



ALBERTA
INJURY CONTROL
STRATEGY



JUNE 2003

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ACKNOWLEDGEMENTS

The Alberta Injury Control Strategy (AICS) is the culmination of the efforts of many people. Sincere thanks are extended to all participants for sharing their expertise and experience and giving their time to provide their perspectives and feedback on the Alberta Injury Control Strategy.

Thanks and appreciation is also due to Braithwaite Boyle Accident Injury Lawyers for their financial support in printing the Alberta Injury Control Strategy document.

EXECUTIVE SUMMARY

Injuries in Alberta are unacceptably high with Alberta having one of the highest rates in Canada. Given these concerns, a broad range of stakeholders involved in the field of injury control came together to develop a coordinated and collaborative strategy to address injury control in Alberta. The Alberta Injury Control Strategy (AICS) was developed with the assistance of an Advisory Steering Committee and reviewed and validated by stakeholders across the province through regional and provincial consultation sessions. This executive summary contains the highlights of the Alberta Injury Control Strategy.

The Alberta Injury Control Strategy provides a framework to guide effective planning and implementation of injury control initiatives among all stakeholders in the injury control field in Alberta.

What do we mean by injury and injury control?

The terms *injury* and *injury control* can mean different things to different people. While the term *injury* has a technical definition¹, it may be viewed as a broad term that encompasses numerous situations in which people are hurt or killed. *Injury control* is an all-encompassing term that includes injury prevention, and in the event of an injury, emergency response, acute care, and rehabilitation. The focus is on preventing injuries in the first place, but when injuries do occur, the provision of quality emergency response, acute care and rehabilitation services can affect the long-term outcome of the injury. This strategy addresses the full continuum of injury control with a focus on injury prevention.

Injury refers to someone being hurt or killed.

Injury control includes injury prevention, emergency response, acute care and rehabilitation services.

Injury includes both *unintentional* and *intentional* injuries. Unintentional injuries result from incidents such as motor vehicle collisions, falls, fires/burns, drowning, and poisonings. Intentional injuries result from incidents such as suicide, personal assault, family violence and homicide. Intentional injuries are just that; actions taken that are intended to injure oneself or others.

What are some things we know about Alberta's injuries?

- Falls, motor vehicle collisions, fire, suffocation, suicide and self-inflicted injury are major causes of injury death.
- Injuries are the leading cause of premature death and account for the majority of deaths of those aged 44 and under.
- Burden of injury is highest in the disadvantaged population.
- Indigenous people and people who live in rural and remote areas are at high risk of injury.
- Injury deaths and morbidity cost the health system, the economy and society billions of dollars annually.

Four Albertans die everyday from injuries.

Unintentional injuries cost Albertans \$1.8 billion in 1997.

Injuries involving Aboriginal people are 2 to 4 times higher than the general population.

What are the injury control issues?

When it comes to injuries, Alberta faces a significant task. What is at the root of the problem? What needs to be understood and acted upon if the injury situation in Alberta is to be changed?

Six major challenges were identified:

- Poor awareness, understanding, acceptance and ownership of injury as a major health and safety issue.
- Under-developed coordination, collaboration and communication among stakeholders.
- Under-resourced programs and services, including no designated and long-term sustained funding for injury control initiatives.
- Public and community stigma attached to intentional injuries such as suicide.
- Lack of timely, comprehensive, standardized, consistent and accurate reporting and data on injuries.
- Limited research and program evaluation on the effectiveness of injury control interventions.

Education and awareness.

Coordination, collaboration and communication.

Program resources.

Public and community stigma.

Timely, comprehensive, standardized, consistent and accurate data.

Research and program evaluation.

Who's Responsible for Alberta's Injury Control Strategy?

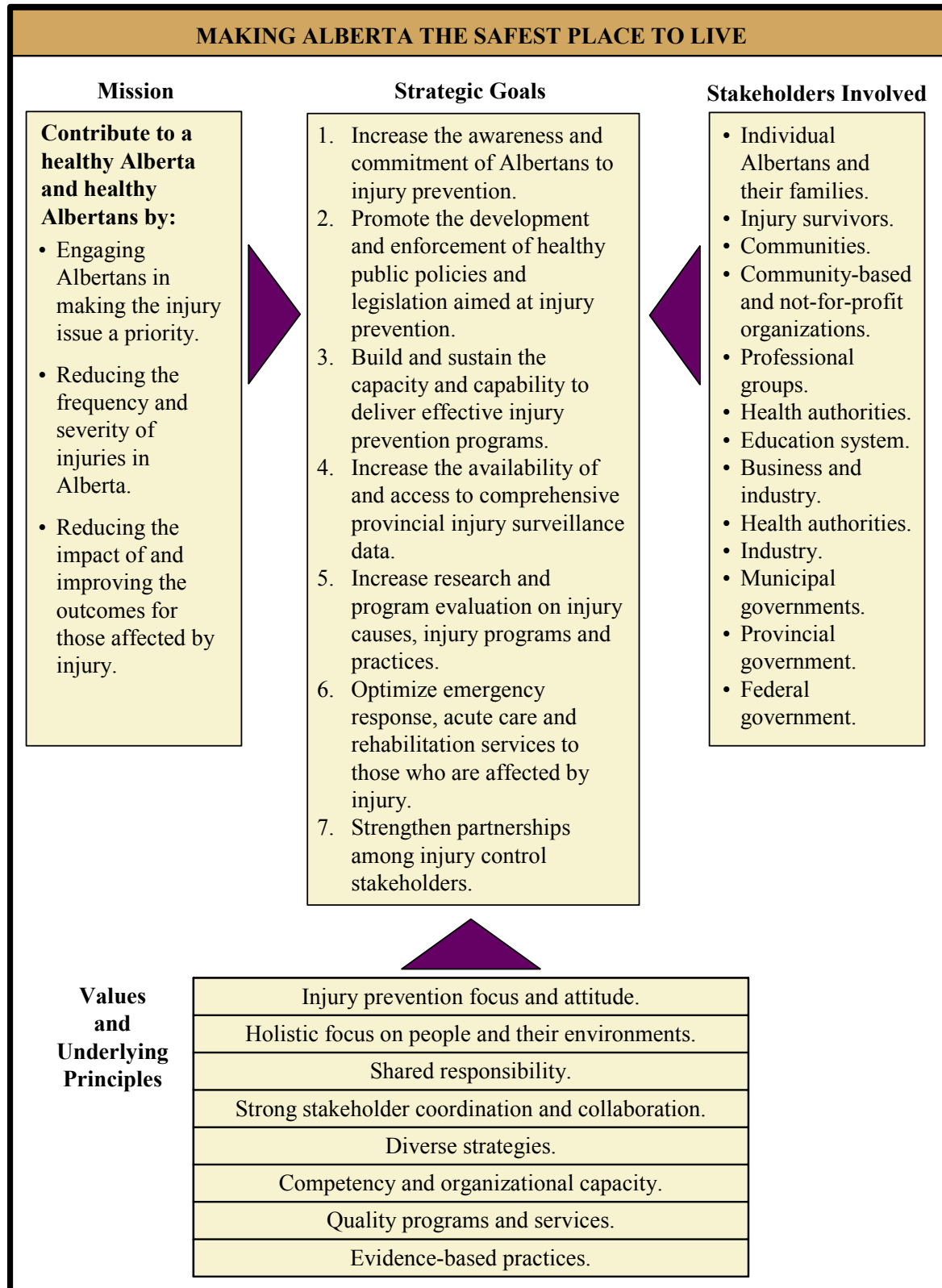
Everyone has a responsibility for making Alberta the safest place to live. Injuries can happen wherever people live, work, play and learn. Everyone needs to be vigilant to the factors—human, agent/vehicle, physical environment or socio-cultural environment—that can contribute to injuries.

This means that everyone has a responsibility including individual Albertans and their families, communities, community-based and not-for-profit organizations, regional health authorities, professional groups, education system, business and industry, and the municipal, provincial and federal governments.

Everyone has a responsibility!

Overview of the Alberta Injury Control Strategy

VISION



Focus on the future—making Alberta the safest place to live!

By effectively addressing injuries, more Albertans will be able to live safe, healthy lives and be free from the impact of injuries.

Focus on the future.

How to do this—pursue the mission:

- Engage Albertans in making the injury issue a priority.
- Reduce the frequency and severity of injuries.
- Reduce the impact of and improve the outcomes for those affected by injury.

Pursue the mission.

Build integrity—adhere to the values. Everyone has a responsibility in building a safer Alberta. With a shared vision and common values, safety can become an integral part of Albertan’s well-being.

Adhere to the values.

Target resources effectively—prioritize the strategies. Use resources wisely in addressing the strategies that will have the most impact on the issues unique to a particular situation.

Prioritize the strategies.

Monitor the outcomes—celebrate success. Stay focused on the end point—the results to be achieved and make adjustments along the way. Then celebrate the achievements!

Celebrate success.

What are the outcomes and other details on the Alberta Injury Control Strategy?

For each objective, specific outcome indicators are identified. Where the current status is known, that information is provided, along with a target for improvement in the years ahead. Where the current status is not known, a baseline will be established with a plan to improve upon the baseline in the years ahead.

Goal 1.0 Increase the awareness and commitment of Albertans to injury prevention		
1.1 Albertans will be aware and knowledgeable about injuries and their prevention.		
Outcome indicator	Current status	Target
Proportion of Albertans aware and knowledgeable about injuries and their prevention.	40% of Albertans correctly identify injury as the leading cause of death for Albertans under the age of 45 (July 2001). Source: Alberta Centre for Injury Control and Research.	80% (2010)
	85% of Albertans indicate that injuries are a serious health problem (July 2001). Source: Alberta Centre for Injury Control and Research.	Maintain or exceed 85% (2010)
	42% of Albertans indicate that injuries are very or completely preventable (July 2001). Source: Alberta Centre for Injury Control and Research.	80% (2010)

Recommended Actions

- Raise awareness about the concept of injury.
- Raise awareness and acceptance that injuries can be prevented.
- Encourage positive attitudes towards and social norms supporting injury prevention.
- Develop, implement and evaluate education and community-based programs and public information campaigns aimed at high injury areas, targeting the public, professionals, media and policy makers.
- Convene injury-related forums to focus on issues likely to influence the development of effective injury prevention interventions.
- Provide opportunities for public and private investment in injury prevention strategies and programs.
- Encourage integration of injury prevention strategies in related provincial and organizational business plans.
- Encourage local governments to create safer environments.
- Use “champions”, including injury survivors, to advance knowledge and awareness about injury priorities.

1.2 Albertans will take actions to reduce the major causes of injury.

Outcome indicator	Current status	Target
Reduction in the major causes of injuries	Motor vehicle casualty collisions: average number of road users killed and seriously injured: 2,969 (1999) Source: Transport Canada: Road Safety Vision 2010.	2,100 (2008-2010)
	Suicide/self inflicted mortality rate: age-adjusted mortality rate due to suicide/self-inflicted injuries per 100,000 people: 15.2 (1999) Source: Alberta Centre for Injury Control and Research.	12.3 (2012)
	Suicide/self inflicted hospitalization rate: hospitalization rate due to suicide/self-inflicted injuries per 100,000 people: 76.7 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Suicide/self inflicted emergency visit rate: emergency visit rate due to suicide/self-inflicted injuries per 100,000 people: 242.2 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Falls hospitalization rate: hospitalization rate due to falls per 100,000 people: 366.8 (1999) Source: Alberta Centre for Injury Control and Research.	300 (2012)

Outcome indicator	Current status	Target
	Falls emergency department visit rate: emergency department visit rate due to falls per 100,000 people: 2,829 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Unintentional poisonings mortality rate: mortality rate due to unintentional poisonings per 100,000 people: 4.6 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Unintentional poisonings hospitalization rate: hospitalization rate due to unintentional poisonings per 100,000 people: 26 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Lost Time Claim Rate: number of lost time claims per 100 person-years worked: 3.0 (2002) Source: Alberta Human Resources and Employment.	Lost Time Claim Rate: 2.0 or lower
Reduction in all other injuries	As identified by other stakeholders in their strategic/business plans	Improve upon current status
Recommended Actions		
<ul style="list-style-type: none"> ■ Implement and build on existing and proposed injury control strategies such as <i>A Strategic Plan to Reduce Impaired Driving In Alberta. A Ten Year Plan; The Healthy Alberta Prevention and Promotion Policy Framework, Alberta Occupant Restraint Program; Alberta Suicide Prevention Strategy; Alberta Workplace Safety 2.0; Alberta Disability Strategy; and the Spinal Cord Injury Collaboration.</i> ■ Develop and support new provincial strategies to fill gaps for leading causes of injury. ■ Encourage integration of injury prevention strategies in related provincial and organizational business plans. ■ Develop and implement an injury prevention strategy in collaboration with Aboriginal communities to address the unique needs of Aboriginal people. ■ Develop an attitude of safety in the schools through curricula and hands-on practice to integrate injury prevention and job safety into all areas of living. ■ Support graduated driver licensing to develop safe driving skills and attitudes among new drivers. ■ Promote child traffic safety initiatives to establish life-long learning about traffic safety such as pedestrian safety, school bus safety, etc. ■ Support aquatic safety initiatives. ■ Promote farm safety and management assessment tools to encourage farm businesses to implement health and safety plans. ■ Promote a culture of safety in all environments and across all sectors. ■ Encourage a community development approach to injury prevention. ■ Promote the “Safe Community” model throughout the province. ■ Provide incentives that promote positive injury prevention behaviours and environmental changes. 		

Goal 2.0 Promote the development and enforcement of healthy public policies and legislation aimed at injury prevention

2.1 Healthy public policies and legislation will be used to support injury prevention.

Outcome indicator	Current status	Target
Advocacy for healthy public policies focused on injury prevention	No data available	Establish baseline
Advocacy for legislation focused on injury prevention	No data available	Establish baseline

Recommended Actions

- Implement legislative and policy reforms to support injury prevention based on evidence of benefits and costs.
- Promote and support compliance with legislation and policies that support and facilitate injury prevention.
- Enforce legislation and policies that support and facilitate injury prevention.
- Evaluate the impact of legislation and policy from an injury prevention perspective.
- Address issues regarding the number and education of enforcement officers, priorities of enforcement agencies and the criminal justice system.
- Advocate for healthy public policies and regulations at the municipal, provincial and federal levels to reflect best practices in injury prevention.

Goal 3.0 Build and sustain the capacity and capacity and capability to deliver effective injury prevention programs

3.1 Sustainable funding and other resources will be available to deliver effective injury prevention programs.

Outcome indicator	Current status	Target
Level of funding designated for injury prevention	No data available.	Establish baseline.
Level of training among those already working in the field.	No data available.	Establish baseline.

Recommended Actions

- Enhance and sustain designated funding for provincial, regional and community injury prevention initiatives based on best or promising evidence, consistent with full social impact of injury and the potential for prevention.
- Promote and support the development and provision of injury prevention in post secondary education curricula and training for professionals.

Goal 4.0 Increase availability of and access to comprehensive provincial injury surveillance data

4.1 A comprehensive provincial injury surveillance system will be operating for systematic injury data collection, integration, analyses, interpretation and dissemination.

Outcome indicator	Current status	Target
Timely, complete, and accurate injury data submitted to and received by stakeholders from the provincial injury surveillance system.	Comprehensive injury surveillance system unavailable.	A fully functioning and comprehensive injury surveillance system.

Recommended Actions		
<ul style="list-style-type: none"> ■ Develop and implement a comprehensive provincial injury surveillance system in collaboration with stakeholders. ■ Establish and require collection and submission of data on key injury indicators. ■ Facilitate access to and dissemination of injury data to stakeholders, assuring that legitimate privacy provisions are in place. ■ Facilitate training of practitioners and others in the collection and interpretation of injury surveillance data. ■ Promote funding and support of the Alberta Trauma Registry by Province-wide Services in Alberta Health and Wellness. 		
Goal 5.0 Increase research and program evaluation on injury causes, injury programs and practices		
5.1 Research will be increased on risk and preventative factors, cause of injury and evidence-based injury control practices.		
Outcome indicator	Current status	Target
Number of research activities directed at injury risk and preventative factors, causes and injury control practices.	No data available	Establish baseline
Recommended Actions		
<ul style="list-style-type: none"> ■ Identify specific research gaps surrounding injury risk and preventative factors, causes and injury control practices. ■ Promote and encourage research on injury risk and preventative factors, causes and injury control initiatives with academic centers, researchers and funders. ■ Identify and disseminate information on injury risk and preventative factors, causes and effective injury control practices based on research findings. ■ Encourage organizations such as the Alberta Heritage Foundation for Medical Research and the Canadian Institute of Health Research to dedicate special funding for increasing the capacity in injury research. ■ Work with the Canadian Injury Research Network in advancing injury prevention and control research. 		
5.2 Evaluations will be an integral component of all injury control programs and services.		
Outcome indicator	Current status	Target
Number of injury control programs and services evaluated.	No data available	Establish baseline
Number of organizations integrating evidence-based practices into their injury control programs based on program evaluations.	No data available	Establish baseline
Recommended Actions		
<ul style="list-style-type: none"> ■ Facilitate evaluations of new and existing injury control programs and initiatives. ■ Facilitate and support development and continuous improvement of evaluation knowledge and skills among those providing injury control programs. ■ Support the continuous improvement of injury control programs and initiatives through the evaluation feedback loop. ■ Identify and disseminate information on effective injury control practices based on program evaluations. 		

