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# School-Based Suicide Prevention: A Framework for Evidence-Based Practice

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## Abstract

Suicide is the second leading cause of death among youth aged 10–25 years, and approximately one in six adolescents reported serious suicidal ideation in the past year (Centers for Disease Control and Prevention [CDC] in Web-based Injury Statistics Query and Reporting System (WISQARS). <http://webappa.cdc.gov/cgi-bin/broker.exe>, 2017). Schools are a unique environment in which to identify and respond to youth suicide risk, yet the research base for school-based suicide prevention programs is limited due to challenges with implementation and evaluation. The purpose of this article is to review best practice approaches and existing empirical support for school-based suicide prevention and to present a framework for how these efforts can be embedded within multi-tiered systems of support (MTSS). In line with the Substance Abuse and Mental Health Services Administration [SAMHSA] (Preventing suicide: a toolkit for high schools. <https://store.samhsa.gov/shin/content/SMA12-4669/SMA12-4669.pdf>, 2012) framework for suicide prevention in schools, the article overviews existing programs for student education, staff training, and screening, noting where these programs may be situated across tiers of intervention. This is followed by a review of school-related outcomes of existing suicide prevention programs, which highlights the limitations of existing research. Because there are only two school-based prevention programs with evidence for reducing suicide risk in students, the authors encourage school staff to implement best practice recommendations in collaboration with school mental health professionals who can provide ongoing evaluation of program effectiveness, as well as with researchers who are able to design and conduct outcome studies addressing the limitations of current research. Findings also underscore the need for greater integration of suicide prevention programming with existing school initiatives such as MTSS, which aligns with a growing focus in the field of suicide prevention on “upstream approaches.”

**Keywords** School · Suicide · Prevention · Intervention · Postvention · Best practice

Suicide is a preventable public health problem. According to the Centers for Disease Control and Prevention, 2428 youth aged 12–19 died by suicide in 2015, making it the second leading cause of death with a suicide rate of 7.25 per 100,000 ([CDC], 2017). Figure 1 shows variation in youth suicide rate by race, with the highest rate among American Indian/Alaskan Native youth, and the lowest rate among Black American youth.

In addition to differences by age and race/ethnicity, suicide rates vary by sex (i.e., males are more likely to die by suicide than females) and geography (i.e., rural youth are nearly twice as likely to die by suicide than urban youth) (CDC, 2017; Nance, Carr, Kallan, Branas, & Wiebe, 2010).

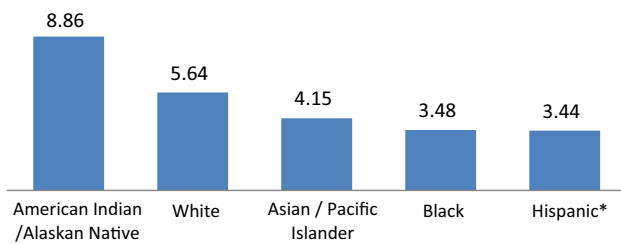
The trauma of losing a student to suicide, combined with the fact that suicidal ideation, planning and attempt are more common than suicide (Kann et al., 2016), makes schools an essential environment in which to identify and respond to youth suicide risk. The primary source of information on non-fatal suicidal thoughts and behaviors is the Centers for Disease Control (CDC) Youth Risk Behavior Surveillance System (YRBSS). The YRBSS is administered at the state and local level every other year in middle and high schools to monitor past-year risky behaviors that contribute to death, disability, and social problems among youth. The most recent data available suggested that in 2015, 17.7% of high

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**Fig. 1** Rate per 100,000 US suicides 0–24 years by race, 2015. *Note* Hispanic is not a stand-alone category. Hispanic includes white Hispanic and white non-Hispanic. Therefore, this rate cannot be directly compared to the other four racial groups. *Source:* Centers for Disease Control and Prevention (2017). *Web-based Injury Statistics Query and Reporting System (WISQARS)* (Fatal Injury Reports, 1999–2015, for National, Regional, and States [RESTRICTED]). National Center for Injury Prevention and Control. Retrieved from <http://webappa.cdc.gov/cgi-bin/broker.exe>

school students seriously considered attempting suicide, 14.6% planned their attempt, 8.6% attempted suicide, and 2.8% reported that their attempt required the medical attention of a nurse or doctor (Kann et al., 2016). Females are more likely to think about, plan and act than males. According to Kann et al. (2016), there were higher rates of suicidal ideation among females (23.4%) than among males (12.2%); planned attempts among females (19.4%) than among males (9.8%); suicide attempts among females (11.6%) than among males (5.5%); and suicide attempts with medical attention among females (3.7%) than among males (1.9%). Males die more often than females because males tend to use more lethal means such as guns and strangulation.

As shocking as these numbers are, Jerry Reed, past director of the Suicide Prevention Resource Center, reminds us that “behind every statistic is a tear” (J. Reed, personal communication, January 15, 2015). We start our review exploring the impact of suicidal thoughts and behaviors within the school community, and then, we organize our overview of what works and does not work for school-based suicide prevention using a three-tier model.

## Impact of Suicide Within the School Community

### Impact on Students

Although there is a well-established protective relationship between youth suicide risk and social connections with peers, parents, and school staff (Borowsky, Ireland, & Resnick, 2001; Marraccini & Brier, 2017), there is very little

empirical research on the impact of suicidal youth on other students. There are many factors that contribute to suicide risk among youth (see Erbacher, Singer & Poland, 2015 for a review), as well as empirically derived warning signs for youth suicide that educators should be familiar with (see <http://www.youthsuicidewarningsigns.org/>).

Suicide-related contagion is among the most well-studied and well-supported phenomena addressing how specific qualities of social ties are associated with suicide risk (De Luca, Wyman, & Warren, 2012). Contagion, whereby one suicide leads to another suicide attempt, is a significant concern in the event of an adolescent death, as those left behind to make sense of the loss begin to see suicide as a viable option in dealing with distress (Abrutyn & Mueller, 2014). Being at the center of a social network with greater exposure to depressed peers has been found to be associated with suicidal ideation (Fulginiti, Rice, Hsu, Rhoades, & Winetrobe, 2016). Research has also looked at the impact on students following a suicide death. Post-traumatic stress disorder (PTSD) among bereaved adolescents left behind after a suicide loss is associated with elevated levels of suicidality (Panagioti, Gooding, Triantafyllou, & Tarrier, 2015; Zisook, Chentsova-Dutton, & Shuchter, 1998). Students who have lost a friend to suicide are 3.7 times more likely, and those losing an acquaintance are 2.2 times more likely, to report suicidal ideation (Song, Kwon, & Kim, 2015).

### Impact on School District Staff

School staff members face enormous pressure both in preventing youth suicide by recognizing warning signs early and in the aftermath of a suicide. They may be responsible for announcing a suicide death to their class, answering student and parent questions, and determining what to do with the “empty desk,” all while possibly experiencing their own grief reactions (Erbacher et al., 2015). Research by Bolnik and Brock (2005) found that over 90% of school psychologists reported one or more negative reactions after doing crisis intervention work, with fatigue and exhaustion being the most frequently reported, followed by increased sensitivity, anxiety, and difficulty concentrating. While performing crisis-related activities, other job responsibilities often accumulate, creating stress that may impact health, family and social relationships (Brock et al., 2016). Furthermore, as devastating as a suicide death is for friends, family and the community (Cerel et al., 2016), school professionals are much more likely to encounter non-fatal suicidal behaviors as noted above in the results of the Youth Risk Behavior Surveillance (Kann et al., 2016).

## Impact of Suicide on Communities

Suicide often has a ripple effect, impacting not only the school but also neighbors, peers, coaches on community sports teams, members of religious communities, and any other organizations a student or their family members may be involved in. Although early research estimated six people were affected by a suicide death (Shneidman, 1973), it has more recently been suggested that each suicide death affects 135 people, with 25 reporting significant and persistent distress (Cerel et al., 2016).

## Identifying Empirically Supported Suicide Prevention Programs for Children and Adolescents

Consistent with the other articles in this special issue, the information in this review is organized by student, classroom, and district level; preschool, elementary, middle, and high school level; and social and academic contexts. Although schools are an ideal location for addressing youth suicide risk, research on school-based suicide prevention programs has been limited by methodological problems, including the challenge of establishing control conditions, establishing suicide-related outcomes, and identifying the mechanisms of change. The purpose of this article is to review best practice approaches and existing empirical support for school-based suicide prevention programs. Although intervention and postvention (i.e., actions taken after a suicide to address grief and prevent subsequent suicide) are essential to reduce suicide risk in schools, this article reviews prevention programs because they are the primary focus in schools and because a more comprehensive review of prevention, intervention, and postvention would exceed page limits. However, intervention and postvention programs are noted as they are essential to reduce suicide risk in schools. For more information on psychosocial interventions for youth, please see Caelear et al.'s (2016) review. For more information about best practices for postvention, please see Erbacher et al.'s (2015) text for practitioners.

We used a three-step process to identify the evidence-based programs discussed in this review. First, we searched electronic databases (PsycINFO and PubMed) for meta-analyses, systematic reviews, and narrative reviews of prevention and intervention programs in schools and for school-aged youth. The initial search identified 16 articles, some of which addressed interventions, since some scholars consider prevention programs that target at-risk groups interventions and others consider them prevention programs (Amitai & Apter, 2012; Berman, 2009; Brent et al., 2013; Brock et al., 2016; Caelear et al., 2016; Corcoran, Dattalo, Crowley, Brown, & Grindle, 2011; Daniel & Goldston, 2009;

Evans & Hurrell, 2016; Harlow, Bohanna, & Clough, 2014; Katz et al., 2013; Macleod, Nada-Raja, Beautrais, Shave, & Jordan, 2015; Marraccini & Brier, 2017; Miller, Eckert, & Mazza, 2009; Robinson, Hetrick, & Martin, 2011; Wyman & Upstream Suicide Prevention Workgroup, 2012). Next, we identified and reviewed school-based suicide prevention research that is more recent than published meta-analyses, and systematic and narrative reviews. Finally, we compared programs identified in the empirical literature to the “best practice” registries through SAMHSA’s National Registry of Evidence-based Programs and Practices (<https://www.samhsa.gov/nrepp>) and the Suicide Prevention Resource Center’s (SPRC) evidence-based prevention registry (<http://www.sprc.org/keys-success/evidence-based-prevention>). Throughout the text, we use the terms “evidence-based” or “best practice” to identify programs with the most rigorous empirical support. Although the term “promising” is used in several of the meta-analyses and systematic reviews to describe programs with good outcomes but which lack the gold-standard randomized control trial, we have chosen not to describe programs as promising in order to avoid confusion about the level of empirical support.

