

# An Interactive Web-Based Method of Outreach to College Students at Risk for Suicide

Ann Haas, PhD; Bethany Koestner, BS; Jill Rosenberg, LCSW; David Moore, MD; Steven J. Garlow, MD, PhD; Jan Sedway, PhD; Linda Nicholas, MD; Herbert Hendin, MD; J. John Mann, MD; Charles B. Nemeroff, MD, PhD

**Abstract. Objective and Participants:** From 2002 to 2005, the authors tested an interactive, Web-based method to encourage college students at risk for suicide to seek treatment. **Methods:** The authors invited students at 2 universities to complete an online questionnaire that screened for depression and other suicide risk factors. Respondents received a personalized assessment and were able to communicate anonymously with a clinical counselor online. At-risk students were urged to attend in-person evaluation and treatment. **Results:** A total of 1,162 students (8% of those invited) completed the screening questionnaire; 981 (84.4%) were designated as at high or moderate risk. Among this group, 190 (19.4%) attended an in-person evaluation session with the counselor, and 132 (13.5%) entered treatment. Students who engaged in online dialogues with the counselor were 3 times more likely than were those who did not to come for evaluation and enter treatment. **Conclusions:** The method has considerable promise for encouraging previously untreated, at-risk college students to get help.

**Keywords:** college students, outreach, suicide prevention, Web-based screening

Suicide is the third leading cause of death among US adolescents and young adults, claiming more young lives than any cause other than accidents and homicides.<sup>1</sup> Although systematic mortality data are not officially

collected on the 14 million students enrolled in US colleges and universities, suicide likely ranks second as a cause of death among this group, given the low rate of campus homicides.<sup>2</sup>

In a comprehensive study of suicides at 12 midwestern universities during the 1980s, Silverman et al<sup>3</sup> reported a student suicide rate of 7.5 per 100,000, half the rate among individuals of comparable age and sex in the general population. At the estimated rate, almost 1,100 college students die by suicide each year,<sup>2</sup> 75% of whom are male.<sup>3</sup> Surveys have identified a much larger number of students, almost equally male and female, who consider suicide or engage in suicidal behavior. Given the increasing number of students entering college with serious psychological problems,<sup>4</sup> campus suicide may currently be more prevalent. In a 2007 survey by the American College Health Association, which included more than 70,000 students at 107 institutions, 9.8% reported seriously considering suicide at least once during the past school year and 1.5% reported making at least 1 suicide attempt.<sup>5</sup>

Psychopathology, in particular depression and substance use disorder, is the most significant risk factor for suicide deaths and attempts among young people.<sup>6-8</sup> Among college students, however, psychiatric disorders appear to be underdiagnosed and undertreated. Notably, an annual survey of college counseling center directors has consistently reported that fewer than 20% of students who die by suicide had received campus-based clinical services.<sup>4</sup> Negative attitudes toward mental health treatment and concerns about stigma are potent barriers to help-seeking among young adults.<sup>9</sup> Of additional concern for college students are issues of confidentiality and potential administrative sanctions, such as mandatory leave or dismissal that may be applied to those who are seriously disturbed or suicidal.<sup>10</sup>

In recent years, community and legal standards have been shifting toward placing an increasing burden on universities

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*Drs Haas and Mann are with the American Foundation for Suicide Prevention (AFSP) in New York, NY. Dr Mann is also with the Division of Neuroscience in the Department of Psychiatry at Columbia University, New York. Ms Koestner was with AFSP at the time the project was implemented. Drs Moore, Garlow, and Nemeroff are with the Department of Psychiatry and Behavioral Sciences at Emory University in Atlanta, GA. Ms Rosenberg was with the Department of Psychiatry and Behavioral Sciences at Emory University at the time the project was implemented. Drs Sedway and Nicholas are with the Department of Psychiatry at the University of North Carolina School of Medicine, Chapel Hill. Dr Hendin is with New York Medical College in Valhalla.*

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to implement interventions that protect students from self-harm.<sup>11,12</sup> Part of this effort has involved the development of anonymous in-person and online screening programs for students to facilitate self-identification of psychological symptoms and encourage follow-up clinical evaluation and treatment. Two private organizations—Screening for Mental Health, Inc.,<sup>13</sup> and the Jed Foundation<sup>14</sup>—developed programs for university use that offer online questionnaires exploring symptoms related to depression, alcohol and drug use, and other disorders and provide immediate, computer-generated feedback that directs students in need to the campus counseling center and other available mental health resources.

