Campus Suicide Prevention: Bridging Paradigms and Forging Partnerships

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Colleges and universities are increasingly recognizing the need to expand suicide-prevention efforts beyond the standard, clinical-intervention paradigm of suicide prevention, which relies on referral to, and treatment by, mental health services. These services frequently struggle, however, to provide effective, comprehensive care. After reviewing findings that support the need to adopt a broader, problem-focused paradigm, the article provides a framework for bridging this paradigm with the clinical-intervention approach and for conceptualizing a full continuum of preventive interventions. For each level of intervention (ranging from the individual to the ecological), we describe the goals and methods used, and provide examples to illustrate the role of psychiatrists and other campus mental health providers in the collaborative partnerships that must form to support a comprehensive, campus-wide suicide-prevention strategy. (HARV REV PSYCHIATRY 2012;20:209–221.)

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Preventing suicide and suicidality on college and university campuses is not for the faint of heart. This complex issue has many challenges. One such challenge is the need to blend and balance two different, yet complementary, paradigms conceptualizing both the problems associated with, and the potential solutions to, campus suicide. The first paradigm involves clinical intervention aimed at identifying and assessing students who are already experiencing some degree of suicidality, and at increasing the number of students participating in treatment. Expert-based treatment of illness is critical to this paradigm. Other key components include the identification of suicidal students and deaths by suicide as the particular (and only) problems requiring attention, the allocation of virtually all responsibility to college mental health services, and crisis resolution and restoration of premorbid functioning as fundamental goals. Despite persistent calls for a multifaceted, public health approach to preventing suicide generally[1–3] and campus suicide specifically,[4–7] and despite the increasing number of campuses adopting some of the associated recommendations,[6] this clinical-intervention paradigm has tended to dominate institutional efforts to prevent student suicide.[4]

The focus of the second, problem-solving paradigm lies elsewhere. It emphasizes the elements of campus ecology that can be amplified, modified, or eliminated to enhance the overall health quotient of the student body, and it encourages the utilization of total and subpopulation proactive interventions that fortify resilience. Such interventions enhance students' coping and self-management skills—in particular, those skills that help protect against suicidality and other pathogenic processes resulting in distress and dysfunction. The fundamental goal is to circumvent or reduce factors that contribute to the current high prevalence of distress and personal vulnerability, both of which spawn suicidality and suicide crises in the student population.

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Several changes in perspective are involved in broadening the suicide-prevention effort beyond the treatment of students who are already suicidal, to include interventions with the entire student population and efforts to address the ecology of tertiary institutions: student distress and suicidality are identified not just as problems, but as targets of prevention; the health-promoting contributions of the students' environment must be strengthened to interrupt the pathogenic process and to raise the overall health status of the student body; the focus is no longer solely on attending to the individual in crisis but includes the well-being of the entire student population and student subpopulations; heavy reliance on the limited resources of college mental health centers lessens with the broader participation of, and ownership by, the institutions and campus stakeholders; and success is no longer measured exclusively in lives saved but also in improving the health status of the student population and in reducing the prevalence of negative events. (We refer, in particular, to those negative events and personal vulnerabilities that raise distress levels to such a degree that students are propelled onto some point on the suicidality continuum, which is conceptualized as beginning with suicidal thoughts, progressing to contemplation of means, making preparations, and then attempting and completing suicide.)

At the time of writing, colleges are at various points in the process of combining these two paradigms,[6] and many of these efforts have been supported by Substance Abuse and Mental Health Services Administration (SAMHSA) grants funded through the Garrett Lee Smith Memorial Act.[8] Characteristic of the early stages of taking on a new intervention approach or attempting to extend the effectiveness of a current one, initial program and service efforts predominantly involve adopting whole interventions used in other colleges and universities (e.g., purchasing one of many commercially available gatekeeper-training programs).[8,9] When institutional commitment to a broader prevention effort solidifies, as more resources become available, and as competence in the utilization of new intervention methodologies increases, campus-specific interventions are added,[6] and comprehensive prevention strategies coalesce to guide, sequence, and pace program efforts.

We propose a framework, delineated in greater detail elsewhere,[5] for conceptualizing the continuum of suicide intervention on a college campus. It embeds intervention within a comprehensive prevention strategy and helps interveners link intervention methodology to specific types of preventive action. Within this framework, five types of preventive actions lie across three zones of intervention, according to purpose, timing, target population, and change in the methodology used. Figure 1 outlines the five types of preventive actions and places them contiguously as, from left to right, the focus of intervention shifts from the environment to populations to individuals. Likewise, as the focus changes across these dimensions, a corresponding shift in intervention purpose and methodology is required. In order to demonstrate the utility of this framework for developing a systematic approach to campus suicide prevention, we will illustrate how a "typical student" is influenced at each level and depict the collaborative partnerships among psychiatrists and other professionals that support each type of intervention.

