

Discussion Paper
for the
Development of a
Suicide Prevention Strategy
for the
Winnipeg Health Region

November, 2003

1. Introduction

Suicide and suicide attempts are a significant public health issue in Canada and a major source of morbidity, mortality and health care cost. Suicidal behaviour occurs on a continuum from thoughts and ideas to attempts and death. Each year, approximately 4,000 Canadians die by suicide. In 2002, 151 people died in Manitoba due to suicide. (Manitoba Department of Justice). The impact of suicide is profound, not only for the individuals themselves but also for their families, peers and community.

The Winnipeg Regional Health Authority identifies suicide prevention as a priority area. There is commitment to understand the causes of suicide, its impact, and to the development of a strategy to reduce and prevent suicide in the Winnipeg Health Region. An effective suicide prevention strategy relies on shared commitment and cooperation from many sectors of the government, agencies and the community.

The purpose of this paper is to present a description of what is understood to date about the problem of suicide including statistical analysis, identification of high-risk populations and models of suicide causation. This paper will also describe suicide prevention strategies that have been developed both in Canada and in other jurisdictions including models from New Zealand, Australia, England and the United States. Finally, initial recommendations regarding the development of a regional suicide prevention plan will be provided.

The primary goal of a suicide prevention strategy for the Winnipeg region is to work together as a community of citizens to build resilience, resourcefulness, tolerance and capacity in communities and in people of all ages, to promote positive life options for the whole population and in particular, those at risk of suicide.

2. Data Collection

In order to ensure a consistent understanding it is necessary to define suicide and suicidal behaviours. In addition to a common understanding it is also important to recognize some of the inherent problems in suicide research as it currently exists.

Definition of Terms

As a means of assuring a mutual understanding of the terminology used, the following terms are defined for the intents and purposes of this report and planning with the Winnipeg Health Region as follows:

Suicide – death caused by self-inflicted, intentional injury (may be used interchangeably with completed suicide)

Suicide attempt – potentially self-injuring behaviour motivated by an attempt to die with a non-fatal outcome.

Limitations of Research on Suicide

The complexity of suicide as a population health issue is profound. There are a large number of limitations that accompany research on suicide. Many of the complicating factors involve the reporting processes used when creating suicide databases and the social and cultural beliefs that affect the reporting of suicide. Some of these limitations are identified as follows:

- 1) In the literature on suicide and suicide prevention there is definitional ambiguity, which creates a number of limitations. Inconsistent definitions of suicide and self-harm make it difficult to compare findings and outcomes across studies. There is also an absence of reliable or valid assessment of actual intent to die, which can lead to falsely classifying suicidal and non-suicidal behaviors.
- 2) Highly lethal methods of unintentional injury (e.g. shooting) are often more easily mislabelled as “suicide” which can in turn lead to an over-representation of the number of completed suicides.
- 3) Less lethal methods of suicide (e.g. overdoses, slashing) are by definition, more easily mislabelled as “unintentional deaths” which can lead to an under-representation of the number of completed suicides.
- 4) The traditional method of collecting suicide attempt data has been through the monitoring of hospitalisation rates. This method does not include people who make attempts but do not seek emergency department interventions after an attempt, or whose injuries did not lead to a conclusion of attempted suicide. It is believed that 1 in 4 youth who attempt suicide do not seek medical attention. It is

commonly believed among suicide researchers that the number of suicides and suicide attempts is underreported.

5) When gathering data regarding Aboriginal people, Provincial databases including Manitoba, include anyone registered as a "status Indian" under the Indian Act of Canada as well as those who are Inuit as Aboriginal peoples. Non-status Indians and individuals that identify themselves as Metis are not included systematically in any health database. Therefore the sub-population identified as being Aboriginal may not be truly representative of Aboriginal in Manitoba. Data collected regarding the Aboriginal population tends to generalize results from one group of Aboriginals to all Aboriginals in general.

6) There is insufficient data that differentiates between those of Non-Caucasian and Caucasian heritage. As a result of most classification systems not accounting for ethnicity, there is a lack of data pertaining to completed or attempted suicides rates concerning immigrants.

7) Many studies indicate that the suicide rate among the gay, lesbian, bisexual, transgender population are higher than that of the general population. Yet national statistics do not use sexual orientation as a variable. There is likely to be under-reporting of self-reported homosexuality, leading to the under-reporting of suicide in this population.

3. Incidence of Suicide

Global Suicide Rate and Burden of Disease

The World Health Organization (WHO) recently published the *World Report on Violence and Health* (2002). In this report it is indicated that suicide, a self-directed violence, is an identified global public health problem. An estimated 815,000 people worldwide killed themselves in 2000, for an overall age-adjusted rate of 14.5 per 100,000. This translates into one death every 40 seconds thus making suicide the thirteenth leading cause of death worldwide. Amongst those age 15-44 years, self inflicted injuries are the fourth leading cause of death and the sixth leading cause of ill health and disability.

Among people who experience suicidal ideation only a minority actually take their own lives. For every fatal suicide there are a number of non-fatal suicide attempts. About 10 % of those who attempt suicide do eventually kill themselves. An even greater number of people experience suicidal thoughts but never attempt to kill themselves. For every fatal suicide there are another 5-6 people, “survivors” (family, friends, colleagues) whose lives are profoundly affected emotionally, socially and economically. (Diekstra et al., 1995).

Suicide mortality and morbidity are a major cost not only to the health sector but also to society in general. These cost include:

- Premature loss of life.
- The provision of medical, surgical, mental health and rehabilitative services to those making non-fatal suicide attempts.
- Bereavement and other psychological impacts on family and others closely involved with individuals making fatal and non-fatal suicide attempts.
- Loss of productivity for those involved in the suicidal behaviors and those affected by it.

Accurate cost evaluations are not available as they would require long term follow up. However, in general terms suicide and suicide attempts including self-inflicted injuries are estimated to cost billions of dollars each year.

International Suicide Rates

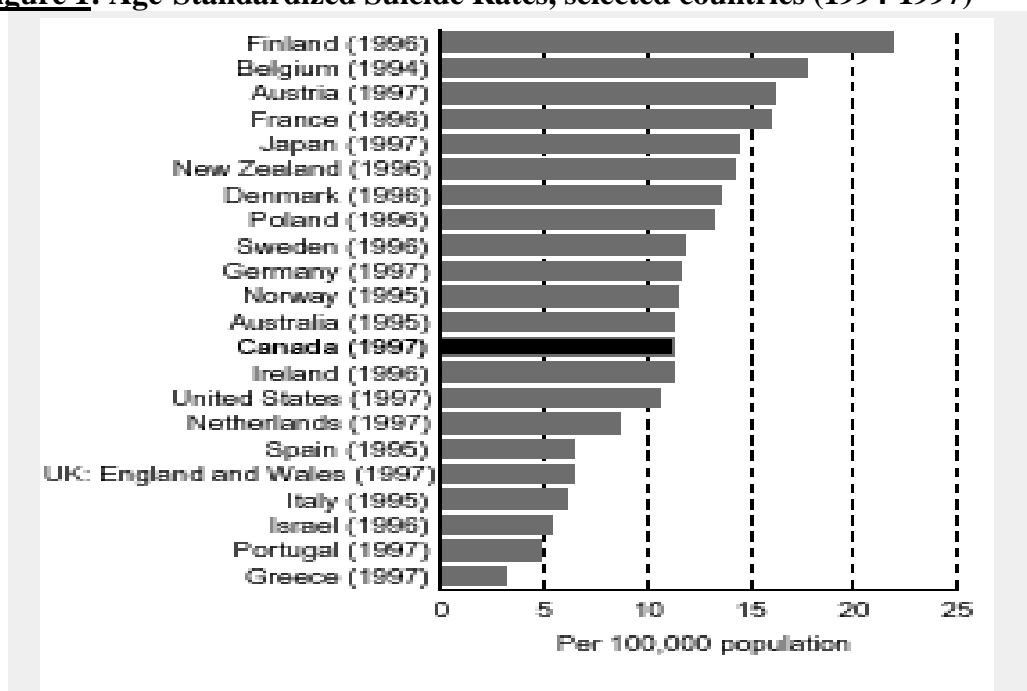
Suicide is currently the 5th leading cause of death among Canadians and is the second leading cause of death among Canadian children and youth aged 10 – 24 years. In 1998 approximately 3,700 Canadians took their own lives, on average about 10 suicides a day. In 1999 Canada’s age standardized suicide rate was 13 per 100,000 (Statistics Canada).

Among developed countries, Canada ranks near the middle, with suicide rates ranging from 3 per 100,000 in Greece to 22 per 100,000 for Finland (See Figure 1). Since the

middle of the 1970's, Canada's suicide rate has exceeded that of the United States (Update of The Report on Suicide in Canada, 1994).

Suicide data in this report are classified according to ICD-9 (International Classification of Diseases, 9th Edition). International comparisons should always be interpreted with caution, as adherence to these classifications may vary between countries. Cultural and religious differences in reporting should be considered. Some authors have commented that using this classification may overestimate the incidences of suicide and hospitalizations while other researchers suggest that there is a large body of evidence to indicate that suicide statistics are underestimated. For example, attempted suicides that do not require hospitalization are not counted.

