



CORE

Public Health Functions for BC

**Model Core Program Paper:
Prevention of
Unintentional Injury**

BC Health Authorities

**Population Health and Wellness
BC Ministry of Health**

This Model Core Program Paper was prepared by a working group consisting of representatives of the BC Ministry of Health and BC's health authorities.

This paper is based upon a review of evidence and best practice, and as such may include practices that are not currently implemented throughout the public health system in BC. This is to be expected, as the purpose of the Core Public Health Functions process—consistent with the quality improvement approach widely adopted in private and public sector organizations across Canada—is to put in place a performance improvement process to move the public health system in BC towards evidence-based best practice. Where warranted, health authorities will develop public performance improvement plans with feasible performance targets and will develop and implement performance improvement strategies that move them towards best practice in the program component areas identified in this Model Program Paper.

This Model Program Paper should be read in conjunction with the accompanying review of evidence and best practice.

Model Core Program Paper approved by:

Core Functions Steering Committee (November 2007)

Population Health and Wellness, BC Ministry of Health (November 2007)

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EXECUTIVE SUMMARY

This paper identifies the core elements that are provided by British Columbia health authorities for the prevention of unintentional injuries. It is intended, as part of the BC Core Functions in Public Health, to reflect evidence-based practice and support continuous performance improvement.

A Working Group of representatives from the Ministry of Health, Provincial Health Services Authority (PHSA) (represented by the BC Injury Research and Prevention Unit [BCIRPU]) and the health authorities worked together in the development of this paper. They agreed that the overall goal of the unintentional injury prevention program is prevention or reduction of unintentional injuries in BC. Specific objectives are to:

- Reduce the occurrence of injuries.
- Reduce the severity and adverse impact of injuries.
- Prevent or reduce injury-related disability and death.

A program framework describes a conceptual approach to injury prevention, based on three levels: a focus on risk and protective factors; intervention targets developed through an epidemiologic model; and prevention strategies including the 3 E's (education, engineering and enforcement).

The program for preventing unintentional injury is based on “better” or “promising” practices identified in the literature. These include:

- Conducting strategic planning and priority setting, which incorporates strategies ranging from health protection to health promotion.
- Advocating for public policies and local by-laws that will enhance the safety of the population, including high-risk groups and individuals.
- Community development and community capacity building to encourage local participation and action by multiple groups and organizations to assist them in responding effectively to local priorities.
- Collaborating and integrating injury prevention across health authority programs.
- Collaborating with stakeholders to build a coordinated regional approach to injury prevention.
- Knowledge transfer, public education and awareness to change behaviours that will enhance population safety.
- Enforcement activities to ensure compliance with relevant regulations.
- Data collection, surveillance, program evaluation and performance improvement strategies.

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With respect to data collection and surveillance activities, the Working Group stressed the need for strong provincial leadership and a coordinated process involving all health authorities, including the PHSA, to:

- Clarify the respective roles in data collection, data management, data analysis and interpretation.
- Define data sharing processes and protocols.
- Develop consistent data sets at the local, regional and provincial levels to enable comparisons and the development of benchmarks.
- Improve access to injury prevention data sources.
- Enhance the timeliness of available data.

The Working Group also recognized that there is a significant gap with respect to best practices that will prevent and reduce the high rate of unintentional injuries among Aboriginal people in BC. It is recommended that a resource group be established, which may include experts in Aboriginal health services from the Ministry of Health, other provincial agencies, the health authorities, PHSA (BCIRPU), and others as appropriate, to commence discussion of strategies for Aboriginal injury prevention. This group should take into account the following documents (to be released in 2008):

- *Injury Prevention Intervention Strategies Among Aboriginal People: A Systematic Review*, by the BC Injury Research and Prevention Unit.
- The upcoming Annual Report on the health and well-being of Aboriginal people in British Columbia, by the Provincial Health Officer.

Re-establishment of the First Nations Tripartite Data Sharing Agreement is recommended by the Working Group to obtain and maintain necessary up-to-date information for effective ongoing analysis and program planning.

Indicators and benchmarks for an injury prevention program are presented for each of the program components to provide a basis for ongoing performance review and evaluation.

1.0 OVERVIEW/SETTING THE CONTEXT

As demonstrated in recent Canadian reports, public health needs to be better structured and resourced, in order to improve the health of the population. The Framework for Core Functions in Public Health is a component of that renewal in British Columbia. It defines and describes the core public health activities of a comprehensive public health system. This policy framework was accepted in 2005 by the Ministry of Health and the health authorities.

Implementation of core functions will establish a performance improvement process for public health, developed in collaboration between the Ministry of Health, the health authorities and the public health field. This process will result in greater consistency of public health services across the province, increased capacity and quality of public health services and improved health of the population. To ensure collaboration and feasibility of implementation, the oversight of the development of the performance improvement process is managed by a Provincial Steering Committee, with membership representing all health authorities and the ministry.

What are core programs? They are long-term programs representing public health services that health authorities provide in a renewed and modern public health system. Core programs are organized to improve health; they can be assessed ultimately in terms of improved health and well-being and/or reductions in disease, disability and injury. In total, 21 programs have been identified as “core programs,” of which the program to prevent unintentional injury is but one. Many of the programs are interconnected and thus require collaboration and coordination between them.

In a “model core program paper,” each program will have clear goals, measurable objectives and an evidentiary base that shows it can improve people’s health and prevent disease, disability and/or injury. Programs will be supported through the identification of best practices and national and international benchmarks (where such benchmarks exist). Each paper will be informed by an evidence paper, other key documents related to the program area and by key expert input obtained through a working group with representatives from each health authority and the Ministry of Health.

The Provincial Steering Committee has indicated that an approved model core program paper constitutes a model of good practice, while recognizing it will need to be modified to meet local context and needs. The performance measures identified are appropriate indicators of program performance that could be used in a performance improvement plan. The model core program paper is a resource to health authorities that they can use to develop their core program through a performance improvement planning process. While health authorities must deliver all core programs, how each is provided is the responsibility of the health authority, as are the performance improvement targets they set for themselves.

It is envisioned that the performance improvement process will be implemented over several years. During that time the process will contribute to and benefit from related initiatives in public health infrastructure, health information and surveillance systems, workforce competence assessment and development and research and evaluation at the regional, provincial and national levels. Over time, these improvement processes and related activities will improve the quality

and strengthen the capacity of public health programs, and this in turn will contribute to improving the health of the population.

1.1 An Introduction to This Paper

This model core program paper for prevention of unintentional injury is one element in an overall public health performance improvement strategy developed by the Ministry of Health in collaboration with provincial health authorities and experts in the field of public health. It builds on previous work from a number of sources.

In March 2005, the Ministry of Health released a document entitled *A Framework for Core Functions in Public Health*. This document was prepared in consultation with representatives of health authorities and experts in the field of public health. It identifies the core programs that must be provided by health authorities, including prevention of unintentional injury, and the public health strategies that can be used to implement these core programs. It provides an overall framework for the development of this document.

The evidence review that has informed this paper is *Evidence Review: Unintentional Injury Prevention* (2007), prepared by the BC Injury Research and Prevention Unit for the Ministry of Health. Information and summaries from several other evidence reviews have also been referenced. These include:

- *Motor Vehicle Crashes among Young Drivers: Systematic Review and Recommendations for BC* (2005), prepared by the BC Injury Research and Prevention Unit.
- *Prevention of Falls and Injuries Among the Elderly: A Special Report* (2004), prepared by the Office of the Provincial Health Officer.
- *Sports and Recreation Injury Prevention Strategies: Systematic Review and Best Practices* (2002), prepared by the BC Injury Research and Prevention Unit.
- *Injuries Among First Nations People within British Columbia* (2006), prepared by the BC Injury Research and Prevention Unit for Health Canada.

In January 2007, a Working Group on Unintentional Injury was formed of experts from the Ministry of Health, Provincial Health Services Authority (BC Injury Research and Prevention Unit), and the health authorities. The group provided guidance and direction in the development of the model core program paper during meetings in January and June 2007, as well as through regular telephone and e-mail discussions.

1.2 Introduction to the Prevention of Unintentional Injuries

Injury prevention is a relatively new field in health care. It is understood to include policies and prevention strategies that target individual, family, community and societal levels. The topics generally addressed within this context include:

- Motor vehicle crashes (MVCs).
- Occupational and industrial injuries.

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- Drowning.
- Unintentional poisoning.
- Falls.
- Bicycle and pedestrian injury.
- Choking, foreign body aspiration, and suffocation.
- Burns and scalds.
- Sports and recreational injuries.

Injury prevention in the workplace is not included in this paper as it is a well-established field governed by occupational health and safety legislation and a high level of involvement from the private sector. In addition, injuries resulting from intentional acts such as suicide, homicide or assault are not covered by the scope of this paper. While these injuries are not included directly, some of them are related to unintentional injuries and may be incorporated into coordinated programs that address a range of different needs and situations.

Unintentional injury is a significant health issue, as it is the leading cause of death and hospitalization for children, youth, and adults (to age 44 in BC) (Rajabali et al., 2005). Approximately 1,200 people in BC are injured each day and, of these, 4 will die (Rajabali et al., 2005). In BC during 1998, a total of 423,931 preventable, unintentional injuries occurred. These injuries cost the people of BC approximately \$2.1 billion, which translates into an estimated \$513 per person (SMARTRISK, 2001). Injury accounts for 12 per cent of the burden of disease and 9 per cent of the economic burden of illness in BC (Ministry of Health, 2005).

The leading causes of death from unintentional injury among BC children and youth 0 to 24 years (1987 to 2000) are:

- Motor vehicle traffic – (61 per cent of all unintentional injuries).
- Drowning/submersion (9 per cent).
- Poisoning (8 per cent).
- Falls (4 per cent).
- Fire/flames/hot substances (4 per cent) (Ministry of Health, 2007).

The leading causes of unintentional injury hospitalization among BC children and youth, 0 to 24 years (1989 to 2000) are:

- Falls (33 per cent of all unintentional injuries).
- Motor vehicle traffic (19 per cent).
- Struck by an object (12 per cent).
- Cutting/piercing (5 per cent).

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- Non-motor vehicle pedal cycle (5 per cent) (Ministry of Health, 2006).

