Suicide Prevention and Intervention: Summary of a Workshop

Committee on Pathophysiology and Prevention of Adoloscent and Adult Suicide, Board on Neuroscience and Behavioral Health, Institute of Medicine

ISBN: 0-309-07624-2, 36 pages, 8 1/2 x 11, (2001)

Suicide Prevention and Intervention

summary of a workshop

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NATIONAL ACADEMY PRESS
Washington, D.C.

NATIONAL ACADEMY PRESS 2101 Constitution Avenue, N.W. Washington, DC 20418

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International Standard Book Number 0309-07624-2
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—Goethe

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This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the NRC's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations nor did they see the final draft of the report before its release. The review of this report was overseen by David Goldston, Department of Psychiatry and Behavioral Medicine, Wake Forest University School of Medicine. Appointed by the National Research Council and Institute of Medicine, he was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authors and the institution.

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Suicide Prevention and Intervention

INTRODUCTION

Two workshops were convened for the committee on the Pathophysiology and Prevention of Adult and Adolescent Suicide of the Institute of Medicine. Workshop I was on Risk Factors for Suicide and convened on March 14, 2001. Workshop II was on Suicide Prevention and Intervention and convened on May 14, 2001. The two workshops were designed to allow invited presenters to share with the committee and other workshop participants their particular expertise in suicide, and to discuss and examine the existing knowledge base.

The two workshops are part of the information-gathering activities that inform the work of the committee. It is the committee's task to assess the science base of suicide etiology, evaluate the current status of suicide prevention, and examine current strategies for the study of suicide. Its full report, which will include consensus statements on the scientific literature of the causes of and risk factors for suicide, and will illuminate contentious issues and gaps in the knowledge base, should guide prevention efforts and intervention. This is the summary for Workshop II, Suicide Prevention and Intervention.

Participants for Workshop II, Suicide Prevention and Intervention, were selected to represent the following areas: design and analysis of prevention programs, systems interventions for youth, suicide contagion, cognitive approaches to suicide, prevention across psychiatric diagnoses, prevention opportunities in general medical practice, and firearm availability and suicide. Among the different topic areas, the committee hoped to find current knowledge on effectiveness of current prevention and intervention methods and best areas of opportunity for suicide and attempted suicide. Participants were asked to present current and relevant knowledge in each of their expertise areas—knowledge both empirically-derived as well as commonly known from professional experience. The agenda for the workshop is in Appendix A.

This workshop was not intended to be a formal or comprehensive review or analysis of the scientific literature on risk factors for suicide or attempts. No conclusions or recommendations were made from this activity.

This report will summarize major themes that emerged over the course of the one-day workshop. Quotations are provided from the workshop discussions.

Although the workshop participants present from a number of diverse perspectives, all share a fundamental belief in the potential for better suicide prevention.

DESIGN CHOICES AND ANALYTICAL STRATEGIES FOR POPULATION-BASED PROGRAMS: IMPLICATIONS FOR SUICIDE PREVENTION

Dr. C.Hendricks Brown discussed a framework and strategies for suicide prevention research. He discussed how to evaluate programs, and described an early intervention program for violence as a model for suicide prevention. He underscored three challenges facing suicide prevention. (1) Suicide is a low base-rate behavior, approximately 12 per 100,000 in the population at large. Therefore, changes in numbers of suicides must be studied appropriately to ensure that any change is due to the intervention, and not to other factors. (2) Risk factors for suicide are non-specific, since they associated with other undesirable outcomes. Therefore study of simple

causal relationships for suicide is not possible. (3) Risk factors can change in individuals over short periods of time, and across developmental life-stages, further complicating assessment of suicide risk and prevention.

Prevention Framework. Dr. Brown described three levels of the currently most broadly used conceptualization of prevention. (1) Universal interventions are delivered to everyone, regardless of an individual's vulnerability. The law requiring seat belt use is an example. (2) Selected interventions are delivered to groups at increased risk. Anti-alcohol abuse classes for adolescents is an example. (3) Indicated prevention is given to individuals who have a known risk factor. For suicide prevention, treating a person with depression is an indicated prevention.

> ***If you are doing a selective or indicated intervention, the only impact you are going to have is on those people who you have identified. You have no impact on those who are at risk, but you missed.***
>
> *C.Hendricks Brown*

According to Dr. Brown the best prevention programs combine interventions on more than one level. Such "unified intervention" strategies are more effective and more practical. They avoid problems faced when individuals' risk factors change over time. Programs using only one level of intervention have to exclude individuals whose level of risk changes during the program, possibly putting these people at risk if exclusion from the program means they lost their only available treatment. In addition, information about the common occurrence of changing risk levels is lost, hindering evaluation of the program.

Prevention Program Strategies. Dr. Brown listed four general strategies for prevention. They are: developmental approaches, individual approaches (reducing risks and increasing protective factors), intervention through policy and law, and intervention through the social context (e.g., reducing poverty, child abuse). Dr. Brown described a promising new strategy of the last type, called "The Empowerment Intervention." In this design, two communities are randomly assigned to either starting a prevention program immediately, or waiting 1 year before starting. Five community pairs make up the data set. This allows collection of "good quantitative data that is not confounded with community readiness and other community characteristics," according to Dr. Brown.

Dr. Brown noted that it is important to take into account two proportions when trying to estimate the number of people targeted by a particular prevention effort. The first is "population-attributable risk." This is the proportionate reduction in number of cases of the condition that would occur upon elimination of a particular risk factor from the population at large. For example, one risk factor associated with the vast majority of completed suicides is depression, according to Dr. Brown. Therefore, if depression could be eradicated from the general population, the vast majority of suicides, according to Dr. Brown's explanation, would be prevented. The second proportion to consider when designing prevention efforts is the "relative risk." The rela

tive risk is the proportion of the population with a particular risk factor (e.g., depression) who get the condition (suicide), divided by the proportion of *unexposed* (those without depression) who commit suicide. By taking into account the population-attributable risk, the relative risk and the number of people in the target population, one can estimate the number of suicides one is aiming to prevent, according to Dr. Brown.