Figure 1: Age-Standardized Suicide Rates, selected countries (1994-1997)



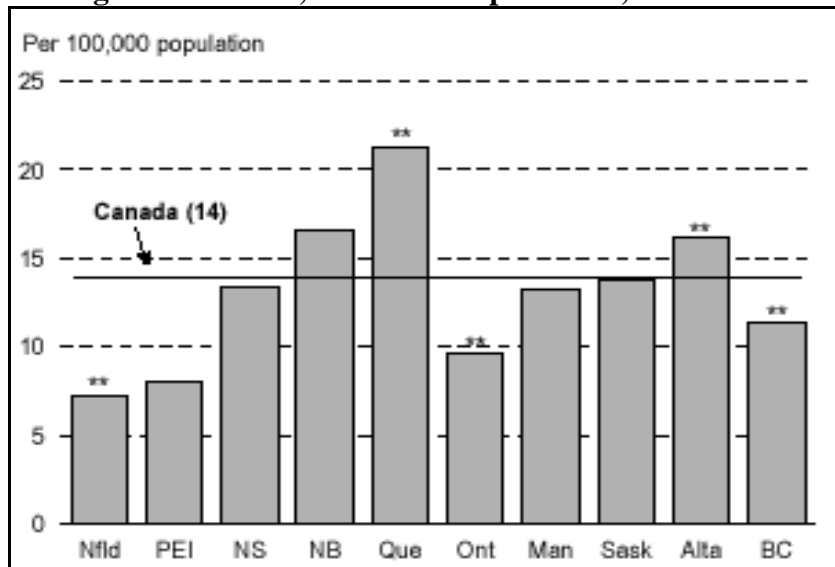
Source: World Health Organization Database (WHOSIS), 2001

National Suicide Rates

Manitoba ranks sixth out of all provinces, with a suicide rate of 13 per 100,000; Quebec had the highest rate, at 21 per 100,000 while Newfoundland had the lowest, at 8 per 100,000. (See Figure 2)

Canadian males had a national suicide rate four times higher than females; the male rate was 22.6, while for females it was 5.8. (See Figure 3) The group with the highest suicide rate was the 30-44 age group, with a suicide rate of 16.7 per 100,000 (not shown). Males in this age group had the highest suicide rate, at 26.5 per 100,000. The highest female rate occurred in the 45-59 age group, with a rate of 7.2 per 100,000.

Figure 2: Age-Standardized Suicide Rates, Population aged 10 or older, Canada and provinces, 1998



Source: Statistics Canada Health Reports, 2001

Figure 3: Age-Specific Suicide Rates, by Sex, Canada,



Source: Statistics Canada Health Reports, 2001

National Rates of Suicidal Thoughts

In September 2003 Statistics Canada released the report "Canadian Community Health Survey: Mental health and well being". The survey collected information related mental health and well being from approximately 37,000 individuals age 15 and over in all provinces excluding territories. The data indicates that 3.7 % of those surveyed experienced suicidal thoughts in the past 12 months.

Suicide Rates for First Nations Youth

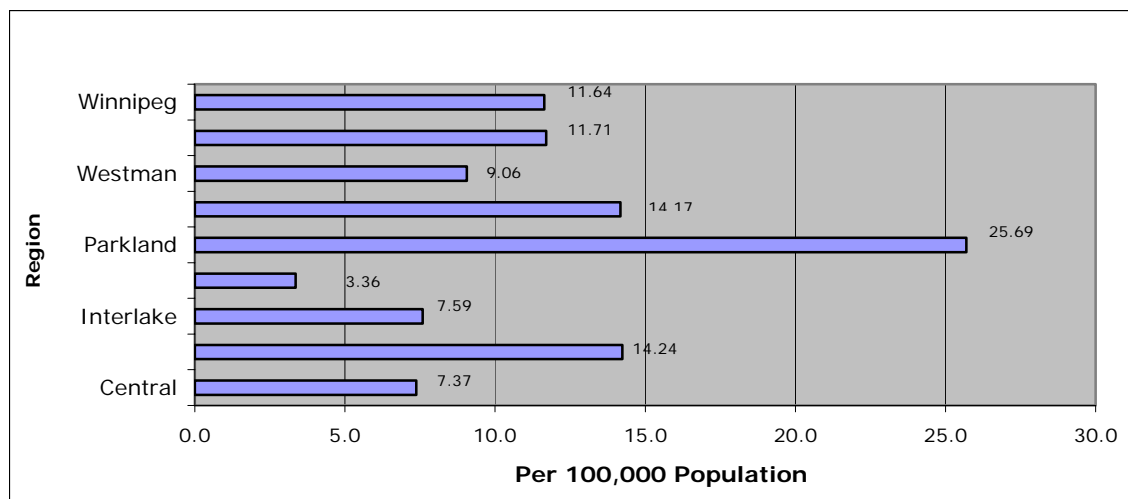
The Canadian Institute of Child Health's most recent edition of "The Health of Canada's Children" (2000) compared First Nations and Canadian suicide rates from 1989-1993 for ages 0-14 years of age and 15-25 years of age. Among First Nations men between the ages of 15-24 years the suicide rate was 126 per 100,000, compared to 24 per 100,000 for Canadian men of the same age group. Young women from First Nations registered rate of suicide was 35 per 100,000 versus only 5 per 100,000 for Canadian women.

Manitoba Suicide Rates

The following statistics are taken from the most recent Injury Data Report in Manitoba published in 1998. It is limited as it reflects only one year of data (1996), so rates (particularly for suicide by regions) are not stable. A Winnipeg Injury Data Report is pending which will provide more robust data.

This data indicates that the overall suicide rate for Manitoba in 1996 was 11.7 per 100,000 (adjusted). Parkland region had the highest suicide rate, at 25.69 per 100,000; Norman region had the lowest rate at 3.36. Winnipeg's rate was similar to the Provincial rate, at 11.64. This commonly occurs since Winnipeg's population accounts for 60% of Manitoba's population.

Figure 4: Age-Adjusted Death Rates, by RHA 1996



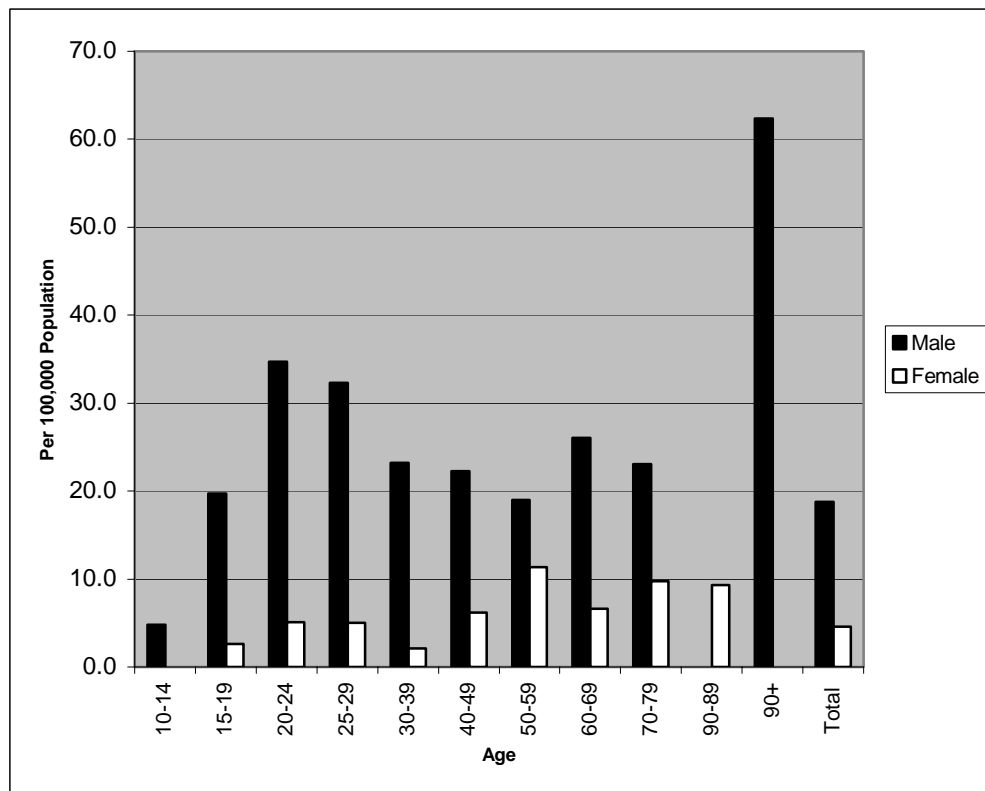
Source: Manitoba Injury Data Resource, 1996

Manitoba Suicide Rates: Gender and Age Adjusted

Males in Manitoba had a suicide rate that was four times higher than females in 1996 with rates of 18.8 and 4.6, respectively (Figure 6). The age group with the highest suicide rate among men was the 90+ group, with a rate of 62.3 per 100,000. The second highest suicide rate among males occurred in the 20-24 age group, with a rate of 34.7 per 100,000.

For females, the age group with the highest suicide rate was the 50-59 age group, with a rate of 11.4 per 100,000. The second highest rate was for the 70-79 age group, with a rate of 9.8 per 100,000.

Figure 5: Age and Gender Adjusted Suicide Rates (1996)



Source: Manitoba Injury Data Resource, 1996

As stated previously, the number of suicide attempts far exceeds the number of completed suicides. As a comparison, while the suicide rate for Manitoba was 11.7 per 100,000, its attempted suicide rate (those which result in hospitalization) was 80.8 per 100,000 in 1996 as detailed in figure 6.

