Suicides Due to Alcohol and/or Drug Overdose

A Data Brief from the National Violent Death Reporting System




National Center for Injury Prevention and Control
Division of Violence Prevention

Background

Suicide occurs when a person ends his or her own life. It is the 11th leading cause of death among Americans, and every year more than 33,000 people end their own lives. Suicide is found in every age, racial, and ethnic group to differing degrees (1).

There are a number of factors that increase the likelihood a person will take his or her own life; one of these is abusing substances such as alcohol and drugs (1). Alcohol and drug abuse are second only to depression and other mood disorders as the most frequent risk factors for suicidal behavior (2, 3). Alcohol and some drugs can result in a loss of inhibition, may increase impulsive behavior, can lead to changes in the brain that result in depression over time, and can be disruptive to relationships—resulting in alienation and a loss of social connection (4). Furthermore, excessive acute drug and/or alcohol ingestion could result in death. According to data from a recent National Violent Death Reporting System (NVDRS) report, in 2007 alcohol was a factor in approximately one-third of the reported suicides, and 62% of these decedents had a Blood Alcohol Content (BAC) of >0.08 g/dL at the time of death (5).

This data brief summarizes suicide deaths reported in the NVDRS due to poisoning by alcohol and/or other drugs (illicit, prescription, and over-the-counter) ingestion as indicated by the cause of death on the death certificate. The brief contains data from 16 states implementing NVDRS from 2005-2007.

NVDRS is a state-based system for providing detailed information about violent deaths, such as when, where, and how they happen and other possible contributing factors. This information can be used to monitor homicides and suicides and design and evaluate prevention strategies. Benefits of NVDRS include the following:

- Linked records describing the detailed circumstances that may contribute to a violent death
- Identification of violent deaths occurring together to help describe the circumstance of multiple homicides or homicide-suicides
- Timely preliminary information on violent deaths
- Better characterization of the relationship of the victim to the suspect

In NVDRS, suicide is defined as a death resulting from the use of force against oneself when the evidence indicates that the death was intentional (5). Unintentional poisonings or deaths caused by chronic or acute substance abuse without the intent to die are not classified as suicides and are not included in this report.

Results

From 2005-2007, there were a total of 26,902 suicides in NVDRS-funded states. Poisoning was the third-leading method of suicide, following firearm and hanging/strangulation. Seventy-five percent (n=3,706) of suicides by poisoning were due to alcohol and/or drug overdose versus other types of poison such as carbon monoxide. Less than half (47%) of those who died by alcohol and/or drug overdose were known to have an alcohol or substance abuse problem.

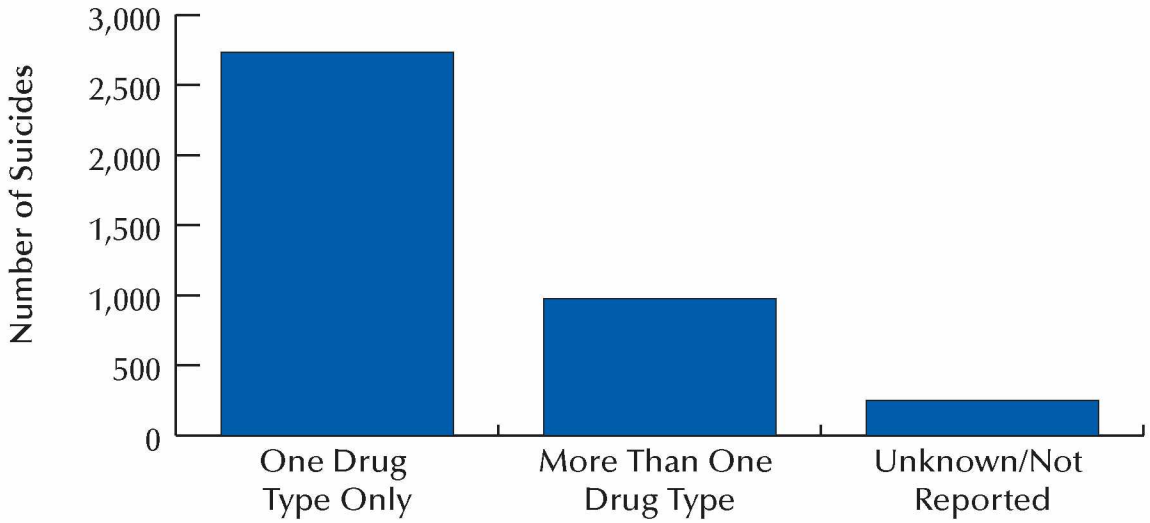
Poisoning is a leading method in suicide deaths, and drugs and/or alcohol make up 75% of suicide deaths due to poisoning.

