





 Conseil Crie de la santé et des services sociaux de la Baie James
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 Cree Board of Health and Social Services of James Bay

Circumstances and Prevention

 RÉGIE RÉGIONALE
DE LA SANTÉ ET DES
SERVICES SOCIAUX
DE MONTRÉAL-CENTRE
Direction de la santé publique



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Cree Board of Health and Social Services of James Bay

Suicide and Parasuicide among the Cree of Eastern James Bay, Canada

Circumstances and prevention

September 1998

Produced by the *Module de Prévention des traumatismes* of the *Écologie humaine et sociale* unit (Maisonnette-Rosemont Hospital) and the Public Health Module, Cree region of James Bay (Montreal General Hospital), in collaboration with the Cree Board of Health and Social Services of James Bay.

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Dépôt légal : 3^e trimestre 1998
Bibliothèque nationale du Québec
Bibliothèque nationale du Canada

ISBN : 2-921749093-1



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Revision : Dr Elizabeth Robinson and Mr Robert Imrie of the Public Health Module, Cree Region, and Dr Gordon Trueblood of Health Canada.

Funding : Cree Board of Health and Social Services of James Bay ; ministère de la Santé et des Services sociaux du Québec. Funding for Mme Gros-Louis was supplied in part by the Program for Careers in Health for Indians and Inuits, Health, Canada.

Special thanks : Dr Elizabeth Robinson, Director of the Public Health Module, Cree Region, Mr James Bobbish, Director, Mr Steven Bearskin, former Director, and Mr Richard St-Jean Director of Research, all of the Cree Board of Health and Social Services of James Bay; and Dr Joyce Pickering for preparing a summary of the report.

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Cover illustration : An adaptation of a painting by Margaret Orr, a Cree artist from Chisasibi, James Bay. She kindly allowed us to use her art to provide a unifying theme for the series of reports from the Cree Injury Study. The Canada goose is a symbol of Cree life and culture. Their upward flight evokes a sense of freedom and suggests traditional values guiding the way to the future. Just as the adult geese are vigilant and protect their young from harm, the Cree family, community, and nation must provide a secure environment for everyone.



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INTRODUCTION

Suicide comprises a range of severity from minor suicide gestures that pose relatively little threat to life to highly lethal acts (Diekstra and Gulbinat, 1993). In many cases, as will be seen from the data, suicide, parasuicide, and suicidal ideation appear to arise from an inability to communicate with others during acute interpersonal crises or to deal with chronic stressors in the home or community. Personal factors such as alcohol intoxication are strongly associated with suicide and parasuicide. The potential lethality of the method used may affect whether the victim survives. Hence, a significant consideration in prevention is limiting impulsive access to highly lethal agents such as firearms.

Definition of suicide & parasuicide.

"Suicide occurs when an individual takes his/her own life. It is literally self-murder. Parasuicide occurs when an individual inflicts some harm upon himself/herself giving the impression that s/he intended to take his/her own life. The term 'parasuicide' is used in preference to the term 'attempted suicide', as many researchers believe that the intention of a parasuicide often is not to take one's life, but to make a plea for help (Frankish et al, 1993)". The methods used for suicide and parasuicide range in lethal potential from ingestion of a few pills of low toxicity to a self-inflicted gunshot wound with a large-bore firearm.

Suicidal ideation.

This includes thoughts that range in severity from intermittent feelings that life is not worth living to organized plans for suicide.

Intentional versus unintentional injuries.

Intentional injuries involve incidents where a person committed an act with the intention of harming themselves or another person. Thus suicides, parasuicides, and assaults are considered intentional injuries, while most injuries from road crashes, falls, and other so-called "accidents" are unintentional injuries.

Suicides and parasuicides are described by activity at the time of the incident, by personal, equipment (method), environment, and time factors, and by clinical details. This information provides a basis for various interventions to change modifiable risk factors and activities. The reader should also refer to the special report on firearm injuries, which contains supplementary details for firearm suicides (Barss, 1998).



METHODS

Information on deaths of Cree residents of Cree communities of Eastern James Bay was obtained from coroners' reports, vital statistics, lists of beneficiaries of the James Bay agreement, and special mortality interviews with families of persons who died by injury during 1982-91 (Damestoy, 1994). Data are reported by calendar years. A brief update of the number of suicides during 1992-94 was also made.

Information on hospitalizations for residents of these villages was obtained by analysis of the Quebec hospitalization data for the 10 year period 1982-92. Data are by fiscal years, i.e., April 1 to March 31. Hospital records were later reviewed to confirm the diagnosis and to obtain circumstances for the 91% (72/79) of hospitalizations for parasuicide that occurred in the 4 local hospitals and in two main McGill University referral hospitals in Montréal used by the Cree Board of Health & Social Services, James Bay (CBHSSJB).

For hospitalizations for parasuicide, a specific questionnaire was used to include details similar to those for the mortality interviews and in the Santé Québec Cree health interview survey. The results do not include details for the 9% (7/79) of cases that were hospitalized in non-survey hospitals, since their records could not be reviewed. Inuit victims, mainly from Great Whale, were identified by their language specified in the chart and/or by family name, and were excluded from analysis.

There were 37 hospitalizations originally classified as parasuicides by hospital coders that were also coded as parasuicide for the purpose of this study after a detailed review of the hospital files. 21 cases originally classified by hospital coders as of undetermined intent, 9 cases originally classified as unintentional injuries, and 5 cases that had never been assigned a code for external cause were reclassified as parasuicides after a review of the hospital records. Thus, the number of parasuicides after a review of hospital records for all injuries doubled from 37 to 72. Details of reclassified cases are included in the annex at the end of the report.

There were another 7 possible parasuicides hospitalized from Cree communities in hospitals other than the six hospitals where records were reviewed. These included 4 coded as parasuicide by medication and 3 as poisonings of unspecified intent by medication or domestic gas. No details are available nor were the diagnoses confirmed. On the basis of the age of the victims, these cases are all presumed to have been parasuicides and are included only in the figure for rates by age and sex. Nine of the hospitalizations for parasuicide represented a transfer from one hospital to another for more specialized treatment. These incidents were counted only once.



RESULTS

DEATHS FROM SUICIDE

There were 10 deaths from suicide during the ten-year study period 1982-1991. Suicide ranked third as a cause of death from all types of unintentional and intentional injuries among males and fifth among females. Drowning and motor vehicle injuries ranked first and second for the two sexes combined.

Personal factors

- **Age et Sex :** Nine were males and 5 of these were between 25 and 39 years old. The death rates per 100,000 person years were 22 for males (95% CI 10-42), 2 for females (95% CI 0-14), and 12 for both sexes combined (95% CI 6-22). [Note : Person-years refers to the number of people in the population multiplied by the number of years during which they were at risk of injury. For example, if an average of 10,000 Cree were monitored for 10 years, there would be 100,000 person-years at risk. CI is an abbreviation for confidence interval. Since in a small population a death rate can vary from year to year, confidence intervals are used to indicate the possible range of upper and lower limits for the actual rate with a 95% degree of certainty.]
- **Alcohol :** A history of alcohol ingestion was available for 8 of 9 victims and 7 of the 8 had ingested alcohol prior to the incident, with 4 being visibly intoxicated.
- **Other personal factors :** Information was available on personal situations facing 6 of the victims. All had serious personal problems at the time of the incident, including familial or marital difficulties for 3 victims and mourning for 1. Two victims were described as depressed, but it is unknown whether this was an acute reactive or chronic depression. There had been at least one previous parasuicide by one of the victims.

Equipment factors

Five of 10 suicides resulted from gunshot wounds, and the remainder from drowning or hanging. In at least 3 cases, the victims died by a gunshot wound from a hunting rifle that had been stored unlocked in the home; all of these 3 victims were intoxicated by alcohol.

Environmental factors

None of the suicides appeared to be linked to other preceding suicides, i.e., there was no evidence of any epidemic spread or so-called "clustering" of suicides.



Comparison with other populations

- **Canada:** In 1991 in Canada, suicide ranked first as a cause of injury death among males and third among females (data from Statistics Canada, 1991). For the period 1982-91, the Cree suicide rate for females and for both sexes combined was about the same as for the general population of Canada in 1986, while the rate for females was about one-half the rate for all Canadians. This information is expressed as SMRs (standardized mortality ratios) of: 1.2 for Cree males (95% CI 0.5-2.3), 0.5 for females (95% CI 0.0-2.8), and 1.1 for both sexes combined (95% CI 0.5-2.0). [Note : The SMR adjusts for the younger age of the Cree population as compared with Canada. An SMR of 1 means that the suicide rates were the same among the Cree as among all Canadians, an SMR of 2 means that the Cree rates were twice as high, and an SMR of 0.5 means that Cree rates were only half as high as those for all Canadians.]
- **Northwest Territories :** The suicide rates among Cree males and females were substantially lower than among residents of the Northwest Territories during 1982-91. The SMRs are : 0.4 for Cree males (95% CI 0.2-0.8), 0.2 for females (95% CI 0.0-1.1), and 0.4 for both sexes combined (95% CI 0.2-0.7).
- **Nunavik Inuit :** The overall suicide rate for all ages and both sexes combined of Inuit in northern Québec was reported by local public health authorities to be 57 per 100,000 population per year, with 17 suicides during the period 1987-90, with 88% of deaths in persons of less than 25 years of age (Boyer et al., 1994). However, a more recent survey reported a rate of 102 deaths per 100,000 population during 1989-93 (n=39 suicides) (Schnarch, 1995). The suicide rate among the Hudson Bay Inuit during 1982-1991 was reported to be 55 per 100,000, with 90% of deaths in the 15-25 age group. Although not all of these suicide rates are for exactly the same time periods as the Cree study, Inuit suicide rates are evidently several times higher than the suicide rate of 12 per 100,000 among the Cree for the period 1982-91 and the rate of 18 per 100,000 for the entire population of Québec during 1987.

Update

Since the field work for this study was completed, there were at least another 5 Cree deaths from suicide during 1992, 3 during 1993, and none during 1994. Four were from firearms, and the others from hanging, drowning, and other methods. With the exception of a single victim in the 30-34 age group, all victims were young people between the age of 13-22 years and half were males. 3 deaths occurred in Chisasibi, all by firearm, 2 in Nemaska, and 1 each in Mistissini, Waswanipi, and Ouje-Bougoumou. Data for 1992-94 may be incomplete, since the only data sources used were Cree health centre records of deaths.