## A Developmental Public Health Approach

In the past few years, scholars in the field of suicide prevention have considered “upstream” prevention approaches that address the reduction in risk factors and promotion of protective factors prior to the onset of suicidal behavior, thereby having the potential to reduce suicide rates at the population level (Wyman, 2014; Wyman & Upstream Suicide Prevention Workgroup, 2012). Schools have been identified as a key context within which to implement upstream suicide prevention programs (Wyman & Upstream Suicide Prevention Workgroup, 2012). According to Wyman (2014), an upstream approach to suicide prevention should incorporate programs during childhood and adolescence that build developmentally appropriate skills and supports, a goal shared by multi-tiered systems of support such as positive behavior interventions and supports (PBIS).

The public health approach for preventing suicide is organized as universal, selected, and targeted programs, which has been translated in the school literature as multi-tiered systems of support (MTSS) or primary (Tier 1), secondary (Tier 2), and tertiary (Tier 3) levels. Although the impetus to engage in district-wide suicide prevention efforts has typically followed the tragic death of a student and subsequent community response, a majority of states now mandate suicide prevention training for school personnel in some capacity (Kreuzer, Stecker, & Ruggiero, 2017).

Tiered models of prevention, drawn from the field of public health, are well researched and widely accepted

within schools through applications to both academics and behavior, with many of these efforts now being integrated given the known link between mental health and academic achievement (Taylor, Oberle, Durlak, & Weissberg, 2017; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). School-based suicide prevention programs, as well, have been embedded within multi-tiered frameworks that have identified interventions at the universal (Tier 1), selected (Tier 2), and indicated (Tier 3) level (Miller et al., 2009; Miller, 2010; Erbacher et al., 2015). According to these models, Tier 1 programs address all students within the school population, regardless of whether they are at risk of suicide, while Tier 2 programs help to identify and support students that may be at risk of suicide and Tier 3 programs target high-risk students with current or prior history of suicidal behavior (Miller et al., 2009). Postvention in the aftermath of a student death by suicide warrants the implementation of supports and activities at each of the three tiers, yet can be considered as part of Tier 3 since this response would not be initiated outside of a tragic loss.

### PreK and Elementary School

Given that there were 46 reported suicide deaths out of 36,732,889 youth age 3–11 (CDC, 2017), most school staff at the PreK or elementary school level will never have a student die by suicide. However, anecdotal reports and empirical studies with non-generalizable samples tell us that most elementary school mental health professionals do work with suicidal youth (Singer & Slovak, 2011). Recent studies that have begun to examine trends and risk factors for suicide in elementary-aged students suggest a need for developmentally appropriate suicide prevention programming for this population (Bridge et al., 2015; Sheftall et al., 2016).

While there are no “suicide prevention” programs for PreK or elementary school students, there is one classroom management intervention, the Good Behavior Game (Wilcox et al., 2008), that examined suicide-related outcomes. The Good Behavior Game (see Table 1) is a universal classroom management intervention designed to socialize first and second graders into the student role and reduce aggressive and disruptive behaviors. Although not designed to be a suicide prevention program, students who participated in the Good Behavior Game were found to be significantly less likely than students in the control group to report suicidal ideation or attempt suicide at long-term follow-up (Wilcox et al., 2008).

### Middle School and High School

Rates of suicidal ideation tend to peak in middle school, but rates of suicide attempt and death continue to rise through high school (CDC, 2017; David-Ferdon et al., 2016). Nearly

all suicide prevention programs have been designed for and evaluated at both the middle and high school level. This is consistent with suicide prevention legislation and policies at the federal level such as the Garrett Lee Smith Memorial Act (2004), which targets youth and young adults between the ages of 10 and 24. The programs reviewed and discussed in each tier below therefore apply to both middle and high school students. To our knowledge, there are no suicide prevention programs that are exclusively for middle school students and not high school students. Because school-based suicide prevention programming is essentially non-existent at the PreK and elementary school level, and suicide prevention is essentially the same at the middle and high school, we have organized our review of suicide prevention programs using the public health framework of universal (Tier 1), targeted (Tier 2), and indicated (Tier 3) prevention.

Table 1 delineates these programs at the universal, targeted, and indicated level of concerns, and programs with control group studies reporting on suicide-related outcomes are identified with an asterisk. There were no programs evaluated through a randomized controlled trial (RCT) at the targeted (Tier 2) or indicated (Tier 3) level.

### Tier 1: Universal

The majority of existing suicide prevention programs in schools are universal, targeting the entire student population. This occurs primarily through the training of school personnel and students to be “gatekeepers.” These trainings teach risk factors, warning signs, and help-seeking behaviors, should students be concerned about themselves or a peer.

### Staff Education and Training

Gatekeeper training has been widely studied in the field of suicide prevention, and while most of these trainings were developed for the general population, several have been evaluated with teachers and other school personnel (Wyman et al., 2008; Shannonhouse, Lin, Shaw, & Porter, 2017). SAMHSA (2012) recommends that all adults within the school community be trained to identify an at-risk student, respond effectively, and refer the student to an appropriate staff member (e.g., school mental health professional) for follow-up. Most evaluations of gatekeeper training programs within school settings have focused on middle and high school teachers (Wyman et al., 2008), although some programs, such as Applied Suicide Intervention Skills Training (ASIST) have been implemented with a K-12 audience including teachers, administrators, and school mental health professionals (Shannonhouse et al., 2017).

As shown in Table 1, existing gatekeeper training programs that have been evaluated with school staff have varied in duration, ranging from 1 h to 2 days, and modality,

**Table 1** Summary of best practices in school-based suicide prevention

Universal Level (e.g., whole district/school/classroom)	Evidence-based approach	Program type	Who implements?	Age range targeted	Settings for implementation	Timing of intervention
	Question, Persuade, Refer (QPR)*	Staff education and training	Trained QPR Instructor	Middle and high school personnel	School-wide	90 min
	Applied Suicide Intervention Skills Training (ASIST)	Staff education and training	Certified ASIST Trainers	K-12 school personnel	School-wide	2 days (14 h)
	Kognito At-Risk for High School and Middle School Educators	Staff education and training	Online modules	Middle and high school personnel	School-wide	50 min (middle school) 60 min (high school)
	Good Behavior Game* (GBG)	Student education/programming	Teachers, with training	1st and 2nd grade students	Classroom	10 min, 3X/week with increasing frequency and duration over a 2-year period
	Signs of Suicide (SOS)*	Student education/programming; Screening	Trained school personnel (i.e., mental health professionals, health teachers)	Middle and high school students	Classroom	90-min all staff presentation; 60-min caregiver training; 1 class period session for students on two consecutive days
	Sources of Strength (SOS)*	Student education/programming	Certified SOS trainers provide initial training to adult advisors and peer leaders; adult advisors then facilitate peer leader meetings	Middle and high school students	School-wide	4–6 h of training for adult advisors; 4 h of training for peer leaders; 1 h of gatekeeper training/orientation for school staff; 4 months of school-wide messaging
	Youth Aware of Mental Health Programme (YAM)*	Student education/programming	Trained YAM Instructor	14–16 year-old students (Note: European study; does not use MS/HS)	Classroom	5 h in 4 weeks (i.e., 3 h of role-play; 2 1-h interactive lectures)
	The American Indian Life Skills Development curriculum (AILSD)	Student education/programming	Teachers working with community resource leaders and representatives of local service agencies	High school students	Classroom	30 weeks, with lessons delivered 3X/week
	Linking Education and Awareness of Depression and Suicide (LEADS)	Student education/programming	Teachers	High school students	Classroom	3 h (one hour per day over 3 days)
	Lifelines Curriculum	Student education/programming	Health teachers or school counselors	Middle and high school students	Health class	4 45-min lessons or 2 90-min lessons

Table 1 (continued)

Targeted Level (At-risk or sub-clinical)	Evidence-based approach	Program type	Who implements?	Age range targeted	Settings for implementation	Timing of intervention
	Care, Assess, Respond, Empower/Coping and Support Training (CARE/CAST)	Student education/programming	School staff	High school students	School/small group setting with at-risk students	12 55-min sessions over 6 weeks
	Reconnecting Youth (RY)	Student education/programming	Trained school staff	High school students	Schools/small group setting for students at risk of school failure or dropout	One class period daily for one or two semesters
Indicated Level (Students with targeted concern)	Attachment-Based Family Therapy*; Cognitive-behavioral therapy for suicide prevention*; Dialectical behavior therapy for adolescents*	Treatment	Outpatient therapist (not school staff)	Adolescents (Note: studies were conducted in community settings, therefore classified by age, not school level)	Community mental health clinic	Varies, but typically 1–2X per week
	PREPaRE	Staff education and training	Trained staff (e.g., school psychologist and members of the school crisis team)	Standardized process for elementary, middle, and high school students; response is differentiated based on developmental level	Individual, class-wide, school-wide or district-wide as needed, with universal, secondary, and tertiary interventions	Varies, depending on the nature of the crisis, the level of intervention required, and given the multiple steps involved

An asterisk indicates interventions with evidence of effectiveness based on high-quality research, listed first under each tier. There are several additional interventions with promising preliminary evidence that are included here for reference purposes, as well as other programs listed on SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP) which have a questionable evidence base because (a) the evidence is from unpublished manuscripts; and/or (b) systematic reviews have called into question the quality of published evidence

with both online and live training options available. Most gatekeeper trainings provide information about common suicide myths, risk factors, and warning signs and provide a strategy or approach for responding effectively. For instance, Question, Persuade, Refer (QPR) teaches a 3-part strategy for intervening (Wyman et al., 2008), while ASIST teaches a 6-step, 3-phase approach (Ewell Foster et al., 2017), the “Pathway for Assisting Life” (PAL) model (Shannonhouse et al., 2017). Most gatekeeper trainings also provide an opportunity for behavioral rehearsal through role-play, which, while described as one of the more effective elements of these trainings (SAMHSA, 2012), has not consistently led to improved skills with regard to identification of suicidal youth (Wyman et al., 2008). The value of role-playing in identification and referral could be a function of the length of the training. For example, a study by Condrón et al. (2015) found that significantly more youth were identified as at risk of suicide and referred to services by staff who received longer trainings (e.g., ASIST) than by staff who received shorter trainings (e.g., QPR or SafeTalk).

