Part 3, Section 1, Addressing Suicidal Thoughts and Behaviors in Substance Abuse Treatment: A Review of the Literature

TIP Organization

Part 3: Addressing Suicidal Thoughts and Behaviors: A Review of the Literature. This section is a literature review on the topic of addressing suicidal thought and behaviors in substance abuse treatment. Part 3 consists of three sections: a review of the recent literature, an annotated bibliography of the literature most central to the topic, and a general bibliography of other available literature. It includes literature that addresses both clinical and administrative concerns. To facilitate ongoing updates, which will be performed every 6 month for up to 5 years from first publication, Part 3 will only be available online at http://www.kap.samhsa.gov. The review is not intended for academics. Rather, it is written for clinical supervisors, counselors, and administrators who are seeking to apply this TIP in their work.

The following topics are addressed in Part 3:

- Review of the literature pertaining to clinical issues discussed in Part 1 of the TIP.
- Review of the literature pertaining to administrative issues discussed in Part 2 of this TIP.
- Information about the methodology used to perform the literature search (see appendix A).
- An annotated bibliography of almost 40 core sources and a general bibliography.

This literature review is organized as follows:

Introduction
Definitions
Focus of the TIP
Extent of the Problem
Risk Factors for Suicide
Protective Factors
Warning Signs and Precipitating Events
Neurobiological and Genetic Factors
The Role of Substance Use in Suicidal Behavior
Specific Populations
Co-Occurring Mental Disorders and Suicidal Behavior
Accidental Versus Suicidal Overdose
The Role of Trauma and Abuse
Introduction

Suicide is a particularly awful way to die: the mental suffering leading up to it is usually prolonged and intense. There is no morphine equivalent to ease the acute pain, and death not uncommonly is violent and grisly. The suffering of the suicidal is private and inexpressible, leaving family members, friends, and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its aftermath a level of confusion and devastation that is, for the most part, beyond description.

—Kay Redfield Jamison

Suicide has been recognized since early civilization. Hanging was a method frequently used before such tools as knives became commonplace. Attitudes toward suicide have shifted through the centuries as people gave names to feelings like shame and guilt (van Hooff, 2000). Suicide is now seen as an act with complex motivation and many contributing factors. It occurs in every culture, although at widely differing rates, and is affected by cultural practices, expectations, and values.

Definitions

Detailed discussions of various ways of defining suicidal thoughts and behavior, along with recommended definitions, were most recently offered by a distinguished panel of experts in a seminal paper by Silverman and colleagues (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007). The following definitions are informed by this paper.

**Suicidal Behaviors**

Suicide is a deliberate act of self-harm with at least some intent to die that results in death.

Suicide attempt is a deliberate act of self-harm with at least some intent to die that does not result in death. Such acts have a wide range of medical seriousness.

**Suicidal Thoughts**

Suicidal ideations are thoughts of attempting suicide. Such thoughts have a wide range of specificity, intensity, and frequency.

Suicide plans are a severe form of suicidal ideation that include identifying a method or scenario to attempt suicide.

**Nonsuicidal Thoughts and Behaviors**

Death ideations are thoughts of dying but without ideas for suicidal behavior per se.

Nonsuicidal self-injurious behaviors are self-directed acts of self-harm without intent to die. Broadly, these acts tend to have intrapersonal (e.g., manage emotion) or interpersonal (e.g., communicate distress) motivations and include a variety of behaviors (cutting, piercing, burning)
Focus of the TIP

This TIP focuses on suicidal behaviors (suicide, suicide attempt) and suicidal thoughts (suicidal ideation, plans). Nonsuicidal thoughts and behavior (death ideation, non-suicidal self-injury) are not emphasized in this TIP, although they are cause for clinical concern and may confer risk for suicidal behavior.

Extent of the Problem

Suicide

In 2005, the latest year for which data have been collected, 32,637 individuals died by suicide (National Center for Injury Prevention and Control [NCIPC], 2007). This translates to an age-adjusted rate of 10.84 suicides per 100,000 individuals in the U.S. population per year. Males die by suicide about four times more often than females (rates of 17.7 and 4.5, respectively). Suicide is extremely rare in the first decade of life. In the second decade of life, for males, rates of suicide increase until about age 21, are fairly stable through the young adult and middle years of life, and then increase beginning at age 70 and continue to rise throughout late adulthood. For females, suicide rates are steadier throughout the life course, showing a small peak between ages 41–50 (NCIPC, 2007).

Suicidal ideation and suicide attempts

Approximately 420,000 individuals received emergency medical care after intentional self-inflicted injuries, primarily suicide attempts, in 2005 (Nawar, Niska, & Xu, 2007). This is an underestimate of the prevalence of suicide attempts because many attempts do not come to emergency medical attention (or clinical attention of any kind). The National Co-Morbidity Survey (NCS; 1990-1992) and its more recent replication (NCS-R; 2001-2003) used surveys to estimate the rates of suicidal ideation, planning suicide, and attempting suicide. These studies showed that the rates have remained relatively consistent since 1990 (Kessler, Berglund, Borges, Nock, & Wang, 2005). Rates of these behaviors in the 12 months of 2005 are provided in Figure 1.

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<tbody>
<tr>
<td>Suicidal ideation</td>
<td>2.8%</td>
<td>3.3%</td>
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<tr>
<td>Suicide plans</td>
<td>0.7%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Suicide attempts</td>
<td>0.4%</td>
<td>0.6%</td>
</tr>
</tbody>
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Gender differences and suicide and suicide attempts

Researchers have long recognized a “gender paradox” in suicidality: women have a higher prevalence of suicide attempts and a higher prevalence of depression—two of the most recognized risk factors for suicide—yet in the United States and other Western countries their rate of suicide is lower compared with men. Some progress has been made in understanding the paradox. First, several protective factors from suicide may be at work in women. These include a tendency to seek help when they are depressed, a less intense wish to die when attempting suicide, lower rates of
substance use disorders, less access to firearms, lower tendency to use highly lethal methods (firearms, hanging), and the assumption of primary responsibility for childrearing (Gold, 2006; Young, Fogg, Scheftner, & Fawcett, 1994). Second, national survey data show that men and women do not differ in the rate of suicide attempts when individuals showing nonsuicidal self-injury are excluded from the calculation (Nock & Kessler, 2006).

Suicide and specific subpopulations

Most people who die by suicide in the United States are White males (NCIPC, 2007). Figure 2 indicates the interaction of gender and race or ethnicity in rates per 100,000 population. White males and American Indian and Alaska Native males have the highest rates of suicide in the United States. African-American females and Hispanic/Latino females have the lowest rates.

<table>
<thead>
<tr>
<th>Age-Adjusted Suicide Rates by Gender and Race/Ethnicity</th>
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<tbody>
<tr>
<td>White</td>
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<tr>
<td>-------</td>
</tr>
<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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</tbody>
</table>

Source: NCIPC, 2007

Data from the recently collected National Survey of American Life (Joe, Baser, Breeden, Neighbors, & Jackson, 2006) showed that among Blacks in the United States, lifetime prevalence of suicidal ideation was 11.7 percent, and lifetime prevalence of attempts was 4.1 percent. The study further showed subgroup differences among Blacks of African and Caribbean descent, illustrating the importance of examining subgroup differences among racial groups in the study of suicidal behavior. For example, among Blacks of Caribbean descent, males had a higher rate of suicide attempts than females. The study suggested that anxiety disorders may be especially salient to suicidal behavior among Blacks in the United States, an important area for further study.

People in jails and prisons have high suicide rates, with jail suicide rates three times higher than prison rates (Mumola, 2005). Figure 3 shows the percentage of deaths from illness (excluding AIDS), AIDS, suicide, and homicide in U.S. jails and prisons. The data illustrate that suicide is a leading cause of death in jails. There are wide differences in suicide rates among jails, with differences depending on the region of the country, State, and size of the facility, among other factors. Risk for suicide is much higher in jails than in prisons, with risk concentrated within the first 24 hours of incarceration, particularly the first few hours following arrest (Hayes, 1994). Jail suicides are most often carried out by hanging; risk factors consist of alcohol intoxication, nonviolent offense (e.g., drunk driving), non-career criminal, acute shame associated with the offense, isolation (e.g., being alone in the cell), direct or indirect statements that suggest suicidal thoughts, and having access to the implements to hang oneself (Hayes, 1994). Compared with jail suicide, risk for suicide in prisons is lower, and the risk factors are not as clearly defined. They appear to mirror those that confer vulnerability in the general population: substance dependence, depression, stressful events that occur during the course of incarceration, and isolation (Hayes, 1995).
Among subgroups with high suicide rates are individuals with substance use disorders, mental disorders, and co-occurring substance use and mental disorders. The NCS and the NCS-R found that the most common single diagnosis among those with suicide-related behaviors was major depression (34–42 percent in the NCS; 37–51 percent in the NCS-R). Mental disorders are highly prevalent among individuals who have attempted suicide or died by suicide. To illustrate, a meta-analysis by Arsenault-Lapierre, Kim, and Turecki (2004) found that 87 percent of people who died by suicide had been diagnosed with one or more mental disorders. These researchers found significant gender differences. Substance use disorders, particularly alcohol problems, personality disorders, and childhood disorders were more prevalent among men whereas depressive disorders and other affective disorders were more common among women.

