


April 2005

**Research Project on Deaths by
Suicide in New Brunswick
between April 2002 and May 2003**



New  Nouveau
Brunswick
C A N A D A

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Foreword

In keeping with the postvention strategy of New Brunswick's Suicide Prevention Program, this study has been conducted to identify the personal and social circumstances that led a number of New Brunswickers to commit suicide and others to attempt suicide.

The study charted the development of psychosocial difficulties, mental health problems, help-seeking behaviours and consultations that marked the lives of the persons who died by suicide.

There were 109 deaths by suicide in New Brunswick between April 1, 2002, and May 31, 2003. Our research team examined 102 of those deaths. The ensuing observations, findings and recommendations are set out in this report.

While collecting data on those 102 cases, the research team also gathered information from more than 40 individuals presenting suicidal behaviour. That information is being analyzed and the findings will be published at a later date.

Research Project Collaborators

We wish to thank all the bereaved families who agreed to participate in this research project. They answered our questions with much generosity of spirit, courage and patience in the hope that their stories might spare other families the same fate. On their behalf, we must now make every effort to lessen the frequency of these personal, family and societal tragedies.

Coordinating Committee in New Brunswick

We wish to mention the full-fledged partnership between the Department of Public Safety, especially the Office of the Chief Coroner and the coroners' team, headed by Dianne Kelly, and the Department of Health and Wellness, particularly the Mental Health Services Division.

- Dianne Kelly, Chief Coroner
- Joan Murray, Coroner's Office
- Pat Dickinson, Coroner's Office
- Gina Girard, Researcher
- Jocelyne Daigle, Coordination Assistant
- Suzanne Cormier, Administrative Support
- France Daigle, Provincial Suicide Prevention Coordinator and Project Coordinator (components I and II)
- Andrée Guy, Director of Acute Services, Mental Health Services Division
- Margie McKendy, Mental Health Social Worker, Coordination Support
- Dr. Christofer Balram, Provincial Epidemiologist and Director, Provincial Epidemiology Service, Health and Wellness NB
- Dr. Jason Liu, Biostatistician, Provincial Epidemiology Service, Health and Wellness

Interviewers

The interviewers did outstanding work deserving of special mention. They displayed selflessness and compassion in agreeing to collaborate actively in this research project. This was above and beyond their regular work as clinicians in community mental health centres.

- Ginette Vautour-Kerwin, Moncton
- France Daigle, Fredericton
- Annie Claveau, Moncton
- Marie Savoie Martin, Moncton
- Julie Belliveau, Moncton
- Lisa Lee, Fredericton
- Sylvie Matin, Grand Falls
- Carole Plourde, Campbellton
- Richard Ouellette, Edmundston
- Anne Marie Drapeau, Campbellton
- Gaetan Boudreau, Bathurst
- Ramona Gagnon, Acadian Peninsula
- Jeanne Mance Chiasson, Acadian Peninsula
- Margie McKendy, Miramichi

- Greg Zed, Sussex
- Sylvia Richardson, St. Stephen
- Denis Leblanc, Elsipogtog
- Carolyne Milliea, Elsipogtog

Persons contacted for recruitment

- Mado Pelletier, Grand Falls
- Nancy Jalbert, Edmundston
- Jacques Bard, Edmundston
- Nelson Parent, Campbellton
- Michael Levesque, Campbellton
- Debra Wafer, Campbellton
- Diane Morin, Bathurst
- Colette Robichaud, Bathurst
- Charline McLean, Miramichi
- Diane Cormier, Moncton
- Marthe Leger, Moncton
- James MacMillan, Moncton
- Lorene Johnson, Saint John
- Nancy Armstrong, St. Stephen
- Pamela Miller, Sussex
- Elizabeth Campbell, St. Stephen
- Marylin DeMerchant, Fredericton
- Gordon Skead, Fredericton
- Helen Jane Blanchard, Woodstock
- Robin Ward, Fredericton
- Dennis Foran, Fredericton

Members of Expert Panel on Services

- Alain Lesage
- Marie-Noëlle Bayle
- Andrée Guy
- Rosanne Landry
- France Daigle
- Monique Séguin

Members of Diagnostics and Life Trajectory Panel

- Nadia Chawky
- Mélanie Bouchard
- Marilou Parser
- Ariane Bonnet Vinet
- Gustavo Turecki
- Monique Séguin

McGill Group for Suicide Studies

- Nadia Chawky
 - Nancy Tremblay
 - Marilou Parser
 - Ariane Bonnet Vinet
 - Monique Séguin
- Mélanie Bouchard
Sarah Jane Parent
Julie Lessard
Gustavo Turecki

Key Messages

Background

The Department of Health and Wellness, in collaboration with Chief Coroner Dianne Kelly and researchers associated with the McGill Group for Suicide Studies and the Centre de recherche Fernand-Séguin, including Monique Séguin, Ph.D., Gustavo Turecki, MD, Ph.D., and Alain Lesage, MD, conducted a study of suicide victims. The purpose was to identify the personal and social circumstances that led a number of New Brunswickers to suicide so as to propose strategies for improving the services offered to suicidal individuals and their families.

Observations

Our study of 102 cases of death by suicide in the Province of New Brunswick over a 14-month period revealed the following:

- In the large majority of cases, the suicide victims had a long trajectory of difficulties throughout their lives, i.e., an accumulation of personal, family, relational, psychological and social problems. The large majority of them had been in contact with specialized mental health and addiction services, and more than 50% of them were in contact with specialized health services during their final year of life.
- Two-thirds of the suicide victims had long-standing addiction problems, making addiction one of the most prevalent factors. Despite previous contacts with addiction services during their lifetime, only 10% of them were in contact with those services during the year preceding their suicide.
- We note major difficulties in treating persons with multiple problems, meaning a combination of problems such as depression, addiction and a suicide issue experienced by the same person. Clinical practices for such individuals should shift from fragmentary treatment of single problems in silo mode to coordinated and continuing treatment of multiple problems.
- In general, members of the public can clearly recognize signs of distress and suicidal behaviours, but for many, the next step, i.e., getting a friend or family member to appropriate services, has not yet become a natural response.

Recommendations

We make the following recommendations to the Government of New Brunswick:

Governance axis

Develop and agree upon regional protocols for systematic coordination and management for all front and second-line practitioners involved in the case files of persons suffering from addiction and mental disorder, with or without a suicide problem, in order to proactively refer those persons to appropriate resources, encourage them to stay in treatment, coordinate that treatment, maintain a fixed point of responsibility, provide follow up, and use an outreach approach if necessary. Achieving the objectives of this axis involves developing a provincial policy for addiction prevention and treatment, in conjunction with the policy on mental disorders, pursuant to the principles of hierarchy of care and areas of jurisdiction.

Intervention axis

Improve the availability, accessibility and relevance of treatment services for addicts and persons with multiple problems of mental health, addiction, and suicidal behaviours.

Prevention axis

Implement preventive measures to better reach, identify, and intervene with persons at risk of suicide and persons with mental disorders and addictions, whatever their age group. Make family/friends, peers and the community more aware of the importance of getting persons presenting suicide-related problems, mental disorders and addictions to seek help from and maintain contact with health and social services.

Evaluative research axis

Maintain an evaluation protocol throughout the implementation process to assess the modification of the practices proposed herein.

Executive Summary

Research Context

Death by suicide is a major cause of mortality in New Brunswick, and it is more prevalent among adult males. With that in mind, it becomes important to be able to identify the factors that could contribute to suicide. The Department of Health and Wellness therefore conducted a study of suicide victims in collaboration with Chief Coroner Dianne Kelly and researchers associated with the McGill Group for Suicide Studies and the Centre de recherche Fernand-Séguin, including Monique Séguin, Ph.D., Gustavo Turecki, MD, Ph.D., and Alain Lesage, MD. The purpose was to identify the personal and social circumstances that led a number of New Brunswickers to commit suicide so as to propose strategies for improving the services offered to suicidal individuals and their families.