### Student Education

Universal suicide prevention programs for students can incorporate awareness activities, curricula, and/or skill building focused on healthy coping and other known protective factors for suicide, such as building problem-solving skills and promoting connectedness (Stone et al., 2017). The literature has primarily examined more structured programs and interventions designed for middle and high school youth (see Table 1). One of the most widely researched programs, Signs of Suicide, offers a universal curriculum to raise awareness of suicide and related issues, teaches students to respond immediately to “signs of suicide,” and screens for depression and other risk factors associated with suicide (Aseltine, James, Schilling, & Glanovsky, 2007). Other programs designed for students offer content similar to Signs of Suicide (without the screening component) but have been evaluated less rigorously, such as Linking Education and Awareness of Depression and Suicide (LEADS) and the Lifelines Curriculum (see Table 1). Some of these programs have also been designed to target youth known to be at increased risk of suicide, such as American Indian Life Skills Development (Lafromboise & Lewis, 2008), which was developed with the people of the Zuni Pueblo to teach middle and high school American Indian youth how to intervene in a suicidal crisis.

The Sources of Strength program has taken a different approach to suicide prevention, focusing more on health promotion and the enhancement of protective factors (Wyman et al., 2010). Adult advisors in the Sources of Strengths program identify and recruit peer leaders who are empowered to share health promotion messages among their peers. Another

program that seeks to empower youth to engage in reflection and discussion around issues of stress, mental health, and suicide is the Youth Aware of Mental Health Programme (YAM). Although not used in the USA, the YAM program has been evaluated in a large-scale study in Europe (Wasserman et al., 2015). As with the other programs reviewed in this section, outcomes are discussed below.

Recent focus on upstream suicide prevention (Wyman, 2014) suggests that the implementation of Social and Emotional Learning (SEL) programs at the universal level, starting in PreK and elementary school, may be a critical approach to reducing suicide rates. Building students’ social-emotional skills has been found to significantly impact student social-emotional functioning, mental health, and well-being across contexts, with findings sustained over time (Durlak et al., 2011; Taylor et al., 2017). Universal interventions such as these may prevent the development of significant risk factors for suicide, while promoting protective factors from a young age. Except for the Good Behavior Game (Wilcox et al., 2008), there is no empirical support that early SEL programming reduces suicidal thoughts or behaviors.

### Screening

Screening for suicide and related risk factors is key approach to increase identification and referral of youth at risk of suicide, and ultimately, for youth to follow-up with recommendations for mental health treatment. Screening for suicide risk or associated risk factors may occur universally with the entire student population or selectively with students already known to be at risk and generally involves a two-step process, where students identified as being at risk after completing a screen are then interviewed further (Katz et al., 2013; Robinson et al., 2013). Best practices for school-based screening for behavioral health and suicide risk have not been established, but discussion in the literature has focused on the feasibility of screening, selection of an appropriate screening tool, and the accessibility of referral options for identified students, among other considerations (Katz et al., 2013; Robinson et al., 2013). While universal behavioral health screening may be a way to identify students *before* they exhibit suicidal thoughts and behaviors, in line with upstream approaches, there are currently no universal screening measures for suicide and/or broader behavioral health issues listed on the NREPP. Only one evidence-based suicide prevention program implemented at the universal level includes a screening component—Signs of Suicide (Aseltine et al., 2007). Within this program, screening is administered in conjunction with student education, rather than as a stand-alone approach. Screenings conducted through Signs of Suicide are anonymous, and students are



encouraged (but not required) to seek help when scoring reveals a positive screen (Aseltine & Demartino, 2004).

Universal screening for social, emotional, and behavioral concerns, however, is an established practice through multi-tiered systems of support such as response to intervention (RTI; Brown-Chidsey & Steege, 2005), and many valid and technically adequate tools exist for schools to choose from. Upstream approaches to suicide prevention in schools may consider this practice as part of early identification of potential risk factors for suicide that with effective early intervention can decrease the likelihood that a student may develop a mental health condition. In fact, these types of universal screenings have been found to improve detection of children likely to benefit from early mental health intervention, with only those students in need being referred for more specialized treatment by mental health specialists (Essex et al., 2009).

## Tier 2: Selected

### Staff Education and Training

At Tier 2, staff education and training should focus on school personnel that are responsible for crisis preparedness and response, including school mental health professionals (i.e., school counselors, school psychologists, school social workers) and administrators. At this tier, the focus is on the identification of students that may be at risk of suicide, as well as the provision of appropriate supports and services for these students. Therefore, staff training at Tier 2 may also incorporate any training required for select staff members to provide small group instruction or run small group interventions.

School crisis plans and suicide prevention policies and protocols should be made available to all staff (at Tier 1), and training for those school personnel directly responsible for carrying out these plans should also occur, as most graduate programs provide no more than 4 h of training on suicide-related content (Debski, Spadafore, Jacob, Poole, & Hixson, 2007; Schmitz et al., 2012). It is essential that mental health staff be trained specifically on screening and/or assessment procedures, as well as measures and forms utilized to ensure adequate understanding and comprehensiveness, whether these are formal, standardized measures or locally developed tools. Erbacher et al. (2015), for example, offer a detailed chapter explaining how to use their form both qualitatively and quantitatively, how to ask questions to ensure validity, and the importance of qualified mental health professionals being trained specifically in risk assessment. A note of caution is that while there is some evidence to suggest that workshop training in assessing and managing suicide risk is effective in improving knowledge and shifting attitudes, this type of preparation is not necessarily as beneficial in cultivating skill (Pisani, Cross, & Gould, 2011).

## Student Education

Suicide prevention programs for students at Tier 2 target those students that may be at increased risk of suicide, possibly because they have been identified at risk through prior screening and/or assessment, or because they possess known risk factors for suicide. Two such programs that are similar in structure, goals, and target population are Reconnecting Youth (RY) and Coping and Support Training (CAST). These programs target youth that are at risk of school failure or dropout, in addition to suicidal behavior. They provide small group training on life skills and offer peer social support resources (Randell, Eggert, & Pike, 2001; Eggert & Herting, 1991; Eggert, Thompson, Herting, & Nicholas, 1995). The main difference between these interventions is duration (see Table 1).

### Screening and Assessment

Indicated suicide screening is considered Tier 2 because students would not be screened until some action or behavior gave an indication to a staff member that a student might be thinking about suicide. School district policies should specify who is qualified to conduct the screening and that school staff members know where to refer students should they be concerned. Suicide screens can utilize more formal, validated measures such as the Columbia Suicide Severity Rating Scale (Posner et al., 2011) or involve a series of simple questions, such as “are you having, or have you had, thoughts of suicide?” Students who screen positive for suicide risk should be referred for a comprehensive risk assessment.

All school mental health professionals have the ethical and practical responsibility to conduct suicide risk assessments (Pisani et al., 2011). Shea (2002) suggested the following elements be concluded in the assessment for comprehensiveness: assessing risk and protective factors; identifying suicidal ideation, intent, and plan; and combining the information into a clinical, or risk, formulation. Recent research also recommended assessing for fearlessness about death, persistence through pain and distress, knowledge about and access to lethal means, and experience with self-inflicted injury because of their relationship to increased capacity to die (Klonsky, Qiu, & Saffer, 2017).

## Tier 3: Indicated

### Staff Education and Training

At Tier 3, staff education and training should focus on equipping school mental health professionals and other key personnel to intervene with students identified at high risk of suicide and to respond to the tragic event of a suicide

attempt or death. Thus, training at this tier might emphasize individualized interventions such as safety planning, procedures, and strategies for the ongoing monitoring of students upon reentry after hospitalization, and postvention, or the response to a suicide death.

As exposure to a suicide loss increases the risk that an adolescent will attempt suicide (Hart, 2012), it is imperative that schools and districts include best practice postvention procedures in their crisis plans. The PREP<sub>a</sub>RE Model of Crisis Intervention, developed by the National Association of School Psychologists (NASP), is a research-based model for crisis prevention, preparedness, response, and recovery (Brock et al., 2016). While this model actually presents strategies for all three tiers of the framework described throughout this paper, the primary focus of the PREP<sub>a</sub>RE model is to prepare for potential crises with research-based postvention strategies, thereby fitting within the current framework as a Tier 3 intervention. According to the PREP<sub>a</sub>RE Model, key staff members within the school trained in this approach are equipped implement universal, selected, and indicated strategies in the event of a crisis, such as a death by suicide. **Tier 1** strategies would include prevention of psychological trauma, reaffirmation of physical health, ensured perceptions of security and safety, evaluation of psychological trauma, reestablishing social supports systems, informational bulletins, flyers, and handouts, classroom meetings, and caregiver trainings. Postvention interventions at the **Tier 2** level, according to this model, include student psychoeducational groups, individual crisis intervention, and classroom-based crisis intervention. Finally, when indicated, **Tier 3** strategies are those therapeutic interventions needed by students to recover and heal after exposure, whether direct or indirect, to a traumatic incident (Brock et al., 2016).

### Student Education (Intervention and Treatment)

Students at high risk of suicide require individualized interventions, which may include school-based counseling, safety planning, and referrals to community agencies or providers for treatment. Safety planning is an essential and often overlooked component of suicide prevention in schools and should be incorporated within the school's crisis procedures. Similar to suicide screening and risk assessment methods, various forms and procedures exist, including a mobile app called Safety Net. While safety planning has been more extensively used within clinical settings, it is a simple and brief intervention that can be implemented by a school mental health professional in collaboration with the youth and family members and made specific to the school context. Safety plans should include the student's triggers/warning signs (specific behaviors, negative thoughts or mood); internal and external coping strategies; agreement to limit access to suicide means; and steps to take for help should a

student become in crisis (Erbacher et al., 2015; Stanley & Brown, 2012). There is strong evidence for the importance of restricting access to lethal means (Zalsman et al., 2016). Parents should be involved in the safety planning process and agree to take responsibility to restrict access to household medications, guns, knives, or other means that the youth has identified in their suicide plan.

Providing ongoing treatment to students with suicidal thoughts and behaviors is typically outside the scope of a school mental health professional's role. School staff should be aware of local behavioral and mental health agencies that work with suicidal youth or those grieving the loss of a loved one to suicide so that referrals can be made quickly. It is not enough to know who the community mental health providers are; school staff should know which therapists have been trained in the treatment and management of suicidal youth, including treatments with empirical support, such as attachment-based family therapy (ABFT; Diamond et al., 2010), dialectical behavior therapy for adolescents (DBT-A; Freeman, James, Klein, Mayo, & Montgomery, 2016), or integrative cognitive-behavioral therapy (Singer, O'Brien, & LeCloux, 2017).