To our knowledge, there are no published data on these programs' effectiveness in bringing potentially suicidal students into treatment. Although the computerized feedback may motivate some students who have not previously recognized themselves as having a treatable problem to seek help, the inability of such programs to identify and help resolve students' resistance to treatment is likely a significant limitation. To address this gap, the American Foundation for Suicide Prevention developed the College Screening Project, an interactive, Web-based method to identify students with psychiatric problems that put them at risk for suicidal behavior, support them in getting help, and determine the proportion who actually enter treatment. This article summarizes the results of a 3-year (2002–2005) test of this novel method of outreach to students on 2 campuses: a private university in the southeastern United States with an undergraduate population of approximately 6,000 students and the main campus of a large state university, also in the southeastern United States, with about 17,000 undergraduates.

## METHODS

We invited students to participate in the project through an e-mail from a designated campus official. Invitations were sent in batches, staggered throughout the academic year. The smaller private university invited all undergraduate students, whereas the state university targeted only sophomores and seniors. The invitation e-mail briefly described the project and provided a link to a secure Web site where procedures were explained fully. Participants were directed to register with a self-assigned, nonidentifying user ID and password and were given a link to a project-developed screening questionnaire.

The questionnaire incorporated the 9-item depression scale of the Patient Health Questionnaire (PHQ-9), a validated depression screen for community populations.<sup>15–17</sup> This measure is based on the 9 *Diagnostic and Statistical Manual of Mental Disorders* (4th edition) symptom criteria for major depressive disorder: feeling little interest or pleasure, feeling depressed, experiencing disturbed sleep, feeling fatigue, experiencing appetitive disturbances, having feelings of failure and guilt, having difficulty concentrating, experiencing psychomotor retardation or agitation, and having suicidal or self-destructive ideas. Each symptom is rated and scored (0–3) for frequency of occurrence over

the past 2 weeks, yielding a depression score of 0–27. Scores of 5, 10, 15, and 20 correspond to mild, moderate, moderately severe, and severe levels of depression. A separate item assesses how difficult symptoms are making it “to work, take care of things at home, or get along with other people.”

The screening questionnaire also includes items on past suicide attempts, affective states (anxiety, panic, rage, desperation, and loss of control) that have been linked to suicidal depression,<sup>18</sup> alcohol and drug use, eating behaviors, current psychiatric treatment, sex, race or ethnicity, and year in school. A final optional item asked students to provide an e-mail address, which would be encrypted in the computer system.

Once submitted, the program automatically generated a depression score and used this, along with responses to other items, to classify respondents into 1 of 3 tiers. Primary criteria for Tier 1 (high risk) included a PHQ-9 score of 15 or higher; current suicidal ideation; a PHQ-9 score of 10–14 with prior suicide attempt; intense feelings of anxiety, panic, rage, desperation, or loss of control; or an indication that current problems were making it very or extremely difficult to function. Criteria for Tier 2 (moderate risk) included a PHQ-9 score of 10–14 without a history of suicide attempt or current suicidal ideation, problems related to alcohol or drug use or eating behaviors, or an indication that current problems were making it somewhat difficult to function. Respondents who did not meet any of these criteria were designated as Tier 3 (low risk). Immediately after determining the tier, the computer program displayed a screen that told students when to expect a personal assessment from a counselor. The time frame ranged from 24 hours for Tier 1 respondents to several days for Tier 3.

When a questionnaire was received, the computer system generated an e-mail to a screening counselor on each campus, indicating the student's tier and providing a link to the questionnaire. At one university, the counselor was a licensed social worker with considerable clinical experience, and at the other campus the counselor was a relatively new clinical psychologist. After reviewing the student's questionnaire, the counselor responded with a detailed, personalized assessment, following a standardized prototype for each tier. In the assessment, the counselor introduced herself by name and position at the university and gave complete contact information, including office address, e-mail address, and phone number. In general, the counselor told Tier 3 (low risk) students that their questionnaire answers indicated no significant problems. The counselor addressed all questions or comments and invited students to communicate with her online if they thought anything had been missed, using a Web site dialogue page that required no identification other than the student's user ID.

