

THE  
ECONOMIC  
BURDEN OF  
UNINTENTIONAL  
INJURY  
IN ONTARIO

presented by

SMARTRISK™



SAUVE-QUI-PENSE™

A SUMMARY

THE  
ECONOMIC  
BURDEN OF  
UNINTENTIONAL  
INJURY  
IN ONTARIO

presented by

SMARTRISK™



SAUVE-QUI-PENSE™

in partnership with



Ministry of Health and Long-Term Care  
Emergency Health Services Branch

Kingston, Frontenac and Lennox & Addington Health Unit

The Economic Burden of Unintentional Injury in Ontario  
Submitted to SMARTRISK  
1999

Study conducted by Terry Albert and Eden Cloutier  
based on the study "The Economic Burden of Unintentional Injury in Canada" by The Hygeia Group.

Additional support for "The Economic Burden of Unintentional Injury in Canada" from  Health Canada Santé Canada

---

Funding for printing and dissemination has been provided by the Government of Ontario through a grant from the Ontario Neurotrauma Foundation in association with the Rick Hansen Institute.  
copyright © 1999

## THE ECONOMIC BURDEN OF UNINTENTIONAL INJURY IN ONTARIO

### INTRODUCTION

Ontarians understand that injuries kill and disable people every day. They also understand that injuries cost money. But do Ontarians know how much money is spent on injuries? The purpose of *The Economic Burden of Unintentional Injury in Ontario* is to determine what it costs to treat unintentional injuries and to bring this public health threat to the forefront of health policy. This category of preventable injury includes falls, motor vehicle crashes, railway and pedestrian injuries, drowning and suffocation, poisoning and fires, but does not include suicide or acts of violence.

The study determines what percentage of the total amount spent on unintentional injuries can be attributed to direct costs that cover

hospital care, physician services, prescription drugs and home modification or vocational rehabilitation. The study also establishes the indirect cost of injury to society incurred by the losses in productive lifetime earnings caused by death or disability. These overall costs are then broken down into specific causes of injury.

The results highlight a crucial issue. If these injuries are largely preventable, then how much money and how many lives could Ontario save by implementing strategic prevention programs? To demonstrate, the study offers examples of cost-cutting strategies showing the extent to which Ontario could save money and lives.

### THE COST OF UNINTENTIONAL INJURIES

<b>Injury Deaths</b>	<b>Hospitalized Injuries</b>	<b>Non-Hospitalized Injuries</b>	<b>Total Injuries</b>	<b>Injuries Resulting in Partial Permanent Disability</b>	<b>Injuries Resulting in Total Permanent Disability</b>	<b>TOTAL ANNUAL COST</b>
2,844	43,382	693,630	739,856	15,232	1,141	<b>\$2.9 Billion</b>

## TOTAL COSTS

In 1996 preventable injuries cost Ontarians \$2.9 billion or \$260 for every citizen. Falls accounted for \$1.3 billion or more than 40 per cent of the total amount. Motor vehicle crashes cost almost \$600 million or roughly 20 per cent of the \$2.9 billion. The remaining 40 per cent of total costs can be attributed to a combination of costs incurred by drowning, poisoning, fires, and a range of other injuries not specified by hospital classification systems. On average, each injury generates \$4,000 in direct and indirect costs.

## DIRECT COSTS

Over 730,000 injuries in 1996 accounted for almost \$1.5 billion in direct health care costs. The most costly injuries were falls, totalling almost \$870 million or 59 per cent of total direct costs, and motor vehicle crashes at \$125 million or 9 per cent of direct costs. Ontarians spent \$40 million treating patients for poisoning.

These three types of injury - falls, motor vehicle crashes and poisoning - made up over 70 per cent of direct costs. Caring for the injured elderly cost over \$430 million or 30 per cent of the almost \$1.5 billion in direct costs. Roughly \$390 million (90 per cent) of the direct cost of elder injuries is attributable to falls where 75 per cent of the costs (\$294 million) are generated by falls among elderly women. Treating children and youth for falls cost over \$160 million or 19 per cent of the total fall amount, with males representing slightly more cases than females.