Our research methodology involved 1) charting the development of mental health problems, determining the sequence in which the initial difficulties appeared, and tracking their evolution over time; 2) surveying the accumulation of psychosocial risk factors and developmental factors; 3) tracing the trajectory of help seeking and use of health services; and 4) assessing the response to service needs.

What We Learned

Of the 109 suicide deaths identified by the Coroner during the time of the study, the research team was able to investigate 102 suicide mortality cases that occurred over a 14-month period in the Province of New Brunswick. We observed the following:

1. In the large majority of cases, the suicide victims had a long-standing trajectory of persistent difficulties in terms of personal development, consisting of an accumulation of personal, family, psychological, psychiatric and social problems. Most of these persons had sought help from specialized mental health and addiction services at some point in their lives. The varying life trajectories of the deceased suggest that specific, targeted interventions at different points along those trajectories, including the final year of life, could have been undertaken more effectively. Our recommendations to the Government of New Brunswick reflect those different targets.
2. There were serious addiction problems among the suicide victims. More than 60% of the deceased had an addiction problem at the time of death and nearly 70% of them had struggled with such problems during their lives, making addiction one of the most prevalent risk factors. These persons also presented other disorders, especially depression, and interpersonal and social problems. Despite earlier contacts with addiction services, only 10% of them were in touch with those services during the year preceding their suicide. We therefore underscore recommendations for the coordination and continuity of specialized mental health and addiction services, broader accessibility to front and second-line addiction treatment and, in the longer term, establishment of a comprehensive policy on addiction, including prevention, treatment and reintegration, within a framework of hierarchy of care.

3. We note that nearly 70% of the suicide victims had an affective disorder, i.e., depression, at the time of death. While the treatment of depression is an important and indeed inescapable aspect of suicide prevention, it should undoubtedly be multidimensional to address the complexity of comorbid problems, enhance treatment efficacy and compliance, and ensure post-treatment follow up.
4. With respect to mental health and addiction services, we note a major stumbling block in the treatment of persons with multiple problems. All too often, specialized mental health and addiction services operate in a silo mode. Clinical practices should shift the treatment focus from single problems to multiple problems, along with coordination and continuity between mental health and addiction programs. While in some cases mental health services did everything possible to aid the suicide victims, in many other cases they could have pressed for more services and improved collaboration between existing services. In this sense, the recommendations for case coordination and follow up represent a key intervention for reducing the number of suicide deaths.
5. Lastly, it is interesting to note that, in general, members of the public can clearly recognize signs of distress and suicidal behaviours. But for many, the next essential step of getting a friend or family member to the appropriate services has not yet become a natural response. We suggest that preventive measures seek to make family and friends, peers, social service practitioners and the community more aware of the importance of getting a person presenting a suicidal problem, mental disorder or addiction to seek help from health and social services and maintain that contact.

Recommendations

We make the following recommendations to the Government of New Brunswick:

Governance axis

Develop and agree upon regional protocols for systematic coordination and management of all front and second-line practitioners involved in the case files of persons suffering from addiction and mental disorder, with or without a suicide problem, in order to proactively refer those persons to appropriate resources, encourage them to stay in treatment, coordinate that treatment, maintain a fixed point of responsibility, provide follow up and use an outreach approach, if necessary. Achieving the objectives of this axis involves developing a provincial policy for addiction prevention and treatment, in conjunction with the policy on mental disorders, pursuant to the principles of hierarchy of care and areas of jurisdiction.

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Evaluative research axis

Maintain an evaluation protocol throughout the implementation process to assess the modification of the practices proposed herein.

Expected Positive Impacts

We believe that the implementation of these recommendations could alter certain life trajectories by promoting earlier, more adequate contact with professional services. A large proportion of the suicide victims (53%) sought out professional mental health services during the year preceding their death. However, in the final month, those same individuals had apparently dropped their ties and contact with professional services, especially addiction services. Given that dropout, linked to insufficient follow up and coordination between services, some of those individuals lost the support so critical to them in times of crisis. We feel that better coordination between services, more outreach activities and the training of specialized mental health and addiction professionals in these new practices will make it possible to introduce services earlier on in the life trajectory of persons in distress, avoid the slippery slope to dropout, and thus alter the outcome of certain life trajectories.

Putting measures in place to reduce addiction rates and increase access to treatment and reintegration services is all-important. The rate of addiction among suicide victims is very high and exceeds the rate generally attributed to addiction in studies of this type. Although alcoholism and drug addiction rates do not seem higher in New Brunswick than elsewhere in Canada (Tjepkema 2004), these problems nevertheless go under treated in large part, even more so than the other mental disorders such as depression with which they are also associated. Still, one promising suicide prevention strategy could be to improve access to front-line treatment services and, in the long term, to develop a policy framework for addiction prevention and treatment and for reintegration, alongside the mental health policy framework, as well as to carry out a public awareness campaign over several years to promote the detection and treatment or management of addictions.

This research project is one of the most important suicide prevention initiatives ever undertaken in New Brunswick. Think of all the bereaved families that so generously participated in this study. Think of all the clinicians who were moved by compassion to share in this study above and beyond their regular professional duties. Think of all the persons who were mobilized by this study. We hope that, once mobilized in suicide prevention activities, these individuals and their communities will have the words, deeds and attitudes necessary to identify vulnerable persons at risk of suicide and help them turn from that path. We also hope that the political authorities will call for social and political actions designed to increase the

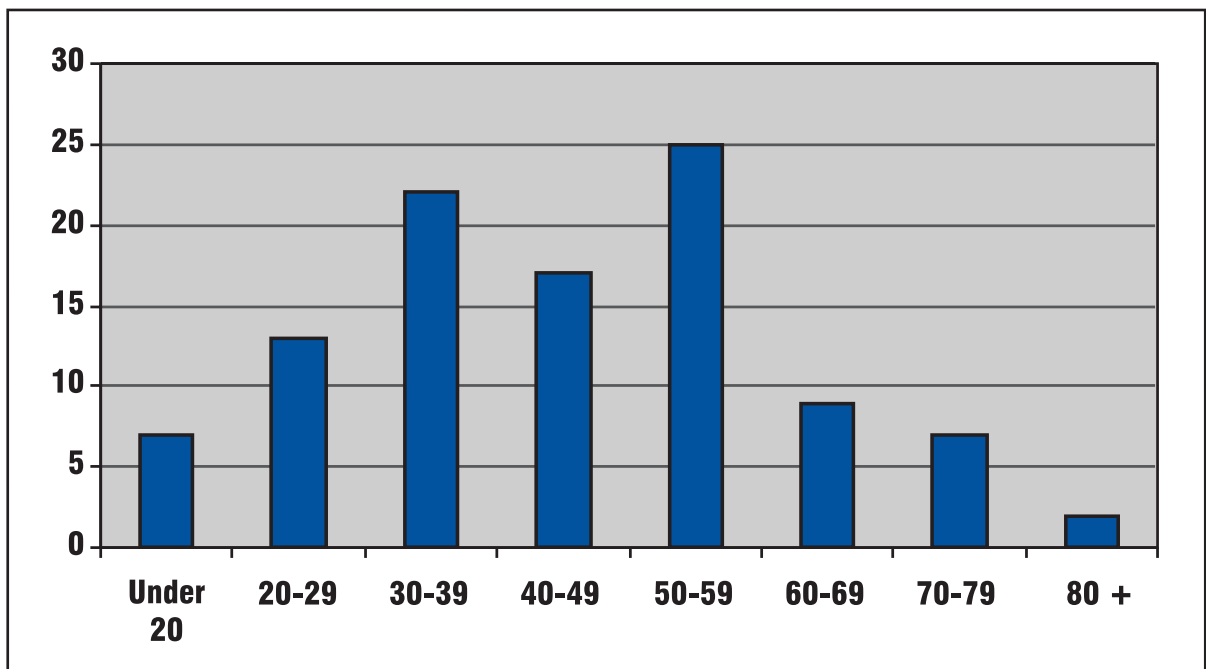
protective factors available to vulnerable individuals when they are faced with inevitable adversity. Lastly, we hope that the actions suggested by this study will be supported in the decades ahead. This project is also a considerable improvement over the last – and only – survey of this type, conducted in Finland more than 10 years ago. It puts New Brunswick in the international forefront of suicide expertise and the continuing efforts to better understand and deal with this complex issue.

