

SECONDARY AND TERTIARY PREVENTION STRATEGIES APPLIED TO SUICIDE AMONG AMERICAN INDIANS

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ABSTRACT. Primary prevention concepts have been widely applied to health problems of American Indian people. When applied to mental health issues, and the problem of suicide in particular, primary prevention intervention methods may not be effective. As an alternative, secondary and tertiary interventions directed at the prevention of suicide are examined, including evidence for their effectiveness, and new potential applications of these techniques.

In the 1980s, planners in the Indian Health Service and tribal mental health programs have attempted to bring the concepts of health promotion and disease prevention to bear upon the major health problems of Indian people. Prevention efforts directed at diseases such as Type II diabetes mellitus, tuberculosis, and others have shown great promise. Within Indian health care programs, it is understandable that the concept of preventing mental health problems, one of the major health concerns affecting Indian people (Neligh, in press), should capture the imaginations of health planners and tribal leaders. Indeed, this decade is witnessing the development of a variety of programs aimed at preventing mental health problems among Indian people (Manson, 1982).

In spite of the proliferation of programs aimed at the prevention of mental illness and related problems, there is a lack of information about their effectiveness. Many of these programs make intuitive sense to planners and leaders who have initiated the programs. Because of the scholarship and fellowship programs sponsored by the Indian Health Service for leaders to obtain advanced public health degrees, the ideas of these leaders have often originated in public health rather than mental health fields. As a result, the well-intentioned planning efforts of prevention programs in Indian mental health have utilized public health models, but not mental health knowledge and technology, in an attempt to effectively deal with the mental health problems of Indian communities.

One of the results of the excitement about efforts to prevent mental illness among Indian people has been the dissemination of the concept of prevention at a rapid rate, and the application of the concept to a variety of health problems. Sometimes the proliferation enthusiasm for prevention interventions has taken place at a more rapid rate than the conceptual framework of mental health technology that would support prevention efforts in mental health. Indian mental health programs may, as a result, rely little upon concepts commonly used in the general mental illness prevention literature.

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When Indian communities experience high rates of suicide, for example, leaders and planners understandably rely upon prevention efforts to halt the suicides. Yet, they are sometimes unfamiliar with differences between health promotion and primary prevention, and may be unfamiliar with concepts of primary, secondary, and tertiary prevention. Instead of focusing program development efforts upon mental illness itself, there may be a targeting of programs toward events that may be symptomatic endpoints of mental illness, such as suicide, violence, alcohol abuse, child abuse, and adolescent pregnancy. Because of the focus on behavioral endpoints, it is difficult to define at-risk groups in communities. On some reservations, prevention programs are aimed at the entire population rather than a defined subgroup, making the prevention efforts inefficient and perhaps ineffective. Many of these programs rely upon common sense understandings of self-esteem and community pride rather than a model of risk based upon mental health technology. There is a lack of evidence that these general "prevention" programs are effective in Indian communities. Furthermore, there may be reason to believe that some of these interventions never reach the groups and individuals at highest risk for suicide.

Models of Mental Illness Prevention

Gerald Caplan may be one of the most articulate spokesmen for preventive mental health (Caplan, 1964). Applying public health principles to mental health, Caplan defined three levels of prevention of mental illness: (a) primary prevention is aimed at "reducing the incidence of mental disorders of all types in a community," (b) secondary prevention is for reducing "the duration of a significant number of those disorders which do occur in the community," and (c) tertiary prevention reduces "the impairment which may result from those disorders."

Since Caplan's book, each of these levels of prevention has developed its own programmatic definitions. Tertiary prevention in mental health has developed an element of rehabilitation in addition to minimizing the impact of established illnesses. Secondary prevention has come to include elements of screening and case identification as a means of early identification of illness. In order to reduce the prevalence of mental illness, these interventions seek to limit the progression of illnesses, hence their duration. Primary prevention is aimed at reducing the actual incidence of illness. The aim of primary prevention is to stop illness from occurring at all. In the years since Caplan's book was first published, another element has been added to the constellation of prevention interventions: (d) mental health promotion, defined as activities which promote behaviors and attitudes which reduce the risks of development of mental illness, and which will

minimize the impact of mental illness on the individual and his/her community. Health promotion activities are aimed at the development of positive attitudes and behaviors, rather than at specific prevention targets.

