A PROSPECTIVE STUDY OF FIREARM DEATHS:
THE FEASIBILITY COMPONENT

Sharon Moyer, Peter Carrington
and Lee Axon

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EXECUTIVE SUMMARY

Introduction

This report presents the findings of research to determine the feasibility of utilizing the services of coroners and medical examiners to collect previously unavailable data on the characteristics of firearm deaths. The feasibility study was conducted over a three month period in the summer of 1997 in Quebec, Alberta, and British Columbia with the cooperation and assistance of the Chief Coroners and Medical Examiner of these provinces.

The purpose of the study is to obtain detailed contextual data on the incidents and circumstances surrounding firearm homicides, suicides, and accidental deaths. The intent was to collect qualitative and quantitative data prospectively, at the time of the coroners' investigation into the firearm death. The findings from the present study will be used by the Canadian Firearms Centre, Department of Justice Canada to determine the feasibility of undertaking a main data collection phase of 12 months.

Empirical research is required to inform and strengthen policies and strategies to prevent the 1,300 firearm deaths that occur annually in Canada. At present, in the majority of firearm deaths we do not know the answers to critical questions, such as: the source of the firearm and its storage prior to the incident, the state of mind of the shooter, and the circumstances of the incident. Previous studies by Justice Canada had found that coroners' and police files rarely contain information sufficiently detailed to devise new prevention strategies or to refine existing policies.

Literature Review and Inquest Findings

The review of the literature assisted in the development of the data collection instrument by identifying situational/environmental and personal factors associated with firearm suicides, homicides, and accidents. The rationale for describing risk factors associated with firearm deaths is as follows. If the main study were undertaken, it would describe in detail the circumstances of firearm-related deaths; and identify common factors that exist in such incidents (i.e., risk factors for firearm homicide, suicide and accidents). This information would then be used as input into the development of prevention strategies. This approach is similar to the epidemiological research on risk factors for illness-related deaths.

In addition to identifying the risk factors associated with firearm deaths, the literature review also revealed that, to date, few studies of firearm deaths have used multivariate analysis to determine the relationship among the various factors identified as associated with serious firearm incidents. This situation would be remedied by the main phases of the study, if undertaken.
Another source of qualitative information on firearms deaths — which had not been systematically analyzed previously — is coroner inquests and investigations. The researchers requested inquest reports for the previous ten years from all the provinces and territories. A content analysis was conducted on the information and a summary of the firearm incidents and shooters characteristics are provided. The analysis provided further insight into our understanding of risk factors by supplementing the literature review and contributed to the development of the data collection instrument.

**Statistics on Firearms Deaths**

The available data on firearm deaths were reviewed to: describe the limitations with the available data on gun suicides, homicides, and accidents; provide the rationale for selecting Quebec, Ontario, Alberta, and British Columbia as the study sites; and, estimate the number of cases to be expected over a 12 month period (i.e., the proposed timeframe for the main study).

The Causes of Death survey maintained by Statistics Canada is the only national data source for all firearms deaths. This data base is limited to “aggregate” statistics on the annual number of firearm deaths by jurisdiction, gender, and age of victim. Case-based data on firearms deaths are available from offices of the chief coroner/medical examiners in most jurisdictions, but not all jurisdictions have computerized information systems to facilitate data retrieval. The Homicide Survey, maintained by the Canadian Centre for Justice Statistics, Statistics Canada provides additional “case-based” data on firearm homicides. However, none of these data sources include the detailed contextual information being sought in the present study.

Between 1990 and 1994, approximately 80 percent of all firearms deaths in the country occurred in four provinces — Quebec, Ontario, Alberta, and British Columbia. These were the jurisdictions that were initially considered for participation in the feasibility study. However for administrative and logistical reasons, Ontario was unable to participate and the feasibility study was conducted in three of the four provinces.

Based on a review of the available statistics, the authors estimated the number of firearm deaths likely to occur in a 12 month period in 1998 to 1999 when the main study would be conducted. This was done to determine whether the numbers are sufficient for the analysis being proposed for the main study, and to estimate the workload required of the coroners in the participating jurisdictions. It was concluded from the analysis that the projected number of firearm suicides would be sufficient for the development of "typologies" based on the characteristics of the victim and the incident. Without the participation of Ontario, the number of firearm homicides would not be sufficient for typology development. With or without the participation of Ontario, the estimated number of accidents would be too small for multivariate analysis although the study would be able to collect valuable information on firearm accidents. One solution to the problem of low numbers would be to extend the data collection period for accidents and homicides to two years.
The Feasibility Study

In April 1997, the Chief Coroners and the Chief Medical Examiner from the provinces selected for the study attended a workshop with Justice officials and the research team. The purpose of the workshop was: to obtain support for the study as a whole; to solicit the advice of the Chiefs with regard to research procedures and the contents of the survey instrument; to seek their participation in a feasibility study; and, to obtain a preliminary view of stumbling blocks that might be encountered. Also discussed were data collection procedures and the most effective way that the feasibility study could be undertaken.

The data collection instrument to be tested in the feasibility study was based on the input of the Chiefs present at the workshop described above, the literature review, a review of the characteristics of deaths on which inquests had been held, instruments used in suicide studies in Quebec and British Columbia, and the Homicide Survey. The instrument has five sections: the first section requests details of the firearm, the incident, the source of the firearm, its storage, who owned it and how the shooter obtained the firearm; the second section asks for victim data such as social characteristics and alcohol/drug impairment and history of substance abuse; the third section requests information on suicide victims such as major life time events, help-seeking for psychiatric problems, and recent stressful life events; section four is to be completed for homicide cases and includes apparent motivation, the nature of the charges laid, and suspect characteristics; the fifth section contains accident-related items such as the apparent cause of the accident.

Because this study utilizes coroners and medical examiners to collect prospective data on firearm deaths, it was important to understand their organizational structure so that, in so far as possible, the research requirements could be meshed with their routine activities. Although provincial legislation varies, the functions and activities of coroners and medical examiners are roughly similar across Canada: they are responsible for determining the cause of death in specified categories of deaths. In the four jurisdictions selected for the feasibility study, the majority of coroners are part-time personnel, employed on a fee-for-service basis. In large cities in Québec, Alberta, and British Columbia, full-time employees supplement the part-time officials. In every jurisdiction, the primary tasks of coroners tend to be similar: to identify the victim and determine the cause of death, which involves close liaison with the police to determine whether the firearm death is an accident, suicide, or homicide; to decide if an autopsy is required; and, to monitor and to coordinate the required paperwork.
The pre-test was conducted over a three month period starting in July 1997. The methodology for data collection was directed primarily by the Chief Coroners and Chief Medical Examiner in the respective province. Therefore, the scope of the feasibility study differed somewhat by province. In Quebec the study was confined to the Montreal and Québec City administrative areas, and the data collectors were full-time assistant coroners. In Alberta, all deaths in the province were captured, and full-time staff of the Medical Examiner's Office were responsible for data collection. In British Columbia the study was also provincial in scope, and the part-time community coroners completed the instrument. In many cases, the data collectors contacted police and next of kin for information.

During the three month feasibility study there were 87 firearms deaths resulting from 81 incidents. In four incidents there were two victims and in one incident there were three victims. Of the 87 deaths, 65 (75%) were suicides, 19 (22%) were homicides, two (2%) were accidents, and in one (1%) incident the cause of death was undetermined. Overall, British Columbia contributed 52 percent of the firearm incidents, Alberta contributed one-third, and Quebec (Montreal and Québec City) accounted for 15 percent.

In this research project, the response rate is particularly important because the data analysis plan includes the development of typologies of firearms suicides, homicides and accidents. A “low” response rate for a large number of key items scattered throughout the instrument introduces the possibility of sampling bias and therefore typologies that have questionable reliability and generalizability. For these reasons, a minimum acceptable response rate of 75 percent has been recommended.

The analysis of the sample data revealed that many of the items in the data collection instrument had an unacceptably high rate of “non-response” — that is, many questions had response rates of less than 75 percent because the information was not known to the data collectors.

It is possible that better response rates could have been obtained if the feasibility study had incorporated: a training session with the data collectors on the purposes of the research, its benefits, and on the contents of the form; ongoing personal contact with the data collectors; and regular feedback on how the jurisdiction measures up in terms of capturing the desired information.

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1 To obtain the participation of the part-time coroners, payment would be required.
A second point with regard to the feasibility study's procedures should be made. The method was planned to be "prospective" — ideally the data collectors would be familiar with the contents of the instrument when they undertook their investigations. It was hoped that this familiarity, and having the instrument on hand during the investigation, would result in satisfactory response rates. This may have occurred in the two Quebec sites, but in Alberta all data collection was done after the fact from two central locations, and in British Columbia the fee-for-service coroners were provided with the survey instrument after the Chief Coroner’s Office had been notified of the death. The study was not therefore prospective for most cases. A truly prospective study would require the distribution of the survey instrument to all (potential) data collectors before the start-up of the study.

As a result of this experience, the difficulties inherent in this methodology were made evident. Firearm deaths make up a very small percentage of the deaths that are investigated by coroners and medical examiners. Because part-time coroners predominate, no one official would be responsible for more than a small number of firearm deaths even in a one year period. This is, in fact, a limitation with using coroners (or police, for that matter) to collect these data: how can a large number of data collectors be trained and monitored when many would investigate very few cases in 12 months? The infrequency of firearm deaths makes it very difficult to have well trained data collectors alert to the steps to be taken to obtain the required information.

Another factor that affects the response rate to specific questions — especially those around the source of the gun, how the firearm was stored prior to the incident, the mental state of the shooter, historical information on topics such as past substance abuse and help-seeking for mental health problems — is that much of the information may be known only to the shooter or to a close family member. For example, relatively few persons other than owner of the firearm would know whether the gun was stored loaded immediately before the incident occurred. In addition, although the data collectors are experienced in speaking with the recently bereaved, undoubtedly some next of kin would refuse to respond to the questions. Finally, it is to be expected that limited information could be obtained on unsolved homicides and from cases for which court proceedings have not been concluded.

**Findings of the Pretest**

The median response rate to the questions on the firearm and ammunition used in the shooting and the shooters past experience (i.e., Section A of the instrument) was 76 percent. Suicides tended to have a higher response rate for firearm characteristics and provenance than did homicides. Some questions did not have a good response rate (less than 50 percent) regardless of the type of death, including: whether the shooter had formal firearm training, the actual and estimated dates on which the shooter acquired the ammunition, whether the firearm was stored with a secure locking device or disassembled, whether the gun was stored loaded, and where the ammunition was stored. The actual and estimated dates on which the shooter acquired the firearm itself and other personal experience with firearms were also not reported for almost one-half the sample.
The victim information for all firearms deaths (i.e., Section B) was well completed by the coroners and medical examiners. The victim-suspect relationship was known in 79 percent of the homicides; missing data occurred because a suspect was not identified. Whether the victim died immediately was reported in 91 percent of the cases. In 85 percent of the cases, marital status, aboriginal status, employment status, and with whom the victim lives were known. Alcohol testing was done on victims in about 38 percent of cases, and a test had been done but the results were not yet known for 20 percent of victims. Toxicology tests were done on 48 percent of victims, and the results were not yet known in 48 percent. Whether the victim had a history of alcohol abuse was known for 76 percent of victims, and a history of illegal drug use was known for 60 percent of the victims.

Many of the questions on firearm suicide (i.e., Section C) had a low response rate — the median response rate was 68 percent. The response rate for the lifetime history items ranged from 35 to 72 percent. Whether the suicide victim had received help for a mental health problem in the past year, or was currently undergoing treatment was reported for 65 and 77 percent, respectively. The response rate for the list of stressful life events ranges from a low of 54 percent to a high of 75 percent. The questions relating to disclosure of suicidal leanings had the highest response rate.

The median response rate for the questions on firearm homicide (i.e., Section D) was slightly lower than for suicides — 67 percent. The apparent motive was not known in many cases. Whether the accused had a history of illegal drug use was available for two-thirds of cases and a history of mental health problems was known for half of the sample. The questions related to prior interpersonal conflict had the highest response rate.

There was a 100 percent response rate for 12 of the 16 accident-specific questionnaire items (i.e., Section E).

Because of the generally low response rate, the evidence is inconclusive for several of the more important survey questions, such as firearm source, storage, and the shooter's experience with firearms. Despite the missing information, some interesting findings emerge from these data. In the majority of firearm suicides, the victim owned the gun. For cases where the victim did not own the firearm, the victim had frequently stolen or taken the gun without permission from another household member or a family member not living in the same household. Many suicide victims were legally impaired at the time of death, and almost one-half had a history of alcohol abuse. A substantial proportion (over one-quarter of the sample) of suicide victims had a history of criminal convictions. Few conclusions can be drawn about the 19 firearm homicide incidents, because of the small number of cases as well as missing information.
Recommendations

In conclusion, a decision in favour of conducting the main study should be contingent on the following conditions:
- if the primary focus of subsequent phases of this research is firearm suicides,
- if monies are available to reimburse coroners,
- if quality control measures can be introduced and regular monitoring of response rates can be implemented,
- if a training session could be provided to the data collectors in each province (perhaps at their annual meetings), and
- if the Chief Coroners/Medical Examiners agree to participate.

It is further recommended that if Justice Canada decides to pursue the collection of data on firearm homicides and accidents, then the project should be undertaken over a two year period, under the same conditions as above.
1.0 INTRODUCTION

This report presents the findings of research to determine the feasibility of utilizing coroners and medical examiners to collect detailed data on the incident and circumstances surrounding firearm deaths. Currently, available research has indicated that the detailed information being sought in this study are not recorded in any other source, including police and coroner paper files. The data which is available is often limited due to the fact that it is collected for operational rather than research purposes. This study is prospective, which means that coroners and medical examiners were to obtain quantitative and qualitative data on the firearm death during their regular investigation and report preparation on that death.

The project has three possible phases: (1) the present feasibility study to prepare the research design, to pre-test the survey instrument, and to develop the procedures for data collection; (2) a data collection phase of 12 months; and, (3) an analysis and report writing phase. The purpose of the main phases of the research (2 and 3), if undertaken, is to obtain detailed contextual data on the circumstances surrounding firearm homicides, suicides, and accidental deaths. The research employs qualitative and quantitative methods and utilizes coroners and medical examiners, with the assistance of the police, to collect the data. The intent is to collect otherwise unavailable data at the time of the investigation into the firearm death. The findings from the present study will be used by the Canadian Firearms Centre, Department of Justice Canada to determine the feasibility of the subsequent phases of the project.

Each year in Canada approximately 1,300 persons are killed by a firearm, and about 80 percent of these deaths are suicides. Empirical research is required to inform and strengthen policies and strategies to prevent firearm deaths. Fatal firearm incidents are often accompanied by presently unanswerable questions relating to the source of the firearm (e.g., whether lawfully or unlawfully owned, borrowed from friends or relatives, stolen), the state of mind of the shooter (such as impairment caused by drug or alcohol use, current and past treatment for psychiatric or emotional problems), and the circumstances of the incident (e.g., how and where the firearm was stored). Earlier studies by Justice Canada had found that coroners' and police files rarely contain such detailed information. This study is unique in that it attempts to answer, in a systematic manner, questions relating to the origins of the firearm, the personal and social situation of the shooter, and the circumstances surrounding the incident.

There are potentially far reaching benefits of this research. The study could, for example, inform policy makers in the development of screening provisions for persons applying for a firearm license; assist in the identification of educational material for the prevention of firearm mishaps; inform and enhance police training procedures; and, inform the development of the information systems maintained by police services and coroners/medical examiners.

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2 See Moyer and Carrington (1992) and Axon and Moyer (1994).
Four jurisdictions were selected for participation in the feasibility study: Quebec, Ontario, Alberta, and British Columbia. In 1990 to 1994, these jurisdictions account for approximately 80 percent of all firearm deaths in the country. Ontario was unable to participate because insufficient time was available to coordinate and secure the necessary consent of key officials. Therefore, the feasibility study was conducted in three of the four jurisdictions.

In this study, coroners/medical examiners completed a questionnaire, in consultation with police, on every firearm death in their jurisdiction during a three month period. The survey instrument included items on the social and demographic characteristics of the shooter (and victim, if different); on the type, provenance, and storage of the firearm prior to its use; the mental health status of the shooter; prior criminal history; and factors found in the literature and in inquest descriptions to be associated with suicides, homicides, and accidents. Procedures to be utilized during the (possible) second phase were examined and are described in this report. The feasibility study is described in Chapter V, and the major findings are briefly described in Chapter VI.

Other components of this report are a review of the literature on the factors associated with firearm deaths (Chapter II) and a summary of the findings from inquests and fatality inquiries on firearm deaths (Chapter III). In Chapter IV we present an analysis of statistics on firearm deaths in the four jurisdictions selected to participate in the feasibility study. The recommendations for the main study are found in Chapter VII.

The appendices referenced in this report are contained under separate cover. Appendix A contains a case-by-case description of coroner inquests and inquiries on firearm deaths, including any recommendations, for the past six to ten years. Appendix B provides the coding manual for the data collection instrument. In Appendix C, the supporting tables for the feasibility study are found.

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3 The appendices are available upon request from the Firearms Research Unit, Canadian Firearms Centre, Department of Justice Canada.
2.0 AN OVERVIEW OF THE RESEARCH

This review of the literature summarizes what is known about the risk factors associated with firearm homicides, suicides and accidental firearm deaths — concentrating, where possible, on research conducted in Canada. Its aim is to identify the issues to be addressed by the proposed research, and to identify specific variables that should be included in the data collection instrument.

The rationale for describing risk factors associated with firearm deaths is as follows. If the main study were undertaken, it would describe in detail the circumstances of firearm-related deaths; and identify common factors that exist in such incidents (i.e., risk factors for firearm homicide, suicide and accidents). This information would then be used as input in the development of prevention strategies. This approach is similar to epidemiological research on risk factors for illnesses and illness-related deaths. Such research is used by public health authorities to develop strategies to reduce the incidence of these illnesses and related deaths. It was therefore important during the design of the data collection instrument to identify the factors that may be associated with firearm deaths.