In the case of Tier 1 and 2 students, the counselor's assessment specifically addressed the issues of greatest concern in the student's questionnaire. When commenting on the student's feelings or behaviors, the counselor expressed empathy and concern and offered to help the student find

relief from what he or she was experiencing. A key goal was to open the door to further communication by asking questions or inviting the student to elaborate on a particular problem or situation. All Tier 1 and 2 students were urged to call or e-mail the counselor to schedule an in-person evaluation. They were also given the option of participating in an online anonymous dialogue with the counselor.

Once the student's assessment was completed, the counselor uploaded it to the project Web site. Students who provided an e-mail address automatically received a message when the counselor's assessment was posted, with a link to the Web site; once on the site, they could view the counselor's assessment by logging in with their user ID and password. Students could also return independently to the Web site and log in to view their assessment. Over the next 6 weeks, Tier 1 and 2 students who provided an e-mail address received multiple reminders to view the counselor's assessment and follow the recommendations. The final reminder asked students who had not contacted the counselor to link to the secure Web site and answer several questions about how they were doing and why they had not responded. Each e-mail reminder repeated the counselor's contact information and urged students to be in touch in person or through the anonymous Web site dialogues.

Students who agreed to be evaluated scheduled the meeting directly with the screening counselor. In this session, the counselor evaluated the student more fully and discussed treatment options. When appropriate, the counselor referred students to a project psychiatrist for medication evaluation. At both universities, the screening counselor was affiliated with the medical school's department of psychiatry and was available to provide short-term psychotherapy to students who came through the screening project. Other treatment options included visiting a low-cost clinic staffed by psychiatric residents (available on both campuses) and, in the case of the private university, a student counseling center that was affiliated with the student health center and offered limited free mental health treatment. At both universities, students who preferred off-campus treatment were referred to mental health providers in the community.

The institutional review board at each university reviewed and approved project procedures. Because we gathered primary data by anonymous survey, signed consent from participants was deemed unnecessary. Key elements of informed consent were included on the project Web site, and students implied consent by completing the questionnaire. The counselors asked students who came for an evaluation to give written informed consent so that the counselor could provide anonymous reports of the evaluation and subsequent treatment sessions for research purposes.

## RESULTS

Over 6 semesters at the private university and 3 semesters at the public university, we invited approximately 14,500 undergraduate students to participate in the screening. A total of 1,162 students (approximately 8%) submitted questionnaires (see Figure 1). Although women composed about

56% of the undergraduate population at both universities, 71.8% of respondents were women ( $\chi^2[1, N = 1,157] = 10.39, p = .001$ ). Respondents' racial/ethnic distribution closely matched that of the student body at each school. At the private university where we invited all undergraduates to participate, respondents were evenly distributed across the 4 classes.

On the basis of their responses, 572 (49.2%) of the 1,162 participants were designated as Tier 1, 409 (35.2%) as Tier 2, and 181 (15.6%) as Tier 3. We found no significant sex or racial/ethnic differences in regard to tier distribution. Although almost 85% of the respondents indicated some level of psychological distress, only 7.7% of Tier 1 and 5.9% of Tier 2 respondents were currently receiving psychotherapy; 13.1% of Tier 1 and 9.0% of Tier 2 respondents were currently taking medication for depression, anxiety, or stress.

