

Final Report: Literature Review
State-wide Elder Suicide Prevention Plan
Oregon Department of Human Services

Mercedes Dekker

March 16, 2004

INTRODUCTION

Suicide is a widespread problem, nationally and around the world. In 1999, the U.S. Surgeon General deemed it a public health issue and issued a national call to action to prevent suicide. In response to this call, many states are developing state-wide suicide prevention plans. Due to the limited resources for suicide prevention it is recommended that at risk groups become the primary target for prevention services. Since 1999, in Oregon, the highest rates of suicide have consistently been among those ages 65 and older. (CDC, 2002)

The following elderly suicide prevention literature review was conducted with the purpose of guiding the development of a statewide elder suicide prevention plan in Oregon. The goal of the literature review was to identify the best available sources of information on elder suicide prevention from a wide range of sources and to synthesize the information.

The objectives were to:

- Determine if any elder suicide prevention or intervention services are known to be effective.
- Determine the consensus of experts and practitioners on elder suicide prevention.
- Learn what the literature had to offer in terms of approaches for developing a prevention program and best practices for suicide prevention.
- Synthesize the information intending to identify specific strategies to reduce the incidence and prevalence of suicide among elderly, determine the best practices in elderly suicide prevention work from around the world, and present it succinctly.

As with all traditional scientific literature reviews, review process was systematic and thorough, however because the goal of this review is to succinctly present best practices and effective prevention strategies to inform public policy and be utilized in a prevention program, presentation of the information is slightly unique.

There are many challenges to conducting a review of literature on suicide, especially when focusing on the best practices for prevention and intervention. Most noteworthy is the lack of empirical evidence on what constitutes effective prevention. Only very recently are evaluation data beginning to appear on intervention methods for the older population (Bruce et al, 2004; De Leo, 2002; Florio, 1996). Prior to this data there had been little evaluation of methods, with none on methods aimed at the elderly. This is most likely due to the difficulty of applying traditional research methods to suicide prevention focused on the elderly. Case-studies, for example, may provide more empirical evidence, but because of the low base rates of suicide and difficulty in determining an appropriate study population and comparison group, these studies are lacking. Adding to these difficulties are the few reliable indicators, no prospective studies tracking risk factors as predictors of suicide, and lack of retention of longitudinal data. Most of the research studies found are cross-sectional or retrospective which may present issues with selection in and out of the study and cannot establish cause and effect. Psychological autopsies are an example of a retrospective method potentially subject to recall bias, but found throughout the suicide literature (Hawton et al, 1998). Data are weakened by the limitation of using proximal endpoints instead of completed suicide and by inaccurate reporting of suicide and suicide attempts. The issue of underreporting of suicide is due to the stigma attached and lack of a rigorous surveillance system to track both completed and attempted suicides and possible risk

factors connected to the people involved. Another reason the data is lacking in this area is that until recently, suicide, especially among the elderly, has not been considered a major public health problem. Therefore some important research gaps exist in the understanding of suicide, suicidal behavior and prevention.

METHODS

The following methods guided the approach to this review of literature. The search began during January 2004 and continued through mid-March. This literature review was focused on suicide prevention and the elderly. Relevant studies were identified using several electronic databases, including, Annual Reviews, Medline, PsycINFO, Sociological Abstracts, and Worldcat. The research was restricted to articles appearing in peer-reviewed journals over the last 14 years (1990-2004). In certain cases older documents were reviewed if the reference kept appearing or if necessary for clarification of ideas. Current websites focused on aging, mental health and suicide issues, were reviewed for relevant content and for additional resources. The review also included existing state prevention programs implemented around the nation, although these were comprehensive and not focused on the elderly. A few very relevant books were examined by identifying applicable chapters in the table of contents and reviewing those specific chapters.