TREATMENT AND CRISIS INTERVENTION

Rather than working from the left to the right in this representation of the model, we will begin at the point of intervention that is most familiar to mental health providers working both on and off college campuses:[10,11] treatment and crisis intervention. Imagine a typical scenario in which a student, whom we will name *Andrew* (and who will be used for illustrative purposes throughout this article), encounters campus mental health services in a state of suicidal crisis. Andrew is a serious student who appears overwhelmed and agitated, and reports both a history of depression beginning in high school and fleeting suicidal thoughts throughout the past year. In the wake of a recent breakup, he has been seriously considering suicide by several possible methods, with his urge to attempt suicide becoming stronger. He visits the counseling center at the insistence of his parents, who are concerned by his comments about wishing it would "just all be over."

At this point on the intervention spectrum, a familiar collaboration of care providers emerges. Ideally, Andrew would have access to crisis services, leading to contact with both a counselor or case manager and a psychiatrist the same day that he is referred. If his risk is deemed severe enough and protective actions became necessary, the treatment team would include a staff psychiatrist at a local hospital to streamline admission and ensure care coordination upon discharge from the hospital. Suppose instead, however, that Andrew is willing to commit to a safety-and-treatment plan that includes medication and therapy, along with his parents' involvement. In that case, Andrew could be supported by a collaboration that would potentially involve a counselor, psychiatrist, case manager, telephone counselor for a 24-hour crisis line; parents, friends, and a primary care provider; and, if the treatment plan included withdrawal from school or a reduction in course load, other relevant campus professionals, such as academic advisers or the dean of students.

This scenario is an ideal one, but in reality many campuses lack the requisite resources, such as on-staff psychiatrists. Thirty percent of surveyed counseling center directors have reported no on-campus psychiatric services, and