Manitoba Hospitalization Rates: Gender and Age Adjusted

Analyzing hospitalization rates for attempted suicide by gender and age indicates that generally, females had a much higher rate of attempted suicides than males. The

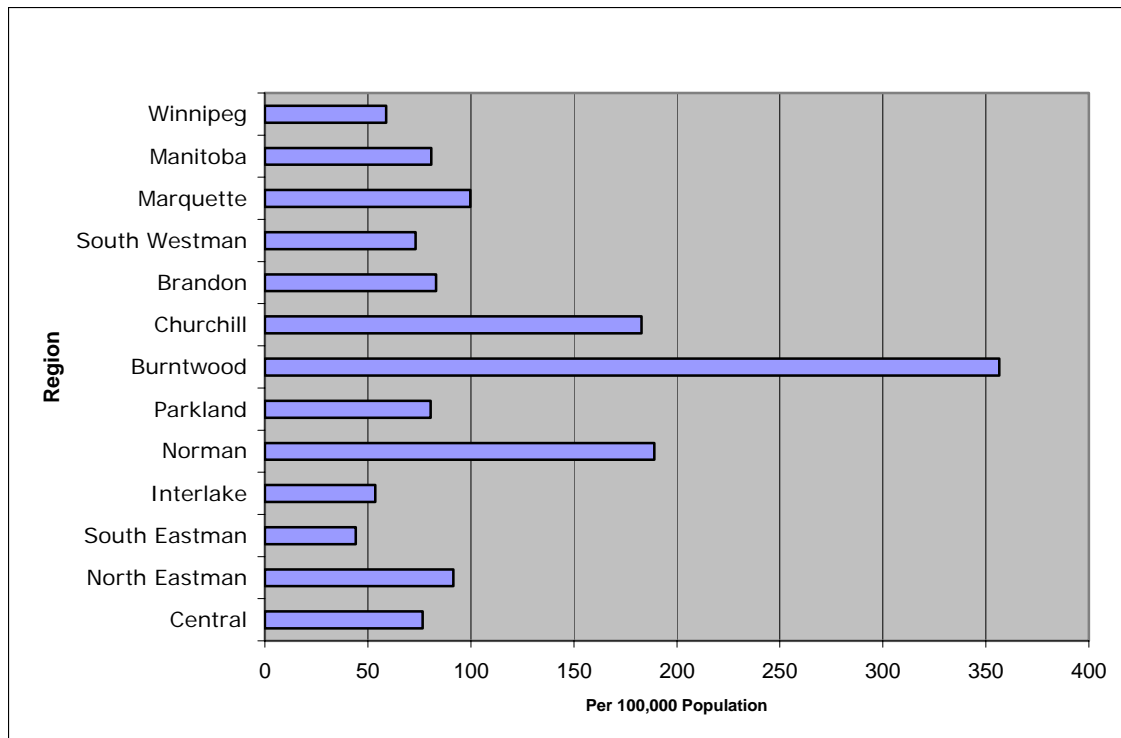
attempted suicide rate for females was 101.9 per 100,000, while for males it was 59.8 per 100,000.

The trend for attempted suicide rates seem to be the reverse of completed suicide rates. The highest attempted suicide rate among females occurred in the 15-19 age category, at 265.3 per 100,000; the second highest attempted suicide rate was for the subsequent 20-24 age category, at 202.9 per 100,000. There were very few hospital admissions for attempted suicides among elderly females.

Hospitalization for suicide attempts among males in Manitoba also followed the female trend. That is, the rates of hospitalization for suicide attempts were skewed towards young adults. The highest rate occurred in the 20-24 age group, with a rate of 134.5 per 100,000. The second highest was among the 25-29 age category, with a rate of 119.8 per 100,000.

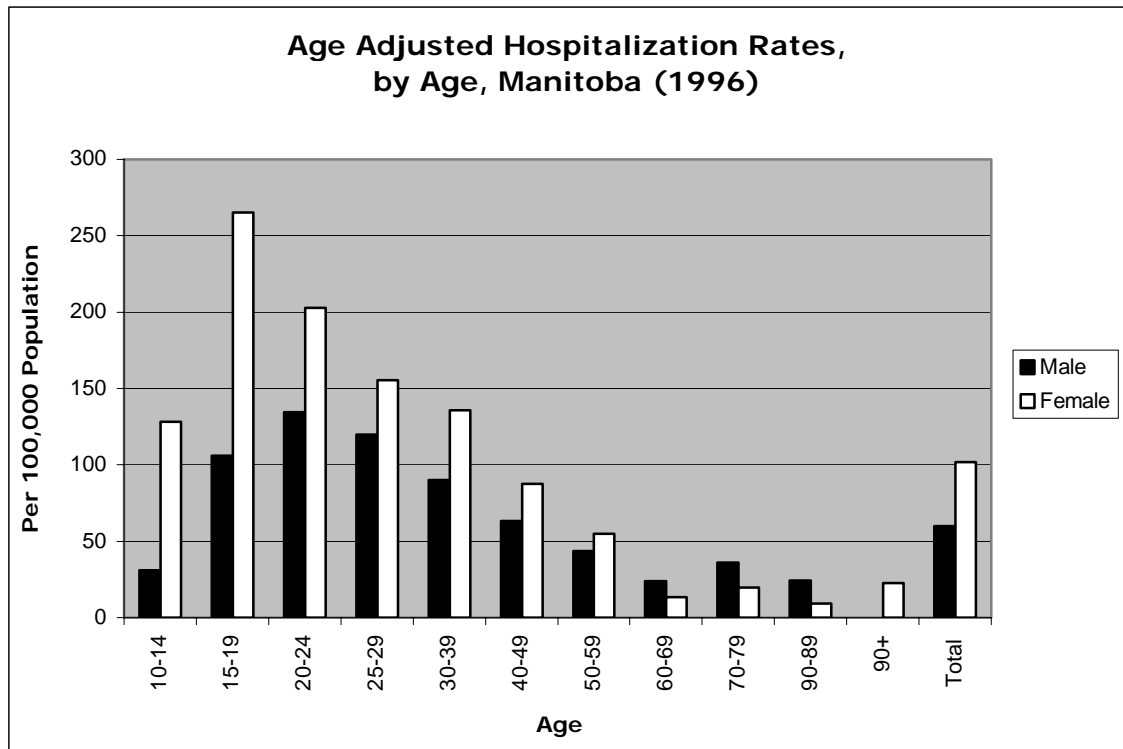
Figure 5 shows the hospitalization rates per 100,000 for each region in Manitoba in 1996. Burntwood region had the highest rate, at 365.5, while South Eastman had the lowest rate at 44.1.

Figure 6: Age-Adjusted Hospitalization Rates, by RHA 1996



Source: Manitoba Injury Data Resource, 1996

Figure 7: Age Adjusted Hospitalization Rates, by Age, Manitoba (1996)



Source: Manitoba Injury Data Resource, 1996

Manitoba Rates of Suicidal Thoughts

In the Statistics Canada "Community Health Survey: Mental health and well-being", it is reported that 3.4 % of Manitobans aged 15 years and over experienced suicidal thoughts in the past 12 months.

Winnipeg Suicide Rates

Data on suicides for residents of the Winnipeg Health Region was received from the Department of Justice, Office of the Chief Medical Examiner for suicides occurring in 1999, 2000, 2001, and 2002. The WRHA Population Health and Health Systems Analysis Unit provided the following analysis of this 4-year period.

Crude Rate of Death Due to Suicide, WHR Residents		
Year	Count	Crude Rate per 100,000
1999	70	10.8
2000	82	12.6
2001	77	11.9
2002	77	11.8
* 4 year crude rate: 11.8 per 100,000 population of the WHR		

Suicides by Age group, WHR Residents, 1999-2002			
Data Source: Manitoba Department of Justice			
Age	Females	Males	Total
<15	*	*	*
15-19	7	8	15
20-24	12	16	28
25-44	45	86	131
45-64	25	71	96
65+	12	22	34
Total	102	204	306
Notes: * Value suppressed due to low cell counts (<5) S indicates that the cell value was >=5 but was suppressed due to suppression of a low value in a related cell			

Suicides by Cause, WHR Residents, 1999-2002						
Cause 1	Females	% of Females	Males	% of Males	Total	% of Total
Hanging	38	37.6%	90	44.1%	128	42.0%
Drugs & Alcohol	34	33.7%	26	12.7%	60	19.7%
Carbon Monoxide	12	11.9%	25	12.3%	37	12.1%
Firearms	0	0.0%	27	13.2%	27	8.9%
Other 2	7	6.9%	16	7.8%	23	7.5%
Drowning	6	5.9%	10	4.9%	16	5.2%
Jumping	*	*	S	S	14	4.6%
Total 3	101		204		305	
Notes: 1 The categories for cause of death were determined by Manitoba Department of Justice 2. "Other" is an aggregate category that includes causes such as: cutting/piercing and motor vehicle accident related. 3. Total: One event was excluded from this table because the cause of death was "undetermined". * Value suppressed due to low cell counts (<5) S Indicates that the cell value was >=5 but was suppressed due to suppression of a low value in a related cell						

Data Source: Manitoba Department of Justice

Population Data Source: Manitoba Health Population Registry – 1999, 2000, 2001, 2002

Summary of the Incidence of Suicide

- Completed suicides by males outnumber those of females.
- The number of females who make a suicide attempt exceeds that of males.
- Suicide rates peak in young adulthood and old age.
- Slight fluctuations in the number of suicides could have a pronounced effect on rates.
- Winnipeg data is limited at the time this report was prepared however more complete data is pending.
- Data provided does not illustrate the impact suicide has on the Aboriginal and the 1st Nations community. This is due to the lack of reliable and consistent collection of race data in Manitoba as it pertains to suicide and injury.

4. Patterns of Suicide: Risk and Protective Factors

Patterns of suicide are observed in the suicide rates previously presented. These patterns are consistent with what the literature describes as risk factors and protective factors. The literature identifies factors that contribute to suicide, and reasons for suicide can be inferred, but currently no scientific study can explain why a particular person attempts suicide. The literature strongly suggests that suicide is rarely the response to a single stressor. Instead it is the outcome of a culmination of stressors and adverse life course sequences in a person with few protective factors to draw upon and whose resilience may be compromised. The risk factors and the possible cause(s) of suicide or suicidal behavior are usually interwoven and complex. Regardless, there is a wealth of knowledge and research that attempts to explore the factors that appear to be related to suicide. The following is a summary patterns of suicide.

