SUBJECT: Military Suicide Research Consortium (MSRC) Summary of Suicide Prevention Best Practices

1. Purpose: Provide a summary of current best practices in suicide prevention, relevant literature, limitations, and recommendations

2. Facts:
   a. Statement of the Problem. A number of programs, interventions, and techniques have been developed that aim to prevent death by suicide and suicidal behavior; however, it is not completely clear which suicide prevention programs have been sufficiently evaluated and garnered the most empirical support. For the purpose of briefing Congressional Staffers, a request was made to provide a review of the suicide prevention programs and techniques that represent the most theoretically sound and empirically evaluated practices. Of note, there are several limitations and gaps in the literature. One particularly relevant limitation to suicide prevention best practices in the military is that only one suicide prevention program to date has been tested in a military sample (United States Air Force Suicide Prevention Program). There may be differences in the effectiveness of suicide prevention programs between civilian and military populations.

   b. Summary of the Relevant Literature. The Suicide Prevention Resource Center (SPRC) provides a registry of best practices for suicide prevention (www.sprc.org). This registry is divided into three categories, one of which is evidence-based programs defined as “interventions that have undergone rigorous evaluation and demonstrated positive outcomes” (SPRC). There are 18 suicide prevention programs that meet this definition and have been shown to be effective in reducing suicidality or related behaviors; however, the majority (11) has been conducted in youth/adolescents. This paper reviews the seven programs deemed effective in older adolescent and adult samples as well as several additional interventions and techniques for which there is evidence in the literature.

   Brief Psychological Intervention after Deliberate Self-Poisoning consists of four-sessions of psychotherapy for adults who have recently attempted suicide by means of poison. This intervention was adapted from a depression treatment with the overall goal to reduce interpersonal difficulties that may exacerbate stress. To our knowledge, only one randomized controlled trial (RCT) has been conducted examining the effectiveness of this intervention with results providing support for its effectiveness in reducing suicidal ideation and self-harm at six months post-intervention (Guthrie et al., 2001). Importantly, this intervention targets high-risk individuals (e.g., those who have recently attempted); however, it may lack generalizability to individuals who have attempted using methods other than poison and has the potential to miss individuals at high-risk for suicide who do not have a recent suicide attempt.
Care, Assess, Respond, Empower (CARE) was originally developed for at-risk high school students and has since been expanded to include young adults (up to age 24 years) in the community (e.g., health care clinics). The program includes one two-hour computer-based suicide assessment interview and a two-hour counseling and social support intervention conducted by trained health care providers. Although some studies have found CARE to reduce suicide risk behaviors in high-school youth in the school-based program (Eggert et al, 1995; Hoven et al, 2010), no studies have tested the efficacy of this program in adult samples.

Cognitive Therapy for Prevention of Suicide Attempts is a cognitive therapy intervention designed to prevent subsequent suicide attempts in adults who have recently engaged in suicide attempt. This intervention is designed as a 10-session treatment. This form of cognitive therapy has been shown to reduce the reattempt rate in past suicide attempters by half as compared to individuals receiving treatment as usual over an 18 month period (Brown et al., 2005). The intervention has also demonstrated positive effects on important risk factors of suicide, including hopelessness (Brown et al., 2005).

Dialectical Behavior Therapy (DBT) is a cognitive-behavioral treatment originally designed to treat individuals suffering from Borderline Personality Disorder (BPD), but has been used in the treatment of several disorders or problems including suicidality. A recent meta-analysis of found DBT to be effective in decreasing self-injury and suicidal behavior in individuals with BPD (Kleim et al, 2010) and another recent study found that DBT was effective in decreasing suicidality at 18-month follow-up compared to treatment as usual in college students aged 18-25 years (Pistorello et al., 2012). Although this intervention does come with a range of materials to assist with implementation, this is a time-consuming treatment that may be hard to administer in military settings.