Full Report

Statistics on Suicide in New Brunswick

The annual report of New Brunswick's Chief Coroner identifies 94 deaths as a result of suicide in the 2001-2002 fiscal year, for an incidence of 12.4 per 100,000 population. Analysis of the data leads to the following observations. Suicide is more prevalent among males (75.6%) than females (24.4%). Graph 1 below plots the ages of the suicide victims included in this study. Suicide deaths occur especially within the population aged 30 to 60, although young people and the elderly are not spared.

Graph 1 - Age distribution of study subjects



According to 2000-2001 data from the Coroner's Report, suicide rates vary from one judicial district to another. For example, Campbellton posted the highest rate of suicide deaths at 29 per 100,000 population, followed by Bathurst at 25.4 and Edmundston at 21.8. During the 2002-2003 study period, the suicide rates were 20.38 per 100,000 population (44 suicides) for the northern part of the province (Edmundston, Campbellton and Bathurst regional health authority areas) and 12.15 per 100,000 population (65 suicides) for the southern part (Moncton, Saint John and Fredericton regional health authority areas).

The most common suicide methods were hanging (39%), use of a firearm or sharp instrument (34%), drug overdose, and CO² (19%). Jumping and drowning accounted for 10% of the other deaths.

The most recent data available from Statistics Canada (1999) put the national suicide rate at 13.4 per 100,000 population. New Brunswick's suicide rate over the past 10 years has consistently hovered around the national rate, a little higher at times, but more often slightly lower, with 100 suicide deaths a year on average. Among the four Atlantic provinces, New

Brunswick recorded a slightly higher suicide rate per 100,000 population during the years 1993-1998 and matched Nova Scotia's rate for 1999.

Research Context and Rationale

In New Brunswick, apart from sociodemographic and epidemiological data on suicide deaths, there are no scientific data on suicide victims' life trajectories or use of services. Provincial health care administrators responsible for implementing suicide prevention measures cannot rely solely on study findings from outside the province. For the same reasons, they cannot say with certainty that the suicide prevention activities that have been implemented are meeting their objectives or the goal of the provincial Suicide Prevention Program.

Each year, 100 persons on average commit suicide in New Brunswick and roughly 800 are hospitalized after attempting suicide.¹ But the actual number of victims is much larger, comprising the families, friends and peers who must cope with the devastating loss, rebuild their lives and try to make some sense of the tragedy.

The initiative launched by this research project places New Brunswick in the role of an expert, for it is the only Canadian province to have systematically studied all suicide deaths that occurred in the space of one year. This expertise can be useful to clinicians in their daily practice, to administrators in planning health care services and to researchers in the advancement of knowledge about suicide.

Research Objectives

The study consisted of tracking events and circumstances, i.e., the accumulation of difficulties that marked the lives of the suicide victims, from various perspectives: 1) charting the development of mental health problems (determining the sequence in which the initial difficulties appeared and tracking their evolution over time); 2) surveying the accumulation of psychosocial risk factors and protective factors; 3) describing help-seeking behaviours and use of health services; and 4) evaluating how well practitioners, programs and the health and social services system in New Brunswick responded to service needs.

General Information About This Study

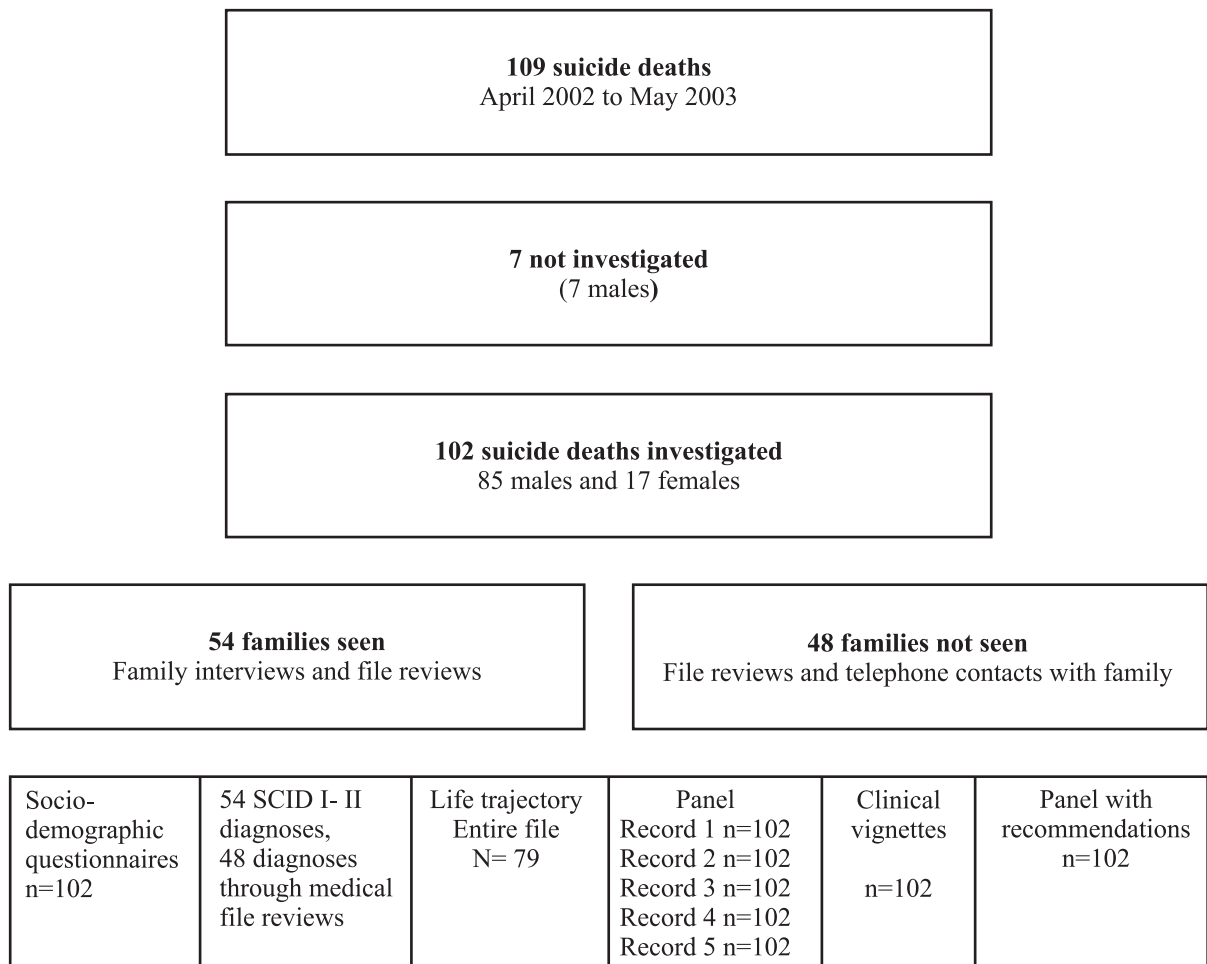
We surveyed 109 suicide deaths that occurred in New Brunswick between April 2002 and May 2003. During the initial contact through the Coroner's Office, seven deaths were not investigated, for several reasons: there were overriding legal factors, it was not possible to find any respondent since the deceased had cut himself/herself off from society altogether, or the family questioned the relevance of the study. The seven cases that were not investigated were all suicide deaths involving adult males between the ages of 27 and 59.

After the first contact with the families, 102 of them agreed to allow our research team to investigate the factors that may have contributed to the events and gather information about the services the suicide victims had received. We used one of two investigative approaches, depending on the extent of family involvement in the study.

1. New Brunswick Department of Health and Community Services, Vital Statistics: Internal Report, 1999.

Under the first approach, 54 families were interviewed to gather information on the lifelong course of the deceased's mental health up to suicide completion (our main measuring instruments were SCID I-II questionnaires and a life calendar) and to ascertain the significant events along the suicide victim's life trajectory and the help-seeking behaviours. Additionally, with the family's consent, the medical files were examined to back up the information gathered and determine what resources the deceased had used. The chart below summarizes the manner in which the files were handled.