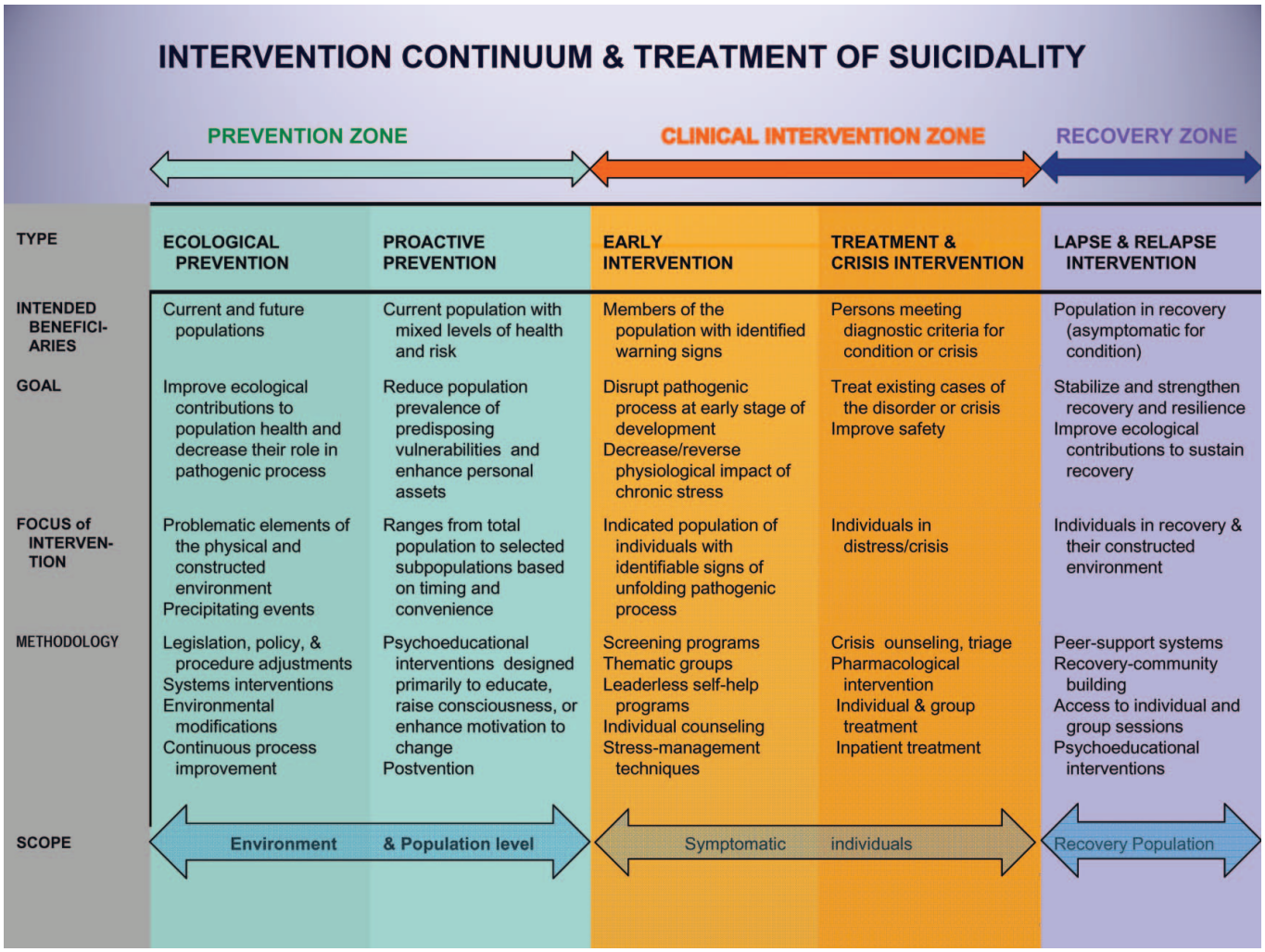

Figure 1. A framework for conceptualizing the continuum of campus suicide interventions. Adapted with permission from Drum DJ, Burton Denmark A. College suicide prevention programs and interventions. In: Lamis DA, Lester D, eds. Understanding and Preventing College Student Suicide. 2011. Courtesy of Charles C Thomas Publisher, Ltd., Springfield, Illinois.

66% have described the available psychiatric services as inadequate.[12] A separate survey indicated that 34% of counseling centers have increased their available psychiatric consultation hours, up 6% from the previous year, in order to respond to their perception of the increasing severity of students' psychological problems.[13] Where services are insufficient, campuses must work to establish community-based care networks that include hospitals, mental health centers, and off-campus psychiatric services to allow for streamlined referrals.[14] Integrated care teams can streamline communication between health and counseling services.[15,16] Additionally, in order for effective coordination of care to occur, it is essential that universities have policies already in place regarding medical withdrawal and how information is shared among team members.[17,18]

As the intervention with Andrew draws to a close, his suicidal thoughts and urges will have been successfully treated with a combination of medication and therapy. Reviews of the research[19] provide strong evidence that psychopharmacological treatment reduces risk of death by suicide, as does psychotherapy. In particular, cognitive-behavioral therapy and dialectical behavior therapy have strong empirical support for reducing risk of suicidal behavior[20–22] and are listed in SAMHSA's National Registry of Evidence-Based Programs and Practices.[23] Treatment and crisis interventions have been described as the "bedrock of suicide prevention" for psychiatric clinicians.[19] These services truly save lives, and it is essential that they continue to be a foundational pillar of campus suicide prevention. The success of treatment and crisis intervention in resolving suicidal crises and

reducing expected deaths among students who utilize campus counseling services[24] has spurred efforts to increase the number of students contacting those services. As a result, many campus prevention programs[8] focus on expanding the number of campus community members (such as students, faculty, residence hall advisers, academic advisers, and others) who receive training in recognizing and referring suicidal students to campus mental health centers.

While these efforts are proving beneficial, difficulties inherent in relying exclusively on a clinical-intervention paradigm become apparent when examining the prevalence and dynamics of suicidality, and the patterns of help seeking among the student body. For example, just half or fewer of students considering suicide receive any help,[4,25] and most who die by suicide have never received help from their school's counseling center.[26,27] Many students, even those with mental health needs, have limited knowledge of available counseling services.[28] Others intentionally avoid seeking help for suicidal thoughts, often because of a concern about potential repercussions, including the loss of confidentiality, the possibility of being forced to leave school, and the loss of freedom through mandated treatment or hospitalization.[29] At the point of crisis intervention, universities struggle to balance concerns about the well-being of the individual student, the well-being of those who would be in contact with the distressed student, and issues of liability—the combination of which, unfortunately, can generate an antagonistic relationship between the institution and the suicidal student.[17,30,31]

Successful intervention depends, in many cases, both on identifying students whose suicidal thoughts are likely to have an intense onset and to be of short duration[4] (and who may try to avoid detection),[29] and on keeping those students engaged in the treatment process.[32] Willingness to seek help and to remain engaged in treatment are influenced by various factors, including race, ethnicity, gender, and international-student status.[33–36] Even if barriers to treatment are overcome, additional difficulties arise from the limited availability of appointment times for psychiatric services at many colleges[12,13]—which hinders, in turn, interdisciplinary collaborative treatment options and optimal use of medications in the treatment process. Semester breaks result in extended periods of time when students are unavailable to participate in treatment services and may contraindicate initiating treatment in the immediate days and sometimes weeks preceding those extended absences.

These focused interventions to prevent suicide require considerable resources on the part of the university, with the expenditures concentrated in health and counseling services. Even if an intervention is successful in a particular case, however, the resources used to protect a particular student during a single episode of suicidal risk confer no protective benefits on any other students on campus. Therefore, if campus suicide "prevention" efforts continue to micro-focus on this single point on the intervention spectrum—that is, on the acutely suicidal student—it is unlikely that the time, money, and energy spent will have noticeable impact on reducing either the prevalence of campus suicidality or the number of deaths from suicide.[4,24,37–39] Indeed, for many years, suicide prevention experts have recognized that treatment and crisis intervention should be considered just one part of a comprehensive framework[6–8] (such as the one we describe in Figure 1).