Although only 6 per cent of patients injured ended up in hospital, the cost of hospitalization generated 23 per cent or nearly \$344 million of the \$1.5 billion spent on direct costs. However, 94 per cent of the injuries assessed were not hospitalized, accounting for 77 per cent or an estimated \$1.1 billion of the total direct costs.

## INDIRECT COSTS

The 19,217 injuries that led to permanent disability or death amount to \$1.5 billion in indirect costs. Permanent disability caused the greatest losses in productivity, amounting to almost \$900 million or 60 per cent of indirect costs. Injuries causing death accounted for almost \$600 million of the \$1.5 billion total.

The two most significant types of injury causing permanent disability were falls and motor vehicle crashes generating almost \$500 million in indirect costs. Falls accounted for \$380 million (42 per cent). Motor vehicle crashes cost \$108 million (12 per cent) of the total disability-related indirect costs.

## THE COST OF A SILENT EPIDEMIC

The staggering costs determined by this study prove that Ontario is suffering from an injury epidemic. But it is a silent epidemic because Ontarians do not see the risk in their everyday lives. If they do not see the risk, they cannot take measures to navigate that risk in order to prevent potential injury. Why can't we see the risk in our lives?

The problem stems from a universal misunderstanding and misuse of the word 'accident.' Injuries sustained by falls or motor vehicle crashes are not seen as the result of predictable events but rather to be the result of 'accidents' or 'acts of fate'. Yet when someone suffers from heart disease or cancer, high cholesterol and smoking are identified as possible predictable causes. It is time to acknowledge that injuries are predictable and preventable. Injuries are not accidents, and investing in injury prevention can save money and lives. Ontarians do not need to spend \$3 billion each year on nearly 750,000 injuries that could have been largely prevented in the first place.

## INJURY PREVENTION CUTS COSTS

How much money could injury prevention programs save Ontario? The following cost-cutting strategies illustrate how targeting the most costly causes of injury combined with the most vulnerable population groups can generate real savings. Combined, these conservative injury reduction targets could produce \$300 million in savings annually.

### Falls among the elderly

This study has shown that over \$390 million of the \$870 million in direct costs spent on falls was devoted to treating falls among the elderly. It is estimated that about 40 per cent of falls leading to hospitalization are the result of hip fractures, and that the number of hip fractures will increase dramatically from 23,375 in 1993 to over 88,000 cases by the year 2041 as the Canadian population ages.

These are falls that can be prevented by recognizing risk factors such as a history of falls, impairment related to cognition, balance and gait, low body mass index, the misuse of medications and hazards in the home. By targeting these risk factors through prevention programs, setting a hospitalization reduction target of 20 per cent could lead to 3,000 fewer hospital stays and 7800 fewer elderly Ontarians permanently disabled. The overall savings could amount to over \$55 million annually.

### Childhood falls

Injuries from childhood falls cost Ontarians \$220 million every year. These are falls that can be prevented by redesigning the structure of playgrounds, targeting hazards in the home and by simply teaching children how to fall.

If these types of prevention strategies reduce the incidence of falls by 20 per cent for children aged 0-9, there would be 500 fewer hospitalized children in Ontario, over 4,000 fewer non-hospitalized injuries, and 185 fewer injuries leading to permanent disability. The net savings could total over \$44 million every year.

### Preventing motor vehicle crashes

Wearing seat belts and installing air bags can reduce motor vehicle injuries by 61 per cent. Drinking and driving is responsible for about 40 per cent of all fatal motor vehicle crashes. It is estimated that mortality can be reduced by 20 per cent through a reduction in drunk driving. Reducing speed limits by 10 km an hour could lead to a 15 per cent decrease in mortality, with the number of deaths lowered and severity of injury reduced.