Table 1
Chart of suicide study files



Under the second investigative approach, we searched the files for information but had telephone conversations only with the 48 families that did not wish to meet with us. In all cases, however, the families completed questionnaires concerning the sociodemographic characteristics of the deceased, and vignettes were compiled to summarize the information gathered on life history and use of services. Those vignettes were submitted to a panel of experts to validate the diagnoses found in the life histories, determine what interventions would have been needed and the options for setting up structures and services, and establish the degree to which the suicide deaths may have been prevented. Note that most of our tables give numbers of persons, not percentages: there are 102 study subjects, meaning that actual numbers and percentages are virtually the same.

Recruitment of Suicide Victims' Families

During the study period, April 2002 to May 2003, the Chief Coroner reported 109 suicide deaths to us. The recruitment methods were developed in co-operation with New Brunswick's Chief Coroner. The Coroner's Office sent the families a letter explaining the study and a professional from that office followed up by telephone after the families received the letter. The names and telephone numbers of the families that agreed to participate in the study were forwarded to the research team.

The research project coordinators, who worked closely with the Coroner's Office, called the families to explain the goal and objectives of the study and request their collaboration. In our experience, this initial telephone contact made it possible to provide support for individuals who expressed an immediate need for such help. The study was described to them in detail and their collaboration was requested.

If the family agreed to participate in the study, we asked for the person who had known the suicide victim best or the person who was designated by the family. The interviewers then contacted that person to arrange an appointment for the research interviews. The interview program did not begin until three months after the death to give the bereaved sufficient time to begin the grieving process. No interviews were undertaken without the written consent of the bereaved respondents. Two or three interviews were conducted with each respondent, and there were up to five interviews in some cases. After each interview, the interviewers systematically did a telephone follow-up with the families and made arrangements for another appointment to complete the data collection process.

In terms of the time required for recruitment, in person interviews, telephone follow ups to support the family, and preparation of the clinical vignette, we calculate that it took 30 hours on average to collect the data necessary to describe the life trajectory (clinical vignette) of each suicide victim.

Data Collection

The participants were seen twice on average, and each meeting lasted about three hours, depending on the participant's fortitude. Each interview was tape-recorded for a consistency check later on. During that time, the participant had to answer a series of semi-standardized questions. That three-hour clinical interview went surprisingly fast. The participants appreciated this, and since a conversational approach was used, the length of the interview seldom posed a problem. The questionnaires described below were administered to the participants.

Interview to determine post-mortem diagnosis

As part of this interview, the researchers administered SCID questionnaires to a relative who had known the deceased well in order to determine whether the suicide victim presented a psychopathology on Axis I (e.g. depression or addiction) or Axis II (e.g., personality disorders) (Brent et al., 1989; Lesage et al., 1994; Turecki et al., 2001).

Interview to chart life trajectory

As part of a semi-standardized interview, the participants described the life trajectory of the suicide victim in order to document the times at which personal, family or social difficulties, or other adverse events had appeared. They were then asked to describe the deceased's help seeking and use of health services (Caspi et al., 1996; Bifulco, 1996).

Review of user files

The user files were reviewed to systematically document the service requests and the responses given to the study participants.

Panel of Evaluators for Assessing Relevance of Services Received

A panel comprised of researchers, professionals, a representative of family/friends, and decision makers was set up to assess the relevance of the services the deceased had received and the extent to which the suicide deaths were preventable. The panel's analysis described the need for *individual actions* that could be taken by family/friends and health and social service practitioners. Actions *at the local level* referred to interventions deliverable by local front-line health care networks, specialized second-line service networks, and community organizations. Then, on the basis of the overall evaluations made by the panel members, the actions required *at the provincial level* were described. The panel used information taken from the medical files and through the interviews with family and friends or with public and private-sector health and social service practitioners who may have been involved. The frame of reference was taken from Kovess et al. (2001), based on experience with valid tools for evaluating individual mental health needs (Kovess et al., 2001). Five needs analysis records had to be created to account for the realities of the suicide victims and the levels of individual and systemic needs.

The research team prepared a case history describing the person's mental health problems and entire life trajectory, then added all information obtained about the person's lifetime use of services, particularly mental health services, with particular emphasis on those received during the year prior to suicide. This section was presented in the form of a report describing not only the interventions but also available information on the impact of those interventions and the individual's satisfaction with them. That information was gathered through the accounts of family and friends and the files consulted.

On the basis of that information, the panel went through five steps reflected in five needs analysis records.

I. Services received during the person's lifetime, in the final year, and in the final month prior to death, through front-line medical and psychosocial services, specialized second-line mental health and addiction services, and non profit community organizations.

II. The person's medical and psychosocial problems during the final year and the interventions from front and second-line services, family and friends, school, police or legal services, and non profit community organizations.

III. The ideal scenario for the care the person should have received during the final year, details regarding his/her medical and psychosocial problems, and the interventions that ideally should have been made. This analysis record summarizes the needs.

IV. The interventions that should have been made but were not available locally, through programs, regional services or at the provincial level to support the individual interventions identified in the ideal scenario presented in analysis record III. Those unavailable services were categorized by types of needs, e.g., training, psychotherapy, medication, coordination, governance and funding.

V. Lastly, the panel used all the information included in the preceding analysis records to determine whether the suicide was preventable, using a scale of 1 to 5 as follows:

1. **Totally unforeseeable suicide.** For example, a person with no history of emotional problems who commits suicide after an unhappy love affair, without talking about it to anyone and without showing any signs of abnormal or unusual distress to anyone.
2. **Suicide for which there was no reasonable known way to counter the risk factor.** For instance, a person with a borderline personality disorder who had serious drug addiction and depression problems and who, despite the reasonable efforts of specialized psychiatric teams, was not able to find relief. The person was known by the team to present a medium-term risk of suicide.
3. **Suicide that could have been prevented with an increase in the measures already undertaken, the need for which, however, was somewhat difficult to anticipate.** For instance, a patient hospitalized in a psychiatric department or a young person in a youth centre with emotional difficulties and a certain level of suicide risk for whom treatment and monitoring measures had been undertaken, said measures being consistent with the suicide risk established but obviously inadequate, given the outcome. Or a person identified as being at risk in his/her community, having begun potentially effective therapy, with a suicide risk that was recognized but clearly underestimated, given the outcome.
4. **Suicide possibly preventable if measures had been taken given the possible risk.** The person presented more than one factor liable to contribute to suicide risk, and interventions may have been undertaken but only partially and not necessarily addressing all the pertinent factors where intervention would have worked.
5. **Suicide that could easily have been prevented** because there were potentially effective interventions that, if they had been adequately put in place, would definitely have modified the predisposing conditions. For instance, a person with a clear major depression for the first time, treated by a family physician who fails to recognize the person's depressive state and treats him/her with an inappropriate medication or an inadequate dosage.

The members of the research team then examined the panel's aggregate findings by means of transversal analyses establishing the actions that should be proposed at the provincial level given the extent of the deficits noted in actions at the individual and local levels. These are the recommendations that appear in the summaries of this report and are detailed later.

Findings

Sociodemographic Profile

The sample comprised 85 males and 17 females, most of them Caucasian (95%). Most of the suicides (63%) occurred between the ages of 30 and 59; 41% of the deceased were part of a couple, 37% were separated, divorced or widowed, and 22% were single.

The suicide victims did not tend to have a high level of formal education: 37% had not earned a high school diploma or the equivalent, 17% had a high school diploma, while only 10% had done postsecondary studies. The level of education for some of them (36%) is unknown, however. We do know that more than half of the subjects were unemployed at the time of death and that almost 19% were deemed disabled.

Psychopathological Profile

Mental health problems would seem to be a constant in the profile of the suicide victims (see Table 2). Indeed, 97% of them presented a mental health disorder, and 75% suffered from two or more such disorders. Beyond the final six months, we also note the presence of long-term mental disorders and addiction (see Table 2), indicating the persistence of those problems.

