The Economic Impact of Firearm-related Crime in Canada, 2008

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The views expressed herein are solely those of the authors and do not necessarily reflect those of the Department of Justice Canada.

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Contents

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Executive Summary

The present study provides estimates of the economic and social costs of firearm-related crime in Canada. In this study, firearm-related crime is defined as crime committed with a firearm present or used during the commission of an offence, of which all are considered violent crimes. The impact of firearm-related crime can be both wide-ranging and long-lasting as it directs a society's resources to address the problem and causes unquantifiable pain and suffering to victims and their family members. Examining the financial impact is not a new approach in understanding crime. An understanding of the economic costs of crime can lead to important insights and policy decisions, both in terms of criminal justice policy and in terms of other social problems that compete with crime for government funding and resources.

In 2008, the total economic and social costs of firearm-related crime in Canada were approximately $3.1 billion. This amounted to a per capita cost of $93 in that year. However, this is likely to be a conservative estimate due to the unavailability of data in many areas. For example, victims may develop mental health problems, such as depression, Post-Traumatic Stress Disorder (PTSD), substance abuse and suicidal behaviour. The associated costs are not included in this report due to data limitations. The costs outlined herein are borne by the criminal justice system, victims and third parties in general.

The costs pertaining to the Canadian criminal justice system in 2008 amounted to approximately $302 million. A breakdown of the total criminal justice costs by sector reveals that policing services used the majority of justice expenditures on firearm-related crime (69.5%), followed by corrections (29.7%), courts (0.3%), prosecution (0.3%) and legal aid (0.2%).

Victims bear the most direct and significant impact of crime. Many costs incurred are a direct result of victimization of firearm-related crime, such as health care cost, productivity losses and value of stolen/damaged property. The total victim costs were $2.7 billion in 2008, including both tangible and intangible costs. The majority were intangible costs (91.9%) for pain, suffering and loss of human life. The remaining $221 million was incurred as tangible costs, of which productivity losses represented 69.8%, followed by personal costs (26.9%) and health care costs (3.2%).

The third party costs capture the impact of firearm-related crime on other people and society in general. In 2008, the total costs borne by the third-party were approximately $79.5 million. About 59.9% were intangible costs measuring the loss of affection/enjoyment to family members of victims who were killed in the crime. Tangible costs cover funeral services (2.0 %), other persons who were harmed or threatened during the incidents (2.4%), social services (5.6%) and other related government expenditures (30.2%).

Note that placing a monetary value on intangible items is subject to considerable uncertainty and controversy. In this present report, intangible costs include pain and

suffering to the victim(s), value of lost life to victim(s) and loss of affection/enjoyment to family members of deceased victims. Although no study has been able to produce estimates for intangible costs without much critique, the consensus remains that intangible costs are often the most expensive component of victim costs. In this study, the total intangible costs were about $2.5 billion, accounting for 82.1% of the total costs.

Estimates of the economic and social costs of crime can play an important role in demonstrating the impact of crime in terms of resources expended. These numbers could increase the awareness of both policy-makers and the public of the full impact of crime on society and the potential gains that could result from crime reduction. In Canada, we do not have consistent, national sources of data in many areas that are required for comprehensive costing estimates. Key stakeholders are engaged to find ways to improve data collection and reporting practices. Therefore, work on costing is continually evolving. Estimation in this report is reliable based on the data available to us at the time the report was prepared. Results of the estimated criminal justice, victim, and third-party costs are presented in Table 1.

TABLE 1
ESTIMATED COSTS OF FIREARM-RELATED CRIME IN CANADA, 2008

COST CATEGORY	$CAD
Criminal Justice System Costs	
1. Police	$209,772,812
2. Court	$1,024,667
3. Prosecution	$837,909
4. Legal Aid	$565,637
5. Corrections	$89,795,351
TOTAL CRIMINAL JUSTICE SYSTEM COSTS	**$301,996,376**
Victim Costs	
1. Health Care	$7,149,138
2. Productivity Losses	$154,527,373
3. Personal Costs	$59,576,443
4. Intangible Costs	$2,496,351,000
TOTAL VICTIM COSTS	**$2,717,603,954**
Third-Party Costs	
1. Funeral Service Expenses	$1,563,660
2. Loss of Affection/Enjoyment to Family Members	$47,640,000
3. Other Persons Harmed/Threatened	$1,899,466
4. Social Service Operating Costs	$4,422,508
5. Other Related Expenditures	$24,000,000
TOTAL THIRD-PARTY COSTS	**$79,525,634**
TOTAL COSTS	**$3,099,125,964**

1. Introduction

Firearm-related violent crime has received considerable attention over the past few years in Canada.[1] One of the government's priorities is to tackle crime through various methods including providing tougher sentences for violent and repeat offenders, particularly those involved in weapon-related crimes.[2] Given the potentially fatal consequences and the relatively large number of young people involved, firearm-related crime is considered a serious social problem, requiring considerable resources directed toward combating the criminal use of firearms.

1.1 Firearm-related Crime in Canada

In 2008, there were a total of 8,710 police-reported incidents in Canada committed with a firearm present or used during the commission of an offence. This represents about 2% of all police-reported incidents in Canada for 2008. Among these incidents, robbery (41.3%) and assault with weapon/causing bodily harm (18.0%) were the most common incidents, followed by firearms – use of, discharge, pointing (14.9%), uttering threats (10.6%), and forcible confinement or kidnapping (3.2%).[3] With respect to homicide and attempted murder, while these offences only represented a small proportion (2.1% and 3.0%, respectively) of all firearm violence, they were more likely to be committed with a firearm. Specifically, firearms were present in about one third of homicides (32.7%) and attempted murders (35.8%) in 2008.[4]

Also in 2008, police statistics indicated that there were 9,469 victims of firearm-related violent crime in Canada, representing a victimization rate of 28.4 per 100,000 population.[5] Male victims were the majority (67.1%). Victims of robbery and assault with a weapon/causing bodily harm together accounted for more than two-thirds (66.9%) of the total firearm-related violent victimizations. Compared to previous years, the national firearm violence victimization rate remained stable. In spite of this fact, two issues should be pointed out. First, the victimization rate of firearm violence in large census metropolitan areas (CMAs) are significantly higher than the national average rate. For example, Vancouver reported the highest victimization rate (45.3 per 100,000 population) in 2006, followed by Winnipeg (43.9) and Toronto (40.4), all of which are well above the national rate of 27.5 per 100,000 population in that year.[6] Second, the national rate of youth (age 12 to 17 years) accused of gun crime has significantly increased during the past few years. In 2008, the charge rate for youth (12-17) for committing a firearm-

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[1] In this study, firearm-related crime is defined as crime committed with a firearm present or used.
[2] Backgrounder on the Safe Streets and Community Act. Last accessed January 10, 2012 from http://www.justice.gc.ca/eng/news-nouv/nr-cp/2011/doc_32637.html
[3] Note that for all the *Criminal Code* violations discussed in this report, a firearm was present or used during the incidents. For example, "robbery" means "robbery with a firearm" and "assault" refers to "assault with a firearm". In other words, the *Criminal Code* violation is used for the indication of the offence type only.
[4] Statistics Canada, CCJS, UCR2 aggregate data. The national coverage of the UCR2 aggregate data in 2008 was 100%.
[5] See note 4.
[6] Juristat: Firearms and Violent Crime, 2008. Ottawa, Ontario: Statistics Canada.

related crime was 55.2 per 100,000 population, which was 48.6% higher than the 2002 rate (37.1). In the same year, the charge rate for adults was only 16.6 per 100,000 population.[7] Moreover, youth accused of committing a violent offence are more likely to use a firearm than adults. In 2008, police reported that 1,424 youth were accused of a firearm related violent offence, accounting for 6.1% of all youth accused of violence. This percentage is more than double the proportion for adults (2.9%).

Violent offences committed with a firearm are more likely to cause death and major injuries. According to the Canadian Centre for Justice Statistics (CCJS), 203 deaths and 436 major injuries were caused by firearms in 2008, representing 33.2% of all deaths and 5.1% of all major injuries as a result of violent crime in that year. Furthermore, research indicates that guns are a feature of youth gang-related activities. Erickson and Butters (2006) show that participation in gangs greatly increases the probability that a juvenile will be involved in an altercation (as offender or victim) involving guns. A series of studies conducted in many cities across the US also demonstrate that gang members are more likely to carry, use, and/or be victimized by a firearm.[8] In Canada in 2008, firearms were involved in less than 30% of all non-gang related homicides, yet firearms were used in nearly 70% of all gang related homicides.[9] In addition, the use of firearms among youth gangs is generally becoming more prevalent and is especially acute in larger urban areas.[10] The fact that gangs are more likely to occur in the larger CMAs could also explain why firearm violence victimization rates are significantly higher in larger CMAs.

1.2 Costs of Crime

The impact of firearm-related violence can be both wide-ranging and long-lasting as it directs a society's resources to address the problem and causes unquantifiable pain and suffering to victims and their family members. For instance, the criminal justice system must allocate resources to resolve the incident if the crime has been brought to the attention of police. To the victims, the firearm can result in either a fatality or a nonfatal injury. In the former case, family members may grieve the loss of a loved one, and in the latter case, victims may require medical attention, hospitalization or long-term health care. The survivors of firearm violence may also develop mental health concerns which could impact their ability to perform daily activities. Counselling may be necessary in the long run. Their family members may need to take time off from daily routines to accompany them. Moreover, as a response to this problem, governments and the public not only provide various services to victims and their families, but also establish ongoing prevention campaigns to raise awareness. All of these examples are the various consequences of this social problem.

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[7] See note 4.

[8] For a comprehensive review of the nexus between gang membership and delinquent/criminal behaviour see Thornberry et al. (2003). Decker and Curry (2002) also suggest that "the levels of violence were much higher than in any previous wave of gang problems, corresponding with even more widespread availability of automobiles and firearms".

[9] Strategies for Reducing Gun Violence: The Role of Gangs, Drugs and Firearm Accessibility. 2007. Ottawa, Ontario: Public Safety.

[10] Feature focus: Youth Gangs and Guns. 2006. Ottawa, Ontario: Royal Canadian Mounted Police.

Examining the financial impact is not a new approach in understanding crime. Proponents of crime costing hold that an understanding of the economic costs of crime can lead to important insights and policy decisions, both in terms of criminal justice policy and in terms of other social problems that compete with crime for government funding and resources.

Specifically, a systematic estimation of the financial costs imposed by criminal behaviour would allow comparisons to be made between the harm of firearm-related violent crime and the harm of other offences. This meaningful knowledge would enhance our understanding of the crime, enabling us to make better-informed policy decisions. For example, is a program that can prevent one robbery with a firearm better than one that prevents three assaults? One way to answer such a question is to ask residents of the affected area which they prefer through polling or survey. However, in many circumstances, policymakers must rely on less direct methods of determining an appropriate choice. In such cases, one would need to have a metric that allows for comparisons between robbery with a firearm and assault. A dollar's value provides such a metric. Furthermore, a comparison can also be made between the aggregate harm of firearm violence and other social problems, which can help us to better shape our priorities by focusing scarce resources on policies that have the most significant impact on Canadians.

While the formulation of a metric that objectively estimates the costs of criminal behaviour would benefit the act of policy making in many ways, a simple costing analysis is not the be-all in terms of evidence to support decision making. Many other factors necessarily feed into the process and may blur the objectivity of the costing metric. Nevertheless, with an increasingly diverse population in terms of culture, religion and attitudes towards social policies, it becomes increasingly important to develop the capacity of building policies on objectively based foundations. Although several examples of costing exercises on victimization have been found in Canada, none have examined firearm-related violence specifically and comprehensively. Therefore, the goal of the present research is to attempt to fill the knowledge gap.

The report is structured as follows. An extensive review of literature on costs of firearm-related crime is presented in the next section, followed by the discussion of the methodology and data sources used. Then, the estimation results are presented and brief concluding remarks follow. Detailed calculations and estimations are displayed in Appendices.

2. Literature Review

There have been several attempts to estimate the firearm related costs in Canada, New Zealand, South Africa and the US. However, these studies are primarily focused on the health care costs associated with injuries caused by firearms, such as hospitalization costs, long-term health care costs and insurance costs. In addition, these studies are usually not limited to firearm-related crime, but also cover suicides, attempted suicides and accidental injuries or deaths where a gun was used. Their main methodologies and key findings are summarized below.

Using a sample of 250 persons initially admitted for hospitalization from January 1, 1984 through June 30, 1985 for firearm injuries at the University of California Davis Medical Center, Wintemute and Wright (1992) estimated that the initial hospitalization charges totalled about USD$3.3 million in 1985 and the subsequent charges for rehospitalisation were USD$447,900 for medical records review to June 30, 1989. Therefore, the average cost per person was USD$14,982 (1985 dollars).

Cook et al. (1999) examined a sample of 134,445 cases in the US to estimate the national acute-care and follow-up treatment costs for persons hospitalized with nonfatal gunshot injuries. At an average medical cost per injury of USD$17,000, the 134,445 gunshot injuries caused the total lifetime medical costs of USD$2.3 billion (1994 dollars).

Based on an existing national database that was derived from 1,012 non-federal community hospital discharge information in 22 states in the US, Coben and Steiner (2003) identified 35,810 firearm-related injuries nationwide in 1997 and estimated the total associated hospital charges of over USD$802 million. The average cost per case was USD$22,396 (1997 dollars).

Allard and Burch (2005) conducted a review of all serious abdominal firearm-related injuries (requiring admission to hospital and emergency surgery) at a state hospital in South Africa over a 6-month period. Their findings indicated that the hospital spent a minimum of USD$30,803 on the treatment of the 21 abdominal gunshot victims from admission to discharge. On average, the treatment of each patient cost approximately USD$1,467 (2003 dollars).

Some research specifically examined the costs for firearms injuries in comparison with cut/stab wounds. Miller and Cohen (1997) estimated that gunshot injuries cost an estimated USD$126 billion in 1992, which is more than twice the costs for cut/stab wounds (USD$51 billion). Costs under their consideration included medical care payments, productivity losses, pain and suffering and lost quality of life. In terms of medical attention, the average treatment cost for each gunshot survivor was USD$154,000 versus USD$12,000 per cut/stab survivor. In another study based on U.S. hospital records, Mock et al. (1994) also suggested that the average acute medical care costs for gunshot wounds were more than two times higher than stab wounds. Moreover, the authors estimated that if all the 1,116 gunshot-wound patients in their study suffered stab wounds instead, there would be an annual saving of $1.3 million in health care costs.

Several studies also provide important insights into other economic and social costs of firearm injuries. In addition to the direct expenditures on health care, professional services and related goods, Max and Rice (1993) also estimated the indirect costs such as lost productivity due to firearm injuries in the US. They reported that the total cost of firearm injuries in the US in 1990 was approximately $20.4 billion, including $1.4 billion for direct expenditures, $1.6 billion for lost productivity resulting from injury-related illness and disability, and $17.4 billion for lost productivity from premature death. Scott and Scott (2006) estimated the costs of accidental deaths caused by firearms in New Zealand, covering medical costs, hospitalization costs, productivity losses and the lost value of human life. Annual total cost amounted to $1.3 million ($144,656 per incident). Similarly, Miller (1995) conducted a comprehensive study of the various costs associated with firearm wounds in Canada, which included: medical care, mental health care, public services (police investigation), productivity losses, funeral expenses, pain and suffering, and lost quality of life. Miller estimated that the total costs associated with gunshot wounds in 1991 were CAD$6.6 billion (1993 dollars). This was equivalent to CAD$235 per capita, as compared with CAD$595 in the US (converted to 1993 Canadian dollars from a 1992 US estimate). The author suggested that the per-capita-cost difference might result from differences in gun availability in the two countries.

As indicated by these studies, firearm-caused injuries pose a substantial financial burden on the health care system and on the society in general. The findings highlight the necessity for effective and successful firearm violence prevention strategies and gun control policies. For instance, Ludwig and Cook (2001) presented an estimation of the benefits of reducing gun violence. Their results suggested that reducing gun assaults by 30% was worth a total of USD$24.5 million (1998 dollars) to the American public.

In contrast to the previous research, this study will be focused on the economic and social costs of firearm-related crime in Canada. Therefore, consequences of suicide, unintentional shooting and other accidental events are not included. In the meantime, we try to widen the lens by developing a framework to capture the full range of costs borne by Canadians. We will not only estimate the costs borne by victims as a direct result of crime, but also examine the various costs borne by family members, friends and colleagues, other people who were hurt or threatened in the incidents and various services providers. Furthermore, we will consider the costs specifically pertaining to the Canadian criminal justice system, such as expenditures for police, court, prosecution, legal aid and corrections.

3. Methodology

The present study seeks to determine the consequences (category and magnitude) of firearm-related crime in Canada and estimate the associated social and economic costs. Despite best efforts to account for all the potential consequences as a result of firearm violence, data are not available in many areas which put a significant constraint on our estimation. For example, individuals and organizations may use home security systems, guard dogs or weapons to avoid crime or for self-defence. Victims may develop certain mental health problems, such as depression, Post-Traumatic Stress Disorder (PTSD), substance abuse and suicidal behaviour. These costs are not included in this report due to the unavailability of data. Therefore, what we present here, of necessity, would not be a complete picture of the true range of costs resulting from firearm-related crime. For many cost categories that are examined in this study, assumptions have to be made. For example, because all calls made to crisis lines by victims are anonymous, no official information is available in regard to an individual's frequency of use. However, according to crisis line workers, people do make follow-up calls; therefore, we assume that on average, each victim made 5 phone calls.

3.1 Scope of the Study

In this study, the term "firearm-related crime" refers to crime where a firearm was present or used during the commission of the offence. While there are primary, secondary, and even tertiary victims, our focus will be on the primary victim of firearm-related violence. Although the impact of the violence on those who are not immediately involved will not be captured, certain important implications on family members, and other persons who were injured or threatened in the incidents will be examined. Victim costs will be gender-disaggregated to reflect the differences between male and female victims.

Two surveys - the Uniform Crime Reporting Survey 2 (UCR2) and the 2009 General Social Survey (GSS) on Victimization, cycle 23, will be used as the primary data sources to provide information on the incidents/prevalence of firearm-related violence in Canada. While the UCR2 is police-reported data recording the number of incidents that have come to the attention of police, the GSS is self-reported recording personal experiences of criminal victimization, regardless of whether or not the incident was reported to police.

Offence categories for firearm-related violence under the UCR2 are defined by the Canadian *Criminal Code*, including, but not limited to, homicide, attempted murder, sexual assault, assault, robbery, firearms – use of, discharge, pointing, criminal harassment, uttering threats and other violent violations. On the other hand, the GSS only measures four types of violent crime that can be defined by the *Criminal Code*. These offences are sexual assault, robbery, attempted robbery and assault.