Caplan's original thesis included the proposition that primary prevention of mental illness should not have to depend upon known etiologic factors (Caplan, 1964). He draws an analogy of prevention efforts for bacterial diseases such as cholera to the task of primary prevention of mental illness, noting that Snow's study of the geographic distribution of cholera cases permitted identification of the Broad Street pump as the source of infection, without having to know about bacteria. Snow's removal of the pump handle prevented further cases of cholera, without the need for identification of a specific etiology for the illness (Snow, 1936).

In Snow's prevention project, the success of the effort depended upon measurement of the reduction of cholera cases. The prevention effort required some evidence of success in lieu of a sound foundation in the knowledge of the specific etiology of the illness. Caplan's model depends upon a model of presumed etiology to organize the interventions, in lieu of incorporation of outcome measures. Because of difficulties in the measurement of the outcomes of suicide prevention efforts in Indian communities, there would appear to be a need to rely upon an etiologic model as an organizing principle for prevention efforts. However, because of the dissociation of the suicide prevention efforts from mainstream mental health technology in many Indian programs, this etiologic basis for program planning may also be lacking. In the remainder of this paper a model for planning suicide prevention efforts, based upon presumed etiology, is advanced.

The Problem of Endemic and Epidemic Suicides

A major problem is posed for the study of Indian suicides in differentiating endemic and epidemic patterns in Indian communities. Endemic rates of suicide represent the steady ongoing suicides in a population. In contrast, epidemic rates represent clusters in a time period and a specific area or in a specific population. Suicide clusters are of particular concern among adolescents (Phillips & Cartensen, 1986). From data presented in a recent review of suicide among American Indians, May (1987) describes suicide patterns of several New Mexico tribes. These suicides clearly demonstrate the differences between epidemic and endemic patterns of the tribes. In his analysis, the rates of Navajo suicides increase slowly and steadily over the years, suggesting an endemic pattern. In contrast, Apache suicides varied from no suicides per year to rates of 70 per 100,000 and continuing in a pattern of peaks and valleys, suggesting an epidemic pattern.

In Indian and non-Indian communities, epidemic patterns of suicide present problems of measuring the effectiveness of prevention efforts. Because the course of these epidemics is such that they end according to a logic that has not yet been identified, it is impossible to say with any degree of certainty whether a specific epidemic has run its natural course, or if a specific prevention intervention has halted the epidemic. The only way of determining the effectiveness of efforts to prevent epidemic suicides would be to identify locations with periodic suicide epidemics, and to prevent the predicted magnitude or actual occurrence of the epidemic. In a single epidemic, it is not possible to assess the effectiveness of prevention interventions. To date, the prevention of periodic episodes of Indian suicide has not been reported.

Endemic suicide rates present a much better opportunity for assessing the effectiveness of suicide prevention efforts. A strong case can be made for the effectiveness of a prevention effort if the endemic rate, present for a number of years, can be reduced for some years following the initiation of a specific prevention effort. However, because suicide epidemics in Indian communities often attract a great deal of public attention, more attention in Indian communities is devoted to epidemic suicide from a programmatic standpoint, than to endemic patterns of suicide. In the Intermountain tribe discussed by May (1987) in his review of Indian suicide, a high endemic rate of suicide was reduced, seemingly as a result of specific interventions by the tribe, to a much lower level that persisted for many years (the author has also worked with this tribe and is aware of long-term reduced rates of suicide).

In addition to the problem of support for prevention efforts for endemic patterns of suicide, there is not evidence to suggest that endemic and epidemic patterns of suicide would respond to the same prevention efforts in Indian communities. Indeed, the "suggestibility" factor (Phillips, 1974) in adolescent suicide clusters would suggest a very different set of interventions than would a series of suicides among older individuals connected to each other only through common tribal membership.