Fifty-five per cent (55%) of the suicide victims had both a dependence problem and another disorder; 56% of them had a mood disorder and a second disorder (drug addiction or personality disorder). Of the persons having only one identified disorder, 17% suffered from depression and 7% from an addiction (see Table 3).

Table 2
Number of persons with an Axis I or II disorder

N=102	Final 6 months No. of persons	Lifetime No. of persons
Mood disorder	69	56
Abuse or dependence problem	61	68
Anxiety disorder	22	17
Psychosis and associated symptoms	7	6
Personality disorder	52	52
No disorder	9	10
Single disorder	18	18
Comorbidity (two or more disorders)	75	74
Total having at least one diagnosis	97	92

With regard to the different types of problems, the data collected show that abuse and dependence problems were very widespread among the deceased (61%), making these a major suicide-related risk factor. Indeed, this is one of the highest percentages we have encountered in this type of study. By decreasing order of prevalence, the most common

problems were alcohol dependence, drug dependence, alcohol abuse, drug abuse and also pathological gambling to a lesser extent (5%). In terms of lifetime prevalence, alcohol dependence and alcohol abuse were the most prevalent.

With regard to other disorders existing at the time of suicide, almost 70% of the deceased had a mood disorder, with major depression coming first, followed by unspecified depression. When it comes to lifetime prevalence, major depression was first, followed by dysthymia. Twenty-two persons were also diagnosed with an anxiety disorder during the final six months of life.

Personality disorders were diagnosed in 52% of the suicide victims. In this category, borderline and anti social personality disorders, or unspecified personality disorders with strong borderline or anti-social features, stand out.

Table 3
Combination of Axis I and II disorders

Combinations of actual difficulties	Number
DEP, SUB, ANX, PER	5
DEP, SUB, PSY, PER	2
DEP, SUB, PER	24
DEP, ANX, PER	5
SUB, ANX, PER	1
DEP, PER, PSY	1
DEP, SUB, ANX	1
DEP, SUB	11
SUB, PER	7
DEP, PER	6
SUB, ANX	3
SUB, PSY	1
ANX, PSY	1
DEP, PSY	1
ANX, PER	1
DEP	9
SUB	7
ANX	1
PSY	1
NONE	9

Legend

DEP: mood disorders

ANX: anxiety disorders

PER: personality disorders

SUB: substance dependence and abuse

PSY: psychosis and other associated symptoms

To summarize, we observe an accumulation of mental health and addiction problems among the suicide victims. Those problems were not recent but were rooted in the individuals' life trajectories. Interventions and treatment plans therefore cannot be based on actions that address single problems. Interventions must take account of the complexity and large number of problems, and the emphasis needs to shift to multiple interventions necessitating coordination, follow up by the care team and commitment to treatment on the part of the patient. Encouraging such commitment is another part of the care team's job.

Precipitating Events and Life Trajectories

While we observe an accumulation of mental health problems in the lives of the suicide victims, the lifetime prevalence tells us that those problems were not recent. Data on precipitating events and life trajectories show how recent events reflect long-standing – often lifelong – personal, family, psychological, and social problems.

Our research identified the main events associated with death by suicide (See table 4). For half the individuals, a significant loss was often the last straw. Failed relationships, couples in difficulty, a variety of major losses, problems with school, work or money, and other traumatizing situations (e.g., assault, fear of serious illness) were among the events associated with suicide completion. Among the other types of events, loss of physical independence and real or potential loss of freedom (e.g. fear of imprisonment) appear among the final elements in the life of the deceased. For others, events associated with mental health problems predominated. They included a worsening depressive state, an episode of high alcohol abuse or an intensifying psychotic state. These changes for the worse became precipitating factors for suicide.

Table 4
Main event associated with the suicide

N=102	Number
Worsening mental health/addiction problems	49
Break-ups	13
Couple in difficulty	8
Losses	12
School/work/financial problems	9
Other types of events	10
No event identified	1
TOTAL	102

Only rarely did none of these events occur in the deceased's final period of life. Indeed, we found only one exception.

This study also enabled us to chart the life trajectories of the deceased. This approach, which uses a life calendar, uses 12 developmental spheres to trace the events that mark an individual's life: place of residence, parent-child relationship, emotional life and couple relationship, family life, episodes of personal difficulty, academic and professional life, loss/separation/departure, other adversity factors, protective factors, help-seeking, and medication taking. We tried to determine whether these events might have been situational or permanent in the lives of the deceased and noted their duration, intensity and frequency.

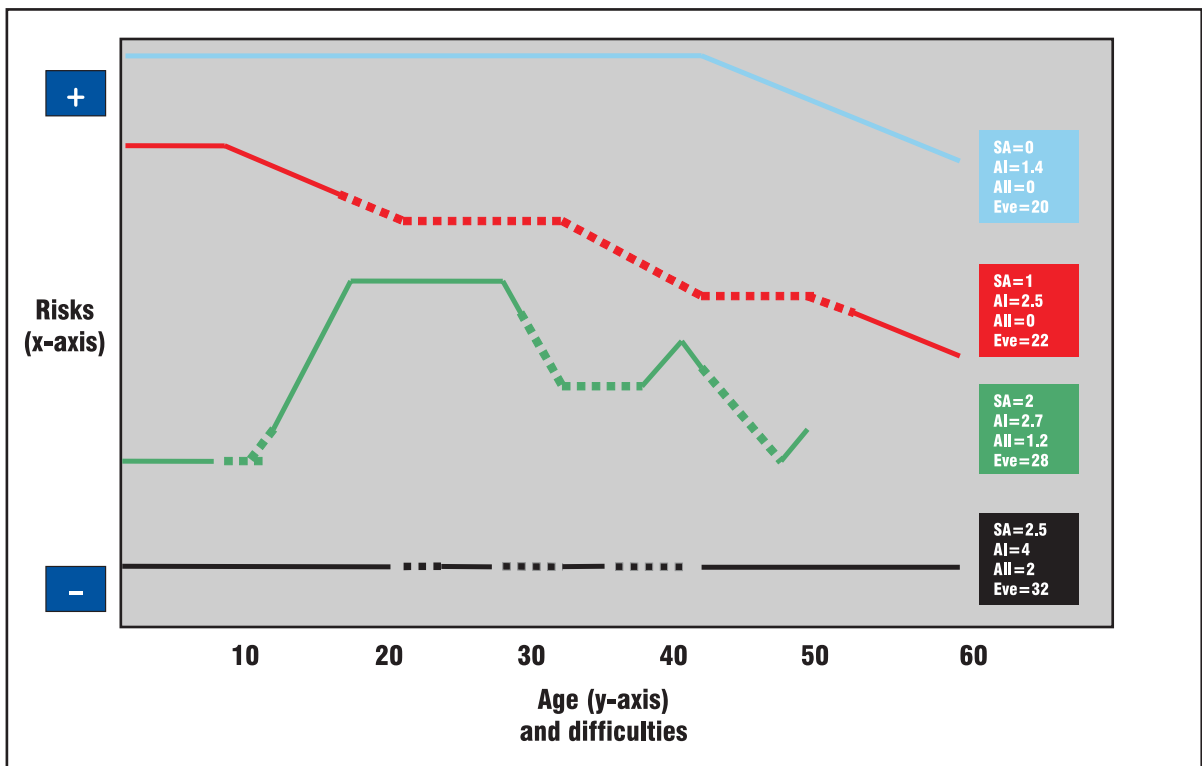
This particular analysis was based on events recalled by family and friends, writings, medical and psychosocial reports, diaries and so on. After collecting this data, we analyzed each individual life trajectory. As a panel of experts, we rated each five-year block in terms of risk. We used a scale of 1 to 6 to identify the degree of risk in the individual's development based on the following grid.