Gender

- More males complete suicide than females by a ratio of approximately 3:1 (Blumenthal, 1990)
- Males tend to use methods that are more lethal such as hanging and shooting
- Females are for more likely to attempt suicide than males, by a ratio of approximately 15:1.

Adolescence and Young Adults

- Suicides by those under age 11 are rare.
- Suicide rates start to increase in adolescence, and continue to rise up to and including the 24-35 year age group.
- Suicide is the second leading cause of death among 15 - to- 24 year olds.
- Suicides among the youth and young adult age group have increased over the last forty years, while the overall rate has remained relatively steady (Allebeck et al. 1996).
- Onset of mental illness and the stressors related to the transition from adolescence to adulthood have been identified as possible factors contributing to youth suicide (Beautrais et al. 1996; Tousignant et al. 1993).

Late Middle-aged and Elderly Persons

- Suicide rates decrease until approximately age 60-64 years. Following this they begin to demonstrate a slight increase.
- Suicides among older age groups can be expected to rise given that they constitute the fastest growing segment of the population (De Leo et al, 1999).
- Some factors attributed to high rates of suicides among the elderly are poor health and chronic pain, unemployment, depression, isolation and loss. (Canadian National Task Force, 1994)
- Losses inherent to mid and older adult life have been identified as one of the most serious risk factors for suicidal behavior in adults. Losses may include marital

breakups, death, retirement, loss of autonomy and physical disability (De Leo et al, 1999).

- A Canadian study found psychological autopsy reports to show a gross under-treatment of mental illness in older people who died by suicide. This would strongly suggest that early identification and treatment of mental illness could prevent many suicides in older adults (Duckworth and McBride, 1996).

Aboriginal and Inuit people

- In Canada, the rates of suicide for people of Aboriginal descent are a minimum of 2 to 4 times those of the general population, and may be as high as 7 times the national average in some communities (Kirmayer, 1994).
- The suicide rate for Aboriginal male youth was 5 times higher than the national average for males in the same age group, during the period of 1989 – 1993. (126 per 100,000 vs. 25 per 100,000).
- The female suicide rate for the Aboriginal age group was seven times higher than the national rate for this same age group (35 per 100,000 vs. 7 per 100,000) (Hallett, 2001).
- First Nations and Inuit youth suicide rate for children under the age of 14 has increased by 45% since 1980. Suicides in this age group among non-aboriginal youth are extremely rare (Human Resources Development Report).
- Suicides are endemic in young male populations on some reserve communities (Kirmayer et al., 1994).
- Literature identifies numerous risk factors for the Aboriginal population including; increased childhood trauma, abuse and separation from family of origin; greater family discord; higher rates of affective disorders, substance use; higher rates of poverty, and unemployment; social and physical isolation; acculturation and poor physical health (MacMillan, 1996).

Family Background

- Increased risk of suicidal behavior has been identified among those whose background was characterized by dysfunction, and adverse familial conditions such as divorce and family discord, physical and sexual abuse, poverty, and parental violence. The determining factor for the impact of these conditions appeared to be related to length and intensity of the circumstances (Beautrais, 1998).
- Individuals who have family histories of attempted or completed suicide are themselves at higher risk of suicidal behavior.

Socio-economic status and employment

- Epidemiological studies consistently show a link between suicide and social disadvantage including low socio-economic status, limited educational achievement and homelessness (Beautrais, 1998).

Sexual orientation

- Studies show that gay, lesbian and bisexual people, particularly adolescents are at substantially increased risk of suicidal behavior and suicidal thinking.

- In the United States they have found that the risk of suicide attempt ranges from 3.5 to nearly 14 times that experienced by heterosexual young people (Bagley and Tremblay, 1997).

Physical Illness

- Physical illness has been identified in several studies as a contributing factor in suicide, attempted suicide and suicidal thinking through the life span but particularly among older adults.
- Suicide risk increases where physical illness is accompanied by mental disorder, chronic pain and harmful drug or alcohol use (De Leo et al, 1999).

Mental Health Factors

- Almost 90% of youth who commit or attempt suicide have a recognizable psychiatric disorder (Beautrais, 1998).
- Discrimination against people with mental health difficulties has been identified as contributing factor to suicide risk as it contributes to isolation, loneliness, unemployment and homelessness (Tehan and Murray, 1996).
- Stigma associated with depression, anxiety and other mental health problems often prevents people from seeking and accepting help.
- International studies suggest that up to 41 % of people who die by suicide have been discharged from psychiatric in-patient settings within the preceding 12 months. Up to 9 % were in-patients at the time of their death or died on the day of discharge from hospital (Pirkis and Burgess 1998).

A) Affective Disorders

- Individuals with affective disorders are 23 times more likely to display suicidal behavior than those without such a disorder. (Beautrais, 1996)
- Rates of depression are reported to be as high as 70% among individuals who have completed suicide.
- 15% of adolescents diagnosed with major depressive disorder, and 10 to 15% of adolescents diagnosed with bipolar disorder, die by suicide (Stoelb & Chiriboga 1998).
- Of older adults (55 years or older) in New Zealand, all who died by suicide had a mood disorder (Canterbury Suicide Project 1999).

B) Alcohol and Substance Abuse/Co-occurring Disorder

- The Canadian National Task Force on Suicide (1994) indicated that there were a disproportionately high percentage of persons with alcoholism who committed suicide.
- It was estimated that the alcoholism rate was as high as 21% in completed suicides, and that 15%-18% of individuals who abuse alcohol may ultimately end their lives.
- In Canada, some retrospective studies have determined that 79% of all suicides in one Aboriginal community involved alcohol abuse. More recently, the suicides in Shamattawa involved youth who were abusing inhalants (CBC Manitoba Online, 2002; CBC News Online 2002).

C) Schizophrenia

- Suicide is the major cause of death among individuals with schizophrenia, with as many as 1 out of 4 persons with schizophrenia dying from suicide. (Conwell, 1998)
- Individuals with schizophrenia who commit suicide tend to do so during times when symptoms of psychosis are not acute or during remission (Roy 1986).
- An unrecognized affective disorder is strongly correlated with suicide in people with schizophrenia. (Roy, 1986)

D) Personality Disorders/Traits

- An estimated 6.5% of individuals with borderline personality disorder and 5% of those with antisocial personality disorder commit suicide (The Update of the National Task Force on Suicide, 1994).
- Certain personality traits have been identified as important correlates of increased risk of suicide including obsessive-compulsive traits, perfectionism, and cognitive rigidity. (Beck et al 1985) Individual personality factors cannot be considered alone but must be evaluated within the context of other risk factors.
- A ten-year longitudinal study concluded that measurement of an individual's hopelessness is a strong predictor for future suicidal behaviors. (Beck et al, 1985)
- Other personality characteristics that are associated with suicidal behaviors are high levels of anxiety, low self-esteem, high impulsivity, poor problem-solving skills and irrationality (Lester, 1992).

Protective Factors

Protective factors are those dynamics that lessen, compensate or protect individuals from exposure and impact to risk factors. Research into protective factors, well-being, optimism, connectedness and resilience as related to suicide is limited. The literature indicates the value of considering evidence from the study of other potentially relevant areas and associations between protective factors and proxy measures for suicide such as depression. The following are some of the factors that have been suggested as protecting against suicide:

- Good problem solving skills
- Help seeking behaviours
- Family and community social supports (e.g. marriage)
- Connectedness (e.g. to family, peer group, school or community)
- Secure social identity
- Cultural, religious and personal beliefs that discourage suicidal behaviour
- Skills in managing conflicts and disputes

