Substance Abuse and Mental Health Services Administration
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IN BRIEF
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DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

SUBSTANCE USE AND SUICIDE: A NEXUS REQUIRING A PUBLIC HEALTH APPROACH

Suicide is a serious and preventable public health problem in the United States. Collaboration among prevention professionals across behavioral health fields has the potential to reduce suicide rates. While multiple factors influence suicidal behaviors, substance use—especially alcohol use—is a significant factor that is linked to a substantial number of suicides and suicide attempts. This "nexus" between substance use and suicide provides an opportunity for behavioral health leaders to develop a cohesive strategy within a public health framework to reduce suicidal behaviors and suicide rates.

This *In Brief* summarizes the relationship between substance use and suicide and provides state and tribal prevention professionals with information on the scope of the problem, an understanding of traditional barriers to collaboration and current programming, and ways to work together on substance misuse and suicide prevention strategies.

Scope of the Problem

How Prevalent Is Substance Misuse and Suicide?

In 2013, there were more than 41,000 deaths as a result of suicide in the U.S. (CDC, 2015). Suicide is the tenth leading cause of death, claiming more lives each year than death due to motor vehicle crashes. It is the second leading cause of death for young people age 10 to 24, as well as for those age 25 to 42 (CDC, 2015).

Additionally, almost four percent of adults—9.4 million people—age 18 or older had serious thoughts of suicide in the past 12 months, according to the National Survey on Drug Use and Health (NSDUH) (SAMHSA, 2014b). The prevalence of suicide ideation and suicide attempts varies based on demographic and individual factors, including age and substance use. Within the adult population, 2.7 million reported making a suicide plan, and 1.1 million reported a suicide attempt (SAMHSA, 2015)

Suicide rates vary considerably within different population subgroups and are affected by factors such as socioeconomic status, employment, occupation, sexual orientation, and gender identity:

- Americans age 45–54 were more likely to die by suicide than any other single age group, with 19.7 deaths per 100,000, compared to 13.0 per 100,000 within the general population (CDC, 2015a);
- Adolescents and young adults (age 15–24) had a suicide rate of 11.1 per 100,000, whereas suicide among children ages 5–14 was relatively rare—0.96 per 100,000 in 2013 (CDC, 2015);
- The rates of suicide were almost four times higher for men than for women (20.6 per 100,000 vs. 5.7 per 100,000) and were highest among Whites (14.9 per 100,000) (CDC, 2015); and
- In 2013, suicide rates were 11.7 per 100,000 for American Indians/Alaska Natives, 6.0 per 100,000 for Asians/Pacific Islanders, 5.3 per 100,000 for Hispanics, and 5.4 per 100,000 for African Americans (CDC, 2015).

At-Risk Populations for Suicide

The following populations are known to have an increased risk for suicidal behaviors (HHS, 2012):

- American Indians/Alaska Natives
- Individuals bereaved by suicide
- Individuals in justice and child welfare settings
- Individuals who engage in non-suicidal self-injury
- Individuals who have attempted suicide
- Individuals with medical conditions
- Individuals with mental and/or substance use disorders
- LGBT individuals
- Members of the armed forces and veterans
- Men in midlife
- Older men

Substance misuse is also prevalent in the U.S. among individuals age 12 and older in 2014:

- Approximately 1 in 12 (21.5 million) had a substance use disorder in the past year;
- Almost one quarter engaged in binge drinking in the past month; and
- Over 10 percent used illicit drugs in the past month (SAMHSA, 2015).

Suicides and Suicide Attempts Are Significantly Affected by Substance Use

Individuals with substance use disorders (SUDs) are particularly susceptible to suicide and suicide attempts. Indeed, suicide is a leading cause of death among people who misuse alcohol and drugs (SAMHSA, 2008; HHS, 2012; Wilcox, Conner, & Caine, 2004; Pompili et al., 2010). Substance misuse significantly increases the risk of suicide:

- Approximately 22 percent of deaths by suicide involved alcohol intoxication, with a blood-alcohol content at or above the legal limit (CDC, 2014b);
- Opiates (including heroin and prescription painkillers) were present in 20 percent of suicide deaths, marijuana in 10.2 percent, cocaine in 4.6 percent, and amphetamines in 3.4 percent (CDC, 2014b).

One of the reasons alcohol and/or drug misuse significantly affects suicide rates is the disinhibition that occurs when a person is intoxicated (HHS, 2012; Pompili et al., 2010). Although less is known about the relationship between suicide risk and other drug use, the number of substances used seems to be more predictive of suicide than the types of substances used (HHS, 2012). However, the research on this subject is limited, and the relationship between drug misuse and suicide risk is even less developed. More research is needed on the association between different drugs, drug combinations, and self-medication on suicidal behavior (SAMHSA, 2008).

Surveillance data nevertheless reveal that a diagnosis of alcohol misuse or dependence is associated with a suicide risk that is 10 times greater than the suicide risk in the general population, and individuals who inject drugs are at about 14 times greater risk for suicide (Wilcox, Conner, & Caine, 2004; SAMHSA, 2009).