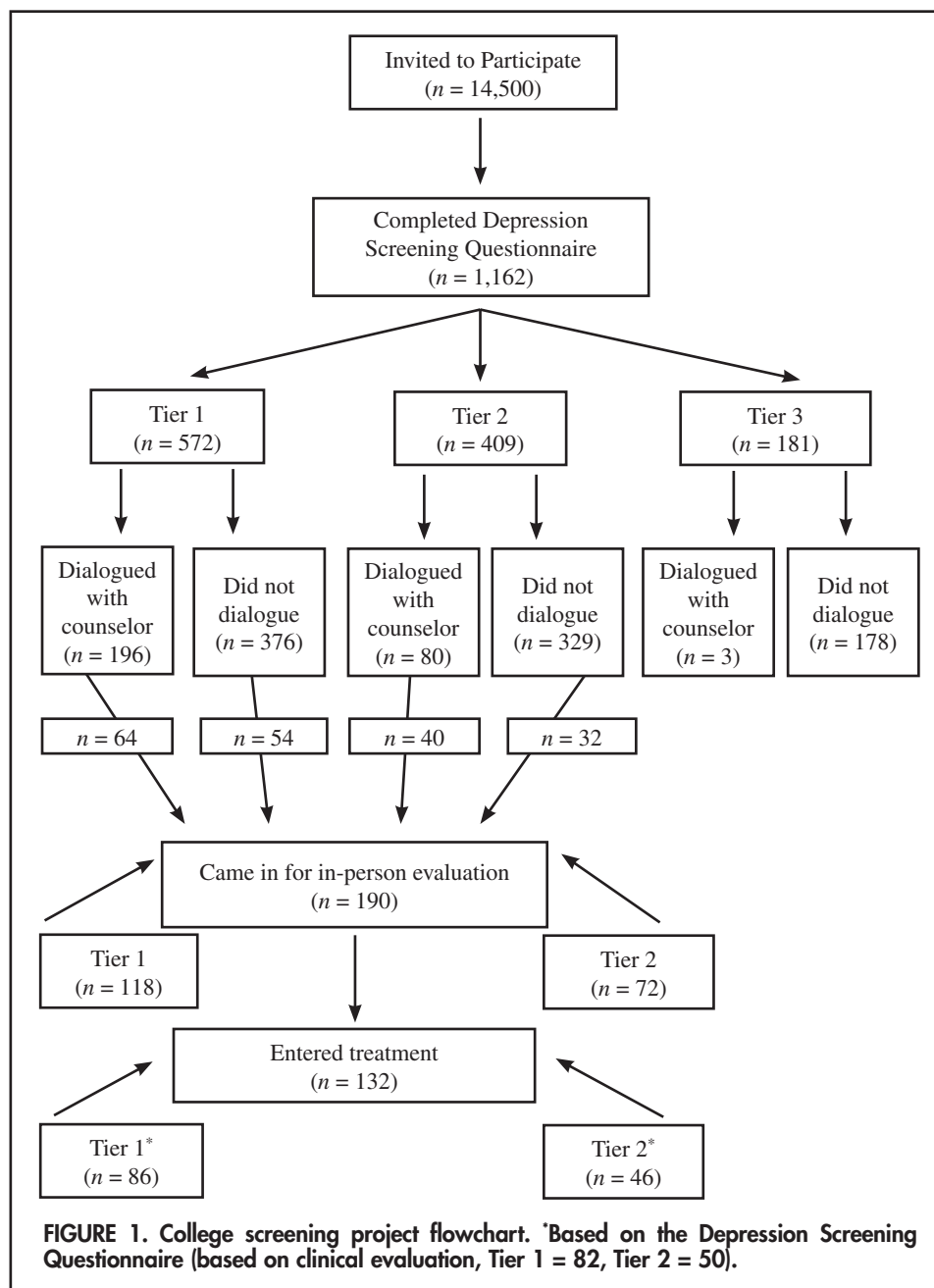
More than 96% ( $N = 1,119$ ) of the 1,162 respondents provided an e-mail address, which facilitated e-mail notification of almost all respondents when the counselor's assessment was posted on the Web site. About two-thirds of the assessments were posted within 24 hours of questionnaire completion, and the remaining third were posted within 48 hours. As tracked by the computer system, 1,033 respondents (88.9%) returned to the Web site to view their assessments; a comparable percentage of each tier (91.1% of Tier 1, 85.8% of Tier 2, 88.7% of Tier 3) viewed the assessment.

Subsequently, 279 students (24.0% of questionnaire respondents)—almost all of whom (276) were in Tier 1 or 2—engaged in 1 or more anonymous online dialogues with the counselor. High-risk students were the most likely to engage in dialogues, with 196 (34.3%) Tier 1, 80 (19.6%) Tier 2, and 3 (1.7%) Tier 3 respondents having at least 1 online exchange with the counselor ( $\chi^2[2, N = 1,162] = 86.979, p < .001$ ). Tier 1 students initiated 70.3% of all dialogues received. The sex distribution of students who wrote dialogues (70.3% female, 29.7% male) was similar to that of the questionnaire respondents. The number of dialogues exchanged between the 279 students and a counselor ranged from 1 to 15, with an average of 2.4.