3.2 Categories of Costs

Drawing on a variety of methods documented in previous studies and an examination of various government and non-governmental reports, a comprehensive costing model is developed that attempts to outline the full extent of the financial costs associated with firearm-related violent crime. The costs examined herein will be broken down into three major categories – Criminal Justice System Costs, Victims Costs and Third-Party Costs. Under each of these categories, we have also delineated several sub-categories to capture the economic implications of the violence. A full illustration of detailed criminal justice system cost categories are presented in Table 2.

Criminal Justice System Costs

TABLE 2: CATEGORIES OF CRIMINAL JUSTICE SYSTEM COSTS

1. Police	**5. Corrections**
2. Court	5.1 Incarceration
3. Prosecution	5.2 Conditional Sentence
4. Legal Aid	5.3 Probation
	5.4 Fine

The criminal justice system plays the role of deterring, attending to, and punishing crime. There are multiple stages in the Canadian criminal justice system to deal with crimes that have been reported to police. They include police, court, prosecution, legal aid and corrections. Only a few previous studies attempt to estimate these costs system-wide (Walby 2004; Brand and Price 2000). Following Cohen, Miller and Rossman (1994), we estimate the cost of each stage separately, as the number of cases/persons involved in one stage is different from the others.

In estimating police costs, the UCR2 survey is used as the main data source as it accurately records the number of incidents of firearm-related crime that have come to the attention of police. Although police-reported data does not capture the actual number of offences (allegedly) committed in Canada, these numbers can indicate the actual resources that have been allocated to address the problem of crime. The money spent by police is mainly based on the number of incidents that have come to the attention of police, not the number of offences committed. On the other hand, the Adult Criminal Court Survey (ACS) and the Youth Court Survey (YCS) will be used to obtain the information regarding the firearm-related cases processed in the court system and court outcomes. We also use court caseloads as the base to estimate the prosecution costs and the legal aid costs.

While police and court costs appear relatively straightforward to measure as aggregate costs are available from government official sources, the cost per crime is not always available. In other words, knowing how much we spend on police or court in total tells us little regarding the appropriate allocation of dollars across different crimes, and hence, for

the purposes of this study, is virtually not useful. For instance, it is difficult to determine how much of the total police expenditures in 2008 were spent on robbery with a firearm versus other robbery. And even for the same type of crime, the cost might vary considerably according to the seriousness of each incident.

The same problem also exists for estimating the costs of prosecution and legal aid. While the aggregate expenditures on criminal matters are available, there is no information to indicate the actual number of cases of firearm-related crime that were involved with prosecution and legal aid, as well as the associated cost per case if involved. In addition, offenders might hire their own defence counsel, and again it is difficult to know how much such services would cost in each case.

As a result, a realistic cost determination should be individual-incident based. For example, to accurately determine the police costs for firearm-related crime, we would require information regarding, for each single incident, the number of police officers involved, investigation time spent per police officer, their wage rates and other expenditures for items such as transportation and utilities, etc. Unfortunately, we are unaware of any such detailed data existing in Canada. Therefore, in estimating the police costs, we assign the police expenditures among different crimes according to their severity weights. In terms of court, prosecution and legal aid costs, we use the average cost per case as the estimation basis.

With respect to the cost of corrections, the estimation is relatively straightforward due to the fact that the Canadian Centre for Justice Statistics (CCJS) continuously releases the average daily cost of provincial and federal incarceration by gender, and this average cost does not vary dramatically by offence type. A breakdown of the categories associated with victim costs are provided in Table 3.

Victim Costs

TABLE 3: CATEGORIES OF VICTIM COSTS

1. Health Care	2.5 Lost Future Incomes
1.1 Physician	**3. Personal Costs**
1.2 Emergency department	3.1 Stolen/Damaged Property
1.3 Acute Hospitalization	3.2 Legal Services
2.Productivity Losses	3.3 Counselling Services
2.1 Lost Wages	**4. Intangible Costs**
2.2 Lost Household Services	4.1 Pain and Suffering
2.3 Lost School Days	4.2 Loss of life
2.4 Lost Child Care Services	

The most direct impact of crime is experienced by victims. Many costs are incurred as a direct result of firearm-related crime, such as health care costs, productivity losses and

value of stolen/damaged property. While police-reported statistics are useful for understanding the nature and extent of firearm-related crimes that are reported to police and hence, the associated expenditures spent by the criminal justice system, it is noteworthy that the majority of the incidents[11] do not come to the attention of police for various reasons, and the impact of such victimizations (not reported to police) has no less of an effect on victims and on society at large. Therefore, in order to capture a more fulsome and accurate reflection of the prevalence of firearm-related violence in Canada and hence, the impact on victims and society, self-reported victimization information from the GSS will be used.

In terms of health care costs, note that the injuries considered in the present study are not necessarily caused by a firearm. For instance, victims may suffer blunt-force trauma or stab wounds during the firearm-related incident where a firearm was not discharged. Since the GSS does not have a variable to distinguish whether the injuries were firearm injuries or non-firearm injuries, both types of injuries will be examined, unless otherwise indicated. This decision is appropriate for the purposes of this study in the sense that all the injuries are the consequences of firearm-related crime.

Nevertheless, it is also interesting to know the health care costs that are specifically related to gunshot injuries. This estimation can be considered as a supplementary component of the health care costs for a special interest. Using data provided by the Canadian Institute for Health Information (CIHI), we are able to estimate the medical treatment costs for gunshot injuries that were intentionally caused by other people. To be consistent with the scope of the present study, accidents and intentional self-harm such as suicides are excluded.

Unlike health care costs, many other costs are not directly observable as there is no monetary transaction. For example, in addition to hospitalization, victims might spend days recovering from physical injuries and emotional disorder, meeting with police, prosecutors or attending court proceedings. As a result, they may take time off from their daily activities and hence, there is a productivity loss to both victims and to society as a whole.

The productivity losses in this study account for both paid and unpaid production activities. The lost value of paid activities is straightforward to measure. For example, to estimate the value of lost wages, knowing how many days of absence and the average daily income would be sufficient. However, the productivity losses of unpaid work activities, such as searching for jobs, household services, raising children, caring for aging parents, shopping and volunteering, are more complicated to evaluate. Due to data limitations, we narrow the range of unpaid activities to three items, school attendance, household services and child care. For other types of activities, the value of household services is used as a proxy for estimation. Loss of missed school days is considered as a victim's forgone benefits as he/she may take additional time on his/her own or require

[11] General Social Survey (GSS), Victimization, Cycle 23, 2009. For example, the GSS data suggest that in 2009, less than one-quarter (22%) of spousal violence victims stated that the incident did not come to the attention of police.

extra lessons from private teachers or tutors to catch up with the class. The national daily tuition fee for undergraduate studies will be used. Lost household services and child care are valued according to the wage rate for a market substitute, for example, household workers or childcare service providers.

There are other types of productivity losses. People may feel angry, fearful and hurt, or may develop depression, anxiety and sleeping problems as a consequence of victimization. These negative impacts could result in a workplace disability or under-performance. People may feel it harder to concentrate on their work or take a longer time than usual to complete a project, which also may be considered productivity losses. Again, as we are lacking data, it is not possible to measure the magnitude of disappointment or the outcome of having 3 hours less sleep.

While tangible costs seem to be easily estimated, intangible costs, such as pain and suffering, are more difficult to quantify. Placing a monetary value on intangible items is subject to considerable uncertainty and controversy. There is now an extensive literature on the estimation of intangible costs and many methods have been explored such as willingness-to-pay (Ludwig and Cook, 2001; and Cohen et al. 2004) and jury awards (Cohen, 1988; Cohen et al., 1994; and Miller et al., 1996). However, no one has been able to produce estimates without much critique. Notwithstanding the differences in method among studies, the consensus remains that intangible costs are often the most expensive component of victim costs. In this study, the estimation for intangible costs will be conducted based on previous research.

It is important to consider the length of time over which the costs will be calculated. In this project, we try to capture both short and long-term effects of the victimization. Therefore, in addition to the current costs, costs occurring in the future as a result of the violence will also be examined. Long-term costs include items such as lifetime medical support services and lost future income due to the inability of performing job functions for the rest of the person's life. In the event of considering a future loss, all the relevant future costs will be computed into the present value for the year 2008. A summary of the categories for third party costs is included in Table 4.

Third-party Costs

TABLE 4: CATEGORIES OF THIRD-PARTY COSTS	
1. Funeral Service Expenses	4.1 Transition Home/Shelter
2. Loss of Affection/Enjoyment to Family Members	4.2 Crisis Lines
3. Other People Harmed/Threatened	4.4 Victim Services
3.1 Health Care	**5. Other Related Expenditures**
3.2 Productivities Losses	5.1 Firearms Action Plan
4. Social Service Operating Costs	5.2 Investments to Combat the Criminal Use of Firearms

Crime has its most significant impact on victims, but others suffer as well. Family members may grieve the loss of a loved one or take time off from their daily activities to accompany victims (e.g., to court or doctor's appointments). In addition to the victim, there might be other people who get injured or threatened during the incidents. They might require medical attention or develop emotional disorders as well. Just like victims, all these consequences may cause underperformance of their work or reduce the quality of their lives. Furthermore, in response to this social illness, governments provide various victim services to help victims, and develop prevention programs, and other initiatives. For example, to enhance the capacity of law enforcement to fight gun crime, the federal government allocates approximately $50 million over five years for the Investments to Combat the Criminal Use of Firearms initiative which is aimed to improve the national collection, analysis and sharing of firearms-related intelligence and information. All these costs are reflected in the third-party costs.

Many people would argue that no amount of money would be adequate to compensate the victims or their families, especially in those fatal crime cases. This is true. Few people would voluntarily surrender their life for any amount of money. However, as Cohen (2005) says, "the cost of crime" is nothing more than the "benefit of reducing crime". Therefore, the costs of a crime shall be interpreted in using this as guidance. For example, the costs of one firearm-related crime can be interpreted as the amount that would be saved if this incident is prevented. It can be considered as the amount that society would be willing to spend to prevent (reduce) one incident of firearm-related violence from occurring. These estimates are important numbers to have in a society where resources are scarce and where many programs - more police on the street, more funding to health and welfare, more programs to protect the environment, new highways or more parks - are always competing for tax revenue.

3.3 Data Sources

While the 2009 GSS is the main data source providing the prevalence and consequences of firearm-related violent crime, various other data sources are used as well. The major data sources are discussed as follows.

Uniform Crime Reporting Survey (UCR)

The UCR survey is an administrative survey that captures detailed information on crime reported to and substantiated by police. In this way, this survey is limited in that it does not capture personal victimizations that are not reported to police. There are several factors which can affect the proportion of crime that comes to the attention of police, including the willingness of the public to report crime or the way police report crime to the UCR. When estimating the criminal justice system costs, the UCR2 data, instead of the GSS data, will be used to provide the number of incidents for firearm-related violent crime since police-reported information, as compared to self-reported data, would better suggest the actual government resources that have been allocated to address the problem. Importantly, though, while the data collected by the GSS is limited to certain offences, the UCR collects information on all *Criminal Code* violations. Furthermore, the UCR2

micro data has a flag indicating the presence of firearm in each incident. In 2008, the national coverage of the UCR2 micro data was 98%.

Adult Criminal Court Survey (ACCS) and the Youth Court Survey (YCS)

The ACCS and the YCS provide statistical information on appearance, charges and cases in adult and youth criminal courts. Specifically, the surveys include information on court caseloads, characteristics of cases such as offence types and the average court elapsed time, and characteristics of persons moving through the court system such as gender/age, court outcomes, sentence types and sentence lengths imposed, etc. Both surveys have a flag indicating the presence of firearm in the case. Information from Quebec's municipal courts (which account for approximately one quarter (25%) of *Criminal Code* charges in that province) is not yet collected and reported to ACCS. According to Statistics Canada, this 25% amount should account for at least 5% of the total cases at the national level.

General Social Survey (GSS)

The GSS gathers data on social subjects in order to monitor changes in the living conditions and well-being of Canadians over time and provide immediate information on specific social policy issues of current or emerging interest. The GSS on Victimization is conducted every five years and asks Canadians aged 15 years and older about their personal experiences of criminal victimization, regardless of whether or not the incident was reported to police. The 2009 GSS, Cycle 23, is the fifth cycle dedicated to the topic of victimization. The purpose of this cycle is to better understand how Canadians perceive crime and the justice system and their experiences of victimization. It is the only national survey of self-reported victimization which provides data on criminal victimization for the provinces and territories.

As not all crimes are reported to police for various reasons, the GSS survey provides an important complement to the officially police-recorded crime statistics. Since the impact of victimizations (not reported to police) has no less of an effect on victims and society at large, using the self-reported data recorded by the GSS to estimate victim costs would capture a more fulsome and accurate reflection of the prevalence of firearm-related crimes in Canada, as apposed to the police-reported data.

In 2009, there were 19,422 respondents of the telephone interviews of Cycle 23. Each person represented roughly 1,400 people in the non-institutionalized Canadian population aged 15 years and over. Questions that provide information on the prevalence, nature and outcomes of criminal victimization include, but are not limited to: "Did you ever receive any medical attention at a hospital as a result of the violence"; "Did you stay in hospital overnight"; and "Did you ever have to take time off from your everyday activities because of what happened to you", etc.. Particularly, the GSS has one important question indicating whether the criminal act was committed with a gun. The GSS also provides information on the characteristics of individual respondents such as gender, age, annual income, education, and main daily activities, which is useful to better identify and quantify the consequences of the violence.

National Ambulatory Care Reporting System (NACRS) and Discharge Abstract Database (DAD)

The two databases that are maintained by the Canadian Institute for Health Information (CIHI) provide valuable insight on volumes and types of cases presenting to Canadian hospitals. Both emergency and ambulatory care and hospital-based acute inpatient case are among the largest-volume patient activities in Canada, making them key components of health services in Canada.

The NACRS contains data for all hospital-based and community-based ambulatory care in Ontario: day surgery, outpatient clinics and emergency departments. The DAD records information on the acute inpatient hospitalizations and hospital discharges across Canada excluding Quebec. Detailed information includes type of ambulances used, types of firearm, average length of hospitalization, average treatment costs, number of patients that survived after treatment, discharge outcomes (home or transferred to other institutions) and demographic information such as gender and age of victims, etc. Note that both datasets do not have records from federal hospitals, e.g. prisons and veteran hospitals.

As a supplementary component, the CIHI data will be used to estimate the health care costs that are specifically related to gunshot injuries that were intentionally caused by other people. To be consistent with the scope of the present study, accidents and intentional self-harm such as suicides are excluded.

In summary, major data sources used in this project are:

- Uniform Crime Survey 2 (UCR2), 2008
- Police Administration Survey (PAS), 2008
- Adult Criminal Court Survey (ACCS), 2007/08,2008/09
- Youth Court Survey (YCS), 2007/08, 2008/09
- Court Personnel and Expenditure Survey (CPES), 2002/03
- Prosecutions Personnel and Expenditure Survey (PPES), 2002/03
- Adult Correctional Services (ACS), 2007/08,2008/09
- General Social Survey, Cycle 23, (GSS), 2009
- Canadian Discharge Abstract Database, 2008/09
- Hospital Morbidity Database, 2008/09
- National Physician Database, 2008/09
- Transition Home Survey (THS), 2003/04, 2005/06
- Existing literature and government reports

3.4 Limitations

The most substantial limitation in conducting a costing analysis is a lack of comprehensive data. While there is a rich source of information available in Canada on many facets of crime impacts, there are also many data gaps that preclude a fulsome estimation of the associated financial costs. For example, the average number of follow-up calls made by distressed victims to crisis line is not known for certain. Since this data is not routinely collected by crisis lines, an average must be assumed based on qualitative data obtained from front line workers. This situation is not unique to Canada. Given the

complexity of the topic and the wide-ranging impacts of crime, it is difficult for studies on crime costs in any country to be wholly accurate.

It should also be noted that the 2009 GSS does not provide sufficient information to allow distinctions to be made as to whether an outcome of the violence was due to a one-time incident or a series of repeat and chronic incidents. For example, a victim might be hospitalized once as a result of a one-time victimization and alternatively, and another victim might be hospitalized multiple times in a given year on account of suffering from chronic victimization. However, only one-time hospitalization is recorded by the GSS, even if a victim has been subject to repeat victimization and went to hospital more than once. Given the lack of clarity, the cost estimates presented in this report will be based on the number of victims, not the number of victimizations experienced. Furthermore, since injuries and psychological trauma could be worsened when associated with repeat victimization, for example in the case where violence occurs within intimate relationships, the true victim costs may be significantly underestimated.

Another limitation of the 2009 GSS is that the survey does not account for victimization in the three territories. Various challenges, including language difficulties and incomplete telephone service pose a significant constraint to the collection of data in the Yukon, the Northwest Territories and Nunavut.

In addition, even though the information regarding gunshot injuries provided by the CIHI data carried a lot of details, the results are far from comprehensive. First, the medical costs related to gunshot injuries were largely underestimated. Victims with less serious gunshot wounds might choose to see a physician or a nurse, or some victims may threaten a doctor to provide the necessary treatment. These victims, therefore, are not captured in the CIHI data which is hospital-based. Secondly, the CIHI information is only for one-time treatment. For survivors who face the prospect of a lengthy recovery period or a permanent disability, the CIHI data does not capture the medical expenses for follow-up appointments or life-time treatments at other health care facilities. Finally, the coverage of neither the NACRS nor the DAD is nationally representative. While the DAD data contains the information from all provinces with the exception of Quebec, the NACRS covers all the emergency departments in Ontario only. Therefore, certain assumptions and adjustments will be made during the estimation.

Finally, note that all survey data might be subject to both sampling error and non-sampling error such as non-response. This data quality issue is particularly pertinent to the 2009 GSS data. For example, people without language skills in either English or French were not able to respond to the telephone interviews; households without telephones or persons (e.g., young, single or urban Canadians) with cellular phone service only were also excluded from the survey. Therefore, somewhat different results might have been obtained if the entire population had been surveyed. Furthermore, wording of the questions and respondents' personal evaluations may also affect the answers given. As a self-reported survey, the answers are based on interviewee's memories, judgement and opinion, and in certain cases, people might not tell the truth for various reasons.

Considerations of firearm-related violent crime from an economic perspective reveal only one dimension of this complex social problem. Moreover, it is not always possible to account for all the consequences of the crime and hence, the estimates given in this study are far from complete. While direct effects are obvious and easy to estimate, indirect effects are much less obvious, and extremely complicated. The limitations discussed thus far are important to bear in mind when reviewing the report. Both the methodologies and the estimation can be revised and improved upon the arrival of new information and research in this area.