Relevant citations from this search were incorporated into a Concepts Matrix (Appendix A). The concepts used to guide the research review are adapted from the National Strategy for Suicide Prevention (NSSP): goals and objectives for action, and the elder specific goals and objectives developed from the Suicide Prevention in Later Life-Year II, scientific consensus conference (June 12-13, 2002, in Washington, DC). These are:

1. Promote Awareness that suicide in older adults is a public health problem that is preventable.
2. Develop Broad-Based Support for elder suicide prevention.
3. Develop and implement strategies to Reduce the Stigma associated with aging and with being a senior consumer of mental health, substance abuse and suicide prevention services.
4. Develop and implement Community-Based Suicide Prevention Programs for older adults.
5. Promote efforts to Reduce Access to Lethal Means and methods of self-harm by older adults
6. Implement Training for Recognition and Assessment of at-risk behavior in and delivery of effective treatment to older adults.
7. Develop and promote effective Clinical and Professional Practices.
8. Improve Reporting and Portrayals of suicidal behavior, mental illness, and substance abuse among older adults in the entertainment and news media.
9. Promote and Support Research on late life suicide and suicide prevention.
10. Improve and expand Surveillance Systems
11. Evaluation of prevention programs

The NSSP was intended to serve as a guideline for moving suicide prevention efforts forward. All of the comprehensive state-wide suicide prevention plans reviewed have followed this basic design with modifications to address their specific populations. Developing a detailed plan for specific activities that correspond to each objective that are appropriate for the particular needs of the targeted community or population are part the next steps of the process.

RESULTS

In addition to these guiding concepts, the literature also revealed some themes that may aid in developing effective suicide prevention policy and program design. Suicide rates are influenced by factors outside health service control. Biological, psychological and social characteristics of population subgroups differ, and these objectives and the specific activities they entail must be modified to address the particular needs of elders. Based on these interactive factors, the Public Health Approach is widely regarded as the approach most likely to produce significant and sustained reductions in suicide. It is the recommended approach found throughout the literature and is advocated in the NSSP (Commonwealth Department, 2000; IOM, 2002; McIntosh et al, 1994; Ministry of Health, 2001; Satcher, 1998; U.S. DHHS, 2001; U.S. PHS, 1999). The public health approach, provides a framework for developing preventive intervention programs by clearly defining the problem, identifying risk and protective factors, developing and testing interventions, implementing programs based on local needs, and evaluating effectiveness. Programs may be specific to one particular organization, such as a university or a community health center, or they may encompass an entire state.

In order to proceed with this approach, it is necessary to accurately identify at risk groups. The U.S. currently does not have a national system for reporting violent deaths such as suicides. The national data regarding violent death is gathered through information reported by the Center for Disease Control and Prevention (CDC) from information found on death certificates. Currently, state information comes from reports from medical examiners, coroners and police officers on circumstances surrounding suicides, but it is not regularly and systematically collected and is fragmented and unlinked. A national system would have far more comprehensive data collection

requirements, and would work with local police departments and medical examiners offices to collect this information. The National Violent Death Reporting System (NVDRS) is a new system designed to do this. It has been funded to collect information in six states, Oregon included. A suicide prevention program for elderly in Oregon should take advantage of such a system and work towards implementing an internal state-wide system that has a broad-base of support that uses resources within the state (CDC, 2002a; CDC, 2002b; NVISS, 2001; NVISS, 2003). Additional benefits of this type of system is the ability to gain knowledge on the links between chronic mental health conditions and suicide attempts to help screen for those at risk and get them appropriate care. Better surveillance systems are needed to collect and link detailed information from death certificates, police reports and coroner or medical examiner reports into a usable, anonymous database to acquire reliable information on suicide.

It is also vitally important to use a culturally appropriate and sensitive approach to elderly suicide prevention (Cook et al, 2002; U.S.DHHS, 2001; U.S.PHS, 1999; Yip et al, 2003). Each community should be treated as distinct in its strengths, challenges and cultural sensitivities. Community forums provide an opportunity to better understand community needs, identify services and to inform the development of suicide prevention programs and training that are relevant to the population (Westerman & Hillman, 2003). To increase the likelihood of establishing successful and sustainable interventions, program planners and evaluation researchers may need to work outside of a standard practice. Successful strategies will require long term, sustainable efforts between the community, the service providers, evaluation researchers and a variety of local organizations.