Goal 6.0 Optimize emergency response, acute care and rehabilitation services to those who are affected by injury

6.1 Emergency response, acute care and rehabilitation programs will provide comprehensive injury assessments and transport, acute hospital care and quality rehabilitative care to those persons injured, their families and other significant supports.

Outcome indicator	Current status	Target
Reduction in hospitalization rates due to trauma	Trauma hospitalization admission rate: rate of hospitalizations due to trauma per 10,000 population: 88.3 (1999) Source: National Trauma Registry, 1999	70 per 10,000
Reduction in mortality from trauma	Trauma mortality rate: rate of mortality due to trauma per 100,000 population: 50.3 (1997) Source: Laboratory Centre for Disease Control, Health Protection Branch, Health Canada, 1997	40 per 100,000
Reduction in missed injury rate	Missed injury rate: rate of missed injuries due to trauma: provincial rate unknown.	Less than 10%
Compliance with transport times	Transport time compliance: transport time from injury to tertiary care: provincial compliance times unknown	90% compliance
Proportion of Emergency Medical Services personnel with BLS and/or ALS qualifications	Proportion of ALS/BLS qualifications: percentage of EMS personnel with ALS/BLS qualifications: 82% (approx. 2001) Source: Alberta Health and Wellness. September 2001.	Improve upon current status.
Proportion of injured individuals receiving quality rehabilitative care.	No data available.	Establish baseline.
Proportion of injured individuals, families and significant others who are satisfied with their rehabilitation.	No data available.	Establish baseline.
Proportion of individuals with long-term injury-related disabilities who achieve independence and self-reliance in their community of choice.	No data available.	Identify outcomes and establish baseline measures.

Recommended Actions		
<ul style="list-style-type: none"> ■ Implement the recommendations from the <i>Alberta Provincial Trauma System Proposal and the Spinal Cord Injury Collaboration</i>. ■ Support the Spinal Cord Injury Collaboration in establishing priorities and strategies in the area of service delivery to persons with spinal cord injuries. ■ Support the full implementation of the recommendations outlined in the Alberta Disability Strategy. ■ Implement recommendations of the Ambulance Review Board including access to 911 and advanced life support. ■ Identify existing gaps and needs in the provision of comprehensive injury assessments through emergency response, acute care and rehabilitation. ■ Identify, develop and promote integration of quality standards of care and best practices for emergency response, acute care and rehabilitation. ■ Implement specific questions addressing injury assessment and care in patient and family satisfaction surveys. ■ Develop and implement a provincial injury rehabilitation strategy to enhance re-integration of injured persons into their homes, workplaces and communities. ■ Identify existing gaps and needs in the provision of emergency, acute care and rehabilitation services to people presenting with intentional injuries. 		
6.2 Injury prevention will be a core component of emergency response, acute care and rehabilitation programs.		
Outcome indicator	Current status	Target
Proportion of emergency response services, acute care and rehabilitation centres integrating injury prevention programming.	No data available	Establish baseline
Recommended Actions		
<ul style="list-style-type: none"> ■ Provide educational resources and support integration of injury prevention into programs carried out by emergency response services, acute care and rehabilitation centres. 		
Goal 7.0 Strengthen partnerships among injury control stakeholders		
7.1 Stakeholders will be effectively communicating, coordinating, and collaborating on injury control initiatives.		
Outcome indicator	Current status	Target
Number of cross-injury teams and stakeholder networks at the community, regional and provincial levels	No data available	Establish baseline
Number of injury-related advisory bodies advocating for injury priorities	No data available	Establish baseline
Number of injury control business plans developed and aligned with the AICS	No data available	Establish baseline

Recommended Actions

- Develop and support provincial working committees to plan and coordinate efforts in each major injury area.
- Develop provincial, regional and local coalitions to address injury priorities.
- Encourage the sharing of human, financial and material resources among stakeholders involved in injury control initiatives.
- Facilitate use of websites such as the Health in Action for the sharing of injury control initiatives and evidence-based practices.

What are the next steps?

Alberta's injury challenge is significant. Five recommendations are key to its successful implementation:

- **Enhance provincial coordination and collaboration.** Authorize and approve the Alberta Centre for Injury Control and Research (ACICR) with a broad provincial mandate and broad stakeholder endorsement for injury control coordination and collaboration support. Enhance provincial coordination and collaboration.
- **Develop and sell the business case.** Develop a compelling business case to reinforce the cost benefits of effective injury prevention programs, followed by effective treatment, management and rehabilitation services. Develop and sell the business case.
- **Develop an implementation plan.** Entrust the coordinating body of ACICR and a broadened advisory body of stakeholders to develop a plan for implementing the Alberta Injury Control Strategy. Develop an implementation plan.
- **Facilitate stakeholder development of injury control plans.** Stakeholders need to participate in, contribute to and collaborate on the development of provincial, regional and local injury control initiatives. Facilitate stakeholder development of injury control plans.
- **Monitor implementation and report progress.** Stakeholders need to contribute annual information and data on their injury control programs as part of the overall, annual monitoring of the strategy. Monitor implementation and report progress.

INTRODUCTION

Alberta has one of the highest rates of injury in Canada despite the fact that injuries are predictable and preventable. Injury remains the leading cause of death for people between one and 44 years of age and accounts for more premature deaths than any disease in the province.² This situation needs to be changed.

Much of the personal and societal devastation and costs created by injuries can be prevented. Unintentional injuries, which exclude intentional injuries like suicide and assault, are estimated to cost Albertans 1.8 billion dollars annually or \$662 for every citizen.³ Stakeholders in the injury control field are committed to the importance of a provincial strategy to guide their efforts to work together to address the challenges of injury control in Alberta—a province that prides itself on its people and prosperity. Their commitment, along with the concerns of individual Albertans and the support of Alberta Health and Wellness led to the development of this document—the Alberta Injury Control Strategy.

Before continuing, an explanation is provided about the use of the terms *injury* and *injury control*. Injury and injury control are two terms that can mean different things to people.

While the term *injury* has a technical definition⁴, it may be viewed as a broad term that encompasses numerous situations in which people are hurt or killed. Many situations cause injuries leading to people being hurt or killed and may be unintentional such as motor vehicle collisions or intentional such as suicide. Regardless of the situation or the circumstances, whenever someone is hurt or killed, that result is referred to as an injury.

Injury control is an all-encompassing term that includes injury prevention, and in the event of an injury, emergency response, acute care, and rehabilitation. The focus is on preventing injuries in the first place, but when injuries do occur, the provision of quality emergency response, acute care and rehabilitation services can affect the long-term outcome of the injury. This strategy addresses the full continuum of injury control with a focus on injury prevention. Figure 1 shows the injury control model commonly used in Alberta.

Alberta has one of the highest rates of injury in Canada.

Injury refers to someone being hurt or killed.

Injury control includes injury prevention, emergency response, acute care and rehabilitation services.

Figure 1
Injury control model



BACKGROUND LEADING TO THE ALBERTA INJURY CONTROL STRATEGY

Table 1 shows the general evolution and changing focus on injury in Alberta over several years.

Injury control has evolved over the years.

Table 1
The evolution of the injury focus in Alberta

Past Situation	Present Situation
Injury project-focused and institutionally based	Provincial organization and mandate for addressing injury
Focus on unintentional injuries	Focus on both unintentional and intentional injuries
Projects focused on injury prevention	Focus on all aspects of injury control including prevention, emergency response, acute care and rehabilitation
Few programs and services directed at injury	Development of centres, foundations and networks at the community, provincial and national levels directed at injury
Little to no coordination of injury programs and services	Move to provincial coordination of injury control initiatives, programs and services through the Alberta Centre for Injury Control and Research (ACICR)

Through Alberta Health and Wellness, the ACICR has a provincial mandate to provide leadership, initiative, influence, coordination and support for injury-related policies, programming, education, research and surveillance across the province in order that injury-related stakeholders can fulfill their mandate in injury control.⁵ While the ACICR has a business plan articulating its vision, mission and strategies as the injury control coordinating body in Alberta, its coordinating function is not guided by a provincial strategy that is inclusive of all injury control stakeholders. Stakeholders have been supportive of the trend toward a greater focus on coordination and collaboration. However, they are concerned that this cannot be adequately realized without broad involvement from a wide range of community sectors in the planning, implementation and evaluation of injury control programs in the province. These concerns led to an agreement to develop a provincial injury control strategy that would involve all stakeholders in the injury control field.

Issue: no provincial injury control strategy to facilitate coordination of injury control efforts and collaboration among stakeholders.

An Advisory Committee comprising a broad range of stakeholders involved in injury control provided direction in the development of the strategy. A Coordinating Committee, a subcommittee of the Advisory Committee, guided the day-to-day project requirements. A list of the members on these two committees is given in Appendix A.

The response: an inclusive and comprehensive process to develop a provincial injury control strategy.

Key events took place to allow a broad range of input from stakeholders across the province:

- **Alberta Injury Control Strategy Community Consultations.** Six community consultations (Lethbridge, Calgary, Edmonton, St. Paul, Grande Prairie and Fort McMurray) were held in September and October 2002 involving more than 200 participants. These sessions were open to anyone interested in injury control.
- **Alberta Injury Control Strategy Summit.** A two-day invitational meeting was held in November 2002 to consider input from community consultations and to further develop the foundation for the strategy.
- **Working Group of Stakeholders.** A smaller group of stakeholders came together in February 2003 to review the initial draft of the strategy.

In June 2003, the Advisory Committee accepted the final Alberta Injury Control Strategy presented in this document.

PURPOSE OF THE ALBERTA INJURY CONTROL STRATEGY

The Alberta Injury Control Strategy provides a framework to guide effective planning and implementation of injury control initiatives among all stakeholders in the injury control field in Alberta. If injuries are to be reduced in Alberta, all stakeholders, including the provincial government and public at large, need be committed to this strategy. Commitment means that stakeholders are willing to collaborate and share information that promotes injury control in Alberta.

All injury control stakeholders plan together and collaborate on reducing injuries and their impact in Alberta.

The Alberta Injury Control Strategy is intended as a guide for all stakeholders in the development of their individual organizational and business plans as well as to enable stakeholders to collaborate on broader initiatives related to their mandate.

The Alberta Injury Control Strategy provides the framework for stakeholders to plan their own initiatives and to collaborate on others.

ORGANIZATION OF THIS DOCUMENT

This strategy document is organized into five major sections:

- Introduction
- Background on Injuries in Alberta
- Alberta's Injury Challenges
- The Alberta Injury Control Strategy
- Summary and Implementation Recommendations

UNDERSTANDING INJURY AND INJURY CONTROL

Understanding injury and injury control is essential to implementing the Alberta Injury Control Strategy. A common frame of reference helps to build awareness of the magnitude of the injury challenges and to strengthen the commitment and resolve to address the challenges. Everyone needs to have a part in changing Alberta's injury situation.

Injury is a broad category that includes both unintentional and intentional injuries. Unintentional injuries result from incidents such as motor vehicle collisions, falls, fires/burns, drowning, and poisonings. The term "unintentional" does not imply that the event was not preventable or anticipatory. In fact, unintentional injuries are very responsive to prevention. Unintentional injuries are often due to human factors and surrounding circumstances that increase the risk of an incident leading to injury, such as drunk driving, uncontrolled intersections and excessive speeds.

Intentional injuries result from incidents such as suicide, personal assault, family violence and homicide. Intentional injuries are just that; actions taken that are intended to injure one-self or others. Intentional injuries such as suicide may involve considerable ambivalence between reasons for dying and reasons for living prior to the event. Intentional injuries are also very responsive to prevention. These injuries are often due to human factors and surrounding circumstances that increase the risk of deliberate behaviour leading to injury, such as personal loss or setbacks, access to weapons, alcohol abuse, and unavailable services.

Unintentional injuries include incidents such as motor vehicle collisions, falls, burns, drownings, etc.

Intentional injuries include incidents such as suicide, personal assault, family violence and homicide.

Injuries are complex

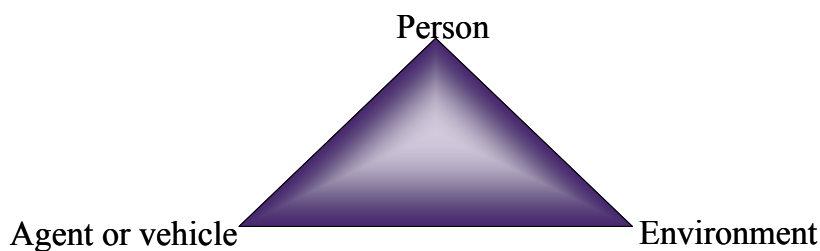
Injuries are the result of a complex mix of interrelated factors: the person being injured, the object that transfers the energy and causes damage such as firearm discharge or car (agent or vehicle), and the environment or conditions surrounding the injury incident. These three factors combine to create an injury triangle.

Figure 2 illustrates the relationship among the three factors.

Three factors interact to create an injury:

- Person being injured
- Agent or vehicle causing the injury
- Environment

Figure 2
The injury triangle



Injuries may be further understood using the Haddon Matrix. The Haddon Matrix expands the injury triangle to assist stakeholders in identifying, considering and choosing possible injury control strategies. The matrix addresses conditions in three time periods: pre-event, event and post-event and extends the three factors to four: the human (person) factors, agent or vehicle, physical environment and socio-cultural environment.⁶

The conditions *before* an event, the pre-event, may combine to create an injury situation or pose a potential risk for injury, such as excessive drinking. The conditions during the injury *event* may make the injury more likely or the injury more serious, such as poor road conditions and the non-use of seatbelts. The conditions *after* an injury event may affect the recovery from the injury, such as access to emergency response services.

The human factors are related to the characteristics of the person. These factors vary prior to the event, during the event and after the event. The agent or vehicle factors are related to the injury mechanism and also vary prior to the event, during the event or after the event. The physical environment may also contain a variety of conditions that may increase or decrease the potential for an injury event to happen and affect the nature of the injury during the event and recovery following the event. The socio-cultural environment also plays a major role in the potential for injury events. These factors while they might be considered human factors are identified separately as they tend to be socially and culturally ingrained. Consequently they may have a major influence on how people conduct themselves in accordance with their belief systems and cultural norms.

Table 2 shows the use of a Haddon Matrix to help understand unintentional injuries involving motor vehicle collisions. Table 2 also shows a variation of the Haddon Matrix by applying the use of Haddon's unintentional injury strategies to an intentional injury involving suicide.

Haddon Matrix describes injuries as involving:

- Human (person) factors
- Agent or vehicle factors
- Physical environment
- Socio-cultural environment

Any one of these factors can be involved:

- Prior to the event
- At the event
- After the event

Table 2
Haddon matrix for unintentional injuries involving motor vehicle collisions

	Human Factors	Agent or Vehicle Factors	Physical Environment	Socio-cultural Environment
Pre-event	<ul style="list-style-type: none"> ■ Alcohol intoxication ■ Fatigue ■ Experience ■ Driver vision ■ Amount of travel 	<ul style="list-style-type: none"> ■ Brakes, tires ■ Center of gravity ■ Jackknife tendency ■ Ease of control ■ Load weight ■ Speed capability 	<ul style="list-style-type: none"> ■ Visibility of hazards ■ Road curvature and gradient ■ Divided highways ■ Intersections, access control ■ Signals 	<ul style="list-style-type: none"> ■ Attitudes about alcohol ■ Laws related to impaired driving ■ Speed limits ■ Support for injury prevention efforts
Event	<ul style="list-style-type: none"> ■ Seat belt use ■ Age ■ Sex ■ Osteoporosis 	<ul style="list-style-type: none"> ■ Speed at impact ■ Vehicle size ■ Hardness and sharpness of contact surfaces ■ Load containment 	<ul style="list-style-type: none"> ■ Recovery areas ■ Guard rails ■ Characteristics of fixed objects ■ Median barriers ■ Roadside embankments 	<ul style="list-style-type: none"> ■ Attitudes about safety belt use ■ Laws about safety belt use ■ Enforcement of child passenger restraint laws
Post-event	<ul style="list-style-type: none"> ■ Age ■ Physical condition 	<ul style="list-style-type: none"> ■ Fuel system integrity 	<ul style="list-style-type: none"> ■ Emergency communications systems ■ Distance to and quality of emergency medical services ■ Rehabilitation programs 	<ul style="list-style-type: none"> ■ Support for trauma care systems ■ Training of emergency medical service personnel

Source: Francescutti. (2003). Adapted from: National Committee for Injury Prevention and Control. (1998). Injury Prevention: Meeting the Challenge. New York:Oxford University Press.

