School Personnel Perspectives on their School's Implementation of a School-Based Suicide Prevention Program

Bradley D. Stein, MD, PhD
Sheryl H. Kataoka, MD, MSHS
Alison B. Hamilton, PhD
Dana Schultz, MPP
Gery Ryan, PhD
Pamela Vona, MA
Marleen Wong, PhD

Abstract

Youth suicide is a national public health priority, with policymakers highlighting schools as an ideal setting in which to deliver suicide prevention programs. Over the past decade, the number of schools implementing such programs has grown substantially, yet little is known about how successfully such programs are being implemented. This study examines the implementation of a district-wide suicide prevention program through key informant interviews with school personnel. Schools with higher rates of implementing district protocols for at-risk students had an organized system to respond to at-risk students, a process for effectively responding to students who were at-risk for suicide, and strong administrative support. In contrast, schools that had lower rates of implementing district protocols relied on a handful of individuals for suicide prevention activities and had limited administrative support. Attention to organizational factors leading to successful implementation of school-based suicide prevention programs may enhance the role of schools in national adolescent suicide prevention efforts.

Address correspondence to Bradley D. Stein, MD, PhD, Health Services Researcher, RAND Corporation, 4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213, USA. Phone: +1-412-6832300; Fax: +1-412-6822800; E-mail: stein@rand.org.

Bradley D. Stein, MD, PhD, Associate Professor of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA.

Sheryl H. Kataoka, MD, MSHS, Division of Child and Adolescent Psychiatry, UCLA Semel Institute, 10920 Wilshire Boulevard, Suite 300, Los Angeles, CA 90024, USA.

Alison B. Hamilton, PhD, Department of Psychiatry, UCLA, Semel Institute, 1640 S. Sepulveda Blvd., Suite 200, Los Angeles, CA 90025, USA.

Dana Schultz, MPP, RAND Corporation, 4570 Fifth Ave, Suite 600, Pittsburgh, PA 15213, USA

Gery Ryan, PhD, RAND Corporation, 1776 Main Street, Santa Monica, CA 90407, USA

Pamela Vona, MA, UCLA Semel Institute, Department of Psychiatry, 10920 Wilshire Blvd., Suite 300, Los Angeles, CA 90024, USA

Marleen Wong, PhD, School of Social Work, University of Southern California, 669 West 34th Street, MRF 214-MC0411, Los Angeles, CA 90089, USA

Journal of Behavioral Health Services & Research, 2009.

Background

Suicide is the third leading cause of death among 10- to 19-year olds in the USA. An estimated 8.5% of US youth has made at least one suicide attempt in the last 12 months.[1] These facts have contributed to the Institute of Medicine's decision to name suicide prevention as a national public health priority in its report, *Reducing Suicide: A National Imperative*,[2] and inspired legislation in a number of states mandating suicide prevention programs in public schools as an effort to enhance youth suicide prevention.[3,4]

Given their access to children and adolescents, schools are commonly viewed as a promising venue for enhanced youth suicide prevention efforts. In 2000, school-based suicide prevention programs existed in 77% of US public schools,[5] an increase from 52% in 1994.[6] These programs use a variety of approaches, including curricular, screening, and gatekeeper methods.

Curricular suicide prevention programs commonly present information directly to students in order to increase their knowledge about suicide and suicidal risk factors,[3,7–9] as suicidal youth are more likely to confide in a peer than seek support from an adult.[10] However, the evidence supporting the efficacy of curricular programs is mixed. Some studies have demonstrated improvements in knowledge and attitudes about suicide following the presentation of classroom-based suicide prevention curriculum.[7,9] Yet others caution that curriculum approaches result in either no improvements[11,12] or detrimental effects.[8,13,14] Concerns about the curricular approach include its characterization of suicide as a reaction to stressful events[14] and a lack of evidence demonstrating that improvements in knowledge and attitudes impact behavior. In response, curricular approaches have begun to promote the concept that suicide is the result of mental illness,[15,16] which has yielded not only improved knowledge and attitudes toward suicide but also reductions in self-reported suicide attempts.[15]

Screening-based suicide prevention programs seek to enhance the identification of youths suffering from mental illness and/or contemplating suicide and to refer these identified youth for appropriate care.[17,18] Screening programs have been successful in identifying students at risk for suicide,[19–21] but concerns about such screening programs include school personnel's reporting that screening programs are less acceptable than curricular and staff in-service programs,[22–24] that such programs require a more time intensive second stage to address false positives, and that screening may not identify students who may become at risk for suicide subsequent to the screening. One promising program that combines both curricular and screening approaches is the SOS Suicide Prevention Program,[15] which educates students about the signs of depression and suicide and has a self-screening tool that encourages students with concerning scores to seek help. This program resulted in improved knowledge and attitudes toward suicide and reductions in self-reported suicide attempts, but no significant effects of the program on suicidal ideation and help-seeking behavior were found.