An emphasis of the goals of the NSSP is to ensure a range of interventions that jointly represent a comprehensive and coordinated program for suicide prevention. This entails use of a multi-faceted approach or comprehensive suicide prevention plan. This type of approach will address the bio-psychosocial, social and environmental aspects of suicide. The two examples of effective comprehensive prevention strategies found in the literature that stand out are the Air Force Suicide Prevention Program and the Center for Elderly Suicide and Grief Counseling (CESP).

CESP offers hope, support and resources for persons suffering from life-threatening depression and their families. The 24-hour Friendship line is for seniors, family members, caregivers, and advocates to call to receive emotional support, crisis intervention, and information and referral. The 1-800 number is available to anyone calling within the United States, either at home or on a public pay phone. It is the only nation-wide toll free number offering telephone support to depressed, isolated, abused, lonely and/or suicidal older adults. The outreach and visiting services are for seniors 60 and over who live in San Francisco and include regularly scheduled telephone calls for emotional support, medication reminders, or safety checks and weekly in-home supportive visits. The Grief counseling program offers individual grief counseling to people of all ages who have suffered a loss from suicide, or sudden or traumatic death. They also provide group counseling to people of all ages through a Suicide Bereavement Support Group, a Suicide Ideation Group, and a Traumatic Loss Group. The Mental Health and Aging Program offers psychological and counseling services to seniors, their families and to the professional community. The services are provided on a sliding fee scale and, when appropriate, Medicare and certain other third party sources can be billed. The Mental Health and Aging

Program also offers assisted living and other communities the opportunity to have an 'in-house psychologist' who can develop programs particular to the needs of the communities. CESP provides services and resources for older adults to become connected to the community, begin the healing process, and discover that life is worth living (CESP website).

The Air Force Suicide Prevention Program is a population-based, community approach to prevention and intervention aimed at Air Force personnel. A cross-functional team, with the support of the Air Force Chief of Staff, implemented eleven recommendations aimed at mitigating risk factors and strengthening protective factors for suicide. The risk factors identified included problems with the law, finances, intimate relationships, mental health, job performance, and alcohol and other substance abuse. These were further complicated by social isolation and poor coping skills. The team identified three key protective factors: a sense of social support, effective coping skills, and policies and norms that encourage effective help-seeking behaviors. To promote social support and help-seeking behavior they used hard-hitting messages to repeatedly and clearly communicate the urgent need for Air Force leaders, supervisors, and frontline workers to support each other during the inevitable times of heightened life stress. Air Force personnel were encouraged to personally offer assistance where possible and to promote use of community resources when necessary. This step required that they also remove policies that acted as barriers to mental health care for those being charged with violations of military law. The team established policy requiring all Air Force personnel to receive annual instruction on suicide risk awareness and prevention to educate community members. A Web-based epidemiological database was established to improve surveillance by capturing demographic, risk factor, and protective factor information pertaining to individuals who attempted or

completed suicide. This tool allowed leaders to quickly detect suicide clusters or changes in patterns in suicidal behavior to inform change in policies and practices. Critical incident stress management teams were established to provide additional resources and respond to events such as combat deployments, serious aircraft accidents, and natural disasters as well as suicides within the military unit. They developed an integrated delivery system for human services that required the principle agencies at each geographical location to work together to assess the needs of the population they serve, develop a consolidated plan targeting their collective resources to a prioritized list of those needs, collaboratively market the resources to the community, and evaluate the effectiveness of their plan. (U.S. DHHS, 2002).

These programs are ideal examples of programs that have proved to be successful at reducing risk factors for elderly suicide and the suicide rate in a targeted population. They both illustrate the need to incorporate system-wide protocols, representing an agreement between key agencies within a community that reflect a coordinated response to people at risk, to ensure they receive coordinated, timely, and effective response. There is no single model or program component that is considered to be superior to other approaches and no service delivery component has been shown to be effective on its own. There are however service components that are widely recognized by experts as being important for inclusion in a comprehensive suicide prevention strategy. These findings are based on some recent evidence, but mostly relies on a convergence of opinion as the best evidence. The most notably effective components that emerged from the literature are identified and operationally defined.