4. Criminal Justice System Costs[12]

As one of the social responses to crime, the criminal justice system plays the role of deterring, attending to and punishing crime. The associated costs considered in the present study include expenditures on policing, court, prosecution, legal aid and correctional services. Several expenditures such as non-legal aid defence costs or criminal code review board expenditures are not covered due to data limitations. Table 5 summarizes the total criminal justice system costs.

TABLE 5: CRIMINAL JUSTICE SYSTEM COSTS FOR FIREARM-RELATED CRIME, 2008

1. Police	**$209,772,812**
2. Court	**$1,024,667**
3. Prosecution	**$837,909**
4. Legal Aid	**$565,637**
5. Corrections	**$89,795,351**
5.1 Incarceration	$ 88,341,558
5.2 Conditional Sentence	$ 44,448
5.3 Probation	$1,409,920
5.4 Fine	($575)
TOTAL	**$301,996,376**

4.1 Police Costs

In 2008, about $7,441 million was spent by police on crime.[13] In that year, there were a total of 2,485,207 incidents under *Criminal Code* violations and *Federal Statute* violations.[14] As no information is available regarding the police costs by specific offences or individual incident, we seek to allocate the total expenditures among different offences according to their severity weight by assuming that a more severe type of offence would normally require more resources for investigation. Statistics Canada assigns a weight to

[12] All estimated figures in the result section are presented in round numbers.
[13] The total police expenditures in 2008 were about $11,449 million, which include salaries and wages, benefits, and other operating expenses such as accommodation costs, fuel, and maintenance, etc. After several communications with the Ottawa Police Service, we assume that 65% of the Canadian police time was used in addressing or preventing crime. Costing studies in other countries use similar percentages. For example, Walby (2004) uses 61% for the UK and Rollings (2008) uses 70% fro Australia. Other duties can include: traffic regulations (non-criminal), offering youth education seminars, coordinating community efforts, patrolling a regular route or responding to phone calls ranging from noise complaints to non-crime emergency calls for help. Statistics Canada, Canadian Centre for Justice Statistics, Police Resources in Canada 2009. Note that capital expenditures, funding from external sources, revenues and recoveries are not included.
[14] Statistics Canada, CCJS, UCR2 aggregate data 2008.

each offence according to the severity of crime. For example, the weight for homicide is 7,042 whereas the weight for robbery is 583.[15] To estimate the police costs per incident, we first calculate the proportion of total crime severity attributable to each offence using severity weights provided by Statistics Canada. Next, we multiply the weighted severity proportion of each offence by the total police expenditure ($7,441 million), which yields the police expenditures spent on each specific crime. Lastly, we divide the offence-specific police expenditures by the number of incidents of the offence to obtain the police costs per incident for each offence. We assume that this cost is the same for all the incidents of that offence regardless of the presence or use of a firearm. Without further information, it is believed that the estimation using this weighted average method is superior to the one using a simple average.

In 2008, there were about 8,885 police-reported incidents where a firearm was present or used during the commission of the offence.[16] Offence categories, defined by the Canadian *Criminal Code*, range from homicide to uttering threats. Multiplying the above estimated per incident police cost by the number of incidents for each offence, we estimate the total police costs for firearm-related violent crime that have come to the attention of police to be $209,772,812. See Appendix A.1 for detailed calculations and sources.

Table 6 presents the estimated average per incident police costs, and the number of incidents where a firearm was present or used by offence type, for selected firearm violent offences. A complete table including a full list of firearm-related violations is presented in Appendix A.1.

[15] Note that these weights are mainly determined according to the sentence lengths and hence may not accurately reflect the police resources that are spent on investigation.
[16] The UCR2 micro-data count has been adjusted for national coverage.

TABLE 6: POLICE COSTS FOR SELECTED FIREARM-RELATED VIOLENT CRIME

Offences	Costs per incident	Firearm-related incidents	Polices costs for firearm-related incidents ($'000)
Homicide	$291,595.31	187	$54,528
Attempted murder	$62,688.65	259	$16,236
Aggravated sexual assault - level 3	$46,526.24	4	$186
Assault with weapon / causing bodily harm - level 2	$3,438.03	1,601	$5,504
Common assault - level 1	$1,041.01	257	$268
Robbery	$25,901.60	3,667	$94,981
Extortion	$10,174.04	38	$387
Criminal harassment	$1,999.27	40	$80

The most recent official information on court expenditures was collected by the Courts Personnel and Expenditure Survey in 2002/03. Expenditures covered in this survey include salaries and wage for all court personnel as well as benefits. It is estimated the average court cost per case in that year was about $1,028. As both the average number of appearances per criminal case and the average elapsed time per criminal case have increased by approximately 23% in 2008/09 as compared to 2002/03, we assume that there has been a general trend towards lengthier, more complex cases. These changes should be reflected in the associated court costs. Therefore, we use a multiplier 1.23 for the increased complexity. Moreover, the average cost is adjusted for inflation (inflation rate is 13.31%). Following this, it estimated that the average court cost per criminal case in 2008 was $1,433.

The CCJS reports that there were a total of 631 cases for firearm-related offences processed in criminal courts in 2008.[17] About 78.6% were adult cases. Table 7 presents the *Criminal Code* offences that are included.

[17] Statistics Canada, Canadian Centre for Justice Statistics, ACCS and YCS, 2007/08 and 2008/09. Detailed data was extracted in October, 2010.

TABLE 7: CRIMINAL CODE FIREARM-RELATED VIOLATIONS	
Criminal Code Section	**Offence Description**
85	Use of firearm or imitation, commission of offence
220(a)	Causing death by criminal negligence – firearm used in commission of offence
236(a)	Manslaughter - firearm used in commission of offence
239(a) 239 (1) (a) and (a.1)	Attempted murder – firearm used in commission of offence
244	Causing bodily harm with intent - firearm
272(2)(a) and (a.1)	Sexual assault with a weapon – firearm used in commission of offence
273(2)(a) and (a.1)	Aggravated sexual assault – firearm used in commission of offence
279(1.1)(a) and (a.1)	Kidnapping – firearm used in commission of offence
279.1(2)(a) and (a.1)	Hostage taking – firearm used in commission of offence
344(a) 344 (1) (a) and (a.1)	Robbery – firearm used in commission of offence
346(1.1)(a) and (a.1)	Extortion – firearm used in commission of offence

However, this number is an undercount of the actual total number of cases containing at least one firearm-related charge that occurred in 2008 due to the following reasons:

- First, municipal and superior court data in Quebec, superior court data in Ontario, and superior court data in Saskatchewan are not reported to the ACCS. According to the CCJS, the missing data from the three jurisdictions approximately account for 5% of the national counts.

- Second, offenders accused with murder where a firearm was used in the commission of the offence are recorded as either first-degree murder or second-degree murder (under the *Criminal Code* of Canada) regardless of whether a firearm was present or not. This is because murder alone is severe enough to be given a life-time custody sentence. As a result, this group of firearm-involved cases is not shown on this data.

- Third, in some cases, offenders might plead guilty to another charge that was part of their case, but was not a firearm-related violent offence. This is because firearms-related violent offences normally carry a mandatory minimum sentence. Pleading guilty to the non-firearms charge might result in the firearms charge being stayed or withdrawn.

- Finally, there might be an undercount of firearms-related cases in Ontario, as there is an indication of certain coding issues with respect to firearm-related offences. If the police officer who charges the accused records the *Criminal*

Code section as the overarching section (for instance simply as robbery instead of robbery with a firearm), this is the data that is provided to the CCJS. Therefore, it is possible that in these cases, the true number of firearm-related charges is not accurately recorded. While this issue might be more specifically in Ontario, it might also be prevalent in other jurisdictions.

The first two limitations can be corrected through certain data adjustment. However, information regarding the latter two limitations is not available, which prevents us from understanding how much the number was undercounted. According to the CCJS, there were 58 offenders in 2008 charged with murder where a firearm was present or used in the commission of the offence.[18] By taking into account these murder cases and by adjusting for the 95% coverage, the total number of cases for firearm-related crime is revised to 715. Following this, at the average court cost of $1,433 per case, it is estimated that the total court costs were $1,024,667 in 2008. See Appendix A.2 for detailed calculations and sources.

4.2 Prosecution Costs

Similar to the court expenditures, the most recent official information on prosecution expenditures was collected by the Prosecutions Personnel and Expenditures Survey in 2002/03. Using the same logic, we estimate the average prosecution cost per case in 2008 was about $1,172. It follows that the total prosecution costs for firearm-related violent crime in 2008 were $837,909. See Appendix A.3 for detailed calculations and sources.

4.3 Legal Aid Costs

In 2008, the total legal service expenditures on criminal matters were approximately 373 million. With a total caseload of 472,100 processed in criminal courts in that year, the average legal aid cost per case was $791. Multiplying this average cost by the number of firearm-related cases yields the total legal aid costs for firearm-related offences, which were $565,637 in 2008. See Appendix A.4 for detailed calculations and sources.

4.4 Correctional Services Costs

The conviction rate for the firearm-related violent offences in 2008 was about 48%, slightly lower than the overall conviction rate (53%) for all violent offences.[19] Among those convicted offenders, 71% received custody as the most serious sentence, followed by probation (13%) and conditional sentences (2%). About 13% of convicted offenders were given other types of sentence as their most serious sentence, including absolute

[18] Statistics Canada, Canadian Criminal Justice Statistics (CCJS), Uniform Crime Report Survey 2 (UCR2). Micro data was extracted in February, 2011.

[19] For murder offences where a firearm was involved, it is assumed the conviction rate is the same as the overall homicide conviction rate.

discharge, restitution, prohibition, seizure, forfeiture, compensation, pay purchaser, essays, apologies, counselling programs and conditional discharge.[20] Sentences under this category are not considered in this study due to a lack of data. Note that it is possible for convicted offenders to receive more than one sentence. Table 8 presents the distribution of sentence types for firearm-related offences by gender in 2008.

TABLE 8: DISTRIBUTION OF SENTENCE TYPES FOR FIREARM-RELATED OFFENCES BY GENDER, 2008

Custody		Conditional sentence		Probation		Fine		Other	
M	F	M	F	M	F	M	F	M	F
233	10	5	1	135	14	1	0	171	9

Custody

In terms of custody, offenders who receive a sentence of 24 months or more will spend their sentenced time in federal custody and offenders whose sentence is less than 24 months will serve the sentence in provincial institutions. To capture the distinction that the average cost of keeping a federal inmate is much higher than that for keeping a provincial inmate, the estimations for federal and provincial incarceration costs are conducted separately. As a part of custody, offenders might be released earlier either on parole or statutory release.[21] All of these factors are taken into account.

In 2008, there were 109 male offenders and 3 female offenders admitted to federal custody for firearms-related offences. Note that there is a significant difference in the length of custody sentence between those convicted of firearm-related murder and other firearm-related offences (non-murder). For other firearm-related crime, the average length of federal custody for male inmates was 1,734 days whereas the length for female inmate was 1,923 days. The full parole grant rate for federal female inmates was significantly higher than the rate for federal male inmates (76% vs. 41%).

With respect to offenders convicted of firearm-related murder, about 37% had at least one parole application under the faint-hope clause before their parole ineligibility period, and of these offenders, 51% were successful in having the parole ineligibility reduced. [22] Specifically, those convicted of first-degree murder spent, on average, 18.4 years (6,737 days) in prison before first parole release where the original length of parole ineligibility period was 25 years (9,131 days). Those convicted of second-degree spent 17.7 years (6,474 days) before parole release where the original length of parole ineligibility period was 21.2 years (7,762 days).

[20] This category also includes, for youth, deferred custody and supervision, intensive support and supervision, attendance at non-residential program and reprimand. However, sentencing data under the Youth Criminal Justice Act (YCJA) are not available.
[21] Due to data limitations, day parole is not considered.
[22] An Analysis of the Use of the Faint Hope Clause. 2010. Ottawa: Department of Justice Canada.

It is important to note that holding a female offender in federal custody costs almost double that of keeping a federal male inmate. In 2008, the average daily federal incarceration cost was $287 for males and was higher at $542 for females.

In addition to the 112 federal offenders, 131 offenders were admitted to provincial custody. The average daily cost of provincial incarceration in 2008 was about $160. It is assumed that people who succeeded in their parole application served 1/3 of their sentence before parole release. For offenders who were not granted parole, they would be released on statutory release after serving 2/3 of their sentence.

In this way, the total custody costs for firearm-related crime in 2008 were $88,341,558, where the majority was borne by the federal custody system ($85,414,540).

Conditional Sentence

About 6 firearm offenders received conditional sentence as their sanction in 2008. The average sentence length was 234 days for male offenders and 219 days for female offenders. As supervision in the community only costs about 20% of the provincial incarceration cost, the average daily cost was about $32.[23] Therefore, the total costs associated with conditional sentence for firearm-related crime were about $44,448.

Probation

In 2008, a total of 149 offenders received probation as their sanction. The average probation length was 472 days for male offenders and 484 days for female offenders. Compared with conditional sentence, probation is less serious and hence, may require fewer resources. We assume that the daily probation cost is lower than daily conditional sentence cost, at $20 per day. We estimate that the total probation costs were $1,409,920.

Fine

Only one offender received fine as sanction. It is estimated that the associated fine amount was about $575, which is considered as revenue to the criminal justice system.

Therefore, the total cost for corrections were $89,795,351. See Appendix A.5 for detailed calculations and sources.

[23] The John Howard Society of Ontario, Fact Sheet: Reconsidering Community Corrections in Ontario, January, 1997.

5. Victim Costs [24]

The most direct impact of crime is experienced by victims. Many costs are incurred as a direct result of firearm-related crime, such as health care costs, productivity losses and value of stolen/damaged property. To reflect the well-documented differences between male and female victims, costs presented in this section will be gender-disaggregated. Table 9 summarizes the total victim costs.

TABLE 9: VICTIM COSTS FOR FIREARM-RELATED CRIME, 2008

	Female	Male	Total
1. Health Care	**$1,563,942**	**$5,585,196**	**$7,149,138**
1.1 Physician	$12,185	$167	$12,352
1.2 Emergency department	$872,771	$66,298	$939,069
1.3 Hospitalization	$678,986	$5,518,731	$6,197,717
2. Productivity Losses	**$59,457,958**	**$95,069,415**	**$154,527,373**
2.1 Lost Wages	$42,801,495	$19,442,345	$62,243,840
2.2 Lost Household Services	$15,346,703	$4,757,848	$20,104,551
2.3 Lost School Days	$5,980	$220,675	$226,655
2.4 Lost Child Care	$42,300	$0	$42,300
2.5 Lost future income	$1,261,480	$70,648,547	$71,910,027
3. Personal Costs	**$51,374,051**	**$8,202,392**	**$59,576,443**
3.1 Stolen/Damaged Property	$26,157,986	$2,233,247	$28,391,233
3.2 Legal Services	$19,490,625	$539,385	$20,030,010
3.3 Counselling Services	$5,725,440	$5,429,760	$11,155,200
4. Intangible Costs	**$615,336,000**	**$1,881,015,000**	**$2,496,351,000**
4.1 Pain and Suffering	$428,086,000	$540,305,000	$968,391,000
4.2 Loss of life	$187,250,000	$1,340,710,000	$1,527,960,000
TOTAL	**$727,731,951**	**$1,989,872,003**	**$2,717,603,954**

[24] For a significant part of the estimation in Victim Costs and Third-party Costs, the analysis is based on Statistics Canada microdata file Cycle 23 - Victimization which contains anonymized data collected in the 2009 General Social Survey. All computations on these microdata were prepared by the Department of Justice and the responsibility for the use and interpretation of these data is entirely that of the authors.

5.1 Health Care Costs

As discussed earlier, despite the benefits of self-reported victimization survey, they do have limitations. The GSS is a telephone survey. Recent social and technological developments are now making it, not only costly, but also more difficult to conduct telephone surveys (Tourangeau 2004). These include call blocking and answering machines that make it harder to reach people by telephone. In addition, the use of cell phones has increased dramatically over the previous years. Specifically, while the percentage of households with at least one cell phone has increased from 41.8% to 74.3% from 2002 to 2008, the percentage of households relying solely on cell phones has also increased from 5.1% to 8.0%.[25] In the 2009 GSS, persons with only cellular telephone service were excluded.

As a result, random-digit-dialling techniques, which traditionally use landline telephone numbers, are likely reaching less and less of the Canadian population and the samples become less representative than they were in the past. Although major differences between a sample and the population with regards to gender, age, income, education, and marital status can be partially addressed through the use of weighting techniques and quota sampling, non-representative coverage bias may still exist. Since the younger generation is more likely to carry cell phones only, the younger population is less likely to be reached by the traditional telephone survey. As discussed previously, youth and gang members are more likely to carry, use, and/or be victimized by a firearm, so this group might be underrepresented in the 2009 GSS. Furthermore, the GSS greatly relies upon respondents to recall and report events accurately and therefore, any inaccurate reporting would compromise the quality of the GSS.

For example, in the Incident File of the 2009 GSS, 24,854 male respondents and 24,299 female respondents indicated that they had been victimized by certain violence where a firearm was present or used. Although 5,789 male victims (23%) and 9,021 female victims (37%) reported that they were injured as a result of the incident, none of them reported that they had sought any type of medical attention. Therefore, there would be no health care costs for those firearm-related offences that were recorded by the Incident File of the 2009 GSS. This is not likely to be true as firearm can cause serious injury (Frappier et al., 2005) and it is the one of the leading cause of death in both Canada (Leonard, 1994) and the US (Fingerhut and Anderson, 2008). As discussed in the literature review section, the health care costs associated with firearm-related injuries are very significant.

The 2009 GSS findings are also significantly different from those obtained from the previous cycle of the GSS (2004). The 2004 GSS Incident File reported that there were 32,566 male victims and 10,518 female victims of crime where a firearm was present or used. While 5,914 male victims and 1,270 female victims visited hospital for medical attention (non-overnight), 2,019 male victims and 1,270 female victims were hospitalized. Similar data issues have also been identified for the Main File of the 2009 GSS.

[25] Statistics Canada, Residential Telephone Service Survey, 2008.

On the other side, both police-reported data (UCR2) and hospital-based data (DAD) suggest that a great number of victims of firearm-related crime required medical attention, either a doctor visit or hospitalization. Therefore, it is reasonable to suspect that the 2009 GSS might not be fully representative due to the above discussed coverage limitations. It is important to bear these data issues in mind when reviewing the research findings.

Medical Attention from Physicians

According to the 2009 GSS, 219 female victims and 3 male victims received medical attention from a physician as a result of the firearm-related incidents. The average cost of one physician visit was about $55.64 in 2008. Therefore, the costs of receiving medical attention from physicians as a result of firearm-related crime were $12,185 for female victims and $167 for male victims.