Table 5
Risk assessment

Overall assessment	Rating	Risks	Protection
Low	6	Few difficulties	Protection present
	5	A few risk factors - Over short period of time - Affecting only one/two spheres	
Moderate	4	Several risk factors - Over short period of time - Affecting several spheres	Some protection
	3	Several risk factors - Over long period of time - Affecting several spheres	
Strong	2	Multiple risk factors/each sphere - Over long period of time - Involving almost all spheres	Little or no protection
	1	Multiple risk factors/each sphere - Over very long period of time - Involving all spheres	

In the clinical opinion of experts, the compilation of all these factors in five-year blocks and the assigning of a specific risk rating for the severity of the problems paint a picture of the burden borne by the individual. The risk ratings form the curve of these trajectories, as shown in graph 2.

**Graph 2 -
Life Trajectory**



The X axis is the trajectory showing the person’s age at the time of severe difficulties; the Y axis plots the extent of the risk, with the minus sign (-) meaning a high risk and the plus sign (+) a low risk. This analysis gives rise to four profiles that reveal differences in terms of the average age at the time of suicide, the average number of suicide attempts, and mental health or addiction problems (Axis I) and personality disorders (Axis II) (see Table 6).

Table 6 - Distribution of psychopathologies and suicide attempts, by type of trajectory

TRAJECTORY	Average age	Average SA	Average DX Axis I	Average DX Axis II
4	52	0.03	1.4	0.6
3	41	0.60	2.5	0.6
2	51	2.00	2.7	1.2
1	38	2.50	4.0	1.8

(Note: DX is diagnostic)

In trajectory 1, which represents the experience of 15% of the deceased, life presented several adversity factors from the beginning, including neglect, mistreatment, major family conflict, or physical and sexual abuse, which accumulated as the individual grew older. The magnitude of risk events in early childhood is associated with major family conflicts, difficulties at school, very early substance use, and so on. It is as though the individuals fell early on into a difficult trajectory that became increasingly hard to alter. Consequently, the accumulation of adversity factors lasted throughout their lives. In trajectory I, we observe a larger number of suicide attempts and Axis I and II psychopathologies. Individuals on these life trajectories were the ones who committed suicide the earliest on average (at age 38). These trajectories illustrate the importance of early intervention in the lives of vulnerable and at-risk families and of acting on the early determinants of health.

Trajectory 2, which represents the experience of 24% of the deceased, groups the individuals for whom life was difficult at the start but began improving in early adulthood. Apparently, this improvement came once they left the family environment and embarked upon independence and relative freedom. The risk factors decreased and the protective factors increased during this period. However, it seems that the onset of adversity events after that positive period coincided with an increase in family problems, marital discord, and parenting difficulties. We also see an accumulation of work-related conflicts of all kinds, problems associated with alcohol and drug use, and depressive states. Those events built up prior to suicide completion. It is as though these individuals had harboured a measure of vulnerability (especially in terms of personality) during all that time, and then personal, psychological and psychiatric problems caught up with them in mid-life, triggering relational disintegration and multiple difficulties prior to suicide completion. Individuals characterized by trajectory II come second to trajectory I subjects in suicide attempts (SA) and present fairly high rates of Axis I and II psychopathologies.

Trajectory 3, representing the experience of 43% of the suicide victims, is characterized by a descending line. Life apparently began well and initially included few risk factors and numerous protective factors. Over the course of their development, adversity factors gradually emerged, and the living environment deteriorated, but without strong risk factors. These individuals present a larger number of clinical psychopathologies (Axis I), especially alcohol and drug addiction and affective disorders (depression). These problems may have begun early in life and existed over many years at varying intensities. The individuals on this trajectory were characterized in particular by relational and emotional disintegration, compounded when the burden of problems caused by a long period of alcoholism and depression is factored in. As a rule, they made few suicide attempts in their life, and suicide often appears in association with separation, significant affective loss, and cascades of negative events. Social policies aimed at the reduction and early treatment of addiction and depression take on special importance in this trajectory.

The suicides in trajectory 4, which represents the experience of 17% of the deceased, are the hardest to understand since there are virtually no known risk or adversity factors. While there are numerous risk factors associated with the suicides in trajectories 1, 2 or even 3, these last suicides are the most difficult to foresee. We also note that the individuals in this trajectory committed suicide the latest in life, at age 52 on average. Those deaths often occurred at a

time of major loss, frequently involving real or perceived public humiliation or loss.

In short, these trajectories show first that there is no one single suicide victim profile and that previously diagnosed mental disorders do not usually occur in a vacuum but are manifested more particularly in individuals who have often experienced difficult personal, family, psychological and social trajectories since childhood. Other trajectories deteriorate after a time of improvement, and still others may reflect a slow decline accompanied and compounded by mental disorders. Common to such disintegration are situations of drug or alcohol dependence, together with failed personal attempts to overcome the problems, which only increases loss of self-esteem and despair before the final cascade, in which all these factors meld and become unbearable for the vulnerable individual. All four of these typical trajectories draw on more distant events, prior to the final year, and more recent events, during the final year.

These trajectories may provide a better understanding of the various suicide victim subgroups. It may become easier, furthermore, to attach specific risk factors to these trajectories in order to better evaluate and grasp the relative importance of the different risk factors at play in each of them. Each trajectory may call for specific measures that target different points in time, e.g., the implementation of measures that are delivered closer to the critical period and would make coordinated treatment of addiction and mental disorders more accessible. Other measures addressing these same problems could be implemented further downstream to target emerging addiction or depression problems responsive to effective interventions. Other measures could be taken even earlier to prevent the development of these types of behaviour and promote mental health by improving social support and resiliency in children and adolescents and by prevention campaigns to counter substance abuse and act on health determinants.

The introduction of measures during the final year will also entail analyzing the use of services and enlisting a panel of experts to determine the suitability of those measures in the final year.

Use of Public, Private and Community Services

During their lifetime, nearly all the suicide victims sought out specialized mental health and addiction services, as well as front-line medical services. Over half of them consulted front-line psychosocial services, while one-third sought help from volunteer services. What is most striking about the final year prior to suicide is the strong tendency to call on private or public specialized services, followed closely by front-line medical services. As for services received during the final month of life, private or public specialized services were used to a fair extent (34.3% of the individuals). Professionals working in mental health centres, i.e., psychologists, social workers and nurses, were consulted most often during the final month prior to death (18%; final year, 26%), followed by psychiatric physicians (12%; final year 32%) and Emergency services (8%; final year, 24%). However, addiction services were used less often, by only 3% of the deceased in the final month and 4% in the final year. Of note is the follow up by front-line health and social services professionals, who were consulted by 18.6% of the persons during the final month, and front-line medical services, including general practitioners, consulted by 17.6% of them. Among front-line services, the suicide

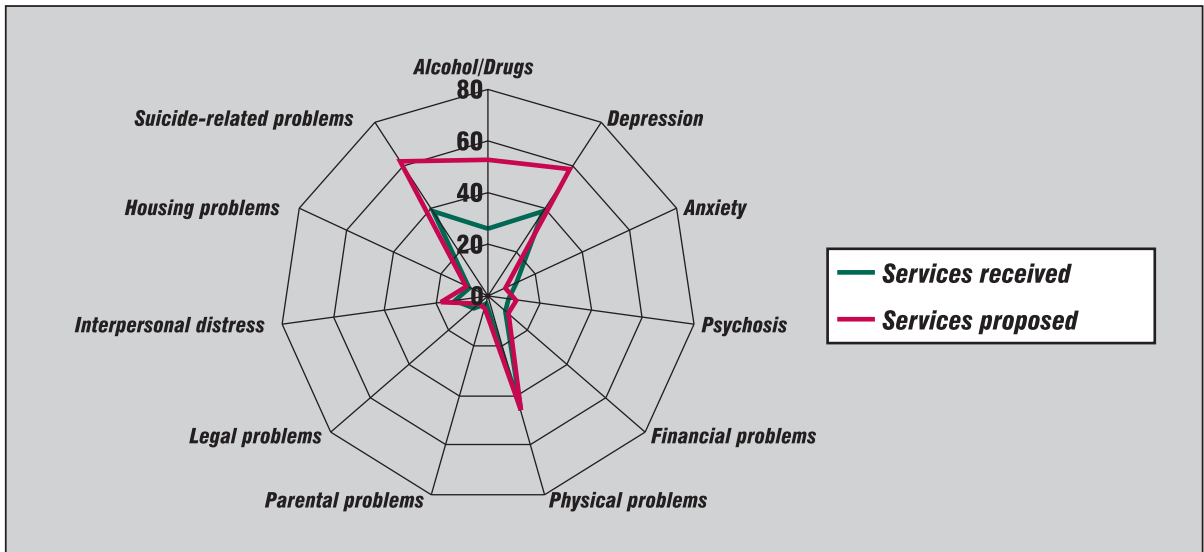
victims called on police services at the rate of 4% in the final month and 9% in the final year (17% over their lifetime). The suicide victims made far less use of volunteer or non profit services (8%). Among those particular services, Alcoholic Anonymous and clergy were consulted more often, while little use was made of hotlines (1% in the final month and 2% in the year prior to death).