Rated as the most acceptable by school personnel,[22–24] gatekeeper suicide prevention programs train teachers and school staff to improve their abilities to detect students who may be at risk for suicide and to enhance their follow-up with appropriate services through engaging the student's social support networks and facilitating referrals for treatment and counseling.[2,4,25,26] After receiving this type of training, school clinicians rate themselves as significantly more effective in working with at-risk students.[27] Gatekeeper programs have been found to increase school staff awareness of suicide warning signs in at-risk students and knowledge of resources to treat suicidal students. One study found that school clinicians who participated in a gatekeeper suicide prevention program were seven times more knowledgeable than school clinicians who did not participate in such a program about risk factors and intervention steps.[27] These programs have also been effective in changing attitudes of counselors and school personnel toward referring students for services[27,28] as well as improving their sense of self-efficacy and intervention skills.[3,27] However, few gatekeeper programs have been evaluated with respect to their effectiveness in

identifying students at risk for suicide[29] or in successfully engaging identified students in subsequent appropriate treatment.[30]

Despite the growth of school-based suicide prevention efforts, relatively little is known about how such programs are actually implemented in schools and the challenges associated with this process. This is not unique to school-based suicide prevention programs. Efforts to successfully disseminate and implement mental health programs in community settings face an array of challenges,[31] with some promising or evidence-based programs not adopted at all and others being modified and reinvented during the process of implementation.[32] Occasionally, mental health programs such as school-based suicide prevention programs are discontinued despite having been adopted and implemented by schools and community mental health providers for a range of reasons, including insufficient school resources for the program, community concerns about the appropriateness of the program, and inability to adequately address the clinical needs of students identified.[33]

The success of school-based suicide prevention efforts requires both the development of effective programs and the successful implementation and dissemination of such programs. To provide insights on how schools might best prepare to effectively participate in youth suicide prevention efforts and to better understand those factors that affect the implementation of school-based suicide prevention programs, the research team conducted a qualitative study of school-based suicide prevention activities examining characteristics of schools that had higher rates of implementing a school-based suicide prevention program and comparing them to schools that had lower rates of implementing a school-based suicide prevention program in the Los Angeles Unified School District (LAUSD), one of the nation's largest school districts.

Methods

LAUSD Youth Suicide Prevention Program

The LAUSD is one of the nation's largest school districts with approximately 900 schools serving 740,000 students, a substantial number of whom are socioeconomically disadvantaged (77% qualify for free or reduced cost lunch) and of ethnic minority backgrounds. Rates of suicide attempts among youth in Los Angeles were 12.3% annually comparable to those seen in other major urban areas.[1]

The LAUSD Youth Suicide Prevention Program (YSPP) was first implemented in 1986 and is consistent with the School Gatekeeper Training Model.[25] The YSPP, which is coordinated by the LAUSD's YSPP psychologist, has two primary components: (1) annual trainings of school personnel (e.g., gatekeepers) by the LAUSD YSPP psychologist to increase knowledge, change attitudes, and develop skills in detecting students potentially at risk for suicide and referring them for crisis intervention, and (2) "crisis intervention," in which the trained school staff members use their increased knowledge and skills to engage suicidal students' support networks and successfully refer them for counseling or treatment. The training and education about youth suicide are offered to all school staff annually. Any school staff, other students, parents, or at-risk students themselves can make the referral for crisis intervention. Once a student is referred, a trained school staff person determines if a crisis intervention is warranted and, if so, completes the mandatory risk assessment form (which includes information about the referral source, reason for referral, and actions taken during the crisis intervention) that is sent to the YSPP psychologist at the district's central office. The crisis intervention consists of: (1) providing immediate support to the suicidal student, (2) engaging the student's social support network (most commonly the family), and (3) facilitating an appropriate referral and engagement with treatment (i.e., hospital, counseling services in the community and/or on campus). At least one staff member from each school is required to be trained in the YSPP crisis intervention protocol.

Sample

From March through July 2005, the research team interviewed 42 school personnel from 11 high schools about their school's suicide prevention activities. High schools were invited based on their level of YSPP implementation, defined as the annual number of YSPP assessment forms completed per enrolled student. All district high schools were categorized as having either high, middle, or low YSPP implementation (in the top, two middle, or bottom quartiles, respectively). To better explore differences, schools were then randomly sampled from the high- and low-implementation groups. Of the 15 schools initially approached, four schools did not choose to participate (73% school response rate), resulting in a total of six high and five low YSPP implementation schools. Participation did not differ by high and low-implementation group.

Principals at participating schools were asked to nominate a range of personnel with different levels of involvement with at-risk youth and different levels of familiarity with the YSPP including: (1) individuals "likely to handle" students identified as being at risk for suicide—primarily nurses, school psychologists, psychiatric social workers, and school counselors, many of whom had received YSPP training; (2) teachers "with prior involvement" in crisis response for at-risk students; (3) teachers "with no prior involvement" in the crisis response for an at-risk student; (4) counselors "unlikely to handle" at-risk students; and (5) administrators.