2.1 Statistics on Firearm Ownership in Canada

To provide a context for this literature review, basic statistics about firearms in Canada are presented in this section. A recent Department of Justice report indicated that, based on the combined findings of several studies, 26 percent of Canadian households possessed at least one firearm (see Block, 1998). There are regional variations in gun ownership. Firearm ownership was highest in the Atlantic provinces (35.8 percent of households had a firearm), and lowest in Ontario (14.2 percent of households) (Block, 1998:7). Data on the percentage of households in which a firearm is present are typically used as indicators of firearm availability, or "density", in each province and territory.

Surveys have consistently shown that firearms owners predominantly own long guns. The International Crime (Victim) Survey 1996 found that almost all Canadian households (95%) with a firearm possessed a long gun. In contrast, only 12 percent of gun owning households possessed a handgun (Block, 1998: 7).

A 1991 survey of gun ownership provided a profile of firearm owners: 86 percent are male, 46 percent are 35 to 54 years old, 55 percent have high school education or less, about one-third are blue collar workers (18 percent are professionals), and 45 percent have household incomes of $40,000 or more. Compared to the Canadian population as a whole, firearm owners are more likely to be male, to be in their "middle" years (i.e., 35 to 54 years of age), to have lower levels of education, to be employed, and to be in blue collar and farming occupations (Angus Reid 1991:Table 8).
2.2 The Lethality of Firearms

Research suggests that firearms are more lethal than many other methods of causing death. For example, the choice of a firearm as suicide method increases the likelihood of completed suicide (Gabor, 1994:77). Fatality rates for firearm suicides range from 85 to 92 percent (Ibid.:45). One study found that 15 percent of attempted suicides involved firearms, compared to 60 percent of completed suicides (Kellermann et al., 1992). While some other methods such as hanging or jumping from a high place are as lethal as firearms, they are less common.

In homicide, firearms are more likely to result in serious injury or death than if another weapon is used (Gabor 1994:45). Firearm attacks are about three times more likely to result in death than knife attacks and many times more likely to be lethal than attacks involving other methods.

2.3 Risk Factors

Factors that are significantly associated with firearm deaths can be divided into two categories: environmental or situational factors, and personal or individual factors. Among the environmental factors are the availability of firearms (the number of firearms in a specific geographical area, for example), the accessibility of the firearms (whether the firearms are securely locked and accessible to only a small number of persons), and societal attitudes towards firearm abuse in general and, in the case of suicide, towards suicide by firearm in particular. Individual factors include age, gender, race, mental health history, social or personal circumstances of the shooter (e.g., unemployed, recently divorced or bereaved), and substance abuse.

2.4 Firearm Suicides

In Canada, about one-quarter to one-third of all suicides are committed with a firearm. Suicide by firearm accounts for the majority of firearm deaths: about 80 percent of all firearm deaths in Canada are suicides. In recent years, approximately 1,000 firearm suicides occur annually.

The relationship between suicide and other factors is complicated by possible interactions among environmental and individual and personal factors. Individual risk factors associated with suicide (such as recent stressful life events or a history of substance abuse) may be mediated by other factors such as the availability of a means of suicide, urbanization, and attitudes towards firearm suicide.
2.4.1 Environmental Factors

2.4.1.1 Degree of Urbanization

Starting with Durkheim in the nineteenth century, many studies have found that the degree of urbanization is positively related to suicide rates: the larger the community, the higher the rate of suicide. In cities, however, there tend to be fewer firearm suicides than in rural areas. In Ontario, for example, almost 60 percent of male suicides in the rural northern parts of the province used firearms compared to 18 percent of suicides in Toronto, and 40 percent elsewhere in the province. Overall, in Ontario, city dwellers were half as likely to use firearms as were suicides who lived in other types of communities (25 percent compared to 50 percent). Similar findings were reported for Manitoba and British Columbia (Moyer and Carrington 1992). A recent Quebec statistical study found that the firearm suicide rate was three or more times as high in the administrative regions of Nord-du-Québec and Abitibi-Témiscamingue as in Québec (City and area), Laval, and Montreal. The three latter regions had the lowest firearm suicide rates in the province (Bureau du coroner 1994:17).

2.4.1.2 Firearm Availability and Type of Firearm

Moyer and Carrington analyzed the relationship among firearm suicide rates, the availability of firearms (i.e., the number of firearms within each jurisdiction as measured by the percentage of households in a province that owned a firearm, as reported in the 1991 Angus Reid poll), and the degree of urbanization of each of the ten provinces. They (1992:14) concluded that:

In modern Canada, urbanization is associated with a reduction in the proportion of households owning guns - and a correspondingly lower rate of suicides due to firearms. Urbanization is also associated with a greatly increased propensity to suicide, manifested in a much higher rate of suicides due to methods other than firearms. The increase in non-firearms suicides in urbanized provinces is due not to "displacement," but to urbanization. While the lesser availability of guns in urban areas appears to reduce the firearms suicide rate, it does not appear to increase the non-firearms suicide rate.

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4 "Displacement" refers to the use of other means of committing the act. There is considerable debate in the literature whether the reduction of access to lethal methods of killing oneself will reduce the overall rate of suicide. Some claim that if one method is eliminated, the suicidal person will substitute another, equally lethal method (displacement). The counter argument is that some suicides are impulsive and if no lethal method is present in the person's immediate environment, the suicide may be prevented.
Therefore, in Canada, the correlation between firearm availability and the suicide rate only became apparent when the degree of urbanization of the ten provinces was controlled.

Gabor reviewed studies examining the relationship between firearm availability and overall suicide rates (i.e., both firearm and non-firearm suicides). Although the studies have mixed findings, Gabor argues that, overall, there does appear to be a positive association between firearm availability and suicide rates in general. The displacement hypothesis — that argues that other equally lethal methods are substituted for firearms when the latter are not accessible — may be incorrect because of the impulsive nature of some suicide attempts.

Case studies suggest that suicide attempters use methods that are readily available (e.g., the victim either owns the firearm or borrows it). Firearms are rarely obtained specifically for the purpose of committing suicide (Gabor 1994). A special study by the Quebec coroner's office found that about 65 percent of firearms used in suicide were owned by the victim, another household member, or a relative of the victim (Bureau du coroner 1994:32-33).

Quasi-experimental studies have found that firearms were more likely to have been present in the homes of suicide victims than in the homes of unsuccessful suicide attempters, psychiatric inpatients, and other control subjects (Brent et al. 1991; Gabor 1994). In the Brent et al. study conducted in the United States, firearms were twice as likely to have been present in the homes of adolescent suicide victims as in homes of suicide attempters and, even if the firearms are securely stored, the risk of suicide is apparently greater.

Although national statistics are not available, several studies have found that long guns are used in suicide much more often than are handguns. For example, in 1992 and 1993, 84 percent of Quebec firearm suicides employed rifles or shotguns (Bureau du coroner 1994:27-28). Studies of recovered firearms in police services have found that the large majority of firearms associated with suicide incidents were rifles or shotguns (Daniel Antonowicz Consulting 1997:8; Proactive Information Services 1997).

2.4.1.3 Cultural or Socialization Factors

Marks and Stokes (1976) concluded that the low rate of firearm suicide by women and the high rate of firearm suicides in certain regions of the United States (e.g., in the south) may be explained by differential socialization. Females are much less likely than males to grow up using firearms for hunting or other sport, and southerners are much more likely to do so than persons residing in many other regions of the United States such as the industrialized northern states.
2.4.2 Individual Risk

2.4.2.1 Sociodemographic Factors

Almost four times as many males as females commit suicide annually and, in the country as a whole, only about 6 percent of firearm suicides are female (Hung 1996). In 1990 to 1992, only 7 percent of firearm suicides in Quebec involved female victims and the per capita rate of males was ten times as high as that of females (Bureau du coroner 1994:16, 27).

The relationship between age and suicide is a complex one, and might well vary by province and territory. Data on the age distribution of suicides by firearms versus other means in five provinces analyzed by Moyer and Carrington (1992) found no consistent relationships between age and suicide method. Canada-wide (1994) data from the Causes of Death survey show that 15 to 24 year olds are slightly more likely to kill themselves with firearms — 17.8 percent of firearm suicides, compared to 15.7 percent of other suicides, were in this age category. Using the same data source, persons aged 65 years and over disproportionately used a firearm for suicide (14.8 versus 10.9 percent for other methods). However, these data have not yet been analyzed controlling for age, gender and jurisdiction, and the picture might change when these "control" variables are introduced.

In Quebec, the firearm suicide rate of males is highest in the 20 to 29 year old age category and gradually declines thereafter. The firearm suicide rate for females is highest for women in their forties. A comparison between firearm suicides and those using other methods shows that firearm suicide victims are somewhat younger than other suicides: 10.5 and 6.4 percent, respectively, are under 20 years of age (Bureau du coroner 1994).

Aboriginal people are over-represented in firearm suicides (Gabor 1994:37). In their analysis of coroners' data, Moyer and Carrington (1992) concluded that, although persons of Aboriginal background have much higher total suicide rates as well as higher firearm suicide rates than others, firearm suicides make up a lower or similar percentage of total Aboriginal suicides than is the case for non-Aboriginal victims. Being of Aboriginal background is a risk factor for suicide, but may not be a risk factor for firearm suicide.
2.4.2.2 Substance Abuse

According to the literature review by Moyer and Carrington (1992), persons who are severe alcoholics are at highest risk, with a peak incidence rate for suicide between 40 and 49 years. There are few studies that compare firearm and other suicides in terms of impairment by drugs and alcohol at the time of death. In their analysis of coroners’ data from two jurisdictions, Moyer and Carrington reported mixed findings. In Ontario, where there did appear to be a relationship between alcohol consumption and firearm suicides, the results may suggest that these suicides are more impulsive or reckless acts than cases where the victims select other methods of suicide. On the other hand, the relationship could also be interpreted as meaning that the need for "disinhibition" is greater in firearm than in other suicides.

In Quebec, the study of firearm suicide found that, in 1992 and 1993, about one out of five of all firearm suicide victims were legally impaired by alcohol, and the same proportion had consumed illegal drugs or medication prior to their death (Bureau du coroner 1994:38-39). However, not all victims were tested and the percentages of suicides who were impaired could be higher.

2.4.2.3 Intention, Motivation and Impulsivity

Research in the United States suggests that suicides are sometimes impulsive acts, often precipitated by stressful life events and facilitated by alcohol or drugs. Studies of youth suicide in particular indicate the impulsiveness of suicide attempts. Gabor (1994:77) draws the following conclusions:

There are further indications that many suicides are not carefully planned but have a strong impulsive component. In these cases, the presence of more lethal, easy, and relatively painless methods can make a major difference in the outcome. Suicidal ideation can be transitory, as illustrated by several studies of survivors of serious, self-inflicted gunshot wounds. Many of these survivors were happy to have survived, made no further attempts, and adjusted reasonably well after reconstructive surgery or other medical interventions. Stressful life events and the consumption of intoxicants were key factors in many of these incidents.
Impulsivity characterizes many adolescent suicides. These suicides sometimes cluster closely in time and place, indicating the extent to which adolescents may be very responsive to events occurring just prior to their own attempts. Also, many adolescent suicides are preceded by conflicts with family or boy/girlfriends. Furthermore, many of these incidents are not preceded by suicide notes, previous attempts, or verbal warnings and are committed under the influence of alcohol. Moreover, some studies indicate that the largest category of adolescent suicides are committed by those with impulsive character disorders who kill themselves due to anger or spite, rather than due to longstanding motives.

2.4.2.4 Other Motives: Stressful Life Events

With respect to stressful events, Moyer and Carrington (1992:38) found that none of a standard list of major life events was significantly associated with firearm suicides as opposed to suicides using other methods. However, when the presence versus absence of stressful life events was examined, victims with one or more stressful events were more likely to use firearms (and other immediately lethal methods of suicide such as hanging or jumping from a high place) than were persons who had no known stressful events reported in Ontario coroners' files.

Studies of familial homicides by Dansys Consultants (1992:47) and Wilson and Daly (1994:4) found that spouses who kill other family members with guns sometimes attempt to or successfully commit suicide following the incident. The shooters are often fathers who are suffering financial difficulties or separation from their families. The characteristics of firearm homicides followed by the suicide of the shooter are not well researched.

2.4.2.5 Other Motives: Mental Illness

In their analysis of male suicides in Ontario in 1989, Moyer and Carrington (1992:36) found that men reported by coroners as having a history of severe depressive illness were less likely than other victims to select a firearm. Rather, their choice of method was typically poisoning, often an overdose of the medication prescribed for their mental illness.

*The following is a standard list of major life events found in the literature and utilized in the Moyer and Carrington research on male suicides in Ontario coroner's files: death of a family member; change in the size or composition of the household, including separation, divorce and childbirth; change of address; work and income problems such as job loss; legal problems such as recent criminal charges; physical illness of the victim; other loss of relationships; and “other” major life events.*
2.4.3 Summary

Environmental factors that appear to be associated with firearm suicide include the degree of urbanization of the community where the prospective suicide victim lives, which may be an indicator of the differential availability of firearms in rural and urban areas. Rural areas have higher firearm suicide rates than do urban areas. Probably because of the differences in their relative availability, long guns are utilized for suicide in much larger proportions than are handguns. Cultural and socialization factors have also been used to explain the differences by region and gender in the use of firearms for suicide.

Individual risk factors associated with firearm suicide are being male, being under 25 years old and over 65 years of age (although this may vary by region), and current and historical abuse of alcohol and drugs. The relationships between firearm suicide and the motives of the attempter (e.g., stressful life events, mental illness) are not well understood, although studies have found that negative life events and current psychiatric status do not necessarily discriminate between firearm suicides and suicides using other means. Evidence suggests that some suicides, especially those using firearms which tend to be more lethal than other methods, do not result from longstanding social, personal or emotional conditions — that is, some suicides may be impulsive.

2.5 Firearm Homicides

In Canada, firearm homicides account for about 15 percent of all firearm deaths. Depending on the year, firearms are used in 30 to 49 percent of homicides and, most recently, 32 to 36 percent of homicides involved a gun. In the last decade, firearms homicides as a proportion of total homicides have remained relatively constant at about one third.

2.5.1 Types of Firearm Homicides and Types of Firearms

In the literature, one of the most common ways of classifying homicides is in terms of the suspect-victim relationship (e.g., homicides occurring between family members, non-family intimates (ex-spouses, other intimate partnerships), acquaintances, and strangers). Other categories of homicide are those occurring in the context of other crimes, such as gang activity, illegal drug transactions, robbery, and other thefts.

In 1991 to 1995 (combined), Homicide Survey data show that, of solved homicides, 21 percent of firearm homicide victims were current or former spouses, 13 percent were other family members of the shooter, 15 percent were lovers or close friends, 27 percent were acquaintances, 11 percent were in illegal business relationships, and 13 percent were strangers (Moyer and Carrington forthcoming).
Using 1986 to 1991 data obtained from Ontario coroners' files, a typology of firearm homicides was developed: domestic and familial disputes (38 percent of the total); other fights or disputes (13 percent); drug crime-related (9 percent); gang- and robbery-related homicides (10 percent of the total); legal intervention (6 percent); and, "other" reasons (10 percent) (Falk et al. 1996:6). The type of firearm used differed in each type of homicide. For example, long guns were most often the weapons used in domestic and familial disputes and long guns were also common in homicides arising from other fights or disputes. In drug-related homicides handguns were used in the majority of cases. In robbery incidents involving death by firearm, rifles and shotguns (including sawed off weapons) were employed in two-thirds of cases. In gang-related homicides 60 percent of firearms were handguns or other restricted firearms (Ibid.:6-10).

A similar typology is presented in the 1994 report prepared by the Office of the Chief Coroner of Quebec. Homicides arise from: conjugal or familial violence (27 percent); drug dealing, theft of automobiles, or extortion (29 percent); robbery homicides (15 percent); and, homicides occurring in "other" contexts (29 percent). In over 60 percent of conjugal and familial homicides, long guns were employed. As in Ontario, handguns were involved in the majority of cases involving drugs, theft, and extortion. Unlike Ontario, in only 14 percent of the robbery homicides were long guns used. About one-half of the "other" homicides involved a long gun (Bureau du coroner 1994:50).

The victim-offender relationship is, therefore, a key variable for a typology of homicide, especially in conjunction with the degree of urbanization of the community where the incident occurs. Other typologies have incorporated both the victim-offender relationship and the type of criminal activity associated with the homicide. These analyses have found that the type of firearm used differs by the "type" of homicide.

2.5.2 Environmental Factors: Firearm Availability, Type of Firearm, and Urbanization

Data from the Homicide Survey show that the percentage of firearm homicides is highest in the largest (1 million or more) and the smallest communities (100,000 population or less). In the largest urban areas, three-quarters of the firearm homicides involve handguns, while in those with populations of 100,000 or less, over 60 percent of homicides involve rifles and shotguns (Department of Justice Canada 1997).

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6 Note the much higher incidence of crime-related firearm homicides in Quebec compared to Ontario. Quebec firearm homicides differ greatly from those occurring in other regions of Canada (Moyer and Carrington forthcoming).
Historically, long guns were used more often than handguns in firearm homicides in Canada. Between 1975 and 1990, about 60 percent of firearm homicides involved rifles or shotguns (Leesti 1997:6). After 1990, there was an increase in the use of handguns in several provinces with Quebec, Ontario, Alberta, and British Columbia showing the greatest increase (Moyer and Carrington forthcoming). In 1995, in Canada overall, 50 percent of firearm homicides involved a handgun, 38 percent involved a rifle or shotgun, 8 percent of victims were shot with a sawed off long gun, and 4 percent of victims were killed with a fully automatic weapon (Fedorowcyz 1997:6).

Stenning (1995:18) explored the relationships among urbanization, suspect-victim relationship, and the type of firearm employed, and concluded that there are:

two quite different problems of firearms abuse in homicide. In the large urban centres, the firearms homicide problem is largely a problem of handgun use in non-intimate homicides, whereas in rural areas it is much more a problem of long-gun use in intimate homicides.

The "quite different problems" are probably related to the availability of types of firearms (more long guns in rural areas) but thus far, surveys of gun ownership have not been sufficiently large to establish the rural and urban differences in firearm ownership and the types of firearms owned.

2.5.3 Individual Factors

2.5.3.1 Sociodemographic Factors

Since 1975, the overall homicide rate (including firearm and non-firearm homicides) for men has been about twice that for women. For a number of years, the firearm homicide rate was twice as high for males as females, but more recently the male firearm homicide rates are almost three times as high as for women (Moyer and Carrington forthcoming). Being male is therefore a risk factor for being victimized in a homicide.