EARLY INTERVENTION

Let us refer back to our suicide-intervention framework (Figure 1) and cross over to the early-intervention component. It is easy to imagine that intervening earlier might prevent Andrew from reaching a crisis state. Effective early-intervention programs have mechanisms for identifying students who are at elevated risk for a condition and then delivering a targeted intervention to reduce the risk, thereby disrupting the ongoing pathogenic process. Perhaps Andrew participates in an online screening for depression and suicidality, such as the College Screening Project developed by the American Foundation for Suicide Prevention,[40,41] or is screened in person as a routine part of a primary care visit.[42,43] Investigations into such programs have found that, at the time of assessment, 85% of students with moderate to severe depression and 84% of those reporting current suicidal ideation were not receiving any psychiatric treatment.[41] The majority of students (95%) who endorse suicidal thoughts also report depression symptoms,[27] and screenings have shown promise in encouraging previously untreated students with depression and suicidality to seek help.[40,42,43]

Through the use of screening, our typical student Andrew becomes part of an indicated population for early intervention even though his thoughts of suicide are either absent or passive and fleeting, before he moves further along the continuum of suicidality.[4] Perhaps he is contacted first by a counselor via an online portal and then invited to take part in a structured thematic group for depression recovery, with options to consult with psychiatric services and to supplement group with individual therapy sessions, as indicated. Other examples of early-intervention programming are broad-spectrum interventions, such as mindfulness-based stress management[44,45] and depression-recovery programs,[46] which do not necessarily target suicidality but which aim, instead, to bolster individuals' self-monitoring and self-calming abilities. Additionally, early intervention can be conceptualized as encompassing treatment for risk-conferring conditions (e.g., substance abuse)[47–50] as well as for symptoms that are not

independently predictive risk factors but are "known to lie on the path to suicide"[51] (e.g., insomnia). Early-intervention, collaborative partnerships between psychiatrists, primary care providers, group leaders, and individual counselors are designed to provide tailored care for at-risk students early enough in the pathogenic process that suicidal crises do not occur.

Note that this level of intervention continues to require significant investment of resources from the institution, and the concentration of effort and responsibility remains with campus health and mental health services. Resources are spent more efficiently here, reaching the 20 or so students attending the group through a lower level of investment than is required for only one student in crisis intervention. Even the resources used here, however, need to be continually renewed for each group of students identified as being at risk. Note also that the burden of engagement on the student remains high and that the effectiveness of the intervention is contingent upon student participation—first in the screening effort and then in some form of treatment.

BRIDGING PARADIGMS

We have now reached the point in the suicide-prevention framework where the clinical-intervention paradigm recedes in importance and the problem-solving paradigm becomes ascendant. Coincident with the paradigm switch, the intervener's focus changes from using clinical interventions at the individual level to population-focused, proactive, and ecological interventions aimed at raising the overall health status of the student body—in particular, by strengthening resilience and by increasing immunity to the development of distress and suicidality. As we transition to a population perspective, we will use a visualization activity to introduce research findings that illustrate some of the many challenges faced by college suicide prevention.

To begin the visualization, imagine that Google Earth™ mapping service has just developed a method for detecting and displaying student suicidality on college campuses and also the behavior of those who have the responsibility to prevent suicide. One feature of this imaginary system is that it can determine and display in percentage terms the lifetime prevalence of suicidality among the student body up to the present moment. It also has a colored-light system to display the past-twelve-month status of each student with regard to suicidality and the activity of campus staff responsible for preventing suicide. A white light is used to denote a student who is not suicidal. A red light is used to depict when and for how long during the past 12 months each student has experienced some form of suicidality, such as ideation, contemplation of means, planning an attempt, or making one or more attempts. A green light identifies the people on campus employed to help turn red lights to white.

Observers perceive that white lights predominate, but there are a surprising number of red lights during the presentation. Noticeably, a small number of white lights turn to a bright, pulsating red, indicating serious sucidality, while fewer are steadily red throughout the entire presentation. You also notice that some lights are twinkling red and white, while other white lights are red so briefly as to seem an illusion. Sadly, on rare occasions, a red light goes off and does not turn white, but vanishes.