In general, the more refined your definition of relative risk, the smaller the proportion of people within the population with those risk factors.
C.Hendricks Brown

Program Evaluation. Dr. Brown reported that the suicide prevention field is significantly behind in quality of study measures, impacting our ability to evaluate results across studies. The workshop attendees discussed approaches to dealing with these problems. The following observations were made. (1) Since suicide is a low base-rate behavior, it can be difficult to tell whether the rate is lowered any further by the prevention program beyond normal fluctuations. Studying large samples can address this problem. Studying prevention in groups at higher risk is another way to approach the problem of studying prevention of a low-base rate behavior. (2) Subjects need to be assigned to different treatment groups randomly, so that the outcome is not biased by the incoming characteristics of the people in a given group. (3) The interventions need to be described in adequate detail for replication and further study. (4) Risk factors must be assessed throughout the study to verify individual levels of risk, and to monitor for change over time. (5) Effects of developmental life-stage can be examined by testing for interactions between risk factors and interventions.

Early risk factors can be modified well before most of the suicidal attempts occur.
C.Hendricks Brown

The workshop attendees discussed the significant drop-off in suicide rate during the first few years after intervention and treatment, an observation made across many studies. Drs. Mann and Fawcett described recent research where most of the suicides occurred within the first year after the intervention, with a precipitous drop off during the subsequent 2 to 3 years. Dr. Brown described a recent review of the world literature on long-term patient survival and found that the older the study, the higher the long-term mortality due to suicide, as compared to more recent studies. Drs. Mann, Pearson, and Tsuang discussed that future research needs to study other possible mitigating factors such as changes in population rates and severity of illness and the incidence of hospitalization before the meaning of these observations can be known.

A Case Study. Dr. Brown described a study designed to prevent aggression involving approximately 1000 children in Baltimore. Data from this study revealed some significant differences in characteristics and behaviors of individuals with suicidal behaviors (suicide completion, attempts or ideation), compared to children who did not engage in these behaviors. This was a universal prevention study (interventions given to all children), including ages 6 through early their 20's. Five percent of these children attempted suicide, and 70 percent of the attempts occurred before age 15. About 15 percent had suicidal ideation at age 21. A number of factors were associated with the increased likelihood of suicidal behavior (suicide completion, attempts or ideation). Poverty status was about twice as common in individuals who committed suicide. Females were approximately three times as likely to attempt suicide than males. Psychiatric diagnoses were noteworthy; for example, anxiety and depression were associated with three to four times the risk of suicide as people without these disorders. "Acting out behaviors," (e.g., attention deficit hyperactivity disorder, antisocial personality disorder) or a substance abuse disorder were associated with two to three times the associated risk." Having multiple diagnoses increased the risk for suicide. Dr. Brown highlighted that a substantial proportion of children who had suicidal behaviors did not have any psychiatric diagnosis.

> ***...about one-third of the people who attempted to commit suicide were without a diagnosis***
> *C.Hendricks Brown*

Dr. Brown described two other noteworthy observations on suicide in this study. First, there was a striking lack of services. Sixty percent of attempters never used mental health services. And 75 percent had no mental health services in the year of the attempt, although 50 percent of the latter group stated that they needed them. Second, "the onset of [substance] dependence and abuse actually occurred most often *after* the first suicide attempt." This obviously puts the status as an antecedent of this risk factor into question for this sub-group. Dr. Brown's study revealed different developmental trajectories with important implications for prevention. They found that the subset of children who were aggressive at an early age, the high risk individuals, showed a much greater impact of the intervention.

A SYSTEMS APPROACH TO YOUTH SUICIDE PREVENTION

Dr. John Kalafat discussed a systems approach to suicide prevention in schools. He defined systems interventions and their rationale, and described evaluation and implementation for systems interventions. He also described the results for two systems school-based suicide intervention programs in two different states.

Dr. Kalafat identified a conceptual issue in suicide prevention. He stated that suicide prevention experts often make a distinction between reducing risk factors and increasing protective factors. Dr. Kalafat expressed that this distinction is "meaningless." He explained that models relying on such a distinction assume that causal factors work in too simple a manner to be realis

tic. Dr. Kalafat prefers a "mediational model." In mediational models, an additional, or mediating factor is involved in the causal relationship between the two factors under study.

> ***Community competence does not exist in most places in this country.***
> *John Kalafat*

The Systems Intervention: Building a Competent Community. The premise of the systems approach is that only by addressing the entire community's interactions can a complex behavioral problem such as suicide be reduced. This includes interventions at the individual, classroom, school, and community levels, as well as changes in interactions among levels. Through his work in implementing and evaluating school-based suicide prevention programs, Dr. Kalafat found problems in communication and oppositional relationships between different groups (e.g., school administration, staff, parents, children, and community agencies). Important issues may be neglected because different community stakeholders have limited time and scopes of responsibility, according to Dr. Kalafat. As a consequence, communities suffer in numerous ways, including increased suicide rates. Dr. Kalafat stated that "systemic prevention change norms; an effective prevention intervention will go beyond affecting individuals."

Evaluation of System Needs. Starting in approximately 1980, schools started seeking outside help to deal with increasing suicide rates. Gate-keeper training was often specifically requested to provide training so that school counselors could more effectively identify students at risk. Upon evaluation of the schools, Dr. Kalafat identified the following six interrelated problems. (1) All staff and faculty need training including bus drivers, cafeteria workers, and coaches who often have developed relationships with students. (2) Students are often the first to be aware of other students having problems. Therefore, training only adults will not suffice. (3) Students are hesitant to seek help from adults. (4) Coordination is lacking between community treatment facilities and schools. (5) There are few clinicians with training in suicide and youth suicide prevention in the community. (6) There are problems with treatment compliance and follow-up.