With respect to adults, 25 years of age and over, the leading causes of unintentional injury death (1990 to 2003) in BC are:

- Falls (27 per cent of all unintentional injuries).
- Poisoning (25 per cent) (The highest rates are among adults aged 25–44 years, and the rate decreases with age).
- Motor vehicle crashes (24 per cent) (MVC mortalities were highest among seniors aged 75–85 and 85+ years) (Rajabali, Smith, Han, Turcotte, & Kinney, 2006).
- Drowning/submersion (4 per cent).
- Suffocation (3 per cent) (Ministry of Health, 2007).

The leading causes of unintentional injury hospitalization among BC adults (1990 to 2003) are:

- Falls (40 per cent of all unintentional injuries).
- Adverse effects (17 per cent).
- Motor vehicle crashes (6 per cent).
- Misadventure (3 per cent).
- Struck by an object (3 per cent) (Ministry of Health, 2007).

Alcohol and other psychoactive substance use increases the risk and severity of unintentional injuries. In 2004 in BC, alcohol was involved in 35.9 per cent of all reported fatal motor vehicle collisions (Insurance Corporation of British Columbia, 2005) and was a major contributing factor in 31.0 per cent of non-traffic unintentional injury deaths. For example, it contributed to: 41.9 per cent of deaths related to burns/fires; 40.9 per cent of deaths related to cold/hypothermia; 34.2 per cent of deaths related to drowning; 32.2 per cent of deaths related to falls; and 29.3 per cent of deaths related to poisoning. The effects of other psychoactive substances may also increase the incidence and severity of unintentional injuries as these can cause decreased long- and short-term memory loss, decreased concentration, distorted senses, impaired perceptions and slowed reaction time.

The injury burden disproportionately affects certain groups. First Nations people (Health Canada, 2001), the poor, young people, less privileged social classes, those with low socio-economic status (SES), ethnic groups, and those with low education level and an unfavourable family context have all been shown to be associated with a higher level of injury morbidity and mortality (Plasenia & Borrell, 2001). For example, children from families with low SES not only have higher injury rates, but their injuries tend to be more severe and more often fatal (Rivara & Mueller, 1987). The strength of the inverse relationship between SES and injury varies according to the injury type, age group affected, injury outcome, gender and place of injury occurrence (Cubbin & Smith, 2002).

With respect to gender, mortality due to injury is significantly higher among males than females between the ages of 5–9 and 20–24 years. The rate of injury hospitalization is significantly higher among males than females, for all ages, except for ages 80–84 (Cubbin & Smith, 2002).

With respect to age, total mortality rates increase slightly with age for adults aged 25–39 years, then decrease significantly until age 64 (1990 to 2003). After age 65, the mortality rate increases sharply with age. The rates tend to be much higher among those aged 90+ years. Injury hospitalization decreases slightly with age between ages 25–44 years. After age 45, the hospital separation rates slightly increase with age until age 65. After age 65, rates increase sharply (Cubbin & Smith, 2002).

First Nations people are at particular risk of injury as they experience higher rates of injury death and hospitalization than other residents of BC (BC Injury Research and Prevention Unit [BCIRPU], 2006). Injuries account for more than one-quarter of all deaths and more than 40 per cent of potential years of life lost (Provincial Health Officer, 2002). For example:

- Injury accounts for over 25 per cent of First Nations death in BC compared to 7.1 per cent for other residents.
- The average annual injury mortality rate for First Nations people was 14.2/10,000 population compared to 5.00/10,000 population for other residents.
- Age-specific injury hospitalization rates were higher for First Nations people for all ages compared to other residents, from age 1 to 75 years (BCIRPU, 2006).

The leading causes of injury mortality among First Nations people (1992 to 2002 are:

- Motor vehicle crashes (36 per cent for children and youth, 19.6 per cent for adults and 22.9 per cent for seniors).
- Unintentional poisonings (31.5 per cent for adults).
- Falls (37.6 per cent for seniors) (BCIRPU, 2006).

The importance of highlighting strategies and best practices that are effective in addressing the high rate of injuries among Aboriginal people was clearly recognized by the Working Group. Supporting evidence was not available at the time this paper was written; however, several BC documents anticipated for release in 2008 are expected to provide a foundation for planning an evidence-based approach to prevent and reduce unintentional injuries among Aboriginal people. These documents are: *Injury Prevention Intervention Strategies Among Aboriginal People: A Systematic Review*, by the BC Injury Research and Prevention Unit, and an annual report by the Provincial Health Officer on the health and well-being of Aboriginal people in BC. Reestablishment of the First Nations Tripartite Data Sharing Agreement is recommended by the Working Group to obtain and maintain necessary up-to-date information for effective ongoing analysis and program planning.

For the population as a whole, there is considerable evidence on the effectiveness of a wide range of interventions to prevent and reduce injuries (Ministry of Health, 2007). Studies on both risk factors and intervention strategies focus on a range of levels: micro level (individual/family level), meso (neighbourhood, town/city), and/or macro (societal). However, there are limitations

in the availability of evidence in some areas. For example, there is little information on contributing factors involving some injuries, such as children's falls. In addition, there are considerable differences in injury patterns across different regions in the province, which must be taken into account.

The World Health Organization suggests that a comprehensive injury prevention strategy should include a population health approach where "at all levels, the social, economic, political, cultural, educational and environmental conditions that support injury-preventing behaviours" (World Health Organization [WHO], 1998) should be in place for prevention to become a reality. In practical terms, injury prevention means implementing strategies to support positive choices and minimize risk at all levels of society while maintaining healthy, active and safe communities and lifestyles. "These choices are strongly influenced by the social, economic and physical environments where one lives, works, learns and plays" (WHO, 1998).

2.0 SCOPE AND AUTHORITY FOR THE PREVENTION OF UNINTENTIONAL INJURY

In order to implement the program for unintentional injury prevention, there must be clarity on the respective roles and responsibilities of the Ministry of Health, the Provincial Health Services Authority (PHSA), the health authorities, and other ministries and levels of government involved in this field.

2.1 National Roles and Responsibilities

Health Canada works with the Public Health Agency of Canada, provincial partners, public health, hospitals, academic institutions, law enforcement and not-for-profit and voluntary organizations to increase safety promotion and injury prevention. Health Canada initiatives include:

- National injury surveillance and research (e.g., National Trauma Registry provided by the Canadian Institute for Health Information, as well as data from Health Canada and the Public Health Agency of Canada).
- Product safety – under the authority of the federal *Hazardous Products Act*.
- Information and messages for public awareness and knowledge.
- Injury prevention programs directed at parts of the population that are at higher risk of injury (e.g., children, First Nations and Inuit, and seniors).

2.2 Provincial Roles and Responsibilities

2.2.1 Ministry of Health Roles and Responsibilities

The Ministry of Health has three major roles and responsibilities:

- Providing overall stewardship of the health care system in British Columbia, including conducting strategic interventions with health authorities to ensure continuation of the delivery of efficient, appropriate, equitable and effective health services to British Columbians.
- Working with the health authorities to provide accountability to government, the public and the recipients of health services.
- Providing resources to health authorities to enable them to deliver health-related services to British Columbians.

Specifically in the area of unintentional injury prevention, the Ministry of Health is responsible for strategic planning, policies and legislation, specifically:

- Advising the Minister on injury prevention policies and legislation.
- Developing provincial strategies on injury prevention in collaboration with other provincial ministries and agencies, as appropriate.

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- Coordinating continued development of province-wide plans and strategies with health authorities to support and enhance programs to prevent injuries.
- Leading/facilitating the development of provincial injury prevention networks and coalitions (e.g., the BC Injury Prevention Leaders Network).
- Coordinating the development of injury prevention initiatives including a range of technical expertise, resources, and support services including research, data standardization and analysis, and safety promotion.
- Facilitating collaborative partnerships with other provincial ministries, the federal government, and Federal/Provincial forums on injury prevention.

2.2.2 Provincial Health Services Authority Roles and Responsibilities

The Provincial Health Services Authority (PHSA) is responsible for ensuring that high-quality specialized services and programs are coordinated and delivered within the regional health authorities. PHSA operates a Poison Control Unit within the BC Centre for Disease Control, and the BC Trauma Registry at Vancouver General Hospital. With respect to preventing unintentional injuries, its role is delivered through the BC Injury Research and Prevention Unit (BCIRPU). The BCIRPU was established in 1998 at BC Children's Hospital and is supported by the BC Child & Family Research Institute. The goal of the BCIRPU is to reduce the societal and economic burden of injury among all age groups in British Columbia through research, surveillance, education and knowledge transfer, public information and the support of evidence-based, effective prevention measures. The BCIRPU also works closely with health authorities, public and private organizations, and community organizations to assist in building and strengthening prevention networks through the provision of education, training and research expertise. BCIRPU provides leadership and secretariat services to the BC Falls Prevention Coalition, the BC Sport and Recreation Injury Free Advisory Committee and the BC Injury Prevention Leadership Network. In addition, the BCIRPU operates the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP).

2.2.3 Other Provincial Ministries/Agencies Roles and Responsibilities

At the provincial level, all ministries and agencies have a significant role and involvement in the prevention of unintentional injuries in those areas related to their specific mandates and responsibilities. Key partners within government include: the Insurance Corporation of British Columbia, Ministry of Children and Family Development, Ministry of Education, Ministry of Public Safety and Solicitor General, Ministry of Tourism, Sport and the Arts, Ministry of Transportation, Ministry of Labour and Citizens' Services, and the Ministry of Agriculture and Lands (Appendix II provides information on the injury prevention role of key provincial ministries).

The Ministry of Health plays a strong advocacy role in encouraging and promoting injury prevention across the provincial government. For example, the Ministry of Health advocates with other government agencies through inter-ministry committees focused on road safety, ActNowBC (sports injury prevention initiatives), off-road vehicles, children in care, and injury prevention among Aboriginal people through the Transformative Change Accord.

Also at the provincial level, there are many non-government groups and organizations that are active in injury prevention. The BC Injury Prevention Leadership Network represents about 30 such provincial associations and organizations. As well, many injury-specific networks, coalitions and groups are involved as partners in social marketing and promotion campaigns. These include seniors' groups, insurance companies, BC Ferries, Telus, bicycle stores, Canadian Tire, and other private, public and non-profit organizations.