In Quebec, in 1991 to 1993, victims of firearm homicides were quite young: 25 to 29 year olds had the highest per capita rates, and there is a steady decrease by age after that (Bureau du coroner 1994). With regard to the typology described above, the victims of "other" context homicides were the youngest, and victims killed in firearm robberies were the oldest. The age distributions for victims of familial and other criminal act homicides were very similar; about 37 percent were in their twenties, and one-half were in their thirties.
The majority of familial homicides involving firearms are committed by men (Dansys Consultants 1992). Incidents involving husbands killing wives outnumber incidents of wives killing husbands by a ratio of five to one.

The Crawford and Gartner paper on “Women Killing” (1992: 68-73) cites research findings to the effect that Aboriginal women face risks of family violence that are about six to eight times the risks faced by non-Aboriginal women. The report also states that Aboriginal victims are over-represented among homicide victims.

2.5.3.2 Substance Use

From 1991 to 1995, 46 percent of firearm homicide victims, and 53 percent of other homicide victims had consumed drugs or alcohol (or both) prior to the incident; 56 percent of firearm homicide suspects had used drugs or alcohol, compared to 71 percent of persons suspected of homicides involving other means (Moyer and Carrington forthcoming). With respect to incidents where husbands kill their wives, Dansys (1992) found that the accused was under the influence of alcohol in almost two-thirds of all incidents.

2.5.3.3 Stressful Life Events

Marital estrangement is well known to be associated with increased risk of homicide, especially for females (Wilson and Daly 1994:7). The 1992 Dansys study found that there was a disproportionate involvement of recently separated couples in familial firearm homicides. Another factor associated with familial homicide by firearm is financial problems (Dansys 1992). It is not known if marital separation (and financial problems) are significant risk factors for firearm homicides in particular or only for homicide in general.

2.5.3.4 Prior Record of the Shooter

The Dansys study (1992) reported that almost one-half of the suspects in familial homicides had a record of prior convictions. This aspect of domestic and other intra-familial violence should be examined more closely in future research.
2.5.4 Summary

The social problem of firearm homicide varies by size of community and the nature of the victim-offender relationship. Homicides occurring in rural and urban areas differ considerably, with urban homicides in the larger provinces often associated with other crimes such as drug distribution. The recent increased use of handguns in homicides in the larger, more urban provinces may also be associated with such criminal activity. Analyses of firearm homicides should always include the location of the incident in terms of rural-urban dimension, the type of firearm, and the "type" of homicide. The most frequently used typologies of firearm homicide are based on the victim-offender relationship and the type of criminal act (robbery, drugs, etc.).

As in the case of firearm suicide, the relative availability of long guns versus handguns is probably related to their differential use in rural and urban homicides.

The individual level variables that are correlated with homicide, and firearm homicide in particular, include gender (being male) of both victims and suspects, younger age groups (although this is related to the "type" of homicide), being of Aboriginal background (both victims and suspects), current substance use, and (for women) being estranged from their spouse or lover. A substantial number of suspects in familial homicide have a history of criminal convictions, suggesting that prior offence history should be included in analyses of all types of homicides.

2.6 Firearm Accidents

Accidents make up about 5 percent of all firearm deaths (Hung 1996). There have been about 78 accidental firearm deaths annually in the past 25 years; however, in more recent years (1989 to 1994), the annual average of accidental firearm deaths dropped to 59. According to a recent Department of Justice study, when injuries rather than deaths are considered, the picture changes considerably. For example, of those who required emergency care for firearm-related injuries, nearly one-half sustained accidental injuries, 32 percent had attempted suicide, and nearly 20 percent had been assaulted (Injury Prevention Centre, 1996: 40).
In examining the correlates of fatal firearm accidents, self-inflicted and other accidents should be distinguished, as well as hunting versus residential accidents. For example, in the studies done by Kellermann and his colleagues in the United States, most self-inflicted injuries were due to play, whereas injuries inflicted by others are associated with hunting as well as play among children (cited in Gabor 1994). In a recent Quebec study, 37 percent of accidental deaths arose as a result of a hunting incident; 5 percent occurred when the shooter was carrying the gun; and 48 percent occurred during "other" activities (including Russian roulette, 13 percent of the total). The person responsible for the gun firing was the victim in 55 percent of the cases; this same person was the owner of the gun in 50 percent of incidents (Bureau du coroner 1994:64-66).

2.6.1 **Environmental Factors**

2.6.1.1 Firearm Availability and Type of Firearm

In a review of international rates using countries with different firearm restrictions and presumably different firearm availability, Gabor comments that availability appears to be positively associated with accidental firearm deaths and concludes that more research is required in this area (1994:54-56).

From 1990 to 1992, in the large majority (74 percent) of cases rifles and shotguns were responsible for Quebec accidental deaths; handguns accounted for 24 percent; and a sawed off long gun for 3 percent of the 38 deaths (Bureau du coroner 1994).

2.6.1.2 Firearm Safety Education Courses

A Manitoba study reported that the number of fatal accidents per year was nearly cut in half from 1964-1968 to 1989-1990. This reduction was attributed to the hunter safety program in that province. A decline in hunting accidents in Denmark was attributed to new legislation requiring greater knowledge regarding the handling of weapons (Gabor 1994). Other research has found that non-hunting accidental shootings tend to result from unsafe storage or handling of a firearm, faulty design, or poor maintenance (Ibid.).

2.6.2 **Individual Factors**

2.6.2.1 Sociodemographic Factors

There is probably a link between ownership/availability and accidents (Gabor 1994:56, citing a 1988 Australian study). Men are far more likely than women to own and use firearms, and most victims of fatal firearm accidents are male. For example, only 5 percent of accident victims in Quebec were female (Bureau du coroner 1994:16).
From 1979 to 1988, one-quarter of firearm accident victims in Canada were under 15 years of age and another 30 percent were in the 15 to 24 age category (Chapdelaine et al. 1991, cited in Gabor 1994:53). Of the 38 firearm accidents in Quebec in 1990 to 1992, 13 percent involved victims under 15 years, and 39 percent were 15 to 24 years old. When the per capita rates are examined, there is a bi-modal distribution: the highest rates are found in the 15 to 24 year old group and the second highest in the 55 years and older group (Bureau du coroner 1994:11).

2.6.2.2 Degree of Caution of Shooters

There is debate about the significance of age with respect to the degree of recklessness exhibited by the shooters in firearm accidents. For example, in the United States, the shooters are disproportionately drawn from the same demographic groups that tend to be over-represented in other violent behaviour — males, persons aged 15 to 24, blacks, and lower income persons. At least two of these characteristics (gender and age) are associated with ownership, so any over-representation of males or younger persons in accidents may be due to the greater exposure of these groups to firearms rather than an increased tendency toward reckless behaviour (Gabor 1994:56).

2.6.2.3 Impairment by Drugs and Alcohol

There are few studies examining the relationship between shooter's use of drugs and alcohol at the time of the firearm accident. There may be a correlation between shooter impairment and a subset of fatal firearm accidents. For example, in Quebec, in 8 of the 18 cases where the alcohol consumption of the person responsible for the shooting was known, some alcohol consumption was involved (Bureau du coroner 1994:70).

2.6.3 Summary

Relatively little is known about firearm accidents in Canada and thus far no typologies have been developed. Key factors to be included in any typology are whether the shooter is also the victim, and under what circumstances the accident occurred (e.g., while hunting, children playing with firearms). Firearm availability is believed to be associated with firearm accidents, but no firm evidence is available to support this hypothesis. A second "environmental" factor — the availability of and increased enrollment in safety education courses — has been found to reduce the number of firearm accidents.

Risk factors associated with deadly firearm accidents are gender (being male), being young or past middle age, and being impaired by drugs or alcohol.
2.7 The Need for Multivariate Analysis

Some of the relationships between risk factors and firearm deaths reported in this chapter may be spurious. That is, the relationship identified between variable "x" and firearm deaths could actually be due to another factor ("y"), which is also related to the use of firearms for deadly violence. This section explains why the discovery and reporting of spurious relationships is a potential problem in research that does not employ multivariate analysis.

If two risk factors are strongly associated, and their effects are only examined one at a time, it could be mistakenly ("spuriously") concluded that both have an effect, whereas it may be that only one actually has an effect. For example, since men are much more likely to commit firearm suicide than women, gender is a possible source of spuriousness in any analysis of risk factors for firearm suicide: any group or activity in which men are over-represented will have a higher-than-average rate of firearm suicide because of the presence of men. Failure to "control for" gender may lead to a mistaken attribution of risk to the group or activity, whereas it is really the gender of the members that is the risk factor.

Suppose that a comparison of firearm suicide rates of police officers with firearm suicide rates in the general population finds that the firearm suicide rate of police officers is higher than for the general population. This suggests that being a police officer is a risk factor for firearm suicide. However, it is possible that it is the over-representation of men in this occupation that is the real risk factor, and that access to a firearm in the course of employment is irrelevant.

This possibility can be tested by controlling for gender. There are several techniques — of research design and of statistical analysis — for such controls. One simple statistical technique is the use of multiple tables: in the example above, the firearm suicide rates of male and female police officers would be compared with the general rates of males and females in separate tables.

The following are the possible outcomes of this analysis:

(a) If the rate of firearm suicide was the same for male police officers as for males in the general population, and that of female officers was the same as for females in the general population, the conclusion would be that there was no evidence that being a police officer was a risk factor for firearm suicide.

(b) If the gender-specific rate of firearm suicide was elevated among both male and female police officers, this would suggest that being a police officer is indeed a risk factor for firearm suicide — since the association persists even when gender is controlled.
The gender-specific rate of firearm suicide is found to be elevated among only one gender, for example, among males. This suggests an "interaction effect": being a police officer is a risk factor only in combination with being male.

The final possible outcome of the analysis — and the outcome that most commonly occurs — is that the association persists when gender is controlled, but is significantly weaker. In the example, the gender-specific rates for both male and female police officers are higher than the gender-specific rates in the general population, but not as much higher as when gender was not controlled. This suggests that being a police officer is indeed a risk factor for firearm suicide, but not as strong a risk as the original, uncontrolled analysis suggested.

To avoid spurious correlation it is therefore necessary to do multivariate analysis (i.e., to include multiple risk factors together in the analyses) so that one can disentangle their individual effects. A major problem of much of the literature described above is that multivariate analysis has not been done or, when some attempt to introduce control factors is made, the analysis is lacking.

### 2.8 Summary and Conclusions

Several conclusions relevant to the current research emerge from this review. First, analyses of relationships between risk factors and firearm abuse would greatly benefit by more Canadian data on the environment in which the incident occurred and on the individual characteristics of the shooter and victim.

Second, further research is required to define more clearly the "types" of firearm suicides, homicides, and accidents. Although preliminary attempts to develop typologies for homicide incidents are described in this section, they seem to have been created in an ad hoc manner. Instead, empirically derived typologies of firearm suicides, homicides, and accidents are necessary. Such data would provide a clearer picture of the relationship among risk factors and firearm deaths: different types of firearm suicides, homicides, and accidents have differing circumstances and most likely, therefore, different risk factors.

A comprehensive prospective study — as is being contemplated by this project — could ameliorate these problems by collecting case-based data on the circumstances surrounding firearm deaths and then by creating typologies of each category of incident. With detailed information on relatively large samples of each type of firearm death and by employing multivariate analyses, more informed conclusions about the causal relationships among different risk factors can be drawn.
3.0 INQUEST FINDINGS

This chapter includes a description of the findings from inquests and fatality inquiries on firearm deaths. The objective of this review was to further inform the development of the data collection instrument to be used in this research. Although cases are non-random and may not statistically represent firearm deaths, the inquests’ close scrutiny of these cases can shed further light on firearm deaths.

3.1 Methodology

The Offices of Chief Coroners and Medical Examiners in all provinces and territories were asked to provide us with inquest and fatality inquiry reports relating to firearm deaths for the previous ten years. The material received differed considerably in form and content. Annual publications with brief summaries of the incident and listed recommendations were received from several jurisdictions. From other jurisdictions, verbatim transcripts of recommendations and little or no description of the incident were provided. Finally, complete copies of inquest reports were received from a few provinces. All of the materials were reviewed and a content analysis was undertaken, the findings of which are presented below.

3.2 Overview

Inquests or fatality inquiries are held when there appears to be a need for recommendations for the prevention of similar deaths, or on occasions that are mandated by provincial legislation such as police shootings. Also, in some jurisdictions, the legislation permits relatives of the deceased to request an inquest. Inquests and fatality inquiries occur infrequently. It should, however, be pointed out that in some jurisdictions (e.g., Quebec and British Columbia) there need not be an inquest — that is, a public hearing with witnesses — for coroners to make recommendations to other government agencies. The British Columbia Office of the Chief Coroner provided this research with information on both inquests and inquiries on firearm deaths.

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7 The term differs by jurisdiction.
As noted, the amount of detail in the material received differs considerably. In some jurisdictions, there is little information on the type of firearms used in these incidents (although this information is almost always in coroner and medical examiner files), who owned the firearms, and how they came to be in the hands of the shooter. The exception to this generalization is the report of the David inquiry in Quebec, because its mandate included an examination of the source and storage of the firearms used in five suicides.

In Appendix B, summaries of the available information are provided for all inquests and fatality inquiries obtained by this research.

3.3 Incident and Shooter Characteristics

There are 121 firearm incidents in the inquest sample. Of these cases, 37 percent were suicides, 33 percent were police shootings (legal intervention), 14 percent were homicides, (including murder-suicides (9 percent) and two cases of self-defence (2 percent)), 12 percent were accidents, and 3 cases or 2 percent of the total were undetermined. According to the Causes of Death data in Chapter IV (Table 2), 79 percent of firearm deaths are suicides, 15 percent are homicides, 4 percent are accidents, and 2 percent are legal interventions or undetermined. In the inquest dataset, police shootings are greatly over-represented (33 percent compared to less than 2 percent in the Causes of Death survey) because in many jurisdictions inquests or fatality inquiries are mandatory and in other provinces, they are held routinely. Accidents are over-represented among coroners’ inquiries (12 percent compared to 4 percent) perhaps because of the perception that many firearm accidents are preventable. Suicides are greatly under-represented when the inquest sample is compared to suicides in Canada overall.

Just less than two-fifths (39 percent) of the inquest reports contained firearm recommendations. Accident inquests were somewhat more likely to make recommendations (11 of the 15, or 73 percent, did so) than were inquiries held on other types of deaths.

Long guns (rifles or shotguns) predominated in all types of incidents in the inquest sample. Storage or ownership information was not often provided other than in the report of the David inquiry: of the five suicides described, the firearms belonged to persons other than the victim, usually parents or other relatives; the firearms were insecurely stored in most cases.

Relatively little data on shooter characteristics are available other than, as expected given the review of the literature, they are overwhelmingly male.
3.3.1 Suicide

Of the 45 firearm suicides in the inquest sample, the material available to us mentioned that 18 victims had suffered from depression or other psychiatric conditions and a sizable proportion of this group had been treated or were seeking treatment for their emotional problems. The reports indicated that 11 suicide victims had a history of alcohol or drug abuse. Eight persons had made suicide attempts in the past. In five suicides, the victim was upset over the loss of a love relationship. Also in five cases the suicide victim had problems with the criminal justice system (e.g., had just been charged, was on temporary absence or day parole, had abducted his estranged girl friend). A small number of victims were in chronic physical pain, although only one person was terminally ill. In nine instances there was no explanation of motivation or causative factors.

3.3.2 Homicide and Murder-Suicide

There were 17 homicide and murder-suicide cases in the sample. They often involved victims who were spouses, estranged spouses or lovers. Such “intimate” homicides made up 10 of the 17 homicide incidents. Five incidents involved shooters with major psychiatric problems such as schizophrenia — including two cases where the victim-offender relationship is not specified, two cases where the shooters shot their child, and one case of a stranger victim. In one incident, it was not specified if the shooter knew his two victims. In another case, a 16 year old shot his 11 year old foster brother for no apparent reason, with a firearm that had been (reportedly) securely stored. Clearly the inquest sample is not typical of all firearm homicides — friend, acquaintance, and stranger homicides are greatly under-represented.

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8 In two of the ten cases, the shooting was judged to be self-defence.
3.3.3 Accidents

There were 15 accidents in the sample and they varied in their characteristics: five occurred during hunting, most often when the victim was mistaken for an animal; in three cases adults accidentally shot themselves, including one accident where an intoxicated male dropped his firearm and it discharged; in two cases children shot themselves while playing with a firearm; in one case a police officer accidentally shot another officer at the police firing range; in one case a security guard shot himself accidentally; and, one death occurred while a group was informally skeet shooting and an inexperienced shooter was re-loading a firearm that he thought was empty, it discharged, and killed a companion. In one accident, the victim was robbing a home owner who accidentally shot the offender. In another, when a 26 year old was being arrested, he bolted into a bedroom closet, brought out a shotgun, and the gun discharged during the ensuing struggle. There was actual or implied (by the recommendations) unsafe storage in four of the 15 accidental firearm deaths. It is impossible to determine from the details available how many of the deaths resulted from shooter "carelessness".

3.4 Summary

Further to the review of the literature, notable recurring themes in the inquest material include: the presence of alcohol and drug abuse by the shooter at the time of the incident; the frequent lack of safe storage; and mental health problems of the shooter.
4.0 STATISTICS ON FIREARM DEATHS

The purpose of the review of available data on firearm deaths is threefold: to describe the problems with the available data on gun suicides, homicides, and accidents; to present the data that explains why Quebec, Ontario, Alberta, and British Columbia were initially selected as study sites; and, to estimate the number of cases for the main study.

The sole national data source for all firearm deaths, including suicides, homicides, and accidents, is the Causes of Death survey maintained by Statistics Canada. These mortality statistics are available only in aggregate form. A second source for homicide data is the Homicide Survey, Canadian Centre for Justice Statistics. The Homicide Survey contains case-based data on all homicides from 1974 to the present, and all murders from 1961 to the present. Case-based data on firearm deaths are also available from offices of the chief coroners/medical examiners in most jurisdictions, but not all jurisdictions have computerized information systems, and even in those that do, historical data are not computerized.