Medical Attention at Emergency Departments

The GSS reported that 1,017 female victims and 82 male victims (of crime where a firearm was present or used) had received medical treatment at emergency departments (ED). It is estimated that the average cost per ED visit was $400.41. In addition, according to the information provided by the CIHI, 78% female victims and 70% male victims were transported to emergency departments by ground ambulance services. In 2008, ground ambulance service cost about $587.08 per transport. Following this, the total costs of receiving medical attention at emergency departments were $872,771 for female victims and $66,298 for male victims. It is important to distinguish these figures from the estimates presented in the following paragraph by noting that the ED costs examined here (based on the GSS data) cover all injuries as a result of victimization which might not necessarily be caused by firearm. In contrast, the paragraph below discusses the ED visit costs for injuries that were specifically caused by a firearm during the violence.

Hospital-reported data which were extracted from the National Ambulatory Care Reporting System (NACRS) were used. As information with regard to the ED visits is only available in Ontario, we assume that the per-capital count in Ontario is the same as the per-capital count in Canada. In this way, it is estimated that in 2008 there were 23 female victims and 341 male victims who were treated at emergency departments in Canada for firearm-caused injuries. Among these victims, 78% women and 70% men were transported to emergency departments by ground ambulance services. Applying the average treatment cost per ED visit ($400.41) and the average cost per ground ambulance transport ($587.08), the total costs of receiving medical attention at emergency departments for firearm-caused injuries are, therefore, estimated at $19,776 for female victims and $275,678 for male victims.

Hospitalization

According to the GSS, only 268 female victims (no male) reported that they had stayed at hospital for more than one night. Given the limitations discussed above, this information

might not be representative. Therefore, we use hospital-reported data to calculate the associated acute hospitalization costs. However, as the hospital-based data provided by the CIHI only covers injuries that were specifically caused by firearms, this impact might be underestimated as other types of injuries (non-firearm) could also have occurred as a result of the firearm-related violence.

To estimate the hospitalization costs, data extracted from the Discharge Abstract Database (DAD) are used. As Quebec is not included in this database, data are adjusted for the coverage limitation. It is estimated that 14 female victims and 269 male victims were admitted to hospital for firearm-caused injuries. In addition to patient counts, the DAD also provides valuable cost information, for each firearm/gunshot category, such as average length of stay, average resource intensity weight and cost per weighted case, which enables us to estimate the average hospitalization cost for firearm-caused injuries by gender: $46,868 per female victim and $19,997 per male victim. Therefore, the total hospital treatment costs were $656,152 for female victims and $5,379,193 for male victims.

Furthermore, the DAD data also suggest that about 15 female and 170 male patients were transported to hospital by certain types of ambulance services, including ground ambulance, air ambulance or a combination of air, ground and water ambulance. As the average cost for providing a ground ambulance transport and an air ambulance transport was $587.08 and $4,675.84, respectively, the total ambulance transportation costs were $22,834 for female victims and $139,538 for male victims.

Combining the two costs together, the total acute hospitalization costs for firearm-caused injuries were $678,986 for female victims and $5,518,731 for male victims.

Therefore, the total health care costs were $7,149,138 of which $1,563,942 was for female victims and $5,585,196 was for male victims. See Appendix B.1 for detailed calculations and sources.

5.2 Productivity Losses

When a victim is unable to go to work or school, or perform household duties, there is a loss to the victims and also to society as a whole. Reasons for such losses include not only serious injuries that require hospitalization or bed rest, but also the time dealing with the criminal justice system for trial or compensation. These costs are calculated in this section and are briefly described below.

Lost Wages and Salaries

In estimating lost wages and salaries, we calculate the total number of days that victims were hospitalized, stayed in bed (for most of a day) and took time off from daily activities. Respondents of the GSS who reported that their main activity was “working at a paid job or business” or “maternity/paternity leave” are included. It is estimated that the total lost working days were 295,543 for female victims and 138,337 for male victims.

According to the GSS data, the average daily wage rate for these victims was within the range of $118 and $179. Following this, the total lost wages were $42,801,495 for female victims and $19,442,345 for male victims.

Lost Household Services

Services performed in the house have a value to the individual and to the rest of the family. When someone is unable to perform some or all of their normal household chores such as cleaning, cooking, lawn care and taking care of their family members, these services need to be replaced either by another family member or by hiring outside household workers. In the former case, there would be an opportunity cost and in the latter case, there would be a hiring cost. In some cases, those injured victims might still be able to perform the services, but at a slower pace. The additional time is also a loss since that time could have been spent on more productive or leisure activities.

The GSS reports that there were a total of 298,110 lost days for female victims and 144,177 lost days for male victims during which the victims were either hospitalized or staying in bed, or having to take time off from daily activities. According to the 2010 GSS on the time use of Canadians, women and men spend, on average, 3.9 hours and 2.5 hours, respectively, per day on household work and related activities, including cooking/washing up, housekeeping, maintenance and repair, child care, shopping for goods and services. We use the average hourly wage rate of $13.2 household workers as a proxy for the value of lost household services per hour. Combining all of the information together, it is estimated that the value of lost household services in 2008 was $15,346,703 for female victims and $4,757,848 for male victims.

Lost School Days

Students who missed many days in school might have to hire a private teacher or tutor to catch up. Someone who missed only one or two days might be able to make up the class time by working a few extra hours after school. The opportunity cost of the additional time learning might still be considered a loss. A high school or college student might otherwise work and earn money. Younger students might also give up the time doing household chores or just relaxing. In some serious cases, if too many school days were lost, an entire academic year might need to be repeated or there could be a permanent reduction in future earning capacity. However, that is only likely to be the very severe case and is not considered in the present study due to data limitations.

This cost is calculated for the victims whose main activity was “going to school”. Examining the age distribution of these victims indicates that all female victims aged 20 and above and the majority of male victims aged between 15 and 17. We assume that victims over the age of 18 were attending university or college, whereas victims under the age of 18 were receiving secondary education. The GSS suggests that female victims missed 154 university days and male victims missed 1,461 university days. In addition, another 4,328 secondary school days were missed for male victims. According to Statistics Canada and provincial department of education, the daily school cost is estimated at $38.83 and $37.88 for university education and secondary school education,

respectively. Following this, the value of lost school days was $5,980 for female victims and $220,675 for male victims.

Lost Child Care Services

Similar to the logic in estimating the value of lost household services, when someone is unable to take care of the children, the services have to be replaced by outside child care service providers or by another family member. There would be a fee or an opportunity cost. The victims whose main activity was “caring for children” were included in this estimation.

According to the GSS, there were a total of 1,410 days for which some female victims could not perform the child care services. No male victims of firearm-related crime stated that their main activity was “caring for children”. The national average daily cost of child care was $30 in 2008. Therefore, the value of lost child care services was $42,300 in 2008, all of which was ascribed to female victims.

Lost Future Incomes

For those victims who require life-time health care, all of their future earnings and workplace productivity will be lost. According to the CIHI data, 1 female victim and 62 male victims required life-time health care as a result of firearm-caused injury. The GSS data found that the average income of all victims of firearm-related crime, including those who had no income, was $33,550 for women and $34,219 for men. Taking into consideration the salary scale, remaining years of employment (if they had not experienced the incidents) and discount rate, it is estimated that the present value of lost future income is $1,216,480 per female victim and $1,139,493 per male victim. Therefore, the total present value of lost future income for female and male victims was $1,216,480 and $70,648,547, respectively.

All considered, the cost of lost productivity was estimated to be $154, 527, 373 of which $59,457,958 was attributable to female victims and $95,069,415 to male victims. See Appendix B.2 for detailed calculations and sources.

5.3 Personal Costs

Stolen and Damaged Property

The GSS also collected information on the value of stolen and damaged property, which includes stolen cash or property, damaged personal property, damaged motor vehicle, dwelling or other building on property and household property. Note that only the Incident File of the 2009 GSS provides such information. Therefore, the loss of stolen and damaged property resulting from spousal violence with a firearm is not captured.

About 23,861 female victims and 9,916 male reported that they had property stolen or damaged during the incidents. The data suggests that the average value of property belongings to female victims is almost five times higher than that of male victims. It is

estimated that the total value of the stolen and damaged property as a result of the incidents were $26,157,986 for female victims and $2,233,247 for male victims.

Legal Services

The GSS data found that 16,875 female victims and 467 male victims had contacted a lawyer to talk about the incidents. Note that the legal aid expenditures for criminal court cases (715 cases) have been examined in the criminal justice system section, and the legal services discussed in this section mainly refer to personally hired counsel (by victims) for various other issues, such as understanding court process and perusing civil damages. According to the Canadian Lawyer's 2009 legal fees survey, the national average hourly rate for a lawyer was about $231 in 2008. As no available information suggests the average length of use of legal services, it is assumed that on average each victim used 5 hours of services. Following this, the legal services cost $19,490,625 for female victims and $539,385 for male victims.

Counselling Services

Although not all crime victims would experience severe psychological trauma, many victims would develop at least mild stress responses, such as depression, phobias or anxiety, following their victimization. While these negative responses can affect their daily lives, counselling services can assist victims to better manage the situation and to resume their lives. According to the GSS, about 3,408 female victims and 3,232 male victims reported that they had contacted a counsellor or psychologist for help. While the information regarding the average national counselling fee is very limited, we find several figures in some provinces. For example, in Saskatoon the average cost of private, unsubsidized counselling was $60 to $100 per hour in 2002 and community-based, publicly funded counselling was typically $45 per hour. This rate was also within the rate range ($40-$105) given by the Crime Victim Assistance Program Counselling Guidelines, regulated by the Ministry of Public Safety and Solicitor General, British Columbia. It is decided to use a lower bound value of the private, unsubsidized counselling for the estimation. After adjustment for inflation, the counselling cost is estimated at $70 per hour in 2008. We also assume that victims on average required 24 hours of counselling services, which is half the amount of the maximum number of hours for counselling services provided by several victim assistance programs. Therefore, the counselling service expenses for female and male victims were $5,725,440 and $5,429,760, respectively.

Total personal costs for female victims were $51,374,051 and for male victims was $8,202,392. This produced a grand total of $59,576, 443. See Appendix B.3 for detailed calculations and sources of the estimates presented in this section.

5.4 Intangible Costs

As discussed in the Methodology section, the intangible victim costs of pain, suffering and loss of life are the most difficult component to measure and subject to considerable

uncertainty and controversy. Yet, when measured, they are inevitably the largest component of victim costs.

Pain and Suffering

Pain and suffering refer to "non-pecuniary damages" for the physical and emotional stress caused from being victimized. In Canada, many provinces have victim compensation programs to assist victims and their families for items such as counselling, damaged and stolen property, and pain and suffering, etc. Unfortunately, there is no specific answer for calculating the true value of pain and suffering. Each case is unique. What a judge does when determining compensation for pain and suffering is evaluate how the personal injury has affected the victim's ability to function in everyday life and how the injury has effected the person's enjoyment of life. The Supreme Court of Canada has placed a limit on the amount of compensation that accident victims are entitled to receive for non-pecuniary damages for pain and suffering. To date, the maximum compensation for pain and suffering is slightly more than $300,000, but it is only paid to the most catastrophically injured victims.

Although courts normally only award pain and suffering compensation for victims with injuries, in this study, we estimate such value for every victim. This is because even for those victims without physical injuries, there could be a mental pain and anguish endured by the victims due to the victimization. Previous studies (Turner, Finkelhor and Ormrod) have shown that violence exposure could make a significant contribution to levels of both depression and anger/aggression. Furthermore, there could also be a loss of life enjoyment as a result of the crime. Cohen (1988) used jury award information to value pain and suffering for non-fatal injuries. He estimated the monetary value of pain and suffering for gunshot wound/firearms injury at USD$59,344, which is equivalent to $ 117,000 in 2008 Canadian dollars. We use this value for the victims with major physical injuries that were caused by firearms.[26] In addition, Cohen (1988) also estimated the value of pain and suffering for victims of various other crimes, including USD$43,561 for rape, USD$7,459 for robbery and USD$4,921 for assault. After adjustment for inflation and exchange rate effect, these values are equivalent to $84,500, $14,500 and $9,500 in 2008 Canadian dollars. These values will be used for victims with minor or no physical injuries, by crime type.

According to the GSS, there were a total of 28,473 female victims and 25,583 male victims, among which 347 female and 1,653 male victims were with major firearm-caused physical injuries. For the remaining victims, 1,038 women and 1,423 men were victims of sexual assault, 8,488 women and 2,565 men were victims of robbery and 18,600 and 19,944 were victims of assault. By combining all the information, it is estimated that the total value of pain and suffering for female and male victims was around $428 million and $540 million, respectively.

[26] According to the UCR2, major physical injury is defined as more than "trifling" or "transient" in nature and requiring professional medical attention at the scent or transportation to a medical facility.

Loss of Life

There is now an extensive literature on the estimation for the value of statistical life (VSL), which has become the standard for assessing the benefits of risk and environmental regulations (Viscusi, 2008). The economic approach on value of life is not simply equating the value of an individual life with the present value of his/her future income. Rather, VSL is the rate of trade-off between money and very small risks of death.

Note that VSL is not a constant as individuals' risk-money tradeoffs vary across the population and also vary over time since their age and economic circumstances changes. The heterogeneity of VSL has become a more prominent issue and many studies (Johansson, 2002; Aldy and Viscusi, 2008; Viscusi and Aldy, 2007; Viscusi, 2009) have developed estimates of the heterogeneity of VSL on dimensions such as individual age, income, immigrant status, and the nature of the risk exposure. For example, Kniesner, Viscusi and Ziliak (2006) find an inverted-U-shaped relationship between the VSL and age. In addition, due to the positive income elasticity (life or health is a normal good), the VSL rises when personal income increases. Despite the heterogeneity of the VSL, using uniform VSL estimates to monetize the benefits of risk regulations and other policies has become standard practice in the US and in many other countries (Viscusi, 2010). Kniesner, Viscusi and Ziliak (2006) find that proper application of evidence on the trajectory of VSL over the life cycle would have little effect on the estimates that would be obtained without any age adjustment.

While there is no agreed-upon method or explicit standard used to select the appropriate value, the fact that the VSL usually rises/adjust over time due both to the positive income elasticity of VSL and inflation have been readily accepted in both academic and policy context. The Department of Transportation of the United States used VSL of $1 million or less in earlier 1980s, but has now raised the VSL to USD$5.8 million in 2007 based on a review of several Meta analyses of the VSL literature.[27] Moreover, the agency recognizes that there is a positive income elasticity of the VSL, and adopted the mean income elasticity of 0.55 from Viscusi and Aldy (2003) as the department's official income elasticity value. The U.S. Senate bill S.3564 proposed in 2008 also recognized the role of income adjustments, stating that the VSL amount must be increased annually to reflect "the average annual total compensation of individuals, including income and benefits."[28]

The Canadian Costs Benefit Analysis Guide: Regulatory Proposals published by the Treasury Board of Canada suggests a value of $6.11 million for the year of 2004 (which was adjusted for inflation from a value of $5.2 million in 1996) and expect departments to use this value after adjusting it for inflation.[29] As discussed above, adjusting a previous

[27] Revised Departmental Guidance: Treatment of the Value of Preventing Fatalities and Injuries in Preparing Economic Analyses. 2007. Washington, D.C: U.S. Department of Transportation.
[28] The bill, titled the "Restoring the Value of Every American in Environmental Decisions Act," was proposed in the 110th Congress, 2d Session.
[29] As the Treasury Board of Canada is currently working on a revised cost-benefit analysis (CBA) guide, the VSL will be adjusted in the near future.

VSL for inflation only is not sufficient and might not be as appropriate as applying a figure based on more recent studies. The 2008/2009 VSL figure (average estimate based on labour market) in the US was about USD$7-8 million. Following this, it is decided to use this more recent figure in the report (USD$ 7 million) which is equivalent to $7.49 million in the 2008 Canadian dollar.

The police-reported data report that there were a total of 204 victims killed as a result of firearm-related violence in 2008. Among the total, 199 were victims of homicide and 5 were victims of other violations causing death. Men continued to be the majority as compared to women (179 versus 25). Therefore, the total value for the loss of human life in 2008 was $187 million for female victims and $1,341 million for male victims.

Total intangible costs were therefore estimated at $2,717,603,954 of which $727,731,951 was ascribed to female victims and $1,989,872,003 was ascribed to male victims. See Appendix B.4 for detailed calculations and sources.

6. Third-Party Costs

While crime has its most significant impact on victims, others suffer as well. For example, family members may grieve the loss of a loved one or take time off from their daily activities to accompany victims (e.g., to court or doctor's appointments); there might be other people injured or threatened during the incidents; governments provide various victim services to help victims, and develop prevention programs. All of these costs are reflected in the third-party costs. Table 10 summarizes the total third-party costs.

TABLE 10: THIRD-PARTY COSTS FOR FIREARM-RELATED CRIME, 2008	
1. Funeral Service Expenses	**$1,563,660**
2. Loss of Affection/Enjoyment to Family Members	**$47,640,000**
3. Other People Harmed/Threatened	**$1,899,466**
3.1 Health Care	$557,000
3.2 Productivity Losses	$1,342,466
4. Social Service Operating Costs	**$4,422,508**
4.1 Transition Home/Shelter	$347,373
4.2 Crisis Line	$354,368
4.3 Victim Services	$3,720,767
5. Other Related Expenditures	**$24,000,000**
5.1 ICCUF	$10,000,000
5.2 Firearm Action Plan	$14,000,000
TOTAL	**$79,525,634**

6.1 Funeral and Burial Expenses

According to the Canadian Press, the average funeral in Canada costs about $7,500 in 2007.[30] This amounted to about $7,665 in the 2008 Canadian dollars. Therefore, the total costs of the funeral services for the 204 deceased victims were estimated at $1,563,660. See Appendix C.1 for detailed calculations and sources.

[30] Information is available from the website of CTV News, http://www.ctv.ca/CTVNews/QPeriod/20070530/dnd_costs_070530/.

6.2 Loss of Affection/Enjoyment to Family Members

The emotional impact of losing a loved one can be enormous. Many people would argue that no amount of money would be adequate to compensate their families, especially in fatal crime cases. Grieving family members may suffer from feelings of fear, anguish and devastation, or may develop depression, anxiety and sleeping problems as a consequence. Although it is not possible to estimate the true value for such suffering, looking at the problem from the perspective of court award might be able to shed some light on this issue.

Relevant information has been found in several jurisdictions. Specifically, Alberta's *Fatal Accidents Act* requires the court to award damages for grief and the loss of care, guidance and companionship in the amount of $75,000 to the spouse or adult partner of the deceased person; $75,000 to the parents of the deceased person; and $45,000 to each minor or unmarried/un-partnered child of the deceased person.[31] As with Alberta, Saskatchewan's *Fatal Accidents Act* also allows for recovery of bereavement damages. The damages for loss of companionship or grief are capped at $60,000 for a spouse and $30,000 for each child of the deceased. Unlike Alberta and Saskatchewan, there is no recovery for grief in Ontario. However, there was a case that the court substituted its own award for the general non-pecuniary damages, and awarded $35,000 to the deceased' daughter, $20,000 to the son, and $75,000 to the deceased's wife.