**Table 7 -
Summary table of services received,
in preceding month or year and over lifetime**

	Month	Year	Lifetime	Total
Medical services <i>Number of persons who consulted at least one service</i>	18 17.6%	50 49.0%	83 81.4%	88 86.3%
Front-line health and social service practitioners (nurses, social workers, school professionals, police) <i>Number of persons who consulted at least one service</i>	19 18.6%	34 33.3%	45 44.1%	58 56.9%
Private or public Mental Health specialized services <i>Number of persons who consulted at least one service</i>	35 34.3%	54 52.9%	86 84.3%	93 91.2%
Volunteer or non profit services (e.g. hotlines and support lines, clergy, Alcoholics Anonymous, Narcotics Anonymous) <i>Number of persons who consulted at least one service</i>	8 7.8%	16 15.7%	28 27.7%	35 34.3%
<i>Number of persons who consulted at least one of all services</i>	52	78	97	99
Total	51.0%	76.5%	95.1%	97.1%

Comparison, by the expert panel, of the services the suicide victims received and the services they should have been offered, lead to some disturbing results. We contrasted the observed situation with the ideal scenario and then identified and analyzed the problems at hand in relation to the therapeutic interventions received or required from the different front and second-line services (medical, psychosocial, specialized and community), family and friends, school and the legal system.

**Graph 3 -
Summary of interventions received and required**



As shown by Graph 3, problems associated with treatment of alcohol or drug addiction account for the biggest discrepancy between services received and services required, followed closely by problems associated with treatment for suicide-related problems and depression. Persons presenting these combined problems are the ones who received adequate interventions least often and who should have received multidisciplinary management. Looking further at these deficiencies, we notice that psychological problems are overrepresented by comparison with financial, physical, housing, legal and other problems. Furthermore, when the individuals had multiple difficulties (especially those coping with two, three or four different problems), multidisciplinary services were not provided in response. This is especially true for persons who had multiple alcohol/drug, suicide-related, and physical problems or for those presenting comorbid alcohol/drug and physical problems, and to a lesser extent, suicide-related and physical problems.

Looking more closely at Table 8 (interventions received by the suicide victims compared with those that should have been provided), we note deficiencies in terms of the interventions delivered in response to requests for help, assessment and case follow up: these deficiencies are major when it comes to referral between services and assessment. The psychiatric medications received were not necessarily adequate in certain cases, while others should have had medication. There were also major deficiencies in case management by the various services: case management would have required a more closely supervised environment for a given period of time (hospitalization, detox centre) and follow up with a specified key

practitioner, recontact, and even a home outreach approach if necessary. We also note significant deficiencies in terms of individual or group psychotherapeutic interventions for addictions and treatment of depression or anxiety disorders. Half the individuals also presented physical conditions requiring medical follow up and those needs were better met.

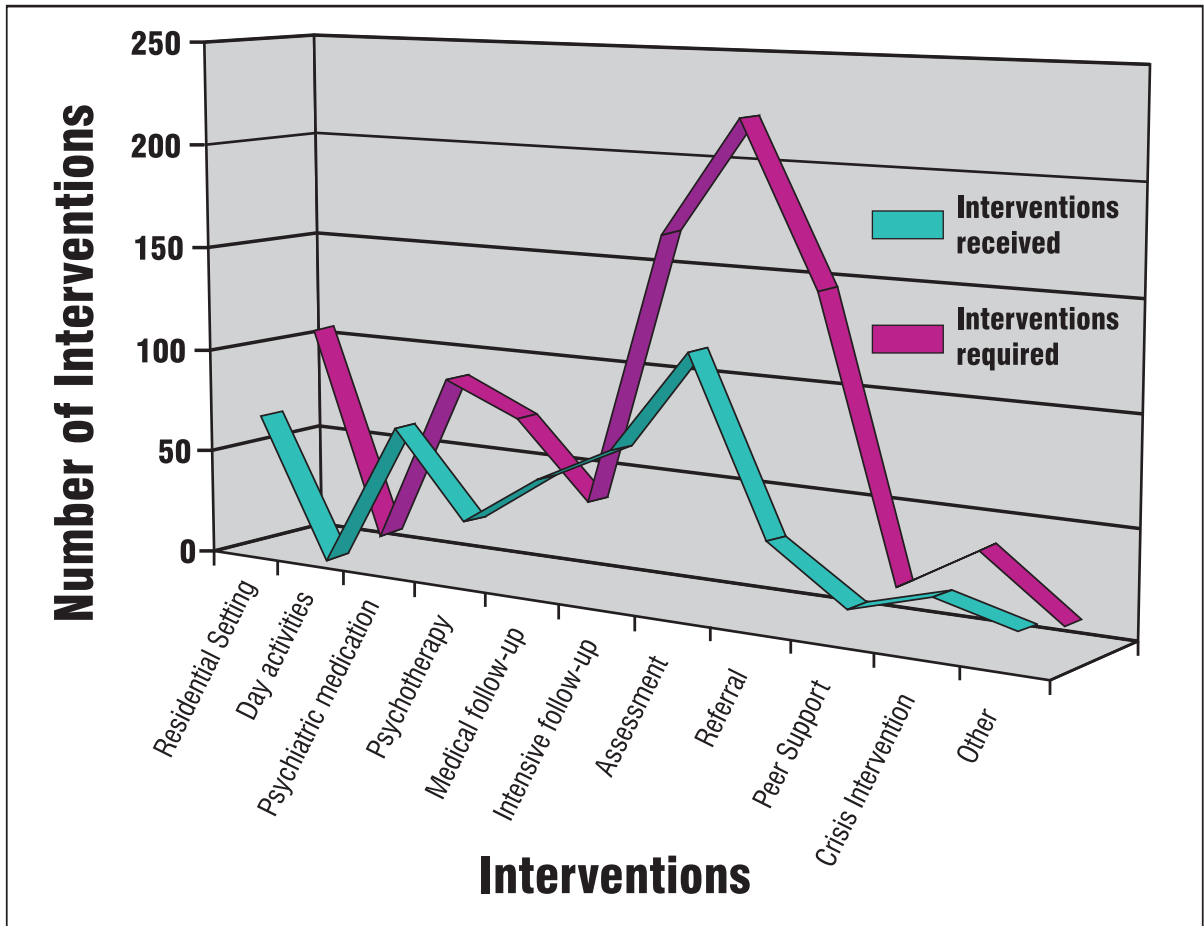
**Table 8 -
Discrepancies between interventions received and those required**

	Interventions received	Interventions required
Psychiatric medication	51	65
Assessment	50	86
Residential setting/hospital/ detox centre	38	70
Medical follow-up of physical condition	35	44
Case follow-up	34	71
Referral	27	69
Psychotherapy	19	48
Crisis intervention	18	24
Peer counselling	13	12
Other	9	10
Day activities	1	4

The types and levels of services needed to deliver the required interventions identified earlier, and the combination of those services, are shown on the ribbon chart below. We note a significant difference between services received and required in the areas of 1) assessment and psychiatric medication, 2) provision of an intake service such as hospitalization or a space in a detox centre or residential setting, 3) intensive follow-up with outreach, 4) referral to another service, and 5) provision of psychotherapies. We should point out that what is needed here is a combination of interventions and sectors, rather than intervention by one lone service sector.