4.1 Problems with the Data Sources

4.1.1 Discrepancies in Numbers

As is well known to anyone who has attempted to analyze quantitative information on firearm deaths, the number of deaths varies according to the data source. The number of homicides differs in the Causes of Death and Homicide Surveys. For example, in 1990 to 1994, there were 11 percent fewer homicides in the Causes of Death dataset than in the Homicide Survey. There are at least two factors that account for the difference, with one being more important than the other. First, and perhaps less likely, coroners/medical examiners may be less willing to classify a death as a homicide than police. Second, discussions with Chief Coroners and Medical Examiners and with Statistics Canada officials revealed that there are two main factors that account for the differences in the two data sources:

(a) some forms are received too late for inclusion into the Causes of Death Survey;
(b) the dataset is not updated upon receipt of the final determination of the cause of death — that is, in some (an unknown number of) cases, the coroner or doctor remits a changed (or final) cause of death to the Health Statistics Branch, but the Causes of Death database is not updated.

Statistics Canada officials are in the process of altering their procedures to improve the quality of mortality statistics.

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9 The Chief Coroners/Medical Examiners from Quebec, Ontario, Alberta, and British Columbia indicate that their staff often defer to the police in the assessment of a death as homicide because they have on the scene evidence.
Discussions with the Chief Coroners lead us to compare coroners' data with that found in the Causes of Death survey. A comparison between coroners' data from Quebec and the numbers found in the Causes of Death survey show that Causes of Death reports 5 percent fewer firearm suicides and 8 percent fewer firearm homicides than the Office of the Chief Coroner (Table 1). There are much larger differences between the two data sources for the small number of accidents and legal intervention/undetermined; it is possible that some cases recorded in Causes of Death as accidents are recorded as undetermined in the Quebec coroners' data. Overall, in the three years from 1990 to 1992, there were 1,283 firearm deaths according to the Coroner's Office, and 1,203 according to the Causes of Death publication, a -6 percent difference.

On the other hand, comparison between the Quebec coroners' data on homicide with the numbers found in the Homicide Survey for Quebec show that they are exactly the same for two of the three years; for 1992, the Homicide Survey has one more firearm homicide than that recorded in the Office of the Chief Coroner. (Data not shown in table form.)

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1991</th>
<th>1992</th>
<th>Total</th>
<th>% difference C of D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coroners</td>
<td>C of D</td>
<td>Coroners</td>
<td>C of D</td>
<td>Coroners</td>
</tr>
<tr>
<td>Homicides</td>
<td>81</td>
<td>74</td>
<td>88</td>
<td>79</td>
<td>82</td>
</tr>
<tr>
<td>Suicides</td>
<td>343</td>
<td>317</td>
<td>303</td>
<td>291</td>
<td>294</td>
</tr>
<tr>
<td>Accidents</td>
<td>15</td>
<td>28</td>
<td>11</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Legal intervention/undetermined</td>
<td>18</td>
<td>5</td>
<td>21</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>424</td>
<td>423</td>
<td>400</td>
<td>403</td>
</tr>
</tbody>
</table>


### 4.1.2 No National Case-based Data on Suicides and Accidents

There is no computerized source of information for the country as a whole on the characteristics of suicides and accidents. The data reported in the Causes of Death publication are aggregate data — annual totals going back many decades — categorized by jurisdiction, age, and gender.
4.1.3 No Data on Type of Firearm

Data on the type of firearm in the Causes of Death survey are not usable because of the very large proportion of "unknown" cases; this means that no national data on firearm type are available for accidents and suicides. On the other hand, the Homicide Survey is believed to contain relatively reliable data on firearm type, at least for the last two decades.

4.2 The Rationale for Site Selection

Table 2 shows the total number of firearm deaths in the country and in the four jurisdictions selected for the feasibility study for 1990 to 1994 combined. In these five years, Quebec, Ontario, Alberta, and British Columbia accounted for 79 to 88 percent of firearm homicides (depending on the data source), 78 percent of all firearm suicides, and 69 percent of all firearm accidents. Overall, almost 80 percent of firearm deaths, according to the Causes of Death survey, occurred in these jurisdictions.

However, Ontario was unable to participate in the feasibility study, and this may also be true for the main study. The three other large provinces — Quebec, Alberta, and British Columbia — account for 55 percent of all firearm deaths, according to the mortality statistics in the last row in Table 2. The problems raised by utilizing only three jurisdictions for data collection are discussed next.
### Table 2: The Total Number of Firearm Deaths, Canada and Four Jurisdictions, 1990 to 1994

<table>
<thead>
<tr>
<th></th>
<th>Homicide Survey</th>
<th>Causes of Death Survey</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Homicides</td>
<td>Homicides</td>
<td>Suicides</td>
<td>Accidents</td>
<td>Legal intervention/undetermined</td>
<td>Total (Causes of Death)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>1,104</td>
<td>979</td>
<td>5,237</td>
<td>277</td>
<td>133</td>
<td>6,626</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td>330</td>
<td>329</td>
<td>1,475</td>
<td>90</td>
<td>30</td>
<td>1,924</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ontario</td>
<td>290</td>
<td>247</td>
<td>1,267</td>
<td>44</td>
<td>34</td>
<td>1,592</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td>101*</td>
<td>124*</td>
<td>700</td>
<td>32</td>
<td>12</td>
<td>868</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td>154</td>
<td>157</td>
<td>658</td>
<td>24</td>
<td>14</td>
<td>853</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal, 4 provinces</td>
<td>875</td>
<td>857</td>
<td>4,100</td>
<td>190</td>
<td>90</td>
<td>5,237</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total, 4 provinces</td>
<td>79.3%</td>
<td>87.5%</td>
<td>78.3%</td>
<td>68.6%</td>
<td>67.7%</td>
<td>79.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal, Qué., Alta., B.C.</td>
<td>585</td>
<td>610</td>
<td>2,833</td>
<td>146</td>
<td>56</td>
<td>3,645</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total, Qué., Alta., B.C.</td>
<td>53.0%</td>
<td>62.3%</td>
<td>54.1%</td>
<td>52.7%</td>
<td>42.1%</td>
<td>55.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* In Alberta, the number of firearm homicides is higher in the Causes of Death dataset than in the Homicide Survey. This is not readily explained.


#### 4.3 Projections of Firearm Deaths

This section estimates the number of firearm deaths likely to occur in a 12 month period in 1998 to 1999 when the main study would be conducted. This is done to determine whether the numbers are sufficient for the analysis being proposed for the main study, and to estimate the amount of workload required of the coroners and medical examiners in the participating jurisdictions.
Figure 1 shows the annual number of deaths by firearms in Quebec, Ontario, Alberta, and British Columbia using Causes of Death data. Based on these data, one would expect that Quebec firearm deaths will range from about 344 to 425, although if the downward trend shown in the graph continues, the actual number will be more likely to fall at the lower end of this range. Aside from an unusually low number of 273 deaths in 1990, the Ontario data suggest that there would be between 308 and 372 deaths in a year. As in Quebec, there may be a decreasing trend. Both Alberta and British Columbia have a similar pattern and the expected numbers are similar: in a one year period, we estimate that between 142 and 203 firearm deaths might occur in Alberta, and in British Columbia, between 143 and 199.

After summing these estimates, we find that the four provinces may be expected to have from 940 to 1,200 firearm deaths in a one year period; 1,070 is the midpoint of this estimate. Of the projected 1,070 deaths, about 78 percent will likely be suicides (838), 16 percent will be homicides (175 deaths), 4 percent will be accidents (39 cases), and the remaining 18 cases will be police intervention and/or undetermined. These projections should be taken as approximations given the differences among Homicide Survey, Causes of Death, and coroner data that were discussed above.

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10 It should be remembered that, according to the preceding analysis, the Causes of Death data may underestimate firearm deaths by about 6 percent.

If Ontario does not participate in the subsequent phases of this research, the estimated total number of cases ranges from 632 to 828, with a midpoint of 730 deaths. The projections for the number of each category of firearm deaths in Quebec, Alberta, and British Columbia is: 122 homicides; 567 suicides; 29 accidents; and 12 cases that result from police intervention or are undetermined.
The main study is to develop "typologies" of homicides, suicides, and accidents based on the details of the incidents which occur during a one year period. Given the numbers cited above, this objective cannot be achieved for accidents even if all four provinces participated. To illustrate the point with regard to accidents: if the 39 or 40 firearm accidents were divided into categories such as shooter versus other deaths, hunting versus other types of incidents, and type of firearm, many cells would be empty. If Ontario does not participate in the study, the number of homicides (122) is also too low for typology development. To take the homicide example: in order to develop a typology, firearm homicides would have to be divided into categories such as suspect-victim relationship, the circumstances of the offence, and the size of the community. The vast majority of cells would contain fewer than five cases — far too few to develop empirically derived "clusters" of firearm incidents.

Therefore, a typology of firearm accidents is unlikely to be empirically developed even if all four provinces participated in a data collection period of 12 months. The development of a typology of firearm homicides and suicides is, however, possible if the four provinces were to participate and our projections are reasonably accurate. If Quebec, Alberta, and British Columbia were the only provinces to undertake the main study, then a valid homicide typology would also be difficult to construct.

With regard to the last comment, analysis of the Homicide Survey has found that Quebec incidents differ considerably from those in the rest of the country: for example, fewer homicides are "cleared" and more homicides involve prohibited and restricted firearms (Moyer and Carrington forthcoming). If only three provinces participate in the main study, a substantial proportion of homicide cases would come from Quebec and the contextual details of the homicides, and therefore the distribution of the number of incidents falling into each category of the typology, would not be characteristic of Canada as a whole.

A possible solution to the problem of sample size for homicide is to expand the "window" of data collection for homicides and accidents from one to two years in each of the three participating jurisdictions. A second option is to develop a typology using data from the Homicide Survey. The drawback of this approach is that a number of important incident characteristics surrounding the provenance and storage of the firearm would not be available. The benefits of utilizing the Homicide Survey are that all homicides in Canada would be used, and multiple (recent) years could be used to increase cell sizes.
5.0 THE FEASIBILITY STUDY

This chapter describes the present feasibility study, including: the role of the Chief Coroners and Medical Examiners in study design; the organization of the Coroners' and Medical Examiner's Offices; the methodology used in the feasibility study; its scope and procedures; the problems with the instrument; the response rate for key variables; and a summary of outstanding issues to be established before the main study begins.

5.1 The Role of the Chief Coroners and Medical Examiners

A meeting of the Chief Coroners of Ontario, Quebec, and British Columbia and the Chief Medical Examiner of Alberta, Justice officials, and the research team was held in April 1997. The purposes of the one and a half day workshop were: to determine support for the study as a whole; to obtain the advice of the Chiefs with regard to research procedures and the contents of the survey instrument; to seek their participation in a feasibility study; and, to obtain a preliminary view of the challenges that might be encountered. Also discussed were data collection procedures and the most effective way that the feasibility study could be undertaken. It was decided that the strategies used for data collection would differ in each jurisdiction.

Generally speaking, the Chiefs were in favour of the research and believed that it could contribute to our knowledge of how firearm deaths occur and how they may be prevented. Details of the research design process and the scope and procedures of the feasibility study are discussed below.

The Chief Coroners at the workshop emphasized that their offices are burdened by research requests. Relatively low remuneration for fee-for-service coroners/medical examiners means that many are reluctant to undertake additional work without recompense — especially since requests for special surveys are made with some frequency. In addition, current budget constraints would not permit the provinces to pay personnel for completing the survey instrument. However, given their interest in understanding firearm deaths in greater detail, three of the four Chiefs present at the meeting agreed to participate in the feasibility study.

5.2 The Organization of Coroners'/Medical Examiners' Offices

Because this study proposes to utilize coroners and medical examiners to collect prospective data on firearm deaths, we needed to know how their organizations are structured so that we could, so far as possible, mesh the research requirements with the routine activities of coroners. This section describes the organization of each office.
5.2.1 Overview

Coroners and medical examiners are responsible for determining the cause of death in specified categories of deaths. Provinces and territories have different legislation that determine when a coroner must become involved. For example, in British Columbia, deaths occurring in nursing homes must involve a coroner. In all jurisdictions, however, the involvement of coroners/medical examiners is automatic in apparent homicides, suicides, police shootings, and in deaths occurring in psychiatric, correctional and child welfare facilities.

In the four jurisdictions selected for the feasibility study, the majority of coroners/medical examiners are part-time personnel, employed on a fee-for-service basis. In large cities in Quebec, Alberta, and British Columbia, employees of the coroner's/medical examiner's office supplement the part-time officials. In every jurisdiction, the primary tasks of coroners/medical examiners tend to be similar: to identify the victim and determine the cause of death, liaise closely with the police to determine whether the firearm death is an accident, suicide, or homicide; to decide if an autopsy is required; and, to monitor and to coordinate the paperwork required by the system.

Physicians, the police, or paramedics inform the local coroner/medical examiner when a death occurs that comes under the latter's jurisdiction. Coroners/medical examiners may or may not attend the scene of the death, but if the scene is not attended the body of the deceased is generally viewed later and, if deemed necessary, samples are taken for alcohol and drug testing. Practices with regard to speaking to the next of kin appear to vary by coroner/medical examiner and the circumstances of the death. In most suicides, the coroner or the police will speak to a relative in order to ascertain the reason for the death. Coroners/medical examiners do not generally become involved in homicide investigations, other than to arrange for an autopsy and undertake the paperwork required.

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11 This was also the case in Ontario until a few years ago.
All case files are maintained in the Office of the Chief Coroner/Medical Examiners and usually include: reports describing the findings of the coroners/medical examiners; the police report; the death certificate; the findings from the autopsy, and drug and alcohol testing (if conducted). A point relevant to the proposed research is that frequently the completed files containing all the records collected by the coroner/medical examiner responsible for the case may not be remitted to the central location for a number of months (up to six or eight) after the death. This occurs because of delays in receiving the necessary paperwork (e.g., toxicology tests may take several months). If the coroner/medical examiner must speak to the next of kin or friends and acquaintances, this may be done several months after the death.

Inquests (termed fatality inquiries in Alberta) are held in a very small percentage of firearm deaths. Inquests most often take place when there is concern about the cause of death, when the incident is one that suggests that public education or prevention efforts are required, or when a review of the functioning of societal institutions (e.g., police response to domestic assault cases; the way in which children are dealt with by child protection agencies) is seen to be required.

Coroners and medical examiners are administratively located in justice-related ministries, not in health departments.

### 5.2.2 Quebec

There are about 100 assistant coroners in this jurisdiction, all of whom are lawyers, doctors, or notary publics, who act as coroners on a part-time basis. Their fee is $50 per hour with a maximum of four hours per case. In addition to the part-time coroners, six full-time employees of the Coroner's Office are based in the Montreal and Québec City administrative areas where the volume of deaths is relatively high. There is no regional structure in Quebec. The assistant coroners report directly to the Deputy Chief Coroner.

The task of coroners in Quebec is primarily administrative — once the coroners determine the cause of death, they are responsible for coordinating the paperwork required, deciding on whether an autopsy or drug testing should be done, and transmitting the paperwork once completed to the Office of the Chief Coroner. An examination of files in the Chief Coroner's Office found that they contain a considerable amount of documentation on many firearm deaths.

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12 Also, we were informed that in some jurisdictions, fee-for-service coroners/medical examiners "batch" their files and send in a large number at one time, often at the end of the fiscal year.

13 Inquests are mandatory in many jurisdictions in shootings by police.
As elsewhere, the coroner may speak to the next of kin of the victim in suicides and accidents, and always works with police to determine the cause of death. In homicides, coroners rely on the findings from the police investigation for information such as the type of firearm and the social and demographic characteristics of the victim.

The Chief Coroner is a lawyer, and the Deputy is a medical doctor. Both are appointed for a five year period. The Office of the Chief Coroner is administratively located in the Ministry of Public Security (termed the Solicitor General in other jurisdictions).

5.2.3 Ontario

All coroners in Ontario are medical doctors. In addition to the Chief Coroner and his two deputies, there are eight full-time regional coroners to whom 313 fee-for-service coroners report. The full-time coroners fulfill administrative functions and also may assist the fee-for-service coroners in more complex cases, but the large majority of the investigative work is undertaken by the latter. The fee-for-service coroners, all of whom are medical practitioners, are appointed by Order-in-Council. Their fee is $145 for each investigation, and in some instances they may be reimbursed for expenses such as mileage costs. In exceptional cases, where the coroner has worked much more than the "typical" case, he or she may also be reimbursed in excess of the $145.

Newly appointed fee-for-service coroners meet with the regional coroner for a one day session and also attend a 2.5 day course where they receive training in various aspects of their responsibilities. In addition, annual courses are offered by the Office of the Chief Coroner, and fee-for-service coroners are encouraged to take this course every two or three years.

Coroners are informed of deaths by the police or hospitals. They typically attend the scene of the death or, if the deceased's body has been removed, they attend at the hospital. The coroners usually speak to a family member to inform them of the procedures (e.g., release of the body) and, in cases of possible suicide, to determine the reason for the death; on occasion, they might also speak to the attending physician of the deceased.

Coroners work closely with the police, and always obtain the report of the police investigation. Legally, the investigation into the cause of death is the responsibility of the coroner, not the police.

Unlike most other jurisdictions, the large majority of suicides as well as homicides have an autopsy. Alcohol and drug testing is also done on a regular basis.
The Chief Coroner is an assistant deputy minister responsible for public safety in the Ministry of the Solicitor General and Correctional Services.

5.2.4 Alberta

The Alberta Medical Examiner's Office is staffed by 3.7 medical examiners who are forensic pathologists. Two full-time medical examiners, including the Chief Medical Examiner of Alberta, are located in Edmonton. In Calgary, there is one full-time examiner and one who works part-time. Medical examiners establish the identification of diseases, in addition to the cause and manner of death. There are four medical investigators in each of Edmonton and Calgary who are nurses or paramedics. They visit the scene of the city death and interview next of kin; unlike the part-time examiners, they cannot sign the death certificate because they are not medical practitioners.

In the rest of the province there are 125 part-time medical examiners, all of whom are doctors, who work on a fee-for-service basis. RCMP officers provide basic descriptive information to the medical examiners. The part-time fee-for-service medical examiners are appointed by the Ministry of Justice. The fee is a maximum of $110 per case — involving attending the scene and doing an external examination — or slightly less if an autopsy is required. Autopsies are done by pathologists in Calgary and Edmonton.