Following this, we use the figures from Alberta as our estimation basis, and we consider the impact on those families of the 204 deceased victims only.[32] According to Statistics Canada, the majority of people lived in family households (69.6%), and the rest lived either alone (26.8%) or lived with one or more unrelated persons (3.7%).[33] In addition, the average number of children per family has also dropped to 1.1 in 2006.[34] By using this distribution, we assume that each victim had both parents to receive the compensation, and victims lived in family households that had one spouse/partner, and one child. Therefore, as the compensation for grief and companionship, parents of the 204 victims would receive $75,000, each of the 142 (204*69.6%) spouses/partners would receive $75,000 and each of the 142 children would receive $45,000.[35] Following this, it is estimated that the total value for the loss of affection/enjoyment was $47,640,000. See Appendix C.2 for detailed calculations and sources.

[31] For detailed definition and conditions, see Alberta *Fatal Accidents Act*, R.S.A. 2000, C. F-8, S. 8. .
[32] Note that some forms of death such as homicide normally generate more emotional suffering than others such as natural disasters, and using compensation awards for accidental death might be an underestimation.
[33] Family Portrait: Continuity and Change in Canadian Families and Households in 2006, 2007. Ottawa, Ontario: Statistics Canada.
[34] See note 28.
[35] Note that in practice, family members may not actually receive the compensations as calculated here. These figures are only used to reflect the emotional impact.

6.3 Costs to Other Persons Harmed During the Incidents

Health Care

The GSS reported that in addition to the primary victims, there were about 76,008 who were harmed or threatened during the incidents. It is assumed that these persons had the same probability as the victims of seeking medical attention from a physician or at a hospital. Therefore, 274 people received medical attention from a physician and 1,353 people received medical attention at a hospital (visiting emergency department). Due to lack of data, hospitalization is not considered for a conservative estimation. The total health care costs for other persons harmed during the incidents were about $557,000.

Productivity Losses

Out of the 76,008 persons who were harmed or threatened during the incidents, 50,851 were aged 15 and over. It is assumed that these persons would take two days off from their daily activities. People might be engaged in different activities. Some go to work, some go to school, some stay home taking care of family members and some go shopping or simply enjoy the leisure time. Therefore, there would be a production loss if they were employed or at least an opportunity cost. We use the value of household work ($13.2 per hour, see section Lost Household Services) as a conservative estimate. Following this, the total productivity losses to other persons were $1,342,466.

Therefore, the total costs to other persons who were harmed or threatened during the incidents were $1,899,466. See Appendix C.3 for detailed calculations and sources.

6.4 Social Service Operating Costs

Shelters/Transition Home

The most recent year for which information is available with regard to the operating expenditures for transition home/shelters is 2005/06. The Transition Home Survey reported that the annual operating costs for the 553 shelters across Canada totalled approximately $317 million in 2005/06. With a total of 10,381 beds, it is estimated that the average operating cost per bed was about $83.61 per day in that year. After inflation adjustment, the average cost increased to $89.07 in 2008.

As suggested by the GSS, 44 female victims reported that they had gone to shelters, and it is estimated that 48% of them were admitted to shelters with their children. For women who were admitted with their children, we assume that only one child was brought. According to telephone conversation with the Interval House of Ottawa, a child normally occupies a separate bed. Therefore, with an average stay length of 60 days, the total shelter operating costs for victims of firearm-related violence were $347,373 in 2008.

Crisis Line

About 12,656 victims contacted crisis lines for assistance in 2008. The average time duration per call was about 17 minutes. As all the phone calls made to crisis lines are anonymous, no official information is available with regard to the number of times that one person called in. However, according to crisis line workers, people do make follow-up calls and it is assumed that on average, each victim made 5 phone calls. We estimate that the average operating cost of crisis lines was about $20 per hour where salaries for employees were the main components. Even though many crisis line workers are volunteers, there is still an opportunity cost as they may use the time to do other paid services or take leisure time instead. In addition, there might be expenses for building use, purchase of equipment, utilities and training. In this way, the total crisis line operating costs for victims of firearm-related crime were $354,368.

Victim Services

According to the Victim Services Survey, it is estimated that the average operating cost of the 879 victim service providers in Canada serving victims of crime was at $456.20 per victim. The GSS data finds that 8,156 victims of firearm-related crime had contacted these service providers to seek assistance. Therefore, the services provided to victims of firearm-related crime totalled approximately $3,720,767 in 2008.

In addition, various support centres (e.g., Men's/Women's/Community/Family centres) provide support and assistance to victims of crime, which includes reporting crime, emotional support, court accompany, referral to other programs and services, counselling services and temporary accommodation. According to the GSS, 11,822 victims went to various support centres to seek assistance as a result of firearm-related crime. However, no information is available regarding the time of length for using the service and the operating cost of these centres. Therefore, the associated costs are not included in the present report.

In sum, the total operating costs of various social services that were related to victims of firearm-related crime were $4,422,508. See Appendix C.4 for detailed calculations and sources. Note that compensation awarded to victims is not included. This is because compensation programs normally cover counselling, damaged and stolen property, lost wages and pain and suffering, etc (although the coverage varies among jurisdictions), all of which have been captured and examined under other parts of this study.

6.5 Other Related Expenditures

In 2004, the Royal Canadian Mounted Police (RCMP) allocated $49.9 million over a five-year span for the Investments to Combat the Criminal Use of Firearms (ICCUF) initiative, which was aimed to enhance the capacity of law enforcement agencies to combat gun crime and firearm smuggling and trafficking. This initiative involves three federal organizations: Public Safety, the Canada Border Services Agency (CBSA) and the Royal Canadian Mounted Police (RCMP). The ICCUF funding allocation now has been

extended indefinitely with the overall aim of improving the national collection, analysis and sharing of firearm-related intelligence.

In addition, as part of the strategy on tackling crime, the Government is committed to effective gun control and action against those who use firearms for criminal purposes. Effective gun control requires the licensing of all individuals who legally possess guns. The Government included a short-term action plan ($14 million) in the 2008 budget which included measures to facilitate compliance and the extension of the waiver on firearms renewal fees from February 2008 until May 2009.

Many other provincial programs and initiatives associated with firearm-related crimes are not included due to data limitations. Therefore, the total other expenditures spent by the Government on firearm-related crime initiatives in 2008 were about $24,000,000. See Appendix C.5 for detailed calculations and sources.

7. Discussion

The present study estimates the financial impact of firearm-related crime in Canada. Three major cost categories are examined: criminal justice system, victims and the third party. We estimate that the total economic and social costs of firearm-related crime in 2008 were approximately $3.1 billion, equivalent to a per capita cost of $93 in that year. However, this is likely to be a conservative estimate due to the unavailability of data in many areas as previously noted.

The costs pertaining to the Canadian criminal justice system is estimated at $302 million in 2008. A breakdown of the total criminal justice costs by sector reveals that policing services used the majority of justice expenditures on firearm-related crime (69.5%), followed by corrections (29.7%), courts (0.3%), prosecution (0.3%) and legal aid (0.2%).

Victims bear the most direct and significant impact of crime. Many costs would be incurred as a direct result of victimization of firearm-related crime, such as health care cost, productivity losses and value of stolen/damaged property. We estimate the total victim costs at $2.7 billion in 2008, including both tangible and intangible costs. The majority was intangible costs (91.9%) for pain, suffering and loss of human life. The remaining $221 million was incurred as tangible costs, of which productivity losses represented 69.8%, followed by personal costs (26.9%) and health care costs (3.2%).

The third party costs capture the impact of firearm-related crime on other people and society in general. In 2008, the total costs borne by the third-party were approximately $79.5 million. About 59.9% were intangible costs measuring the loss of affection/enjoyment to family members of victims who were killed in the crime. Tangible costs cover funeral services (2.0 %), other persons who were harmed or threatened during the incidents (2.4%), social services (5.6%) and other related government expenditures (30.2%).

In this study, we have provided estimation for the costs of firearm-related crime in Canada. Due to data limitations, the scale and the impact of firearm-related violence might have been underestimated. For example, many costs such as lost legitimate

incomes for offenders and psychological impact on family members were not included. In addition, note that while these costs provide an indication of the impact of firearm-related crime on people's lives and on the whole society, considerations from an economic perspective reveal only one dimension of this complex social problem. As such, costing analysis is not a substitute for policy formulation, but a complementary addition that could provide more objective evidence.

Appendix A: Criminal Justice System Costs[36]

A.1 Police Costs

Total police expenditure 2008	$11,448,937,000[a]
Proportion of the expenditures spent on crime-related activities	65%[b]
Police expenditure on crime-related activities ($11,448,937,000*0.65)	$7,441,809,050
Allocating the police expenditures that were spent on crime-associated among offences according to their severity weights. The results are presented in Table A1	

Total Police Costs for Firearm-Related Crime **$209,772,812**

Table A1: Police Expenditures Allocated among Offences according to Severity Weights.

OFFENCES	SEVERITY WEIGHTS [c]	POLICE COSTS PER INCIDENT	NUMBER OF INCIDENTS [d]	POLICES COSTS
Homicide	7,042/1,822	$291,595.31	187	$54,528,323
Other violations causing death	688/62	$29,675.76	5	$148,379
Attempted murder	1,411	$62,688.65	259	$16,236,360
Aggravated sexual assault - level 3	1,047	$46,526.24	4	$186,105
Sexual assault with a weapon - level 2	678	$30,137.65	33	$994,542
Sexual assault - level 1	211	$9,373.41	36	$337,443
Sexual violations against children	211	$9,001.17	4	$36,005
Aggravated assault - level 3	405	$17,987.89	103	$1,852,753
Assault with weapon / causing bodily harm - level 2	77	$3,438.03	1,601	$5,504,286
Common assault - level 1	23	$1,041.01	257	$267,540
Assault police officer	42	$1,865.98	34	$63,443
Other assaults	143/398	$4,055.18	21	$85,159
Firearms - use of, discharge, pointing	988/267	$19,356.10	1,328	$25,704,901
Robbery	583	$25,901.60	3,667	$94,981,167
Forcible confinement / Kidnapping	477	$21,192.22	286	$6,060,975
Abduction	162/67	$4,732.71	3	$14,198
Extortion	229	$10,174.04	38	$386,614
Criminal harassment	45	$1,999.27	40	$79,971
Uttering threats	46	$2,043.69	944	$1,929,243
Other violent violations	1278/611	$10,725.86	35	$375,405

[36] All figures in Appendix A are presented in round numbers.

a. The total police expenditures include salaries and wages, benefits, and other operating expenses such as accommodation costs, fuel, and maintenance, etc. Note that capital expenditures, funding from external sources, revenues and recoveries are not included. Source: Statistics Canada, Canadian Centre for Justice Statistics (CCJS), Police Resources in Canada 2009.

b. It is assumed that Canadian police spend 65% of their time on crime-related activities. Other duties can include: traffic regulations (non-criminal), offering youth education seminars, coordinating community efforts, patrolling a regular route or responding to phone calls ranging from noise complaints to non-crime emergency calls for help. After several communications with the Ottawa Police Service, 65% is considered as a reasonable proportion.

c. Statistics Canada assigns a weight to all crime based on their seriousness. The level of seriousness is based on actual sentences handed down by the courts in all provinces and territories. More serious crimes are assigned higher weights, less serious offences lower weights. As a result, it is assumed that more serious offences would use a greater amount of police resources. In Table A1, some offence categories are given more than two weights separated with a "/". This is because the detailed violations under that category have different weights. For example, the weights for both first-degree and second-degree murders are 7,042, but the weight for manslaughter is lower at 1,822. All three violations are under the group of homicide.

d. Source: Statistics Canada, CCJS, Uniform Crime Report Survey 2 (UCR2) 2008. Micro data was extracted in February, 2011. The underrepresentation of the UCR2 micro data (98%) has been adjusted.

A.2 Court Costs

Number of active civil cases per capita	2.06%[a]
Population 2002/03	31,568,167[b]
Estimated number of active civil cases 2002/03 (31,568,167*2.06%)	650,304
Number of total criminal cases (adult + youth) 2002/03	469,840[c]
Total cases processed in courts 2002/03 (650,304+469,840)	1,120,144
Total court expenditures 2002/03	$1,151,885,000[d]
Average court cost per case 2002/03 ($1,151,885,000/ 1,120,144)	$1,028.34
Average court cost per case ($1,028.34*1.23)	$1,264.86[e]
Average court cost per case 2008 (inflation adjustment)	$1,433.10
Number of firearm offence cases processed in criminal courts 2008	715[f]
Total court costs for firearm-related offences (715*1,433.10)	**$1,024,667**

Total Criminal Court Costs for Firearm-Related Offences	**$1,024,667**

a. This figure is calculated as the average of the active civil cases per capita over the period between 2005/06 and 2008/09 in corresponding jurisdictions. Source: Statistics Canada, CCJS, Civil Court Survey Statistics, 2005/06 to 2008/09.

b. Source: Statistics Canada, CCJS, Population by Age and Sex, Canada, Provinces and Territories, 2008.

c. Source: Statistics Canada, CCJS, Adult Criminal Court Survey (ACCS) and Youth Court Survey (YCS), Number of Cases and Charges by Type of Decision, 2002/03. The underrepresentation of the ACCS has been adjusted.

d. Source: Statistics Canada, CCJS, Overview of the Courts Personnel and Expenditures Survey, 2002/03.

e. As both the average number of appearances per criminal case and the average elapsed time per criminal case have increased by approximately 23% in 2008/09 as compared to 2002/03, we assume that there has been a general trend towards lengthier and more complex cases. These changes should be reflected in the associated court costs. Therefore, 1.23 is used as a multiplier to reflect the increased demand for the court resources.

f. Source: Statistics Canada, CCJS, ACCS and YCS, Cases by Decision, 2007/08 and 2008/09. The underrepresentation of the ACCS has been adjusted.

A.3 Prosecution Costs

Total criminal prosecution expenditures (excluding BC) 2002/03	$352,139,000[a]
Number of criminal cases (adult + youth) (excluding BC) 2002/03	418,754[b]
Average prosecution cost per case 2002/03 ($352,139,000/418,754)	$840.92
Average prosecution cost per case ($840.92*1.23)	$1,034.33[c]
Average prosecution cost per case 2008 (inflation adjustment)	$1,171.90
Number of firearm offence cases processed in criminal courts 2008	715[d]
Total prosecution costs for firearm-related offences (715*$1,171.90)	**$837,909**

Total Prosecution Costs for Firearm-Related Offences	**$837,909**

a. Source: Statistics Canada, CCJS, Overview of the Prosecutions Personnel and Expenditures Survey, 2002/03.
b. Source: Statistics Canada, CCJS, ACCS and YCS, Number of Cases and Charges by Type of Decision, 2002/03. The underrepresentation of the ACCS has been adjusted.
c. See section A.2, note e.
d. See section A.2, note f.

A.4 Legal Aid Costs

Direct legal service expenditures (criminal matters) 2007/08	$282,085,000[a]
Other expenditures (criminal matters) 2007/08	$69,255,000[b]
Total legal aid expenditures (criminal matters) 2007/08 ($282,085,000 + $69,255,000)	$351,340,000
Direct legal service expenditures (criminal matters) 2008/09	$306,202,000[a]
Other expenditures (criminal matters) 2008/09	$74,653,000[b]
Total legal aid expenditures (criminal matters) 2008/09 ($306,202,000 + $74,653,000)	$380,855,000
Total Legal service expenditures 2008 ($351,340,000 *25% + $380,855,000*75%)	$373,476,250
Number of total criminal cases in Canada 2008	472,100[c]
Legal aid costs per case 2008 ($373,476,250/472,100)	$791.10
Number of firearm offence cases processed in criminal courts 2008	715[d]
Total legal aid costs for firearm-related offences (715*$791.10)	**$565,637**
Total Legal Aid Costs for Firearm-Related Offences	**$565,637**

a. Source: Statistics Canada, CCJS, Legal Aid in Canada: Resource and Caseload Statistics, 2007/08 and 2008/09.

b. While direct legal service expenditures were disaggregated between criminal matters and civil matters, other expenditures were not. Therefore, we apply the percentage that the criminal legal service expenditures represent (out of the total direct legal service expenditures) to other expenditures to obtain the proportion of other expenditures that were spent on criminal matters. Other expenditures include office functions, external project expenditures and research activities, etc.

c. Source: Statistics Canada, CCJS, ACCS and YCS, Number of Cases and Charges by Type of Decision 2007/08 and 2008/09. The underrepresentation of the ACCS has been adjusted.

d. See section A.2, note f.