Substances Used in Suicides

- Sixty-nine percent of individuals who died by suicide due to substance overdose had ingested one type of drug (n=2,732); 25 percent ingested two or more types of drugs (n=974) (Figure 1).

In suicides resulting from more than one substance, about one-third occur due to a combination of alcohol and prescription drugs. Almost another third are due to a combination of over-the-counter drugs and prescription drugs.

Figure 1. Number of Suicide Deaths by Number of Drug Type—16 U.S. States, 2005-2007



Of those who consumed a single drug type:

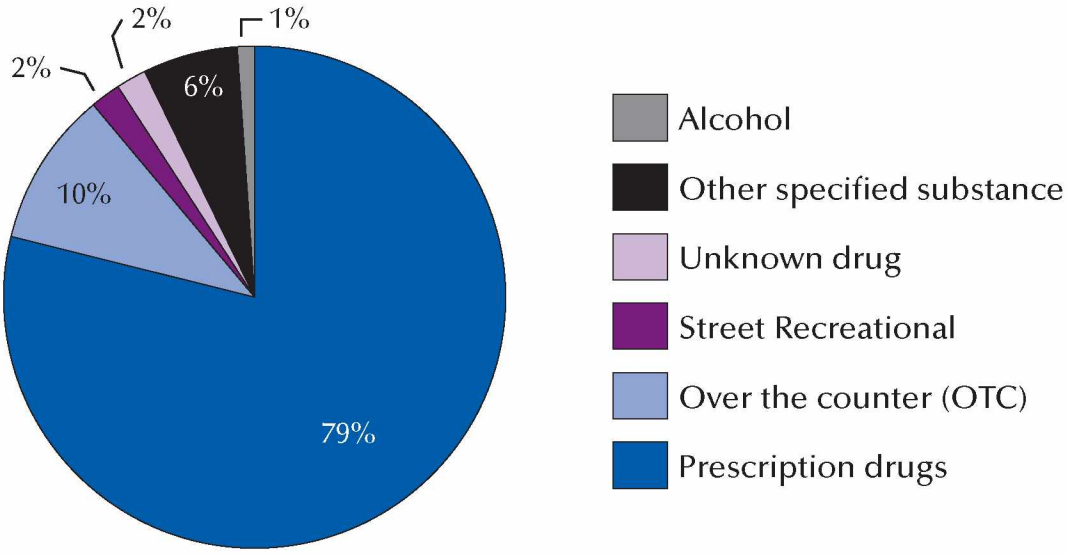
- Prescription drugs such as those in the opioid, benzodiazepine, and antidepressant class (e.g.- oxycodone, diazepam, and fluoxetine) were the leading type used in suicide deaths. From 2005 to 2007, 79% of suicides due to substance overdose were due to prescription drugs only (n=2165).
- Over-the-counter drugs such as acetaminophen were the second leading substance type used in suicides. They represented 10% of suicides due to substance overdose (n=279).
- Street/recreational drugs and alcohol made up the smallest proportion of these suicides (2% and less than 1% respectively) (Figure 2).

The vast majority (79%) of substance overdose suicides are related to prescription drugs. The second most common substance used is acetaminophen.

Of those who consumed more than one type of drug:

- Alcohol and prescription drugs were ingested in 31% of suicides due to multiple substance overdose (n=298).
- Prescription drugs and over-the-counter drugs were ingested in 30% of cases (n=294).
- Other (unspecified) combinations of substances were ingested in 24% of cases (n=236).
- Street/recreational drugs and prescription drugs were ingested in 12% of cases (n=119).
- Alcohol, street/recreational drugs, and prescription drugs were ingested in 2% of cases (n=22).
- Alcohol and street recreational drugs were ingested in < 1% of cases (n=5) (Figure 3).