2.3 Health Authorities Roles and Responsibilities

The role of health authorities overall is to identify and assess the health needs in the region, to deliver health services (excluding physician services and BC Pharmacare) to British Columbians in an efficient, appropriate, equitable and effective manner, and to monitor and evaluate the services which it provides. In the area of unintentional injury prevention, the health authorities are responsible for:

- Coordinating and implementing the delivery of injury prevention programs across the health authority, based on regional injury priorities.
- Advocating for public policies and local by-laws that will enhance the safety of the population including high-risk groups and individuals.
- Community development and community capacity building to encourage local participation and action by multiple groups and organizations to assist them in responding effectively to local priorities.
- Collaborating with stakeholders to build a coordinated regional approach to injury prevention.
- Administering certain provincial legislation related to injury prevention, and facilitating surveillance of reportable incidents, particularly as they relate to unintentional injuries.
- Modeling effective injury prevention practices.
- Public education and awareness to change behaviours that will enhance safety.
- Data collection, surveillance, evaluation and performance improvement.

2.4 Local Roles and Responsibilities

On the local level, local governments exert influence on policy in areas such as public and community health, housing, social services, community safety, recreational services, development and zoning, licensing and bylaws. As well, many community organizations have an important role with respect to injury prevention, including fire departments, ambulance services, police departments, schools and sports organizations.

2.5 Legislation and Policy Direction

The overall legislative and policy direction for unintentional injury prevention is derived from:

- The following acts and regulations: the *Health Act*; *Community Care and Assisted Living Act*; Adult Care Regulations, Child Care Licensing Regulation and Swimming Pool, Spray Pool and Wading Pool Regulations.
- *Framework for Core Functions in Public Health* (March 2005).
- Specific policies/priorities that may be established by the health authority, the Ministry of Health or the provincial government.

3.0 PRINCIPLES

Principles for a model health authority prevention program to prevent unintentional injuries are:

- Multi-sectoral initiatives implemented at multiple levels – Individual/family, community, and societal levels (i.e., micro, meso and macro).
- Collaboration, coordination and partnerships with key sectors – Other health authorities, local governments, schools, non-government organizations, First Nations and Aboriginal organizations, multicultural groups, the private sector and provincial ministries and agencies.
- Coordination and alignment with relevant strategies and linkages (e.g., Primary Health Care Charter, Healthy Communities, etc.).
- A focus on priority injuries, taking into account the burden of injury, economic burden of injuries, regional issues and treatment issues.
- A balance between universal initiatives targeted to the population as a whole, and initiatives targeted to specific population groups.
- A population health approach considering determinants of health, risk factors and vulnerable populations.
- A culture of evidence-based practice, and continuous quality improvement.
- Research and evaluation to strengthen evidence and decision-making.

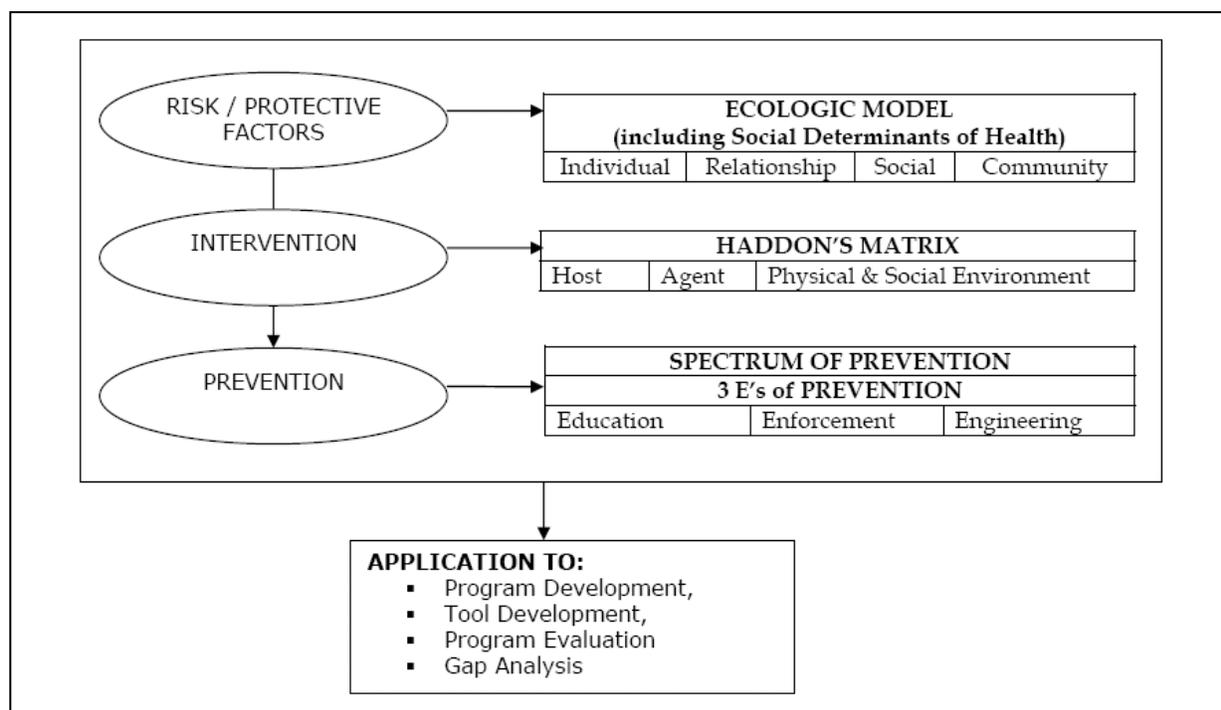
It is recognized that no single sector or department within the health authority “owns” injury prevention; rather, a wide range of programs must integrate initiatives to provide effective prevention. Accordingly, coordination and collaboration across programs and strategies within the health authority and with regional and community groups is essential. Important collaborative linkages within the health authority include emergency departments, acute care, primary care, public health programs, home care, residential care facilities, workplace health, pharmacies, trauma services, mental health, addiction programs and aboriginal health services. In addition, there needs to be close linkage with community development and health promotion strategies within the health authority.

Linkages with key organizations and groups on a regional and community level include local governments, police, ambulance services, fire departments, schools, social services, recreational and sports organizations. Other key linkages include workplaces, businesses, community centres, childcare centres, faith organizations, etc.

4.0 INJURY PREVENTION FRAMEWORK

In order to assist in developing an effective injury prevention program, a conceptual framework¹ is presented in Figure 1 as a context for assessing/analyzing, developing/planning, implementing, and evaluating program components.

Figure 1: Conceptual Framework for Injury Prevention



Source: BC Injury Research and Prevention Unit, 2007.

The framework includes three levels to inform injury prevention planning, implementation and evaluation:

- **Risk/Protective Factors**

The first step in considering an injury prevention program is to identify and analyze the multiple risk factors for injuries. Termed an “ecological” (Runyan, 2003) approach, this step considers risk and protective factors that impact individual, relationship, community and societal determinants of health.

With respect to the individual level, important factors include age, gender, education, income, substance use, current or prior experience with abuse, language and other determinants of health. The relationship level looks at close connections with family,

¹ The “Conceptual Framework for Injury Prevention” was developed by the BC Injury Research and Prevention Unit based a combination of the following three models: 1) the Social Ecological Framework 2) Haddon’s Matrix, and 3) the Three E’s of Prevention. The framework and the sources for each component of it are described in *Injury Prevention Environmental Scan: A Final Report*, prepared for Interior Health by the BC Injury Research and Prevention Unit, April 2007.

friends, intimate partners and peers to explore how these increase the risk of injury, or enhance protection. The community level is intended to explore the community context in which social relationships occur (e.g., schools, workplace and neighbourhoods), to identify the characteristics of settings that increase risk, or enhance protection from injury. The societal level considers broad factors such as social and cultural norms and the health, economic, educational and social policies that prevent and/or reduce injuries.

A key part of the risk factor assessment is identification of regional population groups and sub-groups, and the related risk and protective factors for each. Specific analysis of key groups is necessary to develop and implement strategies that recognize and respond to the unique needs of each group. For example, seniors will require specific targeted initiatives that address their characteristics and needs; similarly, initiatives targeted toward rural and northern residents, Aboriginal people, people who are immigrants or refugees, and other groups, will require initiatives tailored to their specific circumstances and needs.

With respect to Aboriginal people, Section 6.0 recommends the development of specific initiatives to address the high rate of injury experienced in this population. It is proposed that this developmental process take into account documents being prepared by the Provincial Health Officer and the BC Injury Research and Prevention Unit.

- **Intervention Targets**

The “epidemiological model” (Runyan, 2003) identifies multiple causes of injury, in order to determine and develop multiple solutions to prevent injuries. It directs targeted interventions to one or more of the following: 1) the physical and social environment; 2) the person, or host, who is injured; and 3) the agent. The interrelationship between these elements is a key consideration.

- **Prevention Strategies**

Injury prevention strategies should be guided by the 3 E’s (the classic approach to prevention), which includes: education, engineering and enforcement. Education focuses on injury prevention through individual behaviour change. Engineering consists of modification of the built environment, equipment, homes and toys to lead to injury prevention. Enforcement ensures that safety legislation and regulations are used to positively affect products, environments and individual behaviour. These mechanisms may be implemented through independent action or collaborative partnerships with other organizations.

Similarly, *A Framework for Core Functions in Public Health* (Ministry of Health, 2005) notes that “a combination of health protection and health promotion strategies” are required for injury prevention; “health protection strategies reduce or eliminate environmental hazards and create safer environments through a combination of engineering and enforcement... [and] health promotion strategies seek to reduce risk behaviours and the social conditions that cue such behaviours.”

Educational interventions may also be developed through consideration of the World Health Organization's *Ottawa Charter on Health Promotion* (1986) which focuses on advocating, enabling and mediating initiatives to enhance population health. The Charter defines health promotion action as encompassing: building healthy public policy, creating supportive environments, strengthening community actions, developing personal skills and reorienting health services.

It should be noted that as injury prevention is a new and emerging role in many health authorities, many of the approaches and services are in a developmental stage, including resources, baseline data, workforce education, as well as networking and coordination at both the regional and community level.

5.0 GOALS AND OBJECTIVES

The goal of the program is prevention or reduction of unintentional injuries in BC. The specific objectives for achieving this goal are:

- Reduce the occurrence of injuries.
- Reduce the severity and adverse impact of injuries.
- Prevent or reduce injury-related disability and death.