Table 2 (continued)

Application of Haddon’s unintentional injury control strategies to suicide as an intentional injury

	Haddon Unintentional Injury Strategy	Application to Suicide as an Intentional Injury
Pre-injury	<ul style="list-style-type: none"> ■ Prevent the initial creation of the hazard. ■ Reduce the amount of the hazard. ■ Prevent release of hazard that exists. 	<ul style="list-style-type: none"> ■ Improve social support networks. ■ Control firearms. ■ Promote responsible alcohol use.
Injury	<ul style="list-style-type: none"> ■ Modify rates of release of hazard from its source. ■ Separate the hazard from persons to be protected. ■ Interpose a barrier between hazard and person to be protected. ■ Modify contact surfaces and structures to reduce injury. ■ Strengthen resistance of persons who might be injured. 	<ul style="list-style-type: none"> ■ Psychological interventions for mentally ill. ■ Remove firearms and medications after an attempt. ■ Install bridge barriers. ■ Redesign bullets to reduce injury severity. ■ Early detection of suicide thoughts.
Post-injury	<ul style="list-style-type: none"> ■ Rapidly detect and limit damage that has occurred. ■ Initiate immediate and long-term reparative actions. 	<ul style="list-style-type: none"> ■ Postvention for survivors. ■ Treatment and follow-up programs.

Source: Dick Ramsay. (2003). Application of Haddon’s unintentional injury control strategies to suicide. Calgary: Author.

AN OVERVIEW OF ALBERTA'S INJURY CHALLENGES

INJURIES—A MAJOR CHALLENGE

Injuries rank among the most serious health challenges that Alberta faces. The injury problem is not unique to Alberta. Data from other provinces and countries indicate that the injury problem is widespread. Injuries are considered a major public health epidemic nationally and internationally. In reviewing information from other countries, several observations were apparent:

- Falls, motor vehicle collisions, fire, suffocation, suicide and self-inflicted injury are major causes of injury death.
- Injuries are the leading cause of premature death and account for the majority of deaths of those aged 44 and under.
- Burden of injury is highest in the disadvantaged population.
- Indigenous people and people who live in rural and remote areas are at high risk of injury.
- Injury deaths and morbidity cost the health system, the economy and society billions of dollars annually.
- Most nations have identified injury priorities and strategies for national action.

The second Innocenti Report Card⁷ focused on child deaths by injury in the member countries of the Organization for Economic Cooperation and Development (OECD). It ranked the world's richest nations according to their injury death rates for children aged 1 to 14. In every single industrialized country, injury was the leading killer of children. Taken together, traffic crashes, intentional injuries, drownings, falls, fires, poisonings and other incidents kill more than 20,000 1 to 14 year-olds every year in the OECD.

Table 3 shows the number of child injury deaths for the years 1991-95. The figure also shows the lives that could be saved if countries had Sweden's child injury death rate, the lowest among the OECD countries. At least 12,000 child deaths a year could be prevented if all OECD countries had the same child injury death rate as Sweden; over 240 child deaths could be prevented per year in Canada.

Injuries are major challenges in Alberta, Canada and abroad.

Injuries are a leading cause of death, are highest in the disadvantaged population and cost the health system, the economy and society billions of dollars annually.

Traffic crashes, intentional injuries, drownings, falls, fires, poisonings and other incidents kill more than 20,000 one to 14 year-olds every year in OECD countries.

Table 3
Number of child injury deaths in OECD Countries, 1991-95⁸

Country	Child injury deaths 1991-95	Share of injury deaths in all deaths (%)	Lives saved with Sweden's child injury death rate
AUSTRALIA	1,715	42	786
AUSTRIA	608	42	269
BELGIUM	781	40	337
CANADA	2,665	44	1,233
CZECH REPUBLIC	1,138	42	638
DENMARK	334	36	120
FINLAND	368	43	133
FRANCE	4,701	41	2,004
GERMANY	5,171	38	1,949
GREECE	666	40	211
HUNGARY	982	36	507
IRELAND	357	39	133
ITALY	2,563	28	405
JAPAN	7,909	36	2,617
KOREA	12,624	53	9,996
MEXICO	29,745	30	21,965
NETHERLANDS	864	30	186
NEW ZEALAND	519	47	324
NORWAY	294	37	93
POLAND	5,756	44	3,507
PORTUGAL	1,524	40	1,071
SPAIN	2,643	33	932
SWEDEN	391	33	—
SWITZERLAND	537	40	246
UK	3,183	29	454
USA	37,265	49	23,555
OECD TOTAL	125,303	39	73,872

Alberta's experience parallels other countries. Detailed information on injuries in Alberta is contained in Appendix B. Tables 4, 5 and 6 show recent data on injuries as compiled by the Alberta Centre for Injury Control and Research.⁹

Table 4
Top four injuries resulting in death in Alberta, 1999

Injury Category	Number	Rate/100,000
Suicide/self-inflicted	438	15.2
Motor vehicle-related	307	10.7
Unintentional poisonings	134	4.6
Falls	81	3.1

Source: Alberta Health and Wellness Injury Databases. Compiled by Alberta Centre for Injury Control and Research.

Table 5
Top three injuries resulting in hospitalizations in Alberta, 1999

Injury Category	Number	Rate/100,000
Falls	9,704	366.8
Motor vehicle-related	2,280	78.4
Suicide/self-inflicted	2,268	76.7

Source: Alberta Health and Wellness Injury Databases. Compiled by Alberta Centre for Injury Control and Research.

Table 6
Top three injuries resulting in emergency department visits in Alberta, 1999

Injury Category	Number	Rate/100,000
Falls	82,148	2,829.0
Struck by objects/person	47,236	1,573.4
Cutting/piercing	39,413	1,329.8

Source: Alberta Health and Wellness Injury Databases. Compiled by Alberta Centre for Injury Control and Research.

Major injury causes leading to death, hospitalizations and/or emergency department visits in Alberta in 1999:

- Suicide/self-inflicted injuries
- Motor vehicle-related injuries
- Unintentional poisonings
- Falls
- Other injuries due to being struck by an object/person or cutting and piercing.

Other highlights¹⁰ specific to injuries in Alberta are:

- In 1999, 1,334 Albertans died as a result of injuries. That means, on average, four Albertans die everyday from an injury. Four Albertans die everyday from injuries.
- In 1997, preventable unintentional injuries cost the people of Alberta \$1.8 billion or \$662 for every citizen. On average each injury generates about \$4,744 in direct and indirect costs.¹¹ Unintentional injuries cost Albertans \$1.8 billion in 1997.
- Alcohol is a major factor in injury deaths, especially those related to falls, hypothermia, boating, snow vehicle and motor vehicle collisions. Alcohol is a major factor in injuries.
- Injuries are the leading cause of death among Aboriginal people with injury and poisonings being two times higher than the number of deaths associated with diseases of the circulatory system and almost four times higher than deaths associated with cancer. Motor vehicle collisions followed by suicide are the leading causes of injury death. Injuries involving Aboriginal people are two to four times higher than the general population.
- Farming injuries resulted in 163 fatalities between 1990 and 2000. Tractor-related fatalities accounted for 38% of all farm fatalities. The highest at-risk group for fatalities associated with working on a farm are children and seniors. Farming injuries resulted in 163 deaths from 1990-2000.
- Occupational injuries also take their toll. In 1999, 35,440 workplace injuries or disease occurred that were serious enough to miss at least one day of work. Manufacturing and Processing, Construction and Construction Trade Services, Communication and Utilities and Agriculture and Forestry had higher than average lost time claim rates. Sprains, strains and tears were the most common type of injury. 35,400 workplace injuries or diseases were serious enough to miss at least one day of work in 1999.
- In 2000, 31 drownings occurred. The high-risk category was among young adults aged 18-24. From 1996-2000, 45% of all adult drownings were alcohol-related. The majority of drownings occurred in natural bodies of water. 31 people drowned in 2000.
- In 2000, 6,455 fires occurred resulting in 27 deaths, 341 injuries and \$158,918,711 in property loss. Thirty-three percent (33%) of fires were deliberately set. Smoke alarms were not installed in 42% of the homes that experienced fires. Fires resulted in 27 deaths and 341 injuries in 2000.
- In 2001, 107,391 traffic collisions occurred resulting in 404 people killed in motor vehicle collisions on Alberta roadways. Eighty percent of all collisions occurred in urban areas but fatal collisions were more frequent in rural areas. 404 people were killed in traffic collisions in 2001.
- Between 1995 and 2000, 5,936 cases of major trauma (an injury severity score ≥ 12) were reported in adults. The leading cause of trauma was motor vehicle collisions, followed by falls and interpersonal violence. 5,936 major trauma cases were reported in adults between 1995 and 2000.
- In 2001, 70 homicides occurred, a rate of 2.28 per 100,000 population. Alberta ranked third among Canadian provinces. Firearms were involved in 31% of all homicides in 2001. 70 homicides occurred in 2001.

SOME UNDERLYING FACTORS CONTRIBUTING TO ALBERTA'S INJURY PROBLEM

When it comes to injuries, Alberta faces a significant task. While many stakeholders are making progress in the field of injury control, frustration continues with the number of injuries given the overwhelming knowledge about preventing injuries. What is at the root of the problem? What needs to be understood and acted upon if the injury situation in Alberta is to be changed?

Six major challenges were identified:

- Poor awareness, understanding, acceptance and ownership of injury as a major health and safety issue.
- Under-developed coordination, collaboration and communication among stakeholders.
- Under-resourced programs and services, including no designated and long-term sustained funding for injury control initiatives.
- Public and community stigma attached to intentional injuries such as suicide.
- Lack of timely, comprehensive, standardized, consistent and accurate reporting and data on injuries.
- Limited research and program evaluation on the effectiveness of injury control interventions.

Challenge 1

Education and awareness.

Poor awareness, understanding, acceptance and ownership of injury as a major health and safety issue

The data clearly indicate that injury is a problem for Alberta and takes a major toll on personal lives, on society as a whole and on the health care system. However, this evidence does not appear to be reaching Albertans in a way that makes injuries matter to them. Injuries appear to be too casually dismissed as accidents that can happen to anyone—that everyone will die sometime and if death occurs by injury, how unfortunate. This attitude needs to be changed. Albertans need to know there is a government policy statement that clearly identifies injury as a major health and safety issue and in turn they need to be aware and understand that injuries and their devastating consequences can be prevented.

The word “injury” is confusing to the ordinary person. Many people may not associate it with the range of incidents that cause people to be hurt or killed. This limitation also needs to be addressed to strengthen people’s awareness about the nature of injuries.

Challenge 2

Under-developed coordination, collaboration and communication among stakeholders

Alberta is fortunate to have a provincial injury control body and numerous stakeholders involved in injury control initiatives. However, the size and multiplicity of the injury problem have led to scattered and uncoordinated approaches to injury control. Program territorialism is common in many areas. The causes of injuries and effective injury control approaches depend on a common understanding about and a collaborative approach to the factors creating injury-risk situations, and the motivations and attitudes affecting various populations and communities. Stakeholders need support to do what they do best and be able to work with others to address the injury issues.

Coordination,
collaboration and
communication.

Challenge 3

Under-resourced programs and services, including no designated and long-term sustained funding for injury control initiatives

Funding for injury prevention is viewed as minimal and insignificant compared to the size of the problem and the costs of treating injuries that could have been prevented. Short-term project funding, while appreciated, creates problems by not being sustainable. Injury control initiatives, especially preventative initiatives may take several years before results are evident. Also, any significant injury control initiatives that reach extensively into and involve the community may create unrealistic expectations and loss of confidence when funding is not sustained, potentially hampering future community development efforts.

Program resources.

Human resources, especially specialized clinical resources, are a scarce commodity in many fields, including the injury control field, given the aging workforce and multiple other factors. Competition is heightened at the community, regional, provincial, national and international levels for expert resources in injury control. Remote and rural locations in the province are most disadvantaged in attracting qualified resources in all aspects of injury control. Scarce resources have led to turf protection and territorialism due to the competition for resources.

Other resource concerns include inconsistent program and clinical service standards among professionals at regional and provincial levels. Programs need to be focused on client needs and interests with professionals being empowered to provide the best services given their circumstances.

Challenge 4

Public and community stigma attached to intentional injuries such as suicide

Intentional injuries are not easy to talk about, whether they are suicide, homicide, assault or family violence. Intentional injuries may result in violent deaths or long-term mental and physical disabilities. The mental anguish, guilt, sense of inadequacy, and sense of loss are profound and often suffered in private, exacting a huge toll on family members, friends and colleagues. The stigma associated with intentional injuries causes many to suffer in silence, keeping their fears and concerns private and not seeking mental health, substance abuse or other needed prevention services. Consequently the mental illnesses, emotional health issues and other social stresses that may lead to intentional injuries are often underestimated and under-treated.

Challenge 5

Lack of timely, comprehensive, standardized, consistent and accurate reporting and data on injuries

Alberta lacks a comprehensive injury surveillance system. While substantial data are available on injuries as evidenced in this document, many injuries may never enter any injury database such as those treated in physician's offices, medi-centres, and occupational health/workplace sites.

Considerable data are collected by different stakeholders using data collection standards that may vary from one jurisdiction to another. Inconsistencies may occur in the coding of injuries among acute care and emergency departments. The timeliness of jurisdictions in submitting injury data, coding and analyzing the data and producing injury reports may also vary.

Gaps also exist in the type of information on injury. The circumstances surrounding the injury are often unavailable, including the characteristics of the persons involved and their physical and socio-cultural environments. Data are also lacking on the long-term disability of those who survive a severe injury. Data also need to be shared among those jurisdictions that can benefit from the information, while respecting legitimate privacy requirements.

The lack of timely, standardized and comprehensive injury data creates difficulties in assessing specific injury needs at the community, regional and provincial levels and planning appropriately to meet those needs. Monitoring the current situation and assessing real progress in injury control is also a challenge. Lack of standards for injury data collection also hampers comparisons among jurisdictions in assessing their effectiveness using various interventions.

Public and community stigma.

Timely, comprehensive, standardized, consistent and accurate data.

Challenge 6

Research and
program evaluation.

Limited research and program evaluation on the effectiveness of injury control interventions

Injury control is a field that has attracted minimal research dollars. Research is needed to build the body of knowledge surrounding the contributing factors, causes of injuries and the nature of the injury; assessing effectiveness of interventions, including product safety; and assessing improved approaches to collaboration. Research is also needed on the impact of the disabilities resulting from injuries.

Knowledge transfer research is needed to convert the existing body of knowledge into viable and effective programs, services and interventions. Recognition of this important complement to basic and program evaluation research is needed to design and deliver rigorously developed programs as a critical part of the research agenda.

Program evaluation is needed to assess what interventions are working or show promise and what interventions are not working and why. Personnel knowledge and skills in conducting effective evaluations need to be strengthened. The results of program evaluations need to be documented and shared among injury control practitioners for the benefit of all.

Performance measures and targets, focusing on injury control outcomes, are also needed. Injury control initiatives need to identify expected results that can be measured. The results need to be continually monitored and evaluated in order to assess progress, make program changes and satisfy accountability requirements of the public, policy makers and funders.

SUMMARY

Information on injuries clearly indicates that Alberta has a problem. The tragedy is that injuries are preventable. So why does Alberta have this problem? It could be any one or a combination of the challenges. Or it could be the attitude that people generally have towards injuries. When someone gets injured, they tend to accept the injury as one of those unfortunate events that can happen to anyone—*it was an accident*. The word *accident* implies something unplanned or unforeseen as though there was nothing anyone could do to prevent it. But evidence shows that is not the case. Data are available on what causes injuries and how to prevent them. In the case of intentional injuries, data are available on the barriers to seeking and obtaining help. Effective strategies are needed so that all the challenges become injury-reducing actions. Then injuries can be prevented and Alberta's injury record can be changed.