A content analysis identified several themes in these communications. Many students used the dialogues to elaborate the problems they were experiencing and frequently expressed a desire to remain anonymous, as the following excerpt illustrates:

I spend way too much time thinking about food, and it tends to take over my life sometimes.... I have problems actually talking about it face to face with people... I guess I've viewed counseling as a sign of weakness, and I would be mortified if people knew I had to go.... I've [also] had a lot of trouble sleeping lately.... Many times I end up taking Nyquil, which I know isn't the best thing... but I don't know what else to do. Thank you for taking the time to respond, and I apologize for being "too chicken" to come for an actual session. This is the best I can do right now.

Other students seemed to question whether their problems merited attention, as expressed in this student's first dialogue:



I'm sorry it took me so long to respond.... I've had a really bad year, and it seems like I am either super happy or super sad; like right now I am sitting here crying on my bed, and I couldn't even tell you why. I think what I am most stressed out [about] (which makes me contemplate whether I should even live any more or not) is really stupid.... I feel like I am so lost because I am so undecided about my future.... I'm also involved in a lawsuit, which is scaring me so much, for a car accident I caused over 4 years ago, and the woman wants way more money than we have, so it will affect me for the rest of my life—another reason why I don't think it's worth sticking around. I think the depression questionnaire was a God-send before I did something stupid. People looking at my life from the outside in would see a very normal, happy childhood, and I have a great family and people who love me, so I almost feel guilty about being so sad. I don't have a real reason to be, I guess.... This is really long, but it's nice to get it all out. Thanks for listening.

Many students readily responded to the idea of discussing their problems online, sometimes noting prior negative experiences with traditional counseling or therapy. Another common theme was concern with confidentiality or other consequences of entering treatment, as evident in the following comments:

I would actually very much like to come and meet you face to face. However, I need some assurances about confidentiality. I was candidly honest [in the questionnaire] about my illegal drug use, and I don't know if you are required or would report me to the authorities. Also, I want assurances that just because my drug use might be excessive in your eyes, you're not just going to commit me to a rehab program.

This may sound silly, but it has held me back from trying to talk to someone earlier—are there any repercussions for



coming in? Last year, I overdosed on a bunch of pills and I cut up my body. My father flew down here to kind of help me out.... He said that it was probably a good thing that I did not go to the hospital because they would have to report a suicide attempt or something, and it could get me kicked out of school. If I admit to that or talk about my depression, will I get in trouble?

I wouldn't mind meeting you. One thing is bothering me, though: my parents used to pay for my therapists back home, but if I tell them now that I'm thinking of going back to therapy, they would get really worried about me and might want me to withdraw or something. But then, I wouldn't be able to pay on my own if it's as expensive as seeing private psychiatrists were. What do you think I should do?

Some students seemed to resolve their immediate problems during the course of exchanging online messages with the counselor and chose not to come for in-person evaluation. Such students often acknowledged that the dialogues had made them more open to the possibility of seeking treatment in the future.

Overall, 190 students—118 (62.1%) in Tier 1 and 72 (37.9%) in Tier 2—eventually saw the counselor for an in-person evaluation. This represented 20.6% of the 572 questionnaire respondents designated as Tier 1 and 17.6% of the 409 designated as Tier 2. Of these 190 students, 131 (68.9%) were women and 59 (31.1%) were men. Students who had engaged in at least 1 online dialogue with the counselor were significantly more likely to come for evaluation, with 104 (37.7%) of the 276 Tier 1 and 2 dialogue writers, compared with 86 (12.2%) of the 705 Tier 1 and 2 students who did not engage in dialogues, receiving an evaluation (Fisher's exact test  $p < .001$ ). Those who came for evaluation had an average PHQ-9 score of 12, slightly higher than the average of 11 among those who did not come in ( $t[979] = 2.159, p = .031$ ). Even more clearly differentiating these 2 groups were responses to the questionnaire item about the impact of symptoms on day-to-day functioning. Twenty-three (31.9%) of the 72 Tier 1 and 2 students who indicated that their problems made daily functioning *extremely difficult* came for evaluation, compared with 9 (10.0%) of the 90 whose response was *not at all difficult* ( $\chi^2[3, N = 964] = 12.931, p = .005$ ).