Primary Prevention of Indian Suicide

In the author's years with the Indian Health Service, a conversion of resources from clinical efforts to primary prevention programs occurred. Several IHS Areas have, for example, held annual illness prevention conferences and added recreational programs for youth at the same time that positions for mental health professionals have been reduced. The same Service Units have health promotion fairs and other health promotion activities while concurrently not providing mental health referrals for patients coming to the emergency room with overdoses and other suicide attempts. Indeed, at a national conference on Indian

mental health in 1985, a highly placed Indian Health Service official voiced the opinion that all the money spent on treating people with established mental illness was wasted: This money should be spent in preventing schizophrenia in childhood. Although these are isolated events and trends, they reflect a belief in the Indian Health Service that primary prevention and health promotion activities are the only legitimate forms of intervention for preventing mental illness and its consequences, including suicide.

In spite of the enthusiasm for primary prevention efforts, there is reason to question the effectiveness of poorly designed primary prevention interventions in mental health. The author remembers educational efforts to encourage Indian youth to avoid drug abuse. The prevention approach involved a middle-aged non-Indian showing a film about the evils of drugs at a reservation school. I asked several adolescent males who were my patients at the time about the effectiveness of this campaign. They voiced the opinion that this "Mr. Rogers" approach lacked credibility, and was likely to increase drug use in their peer group (although not in those words). It seems likely that such educational approaches run the risk of eliciting a paradoxical response from youth who are alienated from the adult world and the non-Indian adult world in particular, as were these patients.

It might be suspected that more recent efforts involving sports stars encouraging young people to avoid drugs run similar risks, at best appealing to young people with athletic inclinations, but not to other subcultural groups of young people who may run an even greater risk for suicide than their athletic peers.

Primary prevention efforts aimed at preventing suicide among young Indian people run similar risks of ineffectiveness. Therapists who work with adolescents and young adults know well the risks of telling these patients directly to take a particular action, or to give up a particular activity. If these were effective interventions, psychotherapy and counseling would be very simple activities. One elder from a tribe that was experiencing a dramatic epidemic of suicide among its young adults expressed the opinion that the actions of the community were contributing to the epidemic. The elder's observation was that the community had not expressed concern about the youth until the epidemic began. Then the elders began to publicly exhort the young people not to kill themselves and to express appreciation for them, at the advice of health professionals. At the same time, the alienated young people would attend the funerals of their friends and, in death, hear their friends praised extensively. These deceased young people had been alienated from their communities and had received little praise in life. The elder felt that the combination of exhortation to avoid suicide and the extensive praise of the dead youth at the funeral created the social message that the only way to win grudging

praise from the adults in the community was to die. While this analysis may be excessively harsh, it highlights the risks of simplistic prevention efforts in adolescent suicide. While no study was made to validate the observations of the elder, this observation should be at least cause for caution in designing primary prevention interventions for Indian adolescent suicide. Indeed, a similar trend was noted in non-Indian youth following the airing of television programs that may have tended to dramatize suicide among young people (Gould & Shaffer, 1986).

While it is logical to assume that primary prevention efforts are the ideal means to approach the problem of suicide among Indian youth, it is by no means demonstrated that effective primary prevention strategies yet exist to attack the problem. At best, the lack of outcome data prevents sharing of strategies to cope with this problem which may be effective but unknown outside a small area. Worse, if these programs were ineffective, but not actually damaging, the resources devoted to them may be taken from programs and other approaches with a demonstrable effectiveness. In the worst case, it may be that some primary prevention approaches, particularly educational approaches if inexpertly presented, actually increase the risk of suicide among Indian youth. The lack of data in this field would indicate that any of these three cases is of equal probability. For this reason it may be an ethical necessity to present these primary prevention interventions to tribes as experimental, with the possibility of causing harm, until an effective outcome literature is established.

Secondary and Tertiary Approaches to the Prevention of Indian Suicide

In the strictest sense, secondary and tertiary approaches to the prevention of suicide are not possible, since such prevention approaches require established cases. However, if one considers the secondary and tertiary prevention of illnesses which are known or thought to bring with them an increased risk for suicide, prevention of these illnesses and their consequences becomes a means of bringing secondary and tertiary prevention efforts to bear upon the prevention of suicide. Likewise, if one considers suicidal behaviors in some cases to be early "cases" of suicide, it is theoretically possible to intervene in these early cases such that they will not progress to the full condition of a successful suicide.