Forty-two of 52 nominated individuals agreed to participate in the interviews (81% participation rate) with no substantial differences in participation across the different categories of school personnel. Twenty-three participants came from six high-implementation schools and 19 came from five low-implementation schools. There was no substantial difference in the types of participants or the number of participants per school between high- and low-implementation schools.

Procedures

One of two authors experienced in qualitative research (AB or DS) conducted semi-structured telephone interviews and asked participants to (1) explain what happens at their school when concern arises that a student may be at risk for suicide, (2) describe recent incidents with at-risk students, (3) describe any training that they have received related to helping at-risk students, (4) discuss their perception of where suicide prevention fell among their school's overall priorities, and (5) suggest improvements that could be made to better assist at-risk students. Probes were used to clarify the participant's role in any suicide-related prevention activities and familiarity with the LAUSD's YSPP protocol. Interviewers also sought to elicit information about factors that might facilitate or impede the participant's ability to assist an at-risk student, focusing on factors such as available resources and the level of training, which are often related to the successful implementation of school-based suicide prevention programs.[34] At the end of the interview, participants were asked to rate how well their school assists at-risk students. Interviews lasted on average 45 min, ranging from approximately 30 to 75 min, and participants received $40 compensation for participating in the study. The RAND and UCLA Institutional Review Boards and LAUSD Research Review Committee approved all study procedures, and all participants gave verbal consent.

Analysis

All interviews were recorded, transcribed, and reviewed by members of the research team to explore general topics that arose in the interviews. The research team met periodically to review the interview process and to suggest minor modifications to the interview protocol based on team consensus. Transcripts for major domains of inquiry based on common themes in the

implementation literature (e.g., available resources, level of training)[34] were preliminarily coded using qualitative data analysis software (ATLAS.ti).[35] Subsequently, the research team discussed the content of each domain and refined the coding scheme by expanding, collapsing, or eliminating codes until there was a refined list of mutually agreed upon codes. Additional coding was done based on the range of responses within each domain. Using the software's filtering and grouping tools, schools in the "high implementation" category (n=6) were compared to schools in the "low implementation" category (n=5) with regard to detection, intervention, training, level of school priority, and suggested improvements. Because the school was the unit of analysis, individual types of respondents were not compared to one another.

Results

Described below are three key themes that consistently emerged from the interviews, contrasting how high- and low-implementation schools typically respond to students at risk for suicide: (1) school-level organization and use of resources in response to a student at risk for suicide (e.g., procedures, policies, and structures); (2) school leadership and priorities; and (3) district-level training and support. Potentially informative exceptions are discussed, such as the one low-implementation school in which the themes discussed by participants were similar to those consistently discussed in the high-implementation schools, as well as the one high-implementation school where the themes discussed by participants were similar to those that consistently arose in interviews with participants from the low-implementation schools.

School-level organization and use of resources

Having plans with clear lines of communication, a team-based approach, and explicit procedures and protocols distinguished most high- from low-implementation schools. Generally, participants from high implementation schools described how communication about at-risk students occurred at their school and who participated in the communication chain. In addition to a communication plan, the procedures at high implementation schools usually involved clearly delineated and documented protocols and procedures for responding to at-risk students. These participants provided detailed descriptions of their schools' procedures for handling at-risk students, often including recent examples of responses to at-risk students. As one participant who is "likely to handle" at-risk students related, "Knowing what to do and having structures and processes in place help make things easier. Everyone…knows what questions to ask and how to proceed. There is not anything the school or district does…that makes things more difficult." Likewise, a teacher with prior involvement commented, "At this school we have such a complete system—so much better than I've seen anywhere else for handling student mental health." At these schools, knowledge of the procedures also extended to participants "unlikely to handle" and those "with no prior involvement" with at-risk students. For example, a teacher with no prior involvement with at-risk students from the same high-implementation school as above knew that there was a process in place: "I feel like we have a good process. I feel perfectly free to contact people and feel confident that cases will be handled competently." Most of the high-implementation schools were also more likely to have protocols, reference guides, or pamphlets that helped to ensure that all of the school's teachers and administrators were familiar with the process. An administrator at another high-implementation school stated, "I think we've fine-tuned our [system]. We've really got a good response team and we put out a response guide that we gave to people on campus so that when anything comes up, counselors, deans, school nurses, school psychologists—we can (all) pull down our quick reference guide and go through the flow chart…We list the different people and where they need to be or go in a crisis." Even most individuals who are "unlikely to handle" at-risk students at high implementation schools were aware of their school's referral and documentation

process. For example, one such teacher described having filled out an assessment form and knowing the documentation process, including follow-up and maintenance of records.