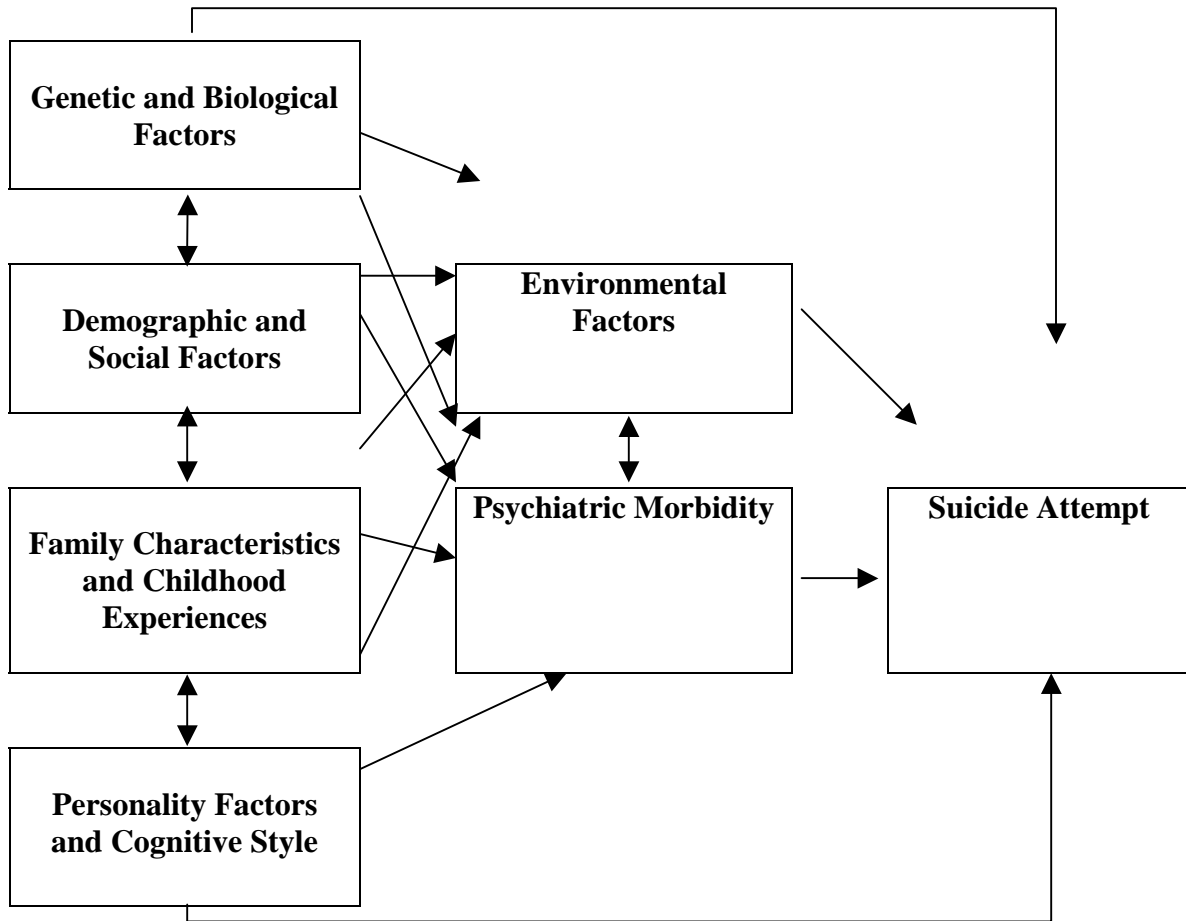
5. MODELS OF SUICIDE CAUSATION

Historically, there have been two models that have been used widely to describe the cause of suicide, the Stress Model and the Mental Health Model. The Stress Model suggests that suicide is the result of a situation(s) that the person finds unmanageable. The model supports the theory that all individuals are equally at risk of suicide, regardless of their mental health background (Garland et al 1989). The Stress Model advocates for population-based public education programs that teach stress management skills and broader societal changes such as higher employment and supports efforts that address societal inequalities.

The Mental Health Model focuses on the evidence that links mental health disorders to suicide and identifies the risk of suicide being largely confined to people who experience mental illness. Proponents of the Mental Health Model believe that suicide prevention efforts should be focused upon high-risk groups or individuals who are experiencing mental illness and increasing the availability of mental health services.

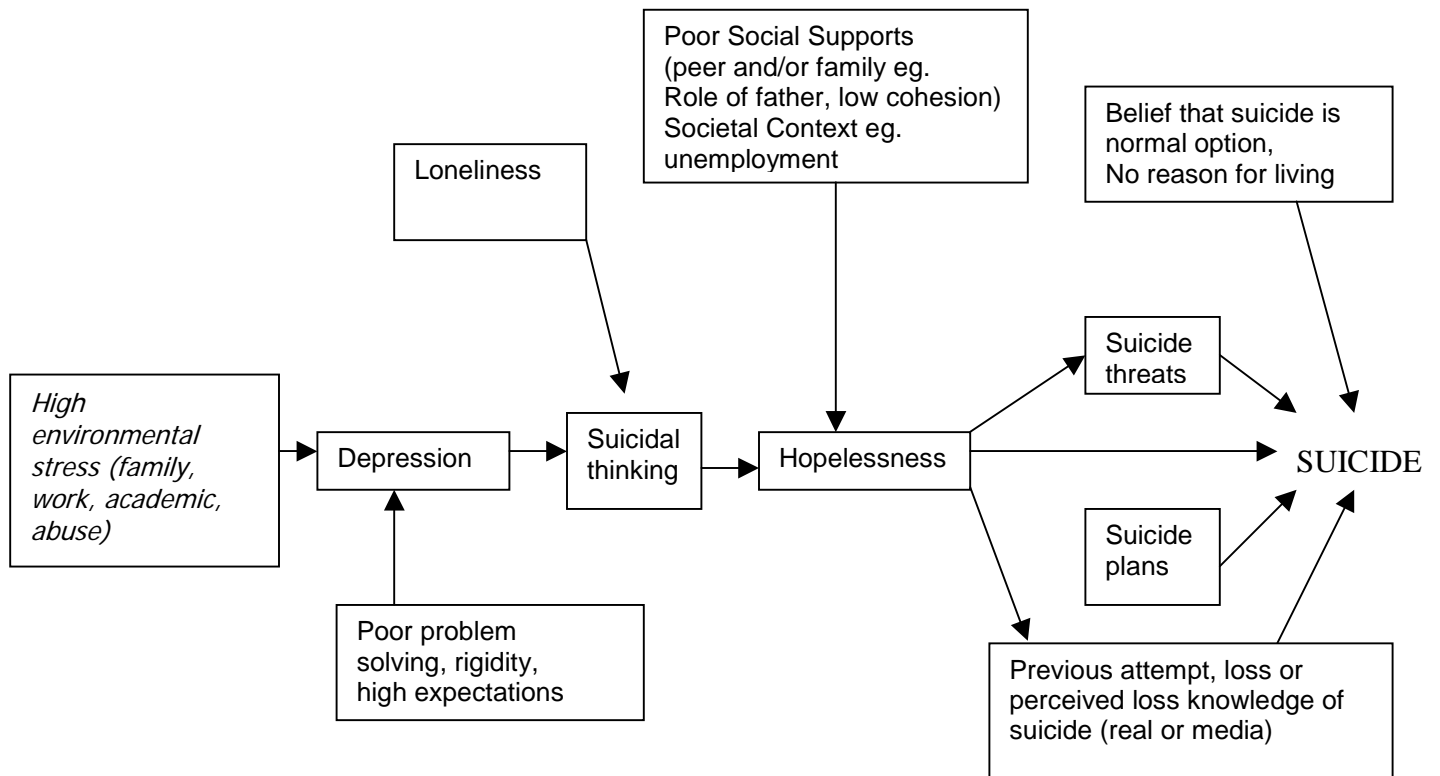
The current thinking and research views suicide as an outcome of complex interactions among neurobiological, genetic, psychological, social, cultural and environmental risk and protective factors. No one factor can be attributed in isolation to the outcome of suicide. In an attempt to understand the complex relationship between these factors a number of models of suicide causation have been developed. Three of the most prominent models are illustrated in figures 8-10. Figure 8 describes a complex interplay of risk factors, while figure 9 suggests a linear casual pathway. Figure 10 presents four overlapping domains that may influence an individual suicide.

Figure 8: The Biopsychosocial Model



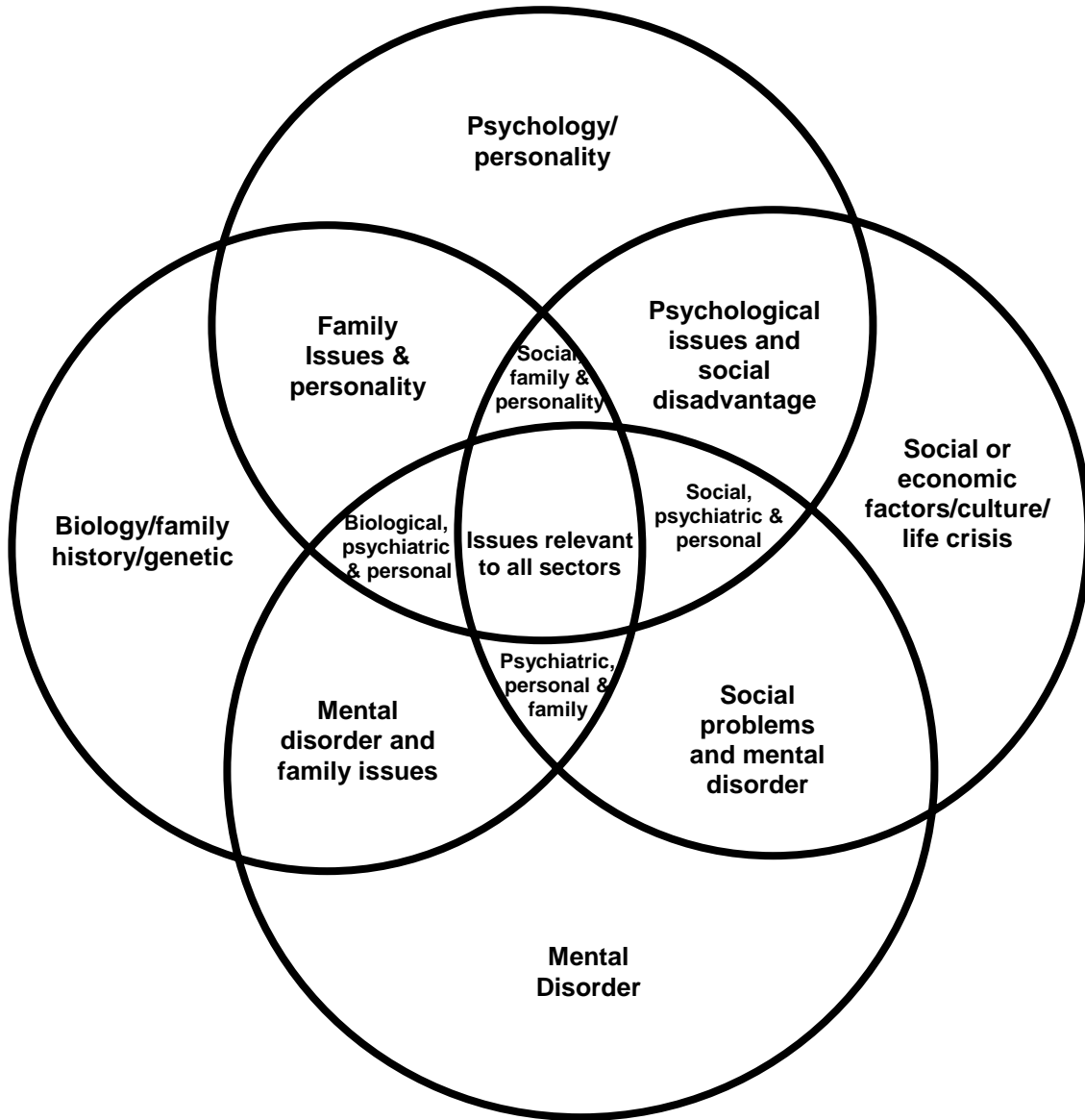
Source: Youth Suicide by Health Care Professionals (Hider et al. 1998)

Figure 9 – Pathways to suicide



Source: Adapted from Bonner and Rich 1987

Figure 10 – A multi-casual model for suicide



Source: Adapted from Maris, Beman and Mattsberger 1992

6. Canadian Perspective on Suicide Prevention

Suicide has been identified as a public health problem in Canada for several decades. A National Task Force on Suicide formed in the mid eighties published a report called *Suicide in Canada*. This paper functioned as an initial document that outlined the nature and extent of suicide and suicide related problems and summarized information on programs of suicide prevention, intervention and postvention. In 1991 a new working group was formed which updated and re-released *Suicide in Canada* in 1994. Through this process a number of recommendations were brought forward however a national Suicide Prevention Strategy has yet to be articulated.