In prevention interventions that treat other conditions as a means of reducing risk for suicide, there are a number of illnesses and conditions which present likely targets. From a conceptual framework, I propose these disorders be divided into three categories:

1. Disorders that usually run a time-limited course, and are relatively treatable, but which during their course pose a substantial risk for suicide. This risk is accompanied by cognitive changes that can be assessed with a suicide risk appraisal. Examples include major depressive episodes and panic disorder.

2. Disorders that pose a chronic risk of suicide that is difficult to assess, and may be of an impulsive nature. Examples include organic mental syndromes, schizophrenia, and severe personality disorders.

3. Disorders that increase the risk for suicide in an otherwise low- or moderate-risk individual, the assessment of which is of intermediate reliability because of the rapidly fluctuating course. Examples include alcohol and drug intoxication and acute grief.

Time-Limited and Relatively Treatable Disorders

Divided in this way, the delivery of services to each group follows a logical course. In the first group of illnesses, good treatments exist once a diagnosis is made, at least in a non-Indian population. The objective of prevention efforts aimed at this group is early identification and intervention, conforming to the pattern of secondary prevention. To date, the risks of illnesses which in clinical training with non-Indians are linked to depression have been established only by inference, as in the 1981 discussion of depression among American Indians and Alaska Natives by Manson and Shore (1981) which discusses suicide in conjunction with depression among American Indians in both a modern and historical context. Likewise, panic disorder is known to pose a risk for death by suicide among non-Indians (Coryell, Noyes, & Clancy, 1982), and is reported among American Indians (Neligh, in press), leading to a suspicion that it may be the cause of Indian suicides as well. Because no national Indian mental health data system that includes diagnostic information exists, correlating specific diagnoses with risks for death by suicide in Indian populations is not possible. However, the tribe that accomplished a significant reduction in what appears to be a very high endemic suicide rate, discussed by May (1987), also employed an aggressive program of diagnosis and treatment of major mental illness. This program utilized psychiatric consultants and actively treated depression, among other illnesses. With the suspicion of very high rates of major depressive illness among many Indian groups by clinicians, active community education about signs and symptoms of depression, and active treatment using modern methods may be highly effective means of preventing suicide in Indian communities.

In applying secondary prevention interventions to the first group of illnesses, a number of steps will be needed at various levels of the service delivery system:

1. At the level of IHS Headquarters and among academicians studying Indian mental health, there is a need for concerted research efforts to identify first incidence and prevalence of major mental illness in Indian communities, and then to assess the relationships among the various major mental disorders and specific outcomes such as suicide.

2. There is a need for researchers to replicate treatment outcome studies for major mental illness from non-Indian groups with Indian populations.

3. At the Area office level there is a need for training and standards of care which will assure that each patient receives an adequate evaluation for major mental illness, and has access to adequate treatment for the illness once it is identified.

4. At the Service Unit level, physicians should be trained to identify major mental illnesses presenting in their clinics, and be trained in modern medical treatments for these illnesses, particularly depression and panic disorder. The physicians should also be made aware of the need for psychotherapeutic interventions in these illnesses, and should be trained to work as a team with Service Unit mental health staff.

5. Mental health staff should be trained in performing adequate mental status and other examinations in accord with the new national IHS standards for mental health programs. In addition, staff should be trained in modern treatments for major mental illness. Mental health staff should also be trained to work comfortably with physicians as a treatment team in bringing these modern treatments to bear in the planning of the treatment for patients with these major disorders. (Currently, many IHS mental health staff are reluctant to perform structured interviews, make diagnoses, or to apply the "medical model" approaches that are effective treatments for several of the major mental disorders).

6. An attempt should be made to educate community members on the signs and symptoms of the most dangerous of the major mental illnesses, in order to seek treatment early in the course of a depression or panic disorder, or to be able to recognize the signs of these illnesses in others (particularly adolescent family members). This community awareness building should also make community members aware that good treatments exist for these conditions.

7. Tribal leaders and health care planners should be made aware that staff hired for mental health programs need to be trained and qualified to provide specialized technical treatment for these major mental illnesses, and that particular types of education are required in filling mental health positions.

8. At some point it may be possible to organize citizen advocacy groups on reservations, such as the Alliance for the Mentally Ill, whose function would be community education, and reducing the stigmatization of mental illness in the Indian communities.