The counselors' evaluation reports indicated that at least three-fourths of these 190 students likely would not have come in without the outreach effort. In the final year of the pilot test, we added a question to the evaluation report that asked whether the clinical evaluation supported the tier designation the student had received on the basis of the screening questionnaire. For 64 (82.1%) of the 78 students evaluated during that period, the evaluation confirmed the tier designation. In 9 cases (11.5%), a Tier 1 designation changed to Tier 2, in 4 cases (5.1%) a Tier 2 designation changed to Tier 1, and in the remaining case (1.3%), a Tier 2 designation changed to Tier 3.

A total of 132 students—98 (74.2%) women and 34 (25.8%) men—entered treatment after evaluation. These 132 students represented 11.4% of the 1,162 questionnaire respondents and 13.5% of the 981 students designated as

Tier 1 or 2. Eighty-six (65.2%) of the 132 had been initially designated as Tier 1 and 46 (34.8%) as Tier 2. Verifying data on tier designation were available for exactly half (61) of the students who entered treatment and indicated that the counselor's clinical evaluation had confirmed the initial tier in 52 (85.2%) of the 61 cases. In 6 cases (9.8%) the designation changed from Tier 1 to Tier 2, and in the remaining 3 cases (4.9%) it changed from Tier 2 to Tier 1. Thus, the overall change was a 4.9% shift from Tier 1 to Tier 2. Applying this change to the 132 students who entered treatment, 82 (62.1%) likely had Tier 1 status at the time they began treatment through the project and 50 (37.9%) were likely Tier 2.

Among the 981 students who had initially been designated as Tier 1 or 2, 69 (25.0%) of the 276 who had engaged in online dialogue with the counselor entered treatment, compared with 63 (8.9%) of the 705 students who did not engage in dialogues (Fisher's exact test  $p < .001$ ). Counselors' reports indicated that 80.2% of Tier 1 students who entered treatment had no prior contact with the university counseling center. Two had been receiving psychotherapy at the time they submitted the screening questionnaire; 10 had been taking psychiatric medications, but few such students were being monitored regularly.

At the large state university, the screening counselor typically saw students who came for treatment through the project for 4 to 5 psychotherapy sessions, after which she referred students requiring extended therapy to an on-campus treatment clinic or community provider. At the private university, the screening counselor treated fewer students because short-term psychotherapy was available through either the student counseling center or the psychiatry clinic. On that campus, the screening counselor normally saw students for 1 or 2 sessions and then facilitated a referral to one of these treatment options. At both universities, at least half the students seen for psychotherapy were also seen by a project psychiatrist for medication management.

Primary diagnoses among the 132 students who entered treatment were major depressive disorder ( $n = 53, 40.2\%$ ), adjustment disorder ( $n = 41, 31.1\%$ ), anxiety disorders ( $n = 19, 14.4\%$ ), and substance use disorders ( $n = 17, 12.9\%$ ). Treatment ranged from 1 to 28 sessions, with an average of 5 sessions. At both universities, treatment duration was limited by the relative lack of low-cost, long-term treatment options. Although treatment reports were incomplete, we found evidence of positive outcomes in 26 (45.6%) of the 57 cases for which information about the final therapy session was available. In 18 cases (31.6%), the student prematurely terminated treatment, and in the remaining 13 cases (22.8%), the counselor referred the student to a provider outside the project for continued treatment.

Responses to questions included in the last follow-up e-mail to Tier 1 and 2 students provided insight into why some troubled students did not follow the counselor's recommendation to come for evaluation or treatment. Six (15.4%) of the 39 students who answered these questions indicated they had sought treatment outside the project, and 25 (64.1%) said they were currently feeling better.

Staffing for the project implementation at the private university included a 0.5 fulltime equivalent (FTE) counselor and a 0.2 FTE psychiatrist. The state university project staff included a 1.0 FTE counselor and a 0.4 FTE psychiatrist.

### COMMENT

This Web-based outreach method offers considerable promise as a tool for identifying previously untreated high-risk students and encouraging them to get help. Among the 572 Tier 1 students who responded to the screening questionnaire, 91% viewed the counselor's personalized assessment, 34% engaged in online dialogues with the counselor, 20% came for an in-person evaluation, and 15% entered treatment. Over the 3-year pilot test, more than 80 new high-risk students entered psychotherapy after the in-person evaluation. In addition, on the basis of the dialogues and the responses to the follow-up questions by Tier 1 and 2 students, the screening process prompted a small number of additional students to seek treatment outside the project. Although these results may appear modest, only a small number of suicides would be expected among the 14,500 students invited to participate in this 3-year pilot project. Viewed in this context, the number of new high-risk students brought into treatment through this relatively low-cost screening initiative is a promising outcome. At the private university where the screening has now been offered to all undergraduates for 8 consecutive semesters, its impact is further suggested by the occurrence of only 1 suicide during this period, compared with 3 during the prior 4 years.