In their meta-analysis, Harris and Barraclough (1997) also found that about 90 percent of those who died by suicide have diagnoses of mental disorders. People with active mental disorders are between seven and ten times more likely to die by suicide. The most common diagnosis among those who die by suicide is major depression (Cavanagh, Carson, Sharpe, & Lawrie, 2003).

### Risk Factors for Suicide

Maris, Berman, and Silverman (2000a) list a number of significant risk factors related to suicide. Some of these factors are more salient in some individuals than in others, but all can contribute to risk of suicide. Other experts emphasize different risk factors. Most individuals who attempt or die by suicide have a number of these factors:

- **Mental disorder.** As discussed above, rates of major depressive disorder, bipolar disorder, and schizophrenia are high among those who die by suicide.
- **Substance use disorder.** This is discussed below.

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<table>
<thead>
<tr>
<th>Figure 3</th>
<th>Jail Deaths 2000–2002</th>
<th>State Prison Deaths 2001–2002</th>
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<tbody>
<tr>
<td><strong>All causes</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Illness</strong></td>
<td>47.6%</td>
<td>80.4%</td>
</tr>
<tr>
<td><strong>AIDS</strong></td>
<td>5.9%</td>
<td>8.8%</td>
</tr>
<tr>
<td><strong>Suicide</strong></td>
<td>32.3%</td>
<td>5.8%</td>
</tr>
<tr>
<td><strong>Homicide</strong></td>
<td>2.1%</td>
<td>1.5%</td>
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Source: Mumola, 2005.
• Previous suicide attempt(s).
• **Suicidal ideation.** The more specific and concrete the individual's thinking is and the more detailed the plan, the more likely the person is to die eventually by suicide.
• **Lethality of method chosen.** People using methods of higher lethality are more likely to die by suicide. In general, women use less lethal methods than men.
• **Access to lethal means.** This includes both firearm access in the general population and access to means and opportunity for hanging in institutions.
• **Family member who attempted or died by suicide.** Family members of people who attempt or die by suicide are more likely to attempt or die by suicide than those without a relative who is or was suicidal (Moscicki, 2001).
• **Male.** In the United States, in all age groups, for all races, men have higher suicide rates than women (NCIPC, 2007).
• **Older age.** Men over age 70 have the highest rate of suicide in the United States.
• **Unemployed.** Most studies show suicide to be more prevalent among individuals who are unemployed.
• **Unmarried.** The highest rates of suicide are among the divorced and widowed, but they are also somewhat elevated among the never married compared with those in an intact marriage.
• Low socioeconomic status.
• Low educational achievement.
• **Social isolation.** Living alone or having no close friends are markers for social isolation. Isolation also makes it less likely that a suicide attempt will be interrupted or that an individual who has made an attempt will receive life-saving medical attention.
• **Subjective interpersonal factors.** Perceived loneliness, a belief that one does not belong, and a perception of being a burden on others are potentially relevant variables.
• Trauma exposure.
• **Childhood maltreatment.** Sexual abuse in childhood creates particularly high risk.
• **Barriers to mental health treatment.** These include both psychological barriers, such as the stigma of receiving treatment for mental disorders, as well as physical barriers, such as geographically distant clinics.
• **Belonging to a cultural or religious group supportive of suicide.** Some cultures regard suicide as a noble resolution to a personal dilemma or martyrdom to a higher cause (as with suicide bombers).
• **Acute stressful life events.** These include relationship disruption, loss of employment, financial loss, and legal/civil crisis (Heikkinen et al., 1994).
• **Hopelessness.** This is an enduring trait that confers long-term risk and a temporary state that confers risk acutely (Beck, Steer, Kovacs, & Garrison, 1985).
• **Aggression and impulsiveness.** There is some evidence that aggression and impulsiveness in combination is an especially potent combination. Functioning of the neurotransmitter serotonin is implicated in explaining the link between aggression/impulsiveness and suicide (Mann, Wateraux, Haas, & Malone, 1999).
• **Select personality disorders.** These include, but are not limited to, borderline personality disorder.
• **Physical illness.** Among the diseases with the highest increased risk of suicide are kidney failure, cancers of the head and neck, and HIV/AIDS (Kelly, Mufson, & Rogers, 1999). The relationship of physical illness and suicide is particularly true for older men. Chronic pain may also be relevant (Fisher, Haythornthwaite, Heinberg, Clark, & Reed, 2001).

The Centers for Disease Control and Prevention (CDC, n.d.) offers a similar list of risk factors for suicide:

• Family history of suicide.
• Family history of child maltreatment.
• History of mental disorders, particularly depression.
• History of alcohol and substance abuse.
• Feelings of hopelessness.
• Impulsive or aggressive tendencies.
• Cultural and religious beliefs (e.g., belief that suicide is the noble resolution of a personal dilemma).
• Local epidemics (or clusters) of suicide.
• Isolation, a feeling of being shut off from other people.
• Barriers to receiving mental health treatment.
• Loss (relational, social, work, or financial).
• Physical illness.
• Easy access to lethal methods.
• Unwillingness to seek help because of the stigma attached to mental health and substance abuse disorders or to suicidal thoughts.

### Protective Factors

Risk factors can be affected by protective factors that mitigate against suicide. Examples of protective factors include getting treatment; being a healthy, young female; participating in religious activities; and having a wide network of social support. It is important to note that such factors may afford limited protection among individuals showing warning signs and/or multiple risk factors. The CDC (n.d.) considers the following to be protective against suicide:

- Effective clinical care for mental, physical, and substance use disorders.
- Easy access to a variety of clinical interventions and support for help-seeking.
- Family and community support.
- Support from ongoing medical and mental health care relationships.
- Skills in problem solving, conflict resolution, and nonviolent ways of handling disputes.
- Cultural and religious beliefs that discourage suicide and support instincts for self-preservation.
- Having a child in the home or having childcare responsibilities.

These protective factors vary in their influence in specific populations. For instance, among African Americans with limited access to mental and physical health care, rural residence, educational attainment, having been married, and older age are protective factors (Willis, Coombs, Drentea, & Cockerham, 2003). For some American Indian and Alaska Native groups, protective factors include strong group affiliation, support from the extended family and community, cultural respect, spirituality, wisdom and strength of elders, and humor (Bruning, Clark, Gomez, & Grenier, 2007). Again, such factors may afford limited protection among highly vulnerable individuals.

### Warning Signs and Precipitating Events

Researchers have noted that there is little consistency in the warning signs listed in materials distributed to teachers, primary care providers, and across web sites, as these lists are not based on a set of clear empirical guidelines (Simon, 2006). Nor is it clear whether all warning signs are equally salient.

Rudd and colleagues (2006a) explored the distinction between a risk factor for suicide and a warning sign. Risk factors, such as depression, are more static and enduring and suggest risk over
longer time periods, of a year or a lifetime. Warning signs, however, imply near-term or immediate risk and are episodic and variable (threatening to kill self, seeking a weapon).

Researchers and clinicians have also identified events that precipitate a suicide attempt in clients. Hendin, Maltsberger, Lipschitz, Haas, and Kyle (2001) analyzed 26 cases of suicide submitted by the therapists who were treating them at the time of their deaths. Fourteen of these patients had co-occurring substance use disorders, and nine were actively abusing substances. In this analysis, the researchers identified a precipitating event that was also associated with one or more intense affective states (other than depression) in response to the event, and one or more of three behavioral signs (including speech or actions suggesting suicide, deterioration in functioning, and an increase in alcohol abuse). The researchers noted that the increased alcohol abuse appeared to be a way of managing increasing anxiety prior to the suicide.