> ***…our mental health services are not culturally or psychologically accessible to males.***
> *John Kalafat*

Thus, a comprehensive evaluation of the problem reveals a need for broad solutions including improved accessibility and delivery of services. Dr. Kalafat noted that services need to be culturally, psychologically, temporally, geographically, and financially accessible. Cultural and psychological accessibility is critical with adolescents according to Dr. Kalafat, and are most critical for adolescent males.

Implementation of a Systems Anti-Suicide Intervention. Dr. Kalafat highlighted the need for those working in prevention to help institutions overcome their preference for short-term and isolated prevention programs. After evaluating the needs of the system, Dr. Kalafat implements a set of complementary measures to reduce suicide. These are described below.

- Meet with the administration, to make sure there are written policies and procedures for responding to at-risk students.
- Develop linkages to the community. These need to be in place prior to onset of an emergency need on the part of the school.
- Develop parental involvement and awareness.
- Train all faculty and staff including bus drivers, cafeteria workers, coaches.
- Educate students about help-seeking.
- Implement screening measures. Screening presents four particular challenges. First, screening is especially important in identifying the population of students who are "quietly disturbed," as Dr. Kalafat described. He said research shows that these children are often self-isolating and may not come to the attention of others, thereby increasing their risk. Second, policy constraints and financial responsibilities for schools create political difficulties. According to Dr. Kalafat, "schools are bound by legislation to provide treatment or pay for treatment for anybody that they identify as having a concern or problem, so they are not interested in case finding." Third, parental consent is needed for screening, and "the rates of compliance with active parental consent run about 50 percent in schools." Fourth, suicidality fluctuates significantly in adolescents, Dr. Kalafat reported, making repeated screening necessary.
- Train community gate-keepers including law enforcement and emergency personnel, and clinicians.
- Reduce access to means. The parents are likely the best avenue to reduce access to means according to Dr. Kalafat.

Case Studies. Dr. Kalafat discussed two school-based systems prevention efforts: Bergen County, New Jersey, and Dade County, Florida. Both of these counties are populous, with about a quarter of a million adolescents in each. A 10-year follow up in Bergen County found that the programs were continuing with good fidelity in 30 of the 32 public schools. In New Jersey, Dr. Kalafat and his colleagues looked at suicide rates for the 5 years pre-implementation, 5 years during the "roll out," and 5 years after the implementation had been completed. They compared county, state and national suicide rates to control for general trends. The suicide rate in Bergen county was reduced by half, with no such change in state or national rates during the same time period.

In Florida, data from 10 years prior and 10 years post-implementation were examined. Again, there was about a 50 percent reduction in suicide rate in the county, but not the state or the nation. The Dade County study occurred some years after the Bergen County program, providing replication at two different times.

The workshop attendees discussed the promise of this approach and its similarity to the program used in the Air Force to reduce suicide. The workshop attendees listed the necessary factors of effective systems interventions.

- Concurrent complementary universal, selected and indicated interventions.
- Collaboration among all parties.
- Fidelity of program implementation.
- The program must be designed to be sustained over a long period of time in order to evaluate its effectiveness.
- Program evaluation must be mandatory, planned at the outset including proximal and distal outcome measures, and sufficiently funded.
- A "Program Champion" is essential. A paid, dedicated staff position works best.
- Everyone is trained to be competent to provide appropriate initial response, at minimum.

The workshop attendees asked Dr. Kalafat if there is any evidence of additional benefits from suicide prevention programs. He stated that they also show promise in reducing interpersonal violence.

No single type of intervention is likely to be universally effective, we can turn our attention to a more appropriate question: which combination of the many potential interventions is likely to be the most effective as well as feasible in preventing violent injuries?
John Kalafat

In a discussion of dissemination of successful models, Dr. Brown suggested three stages of development and dissemination. First, efficacy and effectiveness studies must be done, followed by small-scale implementation studies, and finally broad dissemination can start, with continued evaluations at each step.

Dr. Kalafat listed 10 priorities for effective prevention of suicide. (1) Suicide assessment and intervention training in graduate programs in all clinical disciplines. (2) Study of individual treatment efficacy, since it remains unproven. (3) Program efficacy assessment to formulate data-based methods for all groups. (4) Improved continuity of care from hospital and/or emergency settings to outpatient treatment. (5) Enhanced case identification and referral of at risk individuals. (6) Improved accessibility and delivery of services, as exemplified by the "full service school" movement. (7) Decreased access to means. (8) Improved media reporting to reduce imitation and contagion. (9) Promotion of protective factors. (10) Complementary approaches incorporating universal, selected, and indicated interventions are paramount.

SUICIDE CONTAGION

> ***I am not talking about healthy people reading Romeo and Juliet.***
> *Madelyn Gould*

Dr. Madelyn Gould reviewed two issues, the role of the media in fostering suicide contagion in adolescents, and suicide clusters. She described characteristics of media portrayals of suicide, and characteristics of individual adolescents that increase susceptibility to suicide contagion. She discussed approaches to addressing contagion at the institutional level, including the description of specific guidelines for media coverage, as well as the barriers and challenges to successfully reducing contagion. She also gave a brief overview of the current state of information on suicide clusters.

> ***Media coverage of suicides has been shown to significantly increase the rate of suicide, and the magnitude of the increase is related to the amount, duration, and prominence of coverage.***
> Madelyn Gould

The Media. Contagion of a behavioral disorder is generally defined as increased risk upon affliction of someone in the same social sphere. This definition, however, is limited according to Dr. Gould because it assumes that direct interpersonal experience with the incident and the suicide victim is necessary for contagion to occur. Yet Dr. Gould described studies showing that indirect influence occurs as well for both real and fictional characters portrayed in the media. Thus, suicide can have contagious effects far beyond the immediate social network of the victim.