Whether the fee-for-service medical examiner attends a scene of death depends on a number of factors including the nature of the reported death, the time of day, and the location of the death — it is a case-by-case determination. If the local examiner does not attend the scene, he or she is still responsible for overseeing the case (e.g., determining whether an autopsy is required in cases other than homicides; homicides always result in an autopsy).

At the scene, the police are responsible for documenting the scene findings, such as the means of death (e.g., hanging, etc.), tentatively identifying the deceased, and obtaining information on the victim such as date of birth. The medical examiner collects information on the medical background of the deceased, conducts an external examination, collects toxicology specimens if deemed necessary, and is ultimately responsible for making an identification of the deceased. If the death is a homicide, the police take continuity of the body and accompany the body to its destination in either Calgary or Edmonton where autopsies are performed.

For most accidental deaths a toxicology examination is conducted. In homicides, the RCMP crime laboratory does all toxicology tests. In suicides, the decision to conduct a toxicology examination is discretionary and is based on the evidence at the scene of the incident.
5.2.5 British Columbia

In this province the coroners' system is composed of 120 to 130 community members with a wide range of backgrounds. These fee-for-service coroners report to eight regional coroners, who are full-time employees of the Coroners Office. In addition to the eight regional staff, there are another 14 full-time coroners in the province — including both administrative officials in the Coroners Office and eight coroners who work in high volume areas of the Lower Mainland and Victoria. All work on a rotation system; that is, they are "on call" for specified periods and full-time and part-time coroners share the workload. On occasion the fee-for-service coroners will refer an investigation to a full-time official because of the nature of the case (e.g., because it is very involved or the amount of work required). The coroner’s office provides medical expertise when necessary, and pathology and toxicology services are provided for on a fee-for-service basis.

A week long training session is held annually, with new coroners having to work as an agent for more than six months and have a significant case load before being promoted to coroner. This provides an apprenticeship period for these community coroners. A two day training session is held annually in order to provide them with up-to-date information on procedures and responsibilities. All training is organized by the Office of the Chief Coroner.

On average, the coroners work from four to five hours on a death. The pay scale for the fee-for-service coroners is $20 per hour.

Coroners are informed of deaths by police or hospitals, and usually attend the scene of the death if the body is still at the scene. In suicides and accidents, they always speak to next of kin and liaise with the police during the investigation, and will likely speak to the doctor who attended the deceased. In homicides, the coroner does not become directly involved at the location of the incident in order to avoid contaminating the scene; the main involvement of the coroner is to arrange for the autopsy. Within 48 hours, the Office of the Chief Coroner is informed of all deaths, including the name and date of birth of the deceased and a brief description of the incident.

Autopsies are done routinely for homicides and in other cases when there is uncertainty about the cause of death. Homicide victims are automatically tested for drugs and alcohol, and toxicological tests are done in other cases when there is evidence of drug or alcohol use.
The time between a death and case closure is somewhat longer in British Columbia than in other jurisdictions. In British Columbia, the closing of a file can take six to eight months, because of delays in receiving drug/alcohol screening results and police reports. In Quebec, Ontario, and Alberta, cases are usually closed in less than four months.

5.3 Methodology

5.3.1 The Design Process

The project team designed a draft instrument for completion by coroners and medical examiners. The initial draft was based on previous research by Moyer and Carrington (1992), the literature review, a review of the characteristics of deaths on which inquests had been held, inquest recommendations, an instrument used in a suicide study in Quebec, and a number of items from the Homicide Survey such as the sociodemographic characteristics of victims and shooters. After review by staff of the Canadian Firearms Centre, this instrument was discussed by the Chief Coroners of Quebec, Ontario and British Columbia and the Chief Medical Examiner of Alberta, at the workshop described above.

In reviewing the data collection instrument, the Chiefs noted that some information may not be available or, if available, may not be very reliable. Clinical data such as toxicology testing may not always be available — drug tests are infrequently done in three of the four jurisdictions in the majority of firearm suicides because the cause of death is readily apparent from the scene of the incident. Data on the stressful life events preceding suicides and the psychiatric history of the deceased may be of uncertain quality.

The Chiefs raised the issue of collecting information in ongoing homicide investigations, prior to the conviction of a suspect. It was agreed that some data would not be collected if it could jeopardize the investigation; because of higher court decisions relating to disclosure, it is possible that defence counsel could obtain access to the research protocols, which in some cases (it was believed) may harm the Crown's case. It was decided that the results of the feasibility study would help to determine whether this is indeed an issue.14

A number of items from the suicide study being undertaken in British Columbia were added to the instrument; for the most part, they related to stressful life events and life history.

14 This is discussed below under "response rate" for the homicide component of the instrument.
As a result of this collaborative effort, and after a conference call to finalize the data collection instrument, a final version of the form was distributed to the Office of the Chief Coroner of British Columbia and the Office of the Chief Medical Examiner in Alberta in late June 1997 for a three month data collection period starting July 1, 1997. Following the translation of the instrument, data collection in Quebec began on July 15, 1997 for a three month period. The study was not undertaken in Ontario (see below).

5.3.2 The Contents of the Instrument

The following gives an overview of the items contained in the data collection form, a copy of which is found in Appendix B:

Part A: For all deaths:
- The name of the community and police service; date of incident resulting in the death; time of day of incident; location of the incident; type of firearm and ammunition (e.g., manufacturer, calibre)
- Name and date of birth of the shooter (so that during the main study, whether the shooter had a Firearm Acquisition Certificate could be determined); whether the shooter had firearms training; shooter's previous experience with firearms; when the gun and ammunition were acquired; where and how the firearm was stored prior to the incident; whether the shooter is the gun owner and, if not, how did the shooter obtain the firearm.
- Type of incident: suicide, homicide, accident, unknown/undetermined.

Part B: Victim data for all deaths: date of death; age at death; whether the victim died immediately; sex; marital status; aboriginal status; employment status; occupation; living arrangements; blood alcohol content; toxicological results; history of alcohol and illegal drug abuse; whether an inquest was held.

Part C: Suicides:
- Location of incident; whether shooter under the influence; history of chronic health problems, etc; contact with service providers; recent stressful events (a list of 11 major life events); disclosure of suicidal leanings; prior record, including current violation of court order, re: firearm possession; whether the person left a note; source of information.

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The form asked respondents to specify the name of the community where the death occurred and, if different, the name of the community where the victim lived. In the main phase of the study, this information would be used to determine the size of the community and where it falls on the rural-urban dimension.
Part D: Homicides:
Location of incident; whether another offence (e.g., robbery) was involved; apparent motive of suspect; whether the homicide was "cleared" and how; most serious charge laid; victim-accused relationship; prior interpersonal conflict between victim and shooter; personal information about the accused (the same data as enumerated above for the victim); accused's contact with service providers; prior record, including current violation of court order re firearm possession.

Part E: Accidents:
Location of the incident; whether the shooter or someone else was killed; contributing factors to the incident; whether the incident involved hunting; whether the shooter was under the influence of alcohol/drugs at the time of the incident.

Other studies have found that the items in sections A to C are not routinely contained in police or coroner files.

The homicide data in section D are similar to that collected in the Statistics Canada Homicide Survey, although more detailed information is requested on: the offence history of the suspect, prior interpersonal conflicts between the suspect and victim, and the suspect's contact with service providers. There is no data source which contains case-based data on suicides and accidents similar to what was requested by the study.

5.4 The Scope and Procedures of the Feasibility Study

Contrary to expectations, it did not prove possible to conduct a full-scale pre-test of the instrument and data collection procedures. It was originally anticipated that each jurisdiction would utilize approximately the same methods of collecting the data, that the pre-test would be province-wide, and that the coroners/medical examiners responsible for the investigation of the death would complete the instrument. We expected, too, that the response burden for individual coroners would be minimized by having the coroner/medical examiner complete the form, with the assistance of police, at the same time as the investigation was being conducted.16

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16 Because firearm deaths are relatively rare events, no one coroner would be responsible for more than a small number of cases of firearm deaths, even in a one year period. This is, in fact, one of the major problems with the methodology of this study: how can a large number of "data collectors" be trained and monitored on completion of the form when many would see very few cases during 12 months? Because of the relative infrequency of firearm deaths, the development of routinized procedures and well-briefed data collectors become very difficult.
5.4.1 Ontario

The Chief Coroner of Ontario indicated that the workload and current fee structure of the fee-for-service coroners precluded the participation of Ontario in the feasibility study. The problems around coordination of the study, and obtaining the cooperation of hundreds of police forces in the province (as well as hundreds of part-time coroners), were seen as major impediments to participation in the feasibility study. Moreover, an internal committee of the Ministry of the Solicitor General and Correctional Services must approve all research requests, and this committee would require a detailed proposal and the final instrument before its members could make a decision. The Chief Coroner noted, too, that obtaining the active assistance of police might be difficult because of limited resources in police services. Finally, it was emphasized that the release of details of homicide cases prior to the conviction of a suspect would be of considerable concern to police because release might jeopardize legal proceedings.

5.4.2 Quebec

The feasibility study was limited to the Montreal and Québec City administrative areas, where the coroners are employees of the Office of the Chief Coroner and could therefore be instructed to participate. The Deputy Chief Coroner described the study to the six full-time staff members during a conference call a short time before the start-up date of the pre-test (July 15, 1997). The instruments were sent by the Office of the Chief Coroner to the Montreal and Québec City offices. Upon completion, the forms were returned to the Office of the Chief Coroner and sent to the project team; no review of the forms was undertaken by Coroner’s Office personnel.

It was suggested that, in Quebec, the section on prior record of the victim (and shooter, in the case of homicide) could be completed by staff of the Office of the Chief Coroner. The original plan was to contact the Sûreté du Québec and ask police to run a records check using the name and birthdate of the victim and shooter. However, staff constraints in the Office of the Chief Coroner prevented this process from occurring and as a result, the pre-test does not provide data on the prior record of victims and shooters for this jurisdiction.

No problems were cited by the staff members responsible for form completion, and a Quebec official noted that the form was easy to complete if the information was available. If coroners did not attend the scene of the death, information was more difficult to obtain, and it was indicated that this may have occurred more often in Montreal than in Québec City. The coroners generally consulted the police, but sometimes found that the information being requested was not available because it was requested after the death and the police were not aware of the study requirements in advance. It was recommended that police be more involved in the data collection if the main study is conducted.
5.4.3 Alberta

The feasibility study was undertaken province-wide. The Chief Medical Examiner assigned the supervisor of the records section and a medical investigator in the Edmonton office, and a medical investigator in the Calgary office, to coordinate the collection of the needed information for all firearm deaths in the province. Therefore, incidents occurring in the south part of the province were dealt with by a Calgary medical investigator, and in the north by Edmonton office personnel.

Interviews and the findings from the pre-test indicate that the Calgary medical investigator was diligent in locating the information required through interviews with next of kin, police, and others knowledgeable about the victim. The medical investigator tracked firearms deaths with the assistance of office colleagues. There was no problem in identifying firearm deaths occurring in the city of Calgary, but somewhat more of a problem in ensuring that all firearm deaths occurring outside of the city were captured. The medical investigator collected the information required from existing reports and through interviews with next of kin and police. In person interviews were conducted with family members if they were located in the city. In cases outside of Calgary, the family members and the police were contacted by telephone. Few problems in obtaining the information required by the survey instrument were reported. The exception was one on-reserve death, where the next of kin were difficult to locate and somewhat reluctant to answer questions. It was also noted that many reserve residents do not have a telephone. The additional workload was not seen as problematic — there were only eight firearm deaths over the three months of the pre-test.

In Edmonton, where 19 firearm deaths occurred, staff members completed the survey instrument using police reports, the report of the medical examiner, and other material routinely collected by the Medical Examiner's Office. When an initial report of the death was received by the Edmonton office, staff would start to complete the form and additions would be made when more reports were remitted to the office. The Medical Examiner's staff often faxed relevant parts of the survey instrument to the RCMP detachments responsible for the investigation. The respondent noted that the RCMP was not aware of the study, and perhaps officers could have answered more of the questions if "K" Division had been asked for cooperation and detachments had been informed at the outset of the research. In the respondent’s view, when police are asked questions two weeks after the fact, many are not motivated to go back to the family to obtain the answers. (No personal interviews with next of kin were conducted by the Edmonton form completers.) The respondent noted that asking questions of family members weeks after the incident would be too intrusive and that interviews would be best done by police officers while investigating the death. It was estimated that each form required about one hour to complete.
Although the feasibility study was provincial in scope, there was no involvement of the part-time medical examiners.

5.4.4 British Columbia

The feasibility study was also provincial in scope. The Chief Coroner of British Columbia sent a memorandum to the regional offices explaining the study prior to its start-up. A researcher in the Office of the Chief Coroner was responsible for monitoring all firearm deaths and ensuring that the coroner in charge of the case received the relevant parts of the survey instrument by facsimile transmission. The Chief Coroner's Office receives a brief outline of every death within 24 to 48 hours of the incident. This information is computerized, and by using existing codes it is straightforward to identify the location of all firearm deaths and the coroner responsible.

The contact in the Chief Coroner's Office estimated that about 15 minutes per firearm incident (of which there were 42) was spent in coordination, including telephoning coroners who were tardy in remitting completed instruments. It was estimated that the coroners' time for form completion was 15 to 20 minutes per instrument, although the collection of the actual information could take considerably longer. In some cases, coroners went through the instrument with the police, and the respondent believed that in most cases family members were contacted by the coroner.

In the opinion of B.C. officials, we requested the completed forms too early in the process — in some cases files are not "closed" until eight months after the death. In homicide cases, coroners delay speaking to the next of kin because the police have the lead role in criminal investigations and interviews would not be conducted until the police are satisfied that their investigation will not be compromised. As well, toxicology and police reports are often not received for months, and obtaining access to patient records from doctors and mental health personnel takes time. Forms were not remitted for three homicide cases because of delay in receiving police reports.

The confidentiality of homicide data was of concern to the British Columbia Coroner's Office: in homicide cases, the identity of the suspect was not provided to the research team. If the main study were to be conducted, this would mean that we could not determine whether the suspect had a Firearms Acquisition Certificate or a restricted weapons permit.

Two coroners — one full-time and one part-time community coroner — commented about the extra workload necessitated by the study.

17 Support staff were also involved: e.g., in faxing instruments to coroners, and in running the computer program to identify firearm deaths.
5.4.5 Summary and Conclusions

It did not prove possible to undertake a full-scale feasibility study using the same data collectors and procedures as would be used in the main study. While the Chief Coroners and Medical Examiner were very supportive of the feasibility study and extremely cooperative, the procedures for the main study were not fully established during this feasibility phase. We did obtain, however, a better grasp of the difficulties associated with utilizing coroners to act as the primary data collection agents.

Furthermore, in none of the three provinces was there any training of the data collectors on how to answer the survey questions, or what steps were required to obtain the information. Members of the research team had no contact with the coroners directly responsible for data collection in Quebec and British Columbia. In effect, the amount of "extra" work undertaken was left up to the individual informant. No checking of the contents of completed forms was done until the forms were received by the project team for data entry and analysis, and by the time most of the survey instruments were returned to the research team, the feasibility study was almost over. With no monitoring of the data collectors and their procedures, it could be expected that response rates would vary.

Another point with regard to the feasibility study's procedures should be made. This study is described as prospective in that coroners/medical examiners were to be familiar with the contents of the data collection instrument, have it on hand during the investigation of all firearm deaths, and complete it in consultation with the police. The intended result of which was to be the collection of heretofore unavailable information. This may have occurred in the two Quebec sites, but in Alberta the fee-for-service medical examiners were not involved and all data collection was done ex post facto from two central locations, and in British Columbia the fee-for-service coroners were provided with the survey instrument after the Chief Coroner's Office had been notified of the firearm death. The pre-test was not therefore prospective for most cases. A truly prospective study would require the distribution of the survey instrument to all (potential) data collectors before the start-up of the study.

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18 In Alberta, we checked with the staff who were responsible for data collection two or three times during the pre-test.

19 As discussed elsewhere, the time lag for closing of cases differs by jurisdiction, with the time the longest in British Columbia. In both Alberta and Quebec, at the end of two months, most information is available; the exceptions are the findings of blood alcohol tests and toxicology scans. Because of the time lags, the research team received little data until month three - by which time the three months of the feasibility study was almost over.
5.5 Changes to the Instrument

As a result of the pre-test, we recommend that a few changes be made to the survey instrument. Items to be added are: whether the incident is a murder followed by a suicide; the number of victims injured by the shooter but who were not killed (and the seriousness of their injuries); the number of fatalities in each incident; whether the shooter was identified\(^{20}\); and, whether the firearm was recovered.

Because of multiple deaths occurring as a result of the same incident, the computer file structure was altered to accommodate multiple victims from one incident:

- Section A on the firearm incident is entered once, and the incident is the unit of count, even though multiple victims from homicides and murder-suicides may be involved. With the addition of variables in the A and B (victim) sections the number and type of victims can be determined.
- With the addition of variables identifying the victim's category (suicide, homicide, etc.), section B on the victim has the victim as the unit of analysis (i.e., the total number of firearm deaths).

The coding manual that includes the file structure is found in Appendix B of this report.

While the substantive content of the instrument was adequate, consideration should be given to changing the response categories where the information is not obtained. As is discussed below, the response rate for a number of important items is low, and we are uncertain as to the reasons. Perhaps we should have asked the data collectors to specify why the information was not obtained (i.e., because it was not asked, or because the next of kin, police, etc. did not know the answer). Why the information was not obtained is an especially important gap in our knowledge, particularly with regard to items on the firearm, the shooter's past experience with firearms, and firearm storage. In addition, more details should have been collected on the sources of information (e.g., Were the next of kin or friends asked questions?; Were police asked to locate specific items of information or did the data collector rely on police reports?). The disadvantages of these approaches are a longer survey instrument and more time required for completion.

Only two firearm accidents occurred during the feasibility study. This sample size is insufficient for an adequate pre-test of the contents of the accident section of the instrument.

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\(^{20}\) Murder-suicides, number of deaths, and whether the shooter was identified were available from the information provided on the form, and during data entry we created variables or response categories to capture this information. We recommend, however, that these items be added to the form.
We did not pre-test the instrument by following up with Chief Provincial Firearms Offices to determine if the shooter/owner possessed a valid Firearms Acquisition Certificate, or with the RCMP to determine if the shooter/owner in possession of a handgun had a Restricted Firearms Permit — steps which would be undertaken if the main study is conducted. Because of concerns around court proceedings and privacy issues, the name of the shooter in homicides was not provided by British Columbia. In addition, an Alberta respondent commented that the homicide suspect's name is not routinely collected by the Medical Examiner's Office. However, if the name and date of birth of the shooter were available, the collection of FAC and permit information is not problematic.