This depiction reflects findings across multiple studies that between 4% and 10% of college students report seriously considering suicide within the previous year.[4,25,27,52] A large national study[4] explored in-depth the suicidal experiences of students at 70 institutions and found that 18% endorsed serious suicidal thoughts and 55% endorsed some form of suicidal thinking at some point in their lifetimes. Of those with serious suicidal thoughts in the past 12 months (6%), the majority described the period of suicidality as brief, with 56% reporting that the thoughts lasted for one day or less. A minority of ideators (5%) indicated that their thoughts of suicide lasted for many months. Periods of ideation were also described as recurrent, with 69% of ideators reporting more than one period of serious ideation in the past 12 months, 50% describing their suicidal thoughts as strong, and 31% describing their intent to kill themselves as strong. These findings are consistent with other data suggesting that student deaths from suicide are often impulsive: about 20% of suicides occur on the same day as a significant life crisis, and 25% occur within two weeks of the stressor.[14]

In our visualization, some things are striking about the behavior of the red-light students. Some of the red lights are so dull that it appears as if some students are attempting to conceal their redness so that no one can detect that they are red, whereas other red lights seem to be seeking contact with nearby white lights and far less frequently with green lights. The above-mentioned, in-depth study of students' suicidal experiences[4] indicated that 46% of those who seriously contemplated suicide in the past 12 months did not tell anyone about their suicidal thoughts. Among those who did disclose their thoughts, two-thirds first told a peer, and less than half of all ideators received any professional help. These findings are consistent with other studies, which show that about half of young people contemplating suicide do not seek any help, and that those that do are far more likely to seek support from friends or family members, with friends being preferred over family members.[53–55] In fact, even students receiving mental health treatment may conceal their suicidal thoughts from their clinicians,[56] with some evidence that racial and ethnic minority students are especially likely to be "hidden ideators."[57]

Several general observations are apparent from the presentation. First, the overall change in the percentage of white lights to red is virtually imperceptible. Although rates of ideation vary somewhat based on sample size and how questions are asked, they appear to be relatively constant.[4,25,27,52] This sustained state highlights one of the failings of the treatment-focused paradigm: it is oriented toward preventing individual deaths but does not explicitly aim to reduce either the incidence or prevalence of suicidal distress or suicidal thoughts. And given that over 80% of students who die by suicide never have contact with their campus counseling services,[26,27] even if the clinical-intervention paradigm were to serve twice the number of suicidal students that it does at present, it would be unlikely to result in a substantial reduction in suicide rates. In fact, best estimates of these rates have remained relatively unchanged at 6.5–7.5 deaths per 100,000 students for the past 30 years,[37–39] and it has been observed that when accounting for the changing demographics of the U.S. college student population, the relative risk of suicide for students, which is approximately half that of the nonstudent population, has remained constant for the past 40 years.[24]

PROACTIVE PREVENTION

At this point, the suicide-prevention framework transitions to the problem-solving paradigm, deploys interventions that target the overall population and a variety of subpopulations, and includes elements of the campus ecology. Proactive prevention aims to reduce the likelihood that the intersection of diathesis and stress will produce disease expression. In recognizing that students arrive on campus with existing vulnerabilities, such as attachment ruptures and histories of depression and suicidality, and that they will inevitably encounter stressors—including academic problems, financial strain, and interpersonal challenges related to dating, friendships, and family problems, all of which can trigger suicidality[4,58,59]—proactive intervention is intended to ameliorate existing vulnerabilities and to bolster resilience to the impact of negative events.

The methodology is primarily psychoeducational in nature and may also draw on concepts of social marketing in public health.[60] Interventions are applied through social and academic programming, either to the entirety of the current student population or to a selected subpopulation. Examples of the latter include all first-year students, demographic groups known to have increased vulnerability due to experiences of marginalization and discrimination (e.g., lesbian/gay/bisexual/transgender[61–63] and ethnic minority students),[35,55,64–67] and groups of students affected by loss or trauma. Interventions for students who have been affected by a peer's suicide attempt or death represent a unique form of proactive prevention.[68,69]

Within this framework of proactive prevention, our typical student Andrew is now exposed to a variety of interventions to promote positive health and to increase internal assets, such as knowledge and skills to solve problems more successfully, connect interpersonally, cope with stress, and tolerate emotional distress. During his freshman orientation Andrew and all other members of his class attend a training session providing information about common college mental health concerns, including suicidality, and how both to recognize that a friend may be experiencing distress and to offer support and help. Examples of such training sessions can be found on many college campuses. Some are developed in-house, whereas other colleges use commercially available trainings such as QPR (Question, Persuade, Refer) Gatekeeper Training, DORA (Depression OutReach Alliance), At-Risk, Campus Connect, and others that can be found in the Suicide Prevention Resource Center's Best Practices Registry.[70] The message of supporting and being supported by one's peers is reinforced through activities of peer-to-peer support networks, such as the Worcester Polytechnic Institute Social Support Network program.[71] Social media campaigns, such as the University of Texas at Austin's Together>Alone,[72] promote a culture of connectedness, and a variety of technologies can be utilized to promote awareness of available resources and to encourage help seeking.[73]

During freshman orientation programming or even in some courses, for example, students like Andrew might attend sessions that focus on developing effective ways of coping with stress and that introduce cognitive and behavioral tools for proactively reducing the likelihood of developing depression or anxiety—the most commonly experienced mental health problems on campus.[12,13,74] Walking around campus, students might encounter social-norms campaigns designed to discourage problem drinking.[47] Classes could include course modules on assertive communication and interpersonal skills. The counseling center might host a suicide-prevention week to raise awareness.