COMPONENTS

Access to services refers to strategies that will increase access to and community linkages with health and substance abuse services. This includes requiring health insurance plans to cover mental health and substance abuse services, increasing health and/or social services outreach programs for at-risk populations, developing guidelines for screening and referral of patients to appropriate services, and developing guidelines for and increasing effective support programs for suicide survivors. (Bird & Parslow, 2002; Conwell & Duberstein, 2001; De Leo et al, 2002; DHHS, 2001; Eagles et al, 2003; Everding, 1997; Fiske & Arbore, 2000-2001; Florio et al, 1997 ; Glass & Reed, 1993; McIntosh JL, 1995; Osgood, 1992; Pearson et al, 1997; Quinnett, unpublished; Salvatore, 2000 ; U.S.PHS, 1999; WHO, 2000c).

Community-based prevention programs refers to a unified community response to issues around suicide that includes partnerships between public and private entities and citizens and professionals working together. Ideally it would include promoting community development which is a process of social action in which the people of the community identify their needs and concerns, make plans to meet needs and solve problems, and execute the plan using community strengths and resources. Community-based programs coordinate across government agencies, involving the private sector and supporting plan development, implementation, and evaluation in communities. School districts, colleges and universities, employers, correctional institutions, aging agencies, family and community service providers and organizations should ensure availability of evidence-based prevention strategies. Suicide prevention is a complex problem and community-based interventions could address medication compliance, follow-up with aftercare, substance abuse, social supports, and other relevant issues. The suicide rate is affected

by community norms and cultural values, and vary with factors such as percent of the population residing in rural areas and the ethnic make-up of the population. To help communities address the local issues with suicide prevention, both state and local leadership and responsibility, are needed for planning and implementation. In some regions groups may have already developed suicide prevention action plans. The state plan may be able to collaborate with these plans, rather than duplicate them. Bringing together the key stakeholders and providers in suicide prevention to develop a regional action plan is a key step to ensuring an integrated approach to suicide prevention at all levels and across all sectors. (Adamek & Kaplan, 1996; Conway, 1985; Cook et al, 2002; De Leo et al, 2002; Dieksra, 1995; Duberstein et al, 1994; Eagles et al, 2003; Everding, 1997; Fiske & Arbore, 2000-2001; Florio et al, 1997; Hawton et al, 2001; Kerkhof et al 1991; McIntosh et al, 1994; Neelman, 2002; Quinnett, unpublished; Rubenowitz, 2001; SPAN USA, 2001; U.S.DHHS, 2001; U.S.PHS, 1999).

Crisis centers and hotlines provide emergency support, counseling and resources for people in crisis. Hotlines are designed to respond to the crisis and to deter a caller from self-destructive acts until the immediate crisis has passed. These usually offer an immediate available source of support and should be part of a more comprehensive suicide prevention program. They should include drop-in counseling services, information and referrals, outreach programs and link callers with community services. (De Leo et al, 1995; De Leo et al, 2002; Diekstra, 1995; Everding, 1997; Fiske & Arbore, 2000-2001; McIntosh et al, 1994).

Family support refers to a variety of services designed to help families enhance their health and well-being. Family support programs aim at reducing risk factors, while enhancing protective

factors. Services such as parent support groups, family counseling, empower and strengthen members with the aim of enhancing the overall health and well-being of family systems. By working with the family unit, family support programs aim at reducing risk factors, while enhancing important protective factors such as family relationships and the modeling of healthy adjustment. This could include programs in life-skills training that may include employment and vocational training, or personal development skills such as problem solving, stress reduction, communication and support groups that provide opportunities for family members to share their experiences and concerns with peers. Preventive health care, drop in centers, information and referral service are all related to this component. (Diekstra, 1995; Fiske & Arbore, 2000-2001; Kerkhof et al, 1991; Ministry of Health, 2001; Nisbet, 1996; Rubenowitz, 2001; SPANUSA, 2001; U.S.PHS, 1999).