Despite the absence of a Canadian National Strategy on Suicide Prevention many activities and initiatives have occurred throughout the country in an effort to carry out prevention, intervention and postvention tasks. In 1985 a group called the Canadian Association For Suicide Prevention (CASP) was formed. This was a group of professionals who saw the need to provide information and resources to the community at large to reduce the suicide rate and minimize the harmful consequences of suicidal behavior. The main goals of CASP are to facilitate the sharing of information and to advocate policy development pertaining to suicide prevention at all three government levels.

Throughout the various provinces and territories numerous activities have been occurring over the past 20 years in response to communities' experiences of the impact of suicide. The following are a number of provincial highlights.

- British Columbia published two important documents in 1998: "Youth Suicide Prevention: A framework for British Columbia" and "Before the Fact" Interventions: A Manual of Best Practices in Youth Suicide Prevention.
- Alberta has been recognized as an international leader in the field of suicide prevention since 1979. The Centre for Suicide Prevention in Alberta has three mandates: (1) Resource Center and Library on Suicide that has a collection of over 30,000; (2) Training Centre on suicide related topics and (3) the exclusive providers of the LivingWorks Education ASIST training, formerly known as the Suicide Intervention Workshop. The LivingWorks ASIST training has been internationally recognized and researched as an effective gatekeeper-training program.
- New Brunswick: Has a documented provincial suicide prevention plan and has devoted staff to function as suicide prevention coordinators.

Suicide Prevention Efforts in Manitoba

Suicide Prevention activities in Manitoba can be traced back to 1985-86 in response to youth suicide. A network of professionals established the Suicide Prevention and Intervention Network (SPIN) with the primary goal of providing information and education on suicide. The Mental Health Department within Manitoba Health took a leadership role. In 1991-92 a new provincial government program, the Youth Suicide Information Centre, was established and existed for approximately two years.

During Mental Health Reform in the 1990's a number of new services were expanded and developed that contributed to suicide prevention within Manitoba. These included various crisis services within both the adult and youth mental health systems.

Suicide Prevention activities in Manitoba have primarily been established through grassroots initiatives led by non-profit organizations and family advocates.

Klinic Community Health Centre operates a 24-hour crisis line and provides a comprehensive crisis intervention skills training program with skill development opportunities as part of its volunteer training program. Klinic, in conjunction with the Canadian Association of Suicide Prevention (CASP) offers its trainees an opportunity to become certified through the Crisis Worker Certification Program.

The Salvation Army was the first organization in Manitoba to participate in the Train the Trainers' Program for Suicide Awareness and Intervention Workshops (ASIST), Living Works Inc. Hundreds of helping professionals throughout Manitoba have participated in ASSIST, including mental health workers, social service workers, hospital staff, teachers, and criminal justice staff.

Over the past two years there has been a renewed interest in developing suicide prevention initiatives within Manitoba. In May 2001 a provincial forum on suicide prevention was held in Winnipeg. In November 2002 the second provincial suicide prevention forum was held and attendance was high. Throughout the province there is a range of focus and activities related to suicide prevention. The Manitoba Committee for Suicide Prevention was formed and has representation from all regions of Manitoba.

In 2001, SPEAK (Suicide Prevention Education Awareness Knowledge) was formed by a group of families who had lost children to suicide. SPEAK provides a number of programs including a survivors support group, public education on suicide and mental illness including outreach to schools and talking with youth about suicide, and advocating for system change to address the problem of suicide.

In April 2001, the Canadian Mental Health Association – Manitoba Division published and released the Manitoba Youth Services Manual, which focused on youth suicide and resources. This Manual was circulated to agencies providing services to youth within Manitoba and school guidance counselors. A "Hot Card" which provides a quick resource reference for youth in crisis, was also developed by CMHA – Manitoba Division as an accompanying tool for the Youth Manual, which was given to youth ages 12 to 18.

The Aboriginal community formed the Manitoba Aboriginal Committee for Suicide Prevention in 2001. The goal of this committee is to establish an Aboriginal suicide prevention strategy and to develop a process to assist Aboriginal communities of Manitoba in mobilizing to tackle the issue of suicide. The Assembly of Manitoba Chiefs has also devoted resources to address the problem of suicide and has a full time Youth Suicide Prevention Coordinator.

Throughout the various Health Regions within Manitoba there have been numerous activities related to suicide prevention that have not been highlighted in this report.

Also note that this summary does not represent a comprehensive environmental scan of suicide prevention activities within Manitoba.

7. Framework of Suicide Prevention

Suicide prevention strategies have become widely adopted by many jurisdictions throughout the world. With the development of national strategies a number of conceptual frameworks have been developed and have taken on increasingly important roles in defining suicide prevention across the life span. Such frameworks are useful in planning and evaluation of suicide prevention initiatives. Research demonstrates the value in adopting a common conceptual framework as it allows the prevention strategies to address different but interrelated suicide risk factors.

Public Health Prevention Framework

Gordon introduced a framework that has been recognized as a public health prevention framework by the Centres for Disease Control in the United States. This framework is a comprehensive operational model, which categorizes prevention interventions into 3 main areas:

1. Universal Preventive Interventions

Targeted to the whole population.

2. Selective Interventions

Designed especially for sub-groups considered to be at particular risk.

3. Indicated Interventions

Designed for specific individuals who have a risk factor or condition that puts them at high risk

Figure 11 – Strategies of the Centre for Disease Control (US) Gordon’s Model

	CDC INTERVENTIONS FOR SUICIDE PREVENTION		
	Biopsychosocial	Environmental	Sociocultural
Universal <ul style="list-style-type: none"> Intended to affect everyone in a population 	<ul style="list-style-type: none"> Incorporate depression screening into all primary care practice 	<ul style="list-style-type: none"> Promote safe storage of firearms and ammunition Package drugs in blister packages 	<ul style="list-style-type: none"> Teach conflict resolution skills to elementary school children Provide programs that improve early parent-child relationships
Selective <ul style="list-style-type: none"> Designed especially for certain sub-groups at particular risk for suicide 	<ul style="list-style-type: none"> Improve the screening and treatment for depression of the elderly in primary care practices 	<ul style="list-style-type: none"> Reduce access to the means for self-harm in jails and prisons 	<ul style="list-style-type: none"> Develop programs to reduce despair and provide opportunities (increase protective factors) for high risk populations, such as Native American youth
Indicated <ul style="list-style-type: none"> Designed for specific individuals who, on examination, have a risk factor or condition that puts them at very high risk 	<ul style="list-style-type: none"> Implement cognitive-behaviour therapy immediately after patients have been evaluated in an emergency department following a suicide attempt 	<ul style="list-style-type: none"> Teach caregivers to remove firearms and old medicines from the home before hospitalization suicidal patients are discharged 	<ul style="list-style-type: none"> Develop and promote honourable pathways for law enforcement officers to receive treatment for mental and substance use disorders and return to full duty without prejudice

Source: National Strategy for Suicide Prevention: Goals and Objectives for Action (1994)

Crisis Intervention Framework

Another widely used framework in suicide prevention is a broad model of crisis intervention. This model was adopted in the report of the National Task Force on Suicide in Canada. The following is a summary of the three program response categories and examples of corresponding actions for each.