According to Dr. Gould, the majority of studies on contagion in the United States and other countries indicate that media coverage of suicides significantly increases the rate of suicide. This poses an essential conflict for the media between producing compelling stories and avoiding contagion. (The code of ethics of the Society of Professional Journalists is “Seek truth in reporting and minimize harm”). One response of the media to contagion has been to cease reporting on suicide, but this is not the best option, according to Dr. Gould, since silence on the subject can foster shame and hinder help-seeking by those at risk. Instead, Dr. Gould calls for reporting that is informed by the data, and building alliances between the health and media communities to balance needs of the media and public health as discussed below. Dr. Gould pointed out that not all media presentations of suicides have a negative impact. Some are neutral, and some have a positive effect providing a powerful opportunity for reducing suicide.

Characteristics of the media presentation, the individual, and interactions between media and individual factors impact suicide contagion. According to Dr. Gould, content analysis studies revealed the following eight media factors that increase suicide contagion, especially for young people. (1) Repeated news coverage of the same story. (2) Front-page coverage. (3) Larger size

headlines. (4) Celebrity suicides have greater impact. (5) Portrayal of "rewards" such as the grieving family and boy/girlfriend can foster revenge motivations for suicide, especially among angry and dejected youth. (6) Media reporting indicating suicide as something that is "unavoidable," that "someone will be next." (7) Presenting suicide as a political issue, e.g., as due to desegregation or job stress. (8) Victims shown as possessing desirable, high status qualities.

Dr. Gould indicated that teenagers are especially vulnerable to contagion of suicide from portrayals in the media, as well as through direct knowledge of the person (clusters). The stronger the similarities between the individual and the victim portrayed in a media story, the greater is the impact of the story. Dr. Gould described a study of media coverage of suicide in Japan that showed that if the story was about a Japanese individual the rate of completed suicide went up in Japan, but not if the story was about a non-Japanese person.

> ***Editors say they want to report responsibly, but at the time they wrote the story, they didn't know who to contact, and didn't know how to make it a pro-social story, and it turned out wrong.***
> *Madelyn Gould*

The media can have an impact on suicide, not only by avoiding deleterious effects, but also to increase public health and wellbeing. Dr. Hemenway cited such examples in the injury field. The media now include the status of any smoke detectors when a fire is reported. Likewise, helmet use is indicated when reporting a bicycle. Dr. Gould underscored the importance of reporting correct information about suicide. Anecdotal data reveal numerous instances of misleading and/or incomplete information about risk factors, implicating trivial triggers, with no or minimal coverage of antecedent mental disorders, and rare or absent listing of local services. Dr. Gould highlighted this opportunity for media to have a positive and proactive impact on suicide prevention.

> ***We really need a media-public health partnership.***
> *Madelyn Gould*

Dr. Gould made recommendations for pro-social media reporting on suicide. The foremost overarching need is to establish and then to institutionalize working relationships, and possibly new organizations, linking public health, mental health, and the media. Such relationships and/or institutions would necessarily include media professionals and training program leaders, researchers, and advocacy groups. They would serve as a ready source of information for journalists and would develop national media guidelines. Courses in ethical and pro-social reporting should be mandatory in all journalism programs. Continued education about the newest data for journalists is indicated. A venue for continued dialog among all stakeholders should also be established. Dr. Kay Jamison expressed concern that attempts to encourage responsible reporting

could discourage the media from addressing suicide in any way. She stated that the media should be given positive examples of stories done well as models to follow.

Dr. Gould listed the following specific guidelines for media coverage of suicide.

(1) Consider whether the suicide in question is newsworthy. (2) Do not misrepresent suicide as a mysterious act by an otherwise healthy or high-achieving person. (3) Do not present suicide as a reasonable or understandable way of problem solving. (4) Include information that suicide in an uncommon, but fatal complication of mental and/or substance abuse disorders, which are treatable. (5) Include information that suicide can be prevented with appropriate treatment. (6) Exercise care when using pictures of victims, since it remains unknown if pictures increase contagion. (7) Do not provide a detailed description of method. Evidence shows that when enough details are given, vulnerable youths will commit suicide in the same spot and/or with the same methods. (8) Limit the prominence, length, and number of stories. (9) Edit headlines to match and not sensationalize the story. (10) Provide local treatment resources with each story. Dr. Kalafat suggested that the media is just one part of the "competent community" and should be included in the community collaborative.

Internet. Dr. Gould briefly discussed the possible influence of internet content and chat rooms on fostering suicide contagion. She mentioned research on help-seeking behavior demonstrating that adolescents are likely to look to the internet for help with problem solving. This provides an opportunity for contagion to occur, as well as a point of intervention and prevention efforts.

Suicide Clusters. Dr. Gould provided a brief discussion of suicide clusters through the mechanism of contagion. The first generation of research on clusters consisted of descriptive studies looking at specific clusters in various groups, including religious sects, psychiatric inpatient wards, and high schools students. These anecdotal case reports were difficult to interpret or draw conclusions from. The next wave of studies used statistical approaches to test for clusters. As Dr. Gould described, these generally showed that clusters did occur, primarily among teenagers and young adults. Case-controlled psychological autopsy studies are one way to examine why clusters occur. Dr. Gould reports that very little research has been completed in this area, although some studies are currently underway to address these gaps.

Dr. Gould concluded by emphasizing that the development and implementation of media guidelines and strategies to prevent clusters are just one part of the overall model for suicide prevention, a necessary part of a competent community. Major risk factors for suicide, whether psychiatric disorders, biological factors, or the impact of stressful events, must be attended to as an essential part of any suicide prevention strategy. Underlying vulnerabilities are what allow contagion to facilitate the route to suicide in certain individuals.

COGNITIVE APPROACHES TO SUICIDE

Dr. Aaron T.Beck discussed four topics: (1) an overview of nomenclature and measurement of suicidality, (2) thought (cognitive) disturbances associated with suicidality, (3) how suicidal behaviors differ across psychiatric diagnoses, and (4) data from an ongoing prospective suicide

prevention study at the University of Pennsylvania. He discussed data from his career in cognitive behavioral therapy and suicide research showing suicide can be reduced by changing unhealthy habits of thought (cognitions).