Dynamic Deconstructive Psychotherapy (DDP) is a 12-18 month program for individuals suffering from complex behavior problems including recurrent suicide attempts. This intervention consists of weekly 1-hour sessions with the goal of helping individuals gain insight into their experiences and to develop interpersonal connections. DDP has been found to be effective in reducing parasuicidal behaviors after 18 and 30-month follow-ups (Gregory et al, 2008; Gregory et al., 2010). These reductions were statistically significant compared to the treatment as usual group in one study; however, the clinical significance of these differences is unclear (i.e., the mean number of parasuicidal behaviors over the past 6 months was 0 for the DDP group and 0.1 for the TAU group) (Gregory et al., 2010). Additionally, no studies have specifically examined suicidal ideation, attempts or suicide as an outcome measure and feasibility of this program in a military setting is unclear.

Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) is an awareness/outreach program aimed at preventing suicide among older (60 year of age or older) primary care patients. The intervention consists of three primary components: (1) educating primary care physicians to recognize depression and suicidal ideation, (2)
application of a treatment algorithm to assist in making appropriate care choices, and (3) treatment management (monitoring patients, encouraging treatment adherence for 24 months) by health specialists. Importantly, the main treatment recommendation is citalopram (or other medications if not effective) or interpersonal psychotherapy in addition to or instead of pharmacological treatment. Randomized controlled trials comparing the PROSPECT care management model versus care as usual found that rates of suicidal ideation declined and resolved faster, and patients experienced a more favorable course of depression (lower degree and quicker speed of symptom reduction) among those receiving PROSPECT versus care as usual (Alexopoulos et al., 2009; Bruce et al., 2004). Results also indicate that PROSPECT patients were more likely to receive antidepressants or psychotherapy than usual care patients. However, limits to generalizability of these findings exist as the PROSPECT model has not been studied in primary care setting for younger adults.

Reduced Analgesic Packaging is a guideline/protocol to (1) limit the pack sizes of analgesics (acetaminophens and salicylates) and (2) include specified printed warning about dangers of overdose with all analgesic sales implemented as legislation in 1998 in the United Kingdom. Results of the impact of this legislation for the year after implementation indicate (1) a significant reduction of paracetamol non-fatal self-poisoning patients, (2) a decrease in mean number of tablets used for overdoses, and (3) significant reduction in number of deaths due to overdose of paracetamol and salicylates at seven large general hospitals (Hawton et al., 2001; Hawton, 2002). Reductions in suicide death from paracetamol and salicylates persisted for two years after the legislation (Hawton et al., 2004). A review of seventeen studies highlighted various limitations: (1) inconsistent findings across various studies regarding rates of fatal paracetamol poisoning, (2) short-term follow-up and restriction to small areas of the United Kingdom, and (3) lack of comparison and control groups (see Hawkins, Edwards, & Dargan, 2007). Furthermore, such legislation has not been implemented or examined in the United States of America.

United States Air Force Suicide Prevention Program is a multi-faceted public health program aimed to reduce risk of suicide. As part of this program, the Air Force has implemented 11 initiatives including (but not limited to) leadership involvement, guidelines for use of mental health services, community education and training, critical incident stress management, and suicide event surveillance system. These initiatives are geared toward increasing social support and social skills and changing policy to encourage help-seeking behavior (SPRC). A population-based study found 33% reduction in death by suicide in Air Force personnel exposed to the program compared with personnel prior to the program implementation (Knox et al., 2003). These results are not only promising, but also have direct relevance to implementation and efficacy of a suicide prevention program in the military.

Of the suicide prevention programs deemed effective among older adolescents or adults in the SPRC registry, only two included rates of death by suicide as an outcome variable. To date, three additional interventions have demonstrated effectiveness in preventing death by suicide (While et al., 2012; Fleischmann et al., 2008; Motto &
Bostrom, 2001), and only two of the three in an experimentally controlled fashion. The suicide prevention influence of each of these interventions is hypothesized to result from the development of feelings of connectedness to others. These three prevention interventions are reviewed below.