Figure 2. Major Drug Types in Suicide Deaths Due to Single Substance Overdose—16 U.S. States 2005-2007 (n=2732)



Distribution by Demographic Group

- Females die in disproportionate numbers from suicide due to alcohol and/or drug overdose. From 2005-2007, 34% of female suicides were due to alcohol and/or drug overdose, versus 8% of males (Table 1).
- 15% of suicides among white non-Hispanics were due to alcohol and/or drug overdose; this equals almost two times the percentage of black non-Hispanics in the same category (8%) (Table 1).
- 18% of suicide decedents between ages 40 and 64 died from alcohol and/or drug overdose; this equals more than four times the percentage of those aged 17 years and younger in the same category (Table 1).
- The percent of total suicides due to alcohol and/or drugs in NVDRS-funded states range from 5.8% to 19.8% (Table 2).

Figure 3. Major Drug Types in Suicide Deaths Due to Multiple Substance Overdose—16 U.S. States 2005-2007 (n=974)

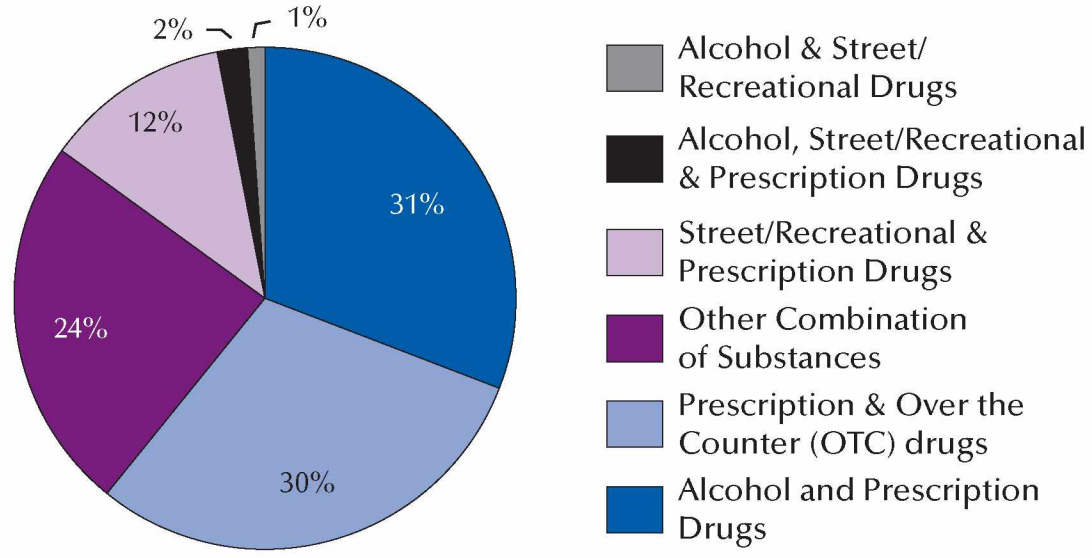


Table 1. Number and percent of suicides due to drug and/or alcohol ingestion, by decedent sex, race/ethnicity, and age group, 16 NVDRS states, 2005-2007

Characteristic	No.	% of Total Suicides Due to Poisoning by Drugs/Alcohol
Sex		
Male	1698	8
Female	2008	34
Race/Ethnicity		
Hispanic	131	10
White, non-Hispanic	3322	15
Black, non-Hispanic	138	8
American Indian/Alaska Native, non-Hispanic	50	10
Asian/Pacific Islander, non-Hispanic	45	11
Unknown/Other	20	10
Age Group (years)		
≤17	31	4
18-39	1079	11
40-64	2313	18
≥65	282	7
Unknown	1	10

Table 2. Number and percent of suicides due to drug and/or alcohol ingestion, by state, 2005-2007