6.0 MAIN COMPONENTS AND SUPPORTING EVIDENCE

6.1 Introduction

The major program components for health authority programs to prevent unintentional injuries are:

- Strategic planning and priority-setting.
- Advocacy and public policy.
- Community development and community capacity building.
- Knowledge transfer and public education.
- Enforcement.
- Surveillance, data collection and evaluation.

The Injury Prevention Framework described in Section 4.0 provides the conceptual approach that should be applied to each of these components.

6.2 Strategic Planning and Priority-Setting

Health authorities will require a comprehensive strategic plan for injury prevention that involves:

- Assessing risk factors and protective factors for a range of settings and levels, considering: individual/family/relationship level (e.g., age, education, income, substance use, abuse patterns, etc.); community/regional settings (e.g., schools, workplaces, sports and recreation, leisure activities, etc.); needs and characteristics of high-risk populations, in particular Aboriginal groups; and societal level cultural and social norms.
- Establishing priorities based on the regional impact on health from different injuries, acknowledging, as appropriate, different priorities for different neighbourhoods, communities and population groups.

- Identifying key injury prevention policies and strategies, ranging from health protection to health promotion, including:
 - A structure for managing and delivering an injury prevention program within the region.
 - Strategies for coordination and integration of injury prevention across relevant health authority programs (public health nursing, home care, continuing care, licensing, health promotion, etc.).
 - Workforce development initiatives to build knowledge and commitment at all levels within the health authority.
 - Collaboration with key stakeholders in the community, region and province.
 - Community capacity building strategies to educate, encourage and facilitate community-based planning, collaboration and partnerships with multiple sectors and multiple settings (e.g., local governments, schools, workplaces, recreation and sports organizations, etc.).
 - Public education, awareness and social marketing.
- Identifying strategies to access and/or obtain necessary monitoring and surveillance data and to establish evaluation and performance improvement processes.

As noted in Section 4.0, the evidence highlights the needs to assess a wide range of factors in developing an effective injury prevention plan.

6.3 Advocacy and Public Policy

Advocacy for injury prevention policies requires proactive leadership by the health authority in:

- Advocating and encouraging the adoption of local bylaws by municipal councils for evidence-based injury prevention policies targeted toward local injury priorities and patterns.
- Advising and encouraging schools, workplaces, recreation and sports groups, and other relevant groups and organizations to adopt proven injury prevention and health promotion policies that address their priorities.
- Advocating for modification to the built environment, equipment, homes and toys to enhance injury prevention.

The advocacy role is well-accepted in public health. As described in *A Framework for Core Functions in Public Health* (Ministry of Health, 2005), public health leaders at the local level have a role on behalf of the public to provide advice to their communities on matters of public health, to report on the health of their communities, and to play a leadership role in initiatives that address the determinants of health in their communities.

Evidence Review: Unintentional Injury Prevention (Ministry of Health, 2007) concludes that “health authorities can assume a direct role in the development, implementation, and enforcement of local injury prevention policies, and additionally provide their position on local legislation and policy.”

6.4 Community Development and Community Capacity Building

Community capacity building and community development are necessary to enhance local participation and support for effective injury prevention strategies. This involves:

- Educating, encouraging and facilitating involvement of local groups and organizations to develop and implement community-based injury prevention initiatives focused on local priorities.
- Coordinating and partnering with key stakeholders including community coalitions and community champions to assess needs, identify resources, and develop and implement community actions plans.
- Providing information, data, evidence-based best practices, technical advice and other assistance to support communities in planning and developing initiatives.
- Facilitating development of specific priority injury initiatives through coalitions with other groups (e.g., police, fire, emergency services, local governments, justice officials, schools, the private sector, Aboriginal organizations, neighbourhood groups) as appropriate.
- Enhancing community capacity through the delivery of established curriculum courses, such as Canadian Injury Prevention and Control Curriculum, Canadian Falls Prevention Curriculum, Journey to the Teachings (Aboriginal Injury Prevention Curriculum from First Nations and Inuit Health, Health Canada).

These activities should be implemented in conjunction with the core program for healthy communities so that local injury prevention initiatives reflect local health priorities and utilize existing networks among community stakeholders. Community coordination with other core programs will also be important, including: healthy living, prevention of harms associated with substance use, healthy infant and child development, prevention of violence and abuse, and prevention of the adverse effects of the health care system.

The above initiatives reflect the evidence on community development; i.e., “there are several components of successful community based interventions that are believed to maximize success. These include utilizing strategies that promote behavior change, programs that are specific and tailored to the community which is being targeted, involving the community in the development of the strategy, utilizing a randomized study design where possible, and dedicating sufficient resources to undertake a rigorous evaluation” (Ministry of Health, 2007).

A multidisciplinary approach is recognized as an important factor in building healthy communities. To avoid an isolated, fragmented approach among individual settings, networking across settings is necessary to strengthen the integration of priorities and initiatives and to supplement and strengthen their overall impact. The literature notes that “the weight of evidence

confirms that multi-component or comprehensive interventions have higher effectiveness and cost-effectiveness compared to those programs that focus on a single component” (Public Health Association of BC, 2006).

6.5 Knowledge Transfer and Public Education

Strategies to increase public education and awareness include:

- Providing educational resources (e.g., materials, workshops, manuals, etc.) to support health professionals in enhancing injury prevention counselling and client support.
- Integrating injury prevention initiatives into appropriate health authority caregiver services and support programs for individuals and families (e.g., public health nursing, emergency room personnel, physicians, home care staff, addictions counsellors, mental health counsellors, etc.).
- Targeting public education and knowledge transfer to high-risk neighbourhoods, communities, and population groups (e.g., Aboriginal injury prevention strategies, programs to reduce senior’s falls, playground safety for children, water safety, etc.), and to risks during key life transitions (e.g., high school graduation, new births [car seats, etc.], tricycle/bicycle learning, etc.).
- Educating key organizations on regional injury prevention priorities (e.g., municipal councils, Chambers of Commerce, schools, workplaces, recreational groups, home care groups, community care facilities, etc.).
- Partnering with the media to provide information and education on key trends and priorities.
- Identifying and prioritizing the need for, and supporting the implementation of, social marketing campaigns to change attitudes and behaviours to enhance safety among the population. Federal and provincial governments are responsible for overall development of social marketing campaigns (macro level), while the health authority role is support for implementation on a local and regional level (micro level).

The evidence review *Evidence Review: Unintentional Injury Prevention* (Ministry of Health, 2007) notes that “legislation is known to be better accepted by the public when associated with education, so health authorities can play a key role in supporting and delivering associated education as part of their public health initiatives.” For example, “injury prevention strategies that have produced the best results have used a combination of education with legislation, regulation, or lowering barriers to implementation”.

6.6 Enforcement

Support for the enforcement of safety legislation and policies involves:

- Enforcing compliance with legislated safety requirements to prevent unintentional injuries, through public health inspections and licensing activities (e.g., community care facilities licensing), as appropriate.

- Informing, educating and advising the general public, high-risk populations and relevant sectors to enhance understanding and compliance with bylaws, legislation and policies that enforce injury prevention, improve physical environments and social behaviours, in order to increase the level of safety on an individual, family and community level.
- Collaborating with external enforcement organizations (e.g., police, bylaw officers and safety inspectors) to enhance a coordinated approach to injury prevention.

Legislation and regulation, along with the associated enforcement activities, are widely acknowledged in the evidence to be key factors in successfully preventing or reducing unintentional injuries (Ministry of Health, 2007).

6.7 Surveillance, Data Collection and Evaluation

Data on injury trends and patterns is fundamental to the effective design, implementation and evaluation of preventive strategies. This requires:

- Collecting and managing data, primarily through collaboration with the Ministry of Health and BCIRPU, who have a role in gathering existing and new data necessary for identifying specific causes, circumstances and trends in unintentional injuries. It is recognized that there are also situations when it is necessary for health authorities to collect unique local/regional information (e.g., data from child day care centres, data on environmental health, etc.).
- Analyzing and interpreting regional data to identify local and regional injury trends, injury risks, vulnerabilities of high-risk groups and sub-populations.
- Sharing and reporting data with key health authority policy and program officials on major issues, trends and concerns to support effective decision-making, public education and community development.
- Participating in research, evaluation and quality improvement projects (e.g., with the ministry, academic institutions, etc.) relevant to the health authority agenda, as feasible, to enhance effectiveness of injury prevention strategies.
- Working with the Ministry of Health and other health authorities to examine the feasibility of establishing an emergency department injury surveillance system.
- Establishing program assessment processes, including evaluation frameworks for new initiatives.

A number of issues presently interfere with effective performance of this program component. Strong provincial leadership by the Ministry of Health and a coordinated process involving health authorities, including PHSA, will be necessary to build an effective approach for the future. In order to be successful, a number of factors require attention and resolution:

- Clarification of the roles of regional health authorities, the PHSA (including BCIRPU) and the Ministry of Health, in injury prevention data collection and data management, considering economies of scale, capacity and resources and accessibility to data sources.

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- Definition of data-sharing processes and agreements between the health authorities, the Ministry of Health and the PHSA/BCIRPU, including baseline data, ongoing and special reports and fee-for-service arrangements.
- Application of OCAP (ownership, control, access, possession) principles (National Aboriginal Health Organization, 2007), when working with Aboriginal stakeholders.
- Development and use of consistent datasets at the local, regional and provincial levels to enable comparisons across the regions and to provide the potential for developing benchmarks or standards (federal government data will also need to be taken into account in building consistency).
- Expansion of injury prevention information through improved access to additional data sources, including emergency department data, and other key sources. The Ministry of Health is currently conducting pilot projects on the collection of emergency department data and examining the feasibility of province-wide implementation.
- Enhancement of the timeliness of injury prevention data collection and reporting processes for the Ministry of Health, health authorities and other stakeholders.

With respect to the evidence, research notes that “there is a need to develop and monitor indicators to assess and monitor a culture of safety, program sustainability and long term community involvement. Community-based injury prevention programs have been hampered by the lack of resources allocated to development and rigorous evaluation” (Towner & Dowswell, 2002) For example, the Provincial Health Officer noted in the report *Prevention of Falls and Injuries Among the Elderly* (2004) that “health authorities are in a position to collect data to help us better understand the risk and impact of falls and other injuries in their region, across all sectors of the health care delivery system, and in the community... these data should be systematically collected, collated and used to design falls and injury prevention strategies and quality of care improvement programs.”