The net result of these interventions would be the early identification of mental illnesses associated with high risk of suicide, the delivery of effective treatments for these illnesses where known, and the reduction of at least endemic suicide rates (presuming that these risk-producing mental illnesses occur with a fixed prevalence in the population). If it is demonstrated that these major mental illnesses also increase the risk of epidemic suicide, they may also be able to reduce or prevent such suicides.

Tertiary prevention interventions with this same group of patients suffering from major mental illness must focus on adequate care for existing cases. In this regard, an evaluation of the suicide potential is a preliminary step in assessing each patient. If a high potential for suicide is discovered, hospitalization, non-suicide contracts, mobilization of the patient's social support network, and other tertiary suicide prevention strategies can be mobilized. It must be emphasized, however, that without adequate treatment for the major mental illness, these anti-suicide steps lack long-term effectiveness. Adequate diagnosis and treatment of the major mental illness, as well as specific tertiary antisuicide prevention steps, form the most logical constellation of interventions for this group of disorders.

Chronic and Relatively Unpredictable Risk Disorders

The second group of patients poses a different type of risk for suicide. This group is identified as having in common a high suicide risk that may be of a variable nature and is difficult to identify with a suicide risk appraisal. If a specific risk of suicide is identified, many of the interventions such as contracts or agreements with patients not to attempt suicide cannot be relied upon as effectively as in the first group, because of the patients' changing mental status and the power of their symptoms to disorganize thinking. Patients in this group suffering from organic mental syndromes, for example, may be unable to remember agreements made with clinicians, or face psychotic symptoms so powerful that such agreements are meaningless. Similarly, patients suffering from schizophrenia may experience command hallucinations telling them to kill themselves that may not be detectable during the patients' visits. In these conditions, tertiary prevention strategies of managing complications of the core illness are of major importance. For patients suffering from organic mental syndromes, the diagnosis and care of the organic mental syndrome is of primary concern, and Indian patients suffering from acute organic mental syndromes should be treated as medical emergencies and hospitalized if possible (Neligh & Scully, in preparation). Indian patients suffering from schizophrenia pose a major problem in that there is generally a lack of specialized programs and facilities to care for them in the reservation setting. For example, day treatment,

partial hospitalization, and halfway houses for the chronically mentally ill are rare to non-existent on reservations. In lieu of these programs, the use of community health representatives serving as case managers has been proposed (Neligh & Manson, 1984). In addition to active case management of schizophrenic patients and patients suffering from chronic organic mental syndromes, good medical care including medical management of core symptoms is of importance.

Patients suffering from what appear to be personality disorders represent another high-risk group that are relatively unpredictable and unstable. Although relatively little is known about personality disorders among Indians (Neligh, in press), clinicians in Indian programs routinely treat patients as though conditions such as "borderline personality disorder" exist in these Indian populations. However these disorders are conceptualized or diagnosed, there are Indian patients seen in most Indian mental health programs who react to social stressors with attempted suicide or violence. These patients do not appear to suffer from a DSM-III or DSM-III-R Axis I diagnosis of a major mental disorder, but have long-standing problems with what at least appears to be maladaptive behavior. For a variety of reasons, there is almost no literature on this group of Indian patients, although most clinicians in Indian programs have treated these people. Because of the scarcity of literature on this group, many clinicians in Indian programs proceed as though this group corresponded to comparable personality disorders in non-Indians. Limit setting, long-term therapeutic relationships, avoiding institutionalization if possible, and the use of psychotropic medications are all practiced. However, because the suicide risk of this group arises from either poor impulse control or maladaptive responses to stress, major risks for suicide may take place in a time frame outside the control of the weekly (or even daily) therapy sessions. It is not clear that intensive involvement by the therapist (such as responding to telephone calls at all hours, or home visits at times of crisis, in the extreme) is helpful to the long-term course of these cases. Extensive emotional investment on the part of the therapist may cause enmeshed, dependent relationships between the therapist and patients, that have led to a variety of dramatic negative outcomes for both therapist and patient in reservation communities. Other interventions, such as self-help groups for these patients, case management, and network interventions offer alternatives, but their effectiveness remains to be proven.