THE ALBERTA INJURY CONTROL STRATEGY

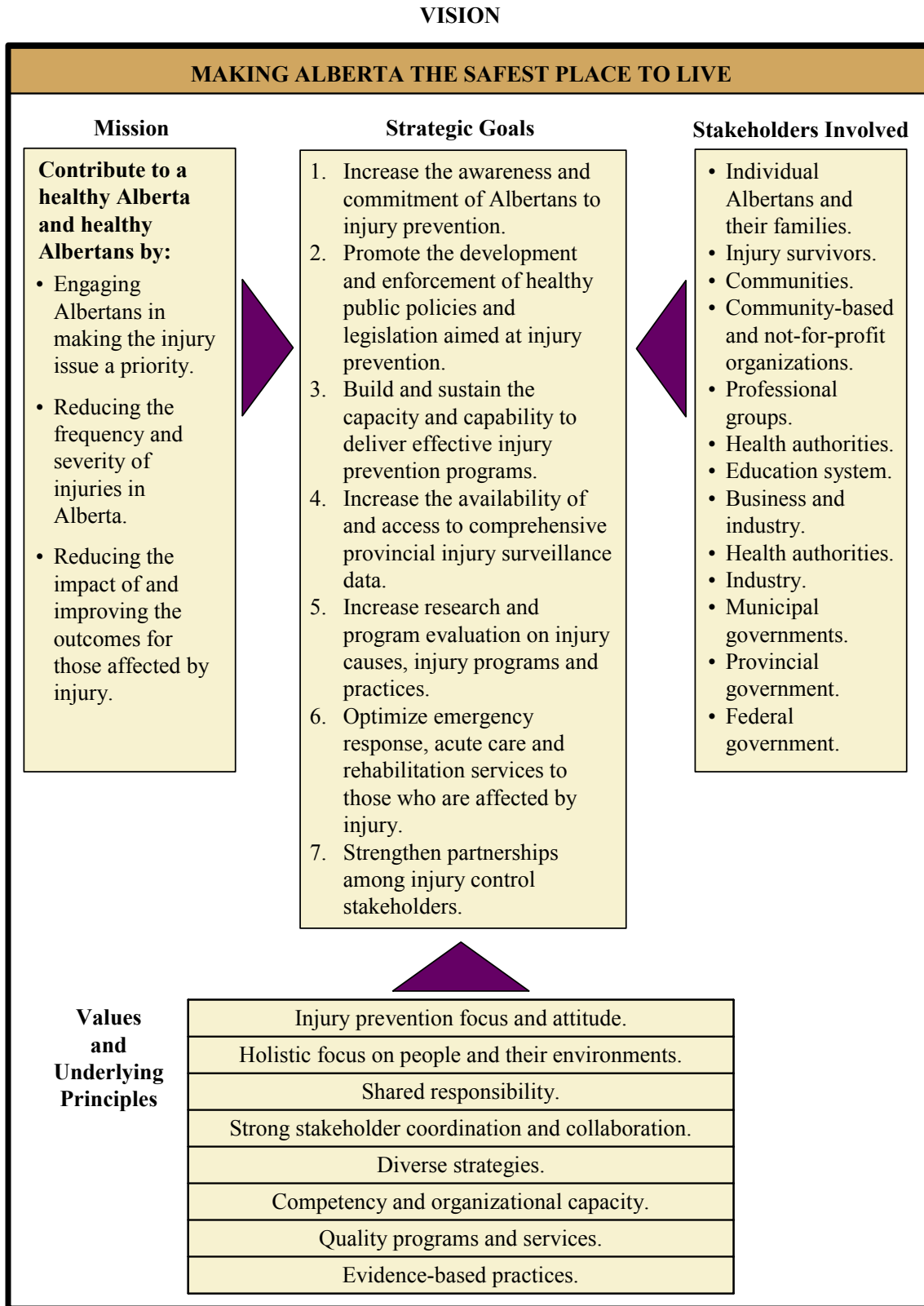
While the Alberta Injury Control Strategy addresses the full continuum of injury control, the priority is injury prevention. First and foremost, injuries need to be prevented if Albertans are to enjoy safe and healthy lives. However, when injuries occur, Albertans need to be assured that they receive optimal care and rehabilitation to enable their re-integration into their homes, communities and workplaces.

The Alberta Injury Control Strategy consists of several parts:

- **Vision**—the desired future for Alberta with respect to injuries.
- **Values and Underlying Principles**—the beliefs that will guide all stakeholders in their actions and plans to move Alberta towards its vision.
- **Mission**—long-term focus for injury control and the areas where significant outcomes expected.
- **Strategic Goals**—priority areas of focus in moving Alberta towards its vision. The strategic goals also contain the following components:
 - **Objectives**—within each strategic goal, specific objectives are identified.
 - **Outcome Indicators, Current Status, and Target**—within each objective, the key results areas, or outcome indicators are identified followed by current status and the target.
 - **Recommended Actions**—identifies high-level actions to be undertaken by stakeholders.
- **Roles and Responsibilities of Stakeholder Sectors**—the roles and responsibilities of various stakeholder sectors in injury control.
- **Summary and Implementation Recommendations**—next steps to be taken to implement the Alberta Injury Control Strategy.

Figure 3 gives an overview of the components comprising the Alberta Injury Control Strategy.

Figure 3
Overview of the Alberta Injury Control Strategy vision



VISION

Making Alberta the Safest Place to Live

The Alberta government's vision focuses on people, prosperity and preservation. Ultimately the desired future is that all Albertans are healthy and that Alberta is a healthy and prosperous province. The Alberta Injury Control Strategy contributes to the provincial vision by addressing injury issues in Alberta. By effectively addressing injuries, more Albertans will be able to live safe, healthy lives and be free from the impact of injuries. *Making Alberta the safest place to live* focuses attention on what each person, organization and community can do to prevent Albertans from being hurt or killed and to minimize the impact of injuries when they do occur.

VALUES AND UNDERLYING PRINCIPLES

- Injuries are predictable and preventable. Injury prevention focus and attitude.
- The holistic needs of individuals, their families and their living environments are supported to achieve an optimal quality of life free from injury. Holistic focus on people and their environments.
- All Albertans share responsibility for making Alberta the safest place to live. Shared responsibility.
- All stakeholders work together in researching, identifying, targeting, planning, delivering and evaluating provincial and community injury control programs. Strong stakeholder coordination and collaboration.
- Multiple strategies involving education, enforcement, and engineering are necessary for effective injury prevention. Multiple strategies.
- Individuals involved in injury control demonstrate evidence-based knowledge and skills and have access to required resources for effective injury control initiatives. Competency and organizational capacity.
- Quality prevention, emergency response, acute care and rehabilitation services are key to preventing injuries in the first place and in caring for and supporting the return of those injured to their family, workplace and community. Quality programs and services.
- Evidence-based practices are integral to the planning, delivery and evaluation of Alberta's injury control programs. Evidence-based practices.

MISSION

Contribute to a healthy Alberta and healthy Albertans by:

- Engaging Albertans in making the injury issue a priority.
- Reducing the frequency and severity of injuries in Alberta.
- Reducing the impact of and improving the outcomes for those affected by injury.

The mission emphasizes the priority areas of focus. Albertans are expected to embrace injury as an issue that warrants priority attention and action. Injuries are to be reduced in both their frequency and their severity by effective preventative initiatives. When injuries occur, those who are affected; the injured individuals, their families and others, are expected to receive quality treatment and rehabilitation. These three areas drive the strategic goals that follow.

STRATEGIC GOALS, OBJECTIVES, TARGETS AND INITIATIVES

The Alberta Injury Control Strategy encompasses seven strategic goals:

- Increase the awareness and commitment of Albertans to injury prevention.
- Promote the development and enforcement of healthy public policies and legislation aimed at injury prevention.
- Build and sustain the capacity and capability to deliver effective injury prevention programs.
- Increase the availability of and access to comprehensive provincial injury surveillance data.
- Increase research and program evaluation on injury causes, injury programs and practices.
- Optimize emergency response, acute care and rehabilitation services to those who are affected by injury.
- Strengthen partnerships among injury control stakeholders.

For each strategic goal, specific objectives, outcome indicators, the current status and target are identified. Some targets pertinent to this strategy are also found in other strategic planning documents. Where this is the case, these targets have been repeated here. Actions are also recommended to guide the next phase of implementation planning and resource allocation and to stimulate individuals, organizations and communities to take action.

Numerous stakeholders are involved in injury control in Alberta. Key roles and responsibilities for the various stakeholder sectors follow the strategies.

Readers should note that the term injury prevention and control are used together and separately in some of the goals and objectives. This is done deliberately where a focus is being stressed on injury prevention. Where the full continuum of injury control, including injury prevention, emergency response, acute care and rehabilitation, is being discussed, the term *injury control* is used.

Goal 1 Increase the awareness and commitment of Albertans to injury prevention

1

Awareness and Commitment

Objective 1.1 Albertans will be aware and knowledgeable about injuries and their prevention.

Outcome Indicator	Current Status	Target
Proportion of Albertans aware and knowledgeable about injuries and their prevention	40% of Albertans correctly identify injury as the leading cause of death for Albertans under the age of 45 (July 2001). Source: Alberta Centre for Injury Control and Research.	80% (2010)
	85% of Albertans indicate that injuries are a serious health problem (July 2001). Source: Alberta Centre for Injury Control and Research.	Maintain or exceed 85% (2010)
	42% of Albertans indicate that injuries are very or completely preventable (July 2001). Source: Alberta Centre for Injury Control and Research.	80% (2010)

Recommended Actions

- Raise awareness about the concept of injury.
- Raise awareness and acceptance that injuries can be prevented.
- Encourage positive attitudes towards and social norms supporting injury prevention.
- Develop, implement and evaluate education and community-based programs and public information campaigns aimed at high injury areas, targeting the public, professionals, media and policy makers.
- Convene injury-related forums to focus on issues likely to influence the development of effective injury prevention interventions.
- Provide opportunities for public and private investment in injury prevention strategies and programs.

- Encourage integration of injury prevention strategies in related provincial and organizational business plans.
- Encourage local governments to create safer environments.
- Use “champions”, including injury survivors, to advance knowledge and awareness about injury priorities.

Goal 1 Increase the awareness and commitment of Albertans to injury prevention

1

Awareness and Commitment

Objective 1.2 Albertans will take actions to reduce the major causes of injury.

Outcome Indicator	Current Status	Target
Reduction in the major causes of injuries	Motor vehicle casualty collisions: average number of road users killed and seriously injured: 2,969 (1999) Source: Transport Canada: Road Safety Vision 2010.	2,100 (2008-2010)
	Suicide/self inflicted mortality rate: age-adjusted mortality rate due to suicide/self-inflicted injuries per 100,000 people: 15.2 (1999) Source: Alberta Centre for Injury Control and Research.	12.3 (2012)
	Suicide/self inflicted hospitalization rate: hospitalization rate due to suicide/self-inflicted injuries per 100,000 people: 76.7 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status
	Suicide/self inflicted emergency visit rate: emergency visit rate due to suicide/self-inflicted injuries per 100,000 people: 242.2 (1999) Source: Alberta Centre for Injury Control and Research.	Improve upon current status

Outcome Indicator	Current Status	Target
	<p>Falls hospitalization rate: hospitalization rate due to falls per 100,000 people: 366.8 (1999)</p> <p>Source: Alberta Centre for Injury Control and Research.</p>	300 (2012)
	<p>Falls emergency department visit rate: emergency department visit rate due to falls per 100,000 people: 2,829 (1999)</p> <p>Source: Alberta Centre for Injury Control and Research.</p>	Improve upon current status
	<p>Unintentional poisonings mortality rate: mortality rate due to unintentional poisonings per 100,000 people: 4.6 (1999)</p> <p>Source: Alberta Centre for Injury Control and Research.</p>	Improve upon current status
	<p>Unintentional poisonings hospitalization rate: hospitalization rate due to unintentional poisonings per 100,000 people: 26 (1999)</p> <p>Source: Alberta Centre for Injury Control and Research.</p>	Improve upon current status
	<p>Lost Time Claim Rate: number of lost time claims per 100 person-years worked: 3.0 (2002)</p> <p>Source: Alberta Human Resources and Employment.</p>	Lost Time Claim Rate: 2.0 or lower
Reduction in all other injuries	As identified by other stakeholders in their strategic/business plans	Improve upon current status

Recommended Actions

- Implement and build on existing and proposed injury control strategies such as A *Strategic Plan to Reduce Impaired Driving In Alberta. A Ten Year Plan*; the *Healthy Alberta Prevention and Promotion Policy Framework*, *Alberta Occupant Restraint Program*; *Alberta Suicide Prevention Strategy*; *Alberta Workplace Safety 2.0*; *Alberta Disability Strategy*; and the *Spinal Cord Injury Collaboration*.
- Develop and support new provincial strategies to fill gaps for leading causes of injury.
- Encourage integration of injury prevention strategies in related provincial and organizational business plans.
- Develop and implement an injury prevention strategy in collaboration with Aboriginal communities to address the unique needs of Aboriginal people.
- Develop an attitude of safety in the schools through curricula and hands-on practice to integrate injury prevention and job safety into all areas of living.
- Support graduated driver licensing to develop safe driving skills and attitudes among new drivers.
- Promote child traffic safety initiatives to establish life-long learning about traffic safety such as pedestrian safety, school bus safety, etc.
- Support aquatic safety initiatives.
- Promote farm safety and management assessment tools to encourage farm businesses to implement health and safety plans.
- Promote a culture of safety in all environments and across all sectors.
- Encourage a community development approach to injury prevention.
- Promote the “Safe Community” model throughout the province.
- Provide incentives that promote positive injury prevention behaviours and environmental changes.

Goal 2 Promote the development and enforcement of healthy public policies and legislation aimed at injury prevention

2

Healthy Public Policies and Legislation

Objective 2.1 Healthy public policies and legislation will be used to support injury prevention.

Outcome indicator	Current Status	Target
Advocacy for healthy public policies focused on injury prevention	No data available	Establish baseline
Advocacy for legislation focused on injury prevention	No data available	Establish baseline

Recommended Actions

- Implement legislative and policy reforms to support injury prevention based on evidence of benefits and costs.
- Promote and support compliance with legislation and policies that support and facilitate injury prevention.
- Enforce legislation and policies that support and facilitate injury prevention.
- Evaluate the impact of legislation and policy from an injury prevention perspective.
- Address issues regarding the number and education of enforcement officers, priorities of enforcement agencies and the criminal justice system.
- Advocate for healthy public policies and regulations at the municipal, provincial and federal levels to reflect best practices in injury prevention.

Goal 3 **Build and sustain the capacity and capability to deliver effective injury prevention programs**

3

Capacity and Capability

Objective 3.1 Sustainable funding and other resources will be available to deliver effective injury prevention programs.

Outcome Indicator	Current Status	Target
Level of funding designated for injury prevention	No data available.	Establish baseline.
Level of training among those already working in the field.	No data available.	Establish baseline.

Recommended Actions

- Enhance and sustain designated funding for provincial, regional and community injury prevention initiatives based on best or promising evidence, consistent with full social impact of injury and the potential for prevention.
- Promote and support the development and provision of injury prevention in post secondary education curricula and training for professionals.

Goal 4 Increase availability of and access to comprehensive provincial injury surveillance data

4

Injury Surveillance

Objective 4.1 A comprehensive provincial injury surveillance system will be operating for systematic injury data collection, integration, analyses, interpretation and dissemination.

Outcome Indicator	Current Status	Target
Timely, complete, and accurate injury data submitted to and received by stakeholders from the provincial injury surveillance system.	Comprehensive injury surveillance system unavailable.	A fully functioning and comprehensive injury surveillance system.

Recommended Actions

- Develop and implement a comprehensive provincial injury surveillance system in collaboration with stakeholders.
- Establish and require collection and submission of data on key injury indicators.
- Facilitate access to and dissemination of injury data to stakeholders, assuring that legitimate privacy provisions are in place.
- Facilitate training of practitioners and others in the collection and interpretation of injury surveillance data.
- Promote funding and support of the Alberta Trauma Registry by Province-wide Services in Alberta Health and Wellness.

Goal 5 Increase research and program evaluation on injury causes, injury programs and practices

5

Research and Evaluation

Objective 5.1 Research will be increased on risk and preventative factors, causes of injury and evidence-based injury control practices.

Outcome Indicator	Current Status	Target
Number of research activities directed at injury risk and preventative factors, causes and injury control practices.	No data available	Establish baseline

Recommended Actions

- Identify specific research gaps surrounding injury risk and preventative factors, causes and injury control practices.
- Promote and encourage research on injury risk and preventative factors, causes and injury control initiatives with academic centers, researchers and funders.
- Identify and disseminate information on injury risk and preventative factors, causes and effective injury control practices based on research findings.
- Encourage organizations such as the Alberta Heritage Foundation for Medical Research and the Canadian Institute of Health Research to dedicate special funding for increasing the capacity in injury research.
- Work with the Canadian Injury Research Network in advancing injury prevention and control research.