> ***The patients who ultimately committed suicide seemed to be among those who were the most hopeless.***
> *Aaron T.Beck*

Approximately 30 years ago, Dr. Beck and his colleagues developed the first nomenclature for suicidal behaviors, distinguishing contemplating suicide (suicide ideation), from attempting (but not committing suicide), from committing (completing) suicide. Dr. Beck described instruments they developed to measure characteristics of suicidal behavior, including the degree of intent to kill oneself, suicidal ideations, and the medical lethality of attempts. Dr. Beck reported that suicidal ideation and intent scores did not correlate highly with the medical lethality of attempts. However, Dr. Beck found that the person's belief in the lethality of the method was significantly correlated with intent. Out of this early work, Dr. Beck and his colleagues developed two additional scales: The Beck Hopelessness Scale and The Beck Depression Inventory. According to Dr. Beck, The Hopelessness Scale "was a very good predictor of ultimate suicide."

In addition to the emotional disturbances in psychiatric disorders, there are abnormalities in thinking and reasoning, collectively called cognitive disturbances. Dr. Beck described two types of cognitive disturbances observed in suicidal people. There are cognitive disturbances that occur for brief periods of time and resolve when other symptoms of the psychiatric disorder diminish. These are referred to as "state" cognitive disturbances. Trait cognitive disturbances are those which remain relatively constant, even when other symptoms have diminished or resolved. Dr. Beck found that hopelessness—unwavering pessimism even in the face of contrary evidence—is one such cognitive distortion expressed both in state and trait forms in suicidal people. He also found that state hopelessness is more often associated with suicidality in people with borderline personality disorder, and that trait hopelessness is more frequently associated with depressive disorders.

> ***Our theory is that the [borderline] patients learned enough in therapy so that when they got out, they were able to deal better with their fear of abandonment***
> *Aaron T.Beck*

Dr. Beck described findings of past and current studies of his and his collaborators. These studies included psychiatric inpatient and outpatient populations. Dr. Beck reported robust differences in suicide rate and clinical course of suicidal behaviors depending on the diagnosis of borderline personality disorder. In a prospective study of patients admitted to a hospital emergency room for a suicide attempt, Dr. Beck found that a diagnosis of personality disorder was

associated with an 8.2% risk of suicide during 5 years of follow-up, as compared to 4.6% in those diagnosed with depression with no personality disorder. He also noted that approximately 99% of those who attempted suicide during the follow-up period of this study, qualified as having an affective disorder at the time, including those diagnosed with a personality disorder. As described by Dr. Beck, the clinical hallmark of borderline personality disorder is emotional volatility in response to minimal, or perceived, environmental stimuli, with heightened sensitivity to abandonment. Emotional modulation, inhibition, controls, and coping skills are inadequate in these patients. They are not able to maintain normal mood states (euthymia), in other words not depressed, nor excessively elated. They experience little or no control over their depressive and suicidal feelings. Eighty percent of the people with borderline personality disorder in the study also had substance abuse problems, as opposed to 65% of those people who did not have this diagnosis.

Learning the problem solving methods is a kind of an antidote to this trait-like hopelessness.
Aaron T.Beck

Dr. Beck reported that in people with personality disorders, suicide occurred at times of acute distress. He reported that cognitive therapy significantly reduces suicides and suicide attempts in patients with borderline personality disorder. As little as 10 weeks of therapy was effective. Some of the therapeutic effect occurs after the cessation of the therapy sessions, during follow-up, which involves lower frequency, briefer, and less interpersonally intensive clinic appointments. The conference attendees discussed possible mechanisms for the continued efficacy after therapy sessions ended, including generalization of learned coping skills to more life-situations over time, or reduction in dependence when therapy ends.

Risk for suicide with depression shows a different clinical course, compared with borderline personality disorder. According to Dr. Beck, suicide attempts associated with depression occur during periods of severe depressive symptoms. These periods of severe depression are associated with profound hopelessness and generalized cognitive distortions. Those who survive a suicide attempt can recover form the depression and achieve an euthymic state again, although the hopelessness persists for some of these individuals. Cognitive therapy, Dr. Beck reports, significantly reduces hopelessness and was more effective than imipramine (an antidepressant medication). Dr. Beck also reported that cognitive therapy "has a significant impact on suicide ideation, as well as hopelessness, as compared to placebo." A number of studies in more than one country, according to Dr. Beck, show that cognitive problem-solving techniques significantly reduce the rate of suicide attempts per month, and delay the time period to next attempt.

In summary, according to Dr. Beck, cognitive therapy is effective in reducing suicidal behaviors in two disorders, borderline personality disorder and depressive disorder. Suicidal behaviors in both of these disorders is associated with hopelessness and cognitive distortions. The reduction in suicide, according to Dr. Beck, is mediated through remedying the cognitive distortions and/or learning coping skills to reduce their negative effects.

RESEARCH AND USUAL CARE PREVENTION EFFORTS ACROSS PSYCHIATRIC DIAGNOSES

Dr. Katherine Comtois reviewed research on suicide prevention interventions and treatment. She discussed methodological issues including treatment as usual, the relationship between suicide and mental illness, and the efficacy of pharmacological and behavioral treatments; she also made recommendations for future research. In general she reported finding very few studies, with broad variability making it hard to compare results across studies. The group discussed the methodological limitations and the implications for this field.

> ***The few randomized controlled trials testing treatment efficacy are plagued with methodological problems.***
> *Katherine Comtois*

Methodological Issues. Sample size is a problem for most studies. This is especially problematic since suicidal behaviors occur at a low frequency, making larger samples necessary to measure any treatment effect. Another problem according to Dr. Comtois, is nomenclature. There is no universally accepted nomenclature in the field. Terms such as parasuicide are defined differently across studies making comparisons difficult. Another complicating factor is that some studies use an "admission versus no admission" measure. This dichotomy obfuscates the difference between a psychiatric crisis and suicidal behavior.

