.0	8.6	5.9	6.1	7.6
35 to 44	10.5	10.6	9.5	10.7	11.0
45 to 54	11.3	11.3	12.1	10.0	12.0
55 to 64	11.0	11.7	10.1	9.9	12.4
65 +	9.5	10.0	8.9	8.7	10.6
MALES					
All males	11.7	11.9	10.9	11.3	12.8
15 to 24	10.5	9.8	11.0	12.6	8.6
25 to 34	11.4	14.1	9.6	9.9	12.0
35 to 44	16.4	16.0	14.5	16.6	18.5
45 to 54	17.4	17.0	18.6	15.4	18.6
55 to 64	17.5	18.6	15.3	14.9	21.0
65 +	18.6	18.3	16.7	17.7	21.4
FEMALES					
All females	3.2	3.5	3.2	3.2	3.0
15 to 24	2.9	2.9	2.7	3.5	2.3
25 to 34	2.6	3.0	2.2	2.2	3.1
35 to 44	4.5	5.2	4.6	4.8	3.5
45 to 54	5.5	5.8	5.8	4.8	5.7
55 to 64	5.3	5.6	5.4	5.5	4.6
65 +	3.4	4.4	3.6	2.5	3.1

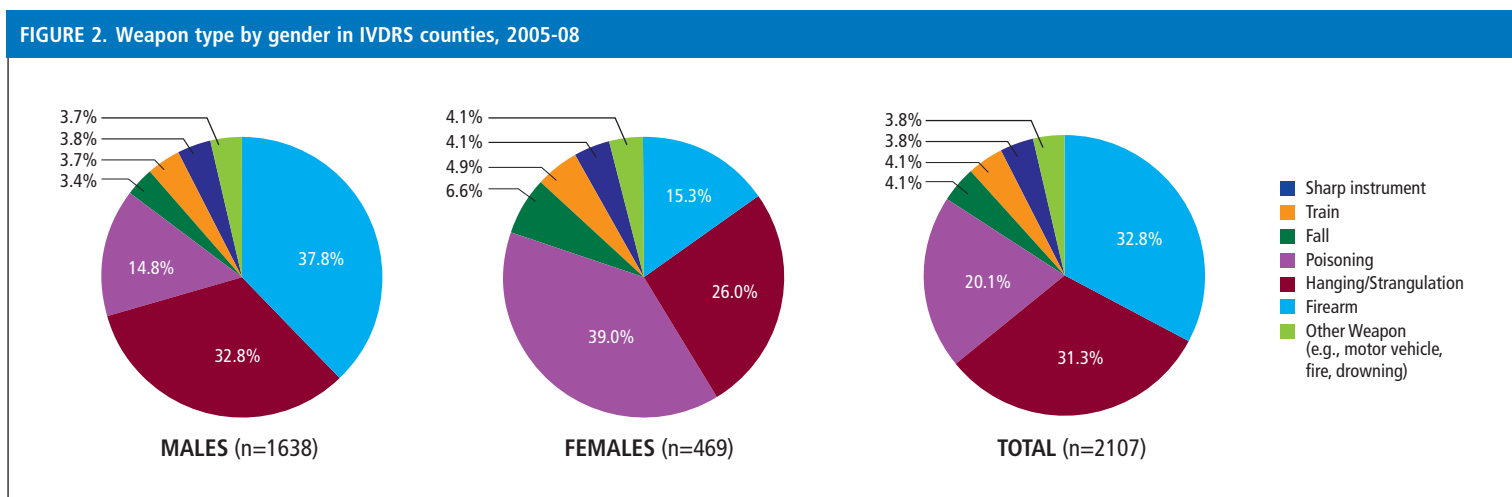


FIGURE 3. Weapon type by age in IVDRS counties, 2005-08

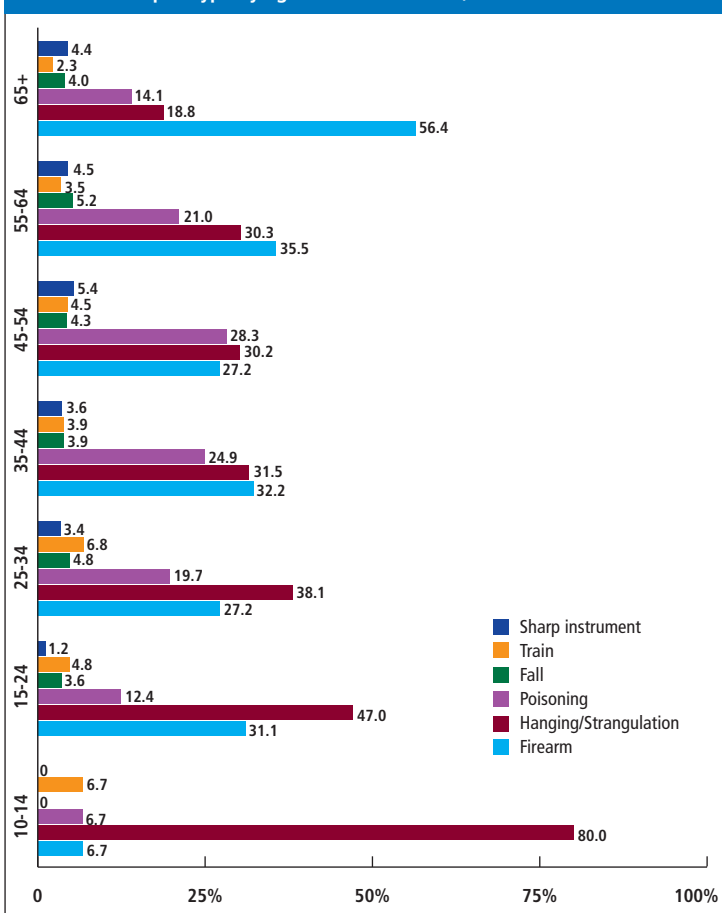


FIGURE 5. Weapon type by race/ethnicity in IVDRS counties, 2005-08

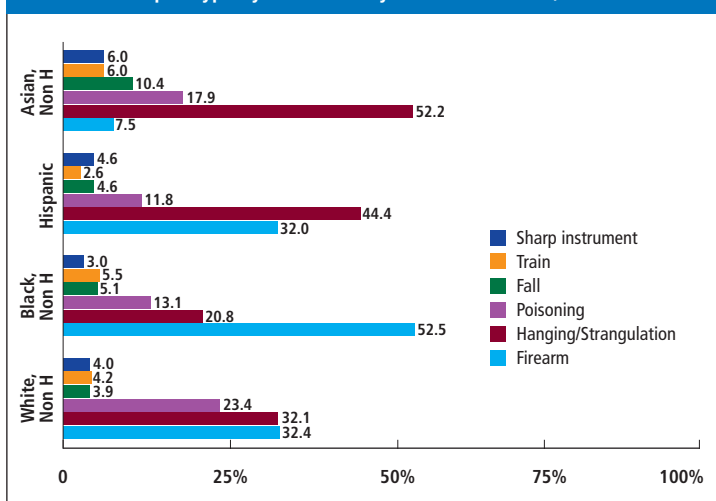
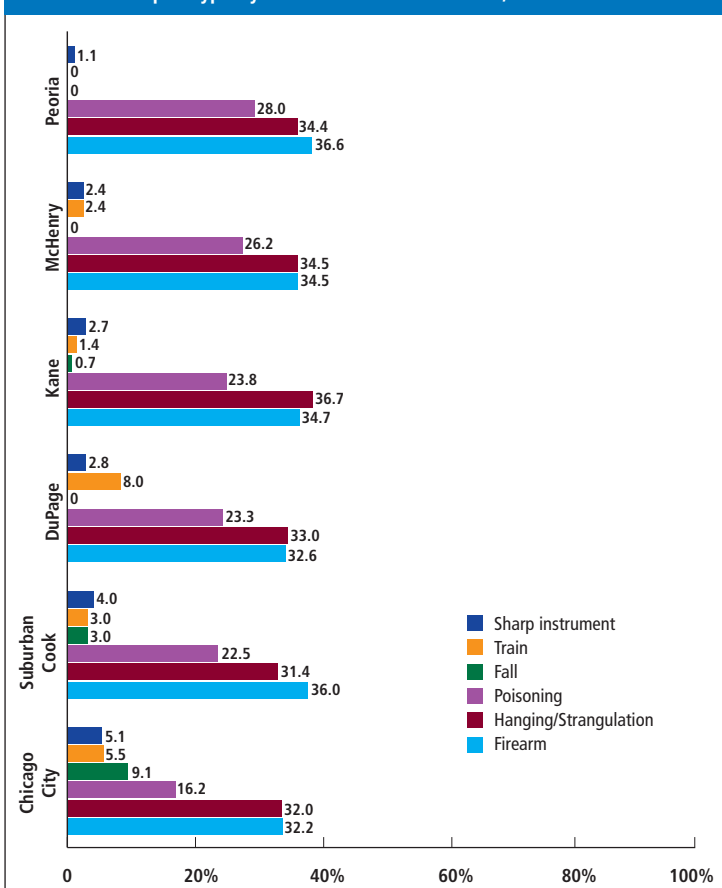