Andrew and his fellow students also benefit from training programs that they experience only indirectly, such as those that faculty, staff, and resident assistants attend to augment their ability to recognize and intervene with students in distress.[75] So, while Andrew remains vulnerable to depression and has experienced the stressor of a breakup, he is able to use the coping skills that he has learned, including that of seeking social support from a friend. His resident assistant, who has noticed that Andrew is withdrawing socially, reaches out to him, reminds him of available help services, and helps him not to feel so alone. Andrew recovers successfully from the breakup, and at the point where early intervention would have identified him as in need of

treatment, he is experiencing only mild depression and is not considering suicide.

These interventions and many others in the zone of proactive prevention illustrate a shift in the resources used and in their targets; the resources expended by the university now have a much wider impact. They affect students who will never have any direct contact with their campus mental health services, which is crucial because that group includes the majority of students who contemplate suicide,[4] as well as the majority of students who ultimately die by suicide.[26,27] The burden of engagement lies heavily on the institution and very lightly on the students—who must act to avoid benefiting rather than act in order to benefit. These proactive interventions nonetheless require some level of student attention, and it is important that the interventions be multifaceted and multimedia. The responsibility for implementation thus ranges beyond the traditional providers of care—that is, campus mental health services—to include faculty, religious leaders, various student affairs staff such as deans of students and residence life, and the students themselves, particularly those who are leaders in their student organizations.

Campus psychiatrists, primary care providers, and counselors, focused as they are on responding to the increasing demands of their clinical caseloads,[12] may infrequently see themselves as having a central role in establishing and coordinating these kinds of proactive interventions.[76,77] Nevertheless, in view of their medical training, biopsychosocial conceptualization of mental illness, and exposure to the tenets of public health, psychiatrists (and potentially others with psychiatric training) are ideally poised to be both leaders and members of such collaborative efforts.[76] By the same token, some authors have argued that the role of psychiatry in campus suicide prevention must not only include direct clinical treatment but also embrace research, education, and outreach, as well as the provision of training for primary care providers and nonmedical staff.[19] One program, established by a psychiatric nurse/faculty member with the initial support of SAMHSA grant funds, sets out the steps of creating and maintaining a suicide-prevention task force to coordinate and carry out such broad-reaching interventions.[77] In that particular program, task force members included "university chaplains, the chair of the mass communications department, the program coordinator for the graduate program in counselor education, a nurse practitioner from the student health center, a member of the counseling center staff, and the executive director of the local mental health association."[77]

Proactive interventions are based on a public health prevention model, which stipulates that where risk is widely diffused through a population (as with suicidality), intervening with a large number of people at low risk is more effective for reducing prevalence than intervening with a small number of people at high risk.[78] The former, broad interventions, while requiring greater levels of support and participation from stakeholders across campus, also pay a significantly greater return on investment by reaching more students at an earlier point on the distress-suicidality continuum. Researchers who have examined early, proactive interventions from a cost-benefit perspective have found that both comprehensive suicide-education and peer-support programs are cost-effective in terms of net social benefits and would therefore be beneficial to society if implemented in colleges and universities.[79] A systematic literature review and report from the Mental Health Economics European Network[80] emphasizes that suicide prevention specifically, as well as mental health promotion and mental illness prevention more generally, are not just cost-effective but are cost-saving. Regarding the economics of proactive prevention, in particular, it should be noted that these interventions affect only the current students; given the constant turnover inherent in a university population, these interventions must be consistently renewed in order to have an ongoing impact on reducing the prevalence of distress and suicidality on campus.

Ecological Prevention

In addition to the interventions already described, a campus seeking to establish comprehensive suicide prevention must further examine the big picture—that is, how health-promoting aspects of the campus environment can be enhanced and how health-degrading aspects can be reduced or eliminated. The methods used for ecological prevention are rooted in environmental restructuring and organizational policy. Imagine that Andrew benefits from comprehensive suicide prevention at this ecological level. When he enters the college environment, his social connection to others is immediately and consistently promoted through classroom structure, residence life, and even architectural design. He may be part of a living-learning community,[81] a freshman interest group,[82] a first-year experience program,[83] or other intentionally structured, academically focused programs that support the development of the social connectedness, a key strategy for suicide prevention.[7,84]