5.6 The Response Rate

5.6.1 The Study Sample

A total of 87 firearm deaths resulting from 81 incidents was obtained in the three month feasibility study. In four incidents, there were two victims and in one incident there were three victims. Of the 87 deaths, 65 were suicides, 19 were homicides, 2 were accidents, and in 1 instance the cause of death was undetermined.\(^21\)

In the three participating provinces:

- five incidents occurred in the Coroner's Québec City administrative area and seven in Montreal;
- 19 firearm incidents were coded by the Edmonton Medical Examiner's Office and eight by the office in Calgary;
- in British Columbia, there were 42 firearm incidents resulting in death.

Overall, British Columbia contributed 52 percent of the firearm incidents, Alberta contributed one-third, and the two administrative areas in the province of Quebec accounted for 15 percent of the 81 incidents. As discussed in Chapter IV, it was anticipated that one-half of the total number of firearm deaths in the three provinces would occur in Quebec with the remainder being evenly distributed between Alberta and British Columbia. Although the feasibility study did not include the entire province of Quebec and estimates were not provided for the areas that did participate, it was still expected that the number of deaths that occurred in the other two provinces would be fairly evenly split.

We do not presently know whether all firearm deaths occurring during the three months of the study were captured for the Montreal and Québec City administrative areas, Alberta, and British Columbia. We do know that delays in receiving police reports prevented the inclusion of three firearm homicides from British Columbia.

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\(^21\) The undetermined case involved a quadriplegic gun owner: whether accident or suicide could not be determined.
5.6.2  The Response Rate for Key Data Elements

This section describes the extent to which data collectors were able to provide information on the type and provenance of the firearm, the shooter's background, firearm storage and ownership; on the victim's characteristics; the risk factors associated with suicide; the characteristics of the firearm homicide; and accident-specific information. We report the "response rate", defined as the percentage of cases where the respondent was able to answer the question — as opposed to answering "unknown" or leaving the item blank. The response rate is important for this research because the data analysis plan includes the development of typologies of firearm suicides, homicides, and accidents. A low response rate for a large number of key items scattered throughout the instrument introduces the possibility of sampling bias and therefore typologies that have questionable reliability (further discussion of this issue is provided below).

5.6.2.1 Firearm Type, When Firearm Acquired, Shooter's Past Experience with Firearms, Firearm Storage, and Firearm Ownership.

In Table 3 the proportions where the most important firearm-related information was known to the coroner are shown. These items are found in section A of the instrument, and the item numbers in the first column refer to the item numbers on the coding manual found in Appendix B.

Whether the firearm used was a rifle, shotgun, or handgun is known in every case where the firearm was recovered (and in one case where the gun was not recovered); this information is regularly collected by coroners and medical examiners. Whether the long gun had its barrel sawed off is reported for two-thirds of homicides, compared to almost 100 percent for other types of incidents. The type of action of the firearm is typically known, again it was known less often for homicide (73 percent known).

There was enough information to determine the legal status of the firearm — restricted, prohibited, neither restricted nor prohibited — in almost all suicides, murder-suicides, accidents, and undetermined cases. Less information on the firearm was available for homicides than for suicides. In the latter instances, police may have withheld firearm information to avoid jeopardizing court proceedings. As mentioned earlier, the Chief Coroners/Medical Examiners participating in this research had expressed concern about the confidentiality of homicide information that is released before the conclusion of court proceedings against the suspect — this problem is related to the requirement of disclosure of the Crown's case to defence counsel. Homicide cases tend to take 12 or more months before they are finally concluded in court. This would mean that there would be a long time delay before the firearm-related information could be obtained without raising police and Crown concerns.
Whether there was an attempt by police to trace the firearm was known in about three-quarters of cases, with homicide incidents having a higher non-response rate than other types of incidents.

Regardless of the type of incident, it was extremely rare for coroners to report whether the shooter had formal firearms training. While this might be expected for homicide, it was also true for suicide — the item on firearm training was answered for only one-quarter of suicides. Similarly in about one-half of firearm incidents, the shooter's other personal experience with firearms (e.g., hunting, target shooting) was not known.

The response rate for the precise dates that the shooter acquired the firearm and ammunition is very low, less than one-quarter of the sample. When asked to approximate when the shooter acquired the firearm/ammunition, the response rate is somewhat higher, at 33 percent (firearm) and 28 percent (ammunition) of the cases. An actual or estimated date of firearm acquisition is therefore available for 55 percent of incidents; the same figure for ammunition acquisition is 43 percent.

Table 3: Response Rate for Items on the Firearm, Date the Firearm Acquired, Shooter’s Past Experience with Firearms, Firearm Storage, and Firearm Ownership, by Type of Firearm Death

<table>
<thead>
<tr>
<th>Type of firearm death:</th>
<th>Suicide</th>
<th>Homicide</th>
<th>Murder-suicide</th>
<th>Accident</th>
<th>Undetermined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents</td>
<td>63</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>81</td>
</tr>
<tr>
<td>A7, Type of firearm</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100% (11)</td>
</tr>
<tr>
<td>A8, Sawed off barrel (if rifle or shotgun)</td>
<td>98% (55)</td>
<td>67% (9)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>94% (69)</td>
</tr>
<tr>
<td>A9, Type of action</td>
<td>97% (11)</td>
<td>73% (11)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>95% (79)</td>
</tr>
<tr>
<td>A10A, Manufacturer</td>
<td>78% (11)</td>
<td>45% (11)</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>72% (79)</td>
</tr>
<tr>
<td>A10B, Calibre</td>
<td>97% (11)</td>
<td>82% (11)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>95% (79)</td>
</tr>
<tr>
<td>AllRP, Is firearm restricted or prohibited</td>
<td>97% (11)</td>
<td>82% (11)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>95% (79)</td>
</tr>
<tr>
<td>A13A, Is there any evidence that the firearm was smuggled?</td>
<td>98% (11)</td>
<td>92% (11)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>98% (80)</td>
</tr>
<tr>
<td>A14A, Did the police attempt to trace the firearm?</td>
<td>79% (11)</td>
<td>64% (11)</td>
<td>100%</td>
<td>50%</td>
<td>100%</td>
<td>76% (80)</td>
</tr>
<tr>
<td>A17, Did the shooter have formal firearms training?</td>
<td>27% (10)</td>
<td>20% (10)</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>28% (78)</td>
</tr>
<tr>
<td>A20, Did the shooter have other personal experience with firearms</td>
<td>57% (10)</td>
<td>40% (10)</td>
<td>0%</td>
<td>50%</td>
<td>100%</td>
<td>54% (78)</td>
</tr>
<tr>
<td>Type of firearm death:</td>
<td>Suicide</td>
<td>Homicide</td>
<td>Murder-suicide</td>
<td>Accident</td>
<td>Undetermined</td>
<td>Total</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------</td>
<td>----------</td>
<td>----------------</td>
<td>----------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>% of Incidents Where the Information Was Provided (Response Rate) before this incident?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A22, Precise date the shooter acquired the firearm</td>
<td>19% (10)</td>
<td>20% (10)</td>
<td>50% (10)</td>
<td>100% (10)</td>
<td>0% (10)</td>
<td>22% (78)</td>
</tr>
<tr>
<td>A22EST, Estimated date the shooter acquired the firearm</td>
<td>34% (53)</td>
<td>25% (8)</td>
<td>0% (1)</td>
<td>- (1)</td>
<td>100% (63)</td>
<td>33% (63)</td>
</tr>
<tr>
<td>A23, Precise date the shooter acquired the ammunition</td>
<td>14% (10)</td>
<td>10% (10)</td>
<td>50% (10)</td>
<td>50% (10)</td>
<td>0% (10)</td>
<td>15% (78)</td>
</tr>
<tr>
<td>A23EST, Estimated date the shooter acquired the ammunition</td>
<td>29% (56)</td>
<td>22% (9)</td>
<td>0% (1)</td>
<td>100% (10)</td>
<td>0% (10)</td>
<td>28% (68)</td>
</tr>
<tr>
<td>A24, In what type of location was the firearm stored before this incident? (e.g., home, car, etc.)</td>
<td>79% (10)</td>
<td>70% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>79% (78)</td>
</tr>
<tr>
<td>A25, Was the firearm stored in a locked cabinet, container, closet in these premises?</td>
<td>62% (10)</td>
<td>70% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>65% (78)</td>
</tr>
<tr>
<td>A26, IF NO to last question, How was the firearm stored?</td>
<td>94% (33)</td>
<td>50% (6)</td>
<td>100% (6)</td>
<td>100% (6)</td>
<td>100% (6)</td>
<td>88% (43)</td>
</tr>
<tr>
<td>A27, Was the firearm stored in an operable condition?</td>
<td>48% (10)</td>
<td>20% (10)</td>
<td>50% (10)</td>
<td>50% (10)</td>
<td>100% (10)</td>
<td>45% (78)</td>
</tr>
<tr>
<td>A28, Was the firearm stored loaded?</td>
<td>35% (10)</td>
<td>20% (10)</td>
<td>0% (10)</td>
<td>100% (10)</td>
<td>0% (10)</td>
<td>33% (78)</td>
</tr>
<tr>
<td>A29, Where was the ammunition stored?</td>
<td>43% (10)</td>
<td>40% (10)</td>
<td>50% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>45% (78)</td>
</tr>
<tr>
<td>A30, Did the shooter own the firearm?</td>
<td>86% (10)</td>
<td>30% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>100% (10)</td>
<td>79% (78)</td>
</tr>
<tr>
<td>IF THE SHOOTER DID NOT OWN THE FIREARM:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A31, Type of owner</td>
<td>79% (14)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>81% (14)</td>
</tr>
<tr>
<td>A32, Relationship between the owner and shooter</td>
<td>86% (14)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>88% (14)</td>
</tr>
<tr>
<td>A33, How did the shooter obtain the firearm?</td>
<td>79% (14)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>81% (14)</td>
</tr>
<tr>
<td>A34, How did the shooter obtain the ammunition?</td>
<td>71% (14)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>100% (14)</td>
<td>- (1)</td>
<td>75% (14)</td>
</tr>
<tr>
<td>AVERAGE % RESPONSE RATE</td>
<td>67%</td>
<td>58%</td>
<td>67%</td>
<td>88%</td>
<td>76%</td>
<td>67%</td>
</tr>
<tr>
<td>MEDIAN % RESPONSE RATE</td>
<td>79%</td>
<td>69%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>76%</td>
</tr>
</tbody>
</table>

Notes: The total number of firearm incidents on which the response rates are based are shown in row three of the table. If the percentages are based on lower numbers, they are provided in brackets after the percentages. "-" means not applicable, no cases in this cell.

The item numbers in the survey instrument are found to the left of each item. See Appendix B for the coding manual which replicates the instrument, with the addition of the codes constructed for open-ended responses and the file structure.
The storage of the firearm prior to the incident is one of the most critical categories of information anticipated to emerge from this research. The type of location (home, car, etc.) was obtained in 80 percent of suicides and 70 percent of homicide incidents; it was known for all murder-suicides, accidents and undetermined deaths. Whether the firearm was stored in a locked closet or container was known in 62 percent of suicides, and 70 percent of homicides, with an overall percentage of 65 percent. If the firearm was not stored locked, respondents were asked to find out how the gun was stored: in three of the six homicide cases, this was missing information but in most suicides and in all murder-suicides, accidents, and the undetermined death, this information was known. However, the next item — was the gun stored with a secure locking device or disassembled? — was reported in only 48 percent of the suicides and in 20 percent of the homicides (two of ten incidents). Similarly, in the majority of deaths, whether the firearm was stored loaded and where the ammunition was stored was known in less than half of the cases — 33 percent and 45 percent respectively.

Whether the shooter owned the firearm was reported in 86 percent of suicides, in 30 percent of homicide incidents, and in 79 percent of all incidents. In suicides where the shooter was known to have borrowed or stolen the firearm, the identity of the owner was known in 79 percent of cases, the owner-shooter relationship was known in 86 percent, how the shooter obtained the firearm was available in 79 percent of cases, and how the shooter obtained the ammunition was known in 75 percent of firearm incidents.

Table 4 shows the response rate for firearm-related data for each jurisdiction. We subdivided Edmonton and Calgary and distinguished between Québec City and Montreal, because we wanted to know if different offices had different response rates. This does not apply in British Columbia, because local coroners were sent a survey instrument every time there was a firearm death. This comparison is slightly hampered by the differences in the type of deaths: Calgary and Québec City had no homicides in the three pre-test months; and all the Calgary cases were either suicides (7) or undetermined whether accident or suicide (1). However, the majority of incidents in each jurisdiction were suicides: British Columbia (74 percent), Edmonton (84 percent), Calgary (88 percent), Québec City (80 percent), and Montreal (71 percent).
The jurisdictional comparisons show that for several key items Calgary and Québec City data contain fewer missing values than the other sites. For example, in Calgary, formal firearms training was known for most cases (88 percent) compared to one-quarter or less elsewhere; the shooter's other experience with firearms was known in higher proportions in the Calgary and Québec City samples. Despite the fewer missing values in these two sites (for some items), in all sites some items were unavailable for a substantial proportion of victims: the actual and estimated dates on which the shooter acquired the firearm and ammunition, was the firearm stored loaded, and where the ammunition was stored. From this uniformity we conclude that these data elements are not available for a large percentage of incidents, no matter how much effort is put into data collection.

The last two rows of Table 4 summarize the site differences in response rates by showing the average and median percentage of responses to the 25 items. The highest response rates (the medians) are found in Edmonton, Calgary, and Québec City. British Columbia and Montreal coroners were least successful in obtaining firearm-related data.

<table>
<thead>
<tr>
<th>Study site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Calgary</th>
<th>Québec City</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents</td>
<td>42</td>
<td>19</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>81</td>
</tr>
<tr>
<td>% of Incidents Where the Information Was Provided (Response Rate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A7, Type of firearm</td>
<td>100% (41)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100% (79)</td>
</tr>
<tr>
<td>A8, Sawed off barrel (if rifle or shotgun)</td>
<td>91% (33)</td>
<td>100% (18)</td>
<td>100%</td>
<td>100%</td>
<td>80% (5)</td>
<td>94% (69)</td>
</tr>
<tr>
<td>A9, Type of action</td>
<td>93% (41)</td>
<td>100%</td>
<td>88%</td>
<td>100%</td>
<td>83% (6)</td>
<td>95% (79)</td>
</tr>
<tr>
<td>A10A, Manufacturer</td>
<td>68% (41)</td>
<td>89%</td>
<td>88%</td>
<td>60%</td>
<td>33% (6)</td>
<td>72% (79)</td>
</tr>
<tr>
<td>A10B, Calibre</td>
<td>95% (41)</td>
<td>95%</td>
<td>88%</td>
<td>100%</td>
<td>100% (96)</td>
<td>95% (79)</td>
</tr>
<tr>
<td>AllRP, Is firearm restricted or prohibited</td>
<td>93% (41)</td>
<td>100%</td>
<td>88%</td>
<td>100%</td>
<td>100% (6)</td>
<td>95% (79)</td>
</tr>
<tr>
<td>A13A, Is there any evidence that the firearm was smuggled?</td>
<td>100%</td>
<td>100%</td>
<td>88%</td>
<td>0%</td>
<td>83% (6)</td>
<td>98% (80)</td>
</tr>
<tr>
<td>A14A, Did the police attempt to trace the firearm?</td>
<td>71%</td>
<td>79%</td>
<td>100%</td>
<td>60%</td>
<td>83% (6)</td>
<td>76% (80)</td>
</tr>
<tr>
<td>A17, Did the shooter have formal firearms training?</td>
<td>27% (41)</td>
<td>16%</td>
<td>88%</td>
<td>20%</td>
<td>0% (5)</td>
<td>28% (78)</td>
</tr>
<tr>
<td>A20, Did the shooter have other personal experience with firearms before this incident?</td>
<td>59% (41)</td>
<td>21%</td>
<td>88%</td>
<td>100%</td>
<td>40% (5)</td>
<td>54% (78)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>A22, Precise date the shooter acquired the firearm</td>
<td>15% (41)</td>
<td>26%</td>
<td>38%</td>
<td>60%</td>
<td>0%</td>
<td>22% (78)</td>
</tr>
<tr>
<td>A22EST, Estimated date the shooter acquired the firearm</td>
<td>34% (35)</td>
<td>14% (15)</td>
<td>60% (5)</td>
<td>100% (3)</td>
<td>20% (5)</td>
<td>33% (63)</td>
</tr>
<tr>
<td>A23, Precise date the shooter acquired the ammunition</td>
<td>10% (41)</td>
<td>24%</td>
<td>12%</td>
<td>40%</td>
<td>0%</td>
<td>15% (78)</td>
</tr>
<tr>
<td>A23EST, Estimated date the shooter acquired the ammunition</td>
<td>32% (37)</td>
<td>13% (15)</td>
<td>29% (7)</td>
<td>75% (4)</td>
<td>0%</td>
<td>28% (68)</td>
</tr>
<tr>
<td>A24, In what type of location was the firearm stored before this incident? (e.g., home, car, etc.)</td>
<td>71% (41)</td>
<td>84%</td>
<td>88%</td>
<td>0%</td>
<td>80% (5)</td>
<td>79% (78)</td>
</tr>
<tr>
<td>A25, Was the firearm stored in a locked cabinet, container, closet in these premises?</td>
<td>66% (41)</td>
<td>63%</td>
<td>75%</td>
<td>80%</td>
<td>40% (5)</td>
<td>65% (78)</td>
</tr>
<tr>
<td>A26, IF NO to last question, How was the firearm stored?</td>
<td>84% (25)</td>
<td>100% (7)</td>
<td>100% (6)</td>
<td>100% (3)</td>
<td>50%</td>
<td>88% (43)</td>
</tr>
<tr>
<td>A27, Was the firearm stored in an operable condition?</td>
<td>46% (41)</td>
<td>32%</td>
<td>88%</td>
<td>60%</td>
<td>0% (5)</td>
<td>45% (78)</td>
</tr>
<tr>
<td>A28, Was the firearm stored loaded?</td>
<td>29% (41)</td>
<td>37%</td>
<td>38%</td>
<td>60%</td>
<td>20% (5)</td>
<td>33% (78)</td>
</tr>
<tr>
<td>A29, Where was the ammunition stored?</td>
<td>39% (48)</td>
<td>47%</td>
<td>50%</td>
<td>80%</td>
<td>40% (5)</td>
<td>45% (78)</td>
</tr>
<tr>
<td>A30, Did the shooter own the firearm?</td>
<td>73% (41)</td>
<td>74%</td>
<td>100%</td>
<td>100%</td>
<td>100% (5)</td>
<td>79% (78)</td>
</tr>
<tr>
<td>IF SHOOTER DID NOT OWN THE FIREARM:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A31, Type of owner</td>
<td>50% (6)</td>
<td>100% (6)</td>
<td>100% (2)</td>
<td>100% (1)</td>
<td>100%</td>
<td>81% (16)</td>
</tr>
<tr>
<td>A32, Relationship between the owner and shooter</td>
<td>67% (6)</td>
<td>100% (6)</td>
<td>100% (2)</td>
<td>100% (1)</td>
<td>100%</td>
<td>88% (16)</td>
</tr>
<tr>
<td>A33, How did the shooter obtain the firearm?</td>
<td>67% (6)</td>
<td>100% (6)</td>
<td>100% (2)</td>
<td>100% (1)</td>
<td>0%</td>
<td>81% (16)</td>
</tr>
<tr>
<td>A34, How did the shooter obtain the ammunition?</td>
<td>50% (6)</td>
<td>83%</td>
<td>100% (2)</td>
<td>100% (1)</td>
<td>100%</td>
<td>75% (16)</td>
</tr>
<tr>
<td>AVERAGE % RESPONSE RATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>61% 68% 80% 76% 54% 67%</td>
</tr>
<tr>
<td>MEDIAN % RESPONSE RATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>67% 83% 88% 100% 50% 76%</td>
</tr>
</tbody>
</table>

Notes: The total number of firearm incidents on which the response rates are based are shown in row three of the table. If the percentages are based on lower numbers, they are provided in brackets after the percentages. "-" means not applicable, no cases in this cell.