Most students who were evaluated were considered unlikely to have come in without the counselor's intervention and encouragement. The dialogue feature of the Web site played a particularly important role in providing a mechanism for students to resolve concerns, remove perceived treatment barriers, and form a therapeutic relationship with the counselor. Among students designated to be at-risk, the rates of coming for in-person evaluation and entering treatment were 3 times higher for those who engaged in online dialogues than for those who did not. In addition, for some students who dialogued with the counselor online but did not come for an in-person evaluation, the online relationship appeared to have had a therapeutic effect, which, even if temporary, likely increased the chances of the student's seeking treatment at a later time. Troubled students whose only contact with the counselor was the personalized assessment of their responses to the screening questionnaire had a relatively low rate of follow-through with treatment recommendations, with about 12% of such students coming for evaluation and about 9% entering treatment. This suggests that online screening systems that provide computer-generated recommendations may have even more limited impact on help-seeking behaviors.

Students who had a face-to-face evaluation were more likely than others to acknowledge on the screening questionnaire that their problems were having a major impact on their day-to-day functioning. Interestingly, in the pilot test, only about 1 in 5 students who scored at least 15 (indicative

of moderately severe to severe depression) on the PHQ-9 said their problems made functioning extremely difficult. This suggests that a substantial number of students with serious depression may minimize its effects on their day-to-day functioning and may be discouraged from seeking help because of their attachment to an image of themselves as high performing. This possibility alerts clinicians to the need to further explore the issue of functioning with students whose questionnaire responses indicate significant depression but who deny substantial interference with day-to-day activities.

The availability of the screening clinician to provide short-term treatment was an important aspect of the outreach effort. Even when students came in directly after receiving the counselor's assessment, many seemed to already feel a sense of connection to that clinician, and immediate referral to another treatment provider would likely have been counter-therapeutic. In the pilot test, having a single outreach counselor at each university assured that the same counselor provided assessment, dialogues, in-person evaluation, and initial treatment sessions. We have now developed procedures to accommodate multiple counselors at a single university and are currently applying these at new sites. Although the 2 counselors who participated in the pilot test had different academic backgrounds and levels of prior clinical experience, we observed no significant differences between the 2 campuses in the proportion of students who engaged in dialogues with the counselor, came for evaluation, or entered treatment. This suggests that counselors, regardless of clinical experience, can effectively implement the outreach method's relatively structured protocol. As we noted earlier, neither screening counselor was associated with her respective campus' counseling center. Although this was due to pragmatic reasons rather than design, it appeared to make it easier for some students to seek help from a source that was perceived as outside the regular mental health system.

There was some suggestion that the project affected high-risk students who submitted the screening questionnaire but did not respond to recommendations for evaluation or treatment. Responses to the questions posed to Tier 1 and 2 students in a follow-up e-mail suggested that in weeks after questionnaire submission, a considerable proportion of these students felt better, possibly because of the counselor's repeated expressions of interest and availability. Maintaining regular contact, via letters or postcards, with depressed, suicidal patients who are not otherwise receiving treatment significantly reduces subsequent suicidal behavior, presumably by fostering patients' experience of connectedness and support.<sup>19,20</sup> Such simple, inexpensive interventions also may have applicability for campus-based suicide prevention.

Requesting that students provide an e-mail address at the time they submitted the questionnaire facilitated ongoing contact with at-risk students. In this pilot implementation, we told students that their e-mail addresses would be encrypted into the computer system and would not be made

available to us or other campus personnel. We do not know whether respondents' almost-universal provision of an e-mail address was because of this assurance of anonymity or the generally high level of comfort that college students have with e-mail communication.