Goal 5 Increase research and program evaluation on injury causes, injury programs and practices

5

Research and Evaluation

Objective 5.2 Evaluations will be an integral component of all injury control programs and services.

Outcome Indicator	Current Status	Target
Number of injury control programs and services evaluated.	No data available	Establish baseline
Number of organizations integrating evidence-based practices into their injury control programs based on program evaluations.	No data available	Establish baseline

Recommended Actions

- Facilitate evaluations of new and existing injury control programs and initiatives.
- Facilitate and support development and continuous improvement of evaluation knowledge and skills among those providing injury control programs.
- Support the continuous improvement of injury control programs and initiatives through the evaluation feedback loop.
- Identify and disseminate information on effective injury control practices based on program evaluations.

Goal 6 Optimize emergency response, acute care and rehabilitation services to those who are affected by injury

6

Emergency Response, Acute Care and Rehabilitation

Objective 6.1 Emergency response, acute care and rehabilitation programs will provide comprehensive injury assessments and transport, acute hospital care and quality rehabilitative care to those persons injured, their families and other significant supports.

Outcome Indicator	Current Status	Target
Reduction in hospitalization rates due to trauma	Trauma hospitalization admission rate: rate of hospitalizations due to trauma per 10,000 population: 88.3 (1999) Source: National Trauma Registry, 1999	70 per 10,000
Reduction in mortality from trauma	Trauma mortality rate: rate of mortality due to trauma per 100,000 population: 50.3 (1997) Source: Laboratory Centre for Disease Control, Health Protection Branch, Health Canada, 1997	40 per 100,000
Reduction in missed injury rate	Missed injury rate: rate of missed injuries due to trauma: provincial rate unknown.	Less than 10%
Compliance with transport times	Transport time compliance: transport time from injury to tertiary care: provincial compliance times unknown	90% compliance

Outcome Indicator	Current Status	Target
Proportion of Emergency Medical Services personnel with BLS and/or ALS qualifications	Proportion of ALS/BLS qualifications: percentage of EMS personnel with ALS/BLS qualifications: 82% (approx. 2001) Source: Alberta Health and Wellness. September 2001.	Improve upon current status.
Proportion of injured individuals receiving quality rehabilitative care.	No data available.	Establish baseline.
Proportion of injured individuals, families and significant others who are satisfied with their rehabilitation.	No data available.	Establish baseline.
Proportion of individuals with long-term injury-related disabilities who achieve independence and self-reliance in their community of choice.	No data available.	Identify outcomes and establish baseline measures.

Recommended Actions

- Implement the recommendations from the *Alberta Provincial Trauma System Proposal* and the *Spinal Cord Injury Collaboration*.
- Support the Spinal Cord Injury Collaboration in establishing priorities and strategies in the area of service delivery to persons with spinal cord injuries.
- Support the full implementation of the recommendations outlined in the Alberta Disability Strategy.
- Implement recommendations of the Ambulance Review Board including access to 911 and advanced life support.
- Identify existing gaps and needs in the provision of comprehensive injury assessments through emergency response, acute care and rehabilitation.
- Identify, develop and promote integration of quality standards of care and best practices for emergency response, acute care and rehabilitation.
- Implement specific questions addressing injury assessment and care in patient and family satisfaction surveys.
- Develop and implement a provincial injury rehabilitation strategy to enhance re-integration of injured persons into their homes, workplaces and communities.
- Identify existing gaps and needs in the provision of emergency, acute care and rehabilitation services to people presenting with intentional injuries.

Goal 6 Optimize emergency response, acute care and rehabilitation services to those who are affected by injury

6

Emergency Response, Acute Care and Rehabilitation

Objective 6.2 Injury prevention will be a core component of emergency response, acute care and rehabilitation programs.

Outcome Indicator	Current Status	Target
Proportion of emergency response services, acute care and rehabilitation centres integrating injury prevention programming.	No data available	Establish baseline

Recommended Actions

- Provide educational resources and support integration of injury prevention into programs carried out by emergency response services, acute care and rehabilitation centres.

Goal 7 Strengthen partnerships among injury control stakeholders

7

Partnerships

Objective 7.1 Stakeholders will be effectively communicating, coordinating, and collaborating on injury control initiatives.

Outcome Indicator	Current Status	Target
Number of cross-injury teams and stakeholder networks at the community, regional and provincial levels	No data available	Establish baseline
Number of injury-related advisory bodies advocating for injury priorities	No data available	Establish baseline
Number of injury control business plans developed and aligned with the AICS	No data available	Establish baseline

Recommended Actions

- Develop and support provincial working committees to plan and coordinate efforts in each major injury area.
- Develop provincial, regional and local coalitions to address injury priorities.
- Encourage the sharing of human, financial and material resources among stakeholders involved in injury control initiatives.
- Facilitate use of websites such as the Health in Action for the sharing of injury control initiatives and evidence-based practices.

ROLES AND RESPONSIBILITIES OF STAKEHOLDER SECTORS

Numerous stakeholder sectors are involved in injury control, including individual Albertans. Each group makes an important contribution to injury control in Alberta. Their continued commitment and involvement will be critical to moving Alberta towards its preferred future. This section provides an overview of the key roles and responsibilities of each stakeholder sector.

■ Individual Albertans and their Families

- Become informed about injuries, what they are, how they are caused and what you can do to prevent yourself or someone you love from being hurt or killed.
- Be aware of the safety risks in your homes, schools, play areas, communities and workplaces, and manage those risks by taking action to prevent someone from being hurt or injured.
- Provide supervision and guide others according to their age and abilities, especially young children and older adults.
- Become knowledgeable before operating equipment or engaging in sports ensuring that you and/or your family have proper training and are wearing appropriate safety gear.
- Comply with regulations and policies designed to keep you safe and encourage others to do so, knowing that these regulations and policies were designed for your safety and that of others.
- Know the risks associated with alcohol, illicit and prescription drugs and take the appropriate precautions.
- If you think someone you know is at risk of hurting themselves or others, reach out and seek help.

Individual Albertans and their Families

■ Injury Survivors

- Use your experience to promote injury prevention among your peers and other stakeholder groups.
- Use your experience to promote improved emergency response, acute care and rehabilitation services to those who sustain injuries.
- Use your experience to avoid risks associated any other injuries.

Injury Survivors

■ Community-based and not-for-profit organizations

- Become informed about injuries, how they are caused and what your organization can do to prevent someone from being hurt or killed.
- Incorporate and integrate injury prevention strategies and actions into your programs and ways of working.
- Identify barriers to injury prevention initiatives and work with other organizations and stakeholders to resolve them.
- Encourage local governments to create safer environments through healthy public policies and the use of engineering techniques to promote safety.
- Be a resource to your local community and schools in identifying community and school safety risks and taking joint action to prevent the risk of someone being hurt or killed.
- Encourage the media to act responsibly in the portrayal of risk and provide the media with accurate information to support accurate reporting on injuries and how to prevent them.
- Encourage First Aid, CPR and suicide prevention information and training to enhance the first response to any injuries.

Community-based and not-for-profit organizations

■ Communities

- Become informed about injuries, how they are caused and what your community can do to prevent someone from being hurt or killed.
- Incorporate and integrate injury prevention strategies and actions into your community.
- Encourage local governments to create safer environments through healthy public policies and the use of engineering techniques to promote safety.

Communities

■ Professional groups

- Become educated and trained about injury, their causes, and preventative actions that can be taken to reduce the risk of injury and actions that can be taken to minimize the impact of injuries when they occur.
- Integrate injury prevention objectives into professional education, policies and practices.
- Educate and train your workforce to integrate injury prevention strategies into their workplaces, methods of working and personal lives.
- Participate in the development of comprehensive injury control

Professional Groups

strategies at the community, regional and provincial levels.

- Advocate and promote injury prevention and safety in all individual and public interactions, informing people and policy makers about injury risks and encouraging them to take the necessary actions to prevent injury.
- Advocate for healthy public policies and regulations that support and strengthen injury prevention efforts as well as injury control efforts in emergency response, acute care and rehabilitation.
- Advocate for innovations in engineering and product design, including required training and education.
- Monitor, collect and distribute injury data, including circumstances surrounding injuries.
- Use research and evaluation studies to guide your best professional practices and to track effectiveness of your programs and services.

■ Education System

Education System

- Become informed about injuries, how they are caused and what the education system can do to protect someone from injury and to respond effectively in the event of an injury.
- Incorporate injury control education and practices into the school curricula and extra-curricular activities.
- Incorporate injury control education and practices into post-secondary curricula.

■ Health Authorities

Health Authorities

- Become informed about injuries, how they are caused and what the health system can do to protect someone from injury and to respond effectively in the event of an injury.
- Promote and protect the health of the population by developing and integrating strategies and programs to prevent injuries.
- Develop comprehensive injury control strategies and plans consistent with the Alberta Injury Control Strategy.
- Designate and allocate required financial and human resources to provide effective injury control programs.
- Develop and provide effective acute care and rehabilitation services to those who have been affected by injuries.
- Use research and evaluation studies to guide your best professional practices and to track effectiveness of your programs and services.

- Educate and train your workforce to integrate injury prevention strategies into their workplaces, methods of working and personal lives.
- Advocate for healthy public policies and regulations that support and strengthen injury prevention efforts.
- Advocate for innovations in engineering and product design, including required training and education.
- Monitor, collect and distribute injury data, including circumstances surrounding injuries.

■ Business and Industry

Business and Industry

- Become informed about injuries, how they are caused and what your business or industry can do to prevent someone from being hurt or killed.
- Ensure safe design of products and environments by using accepted national and international safety standards and best practices.
- Support and champion community and organizational initiatives directed at safety and injury prevention and control.
- Incorporate and integrate innovative safety and injury prevention messages and actions into corporate programs and services.
- Assure public and employee health and safety at all times by being in compliance with all laws and regulations.
- Advocate for innovations in engineering and product design, including required training and education.
- Promote a culture of safety through incentive programs and build in activities to bridge injury prevention at home as well as at work.

■ Municipal Governments

Municipal Governments

- Become informed about injuries, how they are caused and what your government can do to prevent someone from being hurt or killed.
- Identify safety risks in your communities and take actions to prevent someone from being hurt or killed.
- Implement and enforce bylaws and healthy public policies aimed at reducing the risk of injury and minimizing the impact of injuries when they occur.
- Adhere to accepted national and international safety standards and best practices in urban and rural community design, including building codes, bridge and road design.
- Support communities in their efforts to raise awareness about

and to reduce the incidence of injury.

- Encourage and support the development of a “safe community”.
- Integrate specific strategies and actions into your municipal business plans and budgets.

■ Provincial Government

Provincial Government

- Provide the means and support necessary to implement the Alberta Injury Control Strategy and work with other provincial governments and the federal government in implementing national injury control frameworks and strategies.
- Formulate and approve a policy statement that injury is a major health and safety issue.
- Support community-based service delivery in injury control through the provision of adequate human, financial and material resources to appropriate stakeholder groups.
- Provide and support opportunities for public and private investment in research and injury prevention and control strategies.
- Assume primary responsibility to develop and implement a provincial injury surveillance system, track and monitor injuries, taking action to reduce areas of high risk.
- Provide the means and enabling structures to conduct and/or support research on injury, its risk factors and causes, and injury control practices.
- Provide the means and enabling structures to support evaluation of injury control programs and services.
- Formulate, implement and enforce legislation and regulations directed at the health and safety of the public, employers and employees.
- Provide the means and support needed to enhance inter-ministerial collaboration in targeting best practices in injury control in all Ministry plans and activities.
- Provide policy guidance and support to formulate guidelines to promote accurate and comprehensive media reporting on injuries.

■ Federal Government

- Facilitate work between provinces, territories and federal ministries in implementing national injury control frameworks and strategies in addressing injury priorities.
- Develop, implement and evaluate injury control programs in First Nations communities.
- Provide and support opportunities for public and private investment in research and injury prevention and control strategies.
- Conduct and/or support research on injury, its risk and preventative factors and causes, and injury control practices.
- Support evaluation of injury control programs and services.
- Implement and enforce legislation and regulations directed at the health and safety of the public, employers and employees.

SUMMARY AND IMPLEMENTATION RECOMMENDATIONS

Alberta's injury challenge is significant. This Alberta Injury Control Strategy describes the specific challenges and identifies the key directions that the province needs to take to make Alberta a safer place to live. Now specific steps must be taken to bring the strategy to fruition. The following recommendations address the next steps to be taken.

RECOMMENDATIONS FOR IMPLEMENTING THE ALBERTA INJURY CONTROL STRATEGY

■ Enhance provincial coordination and collaboration

Enhance provincial coordination and collaboration

Authorize and approve the Alberta Centre for Injury Control and Research with a provincial mandate and broad stakeholder endorsement for injury control coordination and collaboration support. The ACICR, funded by Alberta Health and Wellness, is viewed as another "health" organization with no funding from other government ministries to support its mission and operation. The ACICR has taken a facilitative approach in working with stakeholders across the province by supporting stakeholders with specific requests and expert resources as available. Some stakeholders are not familiar with the ACICR. With policy support from all provincial government ministries and other stakeholders, the profile and coordination role of the ACICR can be enhanced. The preferred coordination and collaborative role to be taken by the ACICR needs to be agreed upon by stakeholders in injury control, including the role of the ACICR in the Alberta Injury Control Strategy.

■ Develop and sell the business case

Develop and sell the business case

Preventable injuries cost Albertans billions of dollars annually in both direct and indirect costs. Evidence exists on effective interventions to prevent injuries and to manage injuries effectively when they occur. Through the coordinated leadership of ACICR and other stakeholders, develop a compelling business case to reinforce the cost benefits of effective injury prevention programs, followed by effective treatment, management and rehabilitation services. Such evidence will be critical to obtaining support for implementation of the Alberta Injury Control Strategy.

■ Develop an implementation plan

Develop an implementation plan

Entrust the coordinating body of ACICR and a broadened advisory body of stakeholders to develop a plan for implementing the Alberta Injury Control Strategy. The plan needs to identify specific injury priorities and initiatives on an annual basis, designating and obtaining agreements on specific stakeholder responsibilities and accountabilities.

- **Facilitate stakeholder development of injury control plans**

Facilitate stakeholder development of injury control plans

All injury control stakeholders need to take responsibility for becoming informed about the Alberta Injury Control Strategy and incorporating specific injury control initiatives into their business plans. Stakeholders need to participate in, contribute to and collaborate on the development of provincial, regional, and local injury control initiatives. Authorize ACICR to initiate and facilitate the process.

- **Monitor implementation and report progress**

Monitor implementation and report progress

The implementation of the Alberta Injury Control Strategy needs to be monitored on an annual basis consistent with specific implementation plans. Stakeholders need to contribute annual information and data on their injury control programs as part of the overall monitoring of the Strategy. Responsibility for annual provincial progress/status reports needs to be designated. Authorize and support ACICR to do this implementation.