### Screening and Monitoring Suicide Risk

Contrary to the common myth that youth suicide is impulsive and there is nothing we can do about it, most suicidal individuals (youth and adult) plan their suicide attempts in advance (Smith et al., 2008). Indeed, the average length of time between first serious thought of suicide and first suicide attempt is approximately 1 year (Nock et al., 2013). While more impulsive responding to adverse events may play a greater role in suicide risk of elementary school-aged youth, mood disorders (i.e., depression/dysthymia) are a more salient risk factor for early adolescents (Sheftall et al., 2016). Research on adult suicide attempt survivors found that people started thinking about suicide and making a plan up to 5 years before their suicide attempt, but that the final steps, including settling on a method and place, most often occurred within days or hours of the suicide attempt (Millner, Lee, & Nock, 2017). This research is a call-to-action for school mental health professionals to continuously monitor for changes in youth suicide risk (Erbacher et al., 2015) and evaluate whether interventions, such as safety plans, are effective. Pisani, Murrie and Silverman (2016) note the fluid nature of suicide risk that may change in response to certain events and suggest that clinicians assess any potential changes that may exacerbate risk. As suicidal thoughts and behaviors often ebb and flow, clinicians need an effective way to identify these fluctuations (Millner et al., 2017). Therefore, this may be considered a Tier 3 prevention approach, with students already identified as at risk of suicide. Erbacher et al. (2015) developed a Suicide

Monitoring Tool (SMT) to assist clinicians in identifying when suicidal thoughts and behaviors might be increasing in intensity, frequency, or duration. Although the SMT has not yet been empirically evaluated, the SMT addresses the need to monitor suicide risk noted by Millner and colleagues (2017) because data can be collected (self- or clinician administered) as frequently as needed. See Erbacher & Singer (2017) for more information about the conceptual and empirical basis for the development of the SMT.

## Outcomes of Suicide Prevention Programs

### Overview of Outcomes Impacted by Evidence-Based Interventions

Most youth suicide prevention programs have targeted suicidal thoughts and behaviors (e.g., ideation, attempts, deaths), with reduction in these direct outcomes considered the primary goal (Katz et al., 2013). It is challenging to study these outcomes given that suicide deaths are rare among youth, and data collection on ideation and attempt often relies upon self-report (Wei, Kutcher, & LeBlanc, 2015). Several systematic reviews have examined these outcomes for school-based interventions, as well, although conclusive findings on overall outcomes are largely limited by methodological issues (Bennett et al., 2015; Calear et al., 2016; Katz et al., 2013; Robinson et al., 2013).

While no school-based interventions have been documented to decrease youth suicide deaths through randomized controlled trials (Bennett et al., 2015), several have demonstrated efficacy in reducing suicide attempts and ideation (Calear et al., 2016; Katz et al., 2013; Wasserman et al., 2015). Two student-centered interventions, the Good Behavior Game (Wilcox et al., 2008) and Signs of Suicide (Schilling, Aseltine, & James, 2016), described in the previous section and included in Table 1, are among the most widely recognized in the school-based suicide prevention literature. The Good Behavior Game has been found to significantly reduce the incidence of suicide attempts and ideation at long-term follow-up of 19–21 years of age (Wilcox et al., 2008). The intervention provides students with opportunity for social integration and acceptance, which was found to mediate this outcome, particularly for highly aggressive and disruptive youth (Newcomer et al., 2016). Research has shown that middle school youth participating in Signs of Suicide were significantly less likely to report suicidal behaviors than controls and demonstrated improved knowledge about suicide and suicide prevention (Schilling, Lawless, Buchanan, & Aseltine, 2014). High school students had similar results, as well as significantly fewer suicide attempts among those who participated in Signs of Suicide compared to controls (Schilling et al., 2016). However,

authors of systematic reviews have noted methodological limitations of research prior to the 2016 study (Katz et al., 2013; Kutcher, Wei, & Behzadi, 2016).

Although this review focuses primarily on US schools, Wasserman et al. (2015) conducted the Saving and Empowering Young Lives in Europe (SEYLE) study, a large-scale cluster-randomized controlled trial across 168 schools in 10 European countries. They compared the impact of teacher gatekeeper training (i.e., QPR), student curriculum (i.e., Youth Aware of Mental Health Programme [YAM]), student screening (i.e., ProfScreen), and a control group on suicide attempts at 3 and 12 months post-intervention. While no differences were found after 3 months, there were significant decreases in self-reported suicide attempts and severe suicidal ideation after 12 months for students who received the YAM intervention. More specific outcome data on QPR via a randomized controlled trial found that trainees reported significantly higher efficacy, with those reporting the lowest scores at baseline experiencing the greatest gains (Wyman et al., 2008). However, identification of at-risk youth increased most for those staff members that typically engaged youth in conversations about mental health or suicide prior to receiving the training, and no impact on youth access to mental health services at follow-up was found (Wyman et al., 2008).

Findings from these studies suggest that interventions designed to enhance students' skills may be particularly important for school-based suicide prevention efforts. In the case of the Good Behavior Game, interventions can be implemented in early elementary school, which is sooner than the target age for most suicide prevention programs, and prior to the onset of most suicidal thoughts and behaviors (Bridge, Goldstein, & Brent, 2006; CDC, 2017). It is important to note that some replications of the Good Behavior Game found weaker results, due in part to methodological limitations, but also underscoring the need for the intervention to be implemented with fidelity and ongoing support for staff (Wilcox et al., 2008). Signs of Suicide has also been criticized based on a lack of independent replications and measurement of long-term impact, as well as several other aspects of the studies' design (Wei et al., 2015). Furthermore, the SEYLE study has not yet been replicated, nor is YAM easily accessible to schools in the USA, as instructors must participate in a 4- and 1/2-day course to deliver the intervention.

### Help-Seeking

Despite other promising outcomes, Signs of Suicide has not consistently been found to impact help-seeking behaviors, although females were more likely than males to demonstrate help-seeking behaviors on behalf of themselves or a peer (Aseltine, Jr., et al., 2007; Aseltine & DiMartino,

2004). Additionally, staff gatekeeper training such as QPR has not been found to be sufficient for increasing help-seeking among youth at increased risk, including those that have made a prior suicide attempts (Wyman et al., 2008). This is consistent with findings from other studies where sex and risk status were identified as moderators to help-seeking, with males and at-risk youth reporting less willingness and lower incidence of help-seeking (Klimes-Dougan, Klingbeil, & Meller, 2013). While several additional universal prevention programs have sought to impact help-seeking behaviors, most have employed pretest–posttest designs without randomization or control groups, or have had sample sizes too small to establish them as evidence-based (Freedenthal, 2010; Strunk, King, Vidourek, & Sorter, 2014). Additional interventions examining help-seeking behaviors are recognized in SAMHSA's National Registry of Evidence-based Programs and Practices without published findings, such as the Lifelines Curriculum.

### Social

Schools are a natural setting for interventions targeting social outcomes such as help-seeking, connectedness, social support, and pro-social behaviors, since the essential components needed to achieve these outcomes are often already in place. Findings on the effectiveness of school-based suicide prevention programs targeting help-seeking attitudes and behaviors have been mixed (Aseltine et al., 2007; Freedenthal, 2010; King, Strunk, & Sorter, 2011; Klimes-Dougan et al., 2013; Wyman et al., 2010). In a review of 17 studies targeting help-seeking attitudes and behaviors, Klimes-Dougan et al. (2013) found limited evidence to support the overall effectiveness of a range of universal school-based prevention efforts including psychoeducational curricula, gatekeeper training, and public service messages. Findings of limited effectiveness, however, may be partly attributable to variability in intervention components, study design and measurement of help-seeking outcomes across studies (Klimes-Dougan et al., 2013).

Social connectedness may reduce risk of suicide by increasing psychological well-being and exposure to more adaptive social norms for coping and help-seeking (Wyman et al., 2010). Seeking help for oneself or a peer in the midst of a suicidal crisis is a crucial intermediary step in preventing suicide, and help-seeking attitudes and behaviors have been found to be negatively associated with suicidality (Klimes-Dougan et al., 2013). There are multiple barriers that interfere with students' willingness to seek help from others, and when youth do seek help, they generally turn to their peers (Klimes-Dougan et al., 2013). While developmentally appropriate, confiding in a peer does not necessarily provide at-risk youth with the support they need to overcome a suicidal crisis and, in fact, may place a burden

of “keeping a secret” on a well-intentioned peer. Social network analysis suggests that depressed and suicidal youth are more likely to be connected to other depressed and suicidal youth, limiting the number of “safe” peers in whom they could confide (Fulginiti et al., 2016). Even under structured and controlled environments such as hospitals, identifying a peer or adult support person has not been shown to reduce suicide risk (King et al., 2006, 2009). That said, there is some research to support the use of peer support in school-based suicide prevention (Wyman et al., 2010).

Altering students' attitudes about keeping peer suicidal behavior a secret has been examined as an outcome of several student-focused preventive interventions, including Sources of Strength (Wyman et al., 2010). Sources of Strength has been evaluated in one randomized control trial and was found to increase protective factors among peer leaders, including connectedness with adults, in addition to engaging these youth as change agents within their schools (Wyman et al., 2010). Trained peer leaders could significantly alter social norms and perceptions among the general population of students regarding the acceptability of help-seeking and availability of supportive adults to help suicidal youth, with this latter finding most salient for youth with a history of suicide ideation (Wyman et al., 2010). In contrast, the program was successful in getting peer leaders to reject the culture of silence, but that effect did not generalize to the school population as a whole. Trained peer leaders in the intervention condition were also 4 times more likely to refer a suicidal peer to an adult (Wyman et al., 2010).

### Academic

Although low academic achievement has been found to be associated with suicidality and depression (Thompson, Connelly, Thomas-Jones, & Eggert, 2013), few school-based interventions targeting suicide risk have examined academic outcomes. Reconnecting Youth has been found to increase students' GPA, in addition to impacting a range of other risk and protective factors for suicidal thoughts and behaviors (Eggert & Herting, 1991; Eggert et al., 1995). Reconnecting Youth has been evaluated in several studies and found consistent results, yet further evaluation may be warranted since these were not randomized controlled studies and lacked comparison group conditions (Katz et al., 2013; Miller et al., 2009).