Disorders Increasing Risk in Low/Moderate-Risk Individuals

The third group of disorders in the list poses an acute risk for suicidal behaviors. It consists of acute mental disorders that magnify the risk of suicide in even individuals with otherwise lower suicide risk. Certainly alcohol and drug

intoxication and withdrawal represent one of the greatest threats among these conditions. May (1987) found that among Plains, Intermountain, and Northwest tribes, 55%, 75%, and 31% of the youth suicide attempts were alcohol and drug related. Prevention of alcohol and drug abuse among Indians in general is beyond the scope of this paper. However, in individuals suffering from major mental illness, there may be a compounding of risk factors such that individuals running a high risk of suicide as a result of major depression or schizophrenia pose a far greater risk for suicide when intoxicated or withdrawing from drugs and alcohol. If true, this would suggest that working strongly with patients suffering from major mental illness to avoid alcohol and illicit drugs may be a much more effective tool in suicide prevention than working with communities at large to avoid alcohol and drugs.

Another acute risk factor in some Indian populations is the effect of grief from the loss of family or peers. In several suicide epidemics among adolescents on reservations, this author has found the suicides spreading among a particular peer group, rather than the young people in general. The effects of the suicide of a friend or peer may be due at least in part to grief. In some of the Indian cultures in which I have worked, the loss of a close relative or friend is often accompanied by visions of the dead person returning to encourage the living person to join them. I have spoken only with those who resisted this invitation, but strongly suspect that some of the suicides and parasuicides on these reservations may have been the results of people accepting the invitation.

With high death rates and, in particular, suicide rates on a particular reservation, the friends and relatives of a recently deceased person constitute a risk group appropriate for prevention interventions, particularly work designed to help people with grief. Likewise, people who abuse substances constitute another risk group for acute and relatively unpredictable suicides.

If each of the three categories of major mental disorders listed above represents a high-risk group for suicides among Indian people, the cumulative effects of an individual or group suffering from disorders in several of these categories, or from several disorders within a single category, present challenging questions for the design of Indian suicide prevention programs in the future. For example, if the effects of having two separate disorders with a high risk for suicide was additive, a mental health program could significantly reduce the risk for suicide in very high-risk individuals by treating even one of the conditions. If the relationship were more multiplicative than additive, very significant reductions in suicide could be accomplished with even less effort. For example, this model would suggest that a campaign to avoid drinking in individuals with major depression could have a significant effect on reducing suicide, if true. Likewise, treatment of panic disorder in episodic drinking populations might have very significant effects. In addition to the possible cumulative effects of these

multiple disorders, questions are posed about the cumulative effects of these disorders with other risk factors such as age, economic status, and gender. For example, on a specific reservation experiencing a suicide epidemic, it may be that a program to aggressively identify and treat young men between 16 and 20 years old, who are depressed and drink in an episodic excessive manner, could halt the hypothetical suicide attempt. This type of effort would be a sharp contrast to the general primary prevention efforts most frequently employed at present.

Secondary Prevention of "Suicidality"

Another way of viewing secondary and tertiary suicide prevention efforts is considering those who attempt suicide as early cases of suicide, and launching efforts to stop them from progressing to completed cases of suicide. As May (1987) points out, suicide attempts are not directly correlated with frank suicide lethality on most reservations. May also notes that suicide attempters are younger than completed suicides in his study, and use less lethal means to attempt suicide than the completed suicides. He finds the relationship of suicide attempts to interpersonal situations, rather than to a wish to die, in 43% of his sample. Nevertheless, one must question whether completed Indian suicides are in some cases those who began as suicide attempters and progressed either through experience or accident to completed cases. At least, because of their exposing themselves to a high-risk activity in the form of a potentially lethal or injurious overdose or other form of attempt, they run a greater risk of eventual accidental death from future attempts than would a non-attempter.

In spite of the increased risk for future completed suicide, many reservation medical systems treat suicide attempts as events which do not merit referral to mental health or alcohol treatment programs, in spite of the high potential lethality of the attempts in certain cases. The author has reviewed numerous records of reservation emergency room visits for overdoses, wrist and throat lacerations, and other suicide attempts in which the patient was given gastric lavage, sutured or otherwise given acute treatment for a suicide attempt, and discharged without a referral or a treatment plan to prevent future attempts or a possible completed suicide. In many of these cases alcohol intoxication was seen as the causative event in the suicide attempt, rather than as an acute risk factor in addition to others. Reasons for the lack of referral in these cases were often not clear, but may have had to do with the physician's belief that these attempts were one-time events with no overall significance, the physician's anger about self-destructive behavior on the part of the patient, or simply local custom. In many cases, the failure of referral took place in spite of the clinic's existing published policy to the contrary.