In contrast, most low-implementation schools appeared to lack such communication plans and formalized procedures. Instead of communication plans or teams, participants from these schools typically described one person at their school who was solely responsible for all aspects of responding to an at-risk student. Furthermore, participants from these schools were typically unable to specifically describe how at-risk students were assessed and handled at their school. For example, an individual "likely to handle" an at-risk student from one school said that there were no "procedures in place" for handling at-risk students. She further explained that she was trying to respond in the best manner she could. This individual described being overwhelmed by "…the number of students I have. Most of the work [the school district] has us do is paperwork. I'm not a therapist. I can refer but they can't see me once a week. I try to follow-up once or twice but that's all I can do. If I give them the referral and they don't go, that's all I can do." Many participants from these schools described little or no communication within the school about crisis responses to students who are at risk for suicide. As an administrator from another low-implementation school related, "When I tell you that I've only dealt with one case in the past two years, I'm sure that there have been more than just that one case, but I haven't known about it. Not that I'm left out of the loop, or that I'm left out of the loop intentionally, but…I just don't know about it." Participants from low implementation schools also tended to identify student confidentiality as an issue that impeded coordination of a systematic school response. One "likely to handle" participant from a low-implementation school reported that confidentiality concerns prevented communication about at-risk students. When this individual was asked what he knew about suicide attempts at the school, he responded, "I don't get any information other than verbal. They don't give me a breakdown. It is considered confidential." Furthermore, participants from these schools often mentioned student confidentiality when discussing why they believed that they were unaware of prior attempted or completed suicides among students and why such events did not have an impact on the school's response to at-risk students.

School leadership support and on-campus resources

The importance of school administrator support and on-campus resources to meet the needs of at-risk students emerged as another theme common to all types of schools and participants. At most high implementation schools, school leadership was interested and involved in the activities of the suicide prevention team. Administrators at these schools also ensured sufficient time for training of school staff in crisis response activities. Participants from these schools commonly mentioned the importance of attentive school administrators. As one participant "likely to handle" at-risk students described, "The (school) administration is extremely supportive of our children that have issues. If they see something…they'll let me know that someone looked really sad today, or they'll ask me to check in on a student." A teacher with prior involvement stated, "I know that I have the resources here to get the students to help. I have an administration that I can tell that I need to have the student pulled, removed, or assessed." The importance of administrative support was also apparent among those with no prior involvement or who were unlikely to respond to at-risk students. For example, a counselor said, "My administrators are very supportive. That helps a lot."

Participants from most high-implementation schools commonly discussed available on-campus resources, such as a multidisciplinary crisis intervention teams and other student support programs available to address the needs of students who are at risk for suicide. One participant "likely to handle" at-risk students described the school's "pretty strong team": "I work at a school that really sees itself as a team. The counselors, the psychologists, and I lean on each other. If I can't follow up with a kid, they will. We also have teachers that will keep their eyes on a child, especially the teacher that may have brought the child in." Another teacher at this school who had not had direct

experience with at-risk students discussed the importance of above-average resources in creating a "very safe environment," and the school's administrator discussed his "network of resources," which included a crisis team with a psychologist and a nurse.

In contrast, participants from most low implementation schools frequently mentioned the low priority of youth suicide on their administrators' agendas. In one school, four out of five participants perceived suicide prevention as a low priority at their school. A counselor "unlikely to handle" at-risk students at one low-implementation school said that youth suicide ranks "down at the bottom somewhere" among the school's priorities. An individual "likely to handle" at-risk students from another school said that youth suicide is at "minus 20" in the school's priorities because "no one has time to make it a priority so the counselors just deal with it." When this individual was asked if he would contact the administration in a time of crisis, he responded, "Right now? No. I wouldn't involve the administration." Some were hopeful, however, that a new school principal could make a difference. As an individual "likely to handle" at-risk students related, "With the new administration, they're going to try to get more agencies in the community involved to come in and do some counseling for us. Hopefully it doesn't stay the same. Hopefully it's going to improve."

Participants from most of the low-implementation schools also frequently discussed the absence of on-campus resources. When discussing the school's resources to support at-risk students, a teacher "with prior involvement" from this school related, "There's really nothing. It's pretty pathetic, quite honestly." An individual "likely to handle" at-risk students from one of the larger high schools with several thousand students described himself as the only on-campus suicide prevention resource. A counselor from this same school, who had not handled any cases recently, also remarked on the lack of available resources. He suggested that a crisis team could be pulled together if needed, but no such team met regularly. A lack of on-campus resources was not universal among all low-implementation schools, however. One school did have a designated crisis counselor and other student support programs, but participants from this school indicated that despite these resources, little was in place to coordinate services for at-risk students.