The conference attendees noted that the systematic exclusion of high risk patients from suicide prevention trials is a complex and important ethical and methodological problem. It is unethical to place someone at imminent risk of suicide in a randomized trial where they might get placebo treatment. Further complicating the issue, the definition of "high risk" varies across studies and is often not described beyond "in need of imminent hospitalization," according to Dr. Comtois. It is of great concern that only those studies including high risk patients demonstrated significant effects of treatment in reducing suicide. Dr. Comtois explained that this sets up two possible biases in the research literature. Those studies reporting treatment effects may have them due to the high risk group, or conversely, the lack of treatment effect could be due to the inability to reduce the suicide risk any further in the lower risk population.

> ***Thirty-six percent of the studies that specifically targeted deliberate self harm, parasuicide, and the majority of depression studies exclude individuals identified at high risk.***
> *Katherine Comtois*

The clinical setting of a suicide intervention study has consequences for its interpretation. Clinical research often occurs in academic hospital settings, which often differs from the more usual clinical situations. "Usual care" research describes what treatment-as-usual is for different

populations. Dr. Comtois noted that it is important to know what patients are actually receiving via health services in order to assess opportunities for improved outcomes. In addition, to develop prevention efforts that can be applied in real-life settings and have efficacy outside of the research setting, the intervention's setting needs to be considered.

Dr. Comtois reported that most of the studies were based on epidemiological data, primarily from Europe where more comprehensive public data bases are kept. As with the treatment efficacy literature, she reported the body of data to be woefully small and fraught with methodological problems. Often the "treatment-as-usual" condition was not measured. This is a particular problem in studies of outpatient services. Where treatment is described, there are vast variations in treatment services across and within countries and over time.

Suicide and Mental Illness. There is a high but not complete overlap between suicide and mental illness. Dr. Comtois questioned if "treating the psychiatric disorder is not only necessary, but also sufficient to reduce suicide." In some studies, according to Dr. Comtois, "there is a close relationship between a reduction in the symptoms and a reduction in suicidality, but that is not universal." The workshop attendees discussed studies showing a reduction in suicidality without a reduction in depression or vice versa.

The workshop attendees also discussed pharmacological studies showing significant reductions in suicide, even when depressive symptoms are not similarly reduced. Dr. Jamison described a recent meta-analysis on the efficacy of lithium. They found an over 8-fold reduction in suicide risk with prophylactic lithium treatment. Other studies of antipsychotic medications have also found significant reductions in suicide, according to Dr. Comtois. However, not all psychiatric medications are efficacious in reducing suicide, as indicated by some recent meta-analyses of anti-depressants. The lack of efficacy is again confounded by the exclusion of those at high risk for suicide.

Behavioral Interventions. Dr. Comtois reported variability in the behavioral intervention literature. Some interventions reported significant reductions in suicide, others reported trends, and still other studies reported no effect. She underscored the difficulty in comparing studies because of methodological differences across studies, inconsistencies in nomenclature, and exclusion of people at high risk.

Dr. Comtois described the only study reporting a significant reduction in completed suicide. Patients who refused treatment after a suicide attempt were entered into a study in which the "experimental" group received letters (contact) while the "control" group did not (non-contact). Dr. Comtois reinforced the importance of the non-demanding quality of this intervention. People in the contact group received a letter once per month for the first year, every 2 months in the second year, and one every third month for years 3 through 5. After the fifth year, the letters were discontinued. The patients were followed for 15 years. Dr. Comtois described that at year 2 the contact group had significantly reduced suicide rates compared to the non-contact group. This difference continued until year 14, at which point the rates in both groups were similar. Dr. Comtois posed the question: would continuing contact past the 5 years continue to reduced suicide rates?

Prevention Research Priorities. Dr. Comtois outlined seven priorities for suicide prevention research. (1) Increased rigor for future research designs. (2) Replication of the effective prevention and interventions. (3) Dissemination of what is known. There is a tremendous need throughout the health services and community systems for operationalization of data-based approaches; there is great need for treatment manuals. (4) Universal nomenclature and assessment methods to allow comparisons across studies. (5) Focus on suicidal behaviors specifically. (6) Reassessment of ethical ways to include people with high risk in treatment studies. (7) Extension of studies beyond those suicide attempts that reach medical attention.

THE ROLE OF THE PRIMARY CARE PHYSICIAN IN PREVENTING SUICIDE

Dr. Herbert C.Schulberg covered three main topics in his talk: (1) Prevalence of suicidality in the primary care setting (2) assessment and intervention for suicidality in primary care practice, and (3) the current state of research in this field. Dr. Schulberg stated that treatment of suicidality in primary care brings two clinical areas together, suicide prevention and management of mental disorders in primary care.

> ***We cannot extrapolate from studies of psychiatric patients as to what the prevalence or what the suicide rate is among primary care patients.***
> *Herbert C.Schulberg*

Prevalence of Suicidality in the Primary Care Setting. According to Dr. Schulberg it is difficult to engage primary care physicians in suicide screening and prevention because of the low prevalence in their patient populations. "4.2 percent of all the definite or possible suicides were attributed to primary care patients," according to research described by Dr. Schulberg. Approximately one patient commits suicide every 3 years according to another study, with patient loads of 2,000–4,000 per practitioner. Time demands of medical practice are a disincentive for attending to low-base rate disorders, even when fatal. Therefore, it may be preferable for primary care physicians to monitor for the major risk factors for suicide. A history of psychiatric hospitalization, depressive disorders, alcohol and/or substance abuse, marital life events, and physical illness comorbid with depression all increase risk of suicide, according to Dr. Schulberg, and could serve as flags for intervention. Drs. Bell and Schulberg discussed the successful adoption of general practitioner practice guidelines for hypertension as a possible model for suicide risk factor screening.