Studies have also examined clients' reports of the triggers that were followed by their suicide attempt by overdose and found that a disruption in a primary relationship was cited most often:

- Respondents cited overdosing with suicidal intent in response to a break in a primary relationship, after leaving treatment, or a recent discharge from a therapeutic community (Heale, Dietze, & Fry, 2003).
- Overdoses among people who use heroin were associated with multiple drug use, more severe dependence on drugs, and a precipitating event, such as the recent death of someone close, a recent relationship breakdown, or problems with housing (Neale & Robertson, 2005).
- Respondents cited conflicts or fights with their partner or significant other, depression and boredom, or negative emotions at what should be a happy occasion such as a birthday or Christmas, as a trigger for their overdose (Pfab, Eyer, Jetzinger, & Zilker, 2006).

It is well documented that stressful life events often occur before suicide attempts and suicide. In studies of suicide, individuals with substance use disorders are more likely to have partner-relationship disruptions, legal difficulties, and work-related difficulties compared with suicide decedents without substance-related problems (Heikkinen et al., 1994; Rich, Fowler, Fogarty, & Young, 1988). Among people who abuse substances, disruptions of interpersonal relationships, most often partner relationships (e.g., marital separation, break-up with a spouse) are the most common events preceding suicide (Duberstein, Conwell, & Caine 1993; Heikkinen et al., 1994; Murphy Armstrong, Hermele, Fischer, & Clendenin, 1979; Rich et al., 1988). Data such as these have inspired models of suicide that emphasize the role of interpersonal factors (Conner, McCloskey, & Duberstein, in press; Joiner, 2005).

**Neurobiological and Genetic Factors**

Neurobiological studies have most consistently implicated dysregulation of the neurotransmitter serotonin in risk for suicidal behavior (Mann, 2003; Turecki, 2005). Studies have found lower levels of serotonin and its principle metabolite, 5-hydroxyindoleacetic acid (5-HIAA), in the brain stems (Beskow, Gottfries, Roos, & Winblad, 1976; Shaw, Camps, & Eccleston, 1967) and in various brain structures (Cheetham et al., 1989; Korpi et al., 1986; Owen et al., 1983) of people who died by suicide compared with nonsuicide subjects. Further, studies have yielded findings consistent with the hypothesis of reduced serotonergic function among individuals who died by suicide (Arato et al., 1987; Gross-Isserof, Israeli, & Biegon, 1989) and attempted suicide (Mann, Brent, & Arango, 2001). Overall, these studies point to reduced serotonergic functioning in key central nervous system areas among suicidal individuals, and many researchers believe that this provides a neurobiological explanation of why individuals who die by suicide as a group show a tendency for aggression and impulsiveness. There is intensive interest among suicide researchers in
linking such neurobiological findings with genes that affect serotonin expression (Anguelova, Benkelfat, & Turecki, 2003). There are other neurobiological and genetic mechanisms that suicide researchers are examining, but such a discussion is beyond the focus of this review.

The Role of Substance Use in Suicidal Behavior

**Suicide Risk Associated With Substance Use Disorders**

Wilcox et al. (2004) conducted a comprehensive statistical analysis of data from studies conducted in the United States and internationally that contained both information on people who abuse substances and information on their mortality. This study updated the substance use section of a detailed review of suicide studies by Harris and Barraclough (1997) by including reports published after Harris and Barraclough's review and by more thoroughly sampling substance abuse research journals. The analysis enabled the researchers to compare risk for suicide in individuals with alcohol dependence, opioid dependence, injection drug use, and mixed drug use disorders with risk for suicide among individuals in the general population. The analysis showed that people with substance use disorders in each of these groups were at nine-fold greater risk for suicide or higher, with the level of risk varying somewhat depending on the substance. There was not sufficient information on other substance use populations (e.g., cocaine, cannabis, methamphetamine) to estimate risk for suicide associated with these substances. The study (Wilcox et al., 2004) showed definitively that people being treated for substance use disorders are at greatly elevated risk for suicide.

**Alcohol**

The Wilcox et al. (2004) review estimated that individuals with alcohol dependence are at nearly 10 times greater risk for suicide compared with the general population. National survey results have reported that alcohol dependence confers 4.6 times greater risk for suicidal ideation and 6.5 times greater risk for attempted suicide compared with individuals not dependent on alcohol (Kessler et al., 1999). These data underscore that suicide prevention efforts must focus on alcohol use disorders. Although suicide typically occurs during periods of drinking among individuals with alcohol use disorders, suicide may also occur while abstinent from alcohol. When this occurs, another mental illness is nearly always involved, most often major depression (Conner, Duberstein, Conwell, Herrmann, Cox, Barrington, et al., 2000).

In addition to chronic alcohol use and its consequences, acute use of alcohol is also strongly implicated in suicidal behavior. A review of studies containing data on alcohol use at the time of suicide attempts and suicide deaths (Cherpitel, Borges, & Wilcox, 2004) estimated that 37 percent of suicide decedents (range 10–69 percent) and 40 percent of people who attempt suicide (range 10–73 percent) had been drinking at the time of the act. Hufford (2001) has posited that acute alcohol use may affect suicidal behavior by four mechanisms, alone or in some combination:

- Alcohol can heighten psychological distress, thus increasing hopelessness and despair.
- Alcohol can intensify aggressive behavior, of which suicide is an example.
- Alcohol expectancies can tip people who are thinking about suicide to acting on those thoughts, particularly if they expect the alcohol to help them resolve their ambivalence about suicide or loosen their inhibitions against making an attempt.
- Alcohol can cloud and constrict thinking, making it more difficult to identify and implement possible alternative coping strategies that could help resolve the individual's problems.

Studies that have examined the relationship between substance use and suicidal behavior are of two
major types: (1) those that begin with groups of people with substance use disorders and study suicidal ideation and suicide attempts and (2) those that study individuals who have exhibited suicidal behavior and explore the role of alcohol and drugs in their self-harming behaviors. The first type is called a “prospective study” and it is designed to tease out predisposing factors for suicide. The latter is called a “retrospective study.” The larger share of prospective and retrospective studies deal with alcohol, in part because the potential sample sizes are larger, although data on other psychoactive substances including legal and illicit drugs is increasing.

Many individuals who attempt or die by suicide, whether or not they have a substance use disorder, use alcohol in the hours before their act. A review of 37 published studies on acute alcohol use and suicide found that a mean of 37 percent of cases used alcohol. In reviewing 16 articles on suicide attempts, 40 percent, on average, involved acute alcohol use (Cherpitel, et al., 2004). Even alcohol dependence in remission may play a role in suicidal behavior. Among those with remitted alcohol use disorder, it appears that older people who have major depression and younger people with psychotic disorders are at increased risk of suicide (Conner et al., 2000).

Research that focuses on the relationship between the abuse of one substance and suicidal thoughts and behaviors, however, must be put into a larger perspective, as the majority of suicide attempts involve co-occurring mental health disorders, stressful life events, and multiple substances of abuse. Using data from New Zealanders, Conner, Beaurtrais, and Conwell (2003a) found that people with current alcohol dependence who died by suicide were more likely to have been diagnosed with a mood disorder and to have experienced negative interpersonal events (e.g., disruptions in partner relationships or problems with family members or neighbors), and to be older and male, compared with people with alcohol dependence who did not die by suicide. Another study found that people with alcohol use disorders who attempted suicide were more likely to be female, younger, unemployed, separated or divorced, and lacking a college degree compared with those with no suicide attempts (Preuss et al., 2002b). They also had co-occurring mental disorders more frequently, particularly independent depression and substance-induced depression. Indeed, co-occurring substance use disorders and depression are the most common combination of behavioral disorders among people who die by suicide. This fact is illustrated by a comprehensive review study that showed that 38 percent of people who die by suicide are experiencing both types of difficulty at the time of their death (Cavanagh et al., 2003). A history of childhood sexual abuse also confers risk for suicidal behavior in this population (Roy & Janal, 2007).

The research literature pertaining to alcohol use disorders and suicidal behavior is complex. For example, analyses of national survey data showed that the number of substances used is more important in predicting a suicide attempt than the type of substance (Borges, Walters, & Kessler, 2000). Among individuals with alcohol dependence, there are somewhat different risk factors for suicidal ideation, planning, impulsive attempts, and planned attempts (Conner et al., 2007b). The data illustrate that the role of substance use disorders in suicidal thoughts and behaviors depends to some extent on the specific measure of suicidal thoughts (ideation, planning) or suicidal behavior (impulsive suicide attempt vs. planned attempt; suicide attempt vs. suicide).