### Other School-Related Outcomes

Many school-based suicide prevention programs have focused on student and staff knowledge of and attitudes toward mental health (e.g., depression) and suicide, including suicide myths, warning signs, and how to respond to someone in crisis (Aseltine et al., 2007; Katz et al., 2013;

Robinson et al., 2013). Though not directly linked with suicidal thoughts and behaviors, these outcomes are more immediate and easier to measure across a population of individuals exposed to prevention activities. In a systematic review of school-based interventions for suicide-related behavior, Robinson and colleagues (2013) found that a majority of studies examining these outcomes found improvements post-intervention, including Signs of Suicide for students (Aseltine et al., 2007), and QPR and ASIST for staff (Shannonhouse et al., 2017; Wyman et al., 2008). Findings on whether these gains are maintained over time are mixed (Robinson et al., 2013), and the extent to which they translate to other changes in behavior that can more directly impact youth suicide risk remains unclear. A related goal of gatekeeper training with school staff is to increase self-efficacy and confidence in one's ability to identify, engage, or work with suicidal youth, and gains in this area have been found across studies (Robinson et al., 2013). However, greater confidence in one's abilities does not necessarily increase identification and referral of youth at risk of suicide or subsequent mental health service access, behavioral outcomes that are the broader goals of many gatekeeper training programs (Wyman et al., 2008).

Screening has been shown to increase identification of at-risk youth, including youth that would not have been identified through another approach, yet rates of identification have been found to vary widely, from 4 to 45% of students screened (Robinson et al., 2013; Scott et al., 2009). Furthermore, Robinson et al. (2013) found through their review that follow-up referral rates sometimes exceeded 50%, underscoring the need for accessible treatment options. While no adverse effects of screening have been found (Gould et al., 2005), the benefits and feasibility of this practice warrant additional study, particularly with regard to universal screening for suicide and related risk and protective factors.

A small number of studies have looked at several other school-related outcomes, including attendance (Eggert & Herting, 1991) and school engagement (Wyman et al., 2010), as well as skills relevant to school success, including problem-solving (LaFromboise & Howard-Pitney, 1994; Lafromboise & Lewis, 2008; Randell et al., 2001) and executive functioning skills such as attention and self-regulation (Le & Gobert, 2015; Randell et al., 2001). The only school-based suicide prevention program to include school attendance as an outcome, Reconnecting Youth, did not find any impact on school attendance among youth at risk of academic failure and school dropout (Eggert & Herting, 1991). However, findings by Wyman and colleagues (2010) in their evaluation of Sources of Strength have led to greater focus on strengths-based interventions for school-aged youth that have the potential to change school culture. Several skill-based outcomes relevant to school success have been evaluated within the context of culturally adapted

suicide prevention programs for Native American youth and involve promising practices (e.g., mindfulness) and research approaches (i.e., engaging youth and communities, evaluating acceptability and feasibility) that have not been widely evaluated in relation to school-based suicide prevention programs (LaFromboise & Lewis, 2008; Le & Gobert, 2013). Findings from these interventions suggest that school-based suicide prevention programs can impact students' perceptions of their ability to focus and control their thoughts and emotions and that such interventions are acceptable to youth (Le & Gobert, 2013; Randell et al., 2001).

### Important Outcomes Currently Unaddressed by Evidence-Based Treatments

The most relevant outcomes for school-based suicide prevention efforts—specifically, the reduction in suicidal thoughts and behaviors—have been evaluated in many studies (Aseltine & DeMartino, 2004; Aseltine et al., 2007; Wasserman et al., 2015; Wilcox et al., 2008). The challenge in identifying effective interventions for school-based suicide prevention has to do largely with methodological limitations, particularly with regard to study design and variability in how relevant outcomes are being measured (Bennett et al., 2015; Calear et al., 2016; Katz et al., 2013; Robinson et al., 2013). For instance, several gatekeeper training programs and student curricula, such as Kognito At-Risk for High School Educators, LEADS: For Youth (Linking Education and Awareness of Depression and Suicide), and Lifelines are included in SAMHSA's National Registry of Evidence-based Programs and Practices because they have been evaluated through quasi- and pre-experimental studies, but lack rigorous validation through randomized control trials. Furthermore, key outcomes in most studies are generally measured through self-report, rather than more objective indicators that might better convey the true benefit of prevention activities. As an example, Kognito At-Risk for High School Educators is a 1-h, online, interactive gatekeeper training program that uses avatars in online environments to train users in effective communication techniques and is listed on NREPP as a Legacy Program. The evidence base is two unpublished manuscripts that have been reviewed by SAMHSA and reported in a summary of Kognito studies (Albright, Adam, Serri, Bleeker, & Goldman, 2016).

For school-based interventions implemented at universal, selective, and indicated levels, additional school-related outcomes, particularly those protective factors that are associated with lowered suicide risk and standard academic achievement outcomes such as attendance, GPA and standardized test scores, should be incorporated into future research. Such outcomes, including positive school climate and school connectedness, represent the interactions between youth, adults, and their school environment that can

be enhanced and are characteristic of “upstream” prevention efforts (Wyman, 2014). Similarly, prevention programs that address known risk factors for suicide, such as bullying or substance abuse, should be evaluated for their suicide-related outcomes. Some interventions focused on a combination of risk and protective factors for suicide exist, such as selective (Tier 2) programs like Counselors CARE (C-CARE) and Coping and Support Training ([CAST], Randell et al., 2001), yet findings warrant replication and further evaluation to address methodological limitations (Miller et al., 2009).

Additionally, integrated and multimodal suicide prevention programming efforts have been described in the literature as having the potential for wider impact than a stand-alone intervention, with the ability not only to include multiple outcomes, but also to be more feasible and sustainable (Domitrovich et al., 2010). There are also relatively few studies, aside from the recent SEYLE study (Wasserman et al., 2015), that sought to compare interventions to determine which specific suicide prevention activities are most effective. Among the interventions that have been found to be effective, identifying the key elements of these interventions that contribute most to desired outcomes is also essential.

There are a limited number of methodologically robust studies that have evaluated suicide risk in ethnically diverse student populations known to be at increased risk of suicide (Harlow et al., 2014). Qualitative studies involving ethnic minority youth have underscored the importance of ensuring that awareness and prevention activities are culturally meaningful and sustainable, incorporate avenues for social connection and cultural enrichment, and actively engage youth as leaders (Chung-Do et al., 2015; Ford-Paz, Reinhard, Kuebbeler, Contreras, & Sánchez, 2015). The impact of peers as leaders has been demonstrated in existing school-based suicide prevention programs (Wasserman et al., 2015; Wyman et al., 2010) and should be further examined within the context of diverse subpopulations of youth at increased risk of suicide.

Finally, there is growing interest in applying clinical and psychosocial interventions to school settings, as far more universal school-based suicide prevention options exist than selected or indicated. While outcomes for some of these treatments, including cognitive-behavioral therapy (CBT) and dialectical behavioral therapy (DBT), are widely established (Brent et al., 2013; MacPherson, Cheavens, & Fristad, 2013; Spirito, Esposito-Smythers, Wolff, & Uhl, 2011), school-based interventions that utilize these therapeutic modalities (e.g., safety planning, mindfulness) warrant additional research. Mazza and colleagues have developed a universal curriculum based on dialectical behavior therapy which can also be modified for use at the targeted or indicated levels (DBT-A STEPS; Mazza, Dexter-Mazza, Miller, Rathus, & Murphy, 2016). Although not explicitly

a suicide prevention curriculum, the hope is that providing all youth with skills that have been shown to reduce suicide risk in a clinical population will serve a suicide prevention function and establish a shared language for youth who have been receiving clinical interventions for suicidal thoughts and behaviors.

## Recommendations for School Mental Health Providers

School mental health professionals have training and background both in mental health and social, emotional, and behavioral strategies, as well as in multi-tiered systems of support and are therefore best equipped to lead school-based suicide prevention efforts. However, challenges exist with regard to variation in training, availability of evidence-based programs, family and community attitudes and stigma, community mental health resources, and the burden of “yet another” initiative to build into already overstressed school systems. The time and cost requirements for implementation of staff training, student education, and screening may be significant barriers. For instance, the most effective gatekeeper trainings are longer in duration, allowing for more behavioral rehearsal, and they have been part of ongoing suicide prevention or repeated training efforts, not just “once and done” trainings (Cross et al., 2011; Garraza, Walrath, Goldston, Reid, & McKeon, 2015; Walrath, Garraza, Reid, Goldston, & McKeon, 2015).

A critical starting point in an effective school-based suicide prevention effort is operative buy-in from school or district administrators. Suicide prevention has not typically been a priority for schools unless there has been a suicide death. In response, legislative efforts have enacted mandates in more than half of the states in the USA to ensure that schools engage in suicide prevention efforts (Kreuze et al., 2017). Most of these legal mandates have, at a minimum, included a requirement for gatekeeper training to ensure that school personnel are trained in suicide warning signs and what actions to take should they be concerned that a student in their midst might be suicidal (Kreuze et al., 2017). However, these mandates do not necessarily apply to private and non-public schools and in some states are not regulated or actively enforced, and they tend not to include related components of suicide prevention efforts such as student education and screening.

Once there is administrative buy-in, school mental health professionals are positioned to help develop suicide prevention policies and procedures that incorporate programs that provide staff training, student education and awareness, and screening in an effort both to prevent and respond to suicide risk. In line with multi-tiered systems of support, there should be universal suicide prevention

programming in place for all students, as well as programming to support students that may be at risk and those already identified at high risk. There are many reasons why youth might think about killing themselves and schools should tailor their suicide prevention programming to the needs of their students, the capacity and resources of their staff, and the will of the community. The following is an example of how administrators and school mental health professionals can think about applying the information reviewed in this article.