Gatekeepers refers to those in the community who have face-to-face contact with many community members as part of their usual routine. Gatekeeper training provides knowledge, skills and attitudes necessary for these individuals to link those in need with appropriate resources. This would include an array of concerned organizations and include professionals such as teachers, youth workers, social workers, psychiatrists, general practitioners, police and others. These are effective bridge builders who link those who are in need with the more specialized system of mental health. The mode of training may differ according to the category of gatekeeper, recognizing that intervention may vary according to the role held by the gatekeeper and the community context. (Florio et al, 1996; Florio et al, 1997; McIntosh et al, 1994; Quinnett, unpublished; Pearson et al, 1997; WHO, 2000c).

Means reduction refers to suicide prevention efforts that reduce access to firearms, drugs, high places and other common means of committing suicide. The idea is that if lethal means are not readily available when a person decides to attempt suicide, they might either delay the attempt, possibly later deciding against it, or use less lethal means allowing for greater possibility of medical rescue and survival. This would entail raising awareness of community members about the link between lethal suicide means in home and completed suicide, educating the public about safe storage of guns and medications in the home, educating family and clients that are known to be at risk about safe storage of guns and medications in the home, educating physicians about the appropriate prescribing practices for potent medications and importance of screening for possible lethal means in the home. Various local and state policies that may affect access to lethal means should also be examined and possibly addressed. (Conwell et al, 2002; Conwell et al, 1998; Ludwig & Cook, 2000; Miller, 1978; Osgood, 1992; Oslin et al 2004; Pearson et al, 1997; Wintemute et al, 1999).

Media education refers to information and guidelines for the media about responsible suicide reporting practices in an effort to lower the negative effects that sensational publicity can have and educate them about their role in informing the public. There is evidence that publicity and portrayal of suicide in the media can increase suicidal behavior. A Viennese study showed that after the introduction of media guidelines to encourage responsible reporting, the number of suicides and suicide attempts decreased (Sonneck et al, 1994). The media can play a powerful role in educating the public about suicide prevention. They can inform the public about causes, warning signs, trends and treatment advances and prevention methods. Educating the media entails raising awareness of members of the media about the potential “contagion effect” of news

stories about suicide and will increase responsible reporting practices in news stories. It should also include funding service providers to work with local, regional and national media to reduce the potential of imitation and normalization of suicide, in line with the advice. It may also entail partnerships with media (film, television, radio, documentaries, magazines, daily and community newspapers etc), and those who have influence such as editors, film script writers, and journalism instructors. (AFSP, 2001; Commonwealth of Australia, 2001; Conwell & Duberstein, 2001; Eagles et al, 2003; Kastenbaum, 1992; Kerkhof, 1991; Osgood, 1992; Turvey et al, 2002; WHO, 2000b).

Outreach programs refers to programs that send staff into communities to deliver services or recruit participants. They target individuals at risk for suicide based on a variety of potential risk factors and conditions including depression, recent or recurrent loss, prior suicidal ideation and behaviors, alcohol and drug use, and exposure to a suicide of a friend or family member. At risk individuals might be identified through screening or referred by parents/guardians, teachers, community members, mental health professionals, or themselves. This would include support groups to bring together vulnerable individuals in a caring and comfortable group environment where they receive the support of peers and practice valuable life skills. These serve the purpose of counteracting a number of early risk factors experienced by vulnerable populations while enhancing protective factors such as the provision of social support, knowledge building, and skill building. (Conwell et al, 1998; De Leo et al, 2002; Everding, 1997; Fiske & Arbore, 2000-2001, Florio et al, 1997; Goldney et al, 2001; Hawton et al, 2001; McIntosh et al, 1994; Osgood, 1992; Pearson et al, 1997; Quinnett, unpublished).