Treatment status is also linked with suicidality among individuals with substance use disorders. A large-scale study of individuals with alcohol dependence showed that engagement in treatment during a 5-year period was associated with a greater likelihood of suicide attempt during this interval (Preuss et al., 2003). This finding should not be interpreted to indicate that treatment increases risk. Rather, in all likelihood, individuals with alcohol use disorders who sought treatment were also more likely to be those that had the most severe alcohol-related problems. Another report of a large clinical sample of people who abused substances followed up after 1 year showed that a higher level of engagement in substance abuse treatment during that year was associated with a
reduced risk of suicidal behavior, consistent with the idea that treatment can be protective (Ilgen, Harris, Moos, & Tiet, 2007). Consistent with the general literature, a history of suicidal behavior is a potent risk factor for future suicidal behaviors among people who abuse alcohol (Preuss et al., 2003).

Heroin

A comprehensive review of international studies (Wilcox et al., 2004) showed that treated individuals who use injection drugs and opioids are at 10 to 18 times greater risk for suicide compared with the general population. The studies reviewed were composed primarily of people who used heroin, and underscore the high risk for suicide in this population. People with heroin use disorders are also at high risk for attempted suicide, with studies of people who had been treated for heroin use showing that between 17 and 47 percent of this population have made a lifetime suicide attempt (Darke, Williamson, Ross, & Teesson, 2005). Because of the difficulty in determining whether overdose deaths were deliberate (suicide death) or unintentional (accidental death) in this group, suicide risk among people who inject drugs may be underestimated. Some data supports that attempted suicide and unintentional overdose among people who use opioids share similar risk factors (Neale, 2000b; Rossow & Lauritzen, 1999). There is more data, however, to support the idea that these outcomes have different predictors, with risk factors for suicidal behavior including depression and social isolation (Conner, Britton, Sworts, & Joiner, 2007a; Darke & Ross, 2001; Kosten & Rounsaville, 1988), similar to the risk factors for suicidal behavior shown in the general literature. A history of suicidal thoughts and suicide attempts in this population is a potent predictor of future acts of suicide (Darke et al., 2005).

Cocaine

A study that compared individuals in substance abuse treatment for cocaine dependence with and without a history of suicide attempts showed that those who attempted suicide were more likely to show depressive symptoms, have a history of childhood abuse, have co-occurring dependence on alcohol and opiates, show greater hostility, and be female (Roy, 2001a). These risk factors are consistent with those described based on the alcohol and opioid literature reviewed thus far, suggesting a similar risk profile for suicidal behavior among people with substance use disorders who have been treated. Unlike the abundance of data on risk for suicide deaths associated with dependence on alcohol and opioids, data are insufficient to estimate the risk for suicide associated with cocaine use disorders (Wilcox et al., 2004). However, other lines of evidence support the idea that those who abuse cocaine are at risk for suicide, including data that cocaine users show elevated levels of depression (Falck, Wang, Carlson, Eddy, & Siegal, 2002; Kilbey, Breslau, & Andreski, 1992; Shaffer & Eber, 2002; Willis et al., 2003) and that, after statistically controlling for other types of substance use disorders and other risk factors, people who are treated for cocaine use disorders are at elevated risk for suicidal ideation (Garlow, Purselle, & D'Orio, 2003) and suicide attempts (Ilgen et al., 2007).

Methamphetamine

Among the deleterious effects of methamphetamine use are depression symptoms, anxiety disorders, and high rates of suicidal ideation. About 25 percent of people who use methamphetamine have a lifetime history of a suicide attempt (Darke, Kaye, McKetin, & Duflou, 2008). About twice as many females as males who use methamphetamine have a history of suicide attempt (Glasner-Edwards et al., 2008).

Cannabis
Data are inconsistent as to the association of cannabis use disorders with suicidal ideation or behavior after accounting for other risk factors for these outcomes (see Beautrais, Joyce, & Mulder 1999; Ferguson, Horwood, & Swain-Campbell, 2002).

**Specific Populations**

*Alaska Natives*

A study by Marshall and Soule (1998) found that alcohol use disorders were identified in about three fourths of suicides among Alaska Natives. This population shows suicide rates that are far higher than rates in the remainder of the United States, and most are among young (15–29 years of age), unmarried men. The researchers note that many had just broken up with girlfriends, and few had regular jobs. The suicides generally used violent means, including firearms and hanging.

*African Americans*

Analysis of the National Survey of American Life, a nationally representative household survey of Blacks, showed that Caribbean Black men had the highest prevalence of suicide attempts among respondents (7.5 percent) with African-American women next (5.0 percent; Joe et al., 2006). About one third of respondents who reported suicidal ideations made a plan for suicide. People with suicide plans made their initial suicide attempt up to 35 years after ideation had begun. People with suicidal ideations who had mental disorders were eight times more likely to make a suicide attempt, and the more psychiatric diagnoses a respondent had, the more likely he or she was to attempt suicide. Results of this survey also revealed that in this population, anxiety disorders rather than depression were the strongest mental health risk factor for suicide attempt, a novel finding.

Limited research supports that undertreated depression confers risk for suicidal behavior among African Americans (in addition to other populations) who abuse substances (Havens et al., 2005; Kung, Pearson, & Wei, 2005). Willis et al. (2003) used data from the National Mortality Followback Survey to compare 153 African American with 1,185 White suicide decedents. Analysis showed that significantly fewer African Americans used antidepressants or stimulants, but cocaine use was 4 times more common. The researchers found that African Americans who died by suicide were younger than their White counterparts and significantly less likely to have used drugs 24 hours before their suicide or to have used alcohol 4 hours before their death. In another analysis of this dataset, Castle and colleagues showed that there were several risk factors in common between White and Black suicide decedents (Castle, Duberstein, Conner, Meldrum, & Conwell, 2004). Additionally, alcohol abuse was a stronger risk factor for suicide among Whites compared with Blacks. Results of these two analyses suggest that acute use of alcohol and alcohol use disorders are more strongly implicated in suicide among White than Black individuals. Research on these questions is at an early stage, so firm conclusions cannot be drawn at this time.

Roy (2003a) compared African-American veterans with a substance use disorder who made suicide attempts with Caucasian peers for child abuse, legal problems, marital status, age, extraversion, psychoticism, and hostility. The only difference was that the African Americans experienced significantly less childhood emotional neglect.

*Age*

In the United States, younger age confers risk for suicide attempts (Kessler et al., 1999). Studies of attempted suicide among individuals with alcohol dependence have generally shown the same age-
related pattern, with younger substance abusers at higher risk for attempts (Conner et al., 2003b; Preuss et al., 2002b; Roy & Janal, 2007). Older adulthood is associated with greater risk for suicide deaths (NCHS, 2006). There are fewer data on age and suicide among persons with alcohol use disorders, although some data suggest that older persons with alcohol use disorders are at greater risk for suicide (Conner et al., 2003a, b), consistent with the pattern in the general population. Unlike data on people with alcohol use disorders, studies of people treated for cocaine and opioid use have not consistently shown an age-related pattern of risk for attempted suicide (Conner et al., 2007a; Darke et al., 2008; Roy, 2001a, 2002). Solid data on age and suicide deaths in these populations are not available.

Co-Occurring Mental Disorders and Suicidal Behavior

Co-occurring mental and substance use disorders are a common and potent combination among those who die by suicide. An exhaustive review of psychological autopsy studies conducted internationally showed that mood disorders (particularly major depression) and substance use disorders were the most common disorders in people who died by suicide, and that 38 percent had a substance use disorder(s) plus one or more other psychiatric disorder(s) (Cavanagh et al., 2003). A wealth of data illustrate that this combination also confers risk for attempted suicide (e.g., McCloud, Barnaby, Omu, Drummond, & Aboud, 2004; Yen et al., 2003).

Mood disorders commonly co-occur with substance use disorders and confer significant risk for suicidal behavior (Conner et al., 2003b; Darke & Ross, 2002; Dhossche, Meloukheia, & Chakavorty, 2000; Preuss et al., 2002a; Roy, 2001a, b, 2002; Windle, 1994). Major depressive episode (MDE), in particular, is associated with suicidal behavior. Among adults with a past year diagnosis of MDE, those who reported past month binge alcohol use and/or illicit drug use were more likely to report past year suicidal ideation and suicide attempts than those who did not (Office of Applied Studies, 2006). Moreover, whether or not depression is induced by a substance use disorder or occurs independent of substance use, it confers risk for suicidal behavior among individuals with substance use disorders (Aharonovich, Liu, Nunes, & Hasan, 2002; Preuss et al., 2002a). In other words, it is essential that substance-induced depression not be dismissed or minimized by providers because this type of depression confers risk, as does independent depression. Bipolar disorders also increase risk for suicidal behavior (Harris & Barraclough, 1997), with most studies indicating that when substance use disorders co-occur, the risk for suicidal behaviors increases (Comtois, Russo, Roy-Byrne, & Ries, 2004; Dalton, Cate-Carter, Mundo, Parikh, & Kennedy, 2003). People with bipolar disorder tend to kill themselves while depressed or in a mixed state, as opposed to during periods of mania (Hawton, Sutton, Haw, Sinclair, & Harriss, 2005; Institute of Medicine, 2002).