A National Ambulatory Care Reporting System (NACRS) is currently being piloted in BC, based on a system used by hospitals throughout Ontario and in a number of other locations. NACRS tracks the case mix, care processes, utilization and outcomes. Evidence from other jurisdictions indicates the system supports quality assessment and performance improvement initiatives (Ontario Joint Policy and Planning Committee, n.d.). In particular, emergency department data can provide regional and local information vital to injury prevention program planning and prioritization.

7.0 BEST PRACTICES

Often, there is no one “best practice” that is agreed upon; rather, there are practices that may have been successful in other settings and should be considered by health authorities. The terms “promising practices” or “better practices” are often preferred to reflect the evolving and developmental nature of performance improvement.

Many of the practices that are widely supported and considered to be “best practices” by researchers and leading professionals in the field have already been identified in this paper. Those practices include:

- Assess risk factors and protective factors for a range of settings and levels.
- Identify injury prevention policies and intervention strategies ranging from health protection to health promotion, including coordinating and integrating strategies across the health authority, workforce development, advocacy with key stakeholders, community capacity building and community development, and public education, awareness and social marketing.
- Enhance data collection and monitoring as well as evaluation and performance improvement strategies for injury prevention programs.

An extensive review and presentation of many specific “better” practices is available in the document *Evidence Review: Unintentional Injury Prevention* (Ministry of Health, 2007). While multiple strategies are consistently recommended for successful community-based injury prevention (Ministry of Health, 2007), the review also includes practices for coordinating the prevention of a wide range of specific risk factors, including: poisoning; drowning; bicycle and pedestrian injury; falls among children; falls among youth and adults; falls among seniors; injuries among Aboriginal peoples; motor vehicle crash prevention among young drivers; motor vehicle crash injuries (occupant restraints); sports and recreational injury prevention; and small-wheel vehicle injuries.

The Working Group also recognized that there is a significant gap with respect to best practices that will prevent and reduce the high rate of unintentional injuries among Aboriginal people in BC. It is recommended that a resource group be established, which may include experts in Aboriginal health services from the Ministry of Health, other provincial agencies, the health authorities, PHSA (BCIRPU), and others as appropriate, to commence discussion of strategies for Aboriginal injury prevention. This group should take into account the following documents (to be released in 2008):

- *Injury Prevention Intervention Strategies Among Aboriginal People: A Systematic Review*, by the BC Injury Research and Prevention Unit.
- The upcoming Annual Report on the health and well-being of Aboriginal people in British Columbia, by the Provincial Health Officer.

8.0 INDICATORS, BENCHMARKS AND PERFORMANCE TARGETS

8.1 Introduction

It is important to define what one means by the terms *indicators*, *benchmarks* and *performance targets*. An indicator is a summary measure (usually numerical) that denotes or reflects, directly or indirectly, variations and trends in, this case, injuries or injury-related or injury control-related phenomena. Indicators are more than outcome measures; they constitute an important reflection of some aspect of a given program or service, and their value is that they must also drive decision and action. Indicators need to be standard so that they can be compared across different organizational entities such as health regions. Benchmarks are reflective of “best” practices. They represent performance that health authorities should strive to achieve. Benchmarks are determined by: reviewing the literature; reviewing the best practice experience in other jurisdictions; or by determining “consensus” opinion of leading experts and practitioners in the field. Performance targets, on the other hand, are locally determined targets that represent a realistic and achievable improvement in performance for a local health authority.

This section presents a number of key indicators or performance measures for a program on prevention of unintentional injuries. Suggested benchmarks can apply across the province, while other benchmarks may need to be modified to account for key variables such as geographic size or population density of the health authority.

One can develop indicators related to the inputs, activities, outputs and outcomes (immediate, intermediate or final) of each of the respective components of the program on prevention of unintentional injuries. Thus, it is not necessary to only have outcome-related indicators and benchmarks. Furthermore, indicators need to be understood within a broader context. For example, a low per-capita cost for a specific program could reflect the efficiency and effectiveness of the program, or it could reflect a program that is under-resourced. It is recognized that programs to prevent injuries are multi-faceted, and it may be difficult to link interventions with direct human health outcomes, particularly as initiatives involve multiple factors and multiple sectors, which all play a role in determining outcomes. In general, it is best to consider a number of indicators, taken together, before formulating a view on the performance in this area. Indicators and benchmarks work best as flags to indicate a variance from accepted norms and standards. Further investigation is usually required to determine the causes of any given variance from such norms or standards.

A health authority could determine its performance targets by assessing its current (and perhaps historical), level of performance; then, based on consideration of local factors (e.g., capacity, resources, new technology, staff training, etc.), it could establish a realistic performance target. This performance target would be consistent with the goal of performance improvement, but would be “doable” within a reasonable period of time. Initially, health authorities will set performance targets for a number of indicators. However, over time, and particularly if consistent data collection methods and definitions are applied, it would be realistic for health authorities to share information related to their targets and then develop a consensus approach to determine provincial benchmarks for these indicators. In other words, locally developed performance targets, over time, could lead to the development of provincial benchmarks.

8.2 Indicators for the Program on Prevention of Unintentional Injuries

The indicators listed below are considered the most significant in determining the overall performance of strategies for the prevention of unintentional injuries. Health authorities will determine which ones they consider the most important for their purposes, and will focus their efforts on measuring these over time.

It is understood that some of the indicators may not be under the control or influence of health authorities; nevertheless, they can provide important information for the health authorities to collect. Those indicators and benchmarks that are under the control and influence of health authorities provide a basis for ongoing performance review and evaluation. In many cases, baseline data will need to be established to provide a basis for comparative analysis in future years. Injury prevention benchmarks have not been established regionally or provincially, but will be determined over time between the Ministry of Health and the health authorities. Due to the lack of established benchmarks, suggested performance targets have been provided for some of the following indicators.

Indicators are considered to be subject to ongoing review and revision through the Steering Committee on Core Public Health Programs, as well as through collaborative processes among Ministry of Health and health authority injury prevention officials.

8.3 Indicators on Prevention of Unintentional Injuries

The indicators in Table 1 are intended to provide a framework, or a checklist, to identify the key elements necessary for developing and delivering strategic initiatives for an ideal injury prevention program.

Table 1: Indicators for Main Program Components (Process Indicators)

Indicator	Definition/Description	Benchmark
1.1 Strategic Planning and Priority Setting.	a) A strategic plan is developed with goals, measurable objectives and an implementation plan. (Yes/No) b) The strategic plan targets high-risk groups and priority injury issues. (Yes/No)	Yes Yes
1.2 Advocacy and Public Policy.	a) Local governments are encouraged to adopt injury prevention policies and regulations. (Yes/No) b) School districts are encouraged to collaborate in injury prevention education. (Yes/No)	Yes Yes
1.3 Community Development and Community Capacity Building.	a) Working relationships with key agencies and groups are in place. (Yes/No) b) Community grassroots coalitions in place, including First Nations communities. (Yes/No)	Yes Yes

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Indicator	Definition/Description	Benchmark
1.4 Knowledge Transfer and Public Education.	a) Workshops, professional education, and advocacy support for health authority staff. (Yes/No) b) Most health authority programs have an injury prevention education component. (Yes/No) c) Strategies are in place for distributing culturally appropriate public education materials. (Yes/No)	Yes Yes Yes
1.5 Enforcement.	Compliance with regulations are monitored and enforced. (Yes/No)*	Yes
1.6 Surveillance, Data Collection, and Evaluation	a) Morbidity and mortality data** is used to define problems and evaluate strategies. (Yes/No). b) Analysis of risk levels and health determinants are completed for local communities. (Yes/No). c) Protocols exist for information sharing across program areas. (Yes/No). d) Evaluation plans are in place prior to implementation for new programs. (Yes/No).	Yes Yes Yes Yes

Notes:

* A wide range of regulations may be considered, including Adult Care Regulations, Child Care Licensing Regulation, etc.

** Data on reportable incidents in community care facilities should be included, particularly as they relate to unintentional injury.

8.4 Surveillance Indicators (Outcome Indicators) on Prevention of Unintentional Injuries

Collecting indicators, such as those listed below, will assist a health authority in monitoring the trends and patterns of unintentional injuries. It is recognized that health authorities may not be currently collecting this information, and that the Ministry of Health and the BC Injury Research and Prevention Unit play a major role in collecting provincial and regional data to assist both provincial- and regional-level surveillance and assessment.

As noted earlier, it is understood that some of the indicators may not be under the control or influence of health authorities; nevertheless, they provide important information to assist the health authorities in determining trends, needs and priorities.

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Table 2: Surveillance Indicators (Outcomes)

Indicator	Definition/Description	Benchmark
2.1 Health authority mortality rates by cause of injury.	<p>Mortality rates for key causes of injury, including:</p> <ul style="list-style-type: none"> • Annual rates and 5-year averages. • Rates by key age groups, First Nations people and by settings.* • Rates by gender. • Rates by health authority, health service delivery area. <p>a) Motor vehicle crashes. b) Seniors' falls and related injuries. c) Unintentional poisoning. d) Other key causes of injury in the health authority (e.g., drowning, fire, bicycle injuries, etc.).</p>	Establishment of a common data collection set through collaborative planning between the Ministry of Health and health authorities.
2.2 Health authority hospital separation rates by cause of injury.	<p>Hospital separation rates for key causes of injury, including:</p> <ul style="list-style-type: none"> • Annual rates and 5-year averages. • Rates by key age groups, First Nations people and by settings.* • Rates by gender. • Rates by health authority, health service delivery area. <p>a) Motor vehicle crashes. b) Seniors' falls and related injuries. c) Unintentional poisoning. d) Other key causes of injury in the health authority (e.g., drowning, fire, bicycle injuries, etc.).</p>	Establishment of a common data collection set through collaborative planning between the Ministry of Health and health authorities.
2.3 Regulatory initiatives/compliance.	<p>a) Level of compliance with regulations and policies on wearing helmets (e.g., percentage of cyclists who wear helmets). b) Percentage of people using vehicle occupant restraints.</p>	Indicators for specific initiatives are important, and these will be developed by an Indicator Working Group on Injury Prevention coordinated by the Ministry of Health.

Note:

* Settings include workplaces, schools, residential care, and licensed child care settings.