HOSPITALIZATIONS FOR PARASUICIDE

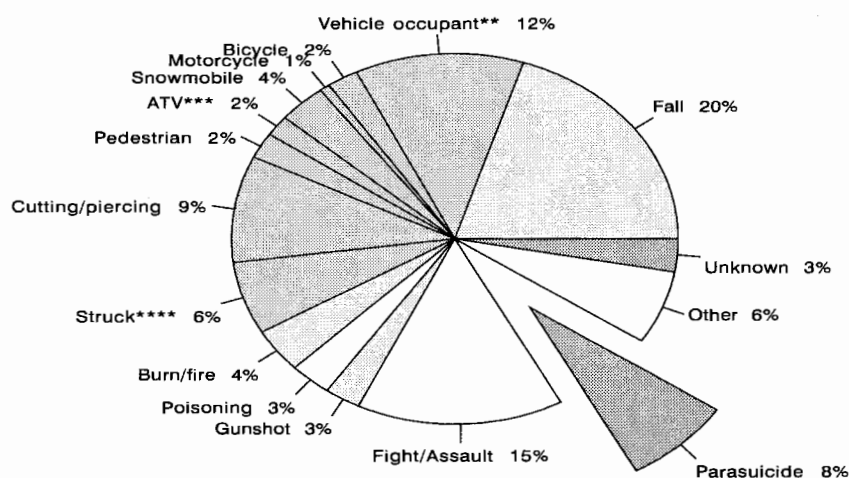
The information included in this section is based upon 72 patients hospitalized in the 6 study hospitals during 1982 to 1992. Seven patients hospitalized in other hospitals are included only in Figure 3, and are described in Annex II.

RELATIVE IMPORTANCE OF PARASUICIDES AS A SOURCE OF INJURY

Parasuicide accounted for 8% of hospitalisations for all unintentional and intentional injuries (*Figure 1*). While falls, traffic injuries, and assaults were the three most frequent sources of hospitalizations for injury, parasuicide ranked fourth along with cutting and piercing wounds. Parasuicide represented about one-third of all intentional injuries, with assault accounting for the remainder.

Figure 1

***Hospitalizations due to an injury by type of injury,
Cree of Eastern James Bay, Canada 1982-92 (n=910*)***



*There were another 288 injury cases outside the 6 survey hospitals; approximately 80% were Cree and 20% were Inuits or Caucasians; **Includes on-road vehicle such as car, truck & van; *** All-terrain vehicle includes 3 and 4 wheelers; ****Struck by/against falling object, stationary object or person
Source: Cree Injury Study, 1996

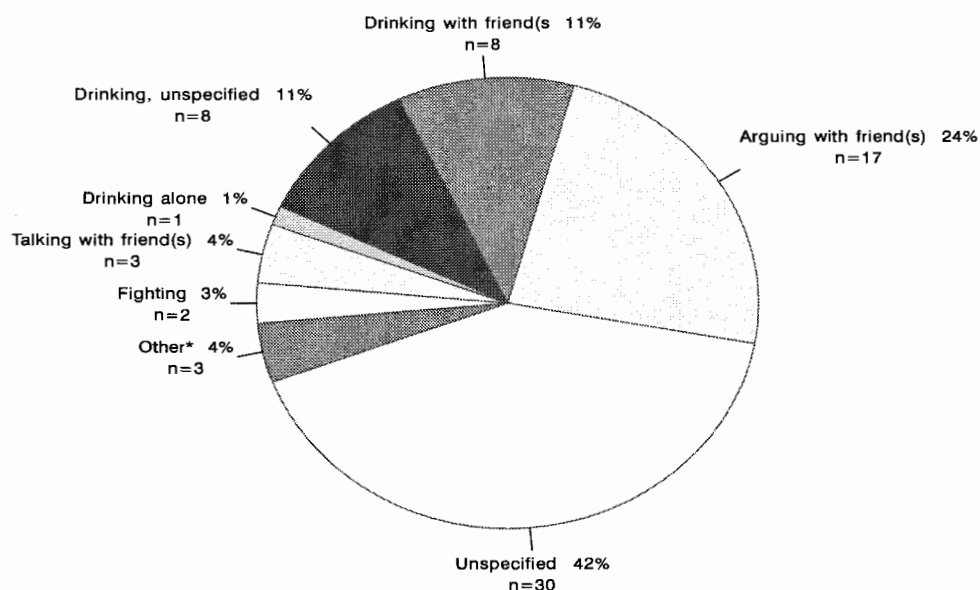


ACTIVITY & INCIDENT AT TIME OF PARASUICIDE

Drinking alcohol alone or with friends accounted for 23% of activities preceding the parasuicide, arguing with friend(s) for another 24%, various other causes for 12%, and in 42% the activity was unspecified (*Figure 2*).

Figure 2

***Hospitalizations for parasuicide by activity prior to the incident
Cree of Eastern James Bay, Canada 1982-92 (n=72)***



* Beaten by parent; going for detoxification; rejected by girlfriend
Source: Cree Injury Study 1996

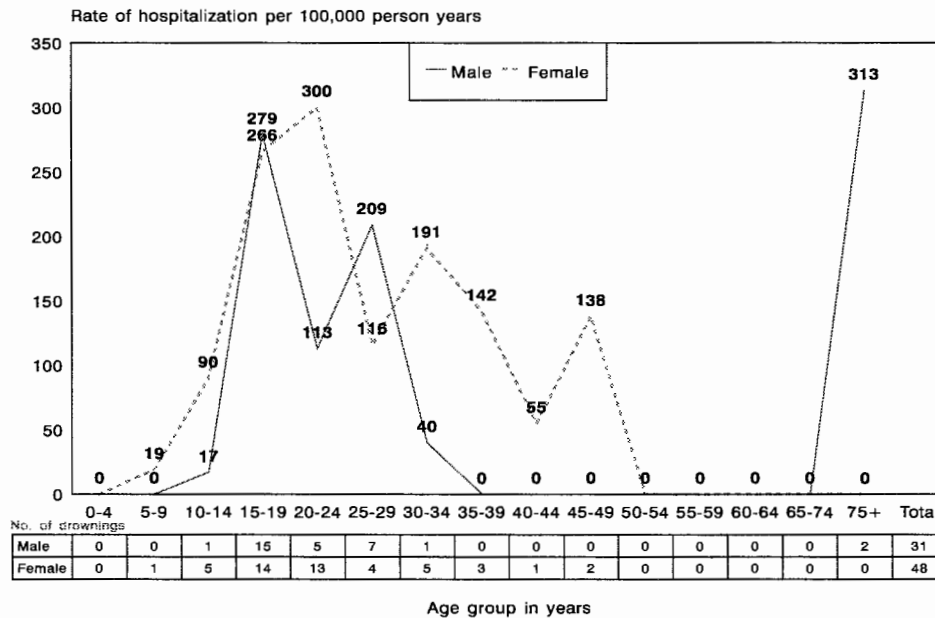
PERSONAL FACTORS

- **Age & Sex :** There were 31 male victims of parasuicide, who were concentrated in the age groups between 15 and 29 years of age, with the exception of 1 victim in the 10-14 year group and 2 elderly in the 75+ group (*Figure 3*).



Figure 3

**Rates and numbers of hospitalizations for parasuicide by age & sex
Cree of Eastern James Bay, Canada 1982-92 (n=79)**



Source: Cree Injury Study 1996

There were 48 female victims, for whom the age range was somewhat broader, from 10-39 years, with a single victim in the 5-9 year age group and 2 in the 45-59 group. Unlike as for other injuries, the however, number of female victims exceeded that for males; however, lethal methods were more frequently used by males.

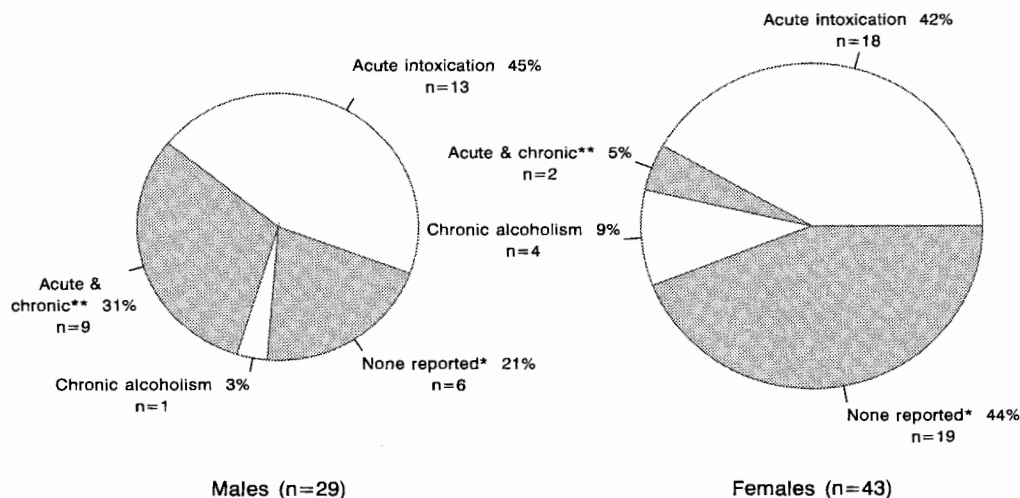
Legals drugs

- Alcohol Alcohol intoxication was associated with at least 76% of parasuicides among males and 47% among females (Figure 4). The combination of acute alcohol intoxication and chronic alcohol abuse was frequently reported for males. An actual level of blood alcohol was reported for only 3% of victims. For at least 12 victims, a pattern of binge drinking was reported; 11 were males. Alcoholism of the victim was reported as a chronic stressor for 10% of males and 12% of females. At least 88% of hospitalized victims of parasuicide by firearms and 75% by cutting instruments were reported to have been intoxicated or suspected to be at the time of the incident. In contrast, 53% of victims of parasuicide by medication were intoxicated or suspected to be at the time of the incident. This difference may in part reflect the fact that males tend to use more lethal methods and to abuse alcohol more frequently than females.



Figure 4

**Hospitalizations for parasuicide by sex by use of alcohol
Cree of Eastern James Bay, Canada 1982-92 (n=72)**



* Neither acute alcohol intoxication nor chronic alcoholism mentioned in hospital record
 ** Acute & chronic = acute alcohol intoxication & chronic alcoholism both reported in record
 Source: Cree Injury Study 1996

In addition to alcohol consumption by the victim, chronic alcohol consumption by another person was a problem for many victims, and was reported as a contributing factor in at least 15% of parasuicides, including 10% of males and 19% of females. These chronic drinkers included a husband/boyfriend in 55%, a parent or other family member in 36%, and a wife in 9%.

- Tobacco Cigarette smoking is associated with suicide, depression, alcoholism and other related problems (Hemenway et al., 1993; Shaffer, 1993; Lavallée et al., 1994). A smoking history was available for only 25% of victims of parasuicide. Of these, 83% appeared to be addicted to nicotine and smoked every day. Of 15 victims who smoked every day, at least 67% were intoxicated by alcohol or suspected to be at the time of their parasuicide.