*Sample Suicide Prevention Plan* Tier 1 prevention programming might involve all teachers, administrators, and support staff (e.g., monitors, bus drivers, custodians) receiving QPR gatekeeper training; teachers report feeling more prepared and committed to assist students in a suicidal crisis after receiving this training (Wyman et al., 2008). School mental health providers would participate in the more intensive and time-consuming ASIST training because research has shown improved identification and referral for providers who attend ASIST (Condrón et al., 2015). Elementary school 1st and 2nd graders would participate in the Good Behavior Game. Middle and high school students would participate in the screening and educational components of Signs of Suicide, which have been shown to be effective in increasing knowledge and decreasing suicidal behaviors in middle school (Schilling et al., 2014) as well as improving attitudes with regard to high school students intervening with a peer and getting help for themselves if in distress (Schilling et al., 2016). Youth who have been identified through the Tier 1 screening and gatekeeper programs (e.g., QPR, ASIST, SOS) would be referred to school mental health professionals for Tier 2 services such as risk screening (e.g., Columbia Suicide Severity Rating Scale [C-SSRS; Posner et al., 2011]), suicide assessment, and skills-based groups (e.g., coping strategies through Reconnecting Youth [RY] and Coping and Support Training [CAST]) or referral for individual or family therapy (e.g., ABFT; Diamond et al., 2010). Finally, at Tier 3, as a prevention approach to crisis preparedness, school mental health professionals and other select staff would get trained in crisis prevention, response, and recovery programs like PREPaRE (Brock et al., 2016). School mental health professionals would continuously monitor suicide risk using the Suicide Risk Monitoring Form (SMT; Erbacher & Singer, 2017). This sample suicide prevention plan is one example of how a school could put together individual suicide prevention programs that would address the key components of school-based suicide prevention outlined by SAMHSA (2012) and integrated within a multi-tiered framework. School districts need to consider the resources available in their communities, the cultural responsiveness of the programs, and the time and staff resources available in schools.

## Future Directions

Critiques by Kutcher et al. (2016) about the lack of rigor of empirical studies of suicide prevention programs notwithstanding, suicide prevention programming in schools is essential. Table 1 identifies prevention programs at the universal, targeted, and indicated levels that schools may consider for implementation based on this review. Recent evaluations of the Garrett Lee Smith Youth Suicide Prevention Grants, which target youth between the ages of 10–24, have found that gatekeeper training is associated with lower suicide rates and that comprehensive suicide prevention programming consisting of training, screening, and education/awareness programs is associated with fewer suicide attempts (Garraza et al., 2015; Walrath et al., 2015). However, these effects are not sustained beyond 1 year in the absence of suicide prevention programming (Garraza et al., 2015; Walrath et al., 2015), suggesting the need for comprehensive suicide prevention efforts that are ongoing. Schools are an opportune setting for the implementation of suicide prevention efforts focused on increasing awareness, identifying youth at risk through screening and observation, and providing referrals and intervention, and these efforts are maximized when they are proactive and integrated with other school mental health initiatives. In addition to reducing suicide risk, schools that take a comprehensive approach to suicide prevention increase the likelihood that youth at risk will feel safe in and connected to school which in turn enhances key protective factors against suicide risk.

Existing limitations are not the result of uncaring researchers. It is unethical, for example, to randomly assign youth to conditions that are suspected to be less effective at preventing suicide risk. Despite suicide being the second leading cause of death among youth, there are relatively few youth who die by suicide. Thus, sample size limitations preclude most studies from establishing causation or correlation between a suicide prevention program and suicide deaths. There is also the very real issue that some of the youth at greatest risk of suicide are those not in school and will not show up in school-based samples, including youth who are suspended, housing insecure, in detention, emergency shelters, residential treatment facilities, hospitals, or whose parents have prevented them from participating in suicide prevention programs.

Similar to any type of program schools may implement, school-based suicide prevention efforts require staff time, as well as financial and other resources, and are therefore not typically considered to be a priority. Rather than seeing the state of empirical support for suicide prevention programs as an argument against school-based suicide prevention, school administrators and staff and scholars should

see it as call-to-action to collaborate with researchers to evaluate suicide prevention programs. Specifically, greater focus on implementation and evaluation of upstream prevention may help to identify those points in a student's life where thoughtful programming will reduce or eliminate future suicide risk, and these efforts need not differ from other school-based initiatives that support the overall behavioral, social, and emotional functioning of students (e.g., multi-tiered systems of support). Unless schools are actively implementing suicide prevention programs, we will never be able to identify what works, for whom, and under what circumstances.

## Compliance with Ethical Standards

**Ethical Approval** This article does not contain any studies with human participants or animals performed by any of the authors.

## References

- Abrutyn, S., & Mueller, A. S. (2014). Are suicidal behaviors contagious in adolescence? Using longitudinal data to examine suicide suggestion. *American Sociological Review*. <https://doi.org/10.1177/0003122413519445>.
- Albright, G., Adam, C., Serri, D., Bleeker, S., & Goldman, R. (2016). Harnessing the power of conversations with virtual humans to change health behaviors. *mHealth*. <https://doi.org/10.21037/mhealth.2016.11.02>.
- Amitai, M., & Apter, A. (2012). Social aspects of suicidal behavior and prevention in early life: A review. *International Journal of Environmental Research and Public Health*, 9(3), 985–994. <http://doi.org/10.3390/ijerph9030985>.
- Aseltine, R. H., & DeMartino, R. (2004). An outcome evaluation of the SOS suicide prevention program. *American Journal of Public Health*, 94(3), 446–451.
- Aseltine, R. H., Jr., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: A replication and extension. *BMC Public Health*, 7, 161. <https://doi.org/10.1186/1471-2458-7-161>.
- Bennett, K., Rhodes, A. E., Duda, S., Cheung, A. H., Manassis, K., Links, P., et al. (2015). A youth suicide prevention plan for Canada: A systematic review of reviews. *Canadian Journal of Psychiatry*, 60(6), 245–257.
- Berman, A. L. (2009). School-based suicide prevention: Research advances and practice implications. *School Psychology Review*, 38, 233–238.
- Bolnik, L., & Brock, S. E. (2005). The self-reported effects of crisis intervention work on school psychologists. *The California School Psychologist*, 10(1), 117–124. <https://doi.org/10.1007/BF03340926>.
- Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: Risks and protectors. *Pediatrics*, 107(3), 485–493.
- Brent, D. A., McMakin, D. L., Kennard, B. D., Goldstein, T. R., Mayes, T. L., & Douaihy, A. B. (2013). Protecting adolescents from self-harm: A critical review of intervention studies. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52(12), 1260–1271. <https://doi.org/10.1016/j.jaac.2013.09.009>.
- Bridge, J. A., Asti, L., Horowitz, L. M., Greenhouse, J. B., Fontanella, C. A., Sheftall, A. H., et al. (2015). Suicide trends among elementary school-aged children in the United States from 1993 to 2012. *JAMA Pediatrics*, 169(7), 673–677. <http://doi.org/10.1001/jamapediatrics.2015.0465>.
- Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 47(3–4), 372–394. <https://doi.org/10.1111/j.1469-7610.2006.01615.x>.
- Brock, S. E., Nickerson, A. B., Reeves, M. A., Conolly, C. N., Jimeron, S. R., Pesce, R. C., & Lazzaro, B. R. (2016). *School crisis prevention and intervention: The PREPaRE model* (Second edition). National Association of School Psychologists.
- Brown-Chidsey, R., & Steege, M. W. (2005). *Response to intervention: Principles and strategies for effective practice*. New York: Guilford Press.
- Calear, A. L., Christensen, H., Freeman, A., Fenton, K., Busby Grant, J., van Spijker, B., et al. (2016). A systematic review of psychosocial suicide prevention interventions for youth. *European Child and Adolescent Psychiatry*, 25(5), 467–482. <http://doi.org/10.1007/s00787-015-0783-4>.
- Centers for Disease Control and Prevention. (2017). *Web-based injury statistics query and reporting system (WISQARS)* (Fatal Injury Reports, 1999–2015, for National, Regional, and States [RESTRICTED]). National Center for Injury Prevention and Control. Retrieved from <http://webappa.cdc.gov/cgi-bin/broker.exe>.
- Cerel, J., Maple, M., van de Venne, J., Moore, M., Flaherty, C., & Brown, M. (2016). Exposure to suicide in the community: Prevalence and correlates in one U.S. state. *Public Health Reports*, 131(1), 100–107. <https://doi.org/10.1177/003335491613100116>.
- Chung-Do, J. J., Goebert, D. A., Bifulco, K., Tydingco, T., Alvarez, A., Rehuher, D., et al. (2015). Hawai'i's Caring Communities Initiative: Mobilizing rural and ethnic minority communities for youth suicide prevention. *Journal of Health Disparities Research and Practice*, 8(4), 108–123.
- Condron, D. S., Garraza, L. G., Walrath, C. M., McKeon, R., Goldston, D. B., & Heilbron, N. S. (2015). Identifying and referring youths at risk for suicide following participation in school-based gatekeeper training. *Suicide and Life-Threatening Behavior*, 45(4), 461–476. <https://doi.org/10.1111/sltb.12142>.
- Corcoran, J., Dattalo, P., Crowley, M., Brown, E., & Grindle, L. (2011). A systematic review of psychosocial interventions for suicidal adolescents. *Children and Youth Services Review*, 33(11), 2112–2118. <https://doi.org/10.1016/j.childyouth.2011.06.017>.
- Cross, W. F., Seaburn, D., Gibbs, D., Schmeelk-Cone, K., White, A. M., & Caine, E. D. (2011). Does practice make perfect? A randomized control trial of behavioral rehearsal on suicide prevention gatekeeper skills. *The Journal of Primary Prevention*, 32(3–4), 195–211. <https://doi.org/10.1007/s10935-011-0250-z>.
- Daniel, S. S., & Goldston, D. B. (2009). Interventions for suicidal youth: A review of the literature and developmental considerations. *Suicide & Life-Threatening Behavior*, 39(3), 252–268. <http://doi.org/10.1521/suli.2009.39.3.252>.
- David-Ferdon, C., Crosby, A. E., Caine, E. D., Hindman, J., Reed, J., & Iskander, J. (2016). CDC grand rounds: Preventing suicide through a comprehensive public health approach. *MMWR. Morbidity and Mortality Weekly Report*, 65(34), 894–897. <https://doi.org/10.15585/mmwr.mm6534a2>.
- De Luca, S. M., Wyman, P., & Warren, K. (2012). Latina adolescent suicide ideations and attempts: Associations with connectedness to parents, peers, and teachers. *Suicide & Life-Threatening Behavior*, 42(6), 672–683. <https://doi.org/10.1111/j.1943-278X.2012.00121.x>.
- Debski, J., Spadafore, C. D., Jacob, S., Poole, D. A., & Hixson, M. D. (2007). Suicide intervention: Training, roles, and knowledge of school psychologists. *Psychology in the Schools*, 44(2), 157–170. <https://doi.org/10.1002/pits.20213>.