District-level training and support

The school district's role with respect to YSPP training and support was another theme that emerged, most commonly with individuals "likely to handle" at-risk students at most high implementation schools. Approximately equal numbers of staff from high- and low-implementation schools receive YSPP training each year. However, participants at high-implementation schools were likely to be aware of and have participated in YSPP training sessions and discussed completion of the YSPP assessment form as one of the steps in the crisis response protocol. For example, one experienced counselor from a high implementation school, trained in YSPP procedures, described how, when concerned about a student, she would "usually fill out [the YSPP assessment] form and submit that to the district. With that, I also refer the student to see the school's psychiatric social worker." However, she did not find the form particularly helpful, describing it as part of the "procedure" to document the actions taken to respond to the situation. An administrator at another high-implementation school said that he and his team had been trained "over and over again" by the district and that his crisis team relies heavily on the district YSPP school psychologist.

Similar to participants in high-implementation schools, staff from low-implementation schools were variably familiar with the YSPP assessment form but had little understanding of its use or purpose. For example, a number of participants in low-implementation schools observed that efforts to follow the formal YSPP protocols, such as properly completing and submitting the assessment form, were not always associated with an effective response to students who are at risk for suicide. As one individual "likely to handle" at-risk students said, "I don't know what follow-up is done with the

assessment form. I'm not informed of that." Participants at another low-implementation school also commented that they did not know what happened after the forms were submitted to the district's central office. Several indicated that they did not consistently complete the forms, as they did not see the value in doing so. For example, one individual "likely to handle" at-risk students, who has served as a YSPP trainer, remarked, "We don't do a good job with [completing the forms]. I don't do a good job. I try to do a good job with it. If you spent one day with me you would understand. If you close down your office for an hour there will be a backlog. So the [forms] are never done right away, ever. Most people are under the impression that the form is for someone's master thesis. Using the bathroom is a luxury—the form is low on the totem pole." Another theme of the low-implementation schools was the perceived lack of district support for the YSPP. As a teacher with prior involvement from a low-implementation school said, "(The district) needs to make it (YSPP) a priority. If they made it a priority and put health clinics on campus and funded [psychiatric social workers], if we had someone we could call anytime, that would help. We have one person in the entire district (running the YSPP); they call him the "Suicide Guy." He is the suicide prevention unit. He's awesome, but it's only one man for the second largest school district in the U.S."

Exceptions to the high-/low-implementation categories

As noted above, one low-implementation school was similar to the high-implementation schools in that respondents from this school indicated that they have a "good response team" and a widely used resource guide. Respondents from this school indicated that they have a team approach wherein they look at each incident as a learning experience. Similar to most of the participants from the high-implementation schools, participants from this one low-implementation school indicated that their administration is highly supportive and involved. Thus, despite low-implementation of the district protocol, this school (re)invented a comprehensive system that they perceived to be highly effective in addressing the issue of at-risk students.

In contrast, one high implementation school was more similar to the low-implementation schools in that the school did not have an organized approach to at-risk cases. They had one person who seemed to be solely responsible for at-risk students; they did not describe a team or an integrated model. Four of the five participants from this school described multiple challenges, including poor staff communication and lack of cohesion. For example, when asked what makes her role more difficult, one experienced teacher said, "Resistance of the school to deal with the patience it takes to deal with a situation." Participants from this school indicated that lack of school commitment to at-risk students is problematic. Most participants from this school indicated that suicide risk was not a priority for the school.

Discussion

There is a growing recognition of the need for a national suicide prevention strategy as highlighted in the President's New Freedom Commission Report, with an emphasis on the role of schools in early detection and treatment of youth who may be at risk for suicide and other mental health problems. Although there has been an increase in dissemination of school-based suicide prevention programs across the USA, this is one of the first studies to examine what factors contribute to variation in implementation of such programs across schools. This study sought to highlight what key organizational and program factors may lead to greater implementation of a school-based suicide prevention program and what barriers may exist that deter such programs from being delivered. School personnel provided rich narratives of their experience in responding to students who are at risk for suicide. Throughout these narratives, several factors were consistently discussed in association with an effective response in their schools: awareness among

school personnel of an organized system to respond to at-risk students, a process for effectively responding to a student who is at risk for suicide, and strong administrative support.

Prior studies have documented the importance of strong leadership in successfully implementing innovative and evidence-based practices.[34,36–44] The principal's support was found to be the most important factor affecting the successful implementation of a school-based substance abuse prevention program[45] and is consistent with this study's finding that having strong support from school administrators appears to be a critical component in effectively implementing a school-based suicide prevention program.