FIGURE 4. Weapon type by location in IVDRS counties, 2005-08



Alcohol and substance use among suicide victims

From interviews conducted during the investigation of each suicide, the victim was identified by at least one person as having an alcohol dependence problem in approximately one-sixth of the cases, and/or a drug abuse problem in one-tenth of the cases; 21.9% of the cases were identified as having one or both. Toxicology reports showed that, among those tested, both alcohol and antidepressants — either singly or in combination — were each found in approximately one-third of the cases (Table 5). Of those tested, fewer than 10% of the victims tested positive for amphetamines, cocaine, marijuana or opiates, either singly or in combination.

In Cook County, only alcohol, cocaine and opiates were routinely tested for toxicology reports; results of antidepressants, other and/or multiple substances mostly reflects DuPage, Kane, McHenry and Peoria counties.

One or more substances (not including antidepressants) was detected in 37.7% of cases; two or more substances (not including antidepressants) were detected in 9.7% of cases.

TABLE 5. Alcohol and substance abuse in IVDRS counties, 2005-08

Circumstance	YES	NO
Person has alcohol dependence problem (n=2113)	16.3%	83.7%
Person has drug abuse problem (n=2113)	10.0%	90.0%
Toxicology results	Present	Not Present
Antidepressants (n=691)	32.4%	67.6%
Blood alcohol (n=1977)	33.3%	66.7%
Cocaine (n=1819)	7.9%	92.1%
Opiates (n=1823)	7.7%	92.3%
Marijuana (n=602)	6.3%	93.7%
Amphetamines (n=663)	3.0%	97.0%
One or more drug, any combination (not including antidepressants, n=575)	37.7%	62.3%
Two or more drugs, any combination (not including antidepressants, n=575)	9.7%	90.3%

Circumstances surrounding the suicide provide context

By pooling information from various sources for the same incident, from police investigations, coroner or medical examiner reports and toxicology reports, IVDRS has the ability to paint a more complete picture of the events surrounding a suicide. For each circumstance, a “yes” means that at least one source of information from the incident documented that particular element. In the absence of any documentation of a circumstance, that element is coded as “no.” A single incident could have many circumstances surrounding the suicide; categories are not mutually exclusive.

A large majority of the suicides, 71.9%, occurred at the victim’s residence. For 20.5%, the victim had a history of attempting suicide (Table 6). Nearly one-fourth of the time, the victim disclosed his/her intent to commit suicide to someone, and in nearly one-third of the cases a note was left by the victim. 42.8% of suicide victims had a current mental health problem at the time of the incident, and 32.7% of the suicide victims were in treatment for a mental health problem at the time of death. In 36.3% of the cases, suicide victims were noticed by others interviewed by investigators to have been in a depressed mood.

Intimate partner problems were cited as a precipitating factor in 23.9% of suicides. In 0.3% of the cases, the suicide victims were victims of interpersonal violence in the previous month, and 3.5% of the suicide victims were perpetrators of interpersonal violence in the previous month.

In 18.1% of the cases, a very acute precipitating crisis occurred within two weeks of the suicide; e.g., the victim had just been arrested, divorce papers had been served that day, the victim was about to lose his/her job. The 1.8% (n=37) victims who had committed a homicide immediately prior to committing suicide were also included in this category. Most often, but not always, these homicides-suicides involved an intimate partner and the perpetrator-victim was male.

A case in which there was a documented crisis does not exclude additional, chronic factors which may have contributed to the suicide. This could be used to attempt to identify which deaths appear to involve an element of impulsivity.

Of the other documented crises surrounding the suicide, physical health problems (19.8%), job/employment problems (13.4%) and financial problems (11.9%) were cited the most often.

TABLE 6. Circumstances surrounding the suicide in IVDRS counties, 2005-08 (n=2113)

	YES	NO
Documentation		
Person left a suicide note	31.4%	68.6%
Disclosed intent to commit suicide	23.7%	76.3%
History of attempting suicide	20.5%	79.5%
Mental Health		
Current mental health problem	42.8%	57.2%
Current depressed mood	36.3%	63.7%
History of ever being treated for mental health problem	34.8%	65.2%
Current treatment for mental health problem	32.7%	67.3%
Intimate Partner		
Intimate partner problems	23.9%	76.1%
Perpetrator of interpersonal violence w/in past month	3.5%	96.5%
Victim of interpersonal violence w/in past month	0.3%	99.7%
Precipitating Crises		
Physical health problems	19.8%	80.2%
Crisis occurred within two weeks previous to suicide	18.1%	81.9%
Financial problems	11.9%	88.1%
Criminal legal problems	6.6%	93.4%
Other relationship problem (relative, friend, associate)	6.3%	93.7%
Death of family/friend within 5 years	5.5%	94.5%
Non-criminal legal problems	2.5%	97.5%
Homicide-Suicide	1.8%	98.2%
Suicide of family/friend w/in past 5 years	0.9%	99.1%
School problems	0.9%	99.1%
Homeless at time of incident	0.9%	99.1%
Job problems	13.4%	86.6%

TECHNICAL NOTES

The Illinois Violent Death Reporting System (IVDRS) is a project of the Child Health Data Lab at Children’s Memorial Hospital. It is based on the National Violent Death Reporting System (NVDRS). The project seeks to help researchers and policy makers determine the circumstances and risk factors associated with homicide, suicide and other violent deaths by linking timely data from multiple sources. In Illinois, we collect this information in Cook, DuPage, Kane, McHenry and Peoria counties. We gratefully acknowledge the assistance of our data-providing agencies including the Cook County Medical Examiner, the DuPage, Kane, McHenry and Peoria County Coroners, the Illinois Department of Public Health and the Chicago Police Department. For additional information on NVDRS, see preventviolence.net.

What is a violent death?

The Centers for Disease Control and Prevention (CDC) establishes standards for all of the state-level Violent Death Reporting Systems, such as the one in Illinois. The CDC defines violent death as homicide, suicide, unintentional firearm death, death from legal intervention, death related to terrorism and death from undetermined causes.

- Cook County (which includes Chicago) is the source of the majority of IVDRS data; the data cannot be understood as representative of Illinois as a whole.
- All rates calculated for this newsletter are crude rates (not age-adjusted) based on locations for which the county of injury and county of death were the same. Rates are not computed for fewer than six cases. All data are accurate as of the date received and is subject to change due to ongoing investigations. Numbers will not always match as data is incomplete in some cases.
- IVDRS collects all violent deaths that occur in a county; however, some of these victims were injured in another county and transported to a medical facility in a different county where the death then occurs. Included in this dataset are suicides in which both the injury and death occurred in a county, which comprise nearly 98% of all the deaths in the IVDRS counties.
- Population data for IVDRS counties, including Chicago, from U.S. Census Bureau, American Community Survey (2005, 2006, and 2005-07 estimates) available at <http://factfinder.census.gov>.

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