Personality disorders are found significantly more often than expected among people who die by suicide (Dubstein & Conwell, 1997). The rate of suicide attempts across all personality disorders is nearly equal to the rate across affective disorders, according to one review (39 percent, compared to 41 percent; Linehan, Rizvi, Welch, & Page, 2000).

Suicidality is a criterion for the diagnosis of borderline personality disorder (BPD; American Psychiatric Association, 2000). Among individuals treated for borderline personality disorder, the majority report a previous suicide attempt (Davis, Gunderson, & Myers, 1999; Linehan et al., 2000). This is particularly true for young adults, who are more likely to be diagnosed with these disorders than their older counterparts. Solid epidemiological data are unavailable but it has been estimated that suicide may occur at a lifetime rate of about 9 percent among those with BPD (Davis et al., 1999). A large-scale study of alcohol-dependent inpatients that rigorously assessed all of the personality disorders defined by the Diagnostic and Statistical Manual, Third Edition, Revised
showed that BPD alone was associated with a lifetime suicide attempt, after controlling for other risk factors and personality disorders (Preuss, Koller, Barnow, Eikmeier, & Soyka, 2006). The relevance of this study to suicide deaths is unclear.

The role of other personality disorders in suicide attempts and suicide among individuals with substance use disorders is not well established. For example, two large-scale studies of patients with alcohol dependence failed to show that antisocial personality disorder was associated with suicide attempts, after controlling for other risk factors (Conner et al., 2007b; Preuss et al., 2006).

**Aggression, Impulsiveness, and Impulsive Aggression**

A longstanding hypothesis is that impulsive aggression (also commonly referred to as reactive aggression) is a potent risk factor for suicidal behavior (Conner, Duberstein, Conwell, & Caine, 2003c; Turecki, 2005). Individuals prone to this type of aggression experience emotional hyperarousal including anger and anxiety, have poor modulation of physiological arousal, and show a loss of behavioral control (Barratt, 1991), characteristics that are presumed to describe an acutely suicidal state (Shneidman, 1985). An empirical review of studies of personality measures and suicide showed an association between suicide and continuous trait measures of aggression and impulsivity (Conner, Duberstein, Conwell, Seidlitz, & Caine, 2001). Most measures appeared to tap constructs most relevant for impulsive aggression: impulsivity (Duberstein, Conwell, & Caine, 1994), anger (Angst & Clayton, 1998), explosiveness (Farberow, Kang, & Bullman, 1990), irritability (Allebeck, Allgulander & Fisher, 1988; Berglund, 1984), and reactive aggression (Angst & Clayton, 1998). Similar findings have been reported in studies of suicide attempts. For example, an influential study that showed that a measure of “aggression/impulsivity,” created by combining scales of aggression and impulsiveness, was a potent correlate of suicide attempts in a high-risk clinical sample (Mann et al., 1999). These reports and other studies of aggression, impulsiveness, and related scales in suicide and attempted suicide are summarized in a recent review (Brezo, Paris & Turecki, 2006). Other widely cited evidence comes from neurobiological studies that have consistently found that low levels of the neurotransmitter serotonin are associated with impulsive aggressive behaviors. These studies have been interpreted to suggest that suicide and impulsive aggressive acts are closely related behaviors that are manifestations of serotonergic dysregulation (Coccaro, 1992; Mann, 2003; Shaikh, De Lanerolle, & Siegel, 1997; Turecki 2005). Impulsive aggression proneness has also been used to explain why interpersonal conflict and disruption so frequently precede suicide (Conner et al., 2003c), a scenario that is especially common among people with substance use disorders (Conner et al., 2003b; Duberstein et al., 1993; Heikkinen et al., 1994; Murphy et al., 1979).

**Schizophrenia**

A small study of 50 patients hospitalized for schizophrenia found that 36 percent of the patients also abused substances (Gut-Fayand et al., 2001). (Other studies have found higher rates of substance use disorders in this population.) Of these, 78 percent had attempted suicide at least once, compared with 42 percent of patients with schizophrenia who did not abuse substances.

A review by Tsuang, Fleming, and Simpson (1999) found that 10–15 percent of those diagnosed with schizophrenia die by suicide. Most are in a depressive rather than a psychotic state when they die, and more than half made previous serious attempts. Between 75 and 90 percent are male, supporting that males with schizophrenia are indeed at high risk of suicide whereas risk among females is less clear (Tsuang et al., 1999).

Another study team took a different statistical approach and concluded that the 10–15 percent
estimate of suicide risk among individuals with schizophrenia is an overestimate (Palmer, Pankratz, & Bostwick, 2005). These researchers concluded that studies on this topic were overrepresented by first admissions or recent-onset patients. In their meta-analysis, they were careful to include patients with a longer duration of illness, and generated a lower estimate that 5.6 percent of those diagnosed with schizophrenia will die by suicide over their lifetime. Note that such a rate is still considerably higher than the approximately 1 percent lifetime risk observed in the general population.

Because schizophrenia and substance dependence are potent risk factors for suicidal behavior, it is a certainty that patients in substance abuse treatment with schizophrenia are at elevated risk. Data are limited, however, because studies of clients with substance use disorders typically contain relatively small samples of individuals with schizophrenia. Usually diagnostic data are not available and/or these patients are excluded from studies, so the extent to which they are at risk and the factors that drive risk among these patients are unclear.

**Accidental Versus Suicidal Overdose**

Fatal overdoses are increasing in the United States (CDC, 2007), driven in part by the increasing availability of prescription pain medications and contributing to what has been called a “national epidemic of drug poisoning deaths” (Paulozzi, Budnitz, & Xi, 2006, p. 618). It is important to note that an overdose (1) may be intentional or unintentional, (2) may result from the use of a single drug or drug combinations, and (3) may involve drugs with (e.g., prescription opioids, cocaine, benzodiazepines) or without (e.g., acetaminophen, antidepressants) euphoric effects that promote abuse liability. Overdose is prevalent among clients with substance use disorders, especially opioid users (Darke, Ross, & Hall, 1996). A prospective study of 470 detoxification patients found that the lifetime prevalence for any overdose requiring emergency treatment was 31 percent of the entire cohort and 42 percent of a subgroup of patients with opioid abuse. History of overdose and elevated depressive symptoms predicted overdose within 2 years (Wines, Saitz, Horton, Lloyd-Travaglini, & Samet, 2004).

A suicide attempt involves suicidal intent, distinguishing it from an unintentional overdose that does not involve suicidal intent. However, suicidal intent may be ambiguous, especially when opioids are involved (Cantor, McTaggart, & De Leo, 2001). A continuum of intent has been suggested, between nonfatal overdoses, fatal unintentional overdoses, and intentional fatal overdoses (Farrell, Neeleman, Griffiths, & Strang, 1996). A large Norwegian study of clients in substance abuse treatment found a significant positive relationship between overdosing and suicide attempts: clients who experienced an overdose were six times more likely to have a suicide attempt than clients who did not have an overdose, and one quarter of clients reported a history of both accidental overdose and suicide attempt. The researchers suggest that overdosing, even without conscious suicidal intent, reflects a state of carelessness about one's own life and indifference with regard to whether one lives or dies (Rossow & Lauritzen, 1999). Other researchers, however, have concluded that unintentional overdose and suicidal behavior are qualitatively distinct outcomes with a different set of predictors, rather than lying on a continuum (Conner et al., 2007a; Darke & Ross, 2001). The extent to which unintentional overdose and suicidal behavior among people with substance use disorders are related (versus categorically distinct) outcomes with related (versus widely dissimilar) predictors is unresolved at this time.