The importance of well-organized and clearly communicated suicide prevention processes and protocols was another point emphasized by participants from all schools. In most high-implementation schools, knowledge of how the school would respond to students who are at risk for suicide was not limited to individuals who would play active roles in intervening with at-risk students but included a broad range of school personnel. In contrast, at most low-implementation schools, even individuals responsible for actively intervening with at-risk students discussed the absence of a systematic response. These findings are similar to those of studies of interventions in mental health and substance abuse provider organizations, which have found that an organization's climate and structure supporting a program are associated with that program's successful adoption and dissemination.[46]

While most high-implementation schools had an organized system in place, these systems were not identical across high-implementation schools nor did any of the systems exactly match the district's YSPP protocols. Tailoring of protocols and systems was especially evident in the school that was not classified as a high implementer. Although this school did not use the YSPP protocol, it has invented a system that appears to be perceived by all respondents to be effective, supportive, and efficient at dealing with at-risk situations/issues. Interventions like prevention programs are often tailored to best fit the situation of the individual or groups seeking to use it,[32,34,46] and such reinvention to adapt the program to local needs appears to have occurred with the LAUSD YSPP. Slight modifications to a program can greatly increase the likelihood that it will continue to be used;[45] however, the literature on dissemination of evidence-based treatments suggests that lack of adherence to the original program can be related to less positive treatment outcomes.[47]

There were other factors that were not associated with a school's ability to effectively respond to at-risk students. While adequate resources appear to be a necessary factor for the implementation of a well-functioning program,[32,34,41] there were several low-implementation schools in which resources did not appear to be a barrier. This suggests that adequate resources alone are not sufficient for an effective school response to students who are at risk for suicide. Others have found that school efforts to address the mental health needs of students require a commitment of sufficient resources to be credible in the face of competing priorities;[32,34,41] however, the study's findings suggest that dedicating resources without a corresponding commitment on the part of school leadership to address the issue of youth suicide and to create an environment in which that issue can be addressed may lead to poorly implemented school-based suicide prevention activities.

Likewise, having a form or protocol from the district and having the staff to participate in the YSPP training did not ensure a school's ability to respond effectively to at-risk students. While many participants were aware of the district's YSPP protocols, many components of the YSPP, such as the assessment form, were being used only intermittently. A number of schools incorporated completion and submission of the YSPP assessment form into their procedure, but school personnel perceived little value in this activity since they did not gain any information in return for submitting the forms. The collection and use of timely information is a critical component of a number of successful community implementations of evidence-based practices;[34] it allows administrators to get feedback on their actions and to monitor implementation. Efforts to make data collection more efficient and the results more useful to front-line staff may be an important step toward district-wide improvement of school-based suicide prevention programs.

Finally, school personnel's perceptions of confidentiality may have also acted as a potential barrier to some schools' ability to improve their response to students who are at risk for suicide. At most low-implementation schools, an apparent lack of understanding about which information should be confidential became a reason for not communicating anything about what school personnel could do to support at-risk students. At most high-implementation schools, knowledge about how to appropriately handle confidential information concerning at-risk students seemed to have led to more effective communication strategies among key school staff and allowed schools to incorporate information about a student's prior actions in its response. Efforts to better educate school personnel about the issues related to mental health confidentiality may be an important component of improving the implementation of school-based suicide prevention programs.

This study's findings should be viewed within the context of several limitations. Participants were high school personnel from one of the largest urban school districts in the USA, which serves a racially and ethnically diverse and socioeconomically disadvantaged student body and whose suicide prevention activities are built around the gatekeeper school-based suicide prevention model. These findings may not generalize to schools and school districts with other characteristics nor to other types of school-based suicide prevention programs. Participants were recruited from high schools in the highest and lowest utilizing quartiles, and it is unknown how participants' responses from schools in the middle quartiles might have differed. In addition, although telephone interviews are more economical to conduct and can facilitate communication of sensitive topics, interviewers miss valuable non-verbal communication. Finally, given the focus of this study on the implementation of a suicide prevention program by school staff, these interviews did not gather information from other key stakeholders such as students and family members, which would have broadened the understanding of the quality and acceptability of this program. Future empirical research should examine the effectiveness of such gatekeeper approaches in the context of family engagement and involvement in each step of suicide prevention including early detection and referral for services.

Implications for Behavioral Health

Despite the limitations, this study's findings highlight several key areas important for the successful dissemination and implementation of a suicide prevention program in schools. At the school district level, this study's findings suggest that protocols and procedures must be coupled with practical information that individual school staff members can access and use in real time. Centralized data systems that can be accessed by key school personnel and used systematically across campuses may be one way to facilitate information sharing. In this way, staff may be able to respond to each student's needs more effectively. Such systems can also enhance continuous quality improvement efforts to further refine how these procedures are implemented on each campus. District suicide prevention training should focus on educating school personnel about the key components of guideline-based suicide prevention services, including information about confidentiality. The training, however, should also suggest alternative strategies for implementing these guidelines on each campus in response to the unique needs, populations, and resources of that campus. Through systematically tailoring these procedures for each campus, the risk that schools may reinvent the program in ways that lead to its ineffective use can be decreased. Although important for all school staff, building awareness of the importance of such programs among those in leadership positions is key to the sustainability of these programs.