Illegal drugs

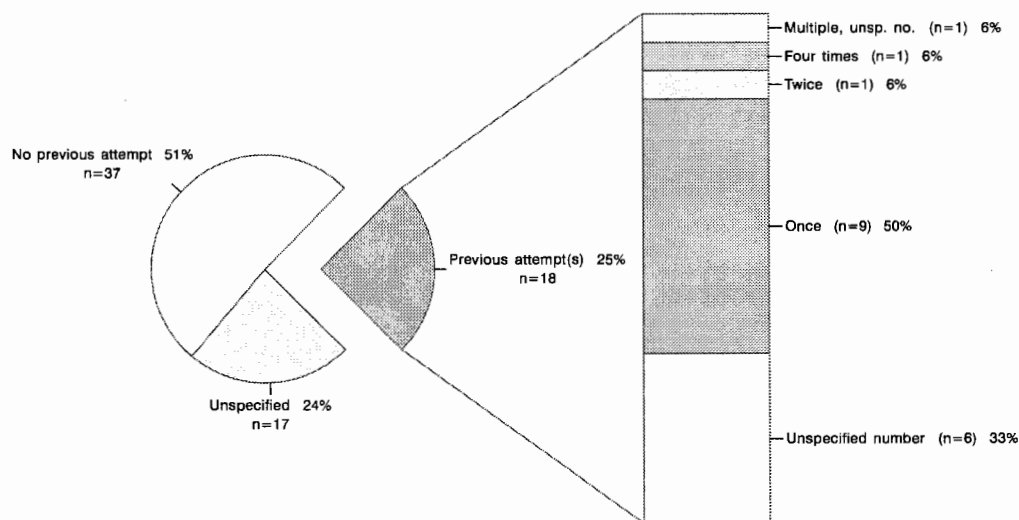
At least 11 victims were reported to be users of illegal drugs; all were males. Frequency of use ranged between more than once per week, 1-3 times per month, to less than once a month. Use of hashish was reported for 8, cocaine for 1, and unspecified drugs for 2. However, in only 1 case was use of an illegal drug (hashish) prior to the parasuicide reported.



- **Occupation** Housekeepers made up 42% of victims, students 31%, the unemployed 7%, and various other occupations the remainder, including 11% unknowns.
- **Marital Status** 73% of victims were single, 25% married or living common-law, 1% widowed, and 1% unknown.
- **Mental Health** At least 25% of victims had a history of a previous parasuicide, and of these, at least 17% had a history of more than one previous parasuicide (*Figure 5*). For 54% of victims, there was no psychiatric diagnosis in the record, while for the remainder, there were a variety of diagnoses (*Figure 6*). Depression of various types was noted for 18%, with a reactive depression as a result of an acute problem the most frequent. In only 7% of incidents was there a report of a chronic mental illness such as schizophrenia, manic-depressive psychosis, or chronic depression of unspecified type. Thus, for the majority of incidents, there was either no reported psychiatric illness, or an inability to cope with various types of acute interpersonal stressors.

Figure 5

Hospitalizations for parasuicide by previous attempt(s)
Cree of Eastern James Bay, Canada 1982-92 (n=72)

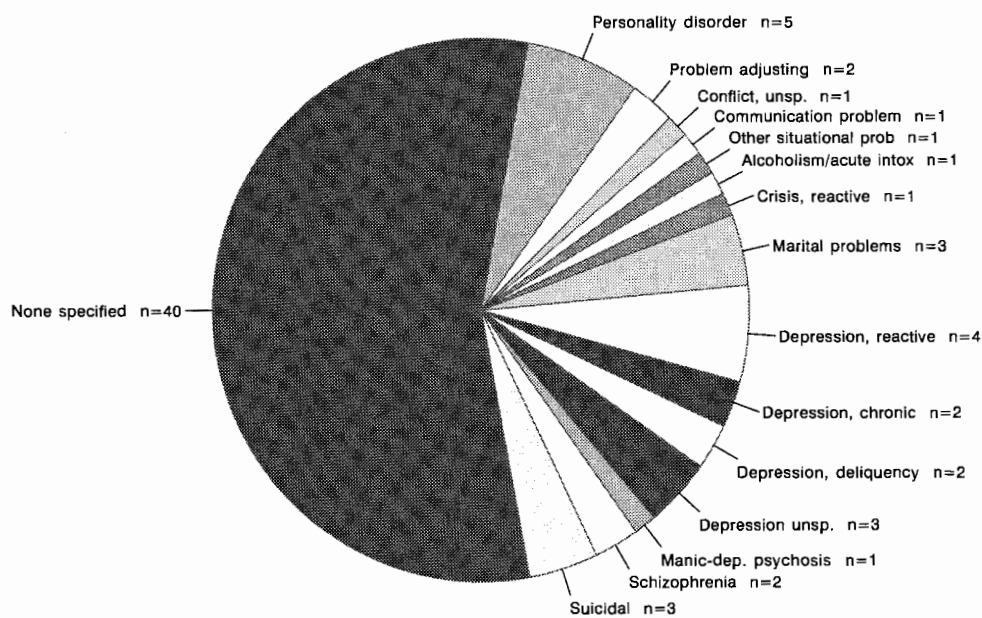


Source: Cree Injury Study 1996



Figure 6

**Hospitalizations for parasuicide by psychiatric diagnosis
Cree of Eastern James Bay, Canada 1982-92 (n=72)**



Source: Cree Injury Study 1996

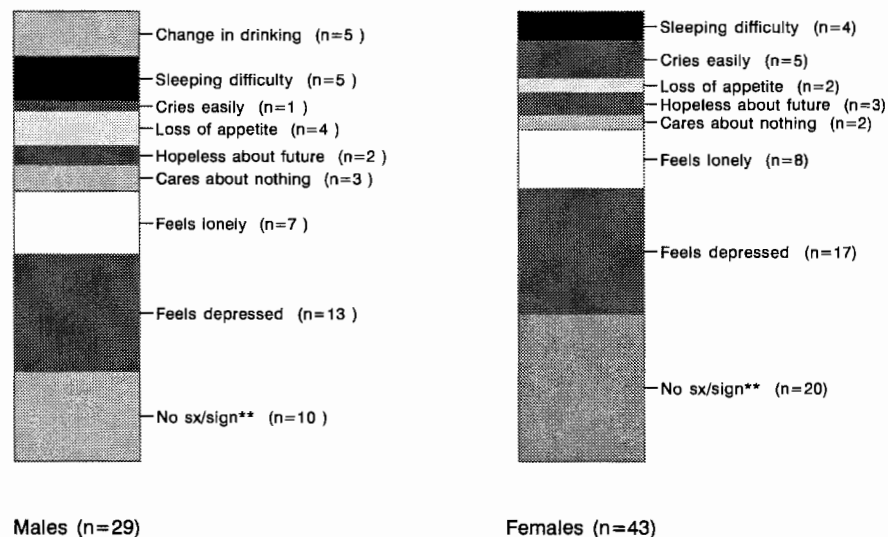
The symptoms of depression noted on the hospital records of male and female Cree victims are of interest for detecting individuals who may need help (*Figure 7*). Aside from a general feeling of depression, other changes that were reported included feeling lonely, not caring about anything, feeling hopeless about the future, difficulty sleeping, and loss of appetite. Among females, crying easily was reported, while among males a change in drinking pattern was noted, usually increased consumption of alcohol. In 42% of victims, there were no symptoms or signs of depression recorded in their hospital record.

Severe symptoms such as loss of appetite and difficulty sleeping appeared to be more frequent among victims of parasuicide by firearm than by other agents such as medications; however, it is possible that this might have been due to more complete inquiry with more lethal methods. Information about one or more symptoms of depression was available in 56-80% of records for suicide by different methods. Among males, the average number of symptoms was 3.6 for victims of firearm parasuicides versus 1.5 for parasuicides by medications and cutting instruments. Among females, the average number of symptoms was 1.7; there were no incidents by firearm. This suggests that if individuals exhibit one or more symptoms of depression other than simply feeling depressed, they may be in urgent need of help.



Figure 7

***Hospitalizations for parasuicide by sex by symptoms & signs of depression
Cree of Eastern James Bay, Canada 1982-92 (n=72*)***



* Multiple response possible: 19 with 1 symptom/sign reported; 15 with 2; 4 with 3; 2 with 4 and 2 with 5 ** No symptoms or signs of depression
Source: Cree Injury Study 1996

At least 16% of victims had had previous problems with the police; 9 were males and 3 females.

- **Acute stressors & interpersonal factors**

Information about various acute stressors such as emotional events was included in 80% of hospital records of male victims and 70% of females. The pattern was somewhat different for males and females (*Figure 8*).

For males, the most frequent problem reported were verbal arguments, a split with a girlfriend or partner, violence as the attacker, and violence as the attacked person. All five male victims of parasuicide by firearm who had reports in their hospital record of acute stressor(s) had experienced a split with a partner. Thus, special attention may be needed for males who experience such a loss. This factor affected young males between 15-24 years, but especially slightly older males between 25-34. There were only 2 suicides among elderly males of 75+ years; however, the number of deaths relative to the population of the elderly (death rate) was high. At least one parasuicide among the elderly was associated with the death of a spouse/partner.



For females, verbal arguments, moving away from family and other separations, and violence as the attacked person were most frequent.

Figure 8

***Hospitalizations for parasuicide by sex by number of reported acute stressors
Cree of Eastern James Bay, Canada 1982-92***

ACUTE STRESSOR	MALES (n = 29)		FEMALES (n = 43)	
	Number	% *	Number	% *
Verbal argument	13	45	16	37
Split with partner	10	34	3	7
Violence, victim	5	17	4	9
Violence, assailant	5	17	1	2
Moving from family	1	3	6	14
Death of someone close	2	7	3	7
Death of partner	1	3	0	0
Other separation	2	7	5	11
Serious illness	1	3	2	5
Family with illness	0	0	1	2
Suicide, family	1	3	0	0
Parasuicide, friend	1	3	1	2
Parasuicide, family	0	0	1	2
Other	3	10	2	5

* Multiple or no response possible : 22 with no reported, 26 with 1, 14 with 2, 9 with 3, and 2 with 4.
Source : Cree Injury Study 1996

A verbal argument was a reported factor for 45% of males, and involved a wife in 23%, girlfriend in 15%, friend in 23%, parent in 15%, and a brother or cousin in 15%. For females, a verbal argument was a factor for 37%, and involved a husband in 38%, boyfriend in 6%, parents in 19%, a brother or sister in 12%, and a professional such as doctor, teacher, or social worker in 19%.

For males, physical violence as victim was a reported factor for 17%, and involved a parent in 20%, friend in 20%, brother in 20%, and an unspecified person in 40%. For females, physical violence as a victim was a factor for 9%, and involved a husband in 50%, brother in 25%, and an unknown person in 25%.

For males, physical violence as an assailant (person attacking) was a reported factor for 17%, and involved a wife in 20%, friend in 20%, cousin in 20%, and an unspecified person in 40%. For females, physical violence as an assailant was a factor for only 2%, and involved someone other than a relative.