- Diamond, G. S., Wintersteen, M. B., Brown, G. K., Diamond, G. M., Gallop, R., Shelef, K., et al. (2010). Attachment-based family therapy for adolescents with suicidal ideation: A randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(2), 122–131.
- Domitrovich, C. E., Bradshaw, C. P., Greenberg, M. T., Embry, D., Poduska, J. M., & Ialongo, N. S. (2010). Integrated models of school-based prevention: Logic and theory. *Psychology in the Schools*, 47(1), 71–88. <https://doi.org/10.1002/pits.20452>.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432.
- Eggert, L. L., & Herting, J. R. (1991). Preventing teenage drug abuse: Exploratory effects of network social support. *Youth and Society*, 22(4), 482–524.
- Eggert, L. L., Thompson, E. A., Herting, J. R., & Nicholas, L. J. (1995). Reducing suicide potential among high-risk youth: Tests of a school-based prevention program. *Suicide & Life-Threatening Behavior*, 25(2), 276–296.
- Erbacher, T. A., & Singer, J. B. (2017). Suicide risk monitoring: The missing piece in suicide risk assessment. *Contemporary School Psychology*. <https://doi.org/10.1007/s40688-017-0164-8>.
- Erbacher, T. A., Singer, J. B., & Poland, S. (2015). *Suicide in schools: A practitioner's guide to multi-level prevention, assessment, intervention, and postvention*. New York: Routledge.
- Essex, M. J., Kraemer, H. C., Slattery, M. J., Burk, L. R., Boyce, W. T., Woodward, H. R., et al. (2009). Screening for childhood mental health problems: Outcomes and early identification. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 50(5), 562–570. <https://doi.org/10.1111/j.1469-7610.2008.02015.x>.
- Evans, R., & Hurrell, C. (2016). The role of schools in children and young people's self-harm and suicide: Systematic review and meta-ethnography of qualitative research. *BMC Public Health*, 16(1), 401. <https://doi.org/10.1186/s12889-016-3065-2>.
- Ewell Foster, C. J., Burnside, A. N., Smith, P. K., Kramer, A. C., Wills, A. A., & King, C. (2017). Identification, response, and referral of suicidal youth following applied suicide intervention skills training. *Suicide and Life-Threatening Behavior*, 47(3), 297–308. <https://doi.org/10.1111/sltb.12272>.
- Freedenthal, S. (2010). Adolescent help-seeking and the Yellow Ribbon suicide prevention program: An evaluation. *Suicide and Life-Threatening Behavior*, 40(6), 628–639. <https://doi.org/10.1521/suli.2010.40.6.628>.
- Freeman, K. R., James, S., Klein, K. P., Mayo, D., & Montgomery, S. (2016). Outpatient dialectical behavior therapy for adolescents engaged in deliberate self-harm: Conceptual and methodological considerations. *Child & Adolescent Social Work Journal: C & A*, 33(2), 123–135. <https://doi.org/10.1007/s10560-015-0412-6>.
- Ford-Paz, R. E., Reinhard, C., Kuebeler, A., Contreras, R., & Sánchez, B. (2015). Culturally tailored depression/suicide prevention in Latino youth: Community perspectives. *The Journal of Behavioral Health Services & Research*, 42, 519–533. <https://doi.org/10.1007/s11414-013-9368-5>.
- Fulginiti, A., Rice, E., Hsu, H. T., Rhoades, H., & Winetrobe, H. (2016). Risky integration: A social network analysis of network position, exposure, and suicidal ideation among homeless youth. *Journal of Crisis Intervention and Suicide Prevention*, 37(3), 184–193.
- Garraza, L., Walrath, C., Goldston, D. B., Reid, H., & McKeon, R. (2015). Effect of the Garrett Lee Smith Memorial Suicide Prevention Program on suicide attempts among youths. *JAMA Psychiatry*, 72(11), 1143–1149. <https://doi.org/10.1001/jamapsychiatry.2015.1933>.
- Gould, M. S., Marrocco, F. A., Kleinman, M., Thomas, J. G., Mostkoff, K., Cote, J., et al. (2005). Evaluating iatrogenic risk of youth suicide screening programs: A randomized controlled trial. *JAMA: The Journal of the American Medical Association*, 293(13), 1635–1643. <https://doi.org/10.1001/jama.293.13.1635>.
- Harlow, A. F., Bohanna, I., & Clough, A. (2014). A systematic review of evaluated suicide prevention programs targeting indigenous youth. *Journal of Crisis Intervention and Suicide Prevention*, 35(5), 310–321.
- Hart, S. R. (2012). Student suicide: Suicide postvention. In S. E. Brock & S. R. Jimerson (Eds.), *Best practices in school crisis prevention and intervention* (2nd ed.). Bethesda, MD: National Association of School Psychologists.
- Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Hawkins, J., et al. (2016). Youth risk behavior surveillance—United States, 2015. *Morbidity and Mortality Weekly Report. Surveillance Summaries*, 65(6), 1–174. <https://doi.org/10.15585/mmwr.ss6506a1>.
- Katz, C., Bolton, S. L., Katz, L. Y., Isaak, C., Tilston-Jones, T., Sareen, J., et al. (2013). A systematic review of school-based suicide prevention programs. *Depression and Anxiety*, 30(10), 1030–1045. <https://doi.org/10.1002/da.22114>.
- King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team-Version II for suicidal adolescents: A randomized controlled intervention trial. *Journal of Consulting and Clinical Psychology*, 77(5), 880–893. <https://doi.org/10.1037/a0016552>.
- King, C. A., Kramer, A., Preuss, L., Kerr, D. C. R., Weisse, L., & Venkataraman, S. (2006). Youth-Nominated Support Team for suicidal adolescents (Version 1): A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 74(1), 199–206. <https://doi.org/10.1037/0022-006X.74.1.199>.
- King, K. A., Strunk, C. M., & Sorter, M. T. (2011). Preliminary effectiveness of Surviving the Teens<sup>®</sup> suicide prevention and depression awareness program on adolescents' suicidality and self-efficacy in performing help-seeking behaviors. *The Journal of School Health*, 81(9), 581–590. <https://doi.org/10.1111/j.1746-1561.2011.00630.x>.
- Klimes-Dougan, B., Klingbeil, D. A., & Meller, S. J. (2013). The impact of universal suicide-prevention programs on the help-seeking attitudes and behaviors of youths. *Crisis*, 34(2), 82–97. <https://doi.org/10.1027/0227-5910/a000178>.
- Klonsky, E. D., Qiu, T., & Saffer, B. Y. (2017). Recent advances in differentiating suicide attempters from suicide ideators. *Current Opinion in Psychiatry*, 30(1), 15–20. <https://doi.org/10.1097/YCO.0000000000000294>.
- Kreuze, E., Stecker, T., & Ruggiero, K. J. (2017). State requirements for school personnel suicide prevention training: Where do we go from here? *Adolescent Research Review*. <https://doi.org/10.1007/s40894-017-0057-0>.
- Kutcher, S., Wei, Y., & Behzadi, P. (2016). School- and community-based youth suicide prevention interventions: Hot idea, hot air, or sham? *The Canadian Journal of Psychiatry*. <https://doi.org/10.1177/0706743716659245>.
- LaFromboise, T. D., & Howard-Pitney, B. (1994). The Zuni Life Skills Development Curriculum: A collaborative approach to curriculum development. *American Indian and Alaska Native Mental Health Research (Monographic Series)*, 4, 98–121.
- Lafromboise, T. D., & Lewis, H. A. (2008). The Zuni Life Skills Development Program: A school/community-based suicide prevention intervention. *Suicide & Life-Threatening Behavior*, 38(3), 343–353. <https://doi.org/10.1521/suli.2008.38.3.343>.
- Le, T., & Gobert, J. (2013). Translating and implementing a mindfulness-based youth suicide prevention intervention in a Native American community. *Journal of Child and Family Studies*, 24, 1–12. <https://doi.org/10.1007/s10826-013-9809-z>.
- Le, T. N., & Gobert, J. M. (2015). Translating and implementing a mindfulness-based youth suicide prevention intervention in a