Acute alcohol intoxication is present in about 30-40 percent of suicide *attempts* (Cherpitel, Borges, & Wilcox, 2004; SAMHSA, 2009). Many of these suicide attempts require medical attention, and every year about 650,000 people receive treatment in emergency rooms following a suicide attempt (Chang, Gitlin, & Patel, 2011). In 2011, approximately 230,000 emergency department visits resulted from drug-related suicide attempts, and almost all involved a prescription drug or over-the-counter medication. The number of emergency department visits for drug-related suicide attempts increased 51 percent overall from 2005 to 2011, and more than doubled among people age 45–64 (SAMHSA, 2014a). The text box on page 4 provides some additional information regarding alcohol's role in suicidal behavior.

Alcohol's Behavioral Mechanism as a Catalyst for Suicide

Acute alcohol intoxication may substantially increase the risk of suicide by decreasing inhibitions and increasing depressed mood. The acute effects of alcohol intoxication act as important proximal risk factors for suicidal behavior among individuals with alcohol use disorders and those without. Mechanisms responsible for alcohol's ability to increase the proximal risk for suicidal behavior include alcohol's ability to (1) increase psychological distress, (2) increase aggressiveness, (3) propel suicidal ideation into action through suicide-specific alcohol expectancies (e.g., alcohol may supply the motivation to complete the action, the user may believe that alcohol will assist in completing suicide painlessly), and (4) constrict cognition, which impairs the generation and implementation of alternative coping strategies (Hufford, 2001).

Programs that Address the Substance Use/Suicide Nexus

SAMHSA's National Registry for Evidence-based Programs and Practices (NREPP) and the Suicide Prevention Resource Center's (SPRC's) Best Practices Registry include evidence-based programs that focus on substance misuse and suicide prevention in different settings (see Resources). The text box below summarizes three programs that specifically target adolescents and their caregivers.

Many of these programs contain replicable elements—e.g., life skills training—that support effective problem-solving and emotional regulation, the nurturing of positive connections with friends and family members, and strong ties to both school and community. Taken together, these social supports can protect individuals from both substance use and suicide. Other programs provide treatment and recovery support and help guide the individual toward recovery from SUDs and from preoccupations with suicidal thoughts.

A Sampling of Evidence-Based Programs for Adolescents and Their Caregivers

Model Adolescent Suicide Prevention Program (MASPP) uses a public health-oriented suicidal-behavior prevention and intervention program originally developed for a Native American tribe in New Mexico. The goals of the program are to reduce the incidence of suicides and suicide attempts by adolescents through community education about suicide and related behavioral issues that include alcohol and substance misuse.

Emergency Department Means Restriction Education is an intervention for adult caregivers of young adults or adolescents who are seen in the emergency department and determined through a mental health assessment to be at-risk for suicide. Parents and adult caregivers of these at-risk youth are taught to recognize the importance of taking immediate action to restrict access to alcohol, prescription drugs, and firearms in the home. Caregivers are given practical advice on how to restrict access to—or dispose of—alcohol and prescription drugs.

Coping and Support Training (CAST) is a school-based small group counseling program for at-risk youth that has demonstrated decreased suicide risk factors in adolescents. The program, offered through 12 55-minute sessions, can be delivered by trained teachers, counselors, social workers, or others with similar experience. The program is available from Reconnecting Youth, Inc., for a fee.

Traditional Barriers to Collaboration among State and Tribal Agencies

Organizational Barriers

Prevention professionals who work on substance use and suicide issues are usually housed in different state agencies or tribal organizations according to their "specialty." Within states, substance misuse prevention specialists typically reside in the Single State Authority for substance misuse or behavioral health, whereas suicide prevention specialists are based within mental health, injury, or violence prevention offices, which may be located within larger public health, mental health, or public safety agencies. Other suicide prevention specialists may be based in combined behavioral health (i.e., mental health and substance misuse) agencies. Organizational barriers to collaborating may exist due to each agency's unique and distinct mission and the structures in place for addressing its mission. Using an interagency approach to develop a comprehensive suicide prevention strategy, state and tribal governments can bridge organizational barriers, build connections among agencies, and facilitate collaboration.

Funding Barriers

Funding mechanisms are another potential barrier to collaboration. Federal funding, which includes Block Grants for both mental health and substance misuse and Partnerships for Success grants for substance misuse prevention (among others), is typically disbursed to a specific state agency or tribal government, which then provides sub-grants to community agencies or organizations, institutions of higher education, or tribal organizations. These funding streams may reinforce each agency's unique way of operating and fulfilling its mission. Formation of suicide prevention councils, coalitions, or work groups that bring together stakeholders across agencies and organizations can help to coordinate funding from different sources and promote collaboration to tackle suicide prevention activities. Such collaboration is likely crucial for effective, sustained, and comprehensive efforts.