A.5 Correctional Service Costs

A.5.1 Custody Costs

A.5.1.1 Federal Custody

Part 1: Non-Murder Offenders

Number of male offenders admitted to federal custody 2008	90[a]
Number of female offenders admitted to federal custody 2008	1[a]
Average length of federal custody (days) for male offenders 2008	1,734[a]
Average length of federal custody (days) for female offenders 2008	1,923[a]
Federal full parole grant rate for male offenders 2008	41.3%[b]
Federal full parole grant rate for female offenders 2008	76.1%[b]
Number of male offenders released on full parole (90*41.3%)	37
Number of female offenders released on full parole (1*76.1%)	1[c]
Number of male offenders released on statutory release [(90-37)*95%]	50[d]
Number of female offenders released on statutory release (1-1)	0
Proportion of the sentence served before parole release, male 2008	38.5%[e]
Proportion of the sentence served before parole release, female 2008	36.4%[e]
Failure rate of parole 2008	27.1%[f]
Failure rate of statutory release 2008	40.1%[f]
Length of federal incarceration (days) without parole and statutory release, male [(90-37-50)*1,734]	5,202
Length of federal incarceration (days) before parole release, male (37*1,734*38.5%)	24,701
Length of federal incarceration (days) before statutory release, male (50*1,734*2/3)	57,800[g]
Number of male offenders **failing** in parole (37*27.1%)	10
Number of male offenders **failing** in statutory release (50*40.1%)	20
Length of federal incarceration (days) for male offenders due to failure in parole or statutory release [10*(1-38.5%)*0.5+20*(1-2/3)*0.5]*1,734	11,112[g]
Total federal incarceration (days) for male offenders (5,202 + 24,701 + 57,800 + 11,112)	98,815
Length of federal incarceration (days) before parole release, female (1*1,923*36.4%)	700
Number of female offenders **failing** in parole	0[c]
Total federal incarceration (days) for female offenders	700

Average daily federal incarceration cost per person, male 2008	$287[h]
Average daily federal incarceration cost per person, female 2008	$542[h]
Federal incarceration cost, male (98,815*$287)	$28,359,905
Federal incarceration cost, female (700*$542)	$379,400
Total federal incarceration costs ($28,359,905+$379,400)	$28,739,305
Length of parole (days) for male offenders [(37-10)*1,734*(1-38.5%)+10*1,734*(1-38.5%)*0.5]	34,125
Length of parole (days) for female offenders [1*1,923*(1-36.4%)]	1,223
Length of statutory release (days) for male offenders [(50-20)*1,734*1/3 +20*1,734*1/3*0.5]	23,120
Length of statutory release (days) for female offenders	0[c]
Total number of days in parole or statutory release, male (34,125+23,120)	57,245
Annual costs of supervising an offender on parole or statutory release 2008	$21,826[i]
Average daily costs of supervising an offender on parole or statutory 2008 (21,826/365.25)	$59.76
Costs of supervising male offenders on parole or statutory release (57,245*$59.76)	$3,420,961
Cost of supervising female offenders on parole or statutory release (1,223*$59.76)	$73,086
Total cost of supervising offenders on parole or statutory release ($3,420,961+$73,086)	$3,494,047
Federal custody costs for non-murder offenders ($28,739,305+$3,494,047)	**$32,233,352**

a. Source: Statistics Canada, CCJS, ACCS and YCS, Case by Length of Custody, 2007/08 and 2008/09.

b. Source: Public Safety, Corrections and Conditional Release Statistical Overview Annual Report 2009, Table D1. Due to data limitations, day parole is not examined.

c. It is assumed that the only female offender was granted the full parole release and was successful in completing the parole.

d. Offenders who are not granted parole release are normally subject to statutory release after serving approximately 2/3 of their sentence. This is the law and is not a discretionary release by the National Parole Board. The offender is supervised in the community and will be returned to prison if he/she is believed to present an undue risk to the public. We assume that 95% of the federal offenders who were not released on parole would be released on statutory release. Statutory release does not apply to those convicted of 1st or 2nd degree murder (and a few other rare offences). The 5% can be considered as a factor to capture dangerous or repeat offenders.

e. Source: Public Safety, Corrections and Conditional Release Statistical Overview Annual Report 2009, Table D4.

f. Source: Public Safety, Corrections and Conditional Release Statistical Overview Annual Report 2009, Table D8 and Table D9.

g. Assumption: revocation occurs in the middle of parole or statutory release, and offenders are returned to incarceration on breach of release conditions to serve the rest of their sentences. Additional sentences due to new charges are not considered due to data limitations.

h. Source: Public Safety, Corrections and Conditional Release Statistical Overview Annual Report 2009 and 2010, Figure B3.

i. Source: Correctional Service Canada, Basic Facts about the Correctional Service of Canada, 2003/04. The costs have been adjusted for inflation from $19,755 per offender in 2003/04 to $21,826 in 2008.

Part 2: Murder Offenders

Number of male first-degree murderers admitted to federal custody	12[a]
Number of female first-degree murderers admitted to federal custody	0[a]
Number of male second-degree murderers admitted to federal custody	7[a]
Number of female second-degree murderers admitted to federal custody	2[a]
Average length of federal custody (days) for first-degree murderers	9,131[b]
Average length of federal custody (days) for second-degree murderers	7,762[b]
Percentage of first-degree murderers applying for judicial review under the Faint Hope clause	41.5%[b]
Percentage of second-degree murderers applying for judicial review under the Faint Hope clause	25.3%[b]
Percentage of first-degree murderers having parole ineligibility reduced	53.8%[b]
Percentage of second-degree murderers having parole ineligibility reduced	39.2%[b]
Number of male first-degree murderers released on parole (12*41.5%*53.8%)	3
Number of male second-degree murderers released on parole (12*25.3%*39.2%)	1
Number of female first-degree murderers released on parole	1[c]
Average length of federal custody (days) served before parole release for first-degree murderers	6,737[b]
Average length of federal custody (days) served before parole release for second-degree murderers	6,474[b]
Failure rate of parole for murderers (due to breach of release condition)	28%[b]
Number of male first-degree murderers **failing** in parole (3*28%)	1
Number of male second-degree murderers **failing** in parole (1*28%)	0
Number of female second-degree murderers **failing** in parole	0[c]
Length of federal incarceration (days), first-degree murderers	
Male offenders without parole [(12-3)*9,131]	82,179
Male offenders released on parole (before parole) (3*6,737)	20,211
Male offenders released on parole (failing in parole) [1*0.5*(9,131-6,737)]	1,197
Length of federal incarceration (days), second-degree murderers	
Male offenders without parole [(7-1)*7,762]	46,572
Male offenders released on parole (before parole) (1*6,474)	6,474
Male offenders released on parole (failing in parole)	0
Female offenders without parole (1*7,762)	7,762
Female offenders released on parole (before parole) (1*6,474)	6,474

Female offenders released on parole (failing)	0
Total federal incarceration (days) for male murderers (82,179+20,211+1,197+46,572+6,474)	156,633
Total federal incarceration (days) for female murderers (7,762+6,474)	14,236
Average daily federal incarceration cost per person, male	$287[d]
Average daily federal incarceration cost per person, female	$542[d]
Federal incarceration cost, male murderers (156,633*287)	$44,953,671
Federal incarceration cost, female murderers (14,236*542)	$7,715,912
Total federal incarceration costs for murderers ($44,953,671+$7,715,912)	$52,669,583
Length of parole (days) for male first-degree murderers [(2+1*0.5) (9,131-6,737)]	5,985
Length of parole (days) for male second-degree murderers [1*(7,762-6,474)]	1,288
Length of parole (days) for female second-degree murderers	1,288
Total number of days in parole for male murderers (5,985+1,288)	7,273
Total number of days in parole for female murderers	1,288
Average daily costs of supervising an offender on parole	$59.76[e]
Cost of supervising male murderers on parole (7,273*$59.76)	$434,634
Cost of supervising female murderer on parole (1,288*$59.76)	$76,971
Total cost of supervising murderers on parole ($434,634+$76,971)	$511,605
Federal custody costs for murder offenders ($52,669,583+$511,605)	**$53,181,188**

a. As court information regarding the number of murder cases where a firearm was involved is not available, we apply the conviction rate of the overall homicide to the number of offenders who were charged with first-degree and second-degree murder where a firearm was present or used. Then, we use the sentences distribution for the overall homicide convictions to estimate the various sentences that were given to these firearm murderers. Number of offenders charged with murder where a firearm was involved is available from Statistics Canada, CCJS, UCR2, 2008. Information on the overall homicide conviction rate and sentence distribution is available from Statistics Canada, CCJS, ACCS and YCS, 2007/08 and 2008/09.

b. Source: Department of Justice Canada, An Analysis of the Use of the Faint Hope Clause 2010.

c. Assumption: for the two female second-degree murderers, it is assumed that one did not receive reduction in the parole ineligibility and therefore, was not released on parole before her sentence served, and the other were granted parole and were successful in completing the parole

d. See section A.5.1.1, Part 1, note h.

e. See section A.5.1.1, Part 1, note i. It is assumed that 1 year has 365.25 days.

Total federal custody costs ($32,233,352+$53,181,188)	**$85,414,540**

5.1.2 Provincial Custody

Number of male offenders admitted to provincial custody	124[a]
Number of female offenders admitted to provincial custody	7[a]
Average length of provincial custody (days) for male offenders	246[a]
Average length of provincial custody (days) for female offenders	146[a]
Provincial full parole grant rate 2008	50%[b]
Number of male offenders released on full parole (124*50%)	62
Number of female offenders released on full parole (7*50%)	4
Number of male offenders released on statutory release (124-62)	62[c]
Number of female offenders released on statutory release (7-4)	3[c]
Proportion of the sentence served before parole release	1/3[d]
Provincial full parole failure rate 2008	24%[e]
Number of male offenders failing in parole (62*24%)	15
Number of female offenders failing in parole (4*24%)	1
Length of provincial incarceration (days) before parole release, male [62*246*1/3)]	5,084
Length of provincial incarceration (days) without parole, male (62*246*2/3)	10,168
Length of provincial incarceration (days) due to failure in parole, male (15*246*2/3)*0.5	1,230
Total provincial incarceration (days) for male offenders (5,084+ 10,168+1,230)	16,482
Length of provincial incarceration (days) before parole release, female [4*146*1/3)]	195
Length of provincial incarceration (days) without parole, female (3*146*2/3)	292
Length of provincial incarceration (days) due to failure in parole, female (1*146*2/3)*0.5	49
Total provincial incarceration (days) for female offenders (195+292+49)	536
Average daily provincial/territorial incarceration cost per person 2008	$160[f]
Provincial male incarceration cost (16,482*$160)	$ 2,637,120
Provincial female incarceration cost (536*$160)	$85,760
Total provincial incarceration cost ($2,637,120+$85,760)	$2,722,880
Provincial parole (days) for male offenders [(62-15)*246*2/3+15*246*0.5*2/3]	8,938
Provincial parole (days) for female offenders [(4-1)*146*2/3+1*146*0.5*2/3)]	341
Average daily provincial parole cost, 2008	$22[g]
Provincial parole cost for male offenders (8,938*$22)	$ 196,636

Provincial parole cost for female offenders (341*$22)	$ 7,502
Total provincial parole costs ($196,636 + $7,502)	$204,138[h]
Total provincial custody costs ($2,722,880+$204,138)	**$ 2,927,018**

a. Source: Statistics Canada, CCJS, ACCS and YCS, Case by Length of Custody, 2007/08 and 2008/09.
b. Source: National Parole Board, Performance Monitoring Report 2008-2009, Table 71.
c. If parole is denied, the provincial offender must be released, by law, after serving 2/3 of the sentence.
d. Offenders sentenced to provincial custody generally are paroled after serving 1/3 of their sentence.
e. Source: National Parole Board, Performance Monitoring Report 2008-2009, Table 144.
f. Source: Statistics Canada, CCJS, Adult Correctional Services in Canada 2008-2009, Reference Tables, Table 4.
g. We assume $22 ($10 cheaper than daily cost for conditional sentence) as an average cost per day (not per visit) for provincial parole, which is in the range of $5-$25 for community supervision. Source: http://www.prisonjustice.ca/politics/facts_stats.html.
h. Provincial supervision of offenders on statutory release is not considered here as there is no data available and it is not as strict as the supervision for federal offenders on statutory release.

5.1.1 Federal custody costs	$85,414,540
5.1.2 Provincial custody costs	$2,927,018
Total custody costs for firearm-related offences 2008	**$ 88,341,558**

A.5.2 Conditional Sentence Costs

Number of male offender receiving conditional sentence	5[a]
Average length (days) of conditional sentence for male offenders	234[b]
Number of female offender receiving conditional sentence	1[a]
Average length (days) of conditional sentence for female offenders	219[b]
Average daily cost for conditional sentence per offender ($160*0.2)	$32[c]
Conditional sentence cost for male offenders(5*234*$32)	$37,440
Conditional sentence cost for female offenders(1*219*$32)	$7,008
Total conditional sentence costs for firearm-related offences 2008 ($37,440+$7,008)	**$44,448**

a. Source: Statistics Canada, CCJS, ACCS and YCS, Cases by Most Serious Sentence, 2007/08 and 2008/09.

b. Source: Statistics Canada, CCJS, Conditional Sentencing in Canada: A Statistical Profile 1997-2001, Catalogue no. 85-560-XIE.

c. It was reported that a person is supervised in the community for about 20% of the cost of provincial custody. Source: The John Howard Society of Ontario, Fact Sheet, Reconsidering Community Corrections in Ontario. January, 1997.

5.3 Probation Costs

Number of male offenders receiving probation	135[a]
Number of female offenders receiving probation	14[a]
Average probation length in days for male offenders	472[b]
Average probation length in days for female offenders	484[b]
Probation length in days for male offenders (135*472)	63,720
Probation length in days for female offenders (14*484)	6,776
Average daily probation cost for probation per person	$20[c]
Probation cost for male offenders (63,720*$20)	$1,274,400
Probation cost for female offenders (6,776*$20)	$135,520
Total probation costs for firearm-related offences 2008 ($1,274,400+$135,520)	**$1,409,920**

a. Source: Statistics Canada, CCJS, ACCS and YCS, Cases by Most Serious Sentence, 2007/08 and 2008/09.
b. Source: Statistics Canada, CCJS, ACCS and YCS, Cases by Length of Probation, 2007/08 and 2008/09.
c. Considering that the seriousness of probation is lower than conditional sentence, it is assumed that the daily probation cost is $20.

5.4 Fine Costs

Number of male offenders receiving fine as sentence	1[a]
Number of female offenders receiving fine as sentence	0[a]
Average fine amount for male offenders, 2008	$575[a]
Total fine costs for firearm-related offences 2008	**-$575**

a. Source: Statistics Canada, CCJS. ACCS and YCS, Cases by Most Serious Sentence, 2007/08 and 2008/09.

b. Source: Statistics Canada, CCJS. ACCS and YCS, Cases by Fine Amount, 2007/08 and 2008/09.

5.1 Custody Costs	$88,341,558
5.2 Conditional Sentence Costs	$44,448
5.3 Probation Costs	$1,409,920
5.4 Fine Costs	-$575
Total Corrections Costs for Firearm-Related Offences	**$89,795,351**

Appendix B: Victim Costs[37]

B.1 Health Care Costs

B.1.1 Medical Attention from a Physician[38]

Number of female victims having medical attention from a physician	219[a]
Number of male victims having medical attention from a physician	3[a]
Average cost of one physician visit 2004/05	$50.36[b]
Average cost of one physician visit 2008 (Inflation adjustment)	$55.64
Costs of medical attention from a physician for female victims (219*$55.64)	$12,185
Costs of medical attention from a physician for male victims (3*$55.64)	$167
Total health care costs, physician (12,185+167)	**$12,352**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, XAI_Q140, CRVIOL, PSP_Q190, SAI_Q140; Incident File: CIR_Q105_C01, CIR_Q180, WGHT_VIC.

b. Source: Canadian Institute for Health Information (CIHI), National Physician Database and National Grouping System Categories Report, Canada 2004/05, Table 7-5: Major Assessments for Office.

[37] All figures in Appendix B are presented in round numbers.

[38] Note that injuries as a result of firearm-related crime may not be necessarily caused by firearm. All injuries are examined, unless otherwise indicated.

B.1.2 Medical Attention at Emergency Departments (ED)

Number of female victims having medical attention at ED	1,017[a]
Number of male victims having medical attention at ED	82[a]
Average ED treatment cost per visit	$400.41[b]
Cost of ED treatment for female victims (1,017*$400.41)	$407,217
Cost of ED treatment for male victims (82*$400.41)	$32,834
Percentage of female victims transported to ED by ground ambulance	78%[c]
Percentage of male victims transported to ED by ground ambulance	70%[c]
Number of female victims transported to ED by ambulance (1,017*0.78)	793
Number of male victims transported to ED by ambulance (82*0.7)	57
Average cost of ground ambulance service	$587.08[d]
Cost of providing ambulance transports for female victims (793*$587.08)	$465,554
Cost of providing ambulance transports for male victims (57*$587.08)	$33,464
Cost of ED visits for female victims ($407,217+$465,554)	$872,771
Cost of ED visits for male victims ($32,834+$33,464)	$66,298
Total health care costs, emergency department ($872,771+$66,298)	**$939,069**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, XAI_Q130, CRVIOL, PSP_Q190, SAI_Q130; Incident File: CIR_Q105_C01, CIR_Q170, WGHT_VIC.

b. An American study (Bamezai, Melnick and Nawathe, 2005) suggested that for trauma ED visits, the average cost per visit was US$192 in 1998, with a low of US$171 and a high of US$215. Using the exchange rate of 1998 (US$1=CAD$1.484), US$215 is converted into CAD$319 in that year. After adjustment for inflation, CAD$319 in 1998 is equivalent to CAD$400 in 2008. Firearm-related crime can result in serious or critical bodily injuries, wounds, or shock, as compared to non-firearms violence. Hence, it is expected that the treatment cost for injuries caused during the violence should be relatively higher than the overall average cost of all ED visits. Therefore, we use the higher bound cost per trauma ED visit from USA (vs. non-trauma visits) in our estimation. According to the CIHI, the average cost of an ED visit in Canada for all ages (seniors included) was $260 in 2007/08.

c. The National Ambulatory Care Reporting System (NACRS) data provided by the CIHI suggest that 78% female victims and 70% male victims of firearm offences (with firearm-caused injuries) were transported to emergency departments by ground ambulance. We assume that this percentage applies to all the victims of firearm-related crime, regardless of whether the injury was caused by a firearm or not.

d. There is not much variation in the cost of providing an ambulance transport among provinces. We use the statistics from British Columbia. Source: Ministry of Health, BC Ambulance Service, 2007, Ambulance Fee Changes, available from http://www2.news.gov.bc.ca/news_releases_2005-2009/2007HEALTH0101-001106-Attachment1.htm. In 2006/07, the average cost of providing a ground ambulance transport to hospital was $565 which is equivalent to $587 in 2008 after inflation adjustment.

B.1.2.1 Medical Attention at ED (Firearm-caused Injuries, hospital-reported data)

Number of female victims having ED treatment in Ontario	9[a]
Number of male victims having ED treatment in Ontario	131[a]
Number of female victims transported to ED by ground ambulance in ON	7[a]
Number of male victims transported to ED by ground ambulance in ON	91[a]
Population of Ontario that is female aged 12 and over, 2008	5,711,646[b]
Population of Ontario that is male aged 12 and over, 2008	5,494,444[b]
Population of Canada that is female aged 12 and over, 2008	14,674,120[b]
Population of Canada that is male aged 12 and over, 2008	14,287,122[b]
Estimated number of female victims having ED treatment in Canada (9*14,674,120/5,711,646)	23[c]
Estimated number of male victims having ED treatment in Canada (131*14,287,122/5,494,444)	341[c]
Average ED treatment cost per visit	$400.41[d]
Cost of ED treatment for female victims (23*$400.41)	$9,209
Cost of ED treatment for male victims (341*$400.41)	$136,540
Estimated number of female victims transported to ED by ground ambulance in Canada (7*14,674,120/5,711,646)	18[c]
Estimated number of male victims transported to ED by ground ambulance in Canada (91*14,287,122/5,494,444)	237[c]
Average cost of ground ambulance service	$587.08[e]
Cost of ground ambulance transports for female victims (18*$587.08)	$10,567
Cost of ground ambulance transports for male victims (237*$587.08)	$139,138
ED visit cost for female victims ($9,209+$10,567)	$19,776
ED visit cost for male victims ($136,540+$139,138)	$275,678
Total Emergency Department Visit Cost ($19,776+$275,678)	**$295,454**

a. Source: CIHI, National Ambulatory Care Reporting System (NACRS) 2008/09. Only Ontario is covered in the NACRS. Note that records from federal hospitals, e.g. prisons and veteran hospitals are not included. Patients who arrived dead at the hospital or died before treatment are excluded in the cost estimation. Only gunshot injuries that were intentionally caused by other people are included. Accidents and intentional self-harm such as suicides are excluded. Table B1 presents the offence categories which are included.