Assessment and Intervention for Suicidality in Primary Care Practice. Dr. Schulberg reports "that the primary care physicians do not do a good job of assessing whether or not there is a psychiatric episode" in general. Research he and his colleagues did found that only 27 percent of those reaching diagnostic criteria for depressive disorders were identified by the primary care physician. False positives are very rare. Suicidal ideation is rarely assessed in the primary care

setting, according to Dr. Schulberg. He described a case vignette analysis which found that 91 percent of the physicians presented with case histories considered depression, but suicidal ideation was only considered two percent of the time in relation to the consequences of the depressive disorder. The group discussed how reinforcing the associated medical risks of depression, such as a 6-fold increased rate of myocardial infarctions in a study Dr. Fawcett described, may be a way of engaging general practitioners in mental health screening.

Physicians find it very difficult to ask direct questions about suicide, according to Dr. Schulberg. One study he described found that in only 2 of over 60 completed suicides was there "any indication in the medical records of concern about suicide, and in both of those instances, the physician did not consider the patient to be at significant risk." Physicians' inquiry about suicidality varies across specialties, and by the patient's age and psychiatric history according to Dr. Schulberg. Family physicians consistently make more inquiries about psychosocial wellbeing than do internists and obstetrician/gynecologists, according to Dr. Schulberg. Primary care physicians are more apt to ask patients with a psychiatric history, or who are middle-aged. Once patients have been identified as suicidal, one study Dr. Schulberg described found that "physicians asked about misuse of medications 77 percent of the time, but in only half the instances would they inquire as to whether or not the patient had access to a gun or any other way of taking his life." Physicians are reticent and non-optimistic in treating older, suicidal patients, as compared to treating older patients for other maladies, according to Dr. Schulberg. Yet once patients of all ages are identified as suicidal, primary care physicians are very likely to refer the patient to mental health services.

> ***When patients were asked about what it was like to talk to your primary care physician, they responded that the primary care physicians were harried and superficial and really not very interested in what the nature of the problem was that led them to the suicide attempt***
> *Herbert C.Schulberg*

Patient behavior impacts assessment and intervention opportunities. Frequency of visits to general practitioners does not distinguish suicidal patients according to a study described by Dr. Schulberg. When examining those with acute mental health needs, therefore at increased risk of suicide, research found that over half "turned to a health provider other than a mental health specialist," a finding that has been replicated a number of time over the last 20 years. Yet, approximately "less than half [of the patients] informed the primary care physician of their thoughts and plans [for suicide]," according to research Dr. Schulberg described. Other research found that in general, people prefer to talk to a mental health practitioner, rather than a general practitioner about mental health needs.

Patients report feeling "extruded" upon the typical quick referral after disclosing suicidality to their general practitioners, according to Dr. Schulberg. This is important, because experience of rejection may significantly impact on compliance with the mental health services. This is a

much different experience from patients presenting with other rare maladies that often fascinate physicians.

The workshop attendees discussed case identification versus treatment of already identified cases as approaches to reducing suicide through primary care. Drs. Davis, Reynolds and Schulberg stated that studies show that 30 to 50 percent of cases of clinical depression goes undiagnosed. Dr. Brent discussed studies indicating that treatment of known cases was a more practical approach, since many of those undetected may remit without treatment. The workshop attendees also discussed that different approaches will likely be optimal for different age, gender, and ethnic and racial groups.

Research on Suicide Intervention in Primary Care. Dr. Schulberg noted five problems in research on suicide prevention via primary care. (1) There is a dearth of studies in this area in the US, with most of the data coming from countries with national health care systems such as Britain and Scandinavia. (2) Methods for case identification, vary across studies, with little or nothing known about the validity or reliability of many of them (psychological autopsy is an exception as a well-studied method). (3) Universal definitions of suicidal ideation and attempts, a necessity for cross-study comparisons, have not been adopted. (4) Variability of observational time period used to define suicide rate, ranging from 1 to 6 months, with rates ranging from 1.0 percent to greater than 7 percent across studies, hinders cross-studies comparisons. (5) Most research is retrospective. Ethical issues complicate prospective studies because study design often requires placing at-risk patients in control groups.

Dr. Schulberg discussed a current prospective study of suicide prevention in older adults through primary care, the "Prospect Study." Dr. Schulberg highlighted "two premises at the heart of this [study]." First, effective treatments for depression do exist. Second, the primary care physician personally is not going to engage in all the necessary activities. This study is expected to generate information on whether or not treatment can occur within the primary care setting, and if and how the primary care physician's role can be enhanced in suicide prevention. In the Prospect Study, patients are "randomized into the intervention arm and into the usual care arm," which gives power to this study, rarely available in studies of suicide. All patients are screened multiple times across the study, and Dr. Schulberg noted that that depressive symptoms, not suicidality, is the key independent variable. Identified patients are offered individual psychotherapy and/or medications.

Dr. Schulberg summarized with three important points for treating suicidality in the primary care setting. (1) The primary care physicians' awareness of suicidality does not necessarily lead to proper intervention. (2) Physicians need to be significantly more comfortable with asking about suicidal symptoms. (3) Possibly the most potent intervention deals with organization and fiscal structure of the physicians' practice. Current constraints result in multiple disincentives to assess and/or treat suicidality.

FIREARM AVAILABILITY AND SUICIDE

Dr. David Hemenway discussed the impact of firearm suicides on the national suicide rate for the United States. Reducing access to methods has proven successful in impacting overall

suicide rates, as efforts in other nations including Japan and Great Britain have shown. He discussed research findings on firearm access and suicide, cross-national data, and issues of data collection.

> ***Our kids have 10 times the gun suicide rate as kids in France and Australia and other countries.***
> *David Hemenway*

Dr. Hemenway explained that the U.S. has the highest rate of firearm suicide of all 27 developed nations, whereas we have the 16th highest rate of suicide. Over 50 percent of all suicides are by firearm in the U.S., according to Dr. Hemenway. Some reasons for the high firearm suicide rate according to Dr. Hemenway are the high number of handguns and less regulation of firearms than in other developed nations. The U.S. lacks a national licensing or registration system, and there are no national storage laws. There is also a large secondary market of gun sales.