Although the literature indicates that the majority of drug overdoses, at least those involving opioids, are considered unintentional (Darke & Ross, 2001), numerous studies have shown that a significant subgroup of patients with a substance use disorder who overdose have suicidal intent. An analysis of 2,567 drug-related presentations to a Chicago-area emergency department over a 10-year period showed that 29.4 percent of these presentations were life-threatening overdoses and 8.5
percent were suicide attempts (Leikin, Morris, Warren, & Erickson, 2001). Another emergency
department study in Germany reported that 43 percent of nonfatal overdoses were intentional, and
32 percent of the intentional overdoses had some level of suicidal intent (Pfab et al., 2006).
Similarly, Neale (2000b) found that nearly half (49 percent) of subjects seen in an emergency
department following an illicit drug overdose reported some level of suicidal intent prior to the
overdose. Motivations for intentional overdose included depression, nothing to live for, childhood
sexual abuse, relationship breakdown, recent bereavement, relationship problems, and problems
with housing. Heale et al. (2003) found that 17 percent of severe heroin overdoses were intentional,
often preceded by some precipitating event or adverse mood state. Finally, an analysis (Oyefeso,
Ghodse, Clancy, & Corkery, 1999) of deaths over 25 years among persons in substance abuse
treatment in the United Kingdom showed that drug overdose accounted for about 45 percent of
known suicides in this population.

In summary, drug overdose is a common life-threatening event among clients with substance use
disorders. Determining intent or motivation for a drug overdose, including suicidal intent, can be
challenging. Moreover, some clients will have a history of both intentional (suicide attempt) and
unintentional overdose, indicative of very high risk for drug-related death.

The Role of Trauma and Abuse

Posttraumatic stress disorder (PTSD) and co-occurring substance use disorder have been linked
with suicidal behavior in a number of studies. Some research examining the relationships between
physical or sexual abuse, substance abuse, and suicidal behavior suggests that the relationships
differ in men and women. However, Rossow and Lauritzen's (2001) comprehensive study suggests
that with more severe childhood stress and trauma, gender differences in suicidal behavior
disappear.

Roy (2004) analyzed 1,078 males and 202 females in substance abuse treatment and found that 42
percent had attempted suicide at least once. The greater the client's childhood trauma, the more
suicide attempts they reported, suggestive of a dose-related relationship. Those who had made their
first of several suicide attempts before age 20 showed the most trauma. In other analyses of
veterans, Roy (2002, 2003b, c) found that among those dependent on opiates, cocaine, or alcohol,
suicide attempts were significantly associated with childhood trauma, as well as a family history of
suicide and a history of at least one major depressive episode.

Benda's (2005) analysis of suicidal thoughts and behaviors among veterans who were homeless and
abused substances also showed an association with sexual abuse. Among the 310 women surveyed,
suicidal ideation and attempts was most closely associated with current sexual abuse, although
childhood sexual and physical abuse also reached significance. Among the men, however, a number
of other variables were also predictive of suicidality, including substance abuse, aggression,
cognitive disorders (ideas of reference, confused thinking, memory loss), and combat-related
PTSD. The data suggest that child abuse is more predictive of suicidality among female veterans,
whereas among male veterans, other variables may play an equal or greater role.

Women, Trauma, Substance Abuse, and Suicide

Jarvis and Copeland (1997) noted the combined effect of substance dependence and history of
childhood sexual abuse (CSA) in contributing to the likelihood of a woman's attempting suicide. Of
the women in substance abuse treatment, 70 percent of those with a history of CSA had attempted
suicide, while only 36 percent of those who had no such history attempted suicide. Among those
receiving counseling for CSA who did not have substance use disorders, 38 percent attempted
suicide. Those who also had experienced adult physical abuse or who had experienced a greater number of lifetime traumas showed higher odds of attempting suicide. An analysis of women with PTSD and substance use disorders found that 32.3 percent had made a suicide attempt or self-harmed in the past 3 months (Harned, Najavits, & Weiss, 2006). The women who displayed suicidal behaviors were more likely to be diagnosed as alcohol dependent or polysubstance dependent and less likely to be opioid dependent, compared with those who were not suicidal.

McFarlane et al. (2005) surveyed and followed 149 women who were actively seeking help from the justice system following assault by their intimate partner. The women who experienced more than one sexual assault were more than three times as likely to report beginning or increasing substance use compared with women who reported only one assault, suggesting a dose-related relationship. Remarkably, 22 percent of the women who had been sexually assaulted had threatened or attempted suicide within 90 days of the event, including one suicide, suggesting that risk in the weeks and months following sexual assault may be especially pronounced.

Low-income African-American women who had made repeated suicide attempts experienced more childhood trauma than those who had made one suicide attempt. The two groups had similar numbers of traumatic events during adulthood (Kaslow, Jacobs, Young, & Cook, 2006). A study of African-American women in treatment for crack cocaine dependence showed that 62 percent reported a past traumatic sexual experience, and of these, 54 percent reported suicidal ideation and 42 percent had attempted suicide (Hill, Boyd, & Kortge, 2000).

Assessment of Suicidal Thoughts and Behaviors

Screening

A screening protocol is the routine administration of standard questions to all individuals in a given setting in order to identify those who require more in-depth assessment and perhaps additional treatment. All clients presenting for substance abuse treatment should be screened for suicidal thoughts and behaviors (Center for Substance Abuse Treatment [CSAT], 2005; Wines et al., 2004).
Independent assessment for suicidal risk is beyond the scope of practice for most substance abuse counselors; however, counselors are a valuable resource in screening and should be trained to screen for suicide.

Scales that are useful in researching large, community-based samples (e.g., Cooper-Patrick, Crum, & Ford, 1994; Kessler et al., 1999) may be useful as screens in clinical settings. An example is a 4-item screen developed in the Epidemiologic Catchment Area (Cooper-Patrick et al., 1994):

- Have you ever felt life is not worth living?
- Have you ever thought of hurting or harming yourself?
- Have you considered specific methods for harming yourself?
- Have you ever made a suicide attempt?

Although potentially useful as screens, such instruments cannot be used as stand-alone assessments in clinical settings. In other words, follow-up questions are always necessary to get a fuller picture. Part 1 of this TIP suggests other specific screening questions that might be asked in certain circumstances.

**Assessment**

Assessment is a more in-depth evaluation of the severity and nature of suicidal thoughts and behavior. It typically also includes evaluation of warning signs and risk and protective factors. For the National Institute of Mental Health, Brown (2002) compiled a highly detailed, annotated list of instruments used in intervention research in seven categories: suicide ideation and behavior, medical lethality of suicide attempts, brief screening measures, hopelessness, reasons for living, provider attitudes and knowledge, and measures in development. In addition to a brief description and evaluative summary of each measure, information about the samples it has been used with, its reliability and validity, and its dimensionality has been provided. Since this compilation, work has been done to develop other instruments including the Suicide Attempt Self-Injury Interview (SASII; Linehan, Comtois, Brown, Heard, & Wagner, 2006a).

Instruments that assess additional clinically relevant domains, such as depression, may serve as a complement to suicide-specific instruments. There are several reliable and valid instruments for assessing depression to select from, including the self-administered Beck Depression Inventory-2 (Beck, Steer, & Brown, 1996; available online at [http://www.harcourtassessment.com](http://www.harcourtassessment.com)) and the Hamilton Depression Rating Scale (Hamilton, 1960).

The Joint Commission on Accreditation of Healthcare Organizations recently added a requirement that clients at risk for suicide be identified. Pursuant to this goal, Screening for Mental Health, Inc., issued the Basic Suicide Assessment Five-step Evaluation (B-SAFE). This includes determining the level of suicide risk and developing a treatment plan.

The American Psychiatric Association's *Practice Guideline for the Assessment and Treatment of Patients With Suicidal Behaviors* (2003) recommends that the following domains be assessed:

- Current presentation of suicidality.
- Psychiatric illnesses.
- History.
- Psychosocial situation.
- Individual strengths and vulnerabilities.
Shea (2002) presents practical techniques to use in assessments that can improve their validity. Jobes (2006) uses a combination of a self-report scale and an interview. Rudd (2006) suggests an interview in which the client's suicidal history is explored as well as the current crisis. However the assessment is conducted, checking in with high-risk clients should be done periodically to determine if there are changes in risk, such as during times of transition that are likely to prove difficult, when the client experiences increased stress, and when the counselor notices warning signs (Suicide Prevention Resource Center [SPRC] and American Association of Suicidology, 2006).

Caution

A caution with the use of assessment instruments is that they are not predictive of suicide. Indeed, as demonstrated more than two decades ago (Pokorny, 1983) and as emphasized by Simon (2004) and many other experts, no standardized instrument has been developed that can accurately identify which clients will kill themselves. Given that many high-risk clients never kill themselves, prediction of suicide is extraordinarily difficult, and so it is unlikely that such an instrument will ever be developed. Accordingly, the purpose of suicide-related screening and assessment is to identify at-risk individuals who require further evaluation and/or treatment, and to provide information that will help plan such treatment, rather than to make “predictions.” Accordingly, use of language such as “acute” rather than “imminent” to describe patients requiring intensive intervention may be preferable because the former speaks to the immediate need without suggesting that the future is knowable. Note that the inability to predict suicide does not absolve clinicians and administrators from the responsibility to seek to identify and respond appropriately to clients at risk. Referral to a specialist for in-depth assessment is among the actions that may be taken.