With a 10 per cent reduction in crashes caused by poor road design and maintenance, and based on the assumption that 20 per cent of those injured end up in hospital, there would be 380 fewer deaths each year. By implementing a prevention strategy based on buckling up, driving sober, slowing down and looking first on the roads, there would also be 900 fewer hospitalizations, over 6,400 fewer injuries treated outside a hospital setting and over 250 fewer injuries leading to permanent disability. The net savings to Ontarians amount to over \$180 million annually.

## PUTTING A PRICE TAG ON PREVENTION

Preventing injuries saves money and lives. The goal of reducing costs can be reached by investing in a provincial injury prevention strategy. But no-one has investigated the cost of such a provincial or national initiative. As a benchmark, it is useful to examine the strategy of a successful and recent national initiative - HIV/AIDS prevention. A recent study estimating the economic dimensions of HIV/AIDS showed that Canadians invest about \$83 million every year to sustain a national prevention strategy. But are the economic dimensions of HIV/AIDS comparable to preventable injuries?

In 1996 there were an estimated 3,940 new HIV infections. The lifetime direct and indirect costs were \$750,000 per case, accounting for up to \$3 billion annually. Canadians responded to the results of this study by investing \$83 million or \$2.65 per capita in HIV/AIDS prevention that same

year. Over 67 per cent of this investment came from the Provinces with the Federal Government investing 24 per cent, the private sector 5 per cent and municipal funding making up the remaining 4 per cent.

In *The Economic Burden of Unintentional Injury in Canada*, the total lifetime costs of all preventable injuries amounted to \$8.7 billion – almost three times the annual HIV costs. Unintentional injury in Ontario alone matches the national annual economic burden of HIV/AIDS (\$3 billion). Based on this information, this would suggest that Ontario could consider a \$90 million injury control strategy, split roughly 70/30 (provincial/federal). This should be viewed as a “ball-park” estimate.

Ontario responded quickly and effectively to the HIV/AIDS epidemic by investing in a prevention strategy. The findings of this study prove that Ontario must now respond to this silent epidemic by investing in a provincial injury prevention strategy.

## THE POLICY CONTEXT

Progress towards developing a national injury prevention strategy has been made in the past. But it has not moved forward. For example, strategists working in 1991 on a project entitled *A Safer Canada: Year 2000 Injury Control Objectives* developed a series of prevention objectives. They recommended that the Government of Canada recognize injuries as a major cause of death and disability that requires a national prevention strategy. They encouraged the development of national injury control objectives for the purpose of stimulating projects across the country. They also called for the establishment of a national injury surveillance system.

None of the recommendations have been fully realized. Ontario can again become a leader. The results of *The Economic Burden of Unintentional Injury in Ontario*

demonstrate that a provincial injury prevention strategy is not only essential, it is integral to the fight against this silent epidemic.

## RECOMMENDING A PROVINCIAL INJURY PREVENTION STRATEGY

It is time for Ontarians to see the risk, reduce the risk, and ultimately manage the risk in their lives. Preventable injuries harm and end the lives of Ontarians and exact a heavy toll on the province’s limited health and financial resources. A Provincial Injury Prevention Strategy in concert with a co-ordinated National Injury Prevention Strategy is required.

This strategy must be guided by strong leadership and supported by varied collaborative efforts across injury prevention groups. Collaboration will guarantee the establishment of priorities and will ensure diverse and innovative approaches to prevention. The Provincial Injury Prevention Strategy will incorporate three main components:

### 1. Comprehensive Programming

- Innovative communications strategies designed to show Ontarians the risks in their everyday lives, and ultimately enabling them to take smart risks.
- Community mobilization and outreach programs that will distribute the message and reduce the risks.
- Engineering strategies designed to reduce the likelihood of injury.
- The development of age-specific educational initiatives.
- An extension of injury prevention networks and coalitions.
- The design and implementation of programming initiatives that will put injury prevention at the top of the province’s public policy agenda.
- Legislative and regulatory initiatives at all government levels.

## 2. Provincial Injury Surveillance System

Data is the lifeline of the proposed Provincial Injury Prevention Strategy. Surveillance is akin to “switching on the lights”.