Schools can play a vital role in the lives of young people, in providing them not only with academic skills and resources but also with the social and emotional tools necessary to achieve their potential. Effective suicide prevention programs that are coordinated at the district and school levels can greatly contribute to ensuring that at-risk students receive the mental health interventions that they need. Yet, suicide prevention and students' mental health more broadly are just two of the

many important issues facing schools at a time of constrained resources and heightened accountability. Support from a broad range of stakeholders, ongoing evaluation of program effectiveness, and efficient use of limited resources are all important factors to ensure the ongoing implementation of programs to address the needs of students at-risk for suicide.

Acknowledgments

Support for this study was provided by the NIMH (R21MH68623, K08MH069741-1, and P30 MH068639). We are indebted to Rich Lieberman of the Los Angeles Unified School District for his support of this project, to Windy Wilkins for research assistance, to Stephanie Lonsinger, Allison Guaspari, and Samantha Shugarman for assistance with the preparation of the manuscript, and finally, to the principals and staff of the participating schools for sharing their experiences with us.

References

1. Grunbaum JA, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2003. *Morbidity & Mortality Weekly Report Surveillance Summaries*. 2004;53:1–96.
2. Goldsmith S, Pellmar T, Kleinman A, et al. *Reducing Suicide: A National Imperative*. Washington DC: National Academy of Sciences; 2002.
3. Garland AF, Zigler E. Adolescent suicide prevention. Current research and social policy implications. *American Psychologist*. 1993;48:169–182. doi:10.1037/0003-066X.48.2.169.
4. Mazza JJ. School-based suicide prevention programs: Are they effective? *School Psychology Review*. 1997;26:382–396.
5. Brener ND, Martindale J, Weist MD. Mental health and social services: Results from the school health policies and programs study 2000. *Journal of School Health*. 2001;71:305–312.
6. Small ML, Majer LS, Allensworth DD, et al. School health services. *Journal of School Health*. 1995;65:319–326.
7. Kalafat J, Elias M. An evaluation of a school-based suicide awareness intervention. *Suicide & Life-Threatening Behavior*. 1994;24:224–233.
8. Shaffer D, Garland A, Vieland V, et al. The impact of curriculum-based suicide prevention programs for teenagers. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1991;30:588–596.
9. Spirito A, Overholser J, Ashworth S, et al. Evaluation of a suicide awareness curriculum for high school students. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1988;27:705. doi:10.1097/00004583-198811000-00007.
10. Hazell P, King R. Arguments for and against teaching suicide prevention in schools. *Australian and New Zealand Journal of Psychiatry*. 1996;30:633–642. doi:10.3109/00048679609062659.
11. Shaffer D, Vieland V, Garland A, et al. Adolescent suicide attempters. Response to suicide-prevention programs. *Journal of the American Medical Association*. 1990;264:3151–3155. doi:10.1001/jama.264.24.3151.
12. Vieland V, Whittle B, Garland ANN, et al. The impact of curriculum-based suicide prevention programs for teenagers: An 18-Month follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1991;30:811. doi:10.1097/00004583-199109000-00018.
13. Overholser JC, Hemstreet AH, Anthony Spirito PD, et al. Suicide awareness programs in the schools: Effects of gender and personal experience. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1989;28:925. doi:10.1097/00004583-198911000-00018.
14. Garland A, Shaffer D, Whittle B. A national survey of school-based, adolescent suicide prevention programs. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1989;28:931–934. doi:10.1097/00004583-198911000-00019.
15. Aseltine Jr. RH, DeMartino R. An outcome evaluation of the SOS Suicide Prevention Program. *American Journal of Public Health*. 2004;94:446–451. doi:10.2105/AJPH.94.3.446.
16. Ciffone J. Suicide Prevention: An analysis and replication of a curriculum-based high school program. *Social Work*. 2007;52:41–49.
17. Columbia University TeenScreen Program. How the Program Works. 2003–2005. Available at http://www.teenscreen.org/cms/content/view/4/32/. Accessed December 05, 2006
18. Shaffer D, Scott M, Wilcox H, et al. The Columbia Suicide Screen: Validity and reliability of a screen for youth suicide and depression. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2004;43:71–79. doi:10.1097/00004583-200401000-00016.
19. Reynolds WM. A school-based procedure for the identification of adolescents at risk for suicidal behaviors. *Family & Community Health*. 1991;14:64–75.
20. Shaffer D, Craft L. Methods of adolescent suicide prevention. *Journal of Clinical Psychiatry*. 1999;60:70–74.
21. Thompson EA, Eggert LL. Using the Suicide Risk Screen to identify suicidal adolescents among potential high school dropouts. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1999;38:1506.
22. Eckert TL, Miller DN, Dupaul GJ, et al. Adolescent suicide prevention: School psychologists' acceptability of school-based programs. *School Psychology Review*. 2003;32:57–77.
23. Scherff AR, Eckert TL, Miller DN. Youth suicide prevention: A survey of public school superintendents' acceptability of school-based programs. *Suicide and Life-Threatening Behavior*. 2005;35:154–169. doi:10.1521/suli.35.2.154.62874.
24. Miller DN, Eckert TL, DuPaul GJ, et al. Adolescent suicide prevention: Acceptability of school-based programs among secondary school principals. *Suicide & Life-Threatening Behavior*. 1999;29:72–85.
25. Centers for Disease Control and Prevention. Programs for the prevention of suicide among adolescents and young adults. *Morbidity and Mortality Weekly*. 1994;43:1–7.
26. US Public Health Service. *The Surgeon General's call to action to prevent suicide*, Washington, DC; 1999.