Treatment of Suicidal Thoughts and Behaviors

The knowledge base for treating suicidal thoughts and behaviors is at an early stage of development. The earliest efforts were in crisis intervention through hotlines and emergency services for people in emergency rooms and mental health centers who were actively suicidal. Assessment for suicidal risk has since become more sophisticated, as has the application of cognitive-behavioral therapies, other psychotherapies, and pharmacotherapy. As with substance abuse, groups at high risk for suicide (e.g., American Indian males showing risk factors, older White males showing risk factors, and clients diagnosed with substance use disorders and co-occurring mental disorders) can be treated with appropriate methods.

These advancements are reflected in the literature. Although the literature on treatment for substance use disorders and for suicidal thoughts and behaviors respectively is considerable, studies that examine treatment for suicidal thoughts and behaviors among adults with substance use disorders have only recently begun to be conducted and are limited at this stage.

When the need for evidence-based practices to treat suicidal individuals is considered, a small number of randomized, controlled trials of treatment methods have been published, particularly when considering data on people with substance use disorders. Rudd (2000) identified 19, of which three examined pharmacological treatment. Six additional studies examined the effects of procedural changes (e.g., case management by volunteers, home visits by a community care nurse, followup letters and phone calls). Many of these studies are hampered by small sample sizes, in part owing to the comparative infrequency of the behavior. Another difficulty in doing this type of research is that people who are suicidal, especially those with multiple attempts and/or frequent ideation, are typically excluded from these studies because of the perception of risks involved
Interventions and Programs That Address Suicidal Thoughts and Behaviors

Between 2003 and 2005, SPRC collaborated with the American Foundation for Suicide Prevention (AFSP) to create a registry of best suicide prevention practices. Based on expert review of evaluated practices, 12 were identified for inclusion on the registry and can be accessed at [http://www.sprc.org/featured_resources/bpr/ebpp.asp](http://www.sprc.org/featured_resources/bpr/ebpp.asp).

The analysis of 19 studies by Rudd and colleagues (2000) does not take substance use or mental disorders into account. The majority of the studies they examined concerned short-term (up to 3 months’ duration) cognitive-behavioral therapy (CBT) with a problem-solving component as the main element. These showed positive treatment effects. Not all showed a drop in number of suicide attempts, but suicidal ideation declined, as did some of the symptoms that accompany suicidal thoughts and behaviors. Rudd et al. (2000) note significant methodological problems with many of these studies, such as imprecise definition of the treatment and high dropout rates.

In a randomized controlled trial using CBT and case management, Brown and colleagues (2005) report that treatment reduced the number of subsequent suicide attempts by about 50 percent in a group of adults who had made a previous attempt compared with a similar group who received treatment as usual. The majority of participants were diagnosed with one or more substance use disorders.

Women with BPD who received dialectical behavior therapy were half as likely to make a suicide attempt during 1 year of treatment and 1 year of followup as women who received community treatment by experts. A majority of the women in both groups had lifetime substance use disorder diagnoses (Linehan, Comtois, Murray, Brown Gallop, Heard et al., 2006b). The group that received dialectical behavior therapy had fewer hospitalizations for suicide ideation, lower medical risk, and were less likely to drop out of treatment.

King County in Washington State responded to suicide attempts in its jail system after studying the pattern of suicide attempts in its population. The intervention program included greater mental health screening and collaboration with mental health professionals in the community, treatment for inmates found to be actively using substances (including methadone), greater consensus building about housing decisions, using group housing rather than isolation for individuals at risk, placing inmates at risk under suicide observation, installing barriers to prevent jumping off balconies, and training on suicide prevention (Goss, Peterson, Smith, Kalb, & Brodey, 2002).

The U.S. Air Force instituted a servicewide suicide prevention program in 1997 that is summarized in an 18-point list of requirements on managing suicidal behavior (U.S. Air Force, 2007). It includes assessment, matching interventions with level of risk, monitoring risk, ensuring continuity of care, and use of community resources. The program was endorsed by Air Force leadership, and implementation mandated education and training for many individuals. Other initiatives were designed to reduce the stigma of help-seeking behavior and integrate services delivery. An outcome study documents a 33-percent reduction in suicide rate between the 7 years before implementation of the program and the 6 years after it was implemented (Knox, Litts, Talcott, Feig, & Caine, 2003).

Rudd, Williamson, and Trotter (in press) reviewed 53 clinical trials of treatments for suicidal behavior, the majority of which used CBT. Among the common elements in the treatments that effectively reduced suicide attempts are:
The theoretical models easily translated into language clients could understand. They specifically targeted suicidal behavior. They emphasized treatment compliance and included plans to focus on noncompliance if it arose. They identified skill sets to help reduce suicidal thoughts and behaviors that could be practiced. They emphasized personal responsibility for care. They provided planning for crisis management and access to emergency services.

Also useful for counselors is a set of 24 core competencies for mental health professionals, *Assessing and Managing Suicide Risk*, developed by the SPRC, the American Association of Suicidology (AAS), and the Education Development Center (Education Development Center; 2006). The advanced training provided by AAS is *Recognizing and Responding to Suicidal Risk*. The American Psychiatric Association's *Practice Guideline for the Assessment and Treatment of Patients With Suicidal Behaviors* 2003 provides a detailed look at the field, including the complex issues involved in co-occurring disorders with suicidal thoughts and behaviors. A great deal of work remains to be done before the field can recommend specific treatments for suicidal thoughts and behaviors that are based on empirical evidence.

**Treatment Programs, Manuals, and Training**


**Substance Abuse Treatment and Suicidal Thoughts and Behaviors**

When a client is suicidal, the counselor must make an immediate effort to reduce the acute risk of suicide. In addition, attention must be paid to symptoms of substance use disorders and co-occurring mental disorders. The quality of the counselor's relationship with the client will be reflected in the client's cooperation in providing information and participation in planning for treatment. Hospitalization of clients at immediate risk should be considered, both to institute suicide precautions and to provide detoxification services ([Modesto-Lowe, Brooks, & Ghani, 2006](#)).

Ilgen, Tiet, Finney, and Harris (2005) looked at the effects of inpatient versus outpatient substance use disorder treatment for those who either had or had not made a recent suicide attempt. Patients with a past attempt who received inpatient treatment had higher abstinence rates than clients receiving outpatient treatment at 6-month followup. In a naturalistic study, men making a recent suicide attempt and receiving residential substance abuse treatment showed alcohol-related outcomes that were as good as those of a comparison group that had not attempted suicide ([Ilgen, Tiet, & Moos, 2004](#)). The improvements were noted at 1-year and 5-year followup. Although
improved, psychiatric symptoms in the suicide attempt group were somewhat more severe after
treatment compared with the nonsuicidal group, probably attributable to the high prevalence of
psychiatric illness among individuals who are suicidal.

Using data from the Australian Treatment Outcome Study along with 12-month followup data,
Darke and colleagues studied the effects of substance abuse treatment on suicidal behavior (Darke
et al., 2005). Compared with the 12 months before treatment, the rate of suicide attempts did not
decline significantly for the group as a whole during the 12 months after treatment, although among
women, the rate halved. This drop appeared only marginally associated with treatment. Suicidal
ideation and major depression declined across the study population. During the 3-year followup,
rates of suicidal ideation, suicide attempts, and major depression in the group declined at each
interview point, but they continued to be higher than in the general population (Darke et al., 2007).

Methadone treatment may have a positive influence on suicide. Of people who died in Texas
between 1994 and 2002, people in methadone programs were less likely to die from suicide than
others who died during this time (Maxwell, Pullum, & Tanner, 2005).

No-Suicide Contracts

The use of no-suicide contracts is controversial. They are clinical, not legal, agreements (Simon,
2004). Two reviews of the literature (Lewis, 2007; Rudd, Mandrusiak, & Joiner, 2006b) concluded
that there is no empirical evidence to support their efficacy in reducing suicide, nor are they useful
for protecting clinicians from malpractice litigation (Lewis, 2007). When a client signs a no-suicide
contract, the counselor's and staff's tendency is to be less careful in attending to her or him, when in
fact there has been no lessening of risk for suicide (Jacobs & Brewer, 2004).