For males, acute separation was a reported factor for at least 34%, and involved a girlfriend in 50%, a wife in 10%, and unspecified persons in 40%. For females, acute separation was a reported factor for at least 28%, and involved a boyfriend in 25%, a husband in 17%, parents in 17%, and other persons in 41%. It is evident that among females, separation from family as well as from a partner was a frequent stressor, whereas for males it was mainly separation from a partner.

For males, an average of 1.9 acute stressors were reported for victims of medication and 1.0 for firearm and cutting instruments; the range of acute stressors for males was 0 to 4 and the median number was 2. For females, there was an average of 1.0 stressor, with a range of 0 to 4 and a median of 1.

Another person was reported to have contributed to the stress that led to 32% of parasuicides. These persons included a boyfriend/girl-friend/spouse for 61%, a parent for 17%, a friend for 9%, a sibling for 9%, and others for 4%.

- Chronic stressors & interpersonal factors

One or more stressors of a somewhat more chronic nature was reported for 93% of male and 81% of female victims.

For males, the most frequent problems were, in decreasing importance, a difficult home situation, a serious personal problem(s), alcoholism, chronic misunderstanding, conjugal violence, difficulty communicating feelings, experiencing rejection or disapproval, and various others (*Figure 9*); these types of problems were experienced by both younger 15-24 year olds and slightly older 25-34 year olds.

For females, the most common chronic stressors were a difficult home situation, a serious personal problem(s), experiencing rejection or disapproval, chronic misunderstanding, chronic alcohol consumption by another person, conjugal violence, difficulty communicating feelings, alcoholism, and jealousy; feeling rejected appeared to be slightly more common among somewhat older 25-34 year old women.

For males, jealousy was a factor for 10%, and involved a wife in 67% and an unspecified person in the remainder. For females, jealousy was a factor for 14%, and involved a husband in 67% and a boyfriend in 33%.

The number of chronic stressors was similar for both sexes. For males, the average number of reported chronic stressors was 2.4 for parasuicide by medication, 2.4 by cutting instruments, and 2.6 by firearm, with a range in number of reported stressors from 0 to 7 and a median number of 2. For females, the average number of stressors was 2.6, with a range from 0 to 8, and a median of 3. A difficulty in communicating feelings was reported for 4 of 9 male victims of firearm parasuicide, often with one or more other problems, but by only 1 of 21 males who used other less lethal methods.



Figure 9

*Hospitalizations for parasuicide by sex by number of reported chronic stressors
Cree of Eastern James Bay, Canada 1982-92*

CHRONIC STRESSOR	MALES (n = 29)		FEMALES (n = 43)	
	Number	% *	Number	% *
Difficult home situation	11	38	22	51
Serious personal problems	11	38	19	44
Feeling rejected/disapproval	5	17	16	37
Chronic misunderstanding	7	24	13	30
Alcoholism of victim	10	34	6	14
Alcohol abuse by another person	3	10	8	19
Conjugal violence	7	24	7	16
Difficulty communicating feelings	5	17	6	14
Jealousy	3	10	6	14
Stress, new challenge	2	7	2	5
Problems at school	2	7	1	2
Financial problems	1	3	1	2
Other	15	52	6	14

* Multiple or no response possible; 11 with no reported stressor, 17 with 1, 15 with 2, 8 with 3, 9 with 4, 5 with 5, 4 with 6, 3 with 7, and 1 with 8.

Source : Cree Injury Study 1996

Chronic misunderstandings usually involved partners or parents. 23% of male victims reported such a problem with a wife or girlfriend in 43% of cases, a parent in 14%, and others for the remainder. For female victims, 30% reported chronic misunderstandings, and in 31% of cases these involved a husband or boyfriend, in 31% a parent, and in the remainder other persons.

Chronic alcohol consumption was another stressor that was discussed above under personal factors, alcohol.

- Other personal factors

For males, there was no mention in the hospital charts of previous neglect, abuse, sexual abuse, or abandon-ment. For females, neglect as a child was mentioned twice, and abuse as a child and sexual abuse once each. [Note : These risk factors could have been underreported if the victim didn't mention it or the doctor or nurse didn't write it down.]

Impulsive behaviour was reported for 14% of all victims and a history of fighting for 6%.

Epilepsy or other causes of seizures was reported for 7% of victims of parasuicide, while there were a number of other chronic illnesses specified for another 18%. The reasons for the high



prevalance of epilepsy among the victims was unknown, but might have been because of stigmatization or shame associated with epilepsy.

5% of victims were reported to have had a permanent handicap prior to their parasuicide.

- Previous injuries

Some victims of parasuicide appeared to be "injury-prone", i.e. at increased risk of injury. The total number of previous injuries reported in the hospital records for all 72 parasuicides was 104, including 31 intentional injuries (parasuicides or assaults) and 73 unintentional (i.e., "accidents" such as falls, traffic injuries, etc.). The average number of reported previous injuries was 2.0 for patients with a history of previous injuries. There were several patients with many previous injuries, including 1 with 7 previous injuries, 2 with 6, 4 with 5, 1 with 4, and 5 with 3.

67% (48/72) of victims of parasuicide were reported to have suffered a previous unintentional or intentional injury. As noted above, 25% (18/72) had made one or more parasuicides, while another 12% had been involved in a fight and 3% had been beaten. Thus at least 40% of hospitalized victims of parasuicide had a previous history of violence to self or others. Of the persons with a history of previous parasuicide, at least 1 had been involved in a fight, while of the persons with a history of being involved in a fight, 1 had also been beaten and 1 had a history of a parasuicide.

At least 23% of victims had sustained their most recent previous injury during the 12 months preceding the parasuicide, while another 8% of the victims had sustained the injury during the 24 months preceding the parasuicide. At least 7% of the previous injury incidents were associated with alcohol intoxication.

At least 16 previous injuries had resulted from falls, and a number of these incidents involved a fall on stairs; another 3 falls had occurred from snowmobiles and a bicycle. Thus, when falls occur in healthy young adults, associated underlying problems such as alcohol abuse and emotional distress should be considered and treated as indicated. At least 6 previous injuries involved snowmobiles, including falls from snowmobiles, and there had been 2 automobile crashes with injury. Other preceding injuries included poisoning from aerosol spray and a gunshot wound.



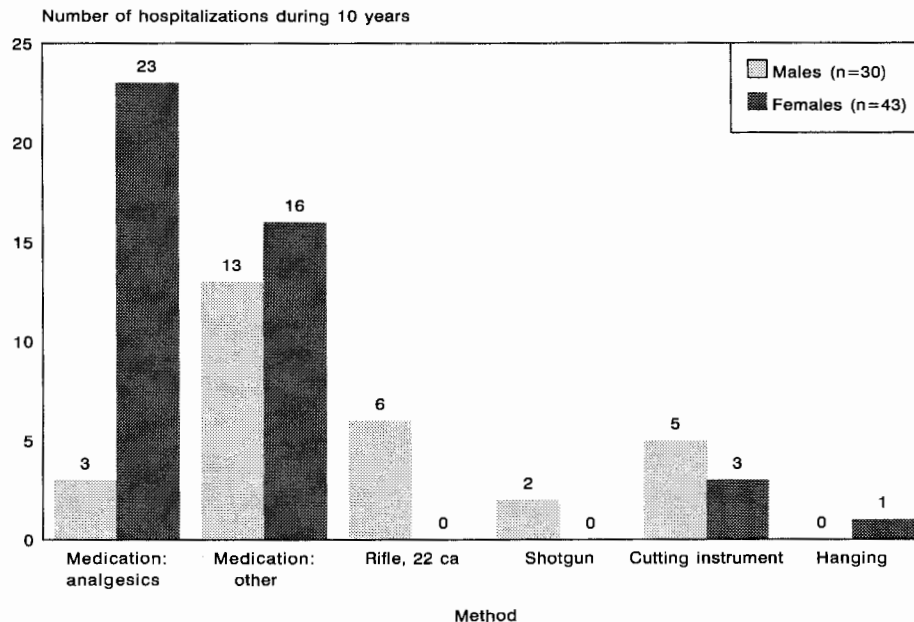
EQUIPMENT FACTORS

- Method

Ingestion of medications was the most common method of parasuicide. There was significant sex differences in the method used, with females favouring less lethal methods such as ingestion of analgesic pills such as aspirin and acetaminophen, and males favouring other medications, firearms, and cutting instruments (Figure 10).

Figure 10

*Hospitalizations for parasuicide by sex by method
Cree of Eastern James Bay, Canada 1982-92 (n=72)*



Source: Cree Injury Study 1996

Medications other than analgesics included a variety of types; however, isoniazid (INH) accounted for 45%, with some of the doses being potentially lethal. This appears to have been an unanticipated complication of a tuberculosis prevention campaign using prophylactic INH during the 1980's; 7 cases occurred during 1982-83, 2 during 1983-84, 1 per year during 1985-88, and none during 1989-92.

75% of firearms used for parasuicide were small-bore 22 rifles. Cutting instruments that were used included a knife in 71% of cases and a piece of glass in the others. As noted above, about 88% of the victims of parasuicide by firearm were intoxicated by alcohol at the time of the incident, which was substantially higher than for other types of firearm injuries such as assaults and unintentional shootings.



- Storage of lethal agents

Unfortunately, hospital staff did not record whether firearms and other potential agents of suicide had been stored in locked cabinets and rooms and whether a trigger lock had been used.

ENVIRONMENT FACTORS

- Location

Nearly all of the incidents where the location was specified had occurred in the victim's own home (*Figure 11*). Thus, secure storage of lethal agents such as firearms could have helped to prevent many of these incidents.

- Home situation

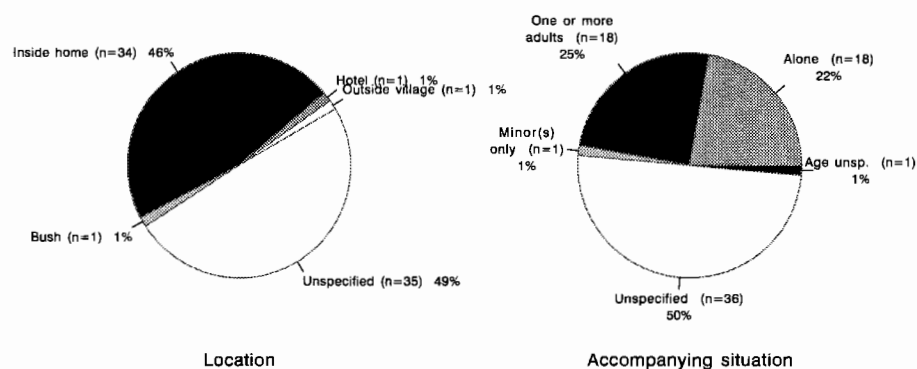
49% of victims reported living with parents or other relatives, 24% with a spouse or partner, and for the remainder, this was unknown.

- Accompanying situation

Where the information was provided, slightly more than half of the victims were with or nearby another person when the incident occurred (*Figure 11*).