The response to the difficulties identified must include adequate, effective interventions and must be delivered by health services and social services. We attempted in our recommendations to project service requirements on the basis of the individual needs identified in the case analyses. Referring to each individual case, we also sought to identify systemic deficiencies in local and regional setups and single out those cases requiring provincial action. We further tried in our recommendations to focus on the cases at hand as much as possible instead of trying to address all systemic problems.

**Graph 4 -
Differences between interventions received and required**



Analysis of the interventions and services offered in various sectors revealed the deficiencies in interventions and operation at the local, regional and provincial levels. Table 9 summarizes our findings. We first observe needs related to training, which must be offered to practitioners in particular and then to the public at large. The responsibility for this recommendation lies at the provincial level, but practitioners must be trained regionally or even locally. The practitioners' training needs include better identification, treatment, management, follow up and referral for depression, addiction and suicidal behaviours. Second-line mental health and addiction practitioners require training in best practices to deal with clients presenting comorbid problems. As for members of the general public, it seems that they are fairly good at recognizing the signs of distress but are not entirely comfortable proactively directing a suicidal person suffering from depression or addiction to social and health services. A promotional campaign targeting such behaviours could be effective.

The next systemic needs shown in Table 9 – some of which stand out strongly – were identified in almost 40% of the cases. They highlight local and regional needs for coordination and continuity between specialized mental health and addiction services. Such coordination is needed between specialized services, but also, in suicide crisis or addiction situations, between front-line psychosocial and medical services, Emergency services, and police services, for persons presenting complex problems, especially comorbid addiction and

mental disorders. We note many difficulties with regard to coordination and follow-up among the different services. These difficulties often arise through lack of control and failure to assign a fixed point of responsibility (a key practitioner) within care teams. The result is lack of continuity between services, lack of follow up with patients and their families, and lack of coordination with regard to the order in which services are offered to patients. This absence of coordination translates into disengagement on the part of patients. At the same time, given the lack of an outreach policy, practitioners are not encouraged to follow through on cases in an effort to re-engage patients in their treatment. Seeing these needs for coordination and continuity, in more than 27% of the cases, we have made recommendations at the provincial level to remedy deficiencies in governance. These recommendations target policies aimed at the joint involvement of specialized mental health and addiction services, but also front-line psychosocial and medical services and legal and police services, in establishing a series of regional and local protocols to ensure coordination, continuity, the establishment of fixed points of responsibility through the presence of a key practitioner, the establishment of prioritization of actions, treatments, referral, case follow up, and outreach if necessary, for individuals presenting comorbid mental disorders with or without a suicide-related problem. A proactive approach and coordination in cases involving complex clinical and social problems will in particular affect practices often carried out in silo mode between the different types of services and will have to be reinforced by practitioner training as indicated earlier.

**Table 9 -
Main local, regional, and provincial deficiencies revealed by the 102
suicide cases**

Needs	No. of cases where this need was identified	Purpose of Intervention
Training	49	Depression-suicide risk and importance of seeking help
Coordination	8 33	Continuity of patient care and follow-up Coordination of cases presenting multiple problems
Governance	7 6 14	Proactive outreach services and intensive follow-up in community Gatekeepers/outreach for addiction intervention and follow-up Treatment protocol for multiple problems (alcohol-depression-suicide-health)
Funding	6	
No recommendation. Everything had been done		28 cases
Cases on which panel did not comment		5 cases

One final comment concerning a limitation of our study, which points out basic needs but does not systematically examine systemic issues. We mentioned funding issues in six instances as the reason given for the lack of a program (e.g., intensive team follow up program or a day hospital program), but our approach does not enable us to evaluate what the major recommendations arising from the preceding findings would mean in the way of additional funding or, even more, the restructuring of services as part of the renewal of health and social services in New Brunswick.

It should also be noted that, in 28% of the cases, social and health services did all they could.

Lastly, on the basis of all the information above, the research team calculated a level of predictability in relation to possible prevention for each of these cases, on a scale of 1 to 5. The predictability estimates show that close to 22% of the suicides would have been very hard to prevent (1 and 2), 63% of them had elements suggesting that they could have been prevented (3 and 4), and 12% of them could have been avoided (5).

The service deficiencies relate mainly to cases where the suicide involved multiple problems and should have been foreseen through interventions such as referrals to other services, more extensive assessment, intensive follow-up actions and services in a residential setting (including hospitalization for psychiatric care) or an addiction treatment centre.

Recommendations

The researchers make the recommendations following a series of discussions with the panel members, who considered all of the findings presented in this report.

Governance axis

Develop and agree upon regional protocols for systematic coordination and management for all front and second-line practitioners involved in the case files of persons suffering from addiction and mental disorder, with or without a suicide problem, in order to proactively refer those persons to appropriate resources, encourage them to stay in treatment, coordinate that treatment, maintain a fixed point of responsibility, provide follow up and use an outreach approach if necessary. Achieving the objectives of this axis involves developing a provincial policy for addiction prevention and treatment, in conjunction with the policy on mental disorders, pursuant to the principles of hierarchy of care and areas of jurisdiction.

Intervention axis

Improve the availability, accessibility and relevance of treatment services for addicts and persons with multiple mental health, addiction and suicidal behaviour problems.

Prevention axis

Implement preventive measures to better reach, identify and intervene with persons at risk of suicide and persons with mental disorders and addictions, whatever their age group. Make family/friends, peers and the community more aware of the importance of getting persons presenting suicide-related problems, mental disorders and addictions to seek help from, and maintain contact with, health and social services.

Evaluative research axis

Maintain an evaluation protocol throughout the implementation process to assess the modification of the practices proposed herein.

These recommendations are based on a series of findings emerging from our analysis of mental health problems and life trajectories, and the summary of services received and required. We call special attention to the following:

- In support of the recommendations for coordination and continuity between mental health and addiction services: we note that alcoholism or an addiction problem was identified in more than two-thirds of the cases, while depression was found in almost half of them. Despite earlier contacts with addiction services, there had been a strong dropout rate, meaning that only 10% of the individuals were in contact with those services in the year prior to their death. Interventions in terms of detox centres, counselling and specific psychotherapies, often combined with treatment for depression, were identified among the unmet needs.

- In support of our recommendations for provincial interdepartmental guidelines for service coordination and outreach: in close to 10% of the cases, there was a police intervention in the final year, while in close to 20% of the cases, there was a police intervention at some point in the subject's life owing to specific addiction, depression or suicide-related problems. The needs for coordination and continuity in over 27% of cases prompted us to suggest, at the provincial level, recommendations intended to remedy governance deficiencies. These recommendations target policies aimed at the joint involvement of specialized mental health and addiction services, but also front-line psychosocial and medical services and legal and police services, in establishing a series of regional and local protocols to ensure coordination, continuity, the establishment of fixed points of responsibility through the presence of a key practitioner, the establishment of prioritization of actions, treatments, referral, case follow up, and outreach, if necessary, for persons presenting comorbid mental disorders with or without a suicide-related problem.
- In support of the recommendations concerning the training of all practitioners to increase the capacity for identification, treatment and follow-up of problems relating to depression, addiction, mental disorders and suicide: through better training, general practitioners working alone or together with second-line mental health or addiction services could put in place potentially more effective treatments for depression.
- In support of prevention through early treatment of addiction and mental health problems: we note that substance dependence problems were identified in more than two-thirds of the suicide deaths. While suicide prevention calls for more concerted actions between specialized mental health and addiction services, as well as access to addiction services, the life trajectories in the cases studied show that dependence problems could have been addressed earlier. Moreover, population surveys suggest that the majority of individuals suffering from some form of dependence receive no treatment at all. These observations prompt us to recommend increasing specialized and front-line addiction treatment services and establishing a more comprehensive policy to develop prevention and early intervention by specifying the hierarchy of care and the necessary training for practitioners and the public at large.

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