Alternatives to No-Suicide Contracts

Rudd et al. (2006b) proposes using a “commitment to treatment” statement as a practical
alternative. This type of statement spells out the counselor's and the client's expectations, identifies
a crisis response plan, and commits the client to living. It is effective for an agreed-on length of
time, specified in the statement. Use of a safety plan may also be helpful.

Suicidal Thoughts and Behaviors and 12-Step Groups

The authors were unable to find data as to the potentially protective or therapeutic influences of 12-
Step group attendance or affiliation on suicide-related outcomes. This is an important area for
future research studies. One attempt to research this issue is provided by Wilke (2004), but the area
is not sufficiently researched at this point to draw conclusions.

The Effects of Suicide on Family and Friends

Suicide is a far-reaching concern not only because of the loss of a valued life, but also because of
the toll it takes on the family, friends, caregivers, and others who loved and/or knew the person who
died by suicide. Suicide survivors (those who have had a family member, friend, or acquaintance
die by suicide) may have an even greater sense of loss than survivors of accidental deaths or deaths
from natural causes, although studies have shown equivocal evidence on this point (e.g., Cleiren,
Diekstra, Kerkhof, & van der Wal, 1994). This difference lessens over time (Jobes, Luoma,
Hustead, & Mann, 2000). Other factors such as the relationship to the deceased, the age of the
deceased, and the pain or suffering the individual was experiencing can affect the survivors'
A wide range of emotional reactions comprises the grieving response of suicide survivors. It includes shock and disbelief, horror, guilt and shame, feelings of rejection, blame, anger, and suicidal thoughts. Other symptoms of distress can include substance abuse, sleep and appetite problems, and impaired performance at school or work (Kaslow & Aronson, 2004). Symptoms of bereavement that persist for several months or more, also called complicated grief, can also negatively affect survivors of suicide (see, e.g., Lichtenthal, Cruess, & Prigerson, 2004).

Other emotional components of bereavement may be more positive, such as the relief that a feared event is now past, that the deceased is no longer suffering, and that the individual's wish was fulfilled (Clark & Goldney, 2002).

Social support is important to suicide survivors during bereavement. In addition to support from relatives and friends, formal and informal support groups can educate survivors about suicide and promote the knowledge that others have gone through this experience and that coping methods for dealing with life after the suicide can help ease the grief. A number of support groups meet throughout the country. Survivors of Suicide (SOS) is a national group, and others are local. People who are active in the 12-Step recovery community often find social support via this alternative as well.

Social support for suicide survivors may be different in different cultures. A qualitative study of African-American suicide survivors indicates that many felt they had “nowhere to turn” in their community for support (Barnes, 2006). To one degree or another, the survivors felt the stigma of the suicide of their family member and sensed that friends expected them to “just get on with their lives.”

The means one uses to come to accept a suicide within the context of one's own life are unique for each survivor. Professional help from a therapist is necessary when a survivor's grief becomes disabling. Supportive therapy in conjunction with short-term use of medications that are not susceptible to abuse may be necessary (Jobes et al., 2000). Family therapy may be appropriate, especially when children are involved. These sessions might deal with denial, fears of family disintegration, and the stigma of suicide (Kaslow & Aronson, 2004).

Family history of suicide is a risk factor for suicide, including among people with substance use disorders (Roy, 2001a). Data generally support that such risk is largely attributable to heritable factors (Mann et al., 2001). A suicide in the family can also potentially lower one's threshold to engage in suicidal behavior by modeling the behavior, making it a more legitimate perceived option (e.g., “individuals in our family die by suicide”), or experiencing it as a form of trauma exposure (Joiner, 2005). Because a family history of suicide is associated with suicide risk among surviving family members, it is important to assess family history when conducting a suicide risk assessment.

The Effects of Suicide on Counselors

Packman, Pennuto, Bongar, and Orthwein (2004) noted that clinicians consistently rank treating clients who are suicidal as the most stressful of clinical situations. For the counselor, the consequences of a client's suicide can be profound. Counselors may feel that they have failed, fear for their reputation, or distance themselves or become overly involved with their clients. They may find themselves unable to deal simultaneously with both their own emotions and those of the family of the deceased (Clark & Goldney, 2002). A supervisor's intervention may become necessary in
these instances. For a discussion of this issue, see DeAngelis, 2001.

McAdams and Foster (2000) analyzed responses from 376 professional counselors and found that 23 percent had at least one client who had died by suicide. Younger counselors were more adversely affected than older, more experienced counselors. Respondents in this study indicated that in addition to heightened stress levels, they also reacted to the client suicide by increasing their attentiveness to the legal liabilities of their work, increasing their tendency to refer at-risk clients for hospitalization, strongly increasing their focus on potential cues to client suicides, becoming more likely to seek consultation around high-risk cases, becoming more conservative in their record-keeping, and experiencing an overall increased concern with death and dying.

McAdams and Foster (2002) report that the way in which supervisors and administrators respond to the counselor whose client has died by suicide has a considerable impact on the coping and recovery of counselors. The researchers interviewed 66 counselors who had experienced a client suicide and identified several factors that help counselors cope. Personal therapy received the highest rating for helping the counselors recover, and second most important was the support of an immediate supervisor, especially in the form of an administrative review in which the more experienced supervisor took the lead in going over the case and debriefing the counselor.

Most malpractice cases involving patient suicide concern inpatients or recently discharged patients. However, a recent search of legal databases (Packman et al., 2004) showed that lawsuits involving suicides in outpatient settings are increasing. The authors describe risk management procedures that are particularly relevant to those working with patients who are suicidal. These include properly involving the family, excellent recordkeeping and documentation, routine consultation with colleagues who have expertise with suicidal patients, knowing one's legal and ethical responsibilities, knowledge of suicide risk factors, familiarity with needed community resources, performing appropriate clinical assessments, understanding one's clinical competence and knowing when to refer, obtaining adequate histories, understanding and using the diagnostic system, and following malpractice insurance guidelines.

References


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Appendix A—Methodology

To find the literature to support the development of this TIP, a search was conducted for the treatment information of primary interest to clinicians.

The clinical literature search began with the question, “How can providers most effectively address suicidal thoughts and behaviors in substance abuse treatment clients?” For this review, the following terms were used to search the National Library of Medicine's (NLM) PubMed database and the American Psychological Association's PsychINFO database:

- Suicide
- Suicidality
- Suicide ideation
- Screening or assessment

The search was conducted for literature published between 1998 and 2008 that was written in English. All fields (including title, abstract, and key terms) were searched.

Because the initial number of references retrieved in the PubMed and PsychINFO searches was so large (nearly 3,000 items in all), these searches were performed a second time limiting the literature to references that also addressed substance use disorders. To do this, a string of substance abuse-related terms was created that were added to the initial list of search terms; these were “drug abuse,” “drug dependence,” “substance abuse,” “substance dependence,” “addiction,” and “alcoholism.” Figure 1 shows the number of items found (or “hits”) for each search term in each database.

For each of the citations found, reference information and abstracts were printed and then reviewed by two reviewers (two reviewers were used to reduce any potential bias in the selection process). Reviewers eliminated any citations that focused on children, adolescents, or older adults specifically; they also eliminated any research concerning individuals with mental disorders that were not substance related.

In addition to the database search for journal articles, a search of books and monographs was also conducted in the Library of Congress catalog and on the Internet using the search term “suicide.” In total, 89 items were identified. This list of publications was also reviewed by two reviewers, who used information from the catalogs, publishers' Web sites, and the http://www.amazon.com store catalog to determine if the publications located would be potentially useful for this TIP. These potentially useful books were then reviewed to determine whether they would be appropriate for the TIP.
After references were selected using these search procedures, the bibliographies or citation lists from those references were reviewed to find older, seminal literature appropriate for this topic. Additionally, members of the TIP consensus panel and field reviewers suggested literature pertinent to the topic at hand.

An Internet search (using the Google search engine) was conducted to locate substance abuse treatment program materials (e.g., policies and procedures) to determine how programs were treating individuals with suicidal thoughts and behaviors. The list of terms used in the clinical literature search were also used to conduct this search. About 75 program Web sites were identified, but none were deemed appropriate to the TIP. Reviewers also looked specifically at Web sites of programs that were known for working with clients with co-occurring disorders and through lists of SAMHSA grantees.

These searches were performed again prior to submitting the TIP for clearance and will be performed every 6 months for a 5-year period after clearance has been received.

The final list of references to empirical studies selected by the reviewers as the most relevant and useful appears as an annotated bibliography at the end of this literature review. A complete bibliography of all relevant literature located during the search appears after the annotated bibliography. Not all references that appear in the TIP are abstracted in the annotated bibliography.

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