9.0 EXTERNAL CAPACITY AND SUPPORT REQUIREMENTS

9.1 Key Success Factors/System Strategies

The previous sections outlined the main components and best practices that health authorities could include in the prevention of unintentional injuries programs.

As noted previously, a number of issues presently interfere with effective performance of the health authorities in their role in this field. The Working Group identified the need for strong provincial leadership and a coordinated process involving health authorities, including PHSA, to build an effective approach for the future. They stressed that to be successful, a number of factors require attention and resolution:

- Clarification of the respective roles of regional health authorities, the PHSA (including BCIRPU) and the Ministry of Health, in injury prevention data collection and data management.
- Definition of data-sharing processes and agreements between the health authorities, the Ministry of Health, and the PHSA/BCIRPU.
- Application of OCAP (ownership, control, access, possession) principles (National Aboriginal Health Organization, 2007), when working with Aboriginal communities.
- Development and use of consistent datasets at the local, regional and provincial levels.
- Expansion of injury prevention information through improved access to additional data sources, such as emergency department data.
- Improved timeliness of injury prevention data collection/reporting processes.

As well, successful implementation of effective strategies will also depend on having in place key system strategies, including:

- Strong support from the Board and management of the health authorities, from the Ministry of Health and the BCIRPU, as well as strong support from the other key players in the region, such as the school board and local governments, regarding the importance of injury prevention and the role it plays in protecting the health of the population.
- Allocation by the health authorities of sufficient resources to deliver high quality programs.
- Well-trained and competent staff with the necessary policies and equipment to carry out their work efficiently.
- An information system that provides staff with appropriate support, and provides management with the information it needs to drive good policy and decisions.
- High-quality and competent management of the injury prevention program, including monitoring of performance measures.
- Clear mechanisms of reporting and accountability to the health authority and external bodies.

9.2 Intersectoral Collaboration and Integration/Coordination

A program for prevention of unintentional injuries does not exist in isolation and will not achieve optimum efficiency or effectiveness unless it works collaboratively with other key partners involved in this field. Intersectoral collaboration and coordination on the local, regional and provincial levels is essential to ensuring the active participation of those who can contribute to preventing injuries from multiple sources. As well, collaboration across health authorities is important in sharing expertise and building consistent approaches.

On the provincial level, the key linkages are the Ministry of Health and the BCIRPU. Other important linkages are the Ministry of Children and Family Development, the Ministry of Public Safety and Solicitor General, the Ministry of Transportation, and the Ministry of Labour and Citizens' Services.

At the regional health authority level, linkages are emergency departments, acute care and primary care physicians, workplace health programs, public health programs, home continuing care, residential care facilities, health promotion, community development, communication departments, pharmacies, trauma services, addiction programs, mental health services and aboriginal health services. As well, it is important to coordinate initiatives with other core public health programs such as: healthy communities, health living, prevention of harms associated with substance use, healthy infant and child development, prevention of violence and abuse, and prevention of the adverse effects of the health care system.

At the regional and local level, it is essential to link with municipalities and a wide range of local organizations and agencies such as schools, police, ambulance, fire departments, sports and recreation organizations.

9.3 Assessment and Evaluation of the Program on Preventing Unintentional Injuries

It will be important for health authorities to review their existing information and monitoring systems with respect to their ability to measure and monitor performance indicators. As a relatively new area, it may be necessary to:

- Establish new policies and procedures for some activities to ensure that the necessary data are gathered.
- Facilitate the process of recording and monitoring data (in this respect, it should be noted that consistency and compatibility among all health authorities is desirable).
- Plan regular survey or sampling projects, either individually or in partnership with other health authorities, or with the Ministry of Health and the BCIRPU to identify trends and patterns, and assess performance on certain indicators. For example, the level of knowledge about injury prevention among the public will likely only be available by conducting a survey to gather baseline data, and repeating the survey at a later date to determine any differences over time. Such surveys may be conducted by each region or be developed as joint projects.

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Health authorities will also need to consider the impact of program monitoring and evaluation on their staffing resources. Expertise will be needed in the fields of program monitoring, program analysis and program evaluation to ensure effective implementation and assessment of the core functions improvement process.

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APPENDIX 1: THE EVIDENCE BASE FOR A MODEL CORE PROGRAM FOR PREVENTION OF UNINTENTIONAL INJURY

**Taken from: Ministry of Health. (2007). *Evidence Review: Unintentional Injury Prevention*.
Prepared by the BC Injury Research and Prevention Unit.**

Summary Statement

Injuries are the leading cause of death and hospitalization for children, youth and adults (to age 44) in BC, and the fourth leading cause of death across all age groups. Approximately 1,200 people in BC are injured each day and of these 4 will die. Each year, approximately 424,000 (1998) preventable, unintentional injuries occur. These injuries cost an estimated \$2.1 billion per year, or \$513 per British Columbian (2001).

Leading Causes of Unintentional Injuries:

- Among children and youth, 1 to 24 years, the leading causes of death from unintentional injuries (1987 to 2000) are motor vehicle traffic (61 per cent), drowning/submersion (9 per cent) and poisoning (8 per cent); while leading causes of hospitalization (1989 to 2000) include falls (33 per cent), motor vehicle traffic (19 per cent) and being struck by an object (12 per cent).
- Among adults 25 years and over, leading causes of death from unintentional injuries (1990 to 2003) are falls (27 per cent), poisoning (25 per cent) and motor vehicle crashes (24 per cent); causes of hospitalization (1990 to 2003) include falls (40 per cent), adverse effects (17 per cent) and motor vehicle crashes (6 per cent).

Injuries are not accidents; they follow predictable patterns, are measurable and preventable. Research has shown that multi-faceted initiatives that use at least two of the following general approaches have the greatest chance of being successful in reducing the burden of injury:

- *Education* – Education and skill training are the most commonly used strategies in injury prevention. Although education is not shown to be very effective on its own, it is an essential element for supporting engineering and enforcement strategies. Educating policymakers and the public usually precedes action in terms of public policy and engineering modifications.
- *Enforcement/Legislation* – Enforcement strategies are generally effective, more so when they are enforced properly.
- *Engineering/Environment* – Engineering strategies involve the development or modification of products and environments to increase safety. Generally, engineering efforts are effective.
- *Economic Incentive and Disincentives* – Economic incentives involve financial benefits to individuals who take specific injury prevention measures; disincentives involve using economic punishments (such as fines for traffic violations). These are potentially very effective when used in conjunction with one or more of the other approaches.

Scalds and Burn Prevention:

Children aged 0 to 5 years sustain scald burns more frequently than any other type of burn. The evidence indicates that:

- Passive interventions, such as legislation, appear to be the most effective way of preventing scald burns. Legislation proven to be effective includes: requiring safe pre-set temperatures for hot water heaters; regulating the flammability of children's sleepwear; and banning the manufacture and sale of dangerous fireworks. To optimize the effectiveness of legislation, enforcement is necessary.
- Product engineering and modifications that prevent contact with hot stoves, irons and heaters are effective in preventing burns. Child-resistant cigarette lighters and self-extinguishing cigarettes have also been shown to prevent burns and fires.
- Smoke detectors have proven to be effective and inexpensive early warning devices for reducing injuries in residential fires. Physician counselling during routine child health surveillance is an effective strategy for increasing the use of smoke detectors. There is moderate or mixed evidence for more general counselling and education on the use of smoke detectors, as well as on smoke alarm campaigns and promotion. Education on its own has not shown strong evidence of effectiveness and fire skills training has not, as yet, proven to be effective.
- There is insufficient evidence to support community-based interventions (such as coordinated, multi-strategy interventions targeted at families with children within a community), primarily because of limited research in this area.

Poisoning Prevention:

- Child resistant packaging has been effective in reducing unintentional childhood poisoning. Legislation governing such packaging is known to be better accepted by the public when associated with education.
- Studies on poison control centres show they have the potential to reduce medical costs associated with poisoning.

Drowning Prevention:

- Isolation of pools through the use of four-sided fencing has been shown to prevent unintended access to pools and therefore significantly reduces the risk of drowning.
- Evidence is limited on effective interventions to reduce alcohol-related drownings.
- Evidence on multifaceted community campaigns show positive results in the use of personal flotation devices. However, studies on boating safety courses suffer from poor design, and it is difficult to determine efficacy in this area.

Bicycle and Pedestrian Injury Prevention:

- Area-wide traffic calming has shown potential for reducing motor vehicle collisions and therefore for reducing motor vehicle-related injuries.
- Bicycle lanes may provide protection to cyclists from motor vehicles when cyclists are travelling in the same direction as the flow of traffic, but there has not been sufficient data collected to form definite conclusions.
- There is clear evidence for the effectiveness of bicycle helmets in reducing the risk of head injury, and legislation on mandatory bicycle helmet use has shown to increase helmet-wearing rates. Overall, characteristics of successful interventions to promote bicycle helmet use include: participation of parents, a broad scope including education, media announcements, bike rodeos, helmet discounts, and interventions which use a combination of legislation, regulation and increasing access to helmets through subsidies.
- There is mixed evidence of the effectiveness of community-based campaigns that promote road safety for bicyclists and pedestrians, as many interventions have not been rigorously evaluated.

Falls Among Children:

The evidence indicates that playgrounds are a common source of injuries among children; a common cause of playground injury is falling from equipment. Studies have found that:

- Surfaces that use impact-absorbing materials with sufficient depth, and playground equipment that reduces fall heights, can reduce the incidence of injuries.
- Education and legislation on the use of window bars, particularly in rental housing, appears to reduce falls.
- Community-based approaches to prevent childhood injury, including falls, are commonly used approaches in preventing injury.

Community-based Injury Prevention Strategies:

- There is increasing evidence emerging regarding the effectiveness of community-based injury prevention programs: however, a positive and sustained impact on injury rates has not yet been demonstrated conclusively.
- Research indicates that community-based approaches are effective at increasing some safety practices, such as bicycle helmet use and car seat use among children. Other community-based interventions are only moderately supported by the evidence, primarily because there are few studies on measurable outcomes. There is, however, some evidence that the World Health Organization's Safe Communities Model reduces injuries within populations.
- Successful interventions have included: the use of multiple strategies that promote behaviour change; strategies tailored for the specific needs of the community; and the use

of community coalitions in the development and assessment of injury prevention initiatives.