Table B1: Firearm/Gunshot Codes and Categorizations

X93	Assault by handgun discharge
X94	Assault by rifle, shotgun and larger firearm discharge
X95	Assault by other and unspecified firearm discharge
X95.00	Assault by BB gun discharge
X95.01	Assault by air gun discharge
X95.08	Assault by other specified firearm discharge
X95.09	Assault by unspecified firearm discharge

b. Source: Statistics Canada, Annual Demographic Statistics, 2009. As suggested by the CIHI data, more than half of the patients with firearm-caused injuries were less than 23 years old. Therefore, we decided to use the population aged 12 and over, rather than 18 and over, for the estimation.
c. It is assumed that the relevant per capita statistics in Canada are the same as the figures in Ontario.
d. See Section B.1.2 note b.
e. See Section B.1.2 note d.

B.1.3 Acute Hospitalization (Firearm-caused Injuries, hospital-reported data)

Number of female victims admitted to acute hospitalization in Canada excluding Quebec	11[a]
Number of male victims admitted to acute hospitalization in Canada excluding Quebec	206[a]
Number of female victims transported to acute care institutions in Canada excluding Quebec, by type of ambulance	
By ground ambulance	9[a]
By combination of air, ground and water ambulance	2[a]
Number of male victims transported to acute care institutions in Canada excluding Quebec, by type of ambulance	
By air ambulance	3[a]
By ground ambulance	123[a]
By combination of air, ground and water ambulance	4[a]
Population of Canada excluding Quebec that is female aged 12 and over	11,226,013[b]
Population of Canada excluding Quebec that is male aged 12 and over	10,937,777[b]
Population of Canada that is female aged 12 and over	14,674,120[b]
Population of Canada that is male aged 12 and over	14,287,122[b]
Estimated number of female victims admitted to hospitalization in Canada (11/11,226,013*14,674,120)	14[c]
Estimated number of male victims admitted to hospitalization in Canada (206/10,937,777*14,287,122)	269[c]
Average hospitalization cost per female patient	$46,868[d]
Average hospitalization cost per male patient	$19,997[d]
Hospitalization cost of firearm-caused injuries, female victims (14*46,868)	$656,152
Hospitalization cost of firearm-caused injuries, male victims (269*19,997)	$5,379,193
Estimated number of female victims transported to acute care institutions in Canada, by type of ambulance	
By ground ambulance (9/11,226,013*14,674,120)	12[c]
By combination of air, ground and water ambulance (2/11,226,013*14,674,120)	3[c]
Estimated number of male victims transported to acute care institutions in Canada, by type of ambulance	
By air ambulance (3/10,937,777*14,287,122)	4[c]
By ground ambulance (123/10,937,777*14,287,122)	161[c]
By combination of air, ground and water ambulance (4/10,937,777*14,287,122)	5[c]
Average cost of ground ambulance service	$587.08[e]
Average cost of air ambulance service	$4,675.84[e]

Average cost of combination of ambulance services ($587.08+$4,675.84)	$5,262.92[f]
Cost of ambulance transportation to acute care institution in Canada (by gender)	
Female victims (12*$587.08+3*$5,262.92)	$22,834[d]
Male victims (4*$4,675.84+161*$587.08+5*$5,262.92)	$139,538[d]
Total acute hospitalization costs for female victims ($656,152+$22,834)	$678,986
Total acute hospitalization costs for male victims ($5,379,193+$1,139,538)	$5,518,731
Total acute hospitalization costs ($678,986+$5,518,731)	**$6,197,717**

a. Source: CIHI, Discharge Abstract Database (DAD) 2008/09. Quebec is not covered in the DAD. In addition, records from federal hospitals, e.g. prisons and veteran hospitals are also not included in the DAD. Ambulance transport services examined in this section do not include those transports to emergency departments. See Section B.1.2.1 note a.

b. See Section B.1.2.1 note b

c. It is assumed that the relevant per capita statistics in Canada are the same as the figures in Quebec.

d. The CIHI provides valuable cost information, including average length of stay (LOS), average resource intensity weight (RIW) and cost per weighted case (CPWC), for firearm-caused injuries by offence category. By using this information, we are able to estimate the average hospitalization cost per patient for firearm-caused injuries.

e. There is not much variation in the cost of providing an ambulance transport among provinces. We use the statistics from British Columbia. Source: Ministry of Health, BC Ambulance Service, 2007, Ambulance Fee Changes, available from http://www2.news.gov.bc.ca/news_releases_2005-2009/2007HEALTH0101-001106-Attachment1.htm. In 2006/07, the average cost was $565 for providing a ground ambulance transport, and $4,500 for an air ambulance transport. After inflation adjustment, the costs become $587.08 and $4,675.84, respectively, in 2008.

f. For a combination of different ambulance transports, we only count one air ambulance transport and one ground ambulance transport.

	Female	Male	Total
Medical Attention from a Physician	$12,185	$167	$12,352
Medical Attention at a Hospital	$872,771	$66,298	$939,069
Acute Hospitalization	$678,986	$5,518,731	$6,197,717
Total Health Care Costs	**$1,563,942**	**$5,585,196**	**$7,149,138**

B.2 Productivity Losses

B.2.1 Lost Wages and Salaries[a]

Main File, GSS 2009, Female Victims	
Number of days staying in hospital	245[b]
Number of days staying in bed (excluding hospital time)	1,254[c]
Number of days off from work (excluding hospital and bed time)	4,257[d]
Total number of days absent from work (245+1,254+4,257)	5,756
Average daily wage rate of female victims	$117.80[e]
Lost wages for female victims (5,756*$117.80)	$678,057
Main File, GSS 2009, Male Victims	
Number of days staying in hospital	0[b]
Number of days staying in bed (excluding hospital time)	44[c]
Number of days off from work (excluding hospital time and bed time	328[d]
Total number of days absent from work (44+328)	372
Average daily wage rate of male victims	$178.87[e]
Lost wages for male victims (372*$178.87)	$66,540
Incident File, GSS 2009, Female Victims	
Number of days absent from work	289,787[f]
Average daily wage rate of female victims	$145.36[g]
Lost wages for female victims (289,787*$145.36)	$42,123,438
Incident File, GSS 2009, Male Victims	
Number of days absent from work	137,965[f]
Average daily wage rate of male victims	$140.44[g]
Total lost wages for male victims (137,965*$140.44)	$19,375,805
Lost wages for female victims ($678,057+$42,123,438)	$42,801,495
Lost wages for male victims ($66,540+$19,375,805)	$19,442,345
Total lost wages to victims ($42,801,495+$19,442,345)	**$62,243,840**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. In the Main File, respondents who reported that their main activity during the last 12 months was either "working at a paid job or business" or "maternity/paternity leave" are included (ACMYR). In the Incident File, respondents who reported that their main activity was "working at a paid job or business are included (OBC_Q150), as there is no record for "maternity leave" and "on vacation".

b. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, EXVIOL, PSX_Q190, XAI_Q135_C (2004), CRVIOL, PSP_Q190, SAI_Q132. Information for

time length staying in hospital is not available in the 2009 GSS PUMP file. Therefore, the value from the 2004 GSS is used in the present estimation.

c. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, EXVIOL, PSX_Q190, XAI_Q155_C, CRVIOL, PSP_Q190, SAI_Q155_C. In the 2009 GSS questionnaire, respondents could respond 1 day, 2 days and 3 days or more as their answer to the question regarding the number of days staying in bed. For respondents who answered 3 days or more, we use 3 days for the estimation.

d. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, EXVIOL, PSX_Q190, XAI_Q160, CRVIOL, PSP_Q190, SAI_Q160. It is assumed that each victim who took time off from their main activity, on average, took 2 days.

e. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, INCM, EXVIOL, PSX_Q190, CRVIOL, PSP_Q190. Daily wages are calculated from annual income divided by 52.18 weeks per year and 5 days per week.

f. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX; Incident File: CIR_Q105_C01, OBC_Q150, OBC_Q160 and LOSTDAYS. Variable LOSTDAYS reported number of days that respondent found it difficult or impossible to carry out his/her main activity (the activity was disrupted for at least 6 hours during a day.

g. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX; Incident File: INCM, CIR_Q105_C01, OBC_Q150, OBC_Q160. Daily wages are calculated from annual income divided by 52.18 weeks per year and 5 days per week.

B.2.2 Lost Household Services

Main File, GSS 2009, Female Victims	
Number of days staying in hospital	268[a]
Number of days staying in bed (excluding hospital time)	1,843[b]
Number of days off from work (excluding hospital and bed time)	4,777[c]
Incident File, GSS 2009, Female Victims	
Number of lost days	219,222[d]
Total number of days not able to perform household services (268+1,843+4,777+219,222)	298,110
Main File, GSS 2009, Male Victims	
Number of days staying in hospital	0[a]
Number of days staying in bed (excluding hospital time)	87[b]
Number of days off from work (excluding hospital and bed time)	336[c]
Incident File, GSS 2009, Male Victims	
Number of lost days	143,754[d]
Total number of days not able to perform household services (0+87+336+143,754)	144,177
Average hours per day in housework and spousal care activities, female	3.9[e]
Average hours per day in housework and spousal care activities, male	2.5[e]
Lost hours for household services, female victims (298,110*3.9)	1,162,629
Lost hours for household services, male victims (144,177*2.5)	360,443
Average hourly wage rate for household workers (Inflation adjustment)	$13.2[f]
Value of lost household services for female victims (1,162,629*$13.2)	$15,346,703
Value of lost household services for male victims (360,443*$13.2)	$4,757,848
Total value of lost household services ($15,346,703+$4,757,848)	**$20,104,551**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, XAI_Q135_C (2004), CRVIOL, PSP_Q190, SAI_Q132. See section B.2.1, note b.

b. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, XAI_Q155_C, CRVIOL, PSP_Q190, SAI_Q155_C. See section B.2.1, note c.

c. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, XAI_Q160, CRVIOL, PSP_Q190, SAI_Q160. See section B.2.1, note d.

d. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Incident File: CIR_Q105_C01, OBC_Q160, LOSTDAYS. See section B.2.1, note f.

e. Source: Statistics Canada. July 2011. General Social Survey 2010: Overview of the Time Use of Canadians. Catalogue no. 89-647-X, available at http://www.statcan.gc.ca/pub/89-647-x/89-647-x2011001-eng.pdf.

f. Source: Statistics Canada, Labour Force Survey. The average wage rate of household workers for activities such as meal preparation and cleanup, house cleaning, laundry and sewing was $12.91 per hour in 2007. After inflation adjustment, the cost was $13.2 in 2008.

B.2.3 Lost School Days [a]

Number of days missing school, female victims, aged 20+	154[b]
Number of days missing school, male victims, aged 18+	1,461[b]
Number of days missing school, male victims, aged 15-17	4,328[b]
National average annual tuition fees for undergraduate studies, 2008	$4,854[c]
Average school days in universities in Canada	125[d]
Average cost per university day ($4,854/125)	$38.83
National average annual tuition fees for secondary education, 2008	$7,198[e]
Average secondary school days in Canada	190[f]
Average cost per secondary school day ($7,198/190)	$37.88
Value of lost school days for female victims (154*$38.83)	$5,980
Value of lost school days for male victims (1,461*$38.83+4,328*$37.88)	$220,675
Total value of lost school days ($5,980+$220,675)	**$226,655**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. In the Main File, respondents who reported their main activity during the last 12 months was "going to school" are included (ACMYR). In the Incident File, respondents who reported their main activity was "going to school" are included (OBC_Q150).

b. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, AGEGR5, EXVIOL, PSX_Q190, XAI_Q135_C (2004), XAI_155_C, XAI_Q160, CRVIOL, PSP_Q190, SAI_Q132, SAI_Q155_C, SAI_Q160; Incident File: CIR_Q105_C01, OBC_Q150, OBC_Q160, LOSTDAYS. See section B.2.1, note b, c and d.

c. Source: Statistics Canada, *The Daily*, University Tuition Fees, 2010/2011, available from http://www.statcan.gc.ca/daily-quotidien/100916/dq100916-eng.pdf. The national average undergraduate tuition fee for Canadian full-time students was $4,942 in 2009/10. After inflation adjustment, the tuition fee was $4,854 in 2008.

d. There is not much variation in terms of the length of school days among universities. For example, University of Toronto offered 120 instruction days in 2009, information available at http://www.artsandscience.utoronto.ca/ofr/archived/0910calendar/0910_Calendar.pdf. McGill University offered 130 instruction days for undergraduate programs in 2008, information available at http://coursecalendar.mcgill.ca/ugcal200809/wwhelp/wwhimpl/js/html/wwhelp.htm. The University of British Columbia offered 125 teaching days in 2009, information available at http://www.senate.ubc.ca/vancouver/termdates.cfm?go=archive. Therefore, 125 days was used in the present report.

e. This is an average figure of several provinces, including New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. Source: Provincial Department of Education, Annual reports.

f. Canada generally has 190 school days (secondary education) per year. Source: Wikipedia, Education in Canada, available from http://en.wikipedia.org/wiki/Education_in_Canada.

B.2.4 Lost Child Care Services [a]

Number of days losing child care services, female victims	1,410[b]
Number of days losing child care services, male victims	0[b]
Average child care cost per day 2008	$30[c]
Cost of lost child care service for female victims (1,410*30)	$42,300
Cost of lost child care service for male victims (0*30)	$0
Total value of lost child care services ($42,300+$0)	**$42,300**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. In the Main File, respondents who reported their main activity during the last 12 months was "caring for children" are included (ACMYR). In the Incident File, respondents who reported their main activity was "caring for children" are included (OBC_Q150).

b. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, ACMYR, EXVIOL, PSX_Q190, XAI_Q132, XAI_155, XAI_Q160, CRVIOL, PSP_Q190, SAI_Q132, SAI_155, SAI_Q160; Incident File: CIR_Q105_C01, OBC_Q150, OBC_Q160, LOSTDAYS.

c. Source: Today's Parent, available from http://www.todaysparent.com/lifeasparent/childcare/article.jsp?content=20100302_173310_5996&page=1. This figure is the average cost of services proved to different age groups of children (infant, toddler, preschool and school age) across all provinces.

B.2.5 Lost Future Income [a]

Number of female victims needing long-term care in Canada excluding Quebec	1[b]
Number of male victims needing long-term care in Canada excluding Quebec	46[b]
Population of Canada excluding Quebec that is female aged 12 and over	11,226,013[c]
Population of Canada excluding Quebec that is male aged 12 and over	10,937,777[c]
Population of Canada that is female aged 12 and over	14,674,120[c]
Population of Canada that is male aged 12 and over	14,287,122[c]
Estimated number of female victims needing long-term care in Canada (1/11,226,013*14,674,120)	1[d]
Estimated number of male victims needing long-term care in Canada (46/10,937,777*14,287,122)	62[d]
Average age of female victims needing long-term care	23[b]
Average age of male victims needing long-term care	28[b]
Median retirement age for females in Canada 2008	60.6[e]
Median retirement age for males in Canada 2008	61.3[e]
Lost working years for female victims (60.6-23)	37.6
Lost working years for male victims (61.3-28)	33.3
Average annual income for female victims of firearm crime	$33,550[f]
Average annual income for male victims of firearm crime	$34,219[f]
The present value of income losses per female victim ($33,550*37.6)	$1,216,480[g]
The present value of total income losses per male victim ($34,219*33.3)	$1,139,493[g]
Future income losses for female victims ($1,216,480*1)	$ 1,261,480
Future income losses for male victims ($ 1,139,493*62)	$70,648,547
Total future income losses ($ 1,261,480+$ 70,648,547)	**$ 71,910,027**

a. Source: CIHI, Discharge Abstract Database (DAD), 2008/09. Victims who were discharged from hospital but then transferred to long-term care facilities are examined in this section. It is assumed that those victims who required long-term care would lose their ability to perform working task during the rest of their lives.

b. Source: CIHI, Discharge Abstract Database (DAD) 2008/09. Quebec is not covered in the DAD. In addition, records from federal hospitals, e.g. prisons and veteran hospitals are also not included in the DAD.

c. See Section B.1.2.1 note b.

d. See Section B.1.2.3 note c.

e. Source: Statistics Canada, Labour Force Survey (LFS), Retirement Age by Class of Worker and Sex, CANSIM, Table 282-0051.

f. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, EXVIOL, PSX_Q190, AGEGR5, INCM; Incident File: CIR_Q105_C01. The average annual income is calculated for all respondents who had experienced victimization of crime where a gun was present or used.

g. For the purpose of simplicity, we assume that there is no significant position promotion and the general annual income increase is only to offset the impact of inflation. Then by assuming that the discount rate is the same as the future inflation rate (e.g. no capital cost), this figure is lump-sum present value of the entire future income stream for victims. In this case, we are actually assuming that the present value of the future annual income remain the same as the value in the year 2008.

	Female	Male	Total
Lost Wages and Salaries	$42,801,495	$19,442,345	$62,243,840
Lost Household Services	$15,346,703	$4,757,848	$20,104,551
Lost School Days	$5,980	$220,675	$226,655
Lost Child Care Services	$42,300	$0	$42,300
Lost Future Incomes	$1,261,480	$70,648,547	$71,910,027
Total Productivity Losses	**$59,457,958**	**$95,069,415**	**$154,527,373**

B.3 Personal Costs

B.3.1 Stolen/Damaged Property

Value of stolen/damaged property for female victims	$26,157,986[a]
Value of stolen/damaged property for male victims	$2,233,247[a]
Total value of stolen/damaged property ($26,157,986+$2,233,247)	**$28,391,233**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, WGHT_PER; Incident File: CIR_Q105_C01, SPR_Q130_C, VALDAMGE_C, WGHT_VIC. About 23,861 female victims and 9,916 male reported that they had property stolen or damaged during the incidents.

B.3.2 Legal Services

Number of female victims contacting lawyer	16,875[a]
Number of male victims contacting lawyer	467[a]
Average hourly rate of lawyer 2008	$231[b]
Average service length (visiting hours) per victim	5[c]
Legal service costs for female victims (16,875*$231*5)	$19,490,625
Legal service costs for male victims (467*$231*5)	$539,385
Total legal service costs ($19,490,625+$539,385)	**$20,030,010**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, PSX_Q190, EXVIOL, XTA_Q150, PSP_Q190, CRVIOL, STA_Q150; Incident File: CIR_Q105_C01, TTA_Q150, WGHT_VIC.

b. Source: The Canadian Lawyer's 2009 Legal Fees Survey.

c. No information is available regarding the length (hours) of service use. It is assumed that on average, each victim required 5 hours legal services.