SMARTRISK and the study partners therefore also recommend the implementation of a comprehensive provincial injury surveillance system that would ideally be connected to a national system. In order to prevent an injury, members of the provincial strategy coalition must know who is getting injured. They also need to know how they are getting injured and what happens to them after they are hurt. They must know the age, sex, and the socio-economic status of the injured person. These variables will influence specific injury prevention strategies targeting high-risk population groups as well as the most common and costly causes of injury.

## 3. Research

Finally, this study points to the urgent need for further research into all aspects of preventing injuries including the epidemiology of preventable injury as well as ongoing evaluation of prevention initiatives. Cost-benefit projections for proposed cost-cutting prevention strategies need to be developed as well as cost-benefit evaluation for programs already in place.

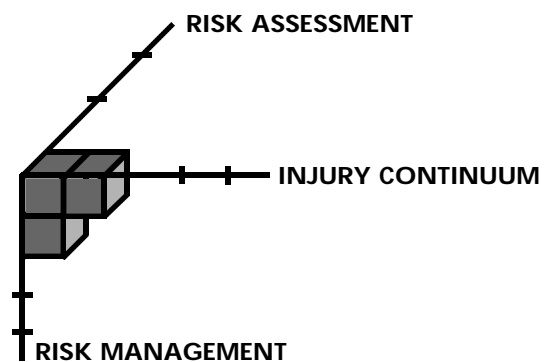
The Provincial Injury Prevention Strategy will provide leadership harnessed by strong collaboration, supported by excellent data and surveillance systems, and kept alive by sophisticated research and evaluation programs. By investing in this Injury Prevention Strategy, Ontario will no longer be able to call the injury epidemic ‘silent’. People will begin to see the risks in their lives. They will begin to understand how to take smart risks, ultimately saving both money and lives.

## A PROPOSED FRAMEWORK

It is proposed that the basic policy framework be premised on an inter/multidisciplinary, multi-organizational and evidence-based risk management model. It assumes that taking risks is part of life and that risk minimization and reduction will enhance the quality of life and the well-being of Ontarians. It is also based on a rational, integrated, cooperative and collaborative injury research program.

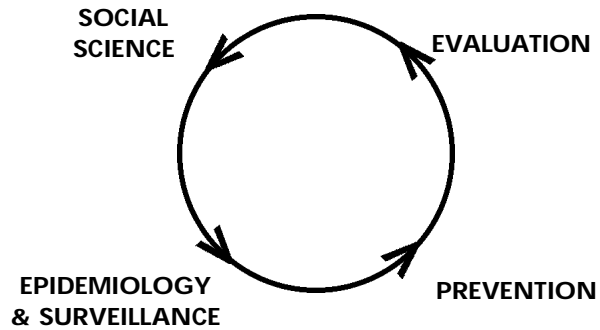
A risk management and risk assessment framework underpins the initial concept that should be explored. Figure 1 depicts a three dimensional analytical framework that could be used to organize a large-scale research program. Each cube represents a distinct injury area where the “tool kits” of the various disciplines can be brought to bear on the risk assessment and risk management axes.

**Figure 1: Analytical Framework**



The iterative nature of the relationship between surveillance/epidemiology, social science, prevention programming and evaluation is critical to creating evidence-based injury prevention and control. This interdependency is illustrated in Figure 2.

**Figure 2: Evidence-Based Injury Prevention and Control Loop**



## CONCLUSION

Every hour of every day, 85 Ontarians are unintentionally injured (over 2,000/day), eight Ontarians die daily from these injuries and over 16,000 are disabled every year. Overall, almost 750,000 Ontarians are injured each year.

The rationale is clear. the time to act is “now”.



SMARTRISK™



SAUVE-QUI-PENSE™

658 Danforth Avenue, Suite 301  
Toronto, Ontario M4J 5B9

Phone: (416) 463-9878 Fax: (416) 463-0137

Web Site: [www.smartrisk.ca](http://www.smartrisk.ca) Email: [info@smartrisk.ca](mailto:info@smartrisk.ca)