Figure 12: Summary of the Strategies outlined in the Suicide Prevention Strategy

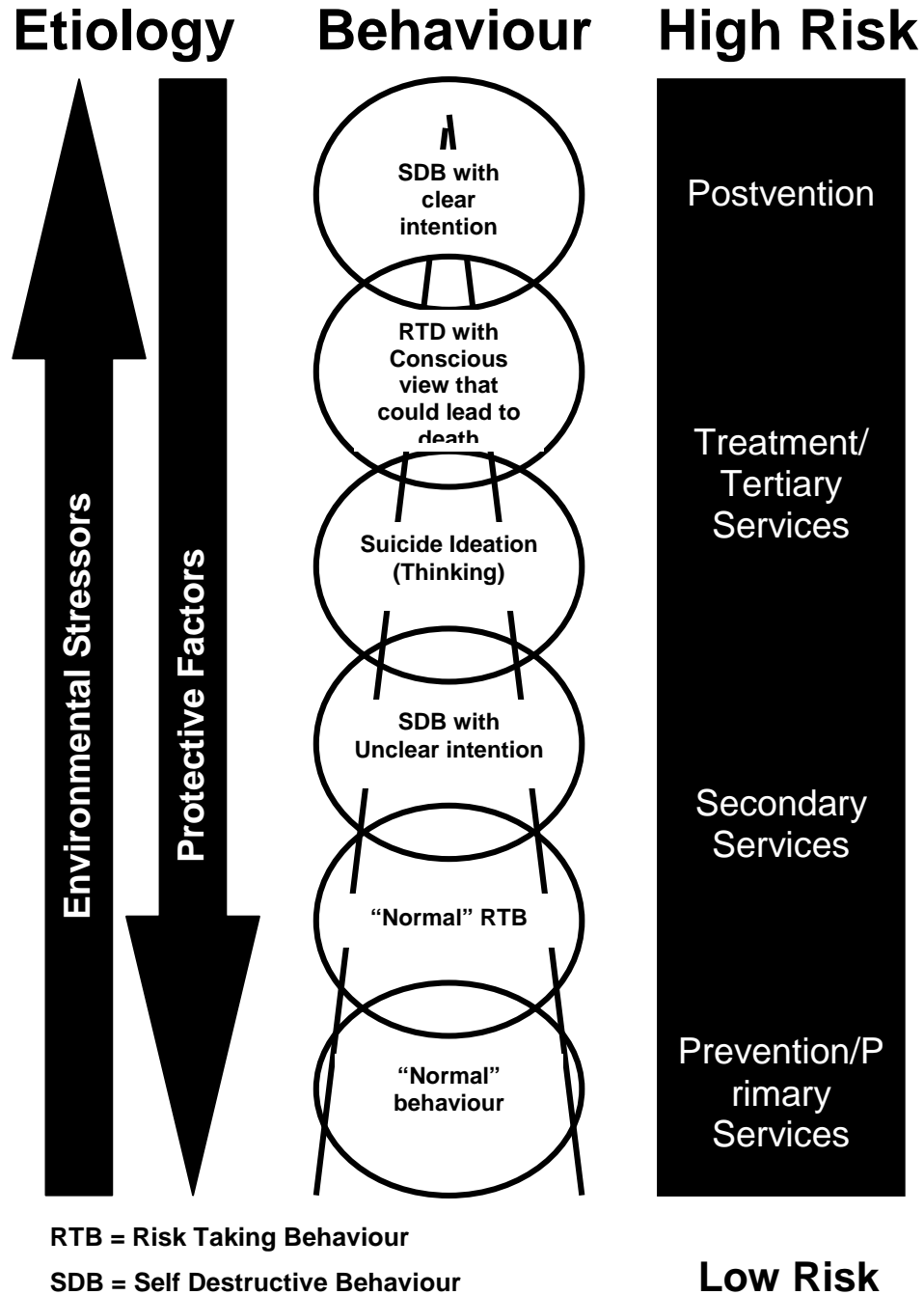
	PREVENTION STRATEGIES		
	Prevention	Intervention	Postvention
Definitions	<ul style="list-style-type: none"> Prevent the onset of suicidal crises by eliminating situations of heightened risk; by promoting life-enhancing conditions; and by reducing negative societal conditions 	<ul style="list-style-type: none"> Actions aimed at the immediate management of the suicidal crisis and the longer-term care, treatment and support of persons at-risk 	<ul style="list-style-type: none"> Activities undertaken to deal with the aftermath of a suicide
Components	<ul style="list-style-type: none"> Improving Societal Conditions Public Education Reducing Availability and Lethality of Means 	<ul style="list-style-type: none"> Education and Training for Health Care Professionals and Other Gatekeepers (Collaboration of) The Spectrum of Intervention Services 	<ul style="list-style-type: none"> Suicide Bereavement Postvention Support Programs Psychological Autopsy

Source: Report of the Task Force on Suicide in Canada

When the public health prevention model (universal, selected, and indicated prevention) is applied to the crisis intervention framework (prevention, intervention, and postvention) a service provision continuum is identified. (See Figure 13) Suicide prevention services need to be provided across this continuum, from prevention to intervention, to treatment and postvention. Population based suicide prevention activities focus on improving the psychosocial well being of communities and individuals. An outcome of effective health promotion of communities and individuals should be a reduction in suicide and attempted suicide.

Figure 13 – Model of Suicide Prevention and Service Provision

Model of Suicide Prevention and Service Provision



Source: Loddon Mallee Regional Planning Branch (May 2001).
 Connections: Suicide Prevention in the Loddon Mallee Region.
 Bendigo: Victorian Department of Human Services.

8. Components of a Suicide Prevention Strategies

In reviewing numerous national suicide prevention strategies it is evident that there is consensus on the goals and underlying principles required in such a strategy. The following strategies were reviewed:

- United States: "National; Strategy for Suicide Prevention" 1999
- Australia: "Life: Life is for Everyone A framework for prevention of suicide and self-harm in Australia" 2000
- New Zealand: "In Our Hands": National Youth Suicide Prevention Strategy 1998
- England: "The National Suicide Prevention Strategy for England" 2002

Principles

Common guiding principles outlined in the various national strategies were as follows:

1. Suicide prevention is a shared responsibility across the community and not the exclusive responsibility of any one sector of society or of health services alone.
2. It requires a diverse approach targeted at the whole population, specific population subgroups and individuals at risk.
3. Suicide prevention efforts should be evidence based, outcome focused and integrate continual evaluation.
4. Build partnerships by incorporating community and consumer participation as well as provider involvement and expert opinion.
5. Activities must be accessible, appropriate and responsive to the social and cultural needs of groups and populations they serve.
6. Efforts must be sustained to ensure continuity and consistency among all communities.

Goals

Common themes related to goals and activities identified in the various national strategies were as follows:

1. **To promote mental health and well-being, resilience and participation in community life for the population.**
 - Community capacity building
 - Reduce stigma related to being a consumer of mental health services
 - Foster environments that are free of discrimination
 - Address social inequities
 - Enhance protective factors

- 2. To promote and support research on suicide and suicide prevention.**
 - Establish performance indicators for suicide prevention plans and evaluate progress
 - Evaluate and establish evidence base
 - Ongoing literature review and disseminate information
 - Increase funding for suicide prevention research
- 3. To develop and promote effective clinical interventions (crisis support and mental health treatment).**
 - Effective treatment for depression
 - Improve linkages to mental health and addiction services
 - Pharmacological/psychosocial treatments
 - Brief treatment
 - Standardized screening in primary care settings
 - Shared Care
- 4. To reduce the risk in key high-risk groups.**
 - Support for suicide survivors
 - Partner with Aboriginal community
 - Early identification and intervention of mental health issues such as depression, anxiety etc.
 - Mental health services for high-risk groups
 - Improved access to and linkages between mental health and addiction services
 - Improve capacity of those who work with at risk individuals, to identify and respond to suicidal behavior
 - Gatekeeper training
- 5. To reduce the availability and lethality of suicide methods.**
 - Public education designed to reduce accessibility
 - Evaluate prescribing practices of lethal quantities of medication
- 6. To improve media reporting of suicide and mental health issues.**
 - Promote accurate and responsible media representation of suicidal behaviors and mental illness.
- 7. To improve and establish surveillance systems.**
 - Reporting cause of death accurately
 - Have hospitals collect uniform and reliable data on suicidal behaviors (including suicidal ideation and suicide attempts)
 - Emergency department surveillance

Key Components of a Suicide Prevention Strategy

Once a broad strategy is identified with clear goals it is then important to identify the type of activities or interventions that are required to realize these goals. The activities and interventions of a suicide prevention plan should be grounded in "best practice". "Best practice is defined as those activities and programs that are in keeping with the best possible evidence about what works". (Health Systems Research Unit 1996. Review of best practices in mental health service delivery.)

There is limited evidence regarding the effectiveness of many suicide prevention interventions. This is in part the result of a lack of effort related to the systematic evaluation of programs. There are also a number of ethical issues in researching of methods of intervention for suicide with high risk individuals. The strongest research method is generally seen to be "randomized control trials" where groups of clients are offered treatment and some comparable clients are not. If the group who receive treatment recover and the control group do not, the treatment is seen to be effective. In many suicide prevention programs, such as telephone counselling interventions, it would be highly unethical to withhold the intervention from a crisis caller. Assessment of the success of a suicide prevention program often requires long term follow up to check whether any short term gains are maintained or repeated suicidal behavior occurs.

Gardiner, LaForge, Vincent and Gaida of the Alberta Mental Health Board Research and Evaluation Unit recently completed a comprehensive study of the literature on evidence based suicide prevention practice. They identified 14 suicide prevention components consistently recommended in the literature. Each of these 14 components were reviewed for evidence of effectiveness in suicide prevention practice. Evidence was organized and defined in three categories: (1) Theoretical/non empirical support which is defined as consensus, expert opinion based on experience ; (2) Weak empirical support which includes other types of non-randomized studies with consistent results; (3) Moderate empirical support with non-randomized studies and consistent results ; (4) Strong empirical support which involves a high quality randomized trial or more than one high quality systematic review of randomized clinical trials.

The following is a brief description of each of the 14 components. The strength of evidence for each component is also identified. This strength of evidence ranges from no empirical support to moderate empirical support.

1. Theoretical/ non-empirical support

A. System-Wide Protocols

- Joint agreements between key agencies within a geographic area that reflect coordinated response to people at risk.
- The development of formal, written statements that guide organization activities following a critical incident and the provision of postvention follow up.
- The goal of system wide protocols is to ensure that at risk or vulnerable people receive a coordinated timely response from a network of community service

providers, including assessment, treatment, follow through, and support (White and Jodoin, 1998).

B. Community Development

- Emphasis is placed on strengthening the social bond within a community context that empowers a community to increase their capacity to work towards common goals. Community capacity often addresses protective factors for community members and also addresses community needs by utilizing community strengths. (White and Jodoin, 1998)

C. School Climate Improvement

- This refers to all the physical and social qualities of a school that affect how staff and students feel and behave while they are there.
- Deliberate, planned process to enhance the well being and health of staff and students by influencing: (1) personal growth and development; (2) communication patterns and participation; (3) maintenance; and (4) physical environment.
- Burns and Paton stated that "there is good evidence that change in the classroom and school climate has an impact on proximal risk factors for suicidal behaviour such as aggression" (Burn and Patton, 2000).

D. Organizational Policy

- Written statements that provide guidelines for staff in various settings such as schools, health care settings, social service settings etc., which include guides for effective handling of crisis situations and specific standards to recognize and respond to suicidal persons.