That is, Andrew enters an academic culture that is intentionally shaped to build health-promoting qualities such as collaboration and a sense of togetherness, and to reduce harmful qualities of depersonalization, competitiveness, and discrimination. An example of curricular design that spans both proactive and ecological prevention is found in a course—"Introduction to Health"—developed by the nursing faculty at the University of Connecticut. In addition to an overarching educational focus on community-based practice and holistic health promotion, the course emphasizes

social connection, interactive teamwork, engagement with multiple campus departments, and individual responsibility for one's own health and for the larger campus climate.[85] Mitchell and colleagues[86] describe another striking example of collaboration with faculty for promoting campus environmental change. The program, supported by SAMHSA grant funds, used the method of *curriculum infusion* to broadly promote mental health, with the superordinate goal of reducing suicidal distress and deaths by suicide. The authors recruited nine faculty partners to creatively integrate mental-health-promoting learning opportunities into existing classroom structures; the student participants then displayed their work publicly or shared their learning in other ways with the larger campus community.

Policy changes that constitute ecological interventions range from norm setting and incentives (e.g., encouraging active faculty mentoring) to engineering a social environment with zero tolerance for racism, heterosexism, ableism, and sexism, and in which institutional policies are regularly reviewed to reduce unintentional discrimination and to promote celebration of diversity. Coupled with strong organizational support for essential departments—such as residential life, counseling and health centers, student-life programming, and academic and career support services—"the entire culture of the campus can in effect become a protective factor in and of itself."[87] This built-in protection is the goal of ecological prevention.

Various environmental qualities may help Andrew develop a sense of belongingness that prevents or ameliorates depression, and he may never enter the suicidal continuum at all. But even if he were to develop serious suicidality (as a portion of the student population inevitably does), the likelihood that he will impulsively end his life can be further reduced by architectural interventions (e.g., erecting protective barriers at locations where students can jump or fall)[88,89] and policy interventions (e.g., banning firearms and other weapons from college campuses).[90–92] In fact, such universally protective strategies have been hailed as the most fundamental form of suicide prevention.[3] Much of the protective effect of college environments—which results in the suicide rate of college students being half that of their non-college-attending peers—has been attributed to bans against firearms.[24,38] In describing the qualities of firearm regulation, Schwartz[93] effectively captures the essential features of ecological prevention: "it is universal, affecting all students and applying without regard to any past, present, or future level of risk for suicide that might characterize any one student."

Andrew benefits from the ecological-prevention interventions, along with all members of his class, the current university population, and all future university populations. Since the interventions require no effort from students, the burden of engagement is shifted entirely onto the institution. Although systemic changes typically require substantial initial investment of resources, they tend to be self-renewing and therefore highly cost-effective in the long term, largely because of their universal and lasting impact.[79,80] The collaboration that is required for ecological interventions (e.g., involving changes to the academic and social environment) is also broader than for other types of intervention. Because of their biopsychosocial perspective on suicide and related conditions,[76,94,95] and their exposure to public health conceptualizations of suicide prevention,[3] campus psychiatrists can play a key role in both training and program development. They have much to learn, too, from the administrators, students, parents, and educators who would be their partners in these prevention efforts.

LAPSE AND RELAPSE INTERVENTION

Now that we have "zoomed out" from the familiar domain of clinical intervention to the population-prevention zone—which holds great promise even though most campus mental health providers have yet to establish their role or to develop appropriate expertise—we return to the case of Andrew as he leaves treatment and crisis intervention. His current episode of suicidality has resolved, but he is returning to the same environment in which he originally developed suicidal ideation. He has presumably learned some problem-solving and distress-tolerance skills, and ideally has ongoing medication support, but his history of depression and suicidal ideation (and in the case of other students, suicide attempts) put him at risk of future episodes of suicidality.[96,97] The purpose of lapse and relapse intervention is both to support identified, higher-risk individuals and to build health-promoting communities so that lapse behaviors are less likely to occur and less likely to lead to full relapse if they do occur. This task is akin to engineering an environment within an environment. Lapse and relapse intervention utilizes the range of methodologies that are common in prevention and clinical-intervention activities—but in a more targeted and resource-intensive manner.

The role of psychiatry in relation to lapse and relapse prevention is similar to the roles adopted in crisis and early intervention as well as in proactive and ecological prevention. A key function is to follow up with medication management for these uniquely at-risk students, but psychiatrists also collaborate in other roles, such as coordinating care in relation to hospitalizations, developing treatment programs, providing training and consultation, and shaping institutional policies. The field of addictive disorders, in which much of the research and theory regarding relapse prevention has been concentrated,[98] has much to offer those involved in college suicide-prevention programs. For example, many concepts employed by campus recovery

centers—along with the recommendations to administrators and other student affairs professionals for how to establish and best contribute to these programs[99]—can also be applied for students in recovery from suicidality, mood disorders, eating disorders, and other conditions with a high risk of relapse. Fundamentally, these programs work to develop a supportive community ecology within the larger campus ecology; the environment is engineered to maximize protective and health-promoting qualities, such as connectedness, mutual support, and altruistic helping.