Figure 11

**Hospitalizations for parasuicide by location & accompanying situation
Cree of Eastern James Bay, Canada 1982-92 (n=72)**



Source: Cree Injury Study 1996

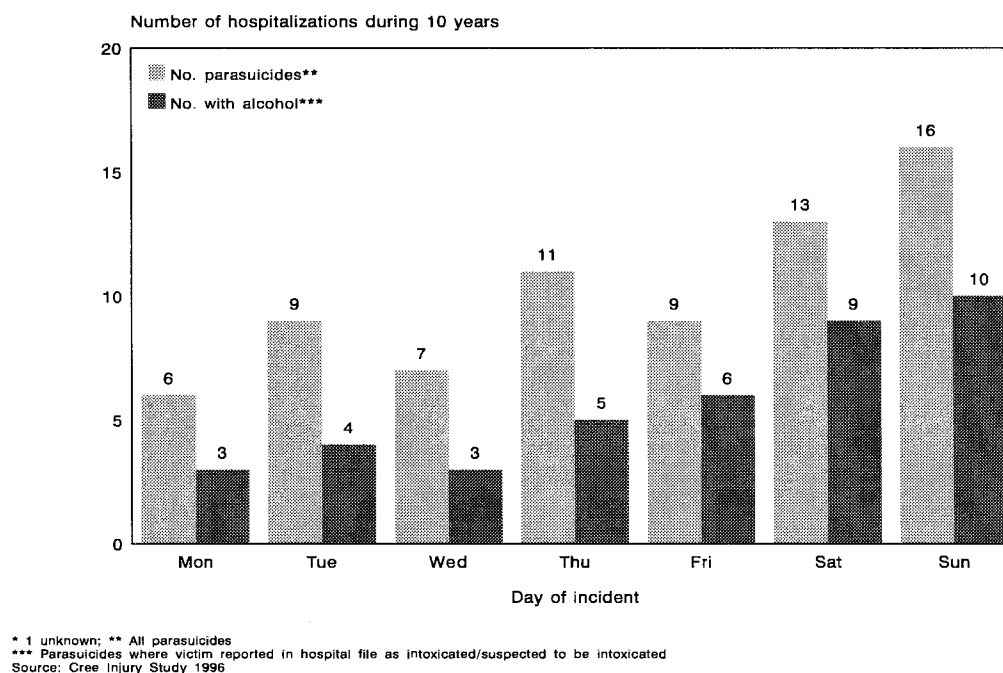


DAY OF WEEK

Parasuicides were most frequent on Sunday, with somewhat more alcohol intoxication of victims, 66%, reported for weekend days of Friday, Saturday, and Sunday, versus 47% for other days of the week (Figure 12). There were no significant differences in frequency of parasuicide by month and exact time was seldom specified, with incidents occurring both during the daytime and at night.

Figure 12

**Hospitalizations for parasuicide by day of incident & by acute alcohol
Cree of Eastern James Bay, Canada 1982-92 (n=72*)**



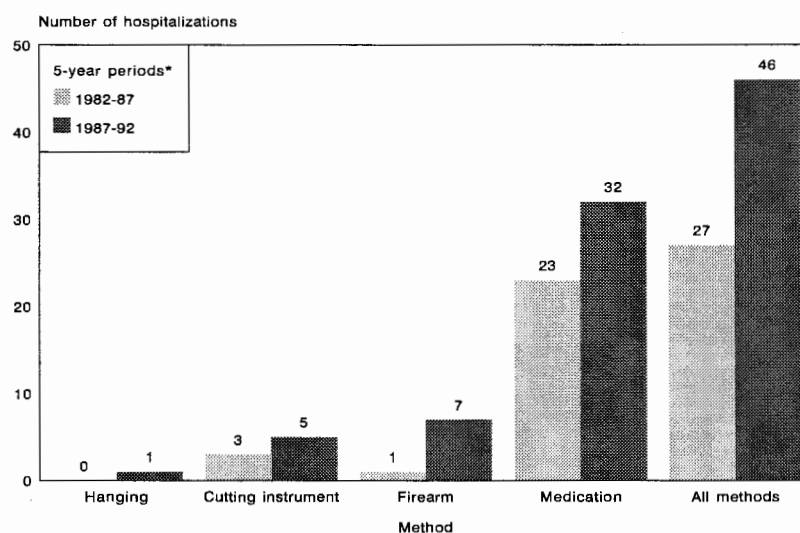
TIME TRENDS

The most important trend within the study period was the increase in number of parasuicides by firearm (among young Cree males) during the second half of the study (Figure 13). When rates adjusted for the changing age structure of the Cree population were compared for the two 5-year periods, the only male rate that showed an increase was that for firearm parasuicides, while for females, the rate for parasuicide by medication increased by about 20% during the period (Figure 14).



Figure 13

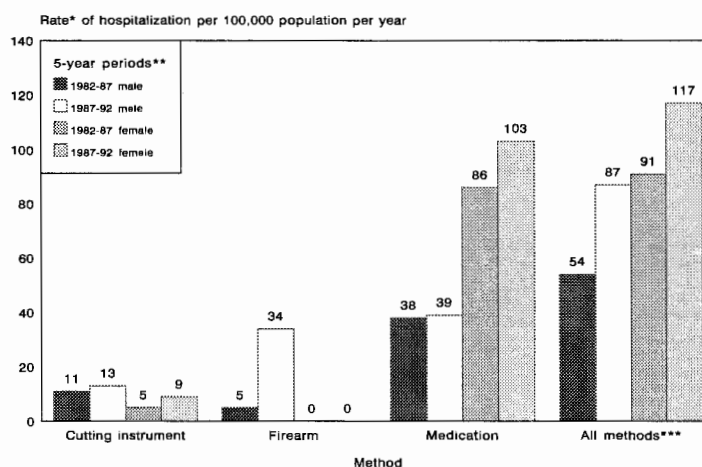
Hospitalizations for parasuicide by method by period
Cree of Eastern James Bay, Canada 1982-92 (n=72)



* Fiscal years, i.e., April 1, 1982 to March 31, 1992
 Source: Cree Injury Study, 1996

Figure 14

Hospitalization rates* for parasuicide by method by period
Cree of Eastern James Bay, Canada 1982-92 (n=72)

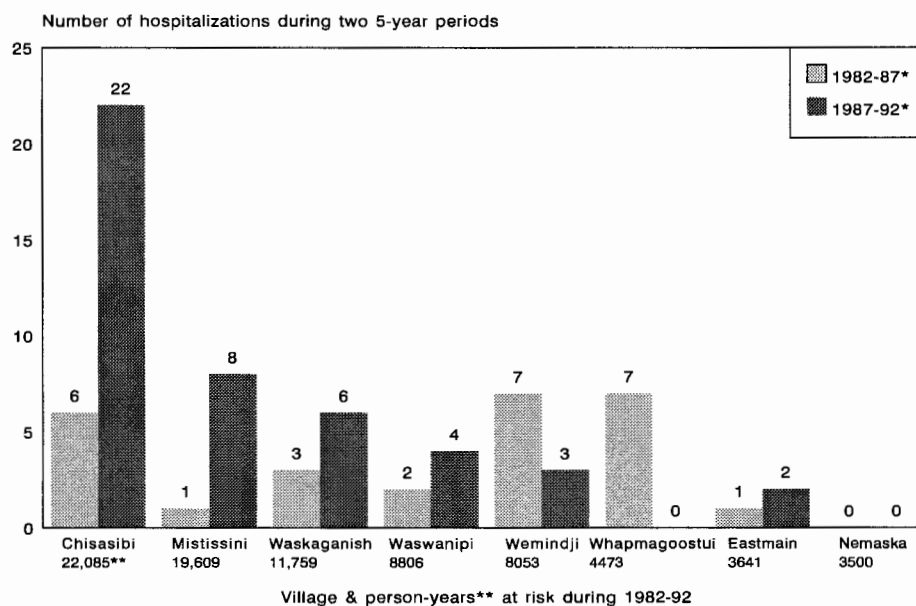


* Rate were age-adjusted to correct for differences in age structure of the population between the two periods; maximum difference between adjusted & unadjusted rates was 2%; ** Fiscal years, 1 April 1982 to 31 March 1992; *** includes 1 hanging
 Source: Cree Injury Study, 1996



Figure 15

**Hospitalizations for parasuicide by village by 5 year periods
Cree of Eastern James Bay, Canada 1982-92 (n=72)**



* Five-year fiscal periods from April 1, 1982 to March 31, 1992

** Person-years at risk in village during 1982-92 (Average population in village x 10 yrs)

Source: Cree Injury Study 1996

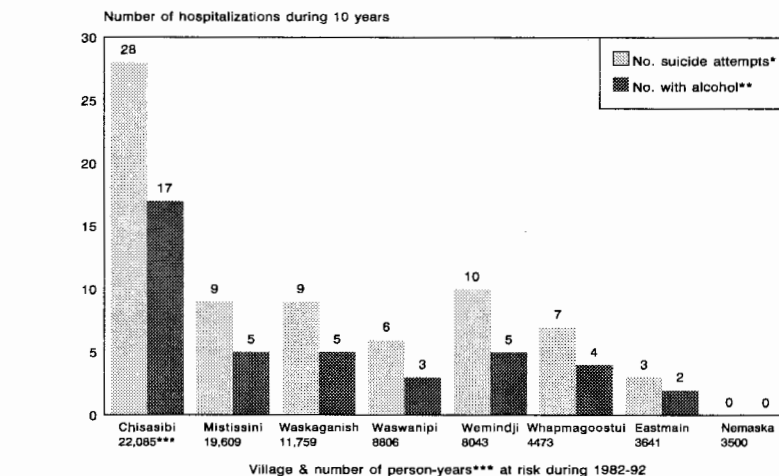
PARASUICIDES BY COMMUNITY

There were substantially more hospitalizations for parasuicide among residents of Chisasibi than of Mistissini during 1982-92 (*Figure 15*). This difference may reflect the proximity of a hospital in Chisasibi. Another possible explanation for the large number of parasuicides in Chisasibi and Mistissini could have been stress due to extensive disruption of the village and natural environment, since there was a marked increase in parasuicides in both communities during the second 5-year period of the study. However, the greatest concentration of hospitalizations for Chisasibi residents was during 1986-89, with 18 incidents during 3 years, while during 1989-92, there were 9 incidents during 3 years. There were slight increases for some other villages and actual decreases for two villages. Alcohol intoxication of the victim was reported for a majority of victims from all villages (*Figure 16*). Firearm parasuicides were most frequent in Chisasibi (*Figure 17*).