APPENDIX A

AICS Advisory Committee Members

Belton, Kathy*	Co-Director	Alberta Centre for Injury Control & Research
Beswick, Lance	Senior Communications Officer	Health Canada
Cantin, Brenda	Program Manager	Health Canada
Drozdowski, Jennifer*	Community Development Manager	Alberta Centre for Injury Control & Research
Eatock, Pattie	Trauma Coordinator	Capital Health Authority
Espie-Lefebvre, Jeanette	Executive Director, Traffic Safety Initiatives	Alberta Transportation
Fersovitch, Joyce	Injury Control Coordinator—Aboriginal	Alberta Centre for Injury Control & Research
Francescutti, Dr. Louis H*	Director	Alberta Centre for Injury Control & Research
Grudnizki, Betty	Branch Head, Agriculture Education and Training	Alberta Agriculture, Food and Rural Development
Hasselback, Dr. Paul*	Medical Officer of Health & Vice-President	Chinook Health Region
Hayes, Louise	Manager, Organizational Liaison	Aboriginal Affairs & Northern Development
Hook, David	Executive Director	St. John Ambulance
Jardine, Marilee	Council Chairperson	The Alberta Petro-Chemical Safety Council (Northern)
Kohle, Elizabeth*	Project Team Leader, Population Health Strategies Branch	Alberta Health and Wellness
Kusyanto, Barbara	Chief Administrative Officer	Lifesaving Society
LaForge, Chris	Provincial Suicide Prevention Coordinator	Alberta Mental Health Board
Leggat, Bill	Injury Control Facilitator	Mistahia Health Region
Lissel, Heather	Projects Coordinator	Canadian Paraplegic Association (Alberta)
MacDonald, Neil*	Director, Population Health Strategies Branch	Alberta Health and Wellness
Marissink, Steve	Manager, Special Constable Program, Public Security Division	Alberta Justice
Petersen, Ryan	Executive Director	Sport Medicine Council of Canada
Petruk, Jackie	Director	Kidsafe Connection, Stollery Children's Hospital
Ramsay, Richard*	Chair, ACICR Advisory Body	Faculty of Social Work, University of Calgary
Rees, Jennifer	Director ADL/CRP	Capital Health Authority
Shanks, Diane	Program Director, Emergency/Critical Care	Chinook Health Region
Staniland, Nancy	Injury Control Leader, Chair Calgary Injury Prevention Coalition	Calgary Health Region
Stewart, Donna	Trauma Coordinator	Capital Health Authority
Sunley, Liza*	Education and Communications Manager	Alberta Centre for Injury Control & Research
Whiting, Patricia	Chair, Occupational Health and Safety Council	Alberta Human Resources and Employment
Wijayasinghe, Mahendra	Assistant Fire Commissioner	Municipal Affairs
Yacoub, Dr. Wadieh	Medical Officer of Health, Director, Health Protection	Health Canada
Blair, Carol*	Senior Manager	BearingPoint (formerly KPMG Consulting)

*Members of AICS Coordinating Committee

APPENDIX B

Injuries know no boundaries. Data from other jurisdictions indicate that the injury problem is widespread. Injuries are considered a major public health epidemic nationally and internationally.

United Kingdom

The United Kingdom, in their report *Preventing Accidental Injury -Priorities for Action*,¹² state that injury is the leading cause of death among children aged 0-14 years. Falls (62%), road traffic accidents (12%) fire (3%) and suffocation (3%) cause the largest number of fatal injuries in older people. Of the accidental deaths that occurred in the home in 1999, half were working adults aged 15-64 years. Further the burden of accidental death is heaviest among the disadvantaged with residential fire deaths (15 times greater) and child pedestrian deaths (five times greater) being significantly higher. The estimated cost of injury deaths and morbidity, including poisoning and intentional injury, to the National Health Service was 2.2 billion pounds in 2000-01. Consequently the Task Force recommended some immediate priorities for action: priority populations being children and young people and older people; and priority injury areas being falls at or near home, road accidents, dwelling fires and play and recreation. Specific attention was also recommended to those persons within the above priorities who are disadvantaged. Longer-term priorities included young car drivers and passengers, sports injuries, injuries at work and home and leisure injuries. The recommendations included a coordinated approach across government and the National Health System, with regional coordination of delivery of the strategies recommended for accidental injury prevention.

Australia

In Australia, a similar situation is also reported. The Department of Health and Aged Care in the Commonwealth of Australia in a document entitled *National Injury Prevention Plan, Priorities for 2001-2003 and the Implementation Plan*,¹³ state that injuries remain a leading cause of death, illness and disability in Australia, despite dramatic advances in road safety over the past two decades and despite improvements in occupational and clinical care. Indigenous Australians, young men, and people who live in rural and remote areas are at particularly high risk of injury. Injuries are the leading cause of premature, preventable death and account for 47% of all deaths under age 45 years. The cost to the nation is estimated to be over 23 billion dollars per year. A National Injury Prevention Advisory Council (NIPAC) was established and identified four priority areas for immediate action: falls in older people, falls in children, drowning and near drowning and poisoning in children. While road crashes and other transport accidents as well as suicide and self-inflicted injuries are major causes of injury, they were ruled out as immediate priorities due their assessment criteria for establishing priorities. In the latter injury areas other national organizations

with mandates in these areas are taking leadership to address these injury concerns.

United States

Injuries are also a major concern in the United States. As reported in the *State Injury Indicators Report*¹⁴, injury death is the leading cause of years of potential life lost before age 75, largely because people aged one to 34 make up such a large portion of injuries. In 1995, of the mortality injuries, 61% were from unintentional injuries, 21% from suicides and 15% from homicides.

The United States has undertaken a number of initiatives to address injuries. Perhaps the most prominent piece of work involves their *Healthy People 2010* initiative.¹⁵ Healthy People 2010 presents a comprehensive, nationwide health promotion and disease prevention agenda. The initiative is committed to promoting health and preventing illness, disability, and premature death. The major public health concerns have been identified as Leading Health Indicators. One of those indicators is injury and violence. One section of Healthy People 2010 is dedicated to Injury and Violence Prevention. That section outlines the goal, issues, trends, disparities and opportunities as well as specific objectives. The specific objectives are categorized into: injury prevention; unintentional injury prevention; and violence and abuse prevention. The baseline information on current status and target are provided for each objective.

Other major initiatives have also been undertaken. These include the *National Strategy for Suicide Prevention: Goals and Objectives for Action*¹⁶, *National Strategies for Advancing Bicycle Safety*¹⁷ and *National Strategies for Advancing Child Pedestrian Safety*¹⁸.

Canada

Canada also faces major injury control challenges. In 1991, a national symposium was held to draft injury control objectives for Canada. This symposium resulted in the document *A Safer Canada Year 2000 Injury Control Objectives for Canada*.¹⁹ Injuries were stated as the leading killer of preschool children, school age children and young adults. At that time for Canadians aged one to 24 years, unintentional and intentional injuries accounted for 67% of all deaths. These deaths were regarded as the tip of the iceberg. For every fatal childhood injury another 45 injuries required hospital treatment and another 1300 an emergency room visit. The impact of those injuries was even greater in affecting family members, employers, health care systems and the community. In 1986, injuries were estimated to cost Canada \$11 billion. Four major recommendations and several goals are described. The recommendations called for a national injury prevention strategy, identified broad injury control goals, recommended consideration of specific working group objectives and the establishment of a national injury surveillance system. The broad injury control goals were:

- Reduce death and disability across Canada.
- Strengthen public policy regarding injury prevention.
- Improve awareness and education programs in injury prevention.
- Create safe environments.

- Decrease the incidence of injuries related to alcohol and other substance use/abuse.
- Improve systems of trauma care and rehabilitation.

Alberta's Injuries

In Alberta, data are collected and maintained by a variety of stakeholders. While this poses a number of challenges as addressed earlier, a sample of the data is presented here to illustrate the nature of Alberta's injury challenge.

Data on injuries in Alberta are presented from the following sources:

- Alberta Health and Wellness Injury Databases. The Health Surveillance Branch, Alberta Health and Wellness provides data on rates of mortality, morbidity and emergency room visits by injury type, year, age group, gender and health authority region. The data situate injuries among other major diseases in Alberta. Data are also provided on mortality due to other causes for comparison purposes. While the most recent data are for 1999, it is unlikely that there has been a marked change since then. The Health Surveillance Branch, Alberta Health and Wellness provided the graphs and tables that follow.²⁰
- Alberta Centre for Injury Control and Research. Injury data were analyzed in the following areas:
 - Cost of injury.
 - Role of alcohol in injury.
 - Aboriginal/First Nations injuries.
 - Farming.
 - Occupational.
 - Drowning.
 - Fire.
 - Traffic.
 - Other.

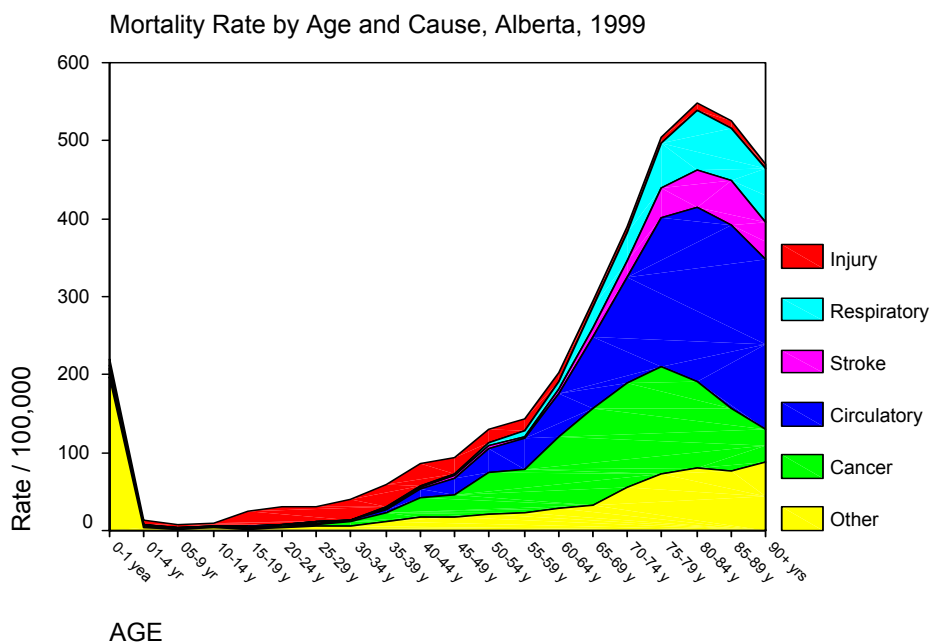
The following points should be noted when using the data:

- Presented rates are age- and sex-standardized rates per 100,000 population using the 1996 Canadian Census population as the standard population.
- Data contained in each category—deaths, inpatient hospitalizations and emergency room visits—should not be added together. Each is recorded as an encounter with the health care system, i.e., one individual might be recorded as an emergency room visit, a hospitalization and subsequently a death from a single injury episode.
- There are no standard categories for grouping injury codes so care must be taken in comparing statistics across jurisdictions.

Injuries as a major cause of mortality

Injuries are a major cause of mortality, especially among young people aged one to 44 years. In 1999, 1,334 Albertans died from injuries; an injury death rate of 47.1 per 100,000 population. On average, *four Albertans die everyday from an injury*. Figure B-1 presents the age and cause specific mortality rates for injury and other major causes of death among Albertans.

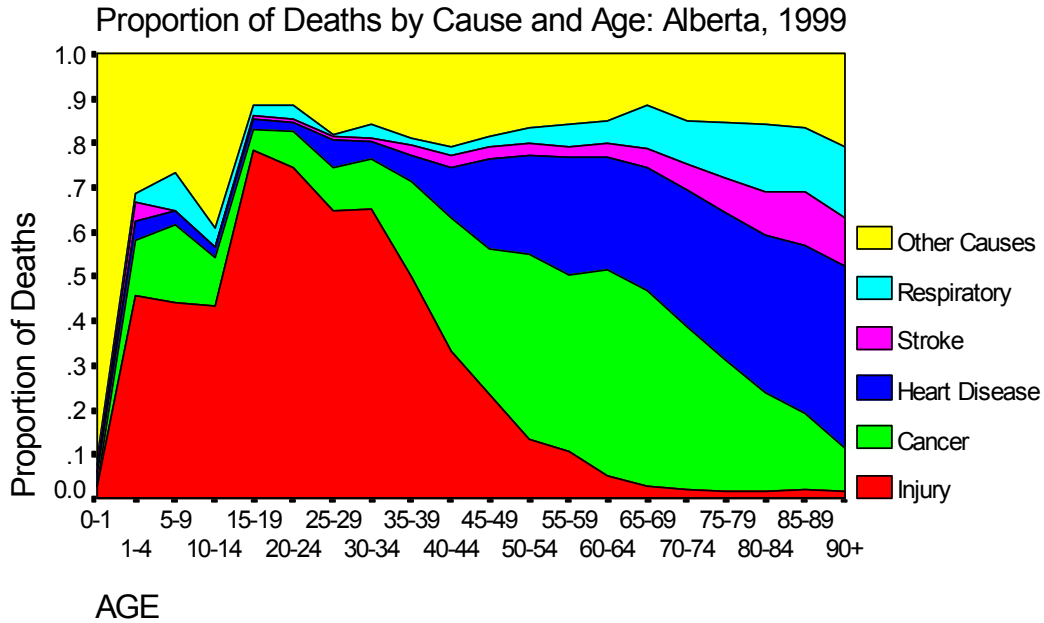
Figure B-1
Mortality rates by age and cause, Alberta, 1999



Source: Health Surveillance, Alberta Health and Wellness

Injuries account for a significant proportion of deaths among Albertans. They are the leading cause of death among those aged one to 44 years, and rank as the fourth leading cause of death among the total population, after cancer, heart disease, and stroke. Figure B-2 presents the proportion of deaths attributed to injury at each age as compared to other diseases.

Figure B-2
Proportion of deaths by cause and age: Alberta, 1999



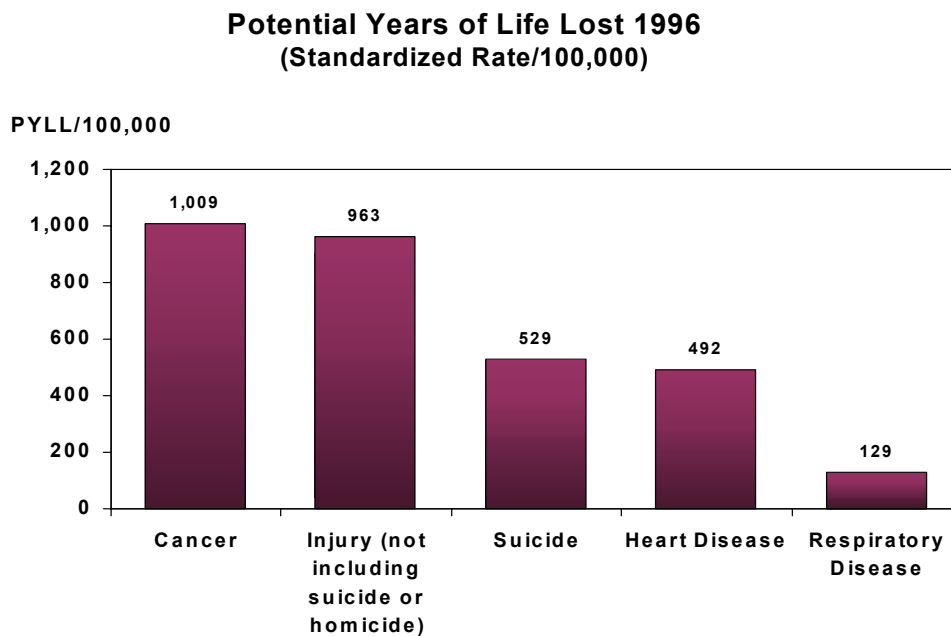
Source: Health Surveillance, Alberta Health and Wellness

Injuries are a leading cause of early death

Potential years of life lost (PYLL) is one measure of the burden of diseases and other causes of death. PYLL is calculated by subtracting the age at death from 75 of those who died before age 75; and summing across all individuals who died prematurely from a particular cause. It is usually expressed as a rate per 100,000 persons.

Figure B-3 shows that injuries were the second leading cause of years of life lost in 1996, even when suicide and homicide are tabulated separately. Today, intentional and unintentional injuries considered together are the leading cause of potential years of life lost.

Figure B-3
Potential years of life lost (early death), Alberta, 1996



Source: Health Surveillance, Alberta Health and Wellness

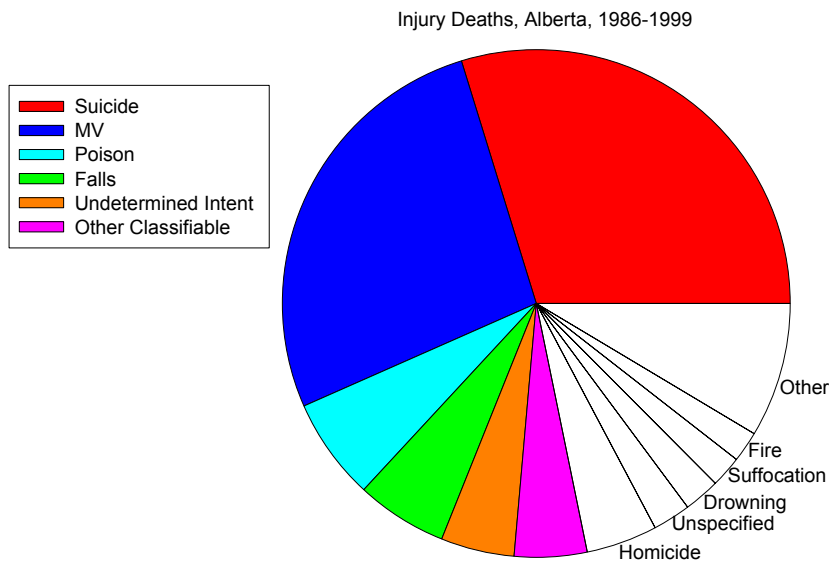
Injury deaths

Figure B-4 presents injury-related deaths. The causes of injury-related deaths were combined over a 13-year period. The injury resulting in the highest number of deaths was suicide with 15.2 suicide deaths per 100,000 population in 1999. The other major causes of injury deaths and their rates per 100,000 population in 1999 were:

- Motor vehicle collisions with a rate of 10.7.
- Poisonings with a rate of 4.6.
- Falls with a rate of 3.1.