The item numbers in the survey instrument are found to the left of each item. See Appendix B for the coding manual which replicates the instrument, with the addition of the codes constructed for open-ended responses and the file structure.
The sources of the firearm-related information are shown in Table 5, first for each category of death, and then for each site. The police were the primary sources of information (73 percent of cases), followed by relatives (49 percent); friends, neighbours, and other persons were rarely contacted. We do not know in how many cases coroners actually contacted officers and asked them firearm information and how often they relied on written police reports. We know from past experience that police reports on sudden deaths such as suicides do not contain the amount of detail required by this research.

Table 5: Sources of Information on the Firearm by Type of Incident and Study Site

<table>
<thead>
<tr>
<th>Type of incident:</th>
<th>Suicide</th>
<th>Homicide</th>
<th>Murder-suicide</th>
<th>Accident</th>
<th>Undetermined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents</td>
<td>63</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>81</td>
</tr>
<tr>
<td>Police</td>
<td>76%</td>
<td>77%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
<td>75%</td>
</tr>
<tr>
<td>Relatives of victim</td>
<td>54%</td>
<td>23%</td>
<td>50%</td>
<td>100%</td>
<td>100%</td>
<td>51%</td>
</tr>
<tr>
<td>Friends of victim</td>
<td>6%</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Neighbours</td>
<td>8%</td>
<td>0%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Other (e.g., visiting homemaker, personal observation)</td>
<td>3%</td>
<td>15%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Calgary</th>
<th>Québec City</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents</td>
<td>42</td>
<td>19</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>81</td>
</tr>
<tr>
<td>Police</td>
<td>81%</td>
<td>68%</td>
<td>75%</td>
<td>40%</td>
<td>86%</td>
<td>75%</td>
</tr>
<tr>
<td>Relatives of victim</td>
<td>48%</td>
<td>47%</td>
<td>63%</td>
<td>80%</td>
<td>43%</td>
<td>51%</td>
</tr>
<tr>
<td>Friends of victim</td>
<td>7%</td>
<td>11%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Neighbours</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>14%</td>
<td>7%</td>
</tr>
<tr>
<td>Other (e.g., visiting homemaker, personal observation)</td>
<td>7%</td>
<td>0%</td>
<td>13%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note: The percentages add up to more than 100 percent because multiple sources were used.

---

22 Alberta respondents often spoke to investigating officers or faxed them a copy of the survey instrument. In some cases in British Columbia, the coroner went through the instrument with police. Quebec respondents most often relied on reports or discussions with police after the investigation.
Understandably, relatives of homicide victims were less likely to be contacted than were relatives of the other victim categories. The across-site comparison shows that British Columbia, Edmonton, and Montreal-based respondents were quite similar in their sources of information — primarily the police, followed by the next of kin. In Calgary, the medical investigator spoke to relatives slightly more often (63 percent of deaths) than did officials in other sites, except in Québec City where the coroner spoke to family members in four of the five cases.

5.6.2.2 Victim Information

The section on the victim (section B) was usually well completed by the coroners and medical examiners and item-by-item response rates are not presented in table form. The victim-suspect relationship was known in 79 percent of homicides; missing data occurred because a suspect had not been identified. Whether the victim died immediately was reported in 91 percent cases. In 85 percent of the cases, marital status, aboriginal status, employment status, and with whom the victim lived were known. Alcohol testing was not done on victims in about 38 percent of cases, and a test had been done but the test result was not yet known for 20 percent of victims. Toxicology tests were not done on 48 percent of victims, and the results were not yet known in 48 percent. Whether the victim had a history of alcohol abuse was known for 76 percent of victims, and a history of illegal drug abuse was known for 60 percent of victims.

The majority of items in the victim file had good response rates, possibly because many are already a routine part of data collection by coroners.

5.6.2.3 Firearm Suicides

This section describes the response rate for items from section C of the survey instrument and the differences among the jurisdictions in the extent to which specific items were collected (Table 6).²³

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²³ Many of these items are familiar to British Columbia coroners as similar questions are asked in a survey completed on a regular basis for all suicides in that province.
The response rate for the lifetime history sequence of items ranged from 35 to 72 percent with the highest response rate from Calgary. Whether the suicide victim had received help for a mental health problem in the past year, or was currently undergoing treatment was reported for 65 and 77 percent of the sample, respectively. Again, the Calgary data were more complete. The response rate for the list of recent stressful life events ranged from a low of 54 percent to a high of 75 percent. British Columbia and Calgary responses were more complete than elsewhere. In Calgary, very few deaths had missing data for these items, and British Columbia responses had the second fewest missing values. The three items on disclosure of suicidal leanings had no missing values in Calgary, Québec City, and Montreal. In Edmonton the response rate was 64 to 75 percent, depending on the item and in British Columbia it ranged from 76 to 91 percent.

Table 6: Response Rate for Items on Suicide, by Study Site

<table>
<thead>
<tr>
<th>Study site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Calgary</th>
<th>Québec City</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Cases Where the Information Was Provided (Response Rate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of victims</td>
<td>33</td>
<td>16</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>65</td>
</tr>
<tr>
<td>Lifetime history of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3, Chronic physical health problems</td>
<td>82%</td>
<td>38%</td>
<td>100%</td>
<td>50%</td>
<td>100%</td>
<td>72%</td>
</tr>
<tr>
<td>C4, Physical abuse</td>
<td>36%</td>
<td>13%</td>
<td>71%</td>
<td>25%</td>
<td>60%</td>
<td>35%</td>
</tr>
<tr>
<td>C5, Sexual abuse</td>
<td>39%</td>
<td>13%</td>
<td>57%</td>
<td>25%</td>
<td>60%</td>
<td>36%</td>
</tr>
<tr>
<td>C6, Diagnosed with a mental health problem</td>
<td>73%</td>
<td>13%</td>
<td>76%</td>
<td>50%</td>
<td>80%</td>
<td>58%</td>
</tr>
<tr>
<td>C7, Hospitalized with a mental health problem</td>
<td>67%</td>
<td>6%</td>
<td>86%</td>
<td>25%</td>
<td>80%</td>
<td>52%</td>
</tr>
<tr>
<td>C8, Family history of completed suicide</td>
<td>49%</td>
<td>13%</td>
<td>100%</td>
<td>0%</td>
<td>40%</td>
<td>42%</td>
</tr>
<tr>
<td>C9, Personal history of suicide attempts</td>
<td>70%</td>
<td>50%</td>
<td>100%</td>
<td>75%</td>
<td>60%</td>
<td>68%</td>
</tr>
<tr>
<td>Contact with service providers:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C10, Help for mental health problem from a health professional in past year</td>
<td>73%</td>
<td>38%</td>
<td>100%</td>
<td>50%</td>
<td>60%</td>
<td>65%</td>
</tr>
<tr>
<td>C11, Help at time of suicide</td>
<td>82%</td>
<td>56%</td>
<td>100%</td>
<td>50%</td>
<td>100%</td>
<td>77%</td>
</tr>
<tr>
<td>Stressful events within past year:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C12, Academic problems</td>
<td>76%</td>
<td>75%</td>
<td>100%</td>
<td>0%</td>
<td>40%</td>
<td>71%</td>
</tr>
<tr>
<td>C13, Job problems</td>
<td>85%</td>
<td>50%</td>
<td>100%</td>
<td>0%</td>
<td>60%</td>
<td>71%</td>
</tr>
<tr>
<td>C14, Financial problems</td>
<td>76%</td>
<td>44%</td>
<td>100%</td>
<td>0%</td>
<td>60%</td>
<td>65%</td>
</tr>
<tr>
<td>C15, Legal problems</td>
<td>82%</td>
<td>38%</td>
<td>100%</td>
<td>0%</td>
<td>60%</td>
<td>66%</td>
</tr>
<tr>
<td>C16, Suicide of friend/family member</td>
<td>73%</td>
<td>38%</td>
<td>100%</td>
<td>0%</td>
<td>20%</td>
<td>54%</td>
</tr>
<tr>
<td>C17, Death of friend/family member</td>
<td>79%</td>
<td>19%</td>
<td>86%</td>
<td>25%</td>
<td>20%</td>
<td>60%</td>
</tr>
</tbody>
</table>
As explained above, time constraints prevented the Office of the Chief Coroner in Quebec from ascertaining the offence history of the suicide victims. In 70 percent of British Columbia suicides and one-half of Edmonton suicides this item was known. Finally, whether the suicide victim was violating a court order by being in possession of a firearm was known for almost every case except in the two Quebec sites.

The response rate summary statistics in the last two rows of Table 6 show that the Calgary site had the highest response rate and British Columbia had the second highest. In the sample as a whole, the median response rate was 68 percent.
Table 7: Sources of Information on the Firearm Suicide, by Study Site

<table>
<thead>
<tr>
<th>Study site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Calgary</th>
<th>Québec City</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of victims</td>
<td>33</td>
<td>16</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>65</td>
</tr>
<tr>
<td>Police</td>
<td>85%</td>
<td>69%</td>
<td>71%</td>
<td>0%</td>
<td>80%</td>
<td>74%</td>
</tr>
<tr>
<td>Relatives</td>
<td>73%</td>
<td>63%</td>
<td>86%</td>
<td>100%</td>
<td>80%</td>
<td>74%</td>
</tr>
<tr>
<td>Friends</td>
<td>27%</td>
<td>31%</td>
<td>0%</td>
<td>50%</td>
<td>60%</td>
<td>29%</td>
</tr>
<tr>
<td>Neighbours</td>
<td>3%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>40%</td>
<td>11%</td>
</tr>
<tr>
<td>Other (e.g., visiting homemaker)</td>
<td>12%</td>
<td>0%</td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
<td>8%</td>
</tr>
</tbody>
</table>

The sources of suicide information are shown in Table 7, above. Police and relatives were contacted for about three-quarters of the victims, friends were contacted for 29 percent of cases, neighbours in 11 percent, and other persons in 8 percent of cases.

5.6.2.4 Firearm Homicides

This section describes the response rates for items from section D of the survey instrument and the differences among the jurisdictions (Table 8). There were 15 firearm homicide incidents during this pre-test: 11 occurred in British Columbia, 2 were dealt with by the Edmonton office of the Alberta Medical Examiner, and 2 occurred in Montreal. A suspect was identified in 12 incidents. Neither of the Montreal homicides were cleared during the feasibility study.

The gender, age, and aboriginal status of the suspect were known in every case where a suspect was identified. The suspect's marital status, employment status, and living arrangements were known in 75 percent of incidents (9 of the 12 suspects), although the information is generally collected by police. These data are not shown in table form.

The apparent motive for the incident was not known in several cases. While drug and alcohol use of the suspect just prior to the incident is almost always reported, whether the accused had a history of illegal drug use was available for only two-thirds of cases, and a history of mental health problems was known in 58 percent (Table 8). The suspect's contact with service providers for mental health problems was known for one-half of the sample. The prior record of the suspect was reported in two-thirds of the cases, although this information is always available to police.
The response rate for the entire series of homicide items presented in Table 8 is two-thirds.

On the assumption that coroners would obtain most if not all of the homicide information from police, the information source was not asked for the series of items on homicides. The survey instrument should have asked for the source of the information, including whether the respondent asked the police for information or depended on the police report.

Table 8: Response Rate for Homicide Items, by Study Site

<table>
<thead>
<tr>
<th>Study Site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Cases Where this Information Was Provided (Response Rate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of homicide incidents</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Apparent motive:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3, Revenge</td>
<td>55%</td>
<td>100%</td>
<td>0%</td>
<td>43%</td>
</tr>
<tr>
<td>D4, Jealousy</td>
<td>36%</td>
<td>50%</td>
<td>0%</td>
<td>33%</td>
</tr>
<tr>
<td>D5, Argument/quarrel</td>
<td>82%</td>
<td>50%</td>
<td>0%</td>
<td>67%</td>
</tr>
<tr>
<td>D6, Financial/personal gain</td>
<td>36%</td>
<td>50%</td>
<td>0%</td>
<td>33%</td>
</tr>
<tr>
<td>D7, Bigotry, discrimination</td>
<td>27%</td>
<td>50%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>D8, Terrorism/political cause</td>
<td>27%</td>
<td>50%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>D9, Contract killing</td>
<td>91%</td>
<td>100%</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>D11, Organized crime involvement</td>
<td>100%</td>
<td>100%</td>
<td>50%</td>
<td>93%</td>
</tr>
<tr>
<td>D12, Did police &quot;clear&quot; the homicide?</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Prior interpersonal conflict:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D15, Known history of violence/abuse</td>
<td>100% (10)</td>
<td>100%</td>
<td>-</td>
<td>100% (12)</td>
</tr>
<tr>
<td>D16, Police ever involved in victim-suspect disputes?</td>
<td>90% (10)</td>
<td>50%</td>
<td>-</td>
<td>83% (12)</td>
</tr>
<tr>
<td>D17, Accused ever charged, given peace bond re violence with victim?</td>
<td>80% (10)</td>
<td>50%</td>
<td>-</td>
<td>75% (12)</td>
</tr>
<tr>
<td>Substance abuse:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C25, Evidence drug/alcohol impairment of suspect</td>
<td>100% (10)</td>
<td>50%</td>
<td>-</td>
<td>92% (12)</td>
</tr>
<tr>
<td>C26, History of alcohol abuse</td>
<td>80% (10)</td>
<td>50%</td>
<td>-</td>
<td>75% (12)</td>
</tr>
<tr>
<td>C27, History of illegal drug use</td>
<td>70% (10)</td>
<td>50%</td>
<td>-</td>
<td>67% (12)</td>
</tr>
<tr>
<td>C28, History of mental health problems</td>
<td>60% (10)</td>
<td>50%</td>
<td>-</td>
<td>58% (12)</td>
</tr>
<tr>
<td>Contact with service providers:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C29, Suspect ever hospitalized for mental health problem</td>
<td>50% (10)</td>
<td>0%</td>
<td>-</td>
<td>42% (12)</td>
</tr>
<tr>
<td>C30, Help for mental health problem from a health professional in past year</td>
<td>40% (10)</td>
<td>50%</td>
<td>-</td>
<td>42% (12)</td>
</tr>
<tr>
<td>C31, Help at time of homicide?</td>
<td>50% (10)</td>
<td>50%</td>
<td>-</td>
<td>50% (12)</td>
</tr>
</tbody>
</table>
### Study Site: British Columbia, Edmonton, Montreal, Total

<table>
<thead>
<tr>
<th>Study Site:</th>
<th>British Columbia</th>
<th>Edmonton</th>
<th>Montreal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Cases Where this Information Was Provided (Response Rate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D32, Any prior record?</td>
<td>70% (10)</td>
<td>50% (10)</td>
<td>- (12)</td>
<td>67% (12)</td>
</tr>
<tr>
<td>D40, Violating a court order by being in possession of a firearm?</td>
<td>90% (10)</td>
<td>50% (10)</td>
<td>- (12)</td>
<td>83% (12)</td>
</tr>
<tr>
<td>AVERAGE % RESPONSE RATE</td>
<td>68%</td>
<td>60%</td>
<td>-</td>
<td>64%</td>
</tr>
<tr>
<td>MEDIAN % RESPONSE RATE</td>
<td>70%</td>
<td>50%</td>
<td>-</td>
<td>67%</td>
</tr>
</tbody>
</table>

Note: Neither of the Montreal homicides were solved and therefore most items are not applicable - "-" indicates that the item is not applicable. It is theoretically possible that the motive for the homicide is known (D3 to D11), but not the identity of the suspect.

#### 5.6.2.5 Firearm Accidents

The two accidents in the sample occurred in British Columbia and in the Québec City administrative region of the Coroner's Office. Of 16 accident-specific questionnaire items, 12 questions had a 100 percent response rate.

#### 5.6.3 Summary

The overall response rate for the questions asked on all deaths — type of firearm, when acquired, shooter’s past experience with firearms, firearm storage and ownership — was 76 percent. However, some of the questions did not have a good response rate (i.e., less than 75 percent — a detailed discussion of the implications of a “low” response rate is provided in the next section) regardless of the site, including: whether the shooter had formal firearm training, the actual and estimated dates on which the shooter acquired the ammunition, whether the firearm was stored with a secure locking device or disassembled, whether the gun was stored loaded, and where the ammunition was stored. The response rate on these questions tended to be higher for suicides than homicides. Comparing the provinces, the highest response rates were found in Québec City, Calgary and Edmonton. British Columbia and Montreal coroners were least successful in obtaining firearm-related data.