Figure 16

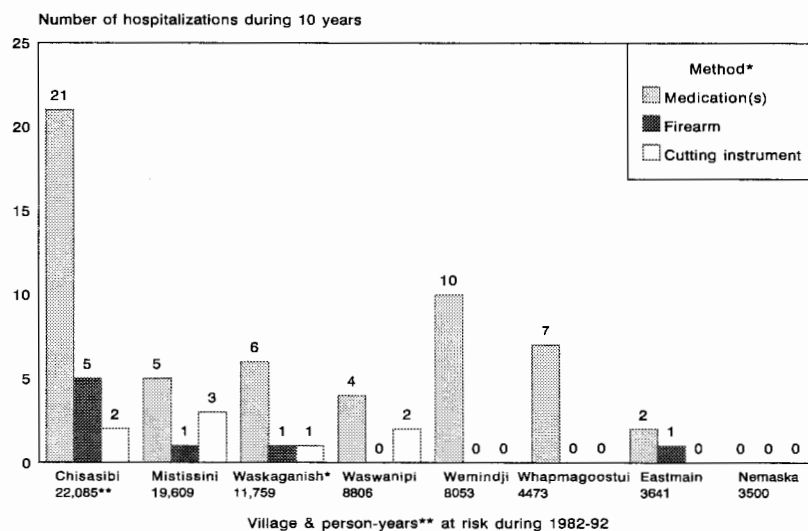
Hospitalizations for parasuicide by village & number with alcohol intoxication
Cree of Eastern James Bay, Canada 1982-92 (n=72)



* All incidents in village; ** Number of incidents with reported or suspected alcohol intoxication; 6/73 were unknown; *** Person-years at risk in village during 1982-92 (Average population in village x 10 yrs)
Source: Cree Injury Study 1998

Figure 17

Hospitalizations for parasuicide by village by method*
Cree of Eastern James Bay, Canada 1982-92 (n=72)



* There was also one parasuicide by hanging in Waskaganish
** Person-years at risk in village during 1982-92 (Average population in village x 10 yrs)
Source: Cree Injury Study 1998



CLINICAL DETAILS OF PARASUICIDES

- Type of injuries

There were 25% (n=18) of parasuicides that involved a wound(s) or a complication of a wound. There were 2 open wounds of the chest, 4 of the abdomen, 1 of the liver, 1 of the mouth, 1 open fracture of the shaft of the radius, 3 wounds of the shoulder or upper arm, 4 wounds of the forearm or wrist, including 2 with tendon lacerations and 1 complicated by infection, and 1 abrasion of the face. One implant of an artificial prosthetic device was complicated by infection.

Intentional ingestions of medications (n=55) accounted for the other 75% of parasuicides. 31% of these (n=17) involved salicylates, 22% (n=12) INH, 15% (n=8) acetaminophen, and the remaining 33% (n=18) 16 different categories of medication. 27% (n=15) of the ingestions involved more than 1 type of medication, including 10 with 2 medications and 5 with 3 types.

- Duration of hospital stay

The average duration of hospitalization for parasuicides was 4.3 days, while the median was 2 days. The longest stay was 36 days. 62% of victims were hospitalized for two or more days, 31% of victims for only 1 day, and for 7% the duration of stay was unknown. The total number of hospital days for all victims of parasuicide was 291 days, excluding 5 cases of unknown duration.

Average duration of stay was 3.6 days for parasuicide by medication, versus 6.9 days for firearms, 6.8 days for cutting instruments, and 8 days for a single incident by hanging.

- Transfers & transport

61% of patients hospitalized for a parasuicide had been transferred from another hospital or clinic; of these, 73% had been transferred from a clinic or health centre to a study hospital, 20% from one study hospital to another, and 7% from a non-study hospital or unknown location to a study hospital. The transfers were counted only once as incident cases. The type of transport used for transfer was known for 48% of transfers, and of these, 55% (11/20) had been transferred by emergency plane, 5% by emergency helicopter, and 45% by ambulance.

- Type of treatment

Gastric lavage, emetics to stimulate vomiting, and oral charcoal were used for treatment of acute ingestions and accounted for nearly half of the primary treatments provided to victims of parasuicide (*Figure 18*). Other treatments included surgery for wounds of the body, head, arm or leg. About 52% of patients had received at least two treatments and 18% three treatments.

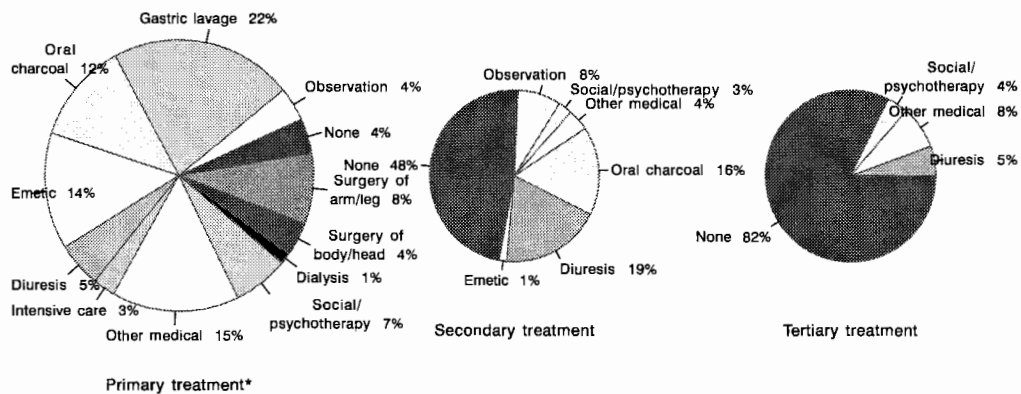


- Referral for help

77% of Crees who were hospitalized for parasuicide were referred to social services for assistance. Nearly all of these referrals were made by a physician.

Figure 18

**Treatment for hospitalized victims of parasuicide
Cree of Eastern James Bay, Canada 1982-92 (n=72)**



* Primary treatment as main or most hazardous treatment, secondary and tertiary as other treatments
Source: Cree Injury Study 1996



DISCUSSION AND RECOMMENDATIONS

OVERVIEW OF RESEARCH FINDINGS FOR SUICIDE

Suicide is a serious problem among young Canadians, and the Cree are no exception. Among the Cree of Eastern James Bay, suicide rates for males were comparable to those for other Canadians, and for Cree females, were somewhat less. Suicide rates among the Cree are lower than among some other aboriginal communities in Canada, such as the Inuit. Although the suicide rate for both sexes was about the same among the Cree as for the general population of Canada, the Cree and other aboriginal peoples have often expressed concern that suicides in their communities go unnoticed because of the small absolute numbers.

The most important trend between 1982-92 was the increase in the number of firearm suicides and parasuicides by young male Crees, especially in Chisasibi. Alcohol intoxication was a factor in most of these incidents. The age groups 15-40 were most affected. The young age of many of the victims is a result in part of the fact that the average age of the aboriginal population of Canada is about 15-17 years, as compared with 28-29 years for the general population of Canada. Most victims of fatal suicides and gunshot wounds were males. Another personal factor associated with a proportion of parasuicides included use of illegal drugs such as hashish. The use of 22 bore rifles for many parasuicides and the fact that in some incidents extremities (an arm or leg) were the target suggests that at least some of these incidents may have been an attempt to create a nonfatal wound in order to communicate distress and obtain help.

Most psychiatric diagnoses of victims appeared to indicate temporary depression as a result of a reaction to various types of acute personal and/or interpersonal problems or an unsatisfactory home situation. Parasuicides of a more severe nature such as those by firearm were associated with a larger number of specific symptoms of depression such as loss of appetite and/or difficulty sleeping, and special attention is needed by families to identify and assist individuals with additional symptoms other than simply feeling depressed. Special help is also indicated where such symptoms occur on the background of acute interpersonal stressors, for example, for males, a split with a girlfriend or female partner, and for females, moving away from family. Other indicators of potential risk include a difficult home situation, difficulty communicating feelings, experiencing rejection, and conjugal violence for both males and females. Special attention may also be needed for locations where additional stress such as rapid development and environmental damage to traditional lands have occurred, as in Chisasibi.

The data on previous injuries and parasuicides suggest that when health professionals treat an injured patient (not necessarily for a parasuicide), they should be on the alert and delicately probe for contributing factors such as alcohol abuse and mental distress. If there is evidence of underlying problems, patients who have sustained an injury should be referred for appropriate counselling to assess and help with home and personal problems. The history of an injury from a non-sports related fall in a young male should be a trigger for further questions to define the circumstances of the incident. In the case of an injured woman, the possibility of battering should be kept in mind.

A tragic example of the importance of recognizing such emotional distress was seen in the case of a teenager who sustained a head injury when he fell down the stairs during a drunken binge. The patient was transferred to a teaching hospital for treatment of head injury and coma; however, no referral was made for the serious emotional problems underlying the alcohol abuse. Within a year, the patient was transferred to hospital again with a gunshot wound from a parasuicide.



Most parasuicides, including firearm injuries, appear to occur in the victim's own home, so safe storage of firearms and ammunition in the home is an important issue in prevention.

In incidents that were considered to be of low lethal potential, health professionals sometimes referred to the incident as a suicidal gesture. Although defined and classified as suicides for the purpose of coding the incidents, it is evident that many victims of such incidents did not truly wish to die. Because of inability to communicate their emotional distress or to receive a sympathetic hearing, they chose this dramatic method of expressing their pain and attempting to obtain help to resolve their problems, be they acute or chronic. While the degree of psychological distress may differ between minor and more severe parasuicides and completed suicides, the victims often shared certain characteristics such as acute and chronic interpersonal and family problems, together with an inability to communicate their distress and obtain help by less violent means.

PERTINENT DATA FROM OTHER STUDIES

- The Santé Québec Cree health survey of 1991

Santé Québec carried out a health interview survey in the Cree nations of Eastern James Bay in 1991. The survey included questions on thoughts about parasuicide. It was reported that 3% of Cree 15 years and older had seriously considered suicide in the 12 months preceding the survey and that 2% had actually tried to take their life, while in their entire lifetime, 5% of Cree had considered suicide and 4% had committed parasuicide.

These data were similar to those for the province of Québec, where there was a somewhat higher prevalence of lifetime thoughts about suicide and a slightly lower incidence of parasuicides in the preceding year. Data were reported for Cree 15-44 years old versus those 45 years and older. Among 15-44 year old Cree, 3% reported a parasuicide in the preceding year, as compared with zero for Cree of 45 and older.

Parasuicides were more frequent among binge drinkers who consumed more than 10 alcoholic drinks at a time than among drinkers who took lesser amounts, and least common among non-drinkers. Parasuicides were reported several times more often by Cree with a recent high level of psychological distress. (No adjustment was made in the Santé Québec analyses for the confounding variable of age with either alcohol or psychological distress).

The Santé Québec interview data suggest that there are about 280 parasuicides per 10,000 person-years of exposure among 15-44 year olds. [Note : see page 3 for an explanation of the term "person-years"]. In the hospitalization data presented in this chapter, there were 62 parasuicides in about 39,000 person-years of exposure, i.e., about 16 hospitalizations for parasuicides per 10,000 person years of exposure. If the Santé Québec data are valid, and this would depend on how the question on parasuicide was phrased and understood, then for every hospitalization for a parasuicide, there were about 18 victims who were not hospitalized. There were about 7 hospitalizations for parasuicide for each death from suicide.