27. King KA, Smith J. Project SOAR: A training program to increase school counselors' knowledge and confidence regarding suicide prevention and intervention. *Journal of School Health*. 2000;70:402–407.
28. Shaffer D, Garland A, Gould M, et al. Preventing teenage suicide: A critical review. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1988;27:675–687. doi:10.1097/00004583-198811000-00001.
29. Kataoka SH, Stein BD, Lieberman R, et al. Suicide prevention in schools: Are we reaching minority youths? *Psychiatric Services*. 2003;54:1444. doi:10.1176/appi.ps.54.11.1444.
30. Kataoka S, Stein BD, Nadeem E, et al. Who gets care? Mental health service use following a school-based suicide prevention program. *Journal of the American Academy of Adolescent Psychiatry*. 2007;46:1341–1348. doi:10.1097/chi.0b013e31813761fd.
31. Schoenwald SK, Hoagwood K. Effectiveness, transportability, and dissemination of interventions: What matters when. *Psychiatric Services*. 2001;52:1190–1197. doi:10.1176/appi.ps.52.9.1190.
32. Rogers EM. *Diffusion of Innovations*. New York, NY: Free Press; 1995.
33. Hallfors D, Brodish PH, Khatapoush S, et al. Feasibility of screening adolescents for suicide risk in "real-world" high school settings. *American Journal of Public Health*. 2006;96:282–287. doi:10.2105/AJPH.2004.057281.
34. Greenhalgh T, Robert G, Macfarlane F, et al. Diffusion of innovations in service organizations: Systematic review and recommendations. *Milbank Quarterly*. 2004;82:581–629. doi:10.1111/j.0887-378X.2004.00325.x.
35. Atlas.ti.4.1. Federal Republic of Germany. Scientific Software Development; 1998.
36. Anderson B, Odden A, Farrar E, et al. State strategies to support local school improvement. *Knowledge: Creation, Diffusion, Utilization*. 1987;9:42–86.
37. Basch CE, Sliepcevich EM. Innovators, innovations and implementation: A framework for curricular research in school health education. *Health Education*. 1983;14:20–24.
38. Berman P, Pauly EW. *Federal programs supporting educational change, Vol. 2: Factors affecting change agent projects*. Santa Monica, CA: RAND; 1975.
39. Gold RS, Parcel GS, Walberg HJ, et al. Summary and conclusions of the THTM evaluation: The expert work group perspective. *Journal of School Health*. 1991;61:39–42.
40. Green PL. Improving clinical effectiveness in an integrated care delivery system. *Journal for Healthcare Quality*. 1998;20:4–8.
41. Gustafson DH, Sainfort F, Eichler M, et al. Developing and testing a model to predict outcomes of organizational change. *Health Services Research*. 2003;38:751–776. doi:10.1111/1475-6773.00143.
42. Montesino MU. Strategic alignment of training, transfer-enhancing behaviors, and training usage: A posttraining study. *Human Resource Development Quarterly*. 2002;13:89–108. doi:10.1002/hrdq.1015.
43. Moser LL, Deluca NL, Bond GR, et al. Implementing evidence-based psychosocial practices: Lessons learned from statewide implementation of two practices. *CNS Spectrum*. 2004;9:926–936, 942.
44. Smith DW, McCormick LK, Steckler AB, et al. Teachers' use of health curricula: Implementation of growing healthy, project SMART, and the teenage health teaching modules. *Journal of School Health*. 1993;63:349–354.
45. Rohrbach LA, D'Onofrio CN, Backer TE, et al. Diffusion of school-based substance abuse prevention programs. *American Behavioral Scientist*. 1996;39:919–934. doi:10.1177/0002764296039007012.
46. Gotham HJ. Diffusion of mental health and substance abuse treatments: Development, dissemination, and implementation. *Clinical Psychology: Science and Practice*. 2004;11:160–176. doi:10.1093/clipsy/bph067.
47. Schoenwald SK, Henggeler SW, Brondino MJ, et al. Multisystemic therapy: Monitoring treatment fidelity. *Family Process*. 2000;39:83–103. doi:10.1111/j.1545-5300.2000.39109.x.