Dr. Hemenway pointed out that one problem in doing cross-national studies is that there is a lack of good measures, especially of gun prevalence. One report he described looked at 5–14 year olds in the U.S. and compared their suicide rate with that of other industrialized countries. Easy accessibility of guns was found to be a risk factor for suicides in the U.S., compared to other countries.

> ***In homes with firearms, 86 percent of the suicides used the firearms. In the homes without firearms, only 6 percent of the suicides used a firearm.***
> *David Hemenway*

Dr. Hemenway discussed data from two types of studies, case-controlled and ecological studies. The case-controlled studies on gun prevalence and suicide risk have revealed significant increases in suicide in homes with guns, even when other factors such as education, arrests, and drug abuse were controlled for. Dr. Hemenway and the workshop participants discussed criticisms of these studies made by other researchers in the field. Case-controlled studies have been criticized for not looking at all suicides, just those occurring in the home. Workshop participants qualified this criticism, explaining that this was true of the largest study done by Kellerman and colleagues, but not of other studies done by Brent and colleagues. Another criticism is that the respondents are not telling the truth. Another criticism is that the respondents are not telling the truth. Dr. Hemenway described a survey study done by Kellerman and colleagues, finding that people *do* tell the truth, but indicated that this research was not definitive. There is some evidence that women underreport the presence of a gun in the home. Dr. Hemenway described a study of an HMO population in Seattle, that found 25% of the suicides had purchased a handgun from a licensed dealer in the state of Washington, as compared to only 15% of controls (those who did not commit suicide).

Virtually all ecological studies on suicide and gun prevalence have shown a positive association between the two, according to Dr. Hemenway. Sometimes this association is statistically significant and sometimes not. One major obstacle in looking at the relationship between the two variables is that fact that good measures of gun availability are lacking. There are no national surveys of gun prevalence in the home. Other measures used instead include the strictness of gun laws, percent suicides with a gun, fatal firearm accident rate, and firearm ownership, considered to be the best standard.

> ***By state or region…for every age, for both genders, where there are more guns, there are more total suicides.***
> *David Hemenway*

Studies that have compared gun suicide rates between states with a high prevalence of guns and states with a low prevalence of guns, have consistently found that the high gun states have higher rates of suicides committed with firearms than low gun states. Almost twice as many people in the states with high gun prevalence commit suicide. The evidence suggests that there is little substitution of means.

Dr. Hemenway stressed the need for collecting data on fatal injuries, including firearm injury. While the U.S. has an excellent data collection system motor vehicle injuries, there is no comparable system for violent deaths such as homicide, suicide, and unintentional gun deaths. Currently, not much is known about suicides at the national level or even across states. Most information is gathered from death certificates and small area studies. A national surveillance system that informs us on circumstances such as the percentage of suicides committed with a handgun, how recently a gun was purchased, whether or not substance abuse was involved, or if there was a precipitating event would be extremely valuable to researchers, according to Dr. Hemenway.

Dr. Hemenway informed the workshop attendees that the Harvard Injury Center has begun collecting such data for a national violent death reporting system. With the pilot system, information on the blood alcohol content of those committing suicide is available, as well as information on drug use, location of death, etc. Dr. Hemenway noted that the Centers for Disease Control are hoping to develop further a national violent death reporting system, if they receive the funding from Congress.

Dr. Philip May commented that one variable that also needs to be examined in studies on gun prevalence and suicide risk is gun values and family culture regarding guns. Are family members educated in safety training with the guns in their household? Is the gun used for hunting or not?

Dr. David Brent described a study on handguns with highly compliant families of depressed adolescents. The families attended all interviews and therapy sessions and formed a good relationship with the clinicians. Only 1 in 4 of these families removed a firearm from their home when the clinician requested it. Dr. Brent emphasized the need to figure out how to separate guns from persons at risk of suicide.

Dr. Hemenway emphasized the need to get at storage habits of gun owners through surveys and research. He stressed that maintaining a violent death registry would not only provide extremely valuable data on suicide, but it could also provide data on homicide and unintentional gun deaths. Dr. Hemenway was successful in getting questions about guns and injury added to the National Comorbidity Survey. These questions will provide researchers with data previously unavailable, such as percentages of persons with mental illnesses who have guns in their household and whether or not these people are at increased risk for suicide. Dr. Hemenway also stressed the need to add questions examining the presence of guns in homes to longitudinal studies.

APPENDIX A

WORKSHOP AGENDA

May 14th, 2001
THE NATIONAL ACADEMIES
Green Building, Washington, D.C

8:30–8:45	Remarks and introduction by the chair: *William Bunney*
8:45–9:15	***C.Hendricks Brown, Ph.D., University of South Florida*** "Design Choices and Analytical Strategies for Population-Based Prevention Programs: Implications for Suicide Prevention"
9:15–9:45	Discussion
9:45–10:15	***John Kalafat, Ph.D., Rutgers University*** "A Systems Approach to Youth Suicide Prevention"
10:15–10:45	Discussion
10:45–11:15	***Madelyn Gould, Ph.D., M.P.H., Columbia University*** "Suicide Contagion"
11:15–11:45	Discussion
12:45–1:15	***Aaron T.Beck, M.D., University of Pennsylvania*** "Cognitive Approaches to Suicide"
1:15–1:45	Discussion
1:45–2:15	***Kate Comtois, Ph.D., University of Washington School of Medicine*** "Research and Usual Care Prevention Efforts Across Psychiatric Diagnoses"
2:15–2:45	Discussion
3:00–3:30	***Herbert C.Schulberg, Ph.D., Cornell University*** "Preventing Suicide in Ambulatory Medicine Patients: Does the Primary Care Physician Have a Role?"
3:30–4:00	Discussion
4:00–4:30	***David Hemenway, Ph.D., Harvard University*** "Firearm Availability and Suicide"
4:30–5:00	Discussion
5:00–5:30	Closing Comments
5:30	Adjourn

Appendix B

WORKSHOP SPEAKERS

AARON T.BECK, M.D.
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