A student in the post-crisis phase would likely participate in ongoing therapy of some kind, whether individual or group, to maintain qualities that previously contributed to the successful resolution of the suicidal crisis. Protocols incorporating cognitive-behavioral therapy have been developed for reducing the likelihood of relapse following a suicide attempt.[100] Even simple follow-up contacts have been found to reduce the likelihood of attempting suicide among those hospitalized for depression or suicidality.[101,102] Organizationally, developing a comprehensive system to track students with histories of suicidality will help to ensure that these students do not simply disappear back into the environments where the problems originally developed. A program at the University of Illinois tracks students who have threatened or attempted suicide and mandates a number of assessment sessions.[103] Assertive outreach and case management[104] can also be applied with more flexible policies, with the same goal of ensuring continued contact with these students.

It is crucial that institutions have clearly defined policies for responding to students post-crisis. Resources such as the framework detailed by the Jed Foundation[105] may be useful. In terms of resource commitment, lapse and relapse prevention places a high burden on both the student and the institution, though not at the same level as that involved in treatment and crisis-intervention services. The institution makes significant resources and programming available to this community of students, who are, in turn, responsible for taking an active part in their own continued wellness and also for supporting and contributing to the wellness of their peers.

FACTORS AFFECTING PROGRAM IMPLEMENTATION AND LONGEVITY

The framework detailed above provides a tool for bridging the treatment-centered and problem-centered paradigms and for conceptualizing a comprehensive suicide-prevention strategy. The framework can aid both in evaluating the current state of an institution's suicide-prevention efforts and in designing new intervention components to fill the identified gaps. While the most effective prevention approach will be broad in scope—addressing suicide as a public health problem and encompassing interventions at each point along the continuum—it must be acknowledged that the actual scope of particular college programs will be determined by several key factors.

Obtaining senior administrator support[6,106] is crucial to acquiring the necessary resources. Resources extend well beyond funding and include staff positions, political support for using the institution's legislative and policy-setting apparatus, and a willingness to modify administrative systems and the material environment in ways that enhance well-being and disrupt the pathogenic process that leads to suicidality.

Next, activating and engaging a broad network of stakeholders is essential for both prioritizing suicide prevention and maintaining prevention efforts. Widespread representation of stakeholders integrates prevention efforts into multiple systems,[107] making these efforts more robust and sustainable than if they were to be situated within a single system—for example, campus mental health services. Given the wide array of initiatives competing for priority within an institution, these partnerships must not only be established but also be continually reenergized to generate sustainable change.

The characteristics and scope of suicide as a condition to be prevented must be considered when seeking initial support from administrators and stakeholders. Unlike a highly contagious, prevalent, and potentially lethal condition—such as the recent H1N1 flu virus, which marshaled immediate support for prevention and widespread participation by all segments of campus communities—the dynamics of suicide pose particular challenges for generating the political will to act. Although suicide is obviously a lethal condition and the second most common cause of death among college-age students,[108] its prevalence and contagion are relatively low. Although any death by suicide is sad and disturbing, a single death typically does not substantially disrupt the educational mission. When the scope of suicide prevention is refocused, however, to include preventing students from experiencing any form of suicidality, not only is the prevalence much higher, but the connection to the college's educational mission (in itself a key factor in resource acquisition) becomes more prominent.

Additionally, in the early stages of defining the scope of prevention and engaging in strategic planning, unique institutional factors—such as size, residency, funding source, and many other variables—must be considered. Administrators and other key stakeholders will give greatest priority to the programs that they perceive as most directly relevant to the primary mission of the institution.[109] Thus, interventions that are designed with the specific university culture, values, and population in mind will likely gain more traction than those that are imported whole from another university setting.[110]

Mounting a comprehensive suicide-prevention program is a daunting task made even more difficult by the need to operate from two different, yet complementary, intervention paradigms bridged by the framework that we have outlined in this article. The good news is that colleges are excellent environments for developing and conducting prevention campaigns. As membership organizations, they have entry standards, persistence requirements, mechanisms to communicate with members, policy-setting and legislative authority, and common membership activities. Additionally, colleges have an advantage over many other types of membership organizations: an abundant supply of scholars with expertise germane to environmental assessment and redesign, proactive prevention, relapse prevention, and other forms of health promotion. These scholars can be recruited to participate in intervention design, implementation, and evaluation.

Krieger[111] describes the *process of embodiment* as the way in which our ecology becomes incorporated into our very biological functioning. Through their impact on human ecology, universities can contribute to the adoption of adaptive, health-promoting collective lifestyles. As the resultant systemic health is absorbed by individual students and also by student populations, they come to embody health and resilience. This process of embodiment is a central feature of successful suicide-prevention efforts and will, more generally, improve the health status of students in their college years and well beyond.

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