Primary care : revolves around optimizing the use of primary care providers and settings for prevention, intervention and treatment. These include services and community-based care that form the first point of contact for those in the community seeking health care, from general practitioners, practice nurses, and health workers. Two-thirds of people who commit suicide each year have seen a physician within a month of their death, emphasizing the key role that primary care physicians can play in recognizing danger and suicide prevention. This takes on added importance as the U.S. moves closer toward a managed care model. Primary-care physicians become the gatekeepers and first line of defense in efforts to prevent suicide.

Training and education for primary care workers entails creating an open dialogue with patients so that those who need treatment receive it before they resort to suicide. It is essential for primary care physicians to ask each new patient about mood and to assess any psychiatric disorders and accompanying suicidal ideation. Physicians then can decide whether patients should be treated on an outpatient basis, hospitalized, or referred to a psychiatrist. It is necessary to learn the risk factors for suicide among the elderly and to be alert to signs of suicidal ideation and depression in persons with established risk factors. The training would include recognizing and treating affective disorder and becoming familiar with pharmacotherapy for patients with suicidal ideation. While addressing patients' emotional problems, screening for depression and suicide risk, being alert to psychiatric ills, and making proper referrals to mental health providers are ways primary care physicians can work to prevent suicide, how much power primary care physicians have to prevent suicide has yet to be determined. (Bartels et al, 2002; Bird & Parslow, 2004; Brown et al, 2001; Bruce et al, 2004; Conwell & Duberstein, 2001; Conwell et al, 1998; Goldney et al, 2001; Hall et al, 2003; Hawton, 1998; Kaplan et al, 1991; Kaplan et al, 1998; Luoma et al, 2002; McIntosh et al, 1994; McNamee & Offord, 1994; Miller, 1978; Milton et al,

1999, Ong, 2003; Pearson & Brown, 2000; Pearson et al, 1997; Perkins & Tice, 1994; Richman, 1993; Rutz et al, 1989; Schulberg, 1996; Unuzter, 2002; Uncapher, 2000; WHO, 2000a; WHO, 2000c).

Public education and information refers to strategies to increase accurate knowledge surrounding suicides to the public. This would entail raising awareness of community members to provide individuals with the necessary attitudes, knowledge, and skills to be able to identify and help potentially suicidal individuals. It would also include raising their awareness about the link between lethal suicide means in home and completed suicide. Safety education and information would provide education for older persons, their families, and healthcare providers concerning risks of having a gun in the home and home safe storage and about medications in the home. (AFSP, 2001; Bird & Parslow, 2002; Commonwealth of Australia, 2001; Conwell et al, 2002; Kaplan et al, 1998; Kastenbaum, 1992; Katon et al, 1996; Kerkhof et al, 1991; Ludwig & Cook, 2000; McIntosh et al, 1994; Osgood, 1992; Oslin et al, 2004; Sonneck et al, 1994; U.S.PHS, 1999; WHO, 2000b; Yip et al, 2003).

Reducing social isolation and **increasing social support:** refers to efforts to provide programs to increase a persons contact and communication with others in the community to reduce feelings of aloneness. Assistance in this area may include companionship, emotional backing, cognitive guidance, material aid and special services. Social networks can act as a buffer between individuals and the general socio-economic, cultural and environmental conditions over which they have little control and are the most difficult to change. Social isolation and lack of community interaction are strongly associated with poorer health and suicide. Social networks

are thought to have an influence on health through at least three mechanisms: the provision of resources and advantages (social capital); the wellbeing effects of social support; and the influence on behaviors. Connections or bonds to other people can have a positive impact on our mental health. Studies show that the factors which promote and protect people's mental wellbeing include strong familial relationships, a sense of belonging, good social skills and supportive networks. Participation in sport or recreational programs provides opportunities for socializing, building friendship networks, reducing social isolation and enhancing community wellbeing. This can ultimately lead to improved physical and mental health. (Bartels et al, 2002; Carney et al, 1994; Conway, 1985; Conwell et al, 1998; Cook et al, 2002; Eagles et al, 2003; Everding, 1997; Florio et al, 1997; Kastenbaum, 1992; Lynch et al, 1999; Nisbet 1996; Rubenowitz, 2001; Turvey, 2002).