E. Family Support

- Programs that are designed to help parents fulfill their childrearing responsibilities such as parent support groups, family counselling or emergency assistance. These services aim to empower and strengthen parents to enhance the overall health and well being of families.
- Family support programs attempt to reduce risk factors such as marital break-up and domestic abuse, while enhancing important protective factors such as warm and caring parent-child relationships.

F. Support Groups

- Bring vulnerable individuals together in a caring and comfortable group environment where mutual aid and support is provided and opportunity to develop skills that build on resiliency (White and Jodoin, 1998).
- The target population of support groups are individuals at early risk of suicide based on a variety of factors and conditions such as depression, recent or recurrent job loss, prior suicidal ideation and behaviour, alcohol or drug use and exposure to suicide of a friend or family member.

2. Weak Empirical Support

G. Gatekeeper Training

- Gatekeepers are individuals who come into contact with a targeted population (e.g. youth) as part of their daily routine (e.g. teacher, coach) and are in an ideal position for early-identification of those at risk of suicide. Gatekeepers are taught intervention skills as a means of helping them to recognize symptoms of suicide, and act as appropriate referral sources. (White and Jodoin, 1998)
- In Australia 50 % of clergy and 25 % of teachers have been approached by a suicidal teen, which supports the importance of these relationships and the value of having gatekeeper training.
- Gatekeeper training has been shown to increase knowledge and intervention skills but impact on suicide is unknown (Shaffer, Garland et al, 1988).

H. Crisis Centres and Hotlines

- Emergency supports for people in crisis including those who are suicidal. These include crisis lines and drop in counselling located within the community that is accessible, advertised, available 24 hours and usually staffed by volunteers.
- Services are designed to respond to the immediate crisis and deter individuals from self-destructive acts until the crisis has passed.
- This is the most frequently implemented suicide prevention component.
- It has been speculated that there is wide spread establishment of crisis centres/hotlines due to low cost of service provision rather than evidence of their effectiveness (Burns and Patton, 2000).
- Research does indicate that crisis services/hotlines may be effective for young, white females as there is evidence that there was a reduction of 1.75 deaths by suicide per 100,000 for this group (Miller, Coombs et al, 1984).

3. Moderate Empirical Support

I. Generic Skill Building

- Enhances personal ability to deal with daily challenges and stresses and increase resilience. Generic skills building strategies may include increasing personal coping skills, strategies for dealing with adversity, cognitive and emotional skills, communication skills, and help-seeking skills.
- Focus is not on suicide directly therefore there is less risk of contagion related to suicide.
- Generic skills building attempts to enhance those factors that protect against suicidal tendencies including creative problem solving, healthy coping and interpersonal competence. This in turn contributes to positive self-esteem.

- Studies on the effectiveness of generic skills building are vast however most focus on the increased knowledge and skills of participants rather than the impact of the increased skills on suicidal behaviour (Biddle, Ginsburg et al 1998).

J. Suicide Awareness Education

- Suicide awareness training efforts inform the community about how to seek help, how to recognize symptoms of suicide and how to facilitate open communication of a problem. This type of training usually takes place in school settings and typically targets all students rather than those at risk.
- Suicide awareness education can encompass any form of presentation, meeting, promotional material such as brochures, posters, public event or short duration training activity related to suicide or suicide prevention. Most suicide awareness education activities are less than 2 hours long. (Garland, Shaffer et al, 1989)
- Suicide awareness training is the most researched component in the field of suicide prevention. However, studies to date have been poorly designed.
- Many suicide awareness strategies (96 %) subscribe to the “stress model” and are criticized for “normalizing” suicide as a response to stress (Garland, Shaffer et al, 1989).
- Modest increases in knowledge, attitudes and help seeking behaviour have been achieved from suicide awareness training.
- Evidence studies suggest that suicide awareness education interventions may be an ineffective method to decrease suicidal behaviours and may be detrimental to male youths (Ploeg et al, 1996).

K. Screening

- Regular application of an instrument or procedure to a large group in order to find those individuals who are in need of a treatment or service. Screening for the purpose of suicide prevention needs to happen in those environments where at risk individuals are located.
- Screening identifies those who are at risk and links individuals to appropriate services in a timely manner.
- There are a number of effective screening tools including Suicidal Ideation Questionnaire (SIQ), which is validated, brief and appropriate for adolescents and adults. The Geriatric Depression Scale SF has been shown to be effective with the aged population.
- Screening is considered a very “promising” suicide prevention strategy and evidence of effectiveness is “optimistic”. (Gardiner, LaForge et al, 2003)

L. Means Restriction

- Efforts to reduce access to fire arms, drugs, high places, medications and other common means of suicide.
- Impulsiveness and ambivalence play an important role in suicide, particularly youth suicide therefore if a means is unavailable a person might delay an attempt or use a less lethal means (U.S. Dept. of Health and Human Services, 1992).

- Restriction to guns for males aged 15-29 resulted in reduction of suicide by that method (Burns and Patton, 2000).
- World Health Organization identified six steps for preventing suicide, 4 of which are related to means restriction.

M. Media Education

- Educating the media about responsible suicide reporting practices in order to lower negative and potentially contagious effects of sensational publicity about suicide.
- Reporting of suicides should include information about causes of suicide, warning signs, trends in rates and treatment advances.
- There is likely a causal relationship between non-fiction media reports of suicide and subsequent increased rates of suicide (Pirkis and Blood, 2001).
- Educating the media has been shown to decrease suicide rates (American Foundation of Suicide Prevention, 2001).
- Centre for Disease Control and the U.S. Surgeon General published standards for reporting suicide in 1994 and 2001.

N. Treatment /Intervention/Postvention

- Treatment refers to all of those therapeutic activities including pharmacological and psychosocial treatments, crisis intervention and postvention.
- There have been many studies done on various treatment interventions including 20 random clinical trials concerning both psychosocial and drug treatment following deliberate self harm (Arensman et al, 2000).
- Study on long-term lithium treatment to treat major affective illness indicated that suicide risk was consistently lower during long-term treatment (Tondo et al, 2001).
- Small controlled studies on the efficacy of cognitive behavioural therapy (CBT) indicate that this type of therapeutic intervention is successful for adults who have attempted suicide (Blackburn, Bishop et al, 1981; Salkovskis, Atha et al, 1990; Linehan, Armstrong et al, 1991).
- Suicides among people with mental illness have been associated with reduction in care. (Appleby, Dennehy et al, 1999). In most cases studied by Appleby et al (1999) it was found that clients had been considered well enough to have their level of care reduced and yet suicide occurred within 3 months of final contact. This suggests that that treatment with high-risk individuals must be long term and emphasizes the importance of follow-up (Stein and Test, 1980; Salkovskis, Atha et al. 1990; Catron, Wyatt et al. 1993; Linehan, Heard et al.1993).

4. Strong Empirical Support

- Gardiner and Laforge concluded that no suicide prevention activity was found to have strong empirical support.

10. Conclusion and Preliminary Recommendations

The Winnipeg Regional Health Authority needs to take a leadership role in the development of a regional suicide prevention strategy. A strategy must be informed by the literature on suicide as well as evidence based suicide prevention practices. In the absence of a vast and solid evidence base all effort must be made to intergrate research and evaluation into health promotion and suicide prevention activites. The intergration of evaluation and research provides an opportunity to contribute to the field of suicide prevention and to establish “ best practices” in our community. Building partnerships is essential to any health promotion strategy but it is particularly important in suicide prevention. Broad participation from multiple levels of government, non-government agencies, health care providers, educators, clergy, social service professionals, citizens, community groups, community leaders, etc. is required and will accomplish a greater effect on the problem of suicide and the promotion of mental health.

Initial recommendations:

1. Establish a Winnipeg Health Region Suicide Prevention coordinating committee.
2. In collaboration with inter and intra sectoral partners, develop a regional suicide prevention strategy that is based on the principles, goals and models outlined in this paper as it reflects current "best practice" within the field of suicide prevention.
3. Complete a comprehensive review of activities in Winnipeg that fall within the 14 components identified as core ingredients of a suicide prevention strategy and identify gaps through interviews with key informants and focus groups.
4. Identify high risk and vulnerable groups within the Winnipeg area.
5. Develop partnerships with the Manitoba Committee for Suicide Prevention, the Aboriginal Suicide Prevention Committee, SPEAK and the Assembly of Manitoba Chiefs First Nations Youth Suicide Prevention Initiative to develop and work on common goals.
6. Identify and establish partnerships with existing health promotion and community development initiatives to integrate the suicide prevention strategy where there are parallel and/or complementary goals and approaches (e.g. Healthy Child/Healthy Schools Initiative, Community Development initiatives within the WRHA).
7. Establish relationships with academic institutions and/or research organizations in order to integrate research/evaluation into suicide prevention practice in Winnipeg.
8. Develop mechanisms and resources to ensure a regional strategy is sustained.

9. Establish "after the fact" protocol for each suicide that occurs in Winnipeg in order to understand trends, risk factors and service gaps in the Winnipeg area.
10. Coordinate suicide intervention training for health care, social service agencies, and educational institutions.
 - Survey the existing gatekeeper training in Winnipeg (particularly in environments where there are high risk populations) and assess the need for this training throughout the community.
 - Establish a training plan utilizing WRHA ASIST trainers.
 - Ensure there is an ASIST trainer(s) available to populations that are at greater risk/vulnerability (e.g. First nation communities, older adults, and youth) for gatekeeper training.
11. Develop a communication strategy that incorporates the training of media in the reporting of suicide and mental health issues as well as public education.
12. Develop a plan with provincial stakeholders to improve injury data collection pertaining to suicide, including improving the classification system and adding surveillance systems to track suicidal ideation and self-injury that is non-fatal.

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