In viewing suicide attempts as possible early cases of suicide, a secondary prevention model would suggest that active interventions should take place with these patients to prevent the progression of the patients to completed suicides. In doing so, local clinicians are again faced with a relative lack of treatment outcome literature. Fleming (1981, 1983) found that a program combining traditional Indian values and group therapy techniques with suicide attempters was able to reduce the suicide attempt rate substantially. Other promising approaches may include treating existing major mental illnesses within this group, utilizing cognitive therapy techniques to reduce the frequency and impact of suicidal thoughts, discouraging drinking and drug use among suicide attempters, and working with attempters around grief.

Scope of the Secondary and Tertiary Prevention Efforts

As some of the primary preventions are attempted in Indian communities, it has seemed that the objective of these efforts is to effect a major social and attitudinal change in the entire community such that the problem of suicide (or whatever other behavioral health problem is the target) will vanish completely in a "phase shift." In contrast, the goals of secondary and tertiary prevention efforts around suicide must be more modest. It cannot be supposed that all or even the majority of cases of suicide on a reservation are related to major mental illness. The lack of data about the epidemiology of major mental illness on reservations, and the lack of data about suicide risks posed by particular illnesses, remains a major problem. If the model proposed here is valid, however, the institution of programs to implement disorder-specific secondary and tertiary prevention interventions should have an effect of whittling away at endemic suicide rates over time. Rather than a dramatic effect of abolishing suicide immediately, these interventions should be considered in the same light as programs aimed at reducing blood pressure, stopping smoking, and adopting an exercise program, which have had significant but slow effects on rates of myocardial infarction in this country. The effect of secondary and tertiary prevention efforts on epidemic suicide patterns is less certain.

Programmatic Implications

In sharp contrast to many current "primary prevention" efforts, the secondary and tertiary prevention efforts proposed here require strong competent mental health programs serving reservations. Rather than taking the funds which have supported trained mental health staff to support non-mental health staff whose function is to alter community attitudes, as has been done in the past, this model proposes that a trained and competent mental health program is the basis for

realistic efforts at reducing suicide in Indian communities. Indeed, this author's experience with the Intermountain tribe described by May (1987) and other tribes which have created strong mental health programs supports the contention that a competent mental health program with a "high-technology" approach has a major impact on the suicide rates in Indian communities. As a minimum, these mental health programs must be able to diagnose and treat common major mental illnesses either with the assistance of psychiatric consultants or in the form of a team with specially trained primary care providers and local mental health staff. The efforts of these teams of staff can be enhanced through a variety of mechanisms including the development of better diagnostic and screening instruments, community education aimed at case finding, and better referral mechanisms with primary medical care providers. Minimum standards of care around major mental illnesses and quality assurance reviews of compliance with these standards may be vital tools to improve the quality of care for high-risk conditions. Care for the chronically mentally ill on reservations may also provide a means for reducing suicide risk among this group. Case management techniques may be among the most effective tools for improving the care for this group on resource-poor reservations. For all of these technologies to be brought to bear on the problem of suicide, a concerted effort will have to be made to hire and train staff capable of performing these tasks.

Special innovative programs for the treatment of patients with multiple risk factors, such as combinations of alcohol and drug abuse, major depressions, organic mental syndromes, and grief and family problems, offer a possibility for a new generation of effective suicide prevention programs for Indian people. In order to create these programs, however, studies of the specific risks posed by these conditions and information about their local prevalence need to be performed.

It is not the purpose of this model to underestimate the contribution of socioeconomic factors and cultural disintegration to suicide rates among Indian communities. These factors have long been identified as contributory to Indian suicide. However, at the level of the health care program, these socioeconomic factors have often seemed much too large for any effective interventions. Rather, the purpose of this paper has been to present a model for reducing suicide rates at a local or Area level, that are within the grasp of existing programs, yet are in accord with modern mental health technology.

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