SANTÉ QUÉBEC INUIT HEALTH SURVEY OF 1992

Santé Québec carried out a health interview survey in the Inuit communities of Ungava (Nunavik) in 1992. The survey included questions on thoughts about suicide and parasuicide similar to those used in the Cree and Québec surveys (Boyer et al., 1994). It was reported that 7% of Inuit had seriously considered suicide in the 12 months preceding the survey and that 7% had committed a parasuicide, while in their entire lifetime 12% of Inuit had considered suicide and 14% had committed a parasuicide. Thus, rates of parasuicide and suicidal ideation are two or more times higher among the Ungava Inuit than among the Cree of Eastern James Bay and the Québec population.

- Nunavik mortality review 89-93

Data from the mortality review carried out among the Nunavik Inuit during 1994 were discussed above under mortality. The suicide death rate among Québec Inuit was found to be several times higher than among the Québec Cree (Schnarch, 1995).

- Other research

Studies in non-aboriginal populations have shown three main risk groups for suicides (Bagley et al., 1976), including :

- persons from a deprived background with disruption of family life, social isolation, and possibly with a sociopathic personality;
- persons suffering from chronic depression, often with a history of psychiatric treatment and previous parasuicide;
- elderly persons, living alone and depressed, who had often lost a spouse

Data for hospitalizations among the Cree show a large number of individuals who appear to fit the first category, a smaller number in the second, and a few in the third. Chronic stressors that were frequently reported for Cree victims of parasuicide included a difficult home situation, personal problems, and rejection or disapproval. The frequent presence of these stressors is indicative of cultural losses or disintegration. Traditional roles erode, but new roles do not emerge. Thus, social isolation develops which is exacerbated by pressures to succeed in the alien non-aboriginal community. Such success or attempts to succeed in this manner are seen as a "sell-out", which can engender rejection for failure to adhere to the norm of anonymity. Females tend to venture forth culturally while males and the older generation try to "keep them in their place".

The data in hospital records were not detailed enough to document all risk factors for parasuicide. Other factors that should be considered include attention deficit disorder, learning disabilities, poor self-image, impulsivity, inadequate skills for coping with life and managing stress, and an external locus of control. The presence of such risk factors could result in a vulnerability to failure and perceived loss.



Three factors in the etiology of suicide have been reported as being particularly amenable to public health intervention (Diekstra and Gulbinat, 1993), including :

- psychological risk factors, including mental and physical illness, alcoholism, and interpersonal disputes;
- easy access to a lethal agent;
- publicity about suicidal acts.

The question of the significance of access to a lethal method of suicide as a modifiable risk factor for suicide is an important one for rural communities, where many households contain one or more firearms. This is a major and controversial issue for aboriginal communities in Canada, and has also been reported as an important issue in rural bush communities in Australia (Dudley et al., 1992). One study indicates that differences in suicide rates between communities are at least in part explicable by differences in access to lethal methods of injury (Marzuk et al., 1992). Impulsive suicides among young males frequently involve alcohol and are probably the most susceptible to prevention by restricted access to firearms. In Australia, traditional beliefs about male self-reliance and the male role in the community and society are under severe challenge due to diminishing opportunities as a result of high youth unemployment and people being forced off the land. In addition, cultural traditions make it difficult for males to seek help for mental distress, and alcohol abuse appears to be more severe than in urban areas. Thus firearm suicides have increased rapidly in rural areas of Australia.

More stringent controls on the availability of firearms have been proposed as one of the potentially most effective solutions for communities. In addition, young men in such communities need to be made more "visible" to community workers and other who are responsible for assisting persons in mental distress. Due to the cultural norm for males, they often present a passive composed exterior, but experience major conflict between the inner turmoil and the presented person.

Other studies have found a strong association between suicide and binge drinking and/or alcoholism, although alcohol may not be the underlying cause, since alcohol abuse can be a result of other community, family, or personal disturbances (May, 1992, 1991; Jarvis and Boldt, 1982). The brain chemical serotonin rises initially after ingestion of alcohol, but later falls, and such a change has been associated with suicide and aggressive violence (Wright, 1995; Kotulak, 1993). Among Americans Indians and Alaska Nations in the United States, it has been estimated that alcohol was involved in 75% of suicides (May, 1992).

Zuni Aboriginal adolescents in the United States who had committed a parasuicide or who had suicidal ideation were assessed and compared with other Zuni adolescents (Howard-Pitney et al., 1992). The affected youth were found to lack basic communication skills as compared with their peers. However parental factors were also important, since suicidal ideation was associated not only with individual use of drugs, lack of communication skills, and other factors, but also with concern about drug use by their parents. It was felt that adolescents



needed to receive life skills training and that this could not only help to prevent suicide, but also improve coping with other areas of their lives.

Cultural and community problems can have a severe impact on parents, that is indirectly expressed via their children. Among Inuit in Greenland, an adverse atmosphere in the parental home appeared to contribute to the risk of suicide; this included disharmony, quarrels, and alcohol abuse (Thorslund, 1990).

Young (1994) has summarized some of the information about prevention of suicide in aboriginal populations in North America. He distinguishes between the many programs that are oriented mainly towards crisis intervention for individuals and programs that focus on longer-term primary prevention. The latter include programs to improve communication between elders and youths, recreational alternatives, both traditional and nontraditional, cultural programs, strengthening support and self-help networks in communities, enhancement of traditional values and customs, school programs to enhance self-esteem, job creation, family counselling, and other measures.

IMPLEMENTING PREVENTION OF SUICIDES AT A COMMUNITY AND REGIONAL LEVEL

The Ottawa Charter for Health Promotion provides a useful framework for considering prevention of suicide. Health promotion should include the following elements (World Health Organization, 1986) :

- build healthy public policy;
- create supportive environments;
- strengthen community action;
- develop personal skills;
- reorient health services.

These provide a starting point for a comprehensive approach to prevention of suicide among the Cree. Advocacy for *healthy public policy* can help to ensure that regulations are passed and followed to provide a safe home environment by mandating locked storage of firearms and ammunition in all homes, so that weapons are not easily available to any person who may become depressed and/or intoxicated as a result of an acute interpersonal problem. If firearms and ammunition were both locked away in separate locations, it would be difficult for a drunk teenager to shoot themselves impulsively before their acute emotional crisis could be recognized and dealt with. Since most suicides and parasuicides occur in villages where there is ready access to alcohol, storage of firearms and ammunition under key is probably more important in villages than in the bush. Healthy public policy can also be used to control the marketing and sales programs for alcoholic beverages that target vulnerable young adults.

Supportive environments can be created by community action to provide interesting activities and to boost the pride, self-esteem and communications skills of young Cree. Schools could include some of these subjects in their curricula. Education is needed on the harmful and dangerous effects of so-called binge drinking. Recreational activities and meaningful work are needed for people who live in isolated communities (Petawabano et al., 1994). Efforts are also needed to overcome the effects of physical isolation in remote communities, since physical isolation can also lead to social isolation, which is associated with an increased risk of suicide. If a sustainable economic base for employment can be developed in communities, together



with employment skills, this will avoid the need for people to leave their community to find meaningful work. This should increase feelings of hope and well-being, as long as job creation is linked with long-term projects that do not involve destruction of the natural environment.

Finally, the importance of spirituality, soul, and harmony with nature and all living beings for mental health and well-being should be emphasized to young people and their parents. Anything, including development projects, that might have an adverse impact on these factors should be carefully reviewed for potential impact on spiritual well-being and dealt with by the community in a coordinated manner. Provincial and federal governments should also be sensitive to this issue. Development projects that provide a sustainable economic base for the community and meaningful long-term employment should be encouraged. The costs and benefits of any project that involves large-scale destruction of the environment should be assessed not only from a purely scientific environmental perspective, but also from a spiritual perspective.

Community action could include a periodic safety round by community members and safety officers and/or public health officers to verify that all firearms are securely stored in the home. Safety rounds could be organized to consider not only firearm storage, but risk factors for other types of injuries such as falls and burns. Examples of community safety rounds are available from communities in Sweden (Björås et al., 1990). Cree need to assert control over their villages and their natural environment so that they can ensure that these are in harmony with their own spiritual beliefs and with other living things.

Personal skills that may need to be developed include the ability of young Crees and their parents to recognize common sources of interpersonal distress such as break-up of a relationship, moving away from family, parent-child interactions, etc., and how to deal with these in a positive way. Individuals need to learn how to communicate pain and emotion and not to be ashamed to do so and to reach out for help. Everyone needs to be aware that alcohol is a very dangerous drug for people who are under stress and that it worsens depression. Thus, alcohol should not be used by people who are depressed and/or have problems to resolve.

Cree parents who may have grown up in a residential school away from their own parents may need help with addressing their own unhealed wounds so that they can provide the support, stability and advice that are so important to their own children. The term "residential-school syndrome" describes the symptoms created by loss of culture, personal identity, and self-worth among former residents of such schools across Canada (Moon, 1996). Epidemics of suicide among aboriginal teenagers in the province of Ontario have been attributed to dysfunctional behaviour of their parents. This included a lack of parenting skills as a result of forced separation from their own parents. Critical bonds between the generations were destroyed as a result of forced removal to an alien language, culture, and spirituality.

Parents and the older generations must also learn how to set reasonable standards for themselves and their children without rejecting them personally. In other words, when parents express their opinions regarding adolescent behaviour such as rejection of traditional roles, they need to be careful not to disapprove of and reject their son/daughter as a person. Better skills in communication together with mutual encouragement between generations should do much to diminish the feelings of rejection, disapproval, chronic misunderstanding, and difficult home situation that were described as stressors by so many victims of parasuicide.

Health services need to be reoriented from crisis management to reaching out to the community to identify distressed homes and young adults, and to provide preventive individual and/or group counselling for



individuals and families at high risk. When young adults present to a clinic or hospital with any injury (especially a fall) or other health problem associated with alcohol intoxication, the health worker needs to recognize that alcohol intoxication is often indicative of an underlying interpersonal problem that needs to be addressed by appropriate referral or personal counselling. Some patients who present with an unintentional injury associated with alcohol intoxication and who do not receive help with their underlying problems later commit suicide or return to hospital as a parasuicide.

Health professionals should consider a single suicide or parasuicide in a small community as a public health emergency. Not only the victim, but all affected friends and family should be provided with counselling by an appropriately-trained individual(s). The importance of avoiding consumption of alcohol at such times should be emphasized. The media should be instructed to avoid harmful coverage of such events, since this can have a contagious effect on others. In particular, descriptions of the method used should be avoided. For example, publicity about a firearm suicide could encourage other suggestible individuals to imitate it. Public health staff should be involved in the reporting and investigation of suicides and parasuicides. Since suicides and parasuicides sometimes occur as mini-epidemics or "clusters", especially in small communities, public health professionals should work with clinical staff and/or community health representatives to prevent the spread of an incident.