Motor Vehicle Occupant Restraint:

- Child motor vehicle restraint promotion programs show mixed evidence of efficacy. Programs that include incentives in conjunction with education have increased child safety seat use over the short term. Child car seat loan programs are effective at increasing use, both for infant seats and booster seats for older children.
- There is strong evidence that enforcement of seatbelt laws and child safety seat laws are effective in increasing their use and reducing injuries and deaths.

Motor Vehicle Crash Prevention Among Young Drivers:²

Motor vehicle crash (MVC)-related injury is the leading cause of death and disability among adolescents and young adults in BC. The evidence has found:

- Strong support for continued legislation and enforcement of blood-alcohol concentration limits, combined with meaningful consequences for violation of zero tolerance among learner and novice drivers.
- A minimum legal drinking age is strongly supported by the evidence—a minimum drinking age raised above age 18 has been reported to reduce MVC fatalities.
- Promising practices include: increasing awareness of vehicle crash worthiness among young drivers and their parents; continued enforcement of alcohol control (e.g., sobriety checkpoints, breath-tests etc); enforcement of mandatory seat-belt use; enforcement of passenger restrictions during learner and novice stages; and greater parental involvement, with parents being encouraged to negotiate drinking privileges with their children.
- Driver education, including school-based driver education, is not supported as a stand-alone, prevention/intervention strategy. Incentives for completing driver education should not shorten the learner period of a graduated licensing system.

Falls Among Youth and Adults:

- There is clear evidence that standards addressing excavation practices, inspections and training programs in the construction field reduce injuries and deaths.

Falls Among Seniors:³

- The evidence suggests that population-based fall prevention initiatives are effective and that these should form the basis of public health practice.

² This summary is based on the report *Motor Vehicle Crashes Among Young Drivers: Systematic Review and Recommendations for BC*, by the BC Injury Research and Prevention Unit (Turcotte, Kinney, Joshi, & Pike, 2005).

³ This summary is based on *Prevention of Falls and Injuries Among the Elderly*, by the Provincial Health Officer (2004).

- A variety of specific prevention practices have proven to be effective including: multidisciplinary, multifactorial screening and assessment of health and environmental risk factors; environmental modifications, particularly if a senior has manual or financial help to modify their environment; clinical assessment and review of medication history to identify and reduce fall risk factors; and the use of hip protectors.
- Exercise programs are also effective, although further research is required to determine the type and effectiveness of specific programs.

Sports and Recreational Injury Prevention:⁴

Rugby

- There is promising evidence that mouth guards, particularly those that are custom-fitted, have a preventive effect against injuries to the mouth and teeth.

Soccer

- It appears that general training and conditioning, or specific strength training programs, can help to reduce injuries among soccer players.

Basketball

- The use of ankle-stabilizing methods such as ankle braces, taping or use of high-top shoes have been shown to reduce ankle injuries among basketball players.

Baseball

- Break-away bases are more effective than standard bases, showing up to an 80 per cent reduction in the number of sliding injuries in both baseball and softball at varying levels of play.

Ice Hockey

- Mandatory head and face protection at all levels of play, and safety equipment that is properly fitted and of high standard, decreases injuries among hockey players. Strict enforcement of safety rules (e.g., high-sticking, fighting and checking from behind) is also effective in preventing injuries.

Football

- Pre-season training is associated with reductions in injuries among football players. Rule changes in 1976 regarding tackling and blocking, along with safety standards for helmets in 1978, have had an important and significant impact on injury reductions. Studies recommend that all equipment be properly fitted, well maintained and appropriate for each playing position.

Skiing and Snowboarding

- It has been clearly demonstrated that use of helmets significantly reduces the risk of head injuries.

⁴ This summary is drawn from *Sports and Recreation Injury Prevention Strategies: Systematic Review and Best Practices*, by the BC Injury Research and Prevention Unit (MacKay et al., 2001), in addition to an updated review by BCIRPU on skiing and snowboarding and small wheel vehicle injury prevention.

Small Wheel Vehicles

- The use of protective equipment has proven to reduce the number and severity of injuries from riding skateboards, scooters and inline skates. Limiting the age at which a child should ride and employing close adult supervision also significantly reduces the risk of injury.

This review includes a summary of the following documents:

- Prevention of Falls and Injuries Among the Elderly (2004), from the Provincial Health Officer.
- Motor Vehicle Crashes among Young Drivers: Systematic Review and Recommendations for BC (2005), BC Injury Research and Prevention Unit (Turcotte et al., 2005).
- Sports and Recreation Injury Prevention Strategies: Systematic Review and Best Practices (2001), BC Injury Research and Prevention Unit (MacKay et al., 2001).

Several other reviews, which are in the final stages of completion by the BC Injury Research and Prevention Unit (BCIRPU), will provide additional important evidence. These will be available on the BCIRPU website (www.injuryresearch.bc.ca) once completed:

- Motor Vehicle-related Injuries in British Columbia.
- A Systematic Review of the Effectiveness of Intervention Strategies to Reduce Older Driver Involved Crashes.
- Injury Prevention Intervention Strategies of Among Aboriginal People: A Systematic Review.

APPENDIX 2: OVERVIEW OF INJURY PREVENTION INITIATIVES IN OTHER PROVINCIAL MINISTRIES/CROWN CORPORATIONS (2007)

This overview applies not only to unintentional injury prevention, but to a broad range of injury prevention provided across the provincial government. Some of these initiatives are addressed more fully in other core program papers such prevention of violence, abuse and neglect, food safety, food security, health emergency management. Ministry of Health initiatives are discussed in Section 2.2 of this model core program paper.

Ministry	Goals Related to Injury Prevention	Overview of Injury Prevention Initiatives
Aboriginal Relations and Reconciliation	Improve social and economic outcomes for Aboriginal people	Policy, planning and collaboration to reduce incidence of preventable diseases, substance abuse, family violence and youth suicide among Aboriginal people. http://www.bcbudget.gov.bc.ca/2007/sp/arr/default.aspx?hash=5
Agriculture and Lands	Safe, high quality BC products from sustainable agri-food systems	<ul style="list-style-type: none"> • <i>Food Safety and Quality</i> Supports industry, retailers and consumers through provision of information, resource materials and services to: access domestic and international markets; ensure safe and high quality agri-food products; and develop environmentally, economically and socially sustainable agri-food industries. • <i>Livestock Health Management and Regulation</i> Monitors the food safety standards for raw milk produced in BC; supports the sustainability of animal agriculture; and monitors antibiotic use and antimicrobial resistance. • <i>Pest Management/Plant Health</i> Facilitates integrated pest management strategies to mitigate the impact of plant and bee diseases, insect pests and weeds; monitors pest outbreaks; and promotes safe and proper use of pesticides. • <i>Crown Land Administration</i> Leads cross-government identification, prioritization and remediation of contaminated sites on Crown land. http://www.gov.bc.ca/aved/index.html
Attorney General	Effective immigrant settlement and adaptation services, multiculturalism and anti-racism initiatives	<ul style="list-style-type: none"> • <i>Multiculturalism and Immigration</i> Funds third-party initiatives designed to: increase understanding of multiculturalism, and prevent and eliminate racism; implement Critical Incident Response Model for community response to racism and hate activity. http://www.bcbudget.gov.bc.ca/2007/sp/ag/default.aspx?hash=6

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Ministry	Goals Related to Injury Prevention	Overview of Injury Prevention Initiatives
Children and Family Development	Promote and develop the capacity of families and communities to care for and protect vulnerable children and youth	<ul style="list-style-type: none"> • <i>Child Care</i> Supports sustainable child care to enable families to choose from a range of affordable, safe, quality “licensed” child care options. • <i>Child Protection</i> Monitors and prevents child neglect and/or child abuse by family members. Provides safe and supportive foster homes for infants/children in care • <i>Youth Services</i> Supports young people and their families when youth are sexually exploited, addicted to drugs or alcohol, and/or living on the street, or when youth have mental health problems, or a combination of issues. • <i>Youth Justice Services</i> Promotes the development of law-abiding behaviour through an integrated, multi-disciplinary approach for youth in conflict with the law. <p>http://www.bcbudget.gov.bc.ca/2007/sp/cfd/default.html#1</p>
Community Services	Promote sustainable, liveable communities that provide healthy and safe places for British Columbians	<ul style="list-style-type: none"> • <i>Community Partnership Branch</i> Builds partnerships to support resilient, sustainable, healthy and safe communities. • <i>Seniors</i> Provides support for” accessible transportation; healthy eating for seniors; active aging plan for BC; mature drivers. • <i>Women’s Services</i> Supports women to live free of domestic violence (e.g., provides shelter and counselling for women leaving abusive relationships, outreach for women at risk, and community violence prevention). <p>http://www.bcbudget.gov.bc.ca/2007/sp/cs/default.html#1</p>
Education	Leadership, funding, and policies to set results-based standards, accountability and performance for the K-12 education system—including teaching students to make responsible choices related to health and safety	<p>Initiatives include: elevating the profile of school safety by holding schools districts accountable to the standards outlined in <i>Safe, Caring and Orderly Schools – A Guide</i>; and proposed legislation to establish a Teachers’ Employment Registry to publicly report the names of teachers disciplined for misconduct involving emotional, physical or sexual abuse.</p> <p>http://www.bcbudget.gov.bc.ca/2007/sp/educ/default.aspx?hash=6</p>
Energy, Mines and Petroleum Resources	Safe and environmentally responsible energy, mineral and petroleum resource development and use	<p>The ministry develops leading health and safety standards and worksite practices in cooperation with labour and industry groups; and improves safety compliance through inspections and audits.</p> <p>http://www.bcbudget.gov.bc.ca/2007/sp/empr/default.aspx?hash=7</p>
Environment	A healthy environment that enhances human health, and a high quality of life—including clean and safe water, land and air	<p>The ministry ensures safe and secure drinking water through the source water protection program; explores new ways to reduce municipal solid waste disposal; reduces the risk to public safety through effective flood hazard management, drought management and dam safety programs; reduces the risk to the environment and human health and safety through effective compliance and enforcement strategies and action; and acts to remediate high-risk contaminated sites.</p> <p>http://www.bcbudget.gov.bc.ca/2007/sp/env/default.aspx?hash=7</p>