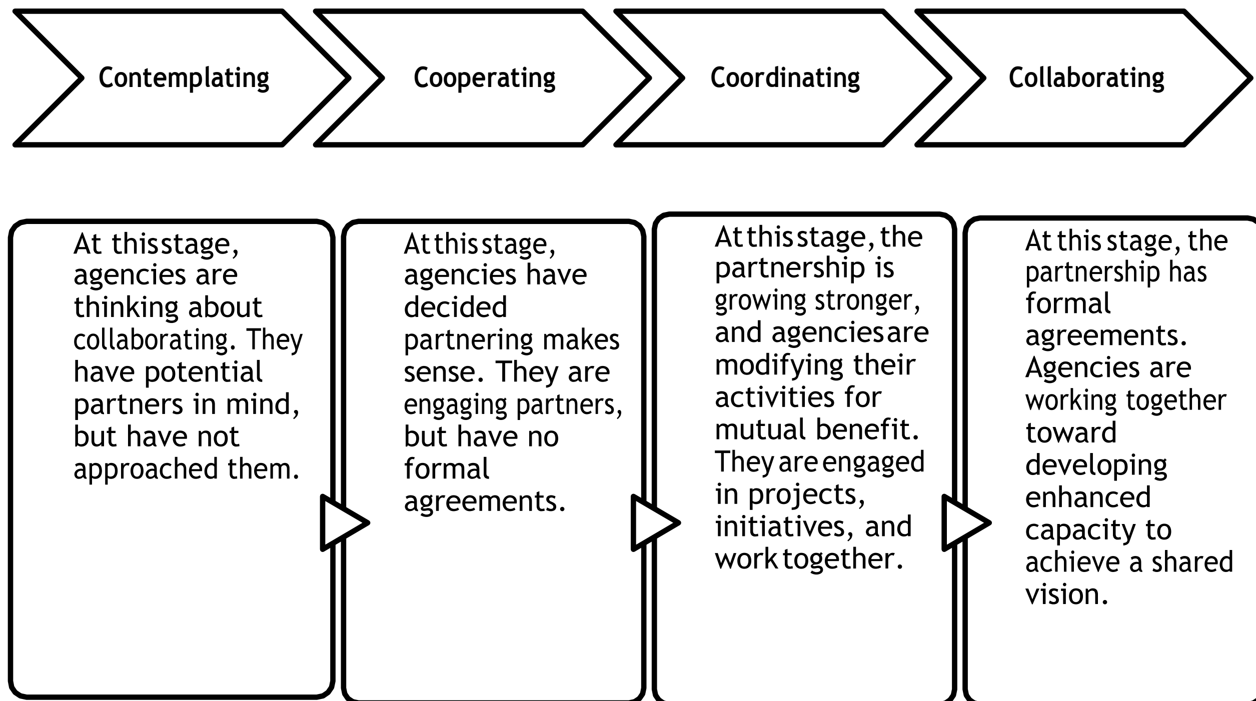
Philosophical Differences

In the span of several decades, there has been a growing realization that substance misuse and suicide are both public health issues requiring comprehensive, population-based strategies. Such a public health approach includes prevention programs as well as clinical treatment for individuals who present with behavioral health issues. In Native American communities, suicide and substance misuse prevention strategies must also reflect cultural traditions and traditional views of health (HHS, 2010; IHS, 2007). Professionals working in the behavioral health field are moving away from a focus primarily on the individual (and individual factors) toward implementation of prevention and health promotion strategies for the whole community. Previously, substance misuse preventionists thought of suicide as a mental health issue that was best addressed through clinical interventions, especially for depression. Those working in the substance misuse field left suicide prevention mainly to mental health professionals. At the same time, mental health professionals were not always trained to work with suicidal persons who had co-occurring mental and substance use problems. However, as research began to show the multiple social and environmental factors affecting suicide risk, it became apparent that population-based strategies aimed at reducing risk and increasing protective factors were critical. Additionally, risk and protective factors for both issues were found to overlap, and a risk factor for suicidal behavior included substance use and misuse. Working collaboratively across the mental health and substance misuse fields is therefore key to reducing suicide rates.

Lack of Information

Reluctance to work collaboratively across agencies, departments, organizations, and professions may also be due to lack of information about the link between substance use and suicidal behavior. Studies show that strategies to reduce alcohol use among young people ages 18 to 23—for example, minimum legal drinking age laws—affect suicide rates (Grucza et al., 2012; Birckmayer & Hemenway, 1999). One study concluded that the minimum legal drinking age of 21 may be preventing as many as 600 suicides annually in the U.S. (Grucza et al., 2012). Prevention professionals[1] should be informed about the connections between suicide and substance use--particularly underage alcohol use, binge drinking, and adult alcohol misuse-- and be encouraged to work together on prevention strategies.

Working across state and tribal agencies, departments, and service providers may be challenging. Yet the rewards gained by substance misuse, mental health, and injury/violence prevention professionals combining their subject matter expertise far outweigh systemic challenges. The sections that follow provide recommendations to both state and tribal policymakers and prevention specialists for addressing the nexus between substance use and suicide, and thereby improving public health. SAMHSA's Suicide Prevention Resource Center (SPRC) has developed a Collaboration Continuum to help states, tribes, campuses, and communities identify where they are on the continuum and find ways to strengthen their collaboration efforts (see below).



[1] Prevention professionals include clinicians, counselors, public health officials, and others who provide services aimed at preventing or reducing problems caused by alcohol, tobacco, and other drug use and abuse.