Special teams can be developed to help communities and local staff cope with suicides and parasuicides and to avoid spread. This approach has been used by the Indian Health Service in the United States (DeBruyn et al., 1988), and in a few Cree communities. It may also be helpful to have a designated consultant to work with local staff (Rodgers, 1991). Community meetings, including young people and parents, have been helpful in some communities to identify critical local psychosocial problems and sources of stress. Skilled and sensitive consultants have been helpful in assisting communities with identifying their problems and in providing ideas about possible options for prevention.

To improve routine future monitoring of suicides for the community, health professionals also need to be aware of the importance of careful documentation in their diagnoses of :

- intent, whether for a minor suicidal gesture involving ingestion of a few aspirin or for a gunshot wound;
- a full description of the external cause of injury, such as the specific type of firearm involved;
- contributing factors such as acute alcohol intoxication and/or chronic alcoholism, breakup with a girlfriend, separation from family



REFERENCES

- Bagley C. Changing profiles of a typology of youth suicide in Canada. *Can. J. Public Health* 1992;83(2):169-170.
- Bagley C. Poverty and suicide among native Canadians: a Replication. *Psychological Reports* 1991;69:149-150.
- Bagley C, Jacobson S. Ecological variation of three types of suicide. *Psychol. Med.* 1976;6:423-427.
- Bagley C, Jacobson S, Rehin A. Completed suicide: A taxonomic analysis of clinical and social data. *Psychol. Med.* 1976;6:429-438.
- Barss P. Firearm injuries among the Cree of Eastern James Bay, Canada: Circumstances and Prevention. Montréal, Québec: Cree Board of Health and Social Services of James Bay, 1996.
- Bjärås G, Danielsson K, Schelp L, Sjöberg D, Skjönberg G. Safety rounds in public environments: experience of a new tool for prevention of accidental injuries. *Accid. Anal. & Prev.* 1990;22:223-228.
- Boyer R, Dufour R, Prévile M, Bujold-Brown L. State of mental health. Chapter in: M Jetté, ed. *A Health Profile of the Inuit: Report of the Santé Québec Health Survey Among the Inuit of Nunavik*, 1992: Volume 2. Montréal, QC: Santé Québec, 1994, 117-144.
- Boyer R, Prévile M, Légaré G. Mental health. Chapter in: C Daveluy, C Lavallée, M Clarkson, E Robinson, eds. *A Health Profile of the Cree: Report of the Santé Québec Health Survey of the James Bay Cree 1991*. Montréal, QC: Santé Québec, 1994, 161-173.
- Damestoy N. *Injury Mortality Among the Cree of Northern Quebec 1982-91* [MSc Thesis]. Montréal, QC: Department of Epidemiology and Biostatistics, McGill University, 1994.
- DeBruyn LM, Lujan CC, May PA. A comparative study of abused and neglected American Indian children in the southwest. *Soc. Sci. Med.* 1992;35(3):305-315.
- DeBruyn LM, Hymbaugh K, Valdez N. Helping communities address suicide and violence: The Special Initiatives Team of the Indian Health Service. *American Indian and Alaska Native Mental Health Research* 1988;1(3):56-65.
- Diekstra RFW, Gulbinat W. The epidemiology of suicidal behaviour: a review of three continents. *Wld Hlth Statis Quart* 1993;46:52-68.
- Dudley M, Waters B, Kelk N, Howard J. Youth suicide in New South Wales: urban-rural trends. *Med. J. Aust.* 1992;156:83-88.
- Frankish CJ, Clarke VA, Green LW et al. *Injury Prevention Projects with Native Populations: A Review and Critique of the Literature*. Institute of Health Promotion, University of British Columbia, May 1993.
- Hemenway D, Solnick SJ, Colditz GA. Smoking and suicide among nurses. *Am. J. Public Health* 1993;83:249-251.
- Howard-Pitney B, LaFromboise TD, Basil M, September B, Johnson M. Psychological and social indicators of suicide ideation and suicide attempts in Zuni adolescents. *J. Consult. Clin. Psychol.* 1992;60(3):473-476.
- Jarvis GK, Boldt M. Death styles among Canada's Indians. *Soc. Sci. Med.* 1982;16:1345-1352.
- Jarvis GK, Boldt M, Butt J. Medical examiners and manner of death. *Suicide and Life-Threatening Behavior* 1991;21(2):115-113.
- Kotulak R. The biology of violence: How a chemical in the brain can curb or unleash violence. *Gazette (Montreal)* 1993 Dec. 26:A1(col 2-3,A6(col 1-4).



Lavallée C, Clarkson M, Lachance B, Paradis G, Tétreault H. Lifestyle. Chapter in: C Daveluy, C Lavallée, M Clarkson, E Robinson, eds. *A Health Profile of the Cree: Report of the Santé Québec Health Survey of the James Bay Cree 1991*. Montréal, QC: Santé Québec, 1994;45-80.

Marzuk PM, Leon AC, Tardiff K, Morgan EB, Stajic M, Mann J. The effect of access to lethal methods of injury on suicide rates. *Arch. Gen. Psychiatry* 1992;49:451-458.

May PA. Alcohol policy considerations for Indian reservations and bordertown communities. *American Indian and Alaska Native Mental Health Research* 1992;4(3):5-59.

May PA. *Suicide and Suicide Attempts Among American Indians and Alaska Natives. An Annotated Bibliography (Revised edition)*. Albuquerque, NM: University of New Mexico, 1991.

May PA. Suicide and self-destruction among American Indian youths. *Am Indian Alaska Native Mental Health Research* 1987;1(1):57-74.

May PA. Alcohol and drug misuse prevention programs for American Indians: Needs and opportunities. *J. Stud. Alcohol* 1986;47(3):187-195.

Moon P. Hundreds of Cree and Ojibwa children violated. School wants truth out and victims to heal. *The Globe and Mail* 1996 Oct. 19;Sect. A:1(col 1-6), 6(col 1-6).

Petawabano BH, Gourdeau E, Jourdain F, Palliser-Tulugak, Cossette J. *Mental Health and Aboriginal Peoples of Québec*. Québec, QC: Le Comité de la santé mental du Québec, 1994, 24-70.

Rodgers DD. Community crisis intervention in suicide epidemics. In: Postl BD et al., eds. *Circumpolar Health 90 Proceedings of the 8th International Congress on Circumpolar Health, Whitehorse, Yukon, May 20-25, 1990*. Winnipeg, MA: University of Manitoba Press for Canadian Society for International Health, 1991:276-280.

Schnarch B. Nunavik Mortality Review 89-93 Kuujuaq, QC: Kativik Regional Council of Health and Social Services, 1995.

Shaffer D. Suicide: risk factors and the public health [Editorial]. *Am. J. Public Health* 1993;83:171-172.

Thorslund J. Inuit suicides in Greenland. *Arct. Med. Res.* 1990;49:25-33.

Thorslund J, Misfeldt J. On suicide statistics. *Arct. Med. Res.* 1989;48:124-130.

World Health Organization. Ottawa Charter for Health Promotion. *Can. J. Public Health* 1986;77:425-430.

Wright R. The biology of violence. *New Yorker* 1995: Mar. 13, 68-77.

Young TK. Injuries and the social pathologies. Chapter in: TK Young. *The Health of Native Americans: Toward a Biocultural Epidemiology*. New York: Oxford University Press, 1994, 176-215.



APPENDICES FOR HEALTH PROFESSIONALS

APPENDIX I

Reclassification of hospitalizations from other categories to parasuicide

The number of hospitalizations coded as parasuicide doubled after a review of the records of all injury cases among the Cree. Of 22 cases reclassified from a coded diagnosis of intent undetermined to parasuicide, 20 involved ingestion of medication and 2 gunshot wounds. 9 cases had originally been classified as unintentional injuries and were reclassified as parasuicide; these included 4 gunshot wounds, 2 injuries by hand tools such as an axe, 1 by glass, and 1 poisoning. 5 cases that were classified as parasuicide by the study were originally unclassified as to intent since no external cause code had been assigned by the hospital coder. 5 cases that were originally classified as gunshot wounds of intent undetermined were reclassified as unintentional, 2 poisonings of undetermined intent as unintentional, 1 assault by cutting instrument as assault, and 1 suicide by cutting instrument as unintentional.

APPENDIX II

Information on Cree victims of parasuicide hospitalized other than in study hospitals

In addition to the 73 victims in study hospitals there were 7 other victims from Cree communities who were hospitalized for parasuicide or for injuries of unspecified intent in hospitals other than the 6 where a review was made of medical records.

The following information is available for Cree patients in non-study hospitals. There were 4 females hospitalized for ingestions classified as parasuicide, including 3 for ingestion of "other specified medications" and 1 for "arsenic". One other female was hospitalized for ingestion of "other specified medication", intent undetermined. The ages of these 5 women ranged from 18 to 42 years. Two males were hospitalized for poisonings of undetermined intent, one by "other and unspecified solid or liquid substances" and one by "pipeline gas"; their ages were between 16 and 34 years. Thus it is probable that the actual total of all hospitalizations for suicide attempts during the study period of 10 years was at least 80 cases, including 48 females and 32 males.

APPENDIX III

Improving data sources for future surveillance of parasuicide

Physicians often fail to include the intent and external cause of injury in their admission and discharge diagnoses in hospital records, and seldom mention intoxication by alcohol or illegal drugs as a contributing



factor. For all parasuicides intent was specified in 29% of admission and 49% of discharge diagnoses; intent was coded as undetermined or unintentional by hospital coders in 45%. For firearm suicides, coding of intent was correct in 33% and the type of firearm in 33%. While alcohol intoxication was described in hospital records for 56% of parasuicides, it was reported in only 8% of admission and 15% of discharge diagnoses; it was coded by hospital coders (as 305.0) in 14% of cases. Alcoholism was noted in 22% of records, but was included in only 4% of admission diagnoses and 6% of discharges.

For 11% of ingestions involving medications, some other contributing factor was listed as the principal code rather than the type of medication ingested. These included schizophrenia ($n=3$), acute alcohol intoxication ($n=3$), adjustment reaction/brief depressive action ($n=1$), and nutritional deficiency complicating pregnancy, childbirth, and the puerperium ($n=1$).

For INH poisonings, it is necessary to search under code 961.8, other antimycobacterial drugs, rather than under 960.6, antimycobacterial antibiotics. One INH ingestion was classified under 977.9, unspecified drug or medication. Altogether 5 ingestions of medications were classified under category 977.9, but in all cases, it was possible to reclassify these cases under a more specific category.

In the case of various wounds associated with parasuicides, in 22% ($n=4$) the principal nature of injury was not used as the primary code, but rather associated psychological disturbances, including unspecified depression ($n=2$), unspecified personality disorder ($n=1$), and unspecified psychological disorder ($n=1$).