Generally the victim information was well completed in all jurisdictions and for all types of firearm death.

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24 Whether the suicide victim had a history of physical and sexual abuse also had a low response rate -- not surprisingly, since a number of suicide victims were over middle age. These items are most applicable to youthful suicides.
The response rate for the items of suicide was 68 percent. Questions on lifetime history, particularly those relating to physical and sexual abuse and family history of suicide attempts, tended to have the lowest response rate in the series. Overall, Calgary had the highest response rate and British Columbia had the second highest.

Homicide questions tended to have a lower response rate at 67 percent. This section contained a number of missing data elements and the response rates varied considerably by item. The coroners in British Columbia had the highest response rate, followed by Edmonton and Montreal. There were no homicide incidents in either Québec City or Calgary.

The differences by site in the response rates are probably due to a combination of factors, including but not limited to the next of kin's ability to answer some questions, police and coroner reluctance to take on extra work, and — for homicides — concerns about the disclosure of information before the suspect was convicted.

5.7 Outstanding Issues

5.7.1 Response Rate

The low response rate greatly hampers the analysis of risk factors associated with firearm deaths. The validity and reliability of empirically derived typologies based on similar data would be questionable. In any survey, the fewer the unknowns the better. Although the acceptable or permissible proportions probably vary by the nature of the research project — as explained next, a certain amount of missing data is to be expected in this type of research — as a general rule the permissible maximum is probably 20 to 25 percent for a specific item. This estimate may be high because in this study, we must look at a number of variables (items) in order to construct typologies. If one or more of a series of items is missing, either the whole case must be omitted from the analysis or special statistical techniques have to be used to accommodate the missing information. If the whole case is omitted, the sample size drops correspondingly — as does the reliability. In general, missing information compromises the generalizability of the findings.

We should not expect a 100 percent response rate to many of the survey questions, for the following reasons:

- The nature of many of the questions in the survey is such that relatively few persons (other than the gun owner/shooter) would be aware of the answers (e.g., whether the gun is stored loaded).
• Many suicide victims live alone (over one-third in this sample) and are social isolates; in some of these cases, it would be extremely difficult to obtain information that is generally only known to another household resident (e.g., firearm-related questions) or to a close family member or to other intimates of the victim (e.g., the suicide items in Table 5).
• A similar argument could be made for cases of domestic homicide when there are no others living in the household.
• Although the data collectors are experienced in speaking to the recently bereaved, undoubtedly some next of kin would refuse to respond to the questions. This may be especially the case for some minority groups, such as Aboriginals, who may distrust officialdom or be difficult to contact, particularly by telephone. In urban areas, there is the added problem of next of kin who do not speak either English or French.
• It is to be expected that limited information could be obtained on unsolved homicides.

Are the missing data the result of the inaccessibility of the information or to other factors? Because of the way the feasibility study proceeded — with no contact with primary data collectors in Quebec and British Columbia — we are uncertain. In three sites, respondents seemed to be able to collect more firearm information than did others and, in one site, the data collector was much more likely to provide answers to the suicide questions.25 We speculate that some data collectors, of whom there were over 50 in total, may not have greatly altered their regular procedures during fatality investigations. Questions that are unfamiliar are not nearly as well answered as are those required by the system, such as type of firearm, the social and demographic characteristics of the victim, and time of death. In the same way, many of the suicide risk factors were well answered by the British Columbia coroners probably because of their past experience with the questions.

An in-person training session on the survey instrument with all officials responsible for forms completion in each jurisdiction may increase the response rate. This session would provide an opportunity to explain why each item was included, and the study’s importance in generating prevention strategies26. A second and not mutually exclusive possibility is that, part way through the main study, feedback on the findings and the differences among the jurisdictions in missing data could be provided to the Offices of Chief Coroners/Medical Examiners for distribution to all staff responsible for the survey.

25 Although the reliability of these data are not known. At the workshop, the Chief Coroners/Medical Examiners suggested that the quality of the responses to the suicide risk factors may be suspect.

26 It is uncertain if the Chief Coroners/Medical Examiners would permit such involvement with their staff.
5.7.2 Payment to Coroners/Medical Examiners

The Chief Coroner of Quebec has been told by the head of the Association of Coroners in the province that his members would require payment of $75 per completed form; the official estimated that collecting the information would take 1.5 hours a case. If our estimates of the number of firearm deaths in a one year period are reasonably accurate, this request would cost Justice Canada from $25,800 to $31,875.27

If the payment to Alberta and British Columbia officials is at the same rate as in Quebec, the overall cost to Justice Canada would range from $47,500 to $62,100 depending on the volume of deaths in a 12 month period. There should, however, be provision in the agreements with each jurisdiction that monitoring of the quality of the information is necessary.

5.7.3 Police Involvement in the Study

As a result of the discussions at the meeting of Chief Coroners/Medical Examiners held at the outset of this project, police services were not formally asked for their cooperation in the feasibility study. Rather, the coroner/data collectors relied on the police investigation reports that they routinely receive and/or informally requested the information required from the investigating officers.

If the main study were undertaken, should formal requests for police cooperation be made? We are aware that many police services are under budgetary constraints and senior officers tend to be reluctant to agree to any task that involves additional paperwork or interviews. Furthermore, the sheer number of police services that could potentially be responsible for investigating a firearm death makes a province-wide request for cooperation cumbersome, especially when many would not have a firearm death in a one year period.

27 The costs are based on estimates of from 344 to 425 deaths in 12 months; see "Projections of firearm deaths" in Chapter IV.
On the basis of these considerations, we do not recommend that all policing services in each province be formally requested to participate in the main study if it were to be undertaken. On the other hand, police officers are the best placed personnel to obtain certain details of the firearm and its provenance, including its storage before the incident. We therefore recommend that the cooperation of the Sûreté du Québec and the RCMP Divisions in Alberta and British Columbia be requested. The majority of firearm deaths in the sample obtained by this study occurred in areas policed by these agencies. If each detachment commander were informed of the main study, it is possible that police cooperation would be provided when coroners and medical examiners asked for information that they were unable to obtain from other sources.

5.7.4 Jurisdictional Participation

In Ontario, because of the independent nature of the fee-for-service doctors who function as coroners on a part-time basis, and their large number (over 300), survey administration, including coordination and monitoring, would be difficult. The Office of the Chief Coroner lacks the staff to provide assistance for such tasks. There is also a problem of data quality with such a large number of potential respondents.

The effect on the analysis of the findings if the main study were confined to Quebec, Alberta, and British Columbia was outlined in Chapter IV. To summarize: the annual number of suicide cases generated by the three provinces is sufficient for the proposed analysis, but this is not true for firearm homicides and accidents. One possible solution is to lengthen the main study's data collection period to 24 months for homicides. While Quebec homicides are dissimilar to homicides in the rest of the country, data collection and analysis could be limited to cleared homicides, which would presumably capture most familial and other intimate homicides and homicides arising out of other interpersonal disputes, and eliminate from the study many homicides occurring in the context of other criminal activity (robbery, gangs, drug dealing).

Even if data collection for firearm accidents took place over a two year period there would be inadequate numbers in the three provinces to develop profiles of different types of accidents. In 1990 to 1994, there was an average of 55 accidents annually in the country as a whole, and 29 annually in Quebec, Alberta, and British Columbia. This does not mean, of course, that some valuable information on accidents could not be obtained from the survey — just that typologies of firearm accidents could not be developed using quantitative data.
5.7.5 The Timing of the Main Study

We recommend that if the main study were to be undertaken, a time lag of six months be allowed in order to ensure that all cases are "closed" before requesting the completed survey instrument. This would ensure that findings from alcohol and drug testing were available and would perhaps reduce the amount of missing data in other areas, since all paperwork would be completed by coroners and medical examiners.
6.0 FINDINGS

This chapter briefly presents the findings of the feasibility study on the characteristics of
the incident and victim for suicides and homicides separately. Appendix C contains the
supporting tables for the data described below.

The reader should be reminded that, for many variables, extrapolating the findings to the
total sample, or to firearm suicides and homicides in general, is ill advised because the known
cases may differ markedly from those where the information was not recorded.

6.1 Suicides

The suicide sample is made up of 65 deaths. Two-thirds of suicides occurred in a
private residence, with most of the remainder occurring in "open areas" such as parks or
the countryside. The large majority of firearms used were long guns, with only 13 percent
of suicides using handguns.

Whether the shooter had formal firearm training was known in only 30 percent of
the cases, but of the 17 suicides where the training information was available, 12 victims
had no formal training. Despite having no formal training, shooters in the majority of
incidents, where the information was known, had past experience with firearms, primarily
hunting; this item also had a high proportion of missing data (46 percent of the total).

When the firearm used in the incident was obtained by the shooter is also unknown
in a large number of cases, but in 8 of the 12 suicides where the year is known, the shooter
obtained the gun in 1997, the year of the death.\textsuperscript{28} Similar findings are evident for the
acquisition of ammunition. This information is, however, almost certainly biased in favour
of recent acquisition.\textsuperscript{29}

\textsuperscript{28} However, estimates of when the shooter acquired the firearm tend to be much further in the past; 8 of the 18
suicides had apparently obtained the gun more than ten years ago. This suggests that either the suicide victim
had recently obtained the firearm for the purposes of killing himself, or the firearm had "been around" for some
time.

\textsuperscript{29} Family and friends may be better able to pinpoint the year of acquisition when the gun was recently obtained.
Before the incident, in 75 percent of cases the firearm was stored in a home. Whether the gun was stored in a locked cabinet, container, closet, etc., was known in 62 percent of cases: in six of 39 suicide incidents, the firearm was in a locked container. When asked where the firearm was kept if not stored locked, the responses were as follows: in no container, 14 cases; in an unlocked container, 16 cases. Whether the gun was stored with a secure locking device or disassembled was not reported in over one-half of the incidents. Of the 30 suicides where the information was known, 26 had neither a secure locking device nor were stored disassembled. It was not known whether the firearm was stored loaded in almost two-thirds of the incidents; in 19 of the 22 cases where this information was reported the firearm was not loaded. The response rate for the question that asked where the ammunition was stored was also low, but of the 27 suicides where the data were reported: in 11 cases the ammunition was stored with the firearm and in 12 cases the ammunition was stored separately from the gun but the ammunition was not locked up. In only three cases the ammunition was not stored with the firearm or was stored separately and locked up.30

In suicide incidents, 64 percent of the victims were also the owners of the firearm used; ownership was not known for 14 percent of the cases. This high proportion of owners has implications for the analysis of firearm storage. If the suicide victim is the owner then the storage of the firearm before the incident is less likely to be relevant information; the owner would generally have ready access to the gun no matter how securely it was stored.

The owner of the firearm, when the shooter did not own the firearm, was most often a private individual. Of the 12 suicide incidents where the shooter-owner relationship was known: the owner was a stranger in one case, the spouse in one case, another household member in four cases, a relative living in a different household in four cases, and a friend in two cases. In most of these incidents (57 percent, with 21 percent not known), the shooter stole or took the firearm without the owner's permission. Similarly, the shooter most often took the ammunition without permission.

As the review of the literature in Chapter II indicated, the large majority of firearm suicide victims were male (97 percent). Almost 30 percent of suicides were 55 years or older at the time of death and 10 percent were 24 years or younger. Just over one out of ten suicide victims were of Aboriginal origin. Over one-third of suicide victims lived alone, and the same percentage lived with a spouse and/or children.

30 These findings may be unrepresentative: family members, friends, and others are more likely to know details of the firearm storage when the gun is stored in open view or in an unlocked cabinet than when the gun is securely and safely stored in an out of the way location in the home.
In two-thirds of the suicides some testing was done to determine the victim's blood alcohol level at the time of death. In 16 percent of these 43 cases the findings were not available at the time the survey instrument was completed, but 37 percent of suicides were legally impaired (a reading of 120 or more). The coroners and medical examiners noted that the suicide victim had a history of alcohol abuse in 46 percent of the cases, although the information was not available in one-fifth of the total. Whether the victim had a history of illegal drug abuse was not known for 34 percent of suicides; about one-fifth were known to have such a history.

About 70 percent of suicide victims killed themselves in or around their own home, and there was some evidence (not necessarily through testing) to suggest that the victim was under the influence of alcohol and/or drugs in 52 percent of deaths by suicide.

Chronic physical health problems were suffered by 28 percent of victims (although this information was not reported for the same percentage) and one-quarter had a personal history of attempted suicide (32 percent of cases were unknown). One-fifth had been diagnosed with a mental health problem, and almost one-tenth had been hospitalized for this problem. Eight of the 27 victims for whom the information was reported had a family history of suicide, but this history was not available for almost 60 percent of victims.

One-fifth of suicide victims had received help from a health professional, for a mental health problem in the year preceding the suicide, and 17 percent were receiving professional help at the time of the suicide.

The victim's disclosure of suicidal leanings was reported rather more often than many other items in the section. In 60 percent of cases the victim had communicated his/her distress to others; in 43 percent, the victim had spoken of an intent to commit suicide; and, in 40 percent friends and/or family of the victim were concerned about the potential suicide risk. These items suggest that, for a sizable proportion of the sample, the suicide may not have been impulsive.

Several suicide victims had a history of convictions for Criminal Code or other federal offences (28 percent had such convictions), but this information was not recorded for over 40 percent of the sample.

Stressful life events are frequently associated with suicide. The most common events cited were: break-up of a love relationship (39 percent); conflicts with friends and family (35 percent); financial problems (30 percent); job-related problems (29 percent); legal problems (23 percent); deteriorating personal health (23 percent); and "other" recent stressful events (23 percent). In one case the victim had a terminal illness.
6.2 Homicides

There were 15 homicide incidents in the sample, including two cases of murder followed by suicide. Overall, there were 19 victims of homicide during the feasibility study.

The large majority of firearms (73 percent) were long guns, with only 13 percent of suspects using handguns. In two of the 15 homicide incidents no firearm information was available.

In the two homicide incidents where the information was available, the suspect had no formal firearm training. Of the four incidents where the shooter's other personal experience with firearms was available, all four had some past experience. The year that the shooter acquired the firearm was not known for nine of the 12 cases and an estimate was available for only two incidents. Similarly, little information is available on when the ammunition was acquired.

In eight of the nine homicides where pre-incident storage information was reported, the firearm was not kept in a locked container or closet of some kind. In those cases where the firearm was not kept in a locked container, it was kept in no container in three cases and in an unlocked place in two cases. In the three (of 12) cases where the information was known, the firearm was not stored with a secure locking device or kept disassembled. In one case the gun was stored loaded, and in one case not loaded. The storage of the ammunition was not recorded in seven of 12 incidents. In one of the five cases where the information was known, the ammunition was stored separately from the firearm and in a locked container.

The shooter was the owner in four cases, not the owner in one incident, and the information was not known in seven instances. In one case, the police knew that the gun had been taken from a firearm dealer, from whom the shooter had stolen the firearm and the ammunition.

Of the 19 homicide victims, ten were male, eight were female, and gender was not provided in one case. Only 16 percent of homicide victims were 55 years or older at the time of death and 21 percent were 24 years or younger. Sixteen percent of homicide victims were Aboriginal (three of the 17 cases where the data were reported). Homicide victims most often lived with their spouse and/or children (47 percent) or with their parents or other relatives (21 percent).
The blood alcohol content of victims was zero in four cases, the victim was legally impaired in two cases, and results had not been received in four cases; no test results were available for nine victims. One-fifth of the 12 victims where the information was known had a history of alcohol abuse, and four of the six cases where the data were known had a history of (illegal) drug abuse.

The accused-victim relationship is an important variable for typology development. The information was not known for 21 percent of homicide victims. In five cases the victims were acquaintances; in two cases (each) they were spouses, other family members, or strangers; an estranged lover, a parent, or an illegal business associate were each victims in one case. There was a known history of abuse between the victim and the accused in two of the 12 homicide incidents where a suspect was identified, and in one case police had been involved in the dispute.

The motivation for the incident is not well recorded, but in nine of the ten cases where a response was provided, an "argument or quarrel" was said to be a precipitating factor. In one case, "personal gain" was the motivation. In five of the eight cases where the information was available, the accused was charged with second degree murder; in the remainder, he was charged with first degree murder.

The suspect characteristics are as follows. All were men whose age ranged from 16 to 54 years old; four of the suspects were less than 25 years of age. Three were of Aboriginal origin. The majority were unemployed. There was some evidence of impairment by drugs or alcohol in four of eleven cases. In three cases the suspect had a history of alcohol abuse and/or drug abuse. In two (of seven) cases where the information was known, the suspect had a history of mental health problems. Six of eight suspects had prior Criminal Code convictions.
6.3 Summary

This brief description of the characteristics of firearm suicides and homicides is hampered by the volume of missing information and few firm conclusions can be drawn on several of the more important survey questions, such as firearm source, storage, and the shooter's experience with firearms. The reader should be aware that extrapolating the findings to suicides in general or to homicides in general may be inappropriate because the findings could be biased by the missing information. Despite these caveats, some interesting findings emerge from these data. In the majority of firearm suicides the victim owned the gun. In suicides where the source of the firearm was available, the victim had frequently stolen or taken the gun without permission from another household member or a family member not living in the same household. Many suicide victims were legally impaired at the time of death, and almost one-half had a history of alcohol abuse. Several (28 percent of the sample) victims had a history of criminal convictions. Few conclusions can be drawn about the 15 firearm homicide incidents, because of the small numbers as well as missing information.
7.0 RECOMMENDATIONS

A decision in favour of conducting the main study is contingent on the following conditions:

- if the primary focus of Phases Two and Three of this research is firearm suicides,
- if monies are available to reimburse coroners,
- if quality control measures can be introduced and regular monitoring of response rates can be implemented,
- if a training session could be provided to the data collectors or coordinators in each province (perhaps at their annual meetings), and
- if the Chief Coroners/Medical Examiners agree to participate.

If Justice Canada decides to pursue the collection of data on firearm homicides and accidents, then the project should be undertaken over a two year period, under the same conditions as above.
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