Motto and Bostrom (2001) conducted a randomized controlled trial of systematic follow-up contact following hospitalization among at-risk individuals who refused follow-up treatment. Results provided evidence that a systematic program of contact (i.e., at least four brief letters per year for five years) exerted a significant preventative influence on death by suicide for at least two years. Fleischmann and colleagues (2008) conducted a randomized controlled trial of a brief intervention and follow-up contact among individuals who were recently hospitalized for a suicide attempt. The intervention consisted of a 1-hour individual information session about suicide risk soon after hospital discharge and nine follow-up contacts by an individual with clinical experience over the 18-month follow-up. Results provided evidence that a brief intervention combined with follow-up contact was effective in reducing subsequent suicide mortality over an 18-month follow-up period among recent suicide attempters in low and middle-income countries. These prevention interventions are simple and cost-effective, making them feasible to disseminate widely in hospital, primary care, and community mental health settings.

Most recently, While and colleagues (2012) conducted a study of the impact of implementing mental health service recommendations on suicide rates. Results provided evidence for a robust association between aspects of service provision (i.e., implementation of key mental health service recommendations) and suicide rates. Specifically, the provision of 24 hour crisis care, local policies on patients with dual diagnoses, and written policies on multidisciplinary review and information sharing with families after suicide were associated with significant reductions in suicide rates compared to the time prior to the provision of these recommendations.

In addition to the interventions detailed above, there are several strategies that have been found in the literature to be effective methods of preventing suicidal behavior and are relevant to military populations; namely, means restriction and gatekeeper education.

Means restriction or reduction, which can occur on a population or individual level, is a particularly important and effective strategy to prevent suicidal behavior. The likelihood of death is significantly higher when a suicide attempt involves highly lethal means. On a population level, several studies have shown that when lethal means are restricted or made less lethal, suicide rates decrease using that method, and often overall (Gunnell, 2003; Gunnell, 2007; Mann et al., 2005). Specifically, suicide rates have decreased following firearm control legislation (Loftin, McDowall, Wiersema, & Cottey, 1991; Bridges, Kunselman, & Gun, 2004; Lester & Leenaars, 1993; Snowdon & Harris, 1992; Cantor & Slater, 1995), detoxification of domestic gas (Kreitman, 1976; Lester, 1990; Gunnel, Middleton, & Frankel, 2000), restriction of pesticides (Ohberg, Lonnqvist, Sarna, Vuori, & Penttila, 1995; Ludwig & Cook, 2000), restriction on barbiturates (Crome, 1993; Nielsen & Nielsen, 1992; Yamasawa, Nishimukai, Ohbora, & Inoue,
1980), alteration of the packaging on analgesics (Hawton, 2002), construction of bridge barriers (Beautrais, 2001), mandatory use of catalytic converters in motor vehicles (McClure, 2000; Kelly & Bunting, 1998) and the use of lower toxicity anti-depressants (Gibbons, Hur, Bhaumik, & Mann, 2005; Whitlock, 1991). Restricting access to lethal means can also occur at the level of the individual. Studies demonstrate that method substitution (i.e., using a different method other than the preferred) is rare (Clarke & Lester, 1989; Prévost et al., 1996). In addition, as suicidal crises are often short-lived and time-limited, reducing access to lethal means may prevent suicidal behavior. In fact, longitudinal studies have shown that the majority of individuals (close to 95%) who attempt suicide but are prevented from using their preferred method do not die by suicide (Owens et al., 2002; Sakinofsky, 2000).

Gatekeeper education has also been systematically evaluated in multi-level organizations and demonstrated success in reducing rates of suicide. Gatekeepers function to identify and connect individuals at-risk of suicide with appropriate resources for assessment and treatment. Gatekeepers may include, for instance, crisis hotline (e.g., National Suicide Prevention Lifeline) workers, clergy, pharmacists, and other personnel of the military that have the opportunity to interact with potentially vulnerable members of the population. Gatekeeper training provides information about risk factors, availability of resources, policy changes concerning help-seeking, efforts to reduce stigma related to help-seeking as well as general organization-wide information concerning mental health and access to services. Positive effects of gatekeeper training on suicide rates have been demonstrated in military services in the US (Knox et al., 2003) and Norway (Mehlum & Schwebs, 2000).

c. Gaps in the Literature. There are several limitations in the current suicide prevention literature. First, the majority of the suicide prevention programs that have been developed have not been tested in studies that use death by suicide as an outcome variable. Therefore, while there is evidence that many of these programs are effective at preventing future episodes of suicidal ideation and behavior, it is unclear whether the majority of these suicide prevention programs are effective at preventing actual death by suicide. There is a crucial need for randomized controlled trials of suicide prevention programs that include long-term follow-ups and assess death by suicide as an outcome variable.