Undetermined intent and other classifiable and other deaths made up the remainder of injury deaths. Fire, suffocation, drowning, unspecified and homicides were included in the other category.

Figure B-4
Injury deaths, Alberta, 1986-1999



Source: Health Surveillance, Alberta Health and Wellness

Rank order of injury deaths

Figure B-5 shows the rank order of injury causes of death by age in 1998 and 1999. Motor vehicle collisions are the major cause of injury death for children and young people aged one to 29 years and for those aged 70 to 79. Motor vehicle collisions are the second major cause of injury death for those aged 30 to 70 years.

Suicide is the major cause of injury death for those aged 30 to 69 years and those aged 80 and older. Suicide is the second major cause of injury death for those aged 10 to 29 and those aged 70 to 79. Falls is the second major cause of injury deaths for those aged 80 years and older.

The data indicate that both the younger and older populations are vulnerable to motor vehicle and suicide injury deaths.

Figure B-5
Rank order of injury causes of death by age, Alberta, 1998 & 1999

0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Homicide	MV	MV	MV	MV	MV	MV	Suicide	Suicide	Suicide
Suffocation	Fire	Drowning	Suicide	Suicide	Suicide	Suicide	MV	MV	MV
MV	Homicide	Fire	Homicide	Homicide	Drowning	Poison	Poison	Poison	Poison
Fall	Drowning	Other Trans	Drowning	Poison	Homicide	Homicide	Homicide	Undeter. Intent	Undeter. Intent
Drowning	Pedestrian	Homicide	Fire	Pedestrian	Poison	Undeter. Intent	Undeter. Intent	Homicide	Homicide

45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
Suicide	Suicide	Suicide	Suicide	Suicide	MV	MV	Other	Other	Other
MV	MV	MV	MV	MV	Suicide	Other	Fall	Fall	Fall
Poison	Poison	Poison	Poison	Poison	Fall	Fall	MV	MV	Unspecified
Undeter. Intent	Fall	Fall	Fall	Fall	Unspecified	Suicide	Suicide	Unspecified	Suffocation
Fall	Undeter. Intent	Unspecified	Homocide	Drowning	Suffocation	Unspecified	Unspecified	Adverse Effects of Medical Treatment	MV

Source: Health Surveillance, Alberta Health and Wellness

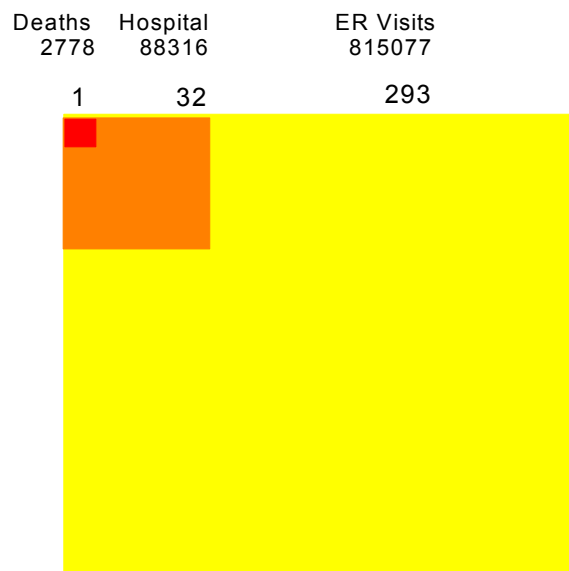
Impact of injuries on the health system

The following data describe the specific injury challenges in Alberta and the impact of injury on the health system as one indicator of the burden of injuries. While the rates show a downward trend, costs are still too high considering that most injuries and their consequences are preventable.

To fully understand the impact of injuries, it is helpful to visualize the proportion of injury deaths to injury hospitalizations to injury emergency room visits. Figure B-6 illustrates the relationship and shows the progressive impact of mortality and morbidity injuries.

Figure B-6
Proportion of injury deaths to injury hospitalizations to injury emergency room visits, Alberta, 1998-1999

Proportions of Injury Deaths to Injury Hospitalisations to Injury Emergency Room Visits, Alberta, 1998-1999



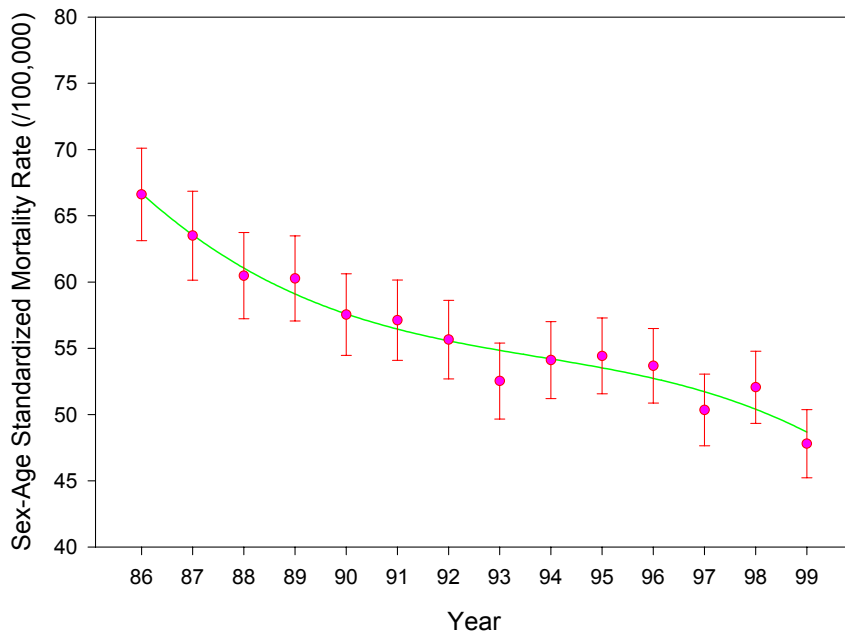
Source: Health Surveillance, Alberta Health and Wellness

For every injury that resulted in death, another 32 required hospitalization and another 293 required a visit to the emergency department. This does not include injuries treated outside hospital settings (e.g., physician offices, occupational health sites or are self managed).

Trends in injury mortality, hospital morbidity and emergency room visits

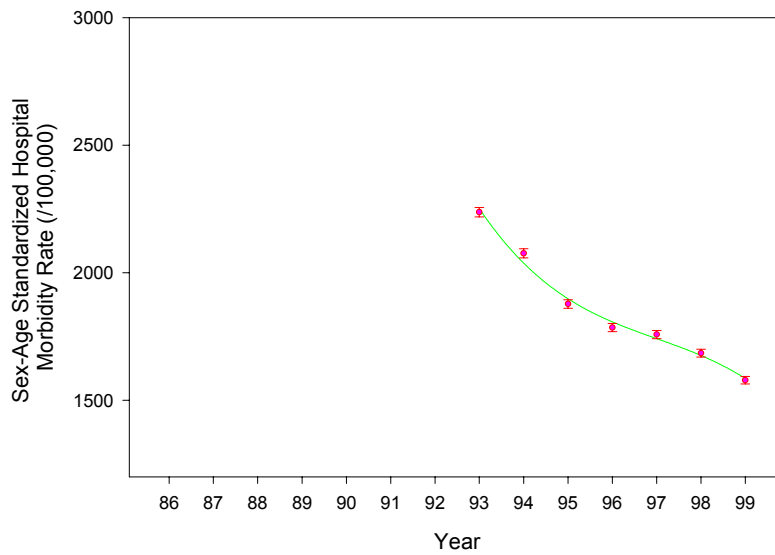
Injury mortality rates in Alberta from 1986 through 1999 are presented in Figure B-7. During this time period injury death rates have shown an overall decline.

Figure B-7
Injury mortality rates, Alberta, 1986-1999



Source: Health Surveillance, Alberta Health and Wellness

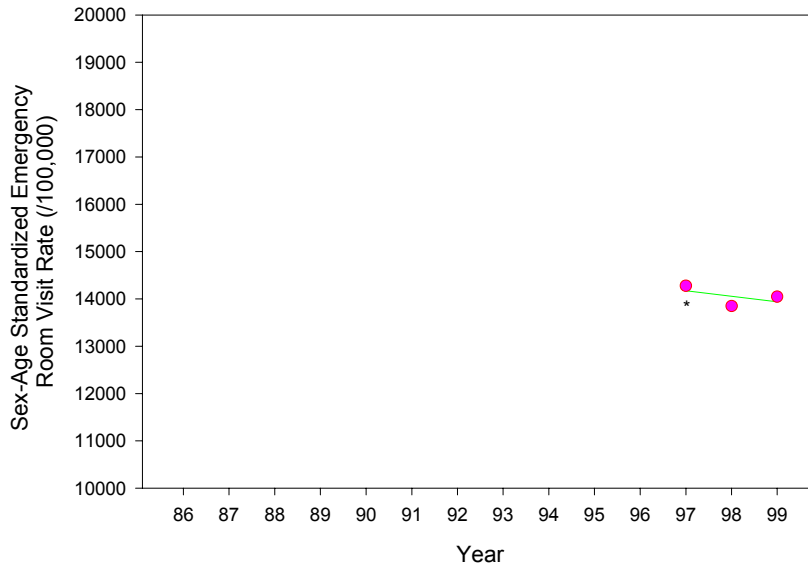
Figure B-8
Injury hospital morbidity rates,
Alberta, 1993-1999



Source: Health Surveillance, Alberta Health and Wellness

Injury hospital morbidity rates have shown a decline from 1993 to 1999.

Figure B-9
Injury emergency room visit rates,
Alberta, 1997-1999



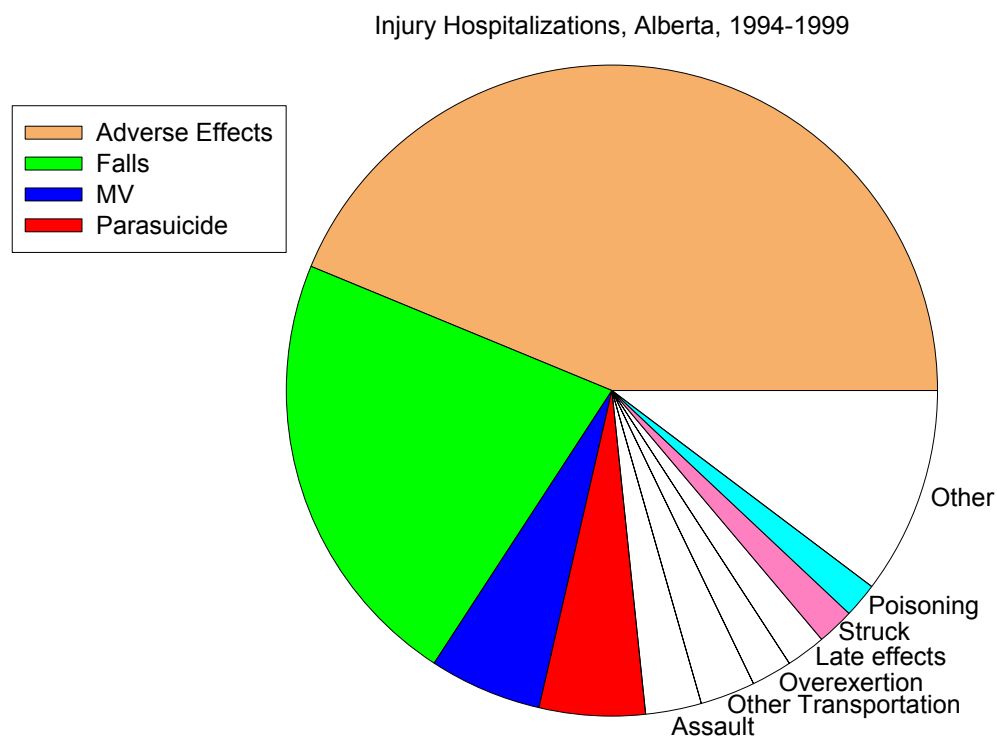
* Yearly Rate estimated from 9 months of data

Source: Health Surveillance, Alberta Health and Wellness

Data on injury emergency room visits were available in 1997; hence, too little data are currently available to establish a trend.

Injury hospitalizations and emergency room visits by cause and age

Figure B-10
Injury hospitalizations, Alberta, 1994-1999



Source: Health Surveillance, Alberta Health and Wellness

The most frequent causes of injury hospitalizations are combined over a five-year period. The most frequent cause of injury hospitalization was adverse effects, which also included adverse events in a hospital setting such as medication adverse reactions. Other major causes of injury hospitalization and their rates per 100,000 in 1999 were:

- Falls with a rate of 366.8.
- Motor vehicle collisions with a rate of 78.4.
- Parasuicide (suicide attempts) with a rate of 76.7.

Other causes included assault, other transportation-related injuries, overexertion/strenuous movements, late effects of injuries, struck by objects/person, and poisonings.

Rank order of injury causes of hospitalization

Figure B-11 shows the rank order of injury causes of hospitalization by age as combined for 1998 and 1999. Adverse effects was the major cause of injury hospitalization for most age groups, with the exception of those aged 5 to 9 and those aged 85 and over. In the latter two age categories, falls were the major cause of injury hospitalization.

Falls was the second major cause of injury hospitalization for most age groups, in particular those aged one to 4, 10 to 14 and 25 to 85.

Motor vehicle collisions were the second major cause of injury hospitalizations for aged 15 to 24. Motor vehicle injuries were also the third major cause of injury hospitalization for those aged 25 to 29 and those aged 50 to 79.

Parasuicide injury hospitalizations were most prominent for those aged 15 to 24 and 30 to 49 years.

Poisonings as a cause of injury hospitalization was also prominent for those aged one to 4 and those aged 70 and over.

Figure B-11

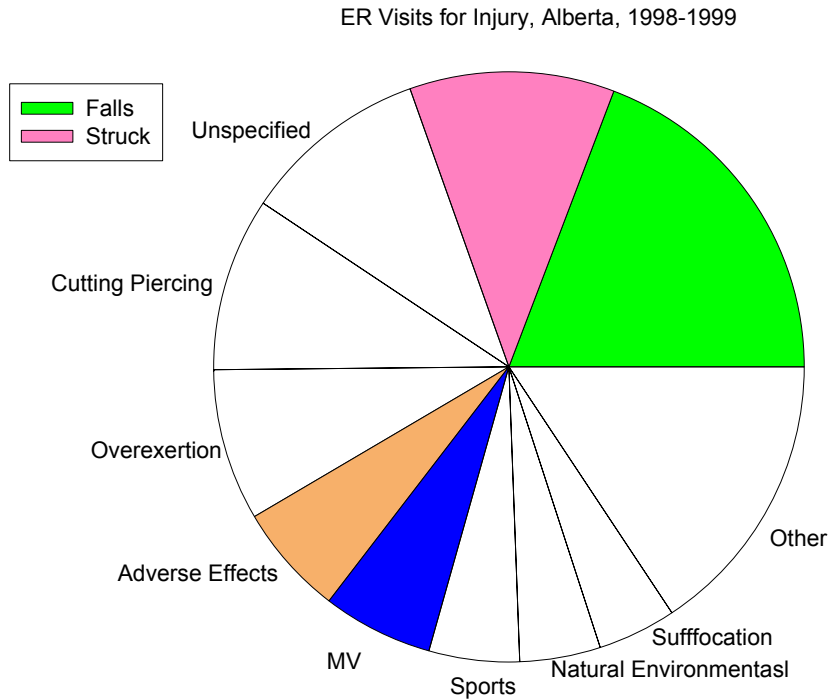
Rank order of injury causes of hospitalization by age, Alberta, 1998 & 1999

0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Adverse Effects	Adverse Effects	Fall	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects
Fall	Fall	Adverse Effects	Fall	MV	MV	Fall	Fall	Fall	Fall
Suffocated	Poison	MV	Other Transp.	Suicide	Suicide	MV	Suicide	Suicide	Suicide
Poison	Suffocated	Bike	Sports	Fall	Fall	Suicide	MV	MV	MV
Assault	Natural Env.	Other Transp.	Suicide	Assault	Assault	Assault	Assault	Assault	Assault

45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Fall	Fall
Fall	Fall	Fall	Fall	Fall	Fall	Fall	Fall	Adverse Effects	Adverse Effects
Suicide	MV	MV	MV	MV	MV	MV	Unspecified	Unspecified	Unspecified
MV	Suicide	Late Effects	Late Effects	Unspecified	Unspecified	Unspecified	MV	Other	Other
Other Transp.	Late Effects	Suicide	Unspecified	Late Effects	Poison	Poison	Poison	Poison	Poison

Source: Health Surveillance, Alberta Health and Wellness

Figure B-12
Emergency room visits for injury, Alberta, 1998-1999



Source: Health Surveillance, Alberta Health and Wellness

Emergency room visits for injury are combined for 1998 and 1999. Falls were the major reason for emergency room visits during this time, followed by being struck with an object or by a person. Adverse effects and motor vehicle injuries were the other two major causes for injury emergency room visits.