Screening: refers to routine administration of an instrument or procedure to seek out suicidal individuals in need of treatment or service. By directly asking people about their emotional state, screening actively seeks out suicidal individuals and ensures that everyone has an equal chance of being identified as to their potential risk status. Screening programs have been designed to identify and provide treatment or other assistance for individuals at high risk of suicide. This might be a paper and pencil questionnaire measuring psychological issues related to suicide administered to large numbers of people, and those certain scores are interviewed and evaluated by a trained professional in order to determine their level of current risk for suicide. They are then referred for appropriate treatment and follow-up. While the Canadian Task Force claims there is insufficient evidence to recommend for or against routine screening by primary care clinicians to detect suicide risk in asymptomatic persons (McNamee & Offord, 1994), many

more recommend this method. (Bird & Parslow, 2002; Lyness et al, 1997; Osgood, 1992; Osgood, 2000-2001; Pearson et al, 1997).

Training and guidelines for health professionals: refers to programs specifically aimed at healthcare professionals. The training of primary care clinicians in recognizing and treating affective disorders in order to prevent suicide is recommended. Clinicians should also be alert to signs of depression and other psychiatric illnesses, and should routinely ask patients about their use of alcohol and other drugs. Patients who are judged to be at risk should receive evaluation for possible psychiatric illness, including substance abuse, and counseling and referral as needed. Patients who are recognized as having suicidal ideation, or patients who suspect suicidal thoughts in their relatives or friends, should be made aware of available community resources such as local mental health agencies and crisis intervention centers. Training should focus on learning the risk factors for suicide and depression and entail becoming familiar with pharmacotherapy for these patients. In a study of the effect of a program to enhance general practitioners' recognition and treatment of depression on the Swedish island of Gotland, it was found that suicide decreased immediately after the educational program but not over the long term (Rutz et al, 1989). The result indicates that training needs to be sustained over time, updated following evaluation and available both in preclinical training and in-service training. (Conwell & Duberstein, 2002; Conwell et al, 2002, Hall et al, 2003, Kaplan et al, 1991, Kaplan et al, 1998; Katon et al, 1996; McIntosh et al, 1994; Milton et al 1999; Nemeroff et al, 2001; Pearson & Brown, 2000; Pearson et al, 1997; Perkins & Tice, 1994; Schulberg, 1996; Turvey, 2002; Uncapher, 1998; Uncapher, 2000; Unutzer, 2002; WHO, 2000a; WHO, 2000c).

Implicit throughout these descriptions is the need for assessment and evaluation. While it may or may not be listed, the starting point for many of the strategies is to determine what materials and resources are already available. There is a need for more and better science about suicide prevention. Intertwined throughout most of the suggested strategies is the need to evaluate the process and the outcomes. Sound evaluation of programs will build the evidence base and ensure that the few and precious suicide prevention resources available will be directed toward those activities that can demonstrate effectiveness.

SUMMARY

Suicide prevention and intervention intersects public health, community health, mental health, and physical health. It requires commitment from health care, education, justice, social services and various private sector groups. Internationally, much of the research into suicidal behavior is now concerned with identifying effective suicide prevention interventions at individual and population levels. It is acknowledged that research in this area is very complex given the multifactorial nature of suicide. Its complexity is compounded by ethical issues, a lack of funding, and the need for long timeframes and use of proxy measures given the comparative rarity of suicide.

In the absence of conclusive empirical evidence on all facets of suicide prevention, there is strong agreement internationally of the key components for suicide prevention. The main themes from reports and strategies on suicide prevention, state the need for a comprehensive and intersectoral approach. This approach should use multiple strategies that address multiple risk and protective factors, involve sustained action over a long period, involve local, regional and

national activity, have a view of prevention and interventions to occur at a range of levels, and include a focus on improving data, research and evaluation.