A second limitation is that no studies to date have included a head-to-head comparison of suicide prevention programs. Head-to-head comparisons are crucial for determining whether one program or technique outperforms others in preventing death by suicide and suicidal behavior.

A third limitation is that many of the suicide prevention programs that have been deemed effective do not have the potential to be easily disseminated in a variety of community mental health and health care settings. Many of the programs that have been found to be effective require numerous months to administer and individuals must undergo a significant amount of training to properly administer the programs. In light of this limitation, there is a crucial need for further research to be conducted on simple,
brief, and cost-effective prevention programs that have already shown promise in their ability to prevent death by suicide (e.g., While et al., 2012; Fleischmann et al., 2008; Motto & Bostrom, 2001).

A fourth limitation is that only one suicide prevention program to date has been tested in a military sample (United States Air Force Suicide Prevention Program). There may be differences in the effectiveness of suicide prevention programs between civilian and military populations. At the present time, the Military Suicide Research Consortium (MSRC) and other Defense Health Program (DHP) funded efforts are aimed at providing evidence for the effectiveness of several suicide prevention techniques in military populations.

3. Recommendations: As is evident in the literature reviewed above, there is a need for further research examining the effects of intervention and prevention programs on death by suicide. Our recommendations are in line with the techniques that have clear evidence supporting their efficacy in reducing suicidal behavior. First, connecting at-risk individuals to appropriate mental health resources is critical. The use of gatekeepers has been shown to be effective in identifying individuals at-risk and linking those individuals with appropriate resources. Secondly, means restriction, especially on the level of population-wide efforts, has repeatedly been demonstrated to reduce suicide rates. Expert clinical consensus and existing evidence also supports the use of means restriction on the level of the individual; however, research documenting the extent of its utility on an individual level would be a significant contribution to the field. On an individual level, means restriction is indicated when an individual identified to be at risk expresses access to means and a plan and intent to use those means. With respect to psychotherapeutic interventions, it should be noted that several interventions have demonstrated positive effects on suicidal thoughts as well as attempts, which is one of the strongest predictors of eventual death (Goldstein, Black, Nasrallah, & Winokur, 1999). However, several of the programs that have demonstrated positive effects on suicidal behavior may be difficult to transport to military settings, given their complexity. As such, there is a critical need for efforts focused on evaluating the effectiveness of brief, streamlined, and cost-effective programs that can be easily transported to and delivered in military settings.

Several studies currently funded by the MSRC fall in this domain. The Military Continuity Project (PI: Katherine Comtois, Ph.D.) extends the work of Motto (1976), which, as noted above, has been one of the few studies to show effects on death by suicide through the use of “caring letters.” The Military Continuity Project is designed to use text messaging as a low cost caring contact in an effort to decrease suicidal thinking and behavior in active duty military. The Usability and Utility of a Virtual Hope Box for Reducing Suicidal Ideation (PI: Nigel Bush, Ph.D.) also represents an effort to increase the accessibility of an effective suicide reduction strategy used in therapy to military personnel by providing a program for a smart phone that allows individuals to be reminded of reasons for living. The Brief Intervention for Short-Term Suicide Risk Reduction in Military Populations (PI: Craig Bryan. Psy.D.) as well as the Behavioral Sleep Intervention for the Prevention of Suicidal Behaviors in Military Veterans: A
Randomized Controlled Trial (PI: Rebecca Bernert, Ph.D.), the Window to Hope (PI: Lisa Brenner, Ph.D.) and the Development and Evaluation of a Brief, Suicide Prevention Intervention Reducing Anxiety Sensitivity (PI: Norman B. Schmidt, Ph.D) place an emphasis on the development of streamlined, time-limited interventions designed specifically for military servicemen that aggressively target top risk factors for suicidal thoughts and behaviors.

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References:


