SUICIDE RISK ASSESSMENT IN THE EMERGENCY DEPARTMENT SETTING

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DEDICATION

Thank you to my committee members for their time, Dr. Roaten for her patience, my parents for their support, and Colin – for all the things you did every day to help me throughout this entire process.

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Abstract

Suicide is a prominent problem that has far-reaching effects. In 2013, 41,149 suicides were reported in the United States, a rate of 13.0 per 100,000. Suicide was the tenth leading cause of death for Americans with someone in the country committing suicide every 12.8 minutes. The World Health Organization estimates that by the year 2020 roughly 1.53 million people will commit suicide annually, and 10-20 times more will attempt suicide. This translates to one death due to suicide every 20 seconds and one suicide attempt every 1-2 seconds (World Health Organization, 1999, 2006). Given these trends, it is becoming even more important to develop and utilize screening and assessment measures to assist in identifying individuals who are at risk for suicide in order to implement appropriate treatment. Emergency departments (ED) are responsible for providing medical and surgical care to patients in need of immediate treatment upon arriving at hospitals. As such, EDs are a primary point of access for individuals immediately following a suicide attempt. Previous studies have investigated the prevalence of suicidal ideation in patients presenting to the ED for non-psychiatric reasons and found that increased suicide-related risk for nearly all of the patients was undetected during routine care. Given these findings, it is highly important that ED providers understand how to perform a proper suicide risk assessment to evaluate for intensity and severity of risk and develop an appropriate care plan.

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LIST OF ABBREVIATIONS

DEA Drug Enforcement Agency

WHO World Health Organization

HAART Highly Active Antiretroviral Therapy

RPTF Research Prioritization Task Force

ED Emergency Department

PCP Primary Care Physician

USPTF United States Preventive Services Task Force

SAFE-T Suicide Assessment Five-step Evaluation and Triage

SITBI Self-Injurious Thoughts and Behaviors Interview

SITB Self-Injurious Thoughts and Behaviors

CHAPTER ONE

Review of Existing Literature

Historical Perspectives

The concept of suicide is relatively modern and its perception has evolved along with the rise and fall of differing belief systems. The term comes from the Latin *sui* "of oneself" and *cidium* "a killing" and was not a part of English vocabulary before the 1650's. The modern concept of suicide is the result of the process of pathologizing, and subsequent decriminalization of, the act of taking one's own life (Bahr, 2013). In certain ancient Graeco-Roman societies killing oneself was not a taboo subject, but instead an act to be lauded under certain circumstances. If an individual's honor had been irreparably damaged to the point of being publicly shamed or in an act of political protest, suicide was a noble solution in a seemingly futile situation (University of Missouri, 2007). A philosopher of the time, Seneca, stated that the length of one's life is not as important as the quality and that a wise man "lives as long as he ought, not as long as he can" (Seneca, 1965).

Societal views on suicide further evolved with the increased popularity of Christianity in the fifth century. The act of suicide became known as "self-murder" and was considered an affront to God and as such those found guilty would be denied a Christian burial. Within the modern Christian faith it is believed that suicide results in eternal damnation, but religious scholars suggest that scripture is lacking on the subject (Amundsen, 1989). In the early fifth century St. Augustine is credited as the first person to create a definitive rationale regarding the reasons suicide is prohibited in the Christian faith - "God's command 'Thou shalt not kill,' is to be taken as forbidding self-destruction, especially as it does not add 'thy neighbor', as it does when it forbids false witness, 'Thou shalt not bear false witness against thy neighbor'"(Cholbi,

2013). During the Renaissance, as classical culture resurged to the forefront, suicide was examined from a more philosophical perspective, and the nature of suffering and the circumstances surrounding the decision to commit suicide were more deeply evaluated. By the 1700's, the act of ending one's own life was no longer termed self-murder, but became widely known and referred to as 'suicide.'

The history of suicide and study of self-directed violence in the United States has also evolved over time and been influenced by numerous historical events. These events provide an important perspective regarding the impact of national events on trends in the general population. Notable events include wars and associated economic fluxes, political movements, and changes in recreational drug use. When World War I began in 1914 the rate of suicide was approximately 15 per every 100,000 people. This number began to drop during the war and continued to fall in the years following the war (Evans & Farberow, 2003). Suicide rates began to increase slowly throughout the 1920's, a decade that began with a major recession which resulted in economic instability and an unemployment rate as high as 11.3% (Granados & Roux, 2009). In October of 1929 the stock market crashed, marking the beginning of the Great Depression. The crash of the stock market led to complete devastation of the United States economy and its repercussions lasted for the next four years. The unemployment rate rose from approximately 3% in 1929 to 25% in 1933. During the same time period the suicide rate increased and hit a 99 year peak high in 1932 at 17.4 per every 100,000 (Webster, 1985). In 1933 President Franklin D. Roosevelt introduced the New Deal, a domestic program focused on the 3 R's: Relief of the unemployed and the poor, the Recovery of the economy to sustainable levels, and Reform of the national financial system to ensure that such a collapse would never occur again. Unemployment and suicide rates both began to fall following the implementation of the New Deal (Berkin, Miller,

Cherny, & Gomfy, 2011). Suicide rates were 14.1 per 100,000 at the onset of World War II in 1939, and the rate steadily decreased to remain below 14 per 100,000 until 1944 (Marshall, 1981). Wasserman (1989) hypothesized that decreases during war time were linked to the economic growth after war and the related drop in unemployment rates due to wartime engagements.

The rate of suicide rose again through the 1960's and the 1970's. Events such as the Gulf of Tonkin incident, the Vietnam War, the Civil Rights Movement, and widespread use of recreational drugs were indicative of a period of upheaval and shifting cultural norms. According to the Drug Enforcement Administration (DEA), drug use hit its peak in 1979 when one in ten Americans reported using illegal drugs on a regular basis (U.S. Drug Enforcement Agency, 2009). Suicide rates hit a high of 13.1 per every 100,000 in 1977 and then declined to 11.9/100,000 in 1980 (Centers for Disease Control and Prevention [CDC], 1985). In the early 1990's the suicide rate was 12.5/100,000; this rate steadily declined until it reached 10.5/100,000 in 1999 (CDC, 2013). In 2000 the suicide rate was 10.4/100,000 and this has since increased to 13.0 per 100,000 in 2013, the year of the most recent data collected (CDC, 2015).

Terminology

Screening and assessing for suicide risk is a complex issue in and of itself that is only further complicated by ambiguity regarding nomenclature within the field of suicide research. Identifying suicidal ideation and behavior is hindered by ambiguous and inconsistent standardization of definitions. The U.S. Institute of Medicine reported that the lack of consistent definitions for suicidality is one of the major impediments to prevention efforts (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). Vague terminology for identical suicidal phenomena has been a contributing factor to the confusion surrounding how to label instances of suicidal

behavior (Posner, Melvin, & Stanley, 2007). These issues contribute to the difficulty in providing recommendations for clinicians. Further research and agreement amongst agencies is needed in the defining of terms in order to assist in prevention efforts. There is no single commonly accepted definition of suicide, and as a result the term does not refer to one action but to a variety of behaviors – ideation, intent, gestures, attempts, etc. In order to advance the field and increase communication in the field, a standard set of definitions is greatly needed. It is a difficult task to make recommendations concerning the treatment of "suicidality" when that can refer to a multitude of behavioral presentations. Without these standard terms, providers and their patients are left at a disadvantage. The CDC developed the *Self-Directed Violence Surveillance: Uniform Definitions and Recommended Data Elements* to improve and help standardize the data collected regarding self-directed violence (Crosby, Ortega, & Melanson, 2011). The document proposes definitions that can be applicable in many settings and be valuable for policymakers, clinical providers, or public health professionals. Most of the terms listed are defined in a general sense, researchers might find a need to further refine the terms. Some of the definitions include suicidal self-directed violence, suicide attempt, and suicide. The CDC also listed terms that are unacceptable for describing self-directed violence such as failed attempt or a successful suicide. This document is not to be considered exhaustive for terminology, but those included are consistent with other terms that have been subject to empirical testing and have demonstrated good reliability (Posner, Oquendo, Gould, Stanley, & Davies, 2007).

Also in the lexicon is the use of suicide as a verb. It is extremely rare in the literature, but can be found in various dictionaries in the transitive and intransitive forms of "to suicide" ("Suicide," 2015). In French, the terms used can either be the noun "suicide" or the verb "se

suicider." The verb form translates to "to suicide oneself," a reflective form indicating that the subject of the verb is performing the action upon himself (Normand & Mishara, 1992). This verb form, which carries connotation, is an interesting contrast to the discussion surrounding the use of the term "commit" and its use in describing suicide. Commit means to carry out or perpetrate a criminal or immoral act, and those who object to the usage of commit when referring to suicide assert that it implies that suicide is sinful or a morally wrong act (Ball, 2005). Despite these objections, "committed" is still the most common description of suicide used in research and journalism (Beaton, Foster, & Maple, 2013).

Scope and Significance

Prevalence. The World Health Organization (WHO) gathers and analyzes data provided by its member states in order to assess international mortality trends. Suicide deaths have only been included in these data inconsistently. Eleven countries have consistently reported data since 1950, but many other countries have not reported any data at all. For example, data from the WHO African region is limited, very little data is collected from the WHO South-East Asia and Eastern Mediterranean Regions, and data from the Western Pacific Region and from Latin American countries is inconsistently available (Bertolote & Fleischmann, 2002). The most reliable information is sent from the European Region. Misclassification of suicide, more specifically the underreporting of international suicides, has been a scientific concern due to cultural differences and contrasting perspectives (Rockett, Kapusta, & Bhandari, 2011).

The WHO estimates that by 2020 roughly 1.53 million people will commit suicide annually, and 10-20 times more will attempt suicide. This translates to one suicide every 20 seconds and one suicide attempt every 1-2 seconds (World Health Organization, 1999, 2006). The highest suicide rates for both men and women are in Eastern Europe. Countries in this area

share similar cultural and historical backgrounds and include nations such as Latvia, Estonia, Lithuania, and to some extent Hungary and Finland (World Health Organization, 2002). The highest rates are found in island countries such as Japan, Cuba, and Sri Lanka. The lowest rates are found in countries in the Eastern Mediterranean Region. Eastern Europe has the highest reported suicide rate, but the majority of suicides occur in Asia (World Health Organization, 2012). Thirty percent of all worldwide suicide deaths occur in China and India. The number of suicides in China alone is 30% greater than the total number of suicides in all of Europe, and the number of suicides in India is equal to those in the four European countries with the highest rates together (Russia, Germany, Ukraine, and France) (Phillips, Li, & Zhang, 2002).

At an initial glance, religious affiliation appears to have some influence on suicide rates in various countries. Based on data collected by the WHO, Bertolote & Fleischmann (2002) observed that countries with predominantly Muslim populations, such as Afghanistan, Yemen, and Comoros, have suicide rates near zero. Countries with large Hindu and Christian populations such as India, Nepal, and the Philippines, have rates near 10 per 100,000. Buddhist countries, including Thailand and Japan, have rates near 17.9/ 100,000. Predominantly atheist countries such as China (25.6 per 100,000) have the highest rates (Bertolote & Fleischmann, 2002). Few studies have investigated the association between religion and suicide. As noted in the rates above, religious countries tend to have lower rates of suicide than secular ones. These variations could at least partially be explained by underreporting due to religious stigma, as documented by the WHO (Rockett et al., 2011). Additional potential explanations include the differing levels of social cohesion various religions offer, and/or to the moral imperatives of certain religious beliefs (Stack & Lester, 1991). The reasons cited still do not definitely explain the variations in rates seen amongst countries of different religions, and reports regarding this topic are sparse.

Morphew (1968) compared suicide attempters who were hospitalized after self-poisoning in terms of religious affiliation and found no significant differences. Malone et al. (2000) reported religious persuasion, more specifically Catholic and non-Catholic, did not differ between suicide attempters and non-attempters. In a multi-national study, Stack (1983) concluded that protective factors against suicide were not linked to any specific religious denomination but were instead related to a strong religious commitment to values, beliefs, and practices. Given these findings and the rates reported by Bertolote & Fleischmann, the differing suicide rates across countries potentially has more to do with cultural factors such as economic and sociological variables than specific religious denominations. Cultural factors such as a nation's divorce rate (Fernquist, 2003), individualism rank (Rudmin, Ferrada-Noli, & Skolbekken, 2003), and wide-spread feelings of having an external locus of control (Allik & Realo, 1997) have been identified as predictors of higher suicide rates. More research is needed to compare and contrast these explanations for differences in international suicide rates.

In 2013, 41,149 suicides were reported in the United States, a rate of 13.0 per 100,000. Suicide was the tenth leading cause of death for Americans with someone in the country committing suicide every 12.8 minutes. Not only does suicide take a devastating emotional toll, but a financial one as well. It is estimated that the annual cost of suicide in the U.S. is $34 billion in medical bills and lost productivity. The total annual cost of suicide and self-inflicted injury combined is estimated to be over $41 billion. A single suicide is estimated to cost $1 million in medical bills and lost productivity (CDC, 2010a).

Demographics. The rates of suicide among different groups of people vary significantly. A recent study conducted in collaboration between Lund University in Sweden and Stanford University (2014) assessed a population of over seven million Swedish adults through census

data, in-patient registries, and the national death registry between the years of 2001 and 2008. Results of this study revealed that Swedish men were almost three times more likely to commit suicide than women. The strongest risk factors for men were young age, being single, and having less education, whereas mental illness was a stronger risk factor for women. Social risk factors for suicide differed by gender, with unemployment as a stronger risk factor for women and single marital status as a more potent risk factor for men. During the study, 8,721 of the study population committed suicide. Of those who died by suicide, 29% of women and 21% of men had an encounter with a physician in the two weeks before their deaths and 51% of women and 44% of men had an appointment with a physician within thirteen weeks before suicide. Individuals with a history of any psychiatric disorder were more likely to commit suicide than the rest of the population; however, consistent with previous findings, depression was the most significant risk factor overall for eventual suicide. Certain medical conditions were also associated with higher risk of suicide: rates of 1.4 to 2.1 times greater for people who had cancer, spine disorders, chronic pulmonary disease, or complications from a stroke.

Age. In the past, the highest rates of suicide in the U.S. were in the elderly and adolescent/young adult populations (CDC, 2010b). From 1991 to 2009, males 65 and older had a consistently higher rate of suicide compared to younger age groups. During this time period, suicide rates among males decreased as a whole. Suicide rates in males 65 and older declined from 40.12/100,000 in 1991 to 29.05/100,000 in 2009. Rates among males aged 25 to 64 declined from 24.08 per 100,000 to 21.27 per 100,000, but then increased to 25.37 per 100,000 in 2009. Compared to men within the same age range**,** females between the ages of 25 to 64 had the highest rates of suicide between 1991 and 2009. Rates in this age range increased from 5.75/100,000 in 2000 to 7.35/100,000 in 2009. Suicide rates among women aged 65 and older

decreased from 5.94 per 100,000 in 1991 to 4.04 per 100,000 in 2009 (CDC, 2010b). In 2013, the highest suicide rate was among people 45 to 64 years old at 19.1 per 100,000. The second highest rate was among those aged 85 years and older. This trend in the rising number of middle aged adults committing suicide has been attributed to the economic downturn and the increased availability of opioid drugs (Parker-Pope, 2013).

Race/Ethnicity. The highest rate of suicide in the United States is among Whites (14.1/100,000) followed by American Indians/Alaska Natives (10.8/100,000). Other ethnic groups, such as Hispanics and African-Americans have lower rates of suicide – approximately 6 for every 100,000 (CDC, 2014). The reasons for these wide differences are not very well understood, but are perhaps due to variations in the cultural and social paradigms for each ethnic group (van Heeringen, Hawton, & Williams, 2000).

Geographic region. There are also variances in U.S. suicide trends based on geographic regions. There is a noticeable divide between the east and west regions, with the Western states having the highest rates and the Eastern states the lowest (Barkan, Rocque, & Houle, 2013). In 2012, all of the states with age-adjusted suicide rates over 18% were located in the West (Barkan et al., 2013). This trend is persistent, as the available data suggests that suicide rates in western states have been higher since the nineteenth century (Lester, 1996). These differences have not been definitively explained; however, Miller, Azrael, & Hemenway (2002) have suggested that there is a relationship between increased frequency of firearm ownership and increased suicide rates. In the late 19th century Durkheim (1897) posited a potential relationship between social integration and suicide rates and current researchers have suggested that the regional differences in suicide rates may be related to varying levels of social cohesion. Barkan, Rocque, & Houle (2003) examined two aspects of social integration and regional patterns of suicide: residential

stability and population density. Areas with high population turnover, or low residential stability, have a higher number of newcomers and temporary residents and as a result have lowered social ties. Lower social ties, such as impaired friendships and weakened social networks, are contributive to lower social integration (Stark, Daniel, & Rushing, 1983). The second aspect studied, lowered population density, can contribute to higher suicide rates for two reasons. The first being that population density affects social interaction; low population density reduces social interaction (Fischer, 1982). The second aspect is that low density areas are prone to weak social ties and are likely to be more "fragmented" (Granovetter, 1983). When considering the Western region in light of these factors, the West has traditionally been an area of greater population turnover (Winkler, Field, Luloff, Krannich, & Williams, 2007) and also has relatively low population density on average. The results of the study for residential stability were supported, but not population density. Based on these findings, residential stability helps to explain the geographic divide in suicide rates.

Psychiatric comorbidity. Mental disorders have been shown to strongly predict suicide attempts and completions (Harris & Barraclough, 1997). Studies have suggested that more than 90% of people who commit suicide have a diagnosable mental disorder at the time of their death (Cavanagh, Carson, Sharpe, & Lawrie, 2003). According to the U.S. Surgeon General and the National Action Alliance for Suicide Prevention (2012), more than 60% of suicides are committed by individuals with mood disorders. Risk for suicide is especially high among individuals diagnosed with bipolar disorder, a diagnosis that is strongly associated with suicidal ideation and behaviors. Over their lifespan, 80% of patients with bipolar disorder will experience either suicidal ideation and/or attempts (Valtonen et al., 2005). It is estimated that 15 to 19

percent of patients with bipolar disorder will commit suicide, a rate approximately 25 times higher than the rate in the general population (Tondo, Isacsson, & Baldessarini, 2003).

Anxiety disorders have been shown to be associated with suicidal ideation and attempts, and the presence of an anxiety disorder in combination with a mood disorder is associated with a higher risk for attempting suicide than a mood disorder alone (Sareen et al., 2005). Considering adults in the general population, PTSD and panic disorder have been found to be significantly associated with suicide attempts in the presence of a co-occurring personality disorder (Paris, 2003).

It is estimated that between 3 and 10 percent of individuals diagnosed with borderline personality disorder will commit suicide (Paris, 2011). Given the unstable mood that is a prominent feature of this disorder, recurrent suicide attempts, self-directed violence, and impulsive acts are often associated with borderline personality disorder. Research has shown that when an individual with borderline personality disorder commits suicide, it is generally after a long period of unsuccessful treatment and late in the course of the illness (Paris, 2003).

In contrast to the trends in suicide among those with borderline personality disorder, the risk for suicide associated with schizophrenia is generally highest near the onset of the illness. Surviving this initial period does reduce the risk, but almost 5 percent of patients with schizophrenia do eventually die by suicide (Palmer, Pankratz, & Bostwick, 2005). The greatest risk indicator among those with schizophrenia is active psychosis combined with depressive symptoms. (U.S. Surgeon General and of the National Action Alliance for Suicide Prevention, 2012). Insight into the illness, dependency on treatment, and the consequences of the disorder are also strongly linked to increased suicide risk (Amador, 2004).

Despite the known association between mental disorders and suicide, there has been little research conducted to distinguish which disorders predict completed suicide. Nock, Hwang, Sampson, & Kessler (2010) posit that most studies have considered the relationship between individual disorders and suicidal behaviors, and that this method of research can lead to an association between every single disorder studied and the outcome of suicide. However, due to the fact that mental disorders are highly comorbid with one another (Kessler, Chiu, Demler, Merikangas, & Walters, 2005) these bivariate associations could reflect the true effects of only a small number of disorders. The effects of comorbidity and its implication for suicidal behaviors need to be more thoroughly studied to establish the unique associations between mental disorders and suicidal outcomes. Another concern regarding psychiatric comorbidity and suicide is that there have not been any definitive findings regarding what type of suicidal behavior is actually predicted by the presence of a mental disorder (Nock, Hwang, et al., 2010). There is a great deal of research supporting the connection between mental disorders and the spectrum of suicidal behavior. There have been several studies which suggest mental disorders are predictive of the development of suicidal ideation but the connection between mental illness and suicidal plans/attempts might be weaker among those who already experience ideation (Borges, Angst, Nock, Ruscio, & Kessler, 2008). Given these findings, it is important to clarify the relationship between specific mental disorders and the spectrum of suicidal behavior to improve risk assessment and guide appropriate treatment.

Medical comorbidity. Previous research suggests that some medical illnesses are associated with increased risk of suicide. Risk seems to vary by medical condition, but factors that may explain the increase include chronic pain, cognitive deterioration, and the emotional toll associated with chronic conditions (Berman & Pompili, 2011).

Cancer is one of the most common physical illnesses associated with risk for suicide. The National Cancer Institute identified mouth, throat, and lung cancers as risk factors for suicide (National Cancer Institute, 2011). Suicide risk appears to be highest shortly after diagnosis, but remains elevated for the first 5 years (Lonnquist, 2001). Exhaustion and the mental deterioration associated with cancer treatments can be risk factors for suicide (U.S. Surgeon General and of the National Action Alliance for Suicide Prevention, 2012). Depression and anxiety are also commonly found in cancer patients, and up to 85% of individuals with cancer who commit suicide meet criteria for anxiety disorders or severe depression (Akechi et al., 2009).

HIV/AIDS is associated with risk for suicide. Studies indicate that 22 to 50 percent of individuals with HIV will attempt suicide (Cooperman, 2011) and those with AIDS will be 44 times more likely to attempt than those without AIDS (Goodwin, Marusic, & Hoven, 2003). It has been found, however, that HIV status itself may not be the most influential factor regarding suicidal behaviors, and instead the elevated suicide rates may be better explained by other risk factors common in this population such as previous psychiatric history (Starace & Sherr, 1998). The rates for suicide amongst this group have significantly decreased since 1996, but still remain higher than the general population as cited above. A Swiss study found that after the highly active antiretroviral therapy (HAART) began to be used suicide rates among the HIV-positive decreased by roughly 50% (Keiser et al., 2004). The authors report that HAART has reduced HIV-related morbidity and mortality but it is unclear what impact it has on the rates of suicide in this population. One possible conclusion proposed that before HAART the prognosis of HIV and AIDS was considerably more bleak, but that there still remains a need for research concerning suicide risk in the HIV-positive (Cassels, 2010).

Degenerative diseases or traumatic injuries of the central nervous system are also associated with risk for suicidal behaviors. Specifically, Huntington's disease, multiple sclerosis, spinal cord injury, and traumatic brain injury have been associated with risk of suicide. For indviduals with Huntington's disease the rate of suicide is believed to be as much as four times greater than that of the general population (Huntington, 2003). Studies have not only shown that individuals with multiple sclerosis have lifetime prevalence rates of depression that can reach up to 54%, but that they are at risk for suicide (Samuel, 2011). Individuals with spinal cord injuries are five times more likely to experience depression and post-traumatic stress disorder (Hatcher, Whitaker, & Karl, 2009), and also have higher rates of suicide and suicide attempts than the general population (Kennedy, Rogers, Speer, & Frankel, 1999). Individuals with a traumatic brain injury are at increased risk of suicide, have a higher number of suicide attempts, and have signficantly more suicidal ideation (Simpson & Tate, 2007), which could be linked to the cognitive impairments in this population (Lezak, Howieson, & Loring, 2004). It has also been found that individuals with TBI are at great risk for developing depressive symptoms (Seel et al., 2003) and that 17% of individuals with a TBI report suicidal ideation and attempts within five years of the injury (Teasdale & Engberg, 2001)

Prevention Efforts

Preventive efforts have been made to reduce rates of suicide. The first suicide prevention center in the U.S. was opened in Los Angeles in 1958 and it provided a 24-hour suicide crisis hotline. In 1966, the Center for the Studies of Suicide Prevention was established at the National Institute of Mental Health (NIMH) (US Department of Health and Human Resources, 2012). In contrast to the prevention method of implementing crisis hotlines the states created laws that listed suicide as a felony, perhaps in an attempt to dissuade the public from attempting suicide. In

the 1960's 32 states had laws prohibiting suicide (Litman, 1966), this number dropped to 20 in the 1980's (Shneidman, 1989), and currently no state has laws criminalizing suicide.

The efficacy of suicide prevention programs has been called into question for a variety of reasons, the primary contention being that suicide is influenced by socio-cultural factors (Bertolote, 2004). More specifically, previous research suggests that the prevention strategies utilized in one location with a specific population may not be generalizable to other settings. Assessment of efficacy is also complicated by the fact that different programs may have different objectives and outcome measures, making it difficult to compare efficacy and systematize interventions. In order to add to public health knowledge regarding suicide prevention, it has been suggested that programs need to clearly state their objectives and indicators of progress (Bertolote, 2004). Gunnel and Frankel (1994) evaluated the literature on prevention programs dating back to 1975 and found that, out of the 19 studies identified examining prevention programs; only two were randomize controlled studies. The remaining studies were based on expert opinion or on the clinical experience of the researcher. When the studies were analyzed by setting, intervention, and method of exposing a patient to intervention, the highest reduction in suicide rates still only reached 4%.

In 1999 the Surgeon General, Dr. David Satcher, issued *The Surgeon General's Call to Action to Prevent Suicide* (U.S. Public Health Service, 1999). The purpose of the document was to provide recommendations of how to address suicide and assist in the development of the National Strategy for Suicide Prevention (National Strategy) (U.S. Department of Health and Human Services, 2001). The Surgeon General's guide to reducing suicide contained 15 recommendations based on *awareness*, *intervention*, and *methodology* (AIM). The *awareness* portion of the strategy was intended to increase public awareness about suicide and its risk

factors. The purpose of the *intervention* stage was to improve both population-based care and specific clinical practices with at-risk populations. The *methodology* section outlined plans for enhancing suicide prevention research (U.S Public Health Service, 1999). The National Strategy was released in 2001 and contained 11 goals and 68 objectives (U.S. Department of Health and Human Services, 2001). In order to evaluate progress, the Substance Abuse and Mental Health Services Administration invested in the production of the *Charting the Future of Suicide Prevention* report (Suicide Prevention Resource Center and SPAN USA, 2010). Based on the findings of this report, the National Action Alliance for Suicide Prevention formed a task force to update the National Strategy. This group's document was released in 2012 and it was designed to direct suicide prevention efforts for the next decade. The revised National Strategy contains 13 goals and 60 objectives that reflect the developments that had been made in suicide prevention since its original release in 2001. These goals and objectives fall within four categories intended to be a comprehensive approach to suicide prevention: create supportive environments to promote health on the individual, familial, and community levels; improve clinical and community preventative measures; promote the availability of treatment; and enhance suicide prevention research (Health and Human Services, 2012). This revised strategy places heavy emphasis on the idea that prevention should be a part of all aspects of life, and that every citizen has a role in preventing suicide. In response to the goal of renewing the focus on suicide prevention research, the Research Prioritization Task Force (RPTF) of the Action Alliance developed a new research agenda. The RPTF developed a prioritized approach to ensure that the available resources were focused on research that had the greatest likelihood of reducing the risk of suicide (National Action Alliance for Suicide Prevention: Research Prioritzation Task Force, 2014). The RPTF defined key questions to explore the current state of the science, pathways for

future progress, and objectives specific to their goals. One of the key questions included in the newly developed agenda was concerned with how can risk be better detected and predicted. The goals for this question, as defined by the RPTF, are to be able to determine level of risk for individuals from a variety of populations and in a variety of settings, and to be able to determine if an individual is at risk for attempting suicide in the immediate future.

The RPTF compiled research relevant to assessing near-term risk states and found that life events can be considered "triggers" for individuals who have attempted suicide and who also possess traits associated with personality disorders (Blasco-Fontecilla et al., 2010). Also relevant is that research dealing with care and decision-making for suicide risk in the emergency department is not evidence-based, and that recommendations for patients with severe mental health issues and those with plans to commit suicide have yet to be tested in the U.S. (Cooper, Lawlor, Hiroeh, Kapur, & Appleby, 2003). Risk assessment is heavily reliant on making the determination between active ideation with a plan and passive ideation; in contrast with this thought process is that studies have found passive ideation to be as strongly related to morbidity as active ideation (Baca-Garcia et al., 2011). One relevant research finding concerning screening and intervention is that young adults with suicidal ideation have risk for attempts throughout their lifetimes (Fergusson, Horwood, Ridder, & Bautrais, 2005) indicating that early detection of risk in youth is important for intervention and treatment planning. Another pertinent finding is that the idea of a continuum of suicide risk and its progression from less severe to most severe forms of suicidal behaviors is highly contested (De Leo, Cerin, Spathonis, & Burgis, 2005). Research findings suggest that about a third of ideators make a plan to commit suicide without attempting suicide and another third will eventually attempt suicide. Another subgroup reports

making an attempt without ideation or planning (National Action Alliance for Suicide Prevention: Research Prioritzation Task Force, 2014).

The RPTF suggested multiple potential research directions for improved detection of risk through screening and assessment measures, which included determining the value of screening approaches and whether patient denial of ideation or other behaviors was related to the type of approach. Another suggested direction was developing a method of obtaining collateral information from family and guardians that can be explored through screening measures and then reported back to family members and others when appropriate. Also included was the possible development of alternative screening measures with less vulnerability to response bias or motivational demands.

Additional research directions suggested in the RPTF document included exploration of the detection of near-term or immediate risk, specifically: further understanding of current clinical practices and determining areas of improvement, development of intensive monitoring of lifetime high-risk patients to determine acute risk factors related to suicidal behaviors, and exploration of the roles of the styles of care that are associated with elevated risk (National Action Alliance for Suicide Prevention: Research Prioritzation Task Force, 2014). The short-term research objectives that are believed to be the most likely to reduce suicidal behaviors included the need to develop screening approaches that would identify risk over time, identify screening tools with predictive validity in various care settings, and use health care data to develop risk detection algorithms. The long-term research objectives are to dedicate continued efforts to reduce suicidal behaviors, including finding a valid risk screening measure to be used across care settings; to determine low, moderate, and high lifetime-risk screening measures for

patients so that appropriate preventative methods can be applied; and to identify other research methods in order to address base rate challenges and response bias.

In 2013 the World Health Assembly adopted the Mental Health Action of the WHO, which includes a specific focus on suicide prevention with the goal of reducing the rate of suicide in participating countries by 10% by 2020 (World Health Organization, 2013). The purpose of the report was to make suicide prevention a priority for global health initiatives and public policy programs and to continually raise awareness of suicide as a public health concern. Three strategies to counter suicide risk factors were outlined in the report: universal, selective, and indicated. Universal strategies are intended to affect entire populations by increasing access to health care or by promoting the maintenance of mental health. Selective strategies are designed to influence groups which might be particularly susceptible to suicide, such as those who survived trauma or disaster, by training the officials who assist these types of groups. Indicated strategies are intended for vulnerable individuals through community support and improving mental health identification and care. The report emphasized that to prevent suicide on a national level multiple sections of society need to become actively involved and that to see a long term reduction in suicide rate countries need to invest in instillation of protective factors on a community level (WHO, 2013).

Study Purpose

The purpose of screening for suicide risk is to identify individuals in need of mental health care to ensure that appropriate safety measures are in place (Emergency Nurses Resources Development Committee, 2012)**.** There have been mixed results concerning the ability of screening measures to accurately predict the risk of suicide (U.S. Preventitve Services Task Force, 2013), but there is a general agreement among practitioners and clinicians that screening

can be useful if providers are well trained and if there is a comprehensive approach through which those who are identified as at risk receive further evaluation and treatment (Suicide Prevention Resource Center, 2014)

Primary care setting. Primary care physicians (PCP) are the providers responsible for both the first contact for patients regarding health concerns and for the continued care for a variety of conditions. Research findings concerning the role of primary care physicians and patient contact prior to suicide have spurred the need to improve the recognition of risk factors for suicide by these clinicians. Patients who go on to commit suicide visit a primary care physician more than twice as often as mental health clinicians. A review of studies regarding this scenario found that 45% of those who commit suicide visited their primary care physician in the month before their death and only 20% saw a mental health professional in the preceding month (Luoma, Martin, & Pearson, 2002). It has also been found that primary care physicians are responsible for the writing of 62% of antidepressant prescriptions in the United States (Mark, Levit, & Buck, 2009). These two findings show that primary care clinicians are providing the majority of antidepressant treatment and are also most likely to see patients who are at high risk of committing suicide a month before their death, when considered in conjunction these conclusions illustrate the importance of prevention on the part of a primary care physician. It has also been shown that suicidal thoughts and behaviors tend to receive less attention from primary care physicians, with suicidal ideation being addressed in only 24% of their patient population (Hepner et al., 2007). When ideation was identified, the doctors generally did not address it themselves nor did they refer the patient to a mental health professional. For patients with current ideation and/or a record of having made a plan or attempt, only one third were referred for psychiatric consultation (McDowell, Lineberry, & Bostwick, 2011). Despite these findings

emphasizing the importance of screening measures to be used by primary care doctors, there is limited evidence that suicide risk screening instruments are accurate in primary care populations (Guirguis-Blake & Hales, 2004). There is also no evidence that test characteristics of commonly used screening measures would be valid in primary care settings (U.S. Preventitve Services Task Force, 2004).

Emergency department setting. Emergency departments (ED) are responsible for providing medical and surgical care to patients in need of immediate treatment upon arriving at hospitals. As such, EDs are a primary point of access for individuals immediately following a suicide attempt. One study found that within one year before their deaths, 39% of individuals who would later commit suicide had visited the emergency department at least once (Gairin, House, & Owens, 2003). Another study aimed to determine whether or not suicide mortality rates for patients seen and subsequently discharged from the ED for a suicide related complaint were higher than those of the ED comparison group (Crandall, Fullerton-Gleason, Aguero, & LaValley, 2006). Suicide rates among patients presenting with suicidal ideation, self-harm, or overdose, had significantly higher rates of suicide compared to the general population. Individuals who deliberately harm themselves are at risk for eventual suicide. Their risk of eventual suicide is six times higher than the general population and they will die on average 40 years earlier than expected (Bergen et al., 2012). Claassen and Larkin (2005) studied the prevalence of suicidal ideation in patients presenting to the ED for non-psychiatric reasons. Of the 1590 patients screened, 11.6% endorsed suicidal ideation and 2% reported having a plan to kill themselves. After reviewing the medical records of the 2% planning on committing suicide, it was revealed that the increased suicide-related risk for nearly all of the patients was undetected during routine care. Given these findings, it is highly important that those who staff the ED need

to know how to perform a proper suicide risk assessment to evaluate for intensity and severity of risk and develop an appropriate care plan.

CHAPTER TWO

Summary and Future Directions

Risk Assessment

Definition and goals. The term “suicide screening” refers to the process of administering a standardized instrument in order to identify individuals who may be at risk for suicidal behaviors (Suicide Prevention Resource Center, 2014). Screening can either be a universal or selective procedure. Universal screening occurs when every individual within a population, regardless of whether they are considered to be at higher risk than the general public, is screened. Selective screening programs are used to screen members of a group that have been shown to have an elevated risk for suicide, regardless of whether the individual being screened is displaying any signs of suicide risk. Screening is typically brief, often relies on administration by front-line staff such as nurses, and is intended to identify patients who are clearly not at risk for a given behavior and do not need further evaluation (Horowitz, Ballard, & Paoa, 2009). Risk assessment, on the other hand, generally refers to a more comprehensive evaluation that is conducted by a clinician to verify suspected risk, estimate if the individual is at immediate risk, and to decide on a course of treatment (Suicide Prevention Resource Center, 2014). Screening and assessment should ideally be used in a coordinated manner, with screening detecting those potentially at risk and assessment specifying risk on a continuum of severity (Bourdeaux & Horowitz, 2014).

The process of suicide risk assessment is incredibly complex, given that the overall goal is predicting imminent risk of a low base rate event in the context of a myriad of dynamic factors. The term “imminent risk” is itself fraught with inconsistencies and disagreement among researchers. The terms "imminent," "acute," and "near-term" are often used interchangeably

without specific parameters, thereby limiting generalizability. Hirshfeld and Russell (1997) defined imminent risk as a suicide attempt occurring with 48 hours of the time the patient is assessed, but this time frame is not consistent across the suicide research literature. Very little is known about the short-term risk factors for suicide, which is why Aspirational Goal 3 of the National Action Alliance for Suicide Prevention's Research Prioritization Task Force is to improve prediction of imminent risk (National Action Alliance for Suicide Prevention: Research Prioritzation Task Force, 2014).

Glenn and Nock (2014) reviewed research concerning the assessment of imminent risk and evaluated the gaps in the literature in order to propose four questions that could improve the identification of short-term risk. The first question focused on determining which factors predict the transition from suicidal ideation to attempts. Suicide ideation has been identified as a risk factor for suicidal behavior, but a large percentage of those with ideation do not make a plan or an attempt. Further research is needed to improve the prediction of which individuals will go on to act on their suicidal thoughts (Glenn & Nock, 2014). Recent research has begun to identify risk factors that make the differentiation between attempters and ideators- including younger age, low income, unemployment, history of sexual violence as factors for predicting those who will attempt (Chiles, Strosahl, Cowden, Graham, & Linehan, 1986). More research is needed to further clarify this distinction.

Glenn and Nock's second question focused on identifying which factors predict the transition from ideation to attempt over the short term. Research has been conducted indicating that there may be significant differences between the risk associated with short and long term variables. For example, Fawcett et al. (1990) found that hopelessness and suicidal ideation predicted suicide risk for the longer term (2-10 years) as compared to anxiety, insomnia, and

anhedonia which predicted suicide over the next 12 months. Long-term risk factors are valuable in indicating which individuals are more likely to engage in suicidal behavior over the lifetime, but short term risk factors are important in indicating when individuals are likely to act on their suicidal thoughts and could benefit from acute clinical interventions (Bagge, Glenn, & Lee, 2013; Fawcett et al., 1990).

The third question posed by Glenn and Nock concerned identifying the most important objective markers of short-term risk. The current method of suicide risk assessment relies on self-report measures which have limitations such as motivation on the part of the patient to conceal suicide plans and intentions (Bush, Fawcett, & Jacobs, 2003; Qin & Nordentoft, 2005). In order to address this shortcoming, risk assessment needs new and objective measures of suicide risk that will not be biased by opinion or clinical interpretation. Currently, objective measures and tests are being developed, including: behavioral measures of suicidal cognition (Nock, Park, et al., 2010), neurocognitive measures of difficulties in attention, working memory, and executive functioning (Keilp et al., 2013), and biological tests of dysfunction in the serotonergic system and hypothalamic-pituitary-adrenal axis (Mann et al., 2006). These tests are not currently being used in practice to assess risk, and it has not yet been determined if they could potentially be used conjointly with existing risk factors to improve the accuracy of prediction/risk identification. The final proposition from Glenn and Nock suggested that methods of combining information about risk and protective factors could yield the best predictive validity. Currently there is no empirically supported method for incorporating both risk and protective factors in order to predict suicidal behavior (Dawes, Faust, & Meehl, 1989). Several recent studies have tested various methods of combining suicide risk factors with some initial success (Borges et al., 2006; Borges et al., 2010; Mann et al., 2008). The risk indices included

sociodemographic and psychiatric risk factors and accurately classified a substantial portion of individuals, meaning that a randomly selected suicide attempter could be differentiated from a randomly selected individual with suicidal ideation with 74-88% accuracy (Borges et al., 2006; Borges et al., 2010). These findings are promising, but the risk indices included were generally limited to lifetime and 12-month risk factors and are not currently used in naturalistic settings. Future research directions should incorporate short–term factors with the risk indices that can be translated into a measure that is easily used in a clinical practice. The initial steps have been made, but a substantial amount of work is needed to more accurately predict and prevent imminent suicide.

Both overestimation and underestimation of risk can have negative consequences. Risk assessment that leads to a high rate of false positives increases the likelihood that an individual will be unnecessarily hospitalized or misidentified with an inappropriate and stigmatizing diagnosis. However, erring in the opposite direction may lead to underestimation of risk, jeopardizing the lives of many individuals. Suicide risk assessment is a process by which a clinician should be able to distinguish between levels of potential for harm and the temporal nature of the risk. Bryan and Rudd (2006) designed a model in which risk is demarcated by one of four categories: *baseline, acute, chronic high risk, chronic high risk with exacerbation*. To meet criteria for the *baseline* risk category, the individual cannot be experiencing acute overlay (i.e., crisis) or significant stressors/symptoms. The baseline category is appropriate for those who experience suicidal ideation or who have made an attempt in the past. The *acute* risk category requires the presence of an acute overlay and related, significant stressors and symptoms. To qualify for the acute risk category the individual must be experiencing significant stress, but it is similar to the baseline category in that it is only appropriate for those who have ideation or made

a single attempt. The *chronic high risk* category includes those individuals who do not have significant stressors or symptoms at the time of evaluation, but do have elevated baseline risk typical of those individuals who have made multiple past suicide attempts. The baseline risk of suicidal individuals can be highly variable. For example, an individual who has attempted suicide multiple times in the past may have a higher baseline level of risk that he returns to after a period of distress/decompensation than someone who only has remote history of one suicide attempt. *Chronic high risk with acute exacerbation* requires the presence of acute overlay and prominent symptoms/stressors. This category is appropriate for an individual who has attempted multiple times and is also experiencing acute risk. The benefit of having a categorical system is that it allows for straightforward clinical decisions depending on where the patient fits in the model. The shortcoming of such a system is that not every patient is going to fit distinctly into a category given the highly personal nature of suicidal behaviors, and decisions about continuing care will remain difficult.

Clinical measures. Suicide risk screening and assessment measures are standardized tools that may be used by clinicians to gather more information about potential risk and formulate treatment planning. Many measures have been adapted or created in an attempt to more accurately identify suicide risk, several of which are included in the current review based on the criteria that they have been validated to be used in a clinical setting and are primarily intended for use with the adult population. One such measure is the Reasons For Living Inventory (RFL). The RFL is a screening tool that measures the probability of suicide based on the idea that there are both risk and protective factors that may moderate suicidal ideation and subsequent self-directed violence (Linehan, Goodstein, Nielsen, & Chiles, 1983). The self-report measure consists of 48 Likert scale items divided into six scales: fear of suicide, fear of social

disproval, child concerns, responsibility to family, survival and coping beliefs, and moral objections. This scale has proven to be moderately reliable and valid in use with adults and also has been validated to be used with adolescents and has been demonstrated to have predictive validity (Cole, 1989; Goldston, Daniel, Reboussin, Frazier, & Harris, 2000).

The Nurses Global Assessment of Suicide Risk (NGASR) is a measure developed by Cutliffe and Barker (2004) to assist novice practitioners in the assessment of suicidal risk. The test has 15 items of varying weights. Items such as "Evidence of a plan to commit suicide" have more weight than the "History of psychosis" item and higher scores are hypothesized to be correlated with increased risk of suicide. Each item on the measure is supported by studies that have established a relationship between the item construct and suicide, but reliability and validity of the test as a singular measure has not yet been tested.

The Suicide Behaviors Questionnaire (SBQ) is a self-report measure of suicidal thoughts and behaviors that was originally developed in 1981 and then shortened in 1988 (Addis & Linehan, 1989). The abbreviated version has only four items that each target a different dimension of suicide: lifetime suicidal ideation or attempts, frequency of ideation for the past twelve months, likelihood of an attempt, and likelihood of suicidal behaviors in the future (Osman et al., 2001). The internal consistency, test-retest reliability, and concurrent validity have been established for the brief SBQ (Cotton, Peters, & Range, 1995). The SBQ was revised in 1996 to assess for 14 different suicidal behaviors within five behavioral domains: past ideation, future ideation, past threats of suicide, future suicide attempts, and the likelihood of completing. Internal consistency and concurrent validity were established for the revised measure (Linehan & Addis, 1990).

Nock and colleagues (2007) developed the Self-Injurious Thoughts and Behaviors Interview (SITBI) in order to assess a variety of self-injurious thoughts and behaviors (SITB) through structured interview. The interview consists of modules that evaluate five types of SITB: suicidal ideation, suicide plans, suicide gestures, suicide attempts, and nonsuicidal self-injury. Each module begins with a screening question regarding lifetime prevalence of that thought or behavior. If the patient endorses the content of the initial screening question, then the module is included in the interview. The SITBI not only assesses for lifetime prevalence, but also for the frequency of each thought or behavior in the past year, month, as well as when the thoughts or behaviors began. The measure also assesses for the intensity or severity of each endorsed thought or behavior on average and at the worst point, as well as including an open-ended question about methods of self-injury. Nock et al. administered the SITBI to 94 adolescents and young adults to assess for reliability and validity. Based on the results, the SITBI demonstrated strong inter-rater reliability, test-retest reliability, and concurrent validity in both research and clinical settings.

The Suicide Assessment Five-step Evaluation and Triage (SAFE-T) is a pocket card designed for mental health clinicians and health care providers that describes protocols for conducting a suicide risk assessment. The SAFE-T was developed through a collaboration between Screening for Mental Health, Inc. and the Suicide Prevention Resource Center. The protocols and guidelines that are featured on the card were based on the American Psychiatric Association Practice Guidelines for the Assessment and Treatment of Patients with Suicidal Behaviors (Jacobs, 2007). Clinical decision making begins in the first step by identifying the presence of warning signs and risk factors that would increase the likelihood of suicidal behaviors. The second step concerns identifying protective factors, but clinicians should remain cautious and not overestimate the ability of protective factors for an unfamiliar client that could

be experiencing acute risk. The third step involves questioning the patient believed to be at risk in order to specifically evaluate suicidal thoughts, plans, and intent. The fourth step involves the clinician determining level of risk by assigning a rating of low, moderate, or high. According to the SAFE-T model, low-risk patient have no specific plans or intent to commit suicide and do not have a history of suicidal behaviors and should be referred to an outpatient treatment facility. Individuals rated to be at moderate risk experience ideation and have developed a plan, but lack intent or behavior. The decision to refer this type of client to the psychiatric or emergency department relies on the patient's presentation. Those determined to be at high risk have serious thoughts of suicide, have a plan, and an intent to commit. These patient's will also experience significant agitation, impulsivity, psychosis, or have recently made an attempt. A high risk patient requires constant observation and an immediate transfer for psychiatric evaluation and hospitalization. The fifth step of the SAFE-T plan requires the clinician to document the reasons for the assigned level of risk, the level of care provided, and the treatment plan.

The Columbia Suicide Severity Rating Scale (C-SSRS) is a clinician-administered rating scale for suicidal ideation ranging from a passive feeling of no longer wanting to be alive to active ideation with a specific plan and intent (Posner et al., 2011). This measure was designed to identify behaviors that may be indicative of suicidal intent, with individuals who endorse even one behavior on the scale being 8 to 10 times more likely to commit suicide (Posner et al., 2011). There are several versions of this tool, one of which is the *Lifetime/Recent* version, which assesses lifetime history of suicidal thoughts or behaviors as well as recent ideation and has been shown to be the most predictive of completed suicide in the future (Beck, Brown, Steer, Dahlsgaard, & Grisham, 1999). The *Since Last Visit* version is intended for use with patients who have completed at least one Lifetime/Recent C-SSRS and assesses suicidal thoughts or

behaviors experienced since the previous visit. The *Screener* version is a condensed form (three to six questions) of the full versions and focuses on severity of suicidal ideation with just one question about suicidal behavior. A multi-site study was used to evaluate the C-SSRS's validity and the results revealed that the measure demonstrated good convergent and divergent validity and the subscales of the measure were sensitive to clinical change over time. One study compared the validity of the C-SSRS as relative to other measures of suicidal ideation and behavior, and found that in a study conducted with adolescent attempters the worst-point lifetime suicidal ideation on the C-SSRS predicted attempts whereas the Scale for Suicidal Ideation did not (Posner et al., 2011). These findings indicated that the C-SSRS can be used to assess suicidal ideation and behaviors in clinical and research settings (Posner et al., 2011).

One of the earliest standardized measures of suicide risk assessment was the Scale for Suicide Ideation (SSI), which was developed in 1979 by Beck and his colleagues in an attempt to evaluate suicidal intent. It was used to monitor response to intervention over time and consisted of 19 items clustered into three categories: active suicidal desire, preparation, and passive suicidal desire. The SSI is one of only two suicide risk tools with documented predictive validity for eventual suicide by adults seeking outpatient treatment (Beck et al., 1979). A related measure, the Scale for Suicidal Ideation-Worst (SSI-W), also was documented to have predictive validity (Brown, Beck, Steer, & Grisham, 2000). The SSI-W slightly differs from the SSI in that the scale measures the intensity of patients' attitudes, behaviors, and plans to commit suicide during the time they were the most suicidal. Patients are asked to recall the dates and circumstances surrounding the period in which they experienced their most intense desire to commit suicide and to keep this experience in mind while an interviewer rates the individual's responses (Beck et al., 1997).

The Modified Scale for Suicidal Ideation (MSSI) was developed by Miller et al. (1986) and augmented the SSI by using 13 of the original items and adding five additional questions in order to improve the reliability and validity of the first instrument. Joiner, Rudd, & Rajab (1997) conducted a large-sample factor-analytic study of the MSSI on a sample of 330 suicidal participants. The factor analyses revealed two MSSI factors: Suicidal Desire and Ideation, and Resolved Plans and Preparation. The Suicidal Desire and Ideation factor dealt with items that addressed ongoing thoughts or desire to commit suicide, and was found to be more related to depressive features than the other factor. This result indicated that level of depression is predictive of suicidal ideation, but not as strongly linked to preparation for eventual suicide. Resolved Plans and Preparation was defined by "intense thoughts, plans, and courage and capability to commit suicide," and was more closely related to status (Attempt vs Suicidal Ideation) than Suicidal Desire and Ideation. The MSSI was demonstrated to more effectively discriminate between attempters and ideators than the Beck Depression Inventory (BDI), the Beck Hopelessness Scale (BHS), and the Psychological Screening Inventory (PSI) (Miller, Norman, & Bishop; 1986).

The Suicide Intent Scale (SIS) was an assessment designed by Beck (1974) to determine the intensity and severity of suicide attempts. The measure consists of 15 questions that assess the intent underlying the attempt and the circumstances surrounding the event. The SIS was shown to have strong validity and reliability. Individuals who committed suicide ranked higher on the severity of the logistics measure compared to individuals who attempted suicide. The author was unable compare intent between those who attempted suicide and those who died, but did find that individuals with multiple past suicide attempts times scored higher than individuals who had only attempted suicide once (Beck et al., 1974).

The Risk-Rescue Rating (Weissman & Worden, 1974) is an interviewer-administered measure that is designed to assess the lethality and intent of a suicide attempt. Of the 10 items, five measure variables such as the risk of suicide and the type of self-injury, the expected degree of recovery, and the degree of medical treatment required. The other five items indicate the likelihood of intervention that is determined by the observable circumstances at the time of the attempt. Each of the items included in the measure has a specific value ranging from 0 to 3. After administration, the patient's responses are then summed to yield a Risk Rating and a Rescue Rating. The Risk Rating ranges from low risk (5) to high risk (15) and the Rescue Rating ranges from least rescuable (5) to most rescuable (15). A Risk-Rescue Rating is then calculated [(Risk Rating/(Risk Rating +Rescue Rating)) x 100] to measure the seriousness of the attempt. The inter-rater reliability of this measure has been established and the concurrent validity is similar to that of other ratings of self-injury. The Risk Rescue Rating does not have a demonstrated predictive validity. When the Risk Rescue Rating was administered to a sample of patients following a suicide attempt (Tejedor, Diaz, Castillon, & Pericay, 1999) it failed to differentiate between patients who re-attempted, completed, or did not make another attempt.

Primary care. Given the previously discussed fact that many individuals who eventually die by suicide are seen by primary care physicians in the weeks and months leading up to their death, these providers are in a unique position to potentially recognize early signs of risk and identify treatment needs. A physician's ability to assess for, and treat suicide risk is reliant on their training, knowledge, and skills (Milton, Ferguson, & Mills, 1999). Various studies have found there to be limitations in PCP's management of suicide risk and other barriers, such as stigma and patient somatization, that impede this practice amongst PCPs (Goldman, Nielsen, &

Champion, 1999). Other authors have noted gaps in residency training regarding suicide and depression (Sudak, Roy, Sudak, Lipschitz, & Maltsberger, 2007).

Several previous studies have demonstrated the need for routine suicide risk screening in primary care settings. In a retrospective review of the final primary care appointment prior to completed suicide, only two of 61 cases had a note from the physician regarding suicide risk (Pearson et al., 2009). Another review found that only 19% of PCPs knew about the suicidal ideation of their patients who would go on to die by suicide compared to 59% of psychiatric practitioners (Isometsa, Aro, Henriksson, Heikkinen, & Lonnquist, 1994). These findings illustrate the fact that it may be beneficial to develop a more systematic approach for assessing for suicide risk in the primary care setting.

Assessing for mental health concerns during a primary care visit is a complicated matter given time constraints and the dominant need to assess the presenting medical issue (Goldman et al., 1999). Detecting suicide risk is further complicated by the finding that approximately 50% of the patients who died by suicide and visited their PCP in the month before their death had a chief complaint unrelated to mental health issues or risk factors for suicide (Luoma et al., 2002). Conversely, another study found that 64% of 61 patients who died by suicide reported psychological complaints to their PCP during appointments three months prior to their death (Appleby, Amos, Doyle, Tomenson, & Woodman, 1996). Taken together, these findings have prompted suggestions for improved practices regarding the detection and assessment of suicide risk for PCPs and seem to support the idea that many patients at risk for suicide will be missed without universal screening.

Evidence suggests that significant improvements in PCP assessment practices are found following training programs (Nutting et al., 2005), one study found that after a six-hour training

course on the assessment and management of suicide risk there was significant improvement in in these areas (Appleby et al., 2000). Nutting et al. (2005) found that 41% of patients seen within a program designed to improve quality of care concerning depression were identified with suicidal ideation, compared to the 21% within the control group.

There is often some reluctance on the part of the physicians to ask probing questions about mental health, particularly about suicide (Posner, Melvin, et al., 2007). Anecdotally, many providers describe feeling relatively comfortable asking questions about mental health issues and suicide, and instead experience anxiety related to the sense of responsibility and "Now what?" if a patient acknowledges risk factors. Many physicians express concern that asking about suicide will have an iatrogenic effect and lead to increased patient distress. However, Gould and colleagues (2005) were able to demonstrate that asking about suicidal ideation does not increase patient distress, nor does it increase the frequency of suicidal thoughts. In their 2007 article, Posner and colleagues discussed a strategy for the identification and monitoring of suicide risk in primary care settings. They suggested that a thorough risk assessment should include questions about ideation, behavior, and any additional risk factors. Posner et al. stated that the physician should assume risk is elevated if the patient endorses having a plan, intent, or access to means.

Treatment options for depression with suicidal ideation in the primary care setting have been developed and are shown to be more effective than usual care. The treatment paradigms typically include training for the PCP for recognition of suicide risk, antidepressant treatment, and a counseling component provided by a trained clinician (Posner, Melvin, et al., 2007). The Suicide Prevention Resource Center (2015) recommends that the primary care staff be trained to identify and respond to warning signs of suicide, be able to provide brief intervention, recognize and effectively treat depression, and counsel patients on limiting access to lethal means.

Emergency department. The Joint Commission publishes the National Patient Safety Goals, a document that establishes various guidelines for hospitals to follow to improve patient safety (The Joint Commission, 2015). One of these procedures is specifically concerned with the identification of patients at risk for suicide. The rationale provided for this requirement stated that suicide of a patient in a staffed care setting is a sentinel event that occurs often and that identification of patients at risk for suicide during treatment or immediately following discharge is an important process in protecting at risk patients. The report listed three steps to take when identifying the at-risk patient: conducting a risk assessment with a focus on evidence-based risk factors for suicide, addressing immediate safety concerns and determining an appropriate setting for treatment, and provision of suicide prevention information to the patient and his/her family if an individual who is potentially at risk for suicide leaves the hospital. In order to meet these guidelines, The Joint Commission proposed the B-SAFE five step method of evaluation, which includes the identification of risk factors, protective factors, suicidal thoughts or history, and planned treatment and setting care (Jacobs, 2007). The first three steps of the B-SAFE model focus on identifying predisposing and protective factors for suicide. The first step uses patient interview, medical records, and collected collateral information to expose suicide risk factors. The second step is oriented around exploring protective factors with the client that will prevent them from attempting in the future - i.e., familial responsibility and religious beliefs. Step three asks about ideation, plans, and behaviors in order to determine the level of intervention necessary. The fourth step concerns understanding why the patient is suicidal by using the information gathered in the first three steps and is the step most dependent on clinical judgment. Step five is the documentation of the assessment of the patient and the decision-making process.

Implementation of a suicide screening measure in the emergency department should improve providers' ability to make expedient clinical decisions by detecting and providing guidance for the management of imminent risk (Bourdeaux & Horowitz, 2014). An effective ED screening measure would be able to detect the presence of risk, identify when a patient requires immediate safety precautions, and identify when a mental health consult is required (Jacobs et al., 2010). When indicated, a mental health provider should then conduct a full suicide risk assessment, and the results of this assessment should guide disposition planning and the provision of other services. In this model, screening and assessment operate together in order to facilitate the decision making that each is designed to support.

There are many challenges concerning conducting suicide risk assessment in the ED; including lack of time (Quality and Patient Safety Division, 2014), lack of resources (Suicide Prevention Resource Center, 2013), lack of trained staff (Mitchell, Garland, & Taylor, 2005), and discriminatory attitudes of personnel toward patients with mental health issues (Knesper, 2010). Additionally, many providers do report feeling comfortable screening patients, but many more do not feel confident in their ability to assess for risk, create a safety plan, or provide brief counseling (Betz et al., 2013).This lack of confidence in their ability to assess is not unfounded, with screening tools and assessment measures not reliably predicting suicide in the individual patient (Cochrane-Brink, Lofchy, & Sakinofsky, 2000). The combination of these factors may prevent the successful implementation of an ED-based suicide screening protocol without careful preparation. In a study of ED directors regarding standard clinical practice, respondents reported that the usual course of action for a patient with suicidal ideation is to request a mental health evaluation, but 23% of the directors reported that they will occasionally send patients with

ideation home without an evaluation and 8.5% of respondents reported that this occurred more than 10 percent of the time (Baraff, Janowicz, & Asarrow, 2006).

Gaps in the Literature

In 2004 the U.S. Preventive Task Force (USPTF) released an initial report on the recommendations concerning suicide risk assessment practices for adolescents, adults, and older adults in primary care. The USPTF concluded that there was insufficient evidence concerning whether screening for suicide risk decreased attempts or mortality. In 2014, the USPTF released an updated set of recommendations and again concluded that there was insufficient evidence (U.S. Preventive Services Task Force, 2014). The USPTF reviewed research concerning the accuracy and reliability of suicide risk screen measures and the benefits or damages of screening. The USPTF evaluated four studies that examined the accuracy of screening measures to identify individuals at an elevated risk for suicide. Of the four studies reviewed, two were conducted amongst an adolescent population and the other two involved primary care patients (Heisel, Duberstein, Lyness, & Feldman, 2010; Holi et al., 2008; Olfson, Weissman, Leon, Sheehan, & Farber, 1996; Thompson & Eggert, 1999). Each study used a different screening measure and all four were considered to be of fair quality. All four studies applied the same reference standard to the participants and only recruited from one identified population. Some concerns were that only one of the four studies reported that the reference test was independent of the screening test and that there was a substantial amount of time between the administration of the screening and reference tests (Heisel et al., 2010). The USPTF found no evidence to support that screening for suicide risk improves outcomes for asymptomatic adults. They were also unable to definitively state whether there is a possibility for short-term harm for participating in suicide screening, but of the studies they reviewed no adverse events were documented (Crawford et al., 2011; Gould

et al., 2005). Given the lack of research regarding accuracy and health outcomes as stated by the USPTF, as well as a lack of research regarding screening in other clinical settings, the field of suicide prevention and treatment would greatly benefit from empirical studies examining the outcomes of screening for suicide risk.

Future Implications

Feasibility. Given that the ED is a very time-limited setting, the question becomes whether it is feasible to screen every patient presenting for care, even if the patient is presenting for evaluation of a non-psychiatric complaint. Further insight into generalized screening may come from examining the implementation of screening efforts for other medical conditions. Screening feasibility studies have been conducted in the ED for firearms, intimate partner violence, depression, and mental illness (Gilbody, Sheldon, & House, 2008; Larkin, 2003; Larkin et al., 1999). Screening for alcohol use is well established, with computer-based screening being used in some locations to identify patients that are at risk of developing alcohol use problems. Based on this implementation, approval among ED staff is high (Love, Greenberg, Brice, & Weinstock, 2008). When the measure is simple and easy to use, the actual act of screening is not considered a burden (Bendsten, Holmqvist, & Johansson, 2007). It should be noted that these initial findings were obtained during the research phase and may not apply when research personnel are no longer present.

In comparison with the success observed with the alcohol screening measure, there is significant pessimism in regards to screening for other mental health issues or suicide risk. As discussed previously, the U.S. Preventive Services Task Force was unable to make a recommendation regarding screening for suicide risk in the primary care setting (U.S. Preventitve Services Task Force, 2004). The reasons cited included the complexity of suicide

risk assessment, the limited evidence that the results of the screen would lead to follow-up, and a general lack of research on the topic. The same concerns appear to be relevant in the ED setting, where there are more patients and patients are generally presenting with more acute/urgent/emergent issues. Additionally, previous research has shown that busy ED physicians may fail to incorporate the results of suicide screening into their treatment plan. Post-discharge review of medical records of screened patients with concealed psychiatric conditions revealed that ED doctors rarely used the diagnostic information (Schriger, Gibbons, Nezami, & Langone, 2001). To add to the complexity, there is no evidence that any screening measure for the ED would reduce suicide risk or prevent the act of suicide (U.S. Preventitve Services Task Force, 2004).

Fortunately, research is currently being conducted to evaluate the feasibility and outcomes of suicide risk assessment in the ED through the Emergency Department Safety Assessment and Follow-up Evaluation (ED-SAFE). The ED-SAFE was a quasi-experimental study designed to assess whether a practical approach to universally screening in the ED leads to improved risk detection, and if a multi-component intervention delivered during and after the ED visit improved suicidal outcomes. The study included 1,440 suicidal patients from 8 ED's nationally who were enrolled in three phases of data collection (480 patients/phase): 1) Treatment as Usual, 2) Universal Screening, and 3) Intervention. The goal of phase 1 was to gather baseline detection data to serve as a control for the second phase. For phase 2, an instrument was created for universal screening purposes. During this phase sites incorporated the measure into standard clinical protocols. At all sites the primary treating nurse conducted the assessment rather than the triage nurse. The triage nurse often has a limited amount of time available and the triage environment is not conducive to asking questions of a sensitive nature.

The primary nurse has more time with the patient in a treatment area that is generally secluded which allows for the opportunity to build rapport and is more likely to result in honest responding. During phase 3, sites continued to use the screening measure as they did in the previous phase. The treating physician further evaluated patients who screened positive, which was consistent with current clinical practice. Additionally, the treating physician was encouraged to use a secondary screening measure consisting of an overview of suicide risk factors to assist in the decision to consult a mental health specialist. This secondary screening measure was created for the study and consisted of well-known risk factors, such as suicidal intent or plan, previous hospitalizations, substance use, and agitation. The risk factors included were selected based on a review of the literature to identify the most consistent predictors of risk among ED patients. All individuals who screened positive, regardless of whether they received a mental health consultation or not, received a printed safety plan that included community resources and hotline numbers. The safety plan was designed to be completed by the patient rather than guided by the therapist and consists of early warning signs of suicidal behavior, coping sources, and other items of that nature. After the ED visit, eligible participants participated in a telephone-based intervention intended to reduce suicidal behavior and help promote engagement in outpatient care. Of the providers included in the study, 1,289 (71% response rate) completed a survey after each phase. Between phases 1 and 3, increasing numbers of nurses reported screening for suicide and an increased number of physicians reported further assessment for suicide risk. A greater number of providers did report that universal screening would result in more psychiatric consultations, but a decreased proportion endorsed the opinion that it would slow down care. The findings collected from the surveys demonstrate the feasibility of implementing a universal suicide screen in emergency departments (Betz et al., 2015).

Education and training for clinicians. It has been established that improved education for clinicians related to depression recognition and treatment results in the reduction of suicide rates (Mann et al., 2005), the logic follows that improved education related to the management of suicidal attempts and ideation will yield similar results. Inadequate education and training is one of the largest obstacles to effective suicide prevention; with ED physicians, including psychiatrists and other mental health professionals, being under-trained in suicide prevention (National Action Alliance: Clinical Care & Intervention Task Force, 2011). In the past, calls for improved training of the mental health workforce on the national scale have been ignored (Institute of Medicine, 2006). The mental health field is comprised of clinicians from a variety of disciplines with each practitioner completing their own assessments, managing cases, and providing treatment. There is no mechanism to allow these disciplines to share curriculums or to ensure quality, and there remain vast disparities concerning best known practices and the actual services provided (Institute of Medicine, 2006). Because there is no uniformity of outcome measures, it is not clear if the programs that train mental health clinicians are adequate for treating suicidal patients. For psychiatry, programs largely do not offer opportunities for classes or conferences that are specifically devoted to suicide (Ellis & Dickey, 1998) and the Residency Review Committee has no requirement that suicide education be a core component of residency education (Fang et al., 2007). A 1998 survey of psychology internship programs described similar findings (Ellis & Dickey, 1998). A recent Institute of Medicine report suggested that these disparities spread farther than psychiatrists and psychologists and documented the variability and limitations discovered in the training of all categories of mental health professionals due to inadequacies in course design, curriculum, and continuing education (Institute of Medicine, 2006).

Suicide risk assessment is not considered one of the skills integral to practicing emergency medicine, despite suicide risk being identified by the American Board of Emergency Medicine as one of the fundamental core patient conditions associated with emergency medicine. There is a developing national agreement about including suicide competency in curricula for providers who will be working with populations at increased risk for suicide. The American Association of Suicidology developed the program "Assessing and Managing Suicide Risk: Core Competencies for Mental Health Professionals" which is designed around 24 clinical core competencies. This program involves one day of face-to-face clinical training intended to increase knowledge of competencies, improve skills, and change attitudes about and approaches to working with patient at risk for suicide. For the probable future, emergency room clinicians will be best served by collaborating with mental health professionals when they are treating a suicidal patient. That is not to say that there is any evidence that mental health professionals are the best equipped to, or the only health providers that can, work with suicidal patients. There may be an opportunity, and a need, for other professionals to fill the gaps in the health care system in regards to suicide management.

Outcomes Research

Emergency department recidivism. Overcrowding is a common problem in many emergency departments, with repeated ED users being responsible for a disproportionate number of visits (Huang, Tsai, Chen, Hu, & Yang, 2003; Malone, 1995; Okuyemi & Frey, 2001). These repeated users, or "recidivists" account for 18% of total visits despite only representing 4% of ED patients (Huang et al., 2003). The prevalence of psychiatric illness is very high among the recidivist population (Andren & Rosenqvist, 1985; Lang et al., 1997), with 11% presenting with a psychological issue compared to 1% of patients in the control group, and substance use in 38%

of the recidivists compared to 6% in the control (Byrne et al., 2003). Suicidality was also found to be a factor related to recidivism (Hall, O'Brien, Stark, Pelosi, & Smith, 1998; U.S. Department of Health and Human Services, 2001). One study considered 234 patients that presented to an ED with a psychiatric chief complaint who were evaluated by a licensed clinical social worker. Of the patients included in the study, 92 expressed suicidal ideation or reported a recent suicide attempt, while the other 142 presented with non-suicidal psychiatric complaints. For a control group, 300 medical and trauma patients without psychiatric complaints were selected. Admission rates for the psychiatric patients were higher at the initial visit as compared to the control group, but this was not statistically significant. The 30-day return visit rate for the psychiatric patients who were discharged from the ED was significantly higher than that of the control group, 21% of psychiatric patients versus the 13% of the control group. Those that were admitted amongst the psychiatric group were less likely to return to the ED within 30 days of the initial visit. Return rates were also compared between the patients reporting ideation and those with other psychiatric complaints. Roughly 31% or suicidal patients versus 20% of non-suicidal patients were admitted at the initial visit. Suicidal patients that were discharged were not more likely to return within 30 days nor to be admitted at a return ED visit (Madsen et al., 2009).

There are several possible explanations for increased recidivism among those with psychiatric complaints, one being that this patient population faces decreasing access to inpatient and outpatient psychiatric services and have to rely on the ED for their sole point of access. It has been found that recidivists use other sources of medical care at a higher rate than the general population (Byrne et al., 2003), meaning that this population not only needs more care but seeks it out as well. High mortality rates have been linked to rates of recidivism, with one five-year follow-up study finding completed suicide as the cause of excess mortality in 37% of females

and 44% of male deaths among suicidal emergency patients (Ostamo & Lonnqvist, 2001). The risk of completing suicide is 100 times greater than average during the 12 months following an attempt (Madsen et al., 2009), signifying that an immediate repeat visit following an attempt needs to be treated with increased caution and attention to assessment. Further research is needed to identify psychiatric patients that would benefit from admission versus discharge as well as finding possible alternatives to the ED for psychiatric patients.

Outpatient and continuing care. Just as recovery from a physical ailment requires multiple levels of care, so does the treatment for individuals at risk of committing suicide. To help ensure the safety of patients, communication across these levels is critical and the delivery of care must be comprehensive and continuous until the risk is eliminated (National Action Alliance: Clinical Care & Intervention Task Force, 2011). Each setting plays a critical role in ensuring that the other levels of care have the information and resources needed in order to keep the patient safe. Treating the physical manifestation of suicidal behavior in the ED and then discharging the patient with a plan to seek therapy is not enough to maintain the patient's safety. To highlight this point, the risk of suicide attempts and completion is highest within the first 30 days after discharge from the ED or inpatient unit, but as many as 70 percent of suicide attempt patients do not attend their first outpatient appointment (Suicide Prevention Resource Center, 2013). These findings reinforce the understanding that access to clinical treatment and continuity of care after discharge is critical for suicide prevention.

One study examined the impact that outpatient commitment had on outcomes and quality of life. Outpatient commitment, the involuntary treatment of individuals with mental health disorders living in the community rather than on an inpatient unit (Swanson et al., 2013), has been criticized in the past, with claims that only voluntary treatment will be effective and

outpatient commitment is a form of legal coercion (Phelan et al., 2010). The study examined two groups both attending the same outpatient facilities, one of which was composed of individuals who were recently mandated to participate in outpatient care. Violence perpetration and suicide risk were lower, and illness-related social functioning was higher in the outpatient commitment group than in the comparison group (Phelan et al., 2010). Another study found that outpatient commitment reduced hospitalizations among individuals with severe mental illness, and that individual's experienced improved hospital outcomes if the outpatient commitment went beyond that of the initial court order (Swartz et al., 1999). These findings indicate that outpatient care is linked to better outcomes, but the barrier is in having the patient adhere and attend to the outpatient treatment.

Outreach and bridging strategies are interventions that are meant to help ease the transition for a patient to outpatient treatment. Outreach refers to various methods of contacting the patient and bridging involves bidirectional access between two providing locations. Reducing the time between inpatient and outpatient facilities works to increase adherence rates; as well as next-day appointments, telephone contact, and intensive follow-up treatment (Frederick, Caldwell, & Rubio, 2002; Oordt et al., 2005). Beginning outpatient treatment before discharge helps to ensure the continuity of care (Boyer, McAlpine, Pottick, & Olfson, 2000). Continuing to contact the patient and the outpatient facility to confirm attendance also is a method for improving adherence (Torrey, 2008).

Continuing care can be an involved and time-intensive process for a provider, but not every method requires extraordinary effort. Previous studies have shown that a simple expression of concern and interest by a provider to an at-risk patient at the time of discharge from the ED improves the chances that the patient will attend the first outpatient treatment appointment

(Knesper, 1982). Attendance rates are also improved if providers call the outpatient facility to schedule the appointment as well as following up to make sure the patient arrived (Torrey, 2008).

Continuity of care reduces the risk of suicide (King et al., 2001), and each of the previously mentioned studies achieved some level of success, but improvements across baseline rates varied considerably as did the factors specific to the studied populations (i.e., type of illness, health system characteristics). Across all studies the baseline rate of follow-up success is about 50 percent, but for these outreach and bridging strategies described, improvement over the baseline rate ranged from 10 percent to 80 percent with 43 percent being the average (Knesper, 2010). Continuity of care many times does not live up to its name with a lack of access and cooperation across the points of treatment. Outpatient facilities need to be able to provide treatment options relatively rapidly upon discharge in order to reduce suicide risk.

Despite the methods of improvements noted above, patients that do follow-up often receive less than ideal care and as a result drop out of treatment soon after the first appointment. It is common for the receiving clinician to not have any knowledge of the patient's experience at the ED or psychiatric unit, or to not even receive a discharge summary (Knesper, 2010). The patient often has to provide their clinical history which can be an extremely painful experience, only to have the clinician acknowledge that the patient might be better suited to work with another provider (Krulee & Hales, 1988). It is common practice for a new provider to conduct his/her own evaluation, but there is a significant difference between intake with and without access to information about the new client's history (Knesper, 2010). The former type of intake is patient-centered and more likely to prompt a return visit. Disjointed care may leave a vulnerable patient feeling unimportant and unwanted, which can lead to continued clinical issues

and risk of suicide (Appleby et al., 2001). In order to improve upon this pattern, clients and their families can be educated about reasonable expectations for mental health care and how and where to register complaints. A more comprehensive option would be to invest in research that creates accessible and exemplary systems of mental health care employing clinicians that can provide empirically-supported suicide prevention treatments (Knesper, 2010).

Emergency department providers are charged with managing high volumes of patients with a wide variety of conditions ranging from medical to psychiatric, and every possible combination of the two. Suicide risk assessment is an important area that requires heightened awareness on the part of the providers and staffs, but is fraught with challenges. Additionally, there is a paucity of data regarding the use of evidence-based screening and assessment paradigms in the emergency department environment. Ongoing research and education for emergency medicine physicians and clinical care staff is essential in order to improve patient safety and reduce suicide rates.

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