State	No.	% of Total Suicides in State Due to Poisoning by Drugs/Alcohol
Alaska	25	6
Colorado	368	17
Georgia	205	7
Kentucky	125	7
Maryland	179	13
Massachusetts	280	20
New Jersey	304	17
New Mexico	118	11
North Carolina	490	15
Oklahoma	231	15
Oregon	275	16
Rhode Island	42	17
South Carolina	173	11
Utah	170	16
Virginia	407	16
Wisconsin	314	16
TOTAL	**3706**	**14**

Implications & Recommendations

Drug and alcohol overdose account for a substantial number of suicides, and many of these deaths can be prevented by limiting access to substances. If lethal substances are not available when people are under psychological or emotional stress and despair, the ability to commit suicide is limited (6). Many of the substances used in suicides are either easily available, as in the case of over-the-counter drugs such as acetaminophen, or, like opioids, antidepressants, and benzodiazepines, are commonly prescribed to treat various physical and mental health conditions. Effective mental health treatment, which often includes pharmacologic therapy, is important to prevent suicide, however to adequately promote the safety and well-being of individuals at risk of suicide, consumers, family members, and others should be aware of the associated risk these substances pose. There are actions that state and local communities, policy-makers, and family members can take to reduce the number of suicides due to substance overdose.

Develop guidelines for safer prescribing and dispensing of medications. The National Strategy for Suicide Prevention calls for the development of guidelines for safer dispensing of medications for individuals at heightened risk of suicide. Policymakers should initiate strategies shown to be effective in preventing suicide. These include requiring bubble/blister packaging of analgesic pills instead of bottle packaging; limiting the number of pills pharmaceutical and nonpharmaceutical outlets can sell at one time, and providing printed warnings about the dangers of overdose with each sale of analgesics (7). Physicians and other clinicians should be educated about safe prescribing practices for suicidal individuals. Related efforts to address unintentional poisoning may also address suicide (8). For example, many states are developing statewide electronic databases to collect information on substances dispensed. This effort can provide valuable information on substance use and abuse trends that can affect drug policy and overdose prevention.

Teach families of suicidal individuals the importance of limiting access to substances in the home. Educational and skill-building interventions shown to be effective in reducing access to lethal substances should be implemented broadly in high-risk populations (9). Examples include educating parents and other family members in emergency departments, hospitals, and other clinical settings. Families should be educated on strategies to limit access at home to prescription drugs, over-the- counter analgesics, and alcohol. They should be educated about the potential dangers of alcohol in suicidal individuals and its ability to amplify the harmful effects of medications and other substances that can result in severe respiratory depression and death.

Promote connectedness between health, mental health, and substance abuse providers and other community-based support organizations to build a safety net for suicidal individuals. Increasing linkages between primary care, mental health, and substance abuse service providers and other community-based support organizations may allow for better identification, assessment, management, and treatment of at-risk individuals. A "team approach" can help ensure that those likely to work with suicidal individuals know appropriate actions to take to see that needed services are actually delivered and appropriate standards of care, monitoring, and follow-up are provided.

Build social support networks for persons who are suicidal. Individuals who have regular interactions with social support networks that may include family, friends, teachers and school administrators, and a faith community can be protected from many of the factors that increase suicide risk such as alcohol and drug abuse (10,11,12). Families, friends, spiritual leaders, and other advisors of suicidal individuals can be instrumental in preventing suicide by maintaining open channels of communication about feelings of despair. They can encourage suicidal individuals to seek professional help and support them in other actions to save their life.

If you or someone you know is struggling with feelings of hopelessness and /or thinking about suicide, call the National Suicide Prevention Lifeline, 1-800-273-TALK, to speak with a trained counselor and be connected with helpful resources in your area.

Recommendations to help states, communities, policy-makers, and family members reduce the number of suicides due to substance overdose include:

- Develop guidelines for safer prescribing and dispensing of medications.
- Teach families of suicidal individuals the importance of limiting access to substances in the home.
- Promote connectedness between health, mental health, and substance abuse providers and other community-based support organizations to build a safety net for suicidal individuals.
- Build social support networks for persons who are suicidal.

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