Either way, administrators should carefully consider whether to collect students' e-mail addresses as part of an outreach effort, in light of recent lawsuits filed against universities for not preventing the suicides of students known to be at risk.<sup>11</sup> Some universities regard a completely anonymous system as providing the best legal protection in cases where students indicate that they are suicidal but refuse to come for in-person evaluation or treatment. Other universities that are implementing this outreach method, however, have incorporated procedures for decrypting the e-mail address and attempting to contact a student who indicates imminent suicide risk. This requires, of course, that students be informed of such procedures at the time they are invited to complete the screening questionnaire. Furthermore, a decrypted e-mail address can be traced to an individual student only if it is university assigned because commercial and public e-mail providers will not reveal a subscriber's name and contact information.

Although relatively little case law guides decisions in this area, current legal opinion<sup>12</sup> and out-of-court settlements in recent high-profile cases<sup>21,22</sup> suggest that universities' liability for a student suicide is limited to situations in which its actions are deemed to have caused the suicide or in which the university has an established clinical or custodial relationship with the student that creates a special duty to protect. Universities are increasingly expected, however, to engage in proactive suicide prevention activities, and thus outreach to previously untreated at-risk students is likely to protect against rather than increase institutional liability.

### Limitations

In this descriptive study, we did not include a control condition against which we could compare the results of the interactive Web-based outreach method. Although the results are promising, firm conclusions about the method's effectiveness as a suicide prevention intervention must await a controlled study. Because we do not know how many students at the participating universities were actually at high risk of suicide during the project period, we cannot know what proportion of the high-risk population we were able to identify. Neither do we know whether students who responded to the questionnaire differed in any systematic ways from comparably troubled students who chose not to participate.

Although the rate of response to the questionnaire was low in terms of the percentage of all students invited to take part in the screening (8%), we did not aim to reach a large, representative segment of the student body. Rather, we sought to identify and encourage into treatment students with significant depression and related problems, a group estimated to constitute 10% to 15% of the US college population at any given time.<sup>23</sup> Considering that the primary targets for the screening method were troubled students who

were not currently in treatment, the 8% response rate was close to our initial expectations. The disproportionate percentage of respondents designated as Tier 1 or 2 (85%) and the low rate of current treatment these respondents reported (6% to 13%) confirmed that the method largely reached the intended target group. We emphasize, however, that questionnaire respondents were a self-selected group and are not representative of the campuses as a whole.

Women were significantly more likely than were men to submit the screening questionnaire, although comparable percentages of male and female respondents came for evaluation and entered treatment. The greater initial response among women may have resulted in part from the questionnaire's emphasis on depression, which recent research suggests is significantly more common among women than among men, across all age groups.<sup>24</sup> In the next phase of the project, we aim to increase response among men by including items on stress, anger, and aggressive behavior, which troubled young men may more readily endorse. Attracting more male students to participate in the screening is critical because they are overrepresented among college suicides.

The more than 80% confirmation of tier by counselors through the clinical evaluation suggests that the tier designation system was valid. For some students, however, there was a lapse of several weeks to more than a year between questionnaire submission and the evaluation session, and events occurring during that period may have resulted in changes in their symptoms. For a number of students whose symptoms appeared less severe in the evaluation than in their questionnaire responses, establishing contact with the counselor through the personalized assessment—and especially through the online dialogues—also appeared to have played a role. Such confounding factors limit firm conclusions about the validity of the tier designation system.

Neither of the universities that participated in this study had policies requiring mandatory leaves, mandatory counseling, or other administrative sanctions for students who indicate suicidal ideation or behavior. Thus, students who participated in the intervention likely felt freer to come forward than would students at universities that enforce such policies.<sup>25</sup>

### Future Research

One troubling finding is the lack of resources available on university campuses for long-term treatment of students with serious psychiatric problems. Treatment availability must be addressed if campus screening initiatives are to be successful. Our findings suggest that Web-based counseling and other online clinical services may be particularly attractive to college students because of their greater convenience, privacy, and affordability.<sup>26</sup> Few clinicians are trained in text-based communications, however, and relatively little is yet known about how factors such as the inability of the clinician or the client to assess one another's nonverbal cues may affect the quality of Internet therapy. Another potential difficulty is that nonsynchronous communications may result in a delayed response to an acute crisis.



University administrators would need to carefully consider the many clinical, ethical, and legal issues involved in providing online mental health services to students, especially those at significant risk for suicide.<sup>26,27</sup>

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### NOTE

For comments and further information, address correspondence to Dr Ann Haas, American Foundation for Suicide Prevention, 120 Wall Street, 22nd Floor, New York, NY, 10005, USA (e-mail: ahaas@afsp.org).

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