- Native American community. *Journal of Child and Family Studies*, 24, 12–23. <https://link.springer.com/article/10.1007%2Fs10826-013-9809-z>.
- Macleod, E., Nada-Raja, S., Beautrais, A., Shave, R., & Jordan, V. (2015). Primary prevention of suicide and suicidal behaviour for adolescents in school settings. In *Cochrane database of systematic reviews*. John Wiley & Sons, Ltd. <https://doi.org/10.1002/14651858.CD007322.pub2>.
- MacPherson, H. A., Cheavens, J. S., & Fristad, M. A. (2013). Dialectical behavior therapy for adolescents: Theory, treatment adaptations, and empirical outcomes. *Clinical Child and Family Psychology Review*, 16(1), 59–80. <https://doi.org/10.1007/s10567-012-0126-7>.
- Marraccini, M. E., & Brier, Z. M. F. (2017). School connectedness and suicidal thoughts and behaviors: A systematic meta-analysis. *School Psychology Quarterly*, 32(1), 5–21. <https://doi.org/10.1037/spq0000192>.
- Mazza, J. J., Dexter-Mazza, E. T., Miller, A. L., Rathus, J. H., & Murphy, H. E. (2016). *DBT skills in schools: Skills training for emotional problem solving for adolescents (DBT STEPS-A)*. New York: The Guilford Press.
- Miller, D. N. (2010). *Child and adolescent suicidal behavior: School-based prevention, assessment, and intervention*. New York: The Guilford Press.
- Miller, D. N., Eckert, T. L., & Mazza, J. J. (2009). Suicide prevention programs in the schools: A review and public health perspective. *School Psychology Review*, 38, 168–188.
- Millner, A. J., Lee, M. D., & Nock, M. K. (2017). Describing and measuring the pathway to suicide attempts: A preliminary study. *Suicide & Life-Threatening Behavior*, 47(3), 353–369. <https://doi.org/10.1111/sltb.12284>.
- Nance, M. L., Carr, B. G., Kallan, M. J., Branans, C. C., & Wiebe, D. J. (2010). Variation in pediatric and adolescent firearm mortality rates in rural and urban US counties. *Pediatrics*, 125(6), 1112–1118. <https://doi.org/10.1542/peds.2009-3219>.
- Newcomer, A. R., Roth, K. B., Kellam, S. G., Wang, W., Ialongo, N. S., Hart, S. R., et al. (2016). Higher childhood peer reports of social preference mediates the impact of the Good Behavior Game on suicide attempt. *Prevention Science*, 17(2), 145–156. <https://doi.org/10.1007/s11121-015-0593-4>.
- Nock, M. K., Green, J. G., Hwang, I., McLaughlin, K. A., Sampson, N. A., Zaslavsky, A. M., et al. (2013). Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry*, 70(3), 300–310. <https://doi.org/10.1001/2013.jamapsychiatry.55>.
- Panagioti, M., Gooding, P. A., Triantafyllou, K., & Tarrier, N. (2015). Suicidality and posttraumatic stress disorder (PTSD) in adolescents: A systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology*, 50(4), 525–537. <https://doi.org/10.1007/s00127-014-0978-x>.
- Pisani, A. R., Cross, W. F., & Gould, M. S. (2011). The assessment and management of suicide risk: State of workshop education. *Suicide & Life-Threatening Behavior*, 41(3), 255–276. <https://doi.org/10.1111/j.1943-278X.2011.00026.x>.
- Pisani, A. R., Murrie, D. C., & Silverman, M. M. (2016). Reformulating suicide risk formulation: From prediction to prevention. *Academic Psychiatry*, 40, 623–629. <https://doi.org/10.1007/s40596-015-0434-6>.
- Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., et al. (2011). The Columbia-Suicide Severity Rating Scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *The American Journal of Psychiatry*, 168(12), 1266–1277. <https://doi.org/10.1176/appi.ajp.2011.10111704>.
- Randell, B. P., Eggert, L. L., & Pike, K. C. (2001). Immediate post intervention effects of two brief youth suicide prevention interventions. *Suicide and Life-Threatening Behavior*, 31(1), 41–61.
- Robinson, J., Cox, G., Malone, A., Williamson, M., Baldwin, G., Fletcher, K., et al. (2013). A systematic review of school-based interventions aimed at preventing, treating, and responding to suicide-related behavior in young people. *Crisis*, 34(3), 164–182. <https://doi.org/10.1027/0227-5910/a000168>.
- Robinson, J., Hetrick, S. E., & Martin, C. (2011). Preventing suicide in young people: Systematic review. *Australian and New Zealand Journal of Psychiatry*, 45(1), 3–26. <https://doi.org/10.3109/00048674.2010.511147>.
- Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further evidence of efficacy and effectiveness. *Prevention Science*, 17(2), 157–166. <https://doi.org/10.1007/s11121-015-0594-3>.
- Schilling, E. A., Lawless, M., Buchanan, L., & Aseltine, R. H. (2014). “Signs of Suicide” shows promise as a middle school suicide prevention program. *Suicide and Life-Threatening Behavior*, 44(6), 653–667. <https://doi.org/10.1111/sltb.12097>.
- Schmitz, W. M., Allen, M. H., Feldman, B. N., Gutin, N. J., Jahn, D. R., Kleespies, P. M., et al. (2012). Preventing suicide through improved training in suicide risk assessment and care: An American Association of Suicidology Task Force report addressing serious gaps in U.S. mental health training. *Suicide & Life-Threatening Behavior*, 42(3), 292–304. <https://doi.org/10.1111/j.1943-278X.2012.00090.x>.
- Scott, M. A., Wilcox, H. C., Schonfeld, I. S., Davies, M., Hicks, R. C., Turner, J. B., et al. (2009). School-based screening to identify at-risk students not already known to school professionals: The Columbia Suicide Screen. *American Journal of Public Health*, 99(2), 334–339. <https://doi.org/10.2105/AJPH.2007.127928>.
- Shannonhouse, L., Lin, Y. W. D., Shaw, K., & Porter, M. (2017). Suicide intervention training for K-12 schools: A quasi-experimental study on ASIST. *Journal of Counseling and Development*, 99, 3–13. <https://doi.org/10.1002/jcad.12112>.
- Shea, S. C. (2002). *The practical art of suicide assessment: A guide for mental health professionals and substance abuse counselors*. Lexington, KY: Mental Health Presses.
- Sheftall, A. H., Asti, L., Horowitz, L. M., Felts, A., Fontanella, C. A., Campo, J. V., et al. (2016). Suicide in elementary school-aged children and early adolescents. *Pediatrics*. <https://doi.org/10.1542/peds.2016-0436>.
- Shneidman, E. S. (1973). *On the nature of suicide*. San Francisco: Jossey-Bass.
- Singer, J. B., O’Brien, K. H. M., & LeCloux, M. (2017). Three psychotherapies for suicidal adolescents: Overview of conceptual frameworks and intervention techniques. *Child and Adolescent Social Work Journal*, 34(2), 95–106. <https://doi.org/10.1007/s10560-016-0453-5>.
- Singer, J. B., & Slovak, K. (2011). School social workers’ experiences with youth suicidal behavior: An exploratory study. *Children & Schools*, 33, 215–228. <https://doi.org/10.1093/cs/33.4.215>.
- Smith, A. R., Witte, T. K., Teale, N. E., King, S. L., Bender, T. W., & Joiner, T. E. (2008). Revisiting impulsivity in suicide: Implications for civil liability of third parties. *Behavioral Sciences & The Law*, 26(6), 779–797. <https://doi.org/10.1002/bsl.848>.
- Song, I. H., Kwon, S. W., & Kim, J. E. (2015). Association between suicidal ideation and exposure to suicide in social relationships among family, friend, and acquaintance survivors in South Korea. *Suicide and Life-Threatening Behavior*, 45, 376–390.
- Spirito, A., Esposito-Smythers, C., Wolff, J., & Uhl, K. (2011). Cognitive-behavioral therapy for adolescent depression and suicidality. *Child and Adolescent Psychiatric Clinics of North America*, 20(2), 191–204. <https://doi.org/10.1016/j.chc.2011.01.012>.

- Stanley, B., & Brown, G. K. (2012). Safety planning intervention: A brief intervention to mitigate suicide risk. *Cognitive and Behavioral Practice, 19*(2), 256–264. <https://doi.org/10.1016/j.cbpra.2011.01.001>.
- Stone, D. M., Holland, K. M., Bartholow, B., Crosby, A. E., Davis, S., & Wilkins, N. (2017). *Preventing suicide: A technical package of policies, programs, and practices*. Retrieved from <https://www.cdc.gov/violenceprevention/pdf/suicide-technicalpackage.pdf>.
- Strunk, C. M., King, K. A., Vidourek, R. A., & Sorter, M. T. (2014). Effectiveness of the Surviving the Teens® Suicide Prevention and Depression Awareness Program: An impact evaluation utilizing a comparison group. *Health Education & Behavior, 41*(6), 605–613. <https://doi.org/10.1177/1090198114531774>.
- Substance Abuse and Mental Health Services Administration. (2012). *Preventing suicide: A toolkit for high schools*. Retrieved from <https://store.samhsa.gov/shin/content//SMA12-4669/SMA12-4669.pdf>.
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156–1171. <https://doi.org/10.1111/cdev.12864>.
- Thompson, E. A., Connelly, C. D., Thomas-Jones, D., & Eggert, L. L. (2013). School difficulties and co-occurring health risk factors: Substance use, aggression, depression, and suicidal behaviors. *Journal of Child and Adolescent Psychiatric Nursing, 26*(1), 74–84. <https://doi.org/10.1111/jcap.12026>.
- Walrath, C., Garraza, L. G., Reid, H., Goldston, D. B., & McKeon, R. (2015). Impact of the Garrett Lee Smith youth suicide prevention program on suicide mortality. *American Journal of Public Health, 105*(5), 986–993. <https://doi.org/10.2105/AJPH.2014.302496>.
- Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., et al. (2015). School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. *The Lancet, 385*(9977), 1536–1544. [https://doi.org/10.1016/S0140-6736\(14\)61213-7](https://doi.org/10.1016/S0140-6736(14)61213-7).
- Wei, Y., Kutcher, S., & LeBlanc, J. C. (2015). Hot idea or hot air: A systematic review of evidence for two widely marketed youth suicide prevention programs and recommendations for implementation. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 24*(1), 5–16.
- Wilcox, H. C., Kellam, S. G., Brown, C. H., Poduska, J., Ialongo, N. S., Wang, W., et al. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempt. *Drug and Alcohol Dependence, 95*(Suppl 1), S60–S73. <https://doi.org/10.1016/j.drugalcdep.2008.01.005>.
- Wyman, P. A. (2014). Developmental approach to prevent adolescent suicides: Research pathways to effective upstream prevention interventions. *American Journal of Preventive Medicine, 47*(3S2), S251–S256. <https://doi.org/10.1016/j.amepre.2014.05.039>.
- Wyman, P. A., Brown, C. H., Inman, J., Cross, W., Schmeelk-Cone, K., Guo, J., et al. (2008). Randomized trial of a gatekeeper program for suicide prevention: 1-year impact on secondary school staff. *Journal of Consulting and Clinical Psychology, 76*(1), 104–115. <https://doi.org/10.1037/0022-006X.76.1.104>.
- Wyman, P. A., Brown, C. H., LoMurray, M., Schmeelk-Cone, K., Petrova, M., Yu, Q., et al. (2010). An outcome evaluation of the Sources of Strength suicide prevention program delivered by adolescent peer leaders in high schools. *American Journal of Public Health, 100*(9), 1653–1661. <https://doi.org/10.2105/AJPH.2009.190025>.
- Wyman, P. A. & The Upstream Suicide Prevention Workgroup. (2012). Upstream youth suicide prevention expert panel meeting summary. American Association of Suicidology (AAS) and the Society for the Prevention of Teen Suicide (SPTS). Retrieved from [http://www.sprc.org/sites/sprc.org/files/library/Upstream\\_Youth\\_Suicide\\_Prevention\\_Expert\\_Panel\\_Meeting%20Summary.pdf](http://www.sprc.org/sites/sprc.org/files/library/Upstream_Youth_Suicide_Prevention_Expert_Panel_Meeting%20Summary.pdf).
- Zisook, S., Chentsova-Dutton, Y., & Shuchter, S. R. (1998). PTSD following bereavement. *Annals of Clinical Psychiatry, 10*(4), 157–163.
- Zalsman, G., Hawton, K., Wasserman, D., van Heeringen, K., Arensman, E., Sarchiapone, M., et al. (2016). Suicide prevention strategies revisited: 10-year systematic review. *The Lancet Psychiatry, 3*(7), 646–659. [https://doi.org/10.1016/S2215-0366\(16\)30030-X](https://doi.org/10.1016/S2215-0366(16)30030-X).