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Ministry	Goals Related to Injury Prevention	Overview of Injury Prevention Initiatives
Forests and Range	Stewardship of provincial forest lands—including protection against fire and pests, safe, reliable forest road network, and safety within the forest industry	<ul style="list-style-type: none"> • <i>Protection Against Fire and Pests</i> Manages wildfires on both Crown and private lands outside of municipalities or regional districts. • <i>Forest Road Safety</i> Develops (with the Ministry of Energy, Mines and Petroleum Resources) legislation on road construction, road use, maintenance/deactivation standards; and encourages safe drivers, safe resource roads and highways. • <i>Forest Safety Action Plan</i> Supports safety in BC forest and timber industries, ensures compliance and enforcement of legislation and licenses, and establishes best safety practices. http://www.gov.bc.ca/for/index.html
Public Safety and Solicitor General	Maintain and enhance public safety through the province—through corrections, coroners service, law enforcement, crime prevention, victim services, hazard mitigation, emergency management and response, road safety, fire prevention, life safety and property protection, liquor control, and consumer protection	<ul style="list-style-type: none"> • <i>Corrections</i> Offenders are supervised and managed based on court orders and their risk to re-offend. Programs address factors known to contribute to criminality and focus on addressing thought patterns, lifestyles and skills necessary to bring about behavioural change. • <i>Policing and Community Safety</i> Ensures adequate and effective levels of police law enforcement throughout the province, as well as: protective programs for vulnerable adults, youth and children; a Protection Order Registry; criminal record checks on individuals who work with children; and assistance and support for victims of crime. • <i>Provincial Emergency Management</i> Provides leadership to minimize loss of life and suffering, protect health, property, infrastructure and the environment, and reduce the economic and social impacts of emergencies and disasters, such as severe storms, floods, interface fires, earthquakes and landslides. • <i>Coroners Service</i> The Coroner investigates all unnatural, sudden and unexpected deaths in the province, and ensures that the relevant facts are made public; and identifies recommendations to improve public safety and prevent death in similar circumstances. • <i>Office of the Fire Commissioner</i> Takes a leadership role in promoting fire and life safety and property protection services in BC, particularly through close working relationships with local governments, fire services organizations and other jurisdictions. • <i>Superintendent of Motor Vehicles</i> Regulates drivers to help ensure the safe and responsible operation of motor vehicles; and promotes/regulates the fitness and safety of drivers in the interest of public safety. • <i>Liquor Control and Licensing</i> Sets policy for the manufacture and resale of liquor in licensed establishments in order to improve the safety of the community by reducing harm caused by liquor misuse. http://www.bcbudget.gov.bc.ca/2007/sp/pssg/default.html#1

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Ministry	Goals Related to Injury Prevention	Overview of Injury Prevention Initiatives
Tourism, Sport and the Arts	Effectively maintain BC's tourism-related outdoor recreation resources Support sustainable recreation and sports initiatives with a wide range of partners	<ul style="list-style-type: none"> • <i>Recreation Sites and Trails</i> Manages and maintains the provincial system of forest recreation sites and trails to ensure they are safe, enjoyable and environmentally sustainable. • <i>Sports</i> Develops and coordinates provincial sport and recreation strategies to encourage and sustain an active, healthy population. http://www.bcbudget.gov.bc.ca/2007/sp/tsa/default.aspx?hash=7#menu3
Transportation	Improve highway safety and reliability Effective road safety enforcement, education and programs for the commercial transport industry	The ministry role involves monitoring highways safety and improving high-risk locations; maximizing highway safety and reliability through safety-focused enhancements and improvements; working with safety partners such as the Insurance Corporation of British Columbia, the police, and the Ministry of Public Safety and Solicitor General to develop a safety plan to achieve the targets established in the Canada-wide Road Safety Vision 2010; improving commercial transport regulations; and working with other jurisdictions to harmonize commercial transport and vehicle safety standards. http://www.bcbudget.gov.bc.ca/2007/sp/trans/default.aspx?hash=6

Crown Corporations	Goals Related to Injury Prevention	Overview of Injury Prevention Initiatives
BC Housing	Affordable, safe housing for those with the greatest need	Role is to provide an innovative and comprehensive strategy for safe, affordable housing for those with high need. http://www.bchousing.org/
BC Transit	Provide safe, reliable, cost-efficient and market-focused public transportation systems	Works to improve transit safety for passengers and reduce the costs of accidents. Ongoing training and improved performance feedback are used as important components for improving safety. http://www.transitbc.com/corporate/pdf/20070220_service_plan.pdf
Community Living BC	Support and services for people with developmental disabilities, children with special needs and their families	Community Living BC helps individuals, children and their families achieve goals; ensures health and safety standards are maintained when living away from families; helps build connections to the community; and provide supports when necessary. http://www.communitylivingbc.ca/index.htm
Insurance Corporation of British Columbia	Road safety in BC	The Insurance Corporation of British Columbia invests in programs that prevent crashes, auto crime and fraud to help control claims costs and keep insurance rates low and stable. Examples include: Road Improvement program; High-risk Driver Education program; and Graduated Licensing. http://www.icbc.com/road_safety/

APPENDIX 3: PROGRAM SCHEMATIC - MODEL CORE PROGRAM FOR PREVENTION OF UNINTENTIONAL INJURIES

Objectives: To prevent or reduce the level of injury-related disability and death.
 To reduce the risk and severity of injuries.
 To conduct surveillance, monitoring and evaluation of injury prevention programs.

Main Components	Implementation Objectives (Best Practices)	Outputs	Linking Constructs	Short-term Outcomes	Long-term Outcomes	
Strategic Planning and Priority Setting	<ul style="list-style-type: none"> Assess risk factors and protective factors for a range of settings and levels. Establish priorities based on regional impact on health from injuries. Identify key injury prevention policies and strategies, including: <ul style="list-style-type: none"> A structure for management and delivery of an injury prevention program. Coordination/integration of injury prevention across health authority programs. Workforce development of health authority staff. Collaborate with key stakeholders in the community, region and province. Community capacity building strategies. Public education, awareness and social marketing. 	<ul style="list-style-type: none"> Needs assessment. A strategic plan for injury prevention. Key priorities identified. 	<ul style="list-style-type: none"> Increased ability to develop and implement programs and services. 	<ul style="list-style-type: none"> Enhanced commitment to, and ability to, implement injury prevention programs. 	Reduced level of injury-related disability and death	
Advocacy and Public Policy	<ul style="list-style-type: none"> Advocate and encourage the adoption of local bylaws by municipal councils for enhanced safety of physical and social environments. Advise and encourage schools, workplaces, recreation and sports groups, and others, to adopt proven injury prevention and health promotion policies. Advocate for modification to the built environment, equipment, homes and toys to enhance injury prevention. 	<ul style="list-style-type: none"> Meetings/planning. Proposals. Background educational materials. 	<ul style="list-style-type: none"> Increased interest in addressing injury risk factors in physical, social, educational and recreational environments. 	<ul style="list-style-type: none"> Increased number of local safety policies and regulations. 		Reduced risks and severity of injuries
Community Development and Community Capacity Building	<ul style="list-style-type: none"> Educate, encourage and facilitate involvement of local groups to development community-based injury prevention initiatives. Coordinate and partner with key stakeholders including community coalitions to assess needs, identify resources, and develop and implement action plans. Provide information, data, evidence-based best practices, technical and other assistance to support community planning and development initiatives. Facilitate development of specific priority injury initiatives through local coalitions. Enhance community capacity through delivery of established curriculum courses. 	<ul style="list-style-type: none"> Meetings/workshops. Community coordination. Public communication initiatives. Resources distributed. 	<ul style="list-style-type: none"> Increased community ability to take action on preventing injuries. Increased collaboration among community groups in planning injury prevention. 	<ul style="list-style-type: none"> Enhanced community mobilization and community action. 		

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Main Components	Implementation Objectives (Best Practices)	Outputs	Linking Constructs	Short-term Outcomes	Long-term Outcomes
Knowledge Transfer and Public Education	<ul style="list-style-type: none"> • Provide educational resources for health professionals to enhance injury prevention counselling and client support. • Integrate injury prevention initiatives into appropriate health authority caregiver services and support programs provided to individuals and families. • Target public education to high-risk neighbourhoods, communities and population groups. • Educate key organizations on priority injury prevention issues. • Partner with the media to provide information and education on key trends. • Identify and prioritize the need for, and support the implementation of, social marketing campaigns to changes attitudes and behaviours to enhance safety. 	<ul style="list-style-type: none"> • Communications plan. • Workforce training. • Public educational materials/workshops. • Media coverage of safety issues. 	<ul style="list-style-type: none"> • Increased public knowledge of risk factors and injury prevention strategies. • Increased awareness of injury prevention among high-risk groups. 	<ul style="list-style-type: none"> • Improved attitudes and safer behaviours among the population, and vulnerable groups. 	Improved population health
Enforcement	<ul style="list-style-type: none"> • Enforce compliance with legislated safety requirements, through public health inspections and licensing activities, as appropriate. • Inform, educate and advise the public, high-risk population, etc. to enhance understanding and compliance with bylaws, legislation and other policies that enforce injury prevention. • Collaborate with external enforcement organizations to enhance a coordinated approach to injury prevention. 	<ul style="list-style-type: none"> • Public health inspection. • Public information on legislation, regulations, and bylaws. 	<ul style="list-style-type: none"> • Increased knowledge of safety requirements. 	<ul style="list-style-type: none"> • Improved public compliance with, and support for, safety enforcement. 	
Surveillance, Data Collection and Evaluation	<ul style="list-style-type: none"> • Collaborate and manage data, through collaboration with the Ministry of Health and the BC Injury Research and Prevention Unit. • Analyze and interpret regional data to identify local and regional injury trends, health risks, vulnerabilities of high-risk groups and sub-populations. • Share and report data with key health authority policy and program officials on major issues, trends and concerns to support decision-making, public education and community development. • Participate in research projects as feasible to enhance effectiveness of strategies. • Work with the Ministry of Health and other health authorities to examine the feasibility of establishing an emergency department injury surveillance system. • Establish program assessment processes, including evaluation frameworks for new initiatives. 	<ul style="list-style-type: none"> • Statistical reports and trends analysis. • Baseline data. • Program evaluation. 	<ul style="list-style-type: none"> • Increased surveillance, monitoring and evaluation of injury prevention programs. 	<ul style="list-style-type: none"> • Improved decision-making to enhance effectiveness of programs. 	