Rank order of causes of emergency room visits

Figure B-13 shows the rank order of causes of emergency room visits by age as combined for 1998 and 1999. Falls were the major cause of injury emergency room visits for those aged one to 19 years and 30 years and over. Falls ranked as the second major cause of injury emergency room visits for those aged 25 to 29.

Being struck by an object or person was the major cause of injury emergency room visits for those aged 20 to 29 years. This injury cause was also prominent for those aged one to 19, ranking as second and third causes.

Adverse effects ranked second for injury emergency room visits for those aged up to one year and those aged 55 to 89 years.

Injury emergency room visits due to sports injuries ranked second among those aged 10 to 19 years.

Figure B-13

Rank order of injury causes of emergency room visits by age, Alberta, 1998 & 1999

0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Fall	Fall	Fall	Fall	Fall	Stuck	Struck	Fall	Fall	Fall
Adverse Effects	Struck	Struck	Sports	Sports	Cutting/Piercing	Fall	Cutting/Piercing	Unspecified	Unspecified
Suffocated	Unspecified	Unspecified	Struck	Struck	Fall	Cutting/Piercing	Struck	Cutting/Piercing	Cutting/Piercing
Unspecified	Natural Env.	Cutting/Piercing	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Struck	Struck
Fire	Cutting/Piercing	Natural Env.	Cutting/Piercing	Cutting/Piercing	Exertion	Exertion	Exertion	Exertion	Exertion

45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
Fall	Fall	Fall	Fall	Fall	Fall	Fall	Fall	Fall	Fall
Unspecified	Unspecified	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Adverse Effects	Unspecified
Cutting/Piercing	Adverse Effects	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Adverse Effects
Struck	Cutting/Piercing	Cutting/Piercing	Cutting/Piercing	Cutting/Piercing	Cutting/Piercing	MV	Struck	Other	Struck
Exertion	Struck	Struck	Struck	Struck	MV	Exertion	MV	Exertion	Other

Source: Health Surveillance, Alberta Health and Wellness

OTHER INJURY DATA FOR ALBERTA

Other injury data have also been analyzed by the ACICR. These data are presented next to build the knowledge base on injuries in Alberta.

Role of alcohol in injury

Information collected and maintained by Alberta's Office of the Chief Medical Examiner was analyzed by ACICR. The Office of the Chief Medical Examiner is responsible for examining all persons who died from sudden and unknown causes.

Alcohol was determined to be a major factor in injury deaths²¹:

- In 2001, in 15% of all fall related deaths, the deceased was legally impaired at the time of their injury.
- In 2001, 63.6% of all hypothermia deaths had alcohol levels exceeding the legal limit to drive in Alberta.
- Within the past five years, 59.5% of the boating fatalities in Alberta involved the use of alcohol.
- In 2001 in Alberta, 5% of drivers involved in injury crashes had consumed alcohol prior to the collision. That number increased to 21% of drivers involved in fatal collisions. In terms of licensed drivers, males aged 18-21 were more likely to be drinking before the crash.
- Between 1991 and 2000, 12.6% of motorized snow vehicle operators involved in casualty collisions had consumed alcohol prior to the collision. This figure increased to 75% for fatal collisions.

Clearly alcohol plays a major role in injuries, with excessive drinking increasing the probability that an injury will occur and very often result in death.

Injury and First Nations People

The leading cause of death among First Nations people in Alberta is injuries. Injury related deaths in Alberta are greater than the number of deaths associated with heart disease, tumors and respiratory diseases combined. Data on injuries involving First Nations people were supplied by the First Nations and Inuit Health Branch.^{22 23} The following injury data provides a portrait of the injury concerns in First Nations communities.

- In Alberta between 1983 and 1999, injuries and poisonings represented the number one cause of death among the First Nations population accounting for 1,975 deaths or 39% of all deaths for all causes among First Nations people.
- Injury and poisoning deaths are two times higher than the number of deaths associated with diseases of the circulatory system; and almost four times higher than deaths associated with cancer.

- Four out of 10 First Nations people in Alberta died due to injury and poisoning between 1983 and 1999.
- Injury is estimated to account for over half of potential years of life lost among First Nations in Canada.
- Motor vehicle collisions, followed by suicide are the leading causes of injury related death among First Nations people.
- The suicide rates for First Nations people in Canada are eight times that of the non-Aboriginal population.
- In 2001, 86% of all hypothermia deaths with alcohol levels exceeding the legal limit to drive in Alberta were Aboriginal persons.
- During the 10-year period of 1989-1998 First Nation Reserves in Alberta accounted for 1% of all fires but 12.3% of all fire deaths.

The cost of injuries in First Nations communities is estimated at \$14 billion per year (1993). This cost includes direct and indirect costs. The impact of the injuries ranges from premature death, loss of family members, loss of family income and loss of productivity and member contribution.

The First Nations and Inuit Health Branch of Health Canada, Alberta Region, undertook a consultation process with First Nations communities to better understand the nature of the injury problems and challenges in First Nations communities. The consultation process resulted in key principles, themes and recommendations for addressing the challenges. These are described in the report *First Nations Communities in Alberta. A Dialogue for Action Planning: Addressing the Problem of Injuries*.²⁴

Farming injuries

Alberta has a large agricultural population and economy. Like other areas, those involved in farming have also incurred injuries. Data was analyzed by the ACICR, using the Canadian Agricultural Injury Surveillance Program.²⁵ Some facts about injuries associated with farming follow.

- In Alberta between 1990 and 2000, 163 fatalities were associated with working on a farm.
- The Alberta rate/100,000 farm population for fatalities associated with working on a farm was 7.9, the lowest in Canada.
- Tractor-related fatalities accounted for 38% of all farm fatalities.
- The highest at-risk group for fatalities associated with working on a farm are children and seniors.
- The leading cause of a fatal farm injury is being pinned or struck by the machinery. However, among children aged less than 15 the leading cause is being run over by machinery.

- Between 1990 and 1996, 4,678 hospitalizations occurred for farm injuries in Alberta.
- The overall ratio of male:female farm hospitalizations in Alberta was 10:1 for machinery and 3:1 for non-machinery.
- 20% of the hospitalized farm injuries were machinery injuries, the remaining 80% were not machine related injuries such as animals, overexertion, falls, etc.

Occupational injuries

The workplace is another environment where injuries can occur. Working people spend a large part of their day in workplaces doing jobs where the potential for a wide range of injuries is possible. ACICR examined data from Alberta Labour, Occupational Injuries and Disease in Alberta and provided the following information.²⁶

- In Alberta in 1999, 35,440 workplace injuries or disease occurred that were serious enough to miss at least one day of work.
- Industry sectors with higher than average lost time claim rates were Manufacturing and Processing, Construction and Construction Trade Services, Communication and Utilities, and Agriculture and Forestry.
- Workers who had worked for their current employer less than six months were more likely to have lost time claims due to work-related injury or disease.
- Sprains, strains and tears were the most common type of lost time injury.
- Median workdays lost due to work-related injury and disease was 9 days.
- 114 occupational fatalities were accepted by the WCB in 1999: 33% were occupational disease; 29% motor vehicle incidents; 32% workplace incidents.

Drowning

Data on drownings collected and maintained by the Lifesaving Society in Alberta were also examined.²⁷ The facts on drowning in Alberta in 2000 follow.

- 31 drownings occurred in Alberta in 2000.
- The high-risk age category was among young adults aged 18-24.
- Boaters represented the largest number of drowning victims with recreational swimmers representing the second largest number of drowning victims.
- The majority of drownings occurred in natural bodies of water.
- 43.5% of all drownings were alcohol-related from 1996-2000.
- From 1991 to 2000, 87 boating deaths occurred. Of these deaths, less than 81% were wearing personal flotation devices.

Fire injuries

Data on fires in Alberta in 2000 from the Alberta Labour Fire Commissioner's Office were examined. Injury facts surrounding fires in Alberta during that period follow.²⁸

- In 2000 in Alberta, 6,455 fires occurred resulting in 27 deaths, 341 injuries and \$158,918,711 in property loss.
- Residential fires accounted for 26% of all fires and 70% of all fire deaths in and 54% of all fire injuries.
- 33% of the fires were deliberately set.
- Smoke alarms were not installed in 42% of the homes that experienced fires.
- Between 1985 and 1999 the rates for fire death in Alberta have been lower than the national average only four of the past 14 years.

Traffic injuries

Data on traffic injuries were also analyzed from the Alberta Traffic Collision Statistics collected and maintained by Alberta Transportation.²⁹ In 2001, the following information was collected about traffic injuries in Alberta.

- 107,391 traffic collisions occurred resulting in 404 people killed in motor vehicle collisions on Alberta roadways.
- Four out of five of all collisions occurred in urban areas. However, fatal collisions were more frequent in rural areas.
- Occupants using restraints at the time of collision were injured less often (14.2%) than occupants not using restraints (37.8%).
- 71% of collisions occurred when the road surface was dry.
- Among drivers in fatal collisions; 44.5 % ran off the road; 14.6% were left of centre line; and 12.8% had stop sign violations.
- Male drivers between the age of 16 and 19 had the highest involvement rate of all drivers involved in casualty collisions.
- Of the eight other provinces for which information was available, only one had a higher fatality rate per 10,000 population than Alberta.

Major trauma

Another source of data on injuries in Alberta is that maintained by the Alberta Trauma Registry.³⁰ Examination of this data revealed the following information on injuries.

- 5,936 cases of major trauma (an injury severity score ≥ 12) were reported in adults between 1995 and 2000.
- The leading cause of trauma was motor vehicle collisions, followed by falls and interpersonal violence.

- Among persons injured in motor vehicle collisions, 40% of drivers and 51% of passengers were not wearing a restraint at the time of their injury. Of the drivers tested, 45% had a blood alcohol level exceeding the legal limit and 17% had a level three or more times the legal limit.
- Only 25% of adults sustaining major trauma while bicycling wore a helmet.
- The average length of stay in a trauma centre was 15.4 days.
- The leading causes of trauma in the home were falls (63%), assault/homicide (15%) and suicide/self-afflicted (10%).
- 81% of the patients who were transported directly from the scene to a trauma centre used ground ambulance, 9% used air ambulance and the remaining 10% used either private vehicles or walked in.
- Among those patients who were transported from a referring hospital to a trauma centre, 51% used ground ambulance and 48% used air ambulance.

Homicides

The final set of data for this section addresses homicides. These data were collected from Statistics Canada.³¹ The following information was provided on homicides in Alberta in 2001.

- 70 homicides occurred, a rate of 2.28 per 100,000 population. This represented an increase from 2000 when the rate was 1.96 per 100,000 population.
- Alberta ranked third among Canadian provinces. Among cities with a population of 500,000 or greater, Edmonton's homicide rate per 100,000 population ranked second nationally.
- Nationally, two-thirds of the people accused of homicide had a criminal record. In addition, 51% of the homicide victims aged greater than 12 had criminal records.
- Only one in nine homicides were gang-related slayings.
- Firearms were involved in 31% of all homicides in 2001.

APPENDIX C

¹ The technical definition for injury is “any specific and identifiable bodily impairment or damage resulting from acute exposure to thermal energy (e.g., burns or scalds); mechanical or kinetic energy (e.g., collisions, cuts and falls); electrical energy (e.g., electrocution); chemical energy (e.g., poisonings or chemical explosions); or the absence of essential energy such as heat or oxygen (e.g., hypothermia or suffocation)”. Taken from The National Committee for Injury Prevention and Control. (1989). Injury Prevention: Meeting the Challenge.

² Alberta Centre for Injury Control and Research. (2001/2002). Annual Report Summary. Edmonton: Author.

³ Alberta Centre for Injury Control and Research. (2002). Economic Burden of Unintentional Injury in Alberta. Edmonton: Author.

⁴ The technical definition for injury is “any specific and identifiable bodily impairment or damage resulting from acute exposure to thermal energy (e.g., burns or scalds); mechanical or kinetic energy (e.g., collisions, cuts and falls); electrical energy (e.g., electrocution); chemical energy (e.g., poisonings or chemical explosions); or the absence of essential energy such as heat or oxygen (e.g., hypothermia or suffocation)”. Taken from The National Committee for Injury Prevention and Control. (1989). Injury Prevention: Meeting the Challenge.

⁵ Alberta Centre for Injury Control and Research. (2001/2002). Annual Report Summary. Edmonton: Author.

⁶ Francescutti, Louis. (1997). (As adapted from the National Committee for Injury prevention and Control: Injury Prevention: Meeting the Challenge. New York: Oxford Press. 1989).

⁷ United Nations Children’s Fund. (February 2001). A League Table of Child Deaths by Injury in Rich Nations. Florence, Italy: Innocenti Research Centre.

⁸ Ibid.

⁹ Alberta Health and Wellness. (1999). Alberta Health and Wellness Injury Databases. Compiled by the Alberta Centre for Injury Control and Research.

¹⁰ Borden K. (2002). What Else do We Know? Facts about Injury in Alberta. Presented at the Alberta Injury Control Summit, Edmonton, November 7, 2002.

¹¹ Alberta Centre for Injury Control and Research. (2002). The Economic Burden of Unintentional Injury in Alberta. Edmonton: Author.

¹² Department of Health. (2002). Preventing Accidental Injury – Priorities for Action. Report to the Chief Medical Officer. London: United Kingdom The Stationary Office.

¹³ Strategic injury Prevention Partnership. (2001). National Injury Prevention Plan. Priorities for 2001-2003. Canberra, Australia: Department of Health and Aged Care.

¹⁴ Davies M, Connolly A, Horan J. (2001). State Injury Indicators Report. Atlanta (GA): Centres for Disease Control and Prevention, National Centre for Injury Prevention and Control.

¹⁵ Centers for Disease Control and Prevention. Healthy People 2010. Injury and Violence Prevention. http://www.health.gov/healthypeople/Document/html/uih/uih_4.htm. Accessed 2002 July 25.

¹⁶ U.S. Department of Health and Human Services. (2001). National Strategy for Suicide Prevention: Goals and Objectives to Action. Rockville, MD: Author.

¹⁷ U.S. Department of Transportation, Centers for Disease Control and Prevention, Federal Highway Administration. (2001). National Strategies for Advancing Bicycle Safety, Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration.

¹⁸ Schieber RA, Gegega ME (Editors). (2001). National Strategies for Advancing Child Pedestrian Safety. Atlanta, GA: Center for Disease Control and Prevention, National Centre for Injury Prevention and Control.

¹⁹ Saunders D.L. and Stewart L.M. (1991). A Safer Canada—Year 2000 Injury Control Objectives for Canada. Edmonton: Injury Awareness and Prevention Centre, University of Alberta Hospitals.

²⁰ Schopflocher D. (2002). Injuries in Alberta: What do we learn from Alberta Health and Wellness Administrative Data. Presented at the Alberta Injury Control Summit, Edmonton, November 7, 2002.

²¹ Borden K. (2002). What Else do We Know? Facts about Injury in Alberta. Presented at the Alberta Injury Control Summit, Edmonton, November 7, 2002.

²² Ibid.

²³ Auer A, Perrin M, Yacoub W. (2001). First Nations Communities in Alberta. A Dialogue for Action Planning: Addressing the Problem of Injuries. Prepared for the Regional Injury Control Committee (RICC) of Health Canada-First Nations and Inuit health Branch, Alberta Region. Edmonton: Health Canada-First Nations and Inuit health Branch, Alberta Region.

²⁴ Ibid.

²⁵ Borden K. (2002). What Else do We Know? Facts about Injury in Alberta. Presented at the Alberta Injury Control Summit, Edmonton, November 7, 2002.

²⁶ Alberta Municipal Affairs. (2000). Fire Commissioner's Statistical Report-2000. Edmonton: Author.

²⁷ Borden K. (2002). What Else do We Know? Facts about Injury in Alberta. Presented at the Alberta Injury Control Summit, Edmonton, November 7, 2002. These data were updated for 2000 by the Alberta Lifesaving Society.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Ibid. Data was used from Statistics Canada. The Daily. September 25, 2002.