B.3.3 Counselling Services

Number of female victims contacting counsellor or psychologist	3,408[a]
Number of male victims contacting counsellor or psychologist	3,232[a]
Average hourly cost of counselling	$70[b]
Average service length (visiting hours) per victim	24[c]
counselling service costs for female victims (3,408*$70*24)	$5,725,440
counselling service costs for male victims (3,232*$70*24)	$5,429,760
Total counselling service costs ($5,725,440+$5,429,760)	**$11,155,200**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Mail File: SEX, PSX_Q190, XCS_Q125, PSP_Q190, SCS_Q125; Incident File: CIR_Q105_C01, TTA_Q220, WGHT_VIC.

b. In Saskatoon, the average cost of private, unsubsidized counselling is $60 to $100 per hour and community-based, publicly funded counselling is typically $45 per hour. Source: Prairie Women's Health Centre of Excellence, The Cost of Providing Health Care Services to Women Survivors of Childhood Sexual Abuse 2003, available from http://www.pwhce.ca/pdf/TamarasHouse31_01_03.pdf. We use a lower bound value of the private, unsubsidized counselling for the estimation. After inflation adjustment, the counselling cost was $70 per hour in 2008. This rate is within the rate range ($40-$105) regulated by the Crime Victim Assistance Program Counselling Guidelines, Ministry of Public Safety and Solicitor General, British Columbia.

c. Source: Ministry of Public Safety and Solicitor General, British Columbia. Crime Victim Assistance Program Counselling Guidelines, available from http://www.pssg.gov.bc.ca/victimservices/publications/docs/cvap-counselling-guidelines.pdf. This guideline establishes the maximum number of hours of counselling provided to victims: 48 hours. Following this, we assume that generally victims on average require 24 hours counselling services.

	Female	Male	Total
Stolen/Damaged Property	$26,157,986	$2,233,247	$28,391,233
Legal Services	$19,490,625	$539,385	$20,030,010
Counselling Services	$5,725,440	$5,429,760	$11,155,200
Total Personal Costs	**$51,374,051**	**$8,202,392**	**$59,576,443**

B.4 Intangible Costs to Victims

B.4.1 Pain and Suffering

UCR2 2008, Female Victims	
Number of victims who survived the crime	3,025[a]
Number of victims with major physical firearm-caused injury	37[b]
Percentage of victims with major physical firearm-caused injury (37/3,025)	1.22%
Percentage of victims with minor or no injury (1-1.22%)	98.78%
GSS 2009, Female Victims	
Number of female victims of sexual assault	1,051[c]
Number of female victims of robbery	8,593[c]
Number of female victims of assault	18,830[c]
Total number of female victims (1,051+8,593+18,830)	28,474
Number of female victims with major physical firearm-caused injury (28,474*1.22%)	347[d]
Number of female sexual assault victims with minor or no injury (1,051*98.78%)	1,038[d]
Number of female robbery victims with minor or no injury (8,593*98.78%)	8,488[d]
Number of female assault victims with minor or no injury (18,830*98.78%)	18,600[d]
UCR2 2008, Male Victims	
Number of victims who survived the crime	6,177[a]
Number of victims with major physical firearm-caused injury	399[b]
Percentage of victims with major physical firearm-caused injury (399/6,177)	6.46%
Percentage of victims with minor or no injury (1-6.46%)	93.54%
GSS 2009, Male Victims	
Number of male victims of sexual assault	1,521[c]
Number of male victims of robbery	2,742[c]
Number of male victims of assault	21,321[c]
Total number of male victims (1,521+2,742+21,321)	25,584
Number of male victims with major physical firearm-caused injury (25,584*6.46%)	1,653[d]
Number of male sexual assault victims with minor or no injury (1,521*93.54%)	1,423[d]
Number of male robbery victims with minor or no injury (2,742*93.54%)	2,565[d]
Number of male assault victims with minor or no injury (21,321*93.54%)	19,944[d]
Proposed value of pain and suffering (major physical firearm-caused injury)	$117,000[e]
Proposed value of pain and suffering (minor or no injury, sexual assault)	$84,500[e]

Proposed value of pain and suffering (minor or no injury, robbery)	$14,500[e]
Proposed value of pain and suffering (minor or no injury, assault)	$9,500[e]
Value of Pain and Suffering, Female Victims	
Female victims with physical firearm-caused injury ($117,000*347)	$40,599,000
Female sexual assault victims with minor or no injury ($84,500*1,038)	$87,711,000
Female robbery victims with minor or no injury ($14,500*8,488)	$123,076,000
Female assault victims with minor or no injury ($9,500*18,600)	$176,700,000
Value of pain and suffering for all female Victims	$428,086,000
Value of pain and suffering, Male Victims	
Male victims with physical firearm-caused injury ($117,000*1,653)	$193,401,000
Male sexual assault victims with minor or no injury ($84,500*1,423)	$120,243,500
Male robbery victims with minor or no injury ($14500*2,565)	$37,192,500
Male robbery victims with minor or no injury ($9,500*19,944)	$189,468,000
Value of pain and suffering for all male Victims	$540,305,000
Total value of pain and suffering ($428,086,000+$540,305,000)	**$968,391,000**

a. Source: Statistics Canada, CCJS, Uniform Crime Report Survey 2 (UCR2) 2008, Victims of Violent Crime where Firearms were Present, by Violation and Sex of Victim. Micro data was extracted in February, 2011.

b. Source: Statistics Canada, CCJS, Uniform Crime Report Survey 2 (UCR2) 2008, Victims of Violent Crime where Firearms were Used, by Violation, Sex of Victim and Level of Injury. Micro data was extracted in February, 2011. In the UCR2, major physical injury is defined as more than trifling or transient in nature and requiring professional medical attention at the scene or transportation to a medical facility.

c. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: SEX, PSX_Q190, EXVIOL, EXPHYSABUSE, EXSEXABUSE, PSP_Q190, CRVIOL, CRPHYSABUSE, CRSEXABUSE; Incident File, CIR_Q105_C01, MSCRIME.

d. Since the 2009 GSS data does not distinguish the different levels of injuries, we use the information suggested by the UCR2 data. We separate the victims into various groups. Those with major physical firearm-caused injury are in one group regardless of the offence type and those with minor or no injury are separated further by offence type: sexual assault, robbery and assault.

e. Cohen (1988) used jury award information to value pain and suffering for non-fatal injuries. He estimated the monetary value of pain and suffering for gunshot wound/firearms injury at USD$59,344. He also estimated the value of pain and suffering for other crimes, including USD$43,561 for rape, USD$7,459 for robbery and USD$4,921 for assault. These four figures are used to estimate the value of pain and suffering for the four groups of victims: victims with major physical firearm-caused injury, sexual assault victims with minor or no injury; robbery victims with minor or no injury and assault victims with minor or no injury. Take inflation into consideration, these values were equivalent to approximately CAD$117,000, $84,500, $14,500 and $9,500 in 2008 dollars.

B.4.2 Loss of Life

Number of female deaths due to firearms related crimes 2008	25[a]
Number of male deaths due to firearms related crimes 2008	179[a]

Proposed dollar value of a human life	$7,490,000[a]
Value of lost lives for female victims (25*7,490,000)	$187,250,000
Value of lost lives for male victims (179*$7,490,000)	$1,340,710,000

Total value of loss of life ($187,250,000+$1,340,710,000)	**$1,527,960,000**

[a.] The 2008/2009 VSL figure (average estimate based on labour market) in the US was about USD$7-8 million. It is decided to use the value of USD$ 7 million which is equivalent to $7.49 million in the 2008 Canadian dollar in the present report.

	Female	Male	Total
Pain and Suffering	$428,086,000	$540,305,000	$968,391,000
Loss of life	$187,250,000	$1,340,710,000	$1,527,960,000
Total Intangible Costs	**$615,336,000**	**$1,881,015,000**	**$2,496,351,000**

Appendix C: Third-Party Costs[39]

C.1 Funeral Service Expenses

Number of victims killed in firearm-related crime	204[a]
Average cost of funeral services in Canada 2007	$7,500[b]
Average cost of funeral services in Canada 2008 (inflation adjustment)	$7,665
Total Funeral Service Expenses ($7,665*204)	**$1,563,660**
Total Funeral and Burial Expenses	**$1,563,660**

a. Source: Statistics Canada, CCJS. Uniform Crime Report Survey 2 (UCR2).

b. According to the Canadian Press, the average funeral in Canada costs about $7,500 in 2007. Ontario Board of Funeral Services reported that the average value purchased was about $7,366 in 2008.

[39] All figures in Appendix C are presented in round numbers.

C.2 Loss of Affection/Enjoyment to Family Members

Number of victims killed in firearm-related crime	204[a]
Percentage of people living alone or with unrelated persons	30.4%[b]
Percentage of people living in family households	69.6%[b]
Number of victims living alone or with unrelated persons (204*30.4%)	62[c]
Number of victims living in family households (204-62)	142[c]
Number of parents of victims (204*2)	408
Number of spouse/partners of victims (142*1)	142
Number of children of victims (142*1)	142[d]
Average court award to parents for grief and loss of companionship	75,000[e]
Average court award to spouses/partners for grief and loss of companionship	75,000[e]
Average court award to children for grief and loss of companionship	45,000[e]
Court awards to parents (408*$75,000)	$30,600,000
Court awards to spouses/partners (142*$75,000)	$10,650,000
Court awards to Children (142*$45,000)	$6,390,000
Total Loss of Affection/Enjoyment to Family Members ($30,600,000+$10,650,000+$6,390,000)	**$47,640,000**

Total Loss of Affection/Enjoyment to Family Members **$47,640,000**

a. Source: Statistics Canada, CCJS, Uniform Crime Report Survey 2 (UCR2).

b. Source: Statistics Canada, Family Portrait: Continuity and Change in Canadian Families and Households in 2006, 2007.

c. It is assumed that the household composition for victims is the same as the distribution for the general Canadian population.

d. The average number of children per family has also dropped to 1.1 in 2006. Source: Statistics Canada, Family Portrait: Continuity and Change in Canadian Families and Households in 2006, 2007. It is assumed that the average number of children per family household in 2008 was 1.

e. Alberta's Fatal Accidents Act requires the court to award damages for grief and the loss of care, guidance and companionship in the amount of $75,000 to the spouse or adult partner of the deceased person; $75,000 to the parents of the deceased person; and $45,000 to each minor or unmarried/un-partnered child of the deceased person. Source: Alberta Fatal Accidents Act, R.S.A. 2000, C. F-8, S. 8.

C.3 Costs to Other Persons Harmed During the Incidents

C.3.1 Health Care Costs

Number of other people harmed or threatened (Main File)	852[a]
Number of other people harmed or threatened (Incident File)	75,156[a]
Total number of other people harmed or threatened (852+75,156)	76,008
Percentage of people who had medical attention from a physician	0.36%[b]
Number of other persons having medical attention from a physician (76,008*0.36%)	274
Average cost of medical attention from a physician	$55.64[c]
Cost of medical attention from a physician (274*$55.64)	$15,245
Percentage of people who had medical attention at a hospital	1.78%[b]
Number of victims having medical attention at a hospital (76,008*1.78%)	1,353
Cost of an ED visit	$400.41[d]
Cost of medical attention at a hospital (1,353*$400.41)	$541,755[e]
Health care costs to other people ($15,245+$541,755)	**$557,000**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: PSX_Q190, EXVIOL, XAI_Q180, XAI_Q185, CRVIOL, SAI_Q180, SAI_Q185; Incident File: CIR_Q105_C01, CIR_Q335.

b. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: PSX_Q190, EXVIOL, XAI_Q130, XAI_Q140, PSP_Q190, CRVIOL, SAI_Q130, SAI_Q140; Incident File: CIR_Q105_C01, CIR_Q170 and CIR_Q180. It is assumed that other individuals who were harmed or threatened during the incidents had the same possibility as the victims of seeking medical attention from a doctor or at hospital.

c. See section B.1.1, note b.

d. See section B.1.2, note b.

e. There is a lack of data regarding hospitalization of other persons harmed and therefore, to provide a conservative estimate, we do not consider this case.

C.3.2 Productivity Losses

Number of other people off from daily activities (Main File)	413[a]
Number of other people off from daily activities (Incident File)	50,438[a]
Total Number of other people off from daily activities (413+50,438)	50,851
Number of days for other people off from daily activity (50,851*2)	101,702[b]
Average hourly wage rate for household workers	$13.20[c]
Productivity losses to other people (101,702*$13.20)	**$1,342,466**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: PSX_Q190, EXVIOL, XAI_Q190, XAI_Q195, PSP_Q190, CRVIOL, SAI_Q190, SAI_Q195; Incident File: CIR_Q105_C01, CIR_Q336. Note that this figure only refers to people who were harmed or threatened and who were 15 years and over.

b. It is assumed that each person took 2 days off from daily activities.

c. We use the value of household work as a conservative estimate. See section B.2.2, note f.

Health Care costs	$557,000
Productivity Losses	$ 1,342,466
Total Costs to Other People Harmed or Threatened	**$1,899,466**

C.4 Social Service Operating Costs

C.4.1 Operating Costs of Shelters (Transition Home)

Number of shelters 2003/04	473[a]
Number of beds 2003/04	8,879[a]
Average number of beds per shelter 2003/04 (8,879/473)	18.77
Number of shelters 2005/06	553[b]
Estimate Number of beds 2005/06 (18.77*553)	10,380
Annual operating costs of shelters 2005/06	$317,000,000[b]
Daily cost of shelter per bed 2005/2006 [$317,000,000/(10,380*365.25)]	$83.61
Daily cost of shelter per bed 2008 (inflation adjusted)	$89.07
Number of victims going to shelters (all female victims) 2008	44[c]
Number of dependent children going to shelters (44*48%)	21[d]
Average length of stay (days)	60[e]
Operating costs of shelters [(44+21)*60*$89.07]	**$347,373**

a. Source: Statistics Canada, Canada's Shelters for Abused Women 2003/04.
b. Source: Statistics Canada, Canada's Shelters for Abused Women, 2005/06. Costs include wages and salaries, and expenditures directly with clients, such as food, supplies, protection, protection and counselling services
c. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main file: PSX_Q190, XCS_Q145, PSP_Q190, SCS_Q145.
d. About half (48%) of the women were admitted to shelters with their children. Source: Statistics Canada, Residents of Canada's Shelters for Abused Women 2008. According to the Interval House of Ottawa (Ottawa ON), normally each child occupies a separate bed. Furthermore, it is assumed that each female victim brought only one child with her.
e. Average length of stay is calculated from the information presented in the following table. Source: Statistics Canada, Canada's Shelters for Abused Women, 2005/06.

Table C1: Length of Stay (days) by Type of Shelters

Type of Shelters	Percentage	Length of stay(Days)
Transition home/shelter	45%	39
Second stage housing	18%	225
Women's emergency shelter	13%	11
Emergency shelter	13%	2
Other	5%	1
Safe home network	3%	2
Family resource centre	2%	1
Interim housing	1%	1

C.4.2 Operating Costs of Crisis Lines

Number of victims contacting crisis lines (Main File)	1,578[a]
Number of victims contacting crisis lines (Incident File)	11,078[a]
Total number of victims contacting crisis lines (1,578+11,078)	12,656
Average hourly operating cost of crisis lines	$20[b]
Average call length in hours per call	0.28[c]
Average frequency for a victim to call in	5[d]
Operating costs of crisis lines (12,656*$20*0.28*5)	**$354,368**

a. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main file, PSX_Q190, XCS_Q115, PSP_Q190, SCS_Q115; Incident File, CIR_Q105_C01, TTA_Q210.

b. Annual salary for crisis line coordinators ranges from $37,011 to $46,274 (2011), equivalent to an hourly wage rate range from $19 to $24. Source: http://www.charityvillage.com/. Various other job-posting websites also suggested that the hourly wage rate is from $13 to $19. We use $20 for the estimation.

c. Source: Centre of Excellence for Children & Adolescents with Special Needs, Usage of the Nunavut Kamatsiaqtut Help Line (NKHL): An Analysis of 11 Years' of Database, 2005. The report is available from http://www.coespecialneeds.ca/PDF/nkhlfinalreport.pdf.

d. As all the phone calls made to crisis lines are anonymous, no official information is available with regard to the number of times that one person called in. However, according to crisis line workers, people do make follow-up calls. Following this, it is assumed that on average each victim made 5 calls to the crisis lines.

C.4.3 Operating Costs of Victim Services

Average operating cost per victim service agency 2007/08	$263,181[a]
Average operating cost per victim service agency 2008 (Inflation adjustment)	$270,073
Total number of victim service agencies	879[b]
Total annual operating costs for victim services 2008 ($270,073*879)	$237,394,167
Average number of victims served per agency	592[c]
Total number of victims seeking assistance (592*879)	520,368
Average operating cost per victim ($237,394,167/520,368)	$456.20
Number of victims using victim services	8,156[d]
Operating costs of victim services ($456.20*8,156)	**$3,720,767**

a. Source: Statistics Canada, CCJS, Victim Services Survey, 2007/2008. According to the information collected from 679 victim service agencies (excluding compensation programs), the cost of providing formal services to victims of crime in Canada was $178.7 million in 2007/08. This amount excludes costs incurred to administer criminal injury compensation and other financial benefits programs, and other costs not specifically related to the formal delivery of services provided to victims. Therefore, the average cost was $263,181 (=$178,700,000/679).

b. Source: Statistics Canada, CCJS, Victim Services Survey, 2007/2008. According to the survey, there were 884 victim service agencies in the fiscal year ending March 31, 2008. Out of the 884 agencies, 5 agencies offered only criminal injuries compensation programs or other financial benefits programs to victims. Therefore, there were 879 (=884-5) victim service providers.

c. Source: Statistics Canada, CCJS, Victim Services Survey, 2007/2008. According to the survey, 686 service providers indicated they had assisted close to 406,000 victims from April 1, 2007 to March 31, 2008. Therefore, the average number of victims served by each agency was about 592 (=406,000/686).

d. Source: Statistics Canada, GSS 2009, Cycle 23, Victimization. Main File: PSX_Q190, XCS_Q180, PSP_Q190, SCS_Q180; Incident File: CIR_Q105_C01, TTA_Q270.

Operating Costs of Shelters	$347,373
Operating Costs of Crisis Lines	$354,368
Operating Costs of Victim Services	$3,720,767
Total Operating Costs of Social Services	**$4,422,508**

C.5 Other Related Expenditures

Investments to Combat the Criminal Use of Firearms (ICCUF)	$10,000,000[a]
Firearms Action Plan	$14,000,000[b]
Total other expenditures 10,000,000+$14,000,000)	**$24,000,000**

Total Other Expenditures on Crime Prevention	**$24,000,000**

a. Source: Treasury Broad, Horizontal Initiative Database.
b. Source: Department of Finance Canada, The Budget Plan 2008.

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