



THE BRITISH COLUMBIA **Casebook for Injury Prevention**

AUGUST 2015

BC INJURY research and
prevention unit



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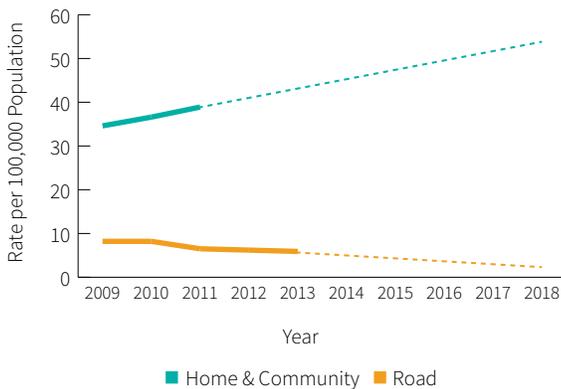
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Everyone has a role in injury prevention—working collaboratively to implement evidence-based solutions will save lives and prevent disabilities.

The Purpose of this Book

This Casebook makes the case for injury prevention in British Columbia (BC). Injury prevention addresses premature death and greatly reduces the frequency and severity of injuries. When sustained resources are available and collaborative efforts that use multiple strategies are applied, injuries can be prevented.

COMPARISON OF INJURY DEATH RATES ON THE ROAD VS. THOSE OCCURRING IN THE HOME & COMMUNITY
BC, 2009 - 2013^{1,2}



Sustained and collaborative effort has resulted in a steady decrease in the number of deaths on BC roads from 2000 to 2013. This reduction in road injuries is supported by continued resource and collaboration directed towards motor vehicle crash prevention such as improved vehicle safety, legislation restricting cell phone use while driving, and changes to enforcement of drinking & driving legislation.

During the same time period, deaths due to injuries in the home and in the community have increased. Injury prevention efforts are required to see the same decreases to injuries

in the home, at work and during sport and recreational activities in the community. For example, child poisonings from household products such as laundry soap pods could be reduced through partnerships between educators and laundry soap manufacturers. Similar to child-resistant caps on medicine bottles, developing child-resistant packaging along with enforcement aimed at manufacturers is likely to result in fewer children poisoned by laundry soap pods.³ Using concussion as another example, collaborative efforts between players/athletes, coaches, health practitioners, parents and school professionals will result in a standardized approach to concussion recognition, diagnosis treatment and management.⁴

We know what to do. Years of injury research has identified the types of injuries that contribute to the greatest burden, the groups that are most affected, the societal factors that have an impact on injury rates and the injury prevention solutions that are proven to make a difference. It is time to work together to implement evidence-based solutions that prevent injuries so that British Columbians can live long lives to the fullest.



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Injury prevention prevents death and reduces the need for medical treatment so British Columbians can live long lives to the fullest.

Establishing partnerships between professionals working in the areas of provincial government, municipal government, transportation, workplace & industry, insurance, regulation, business, injury prevention, sport and recreation, health, first response, trauma and acute care, as well as other areas will lead to effective injury prevention.

How to Take Action

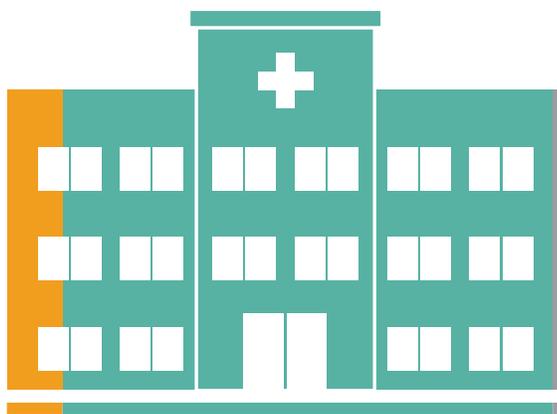
The following chapters provide the rationale for why action is needed as well as outlining potential actions to be taken. This information is summarized in Chapter 10.

Because the social determinants of health and other public health issues are connected to injury rates and patterns, addressing them will also address injury.⁸⁻¹⁰ Determining and acting upon the upstream investment for injury prevention will translate to injury costs avoided and financial resources available for reallocation to other important health care areas.¹¹⁻¹³ Evidence-based solutions are available.

What Injuries are We Talking About?

Injuries can be intentional, self-inflicted or inflicted by another person, or unintentional, what we have traditionally labelled “accidents.”

INJURY HOSPITALIZATIONS IN BC 2010/11⁴



10%

Intentional Injury

Inflicted by another:
Violence, Abuse
Self-Inflicted: Self-Harm,
Suicide

88%

Unintentional Injury

Motor Vehicle Crashes,
Falls, Poisoning,
Drowning, Suffocation,
Struck by Object, Fire and
Burns & Other

Note: The remainder of the injuries were of undetermined intent.

Why Focus on Injuries?

Injuries are the leading killer of British Columbians ages 1-44 years old.⁵ More than 400,000 residents of BC are injured each year, with over 2,000 dying from their injuries,⁶ yet as many as 90% of these injuries are both predictable and preventable.⁷

What is Your Role?

This Casebook is for senior decision makers, policy makers, legislators and others in BC who have a responsibility in injury prevention and/or a role in resource allocation.

Injury prevention is conducted by collaborative partnerships that rely on multiple reinforcing strategies.

Why is Injury Prevention Important?

In practical terms, injury prevention means eliminating hazards and managing risk at all levels of society while maintaining healthy, active and safe communities and lifestyles. Individual and collective choices are strongly influenced by the social, economic and physical conditions where people live, work, learn and play. To prevent injuries, the social determinants and risk factors for injury must be addressed.¹⁻³ Policy makers can make a difference by enabling supportive policy, programs and practices. Education must also be in place at all levels in these environments.

Partnerships & Collaboration

In BC, Health Authorities work with stakeholders beyond the health system, such as local governments, non-governmental organizations (NGOs), researchers, communities, and private organizations that play a role in reducing or eliminating risk factors that can cause injuries. Collaboration aids in gaining a better understanding of the scale and impact of injuries so that professionals in all sectors can take informed and appropriate preventative action.



For examples of how Government, Health Authorities, Communities and Researchers have worked together in BC to prevent injury, see the *Partnerships* section in the case studies on pages 24 through 41.

Government: Government develops public health policy and provides leadership for population and public health. Government establishes expectations and target outcomes for health authority performance; monitors and evaluates health authority performance against those expectations; and reports to the public.

Example of injury prevention at the government level: the provincial government created Child Safety Seat Regulations and updated the policy to include booster seats in 2008.

Health Authorities: Together, the BC Ministry of Health, the Provincial Health Services Authority, the five regional Health Authorities and the First Nations Health Authority share responsibility for providing high quality, appropriate and timely health services province-wide. Health Authorities in BC have a mandate to understand the causes and burden of injury, and a responsibility to lead injury prevention.^{4,5}

Example of injury prevention at the Health Authority level: Public health nurses provide information to parents and caregivers about the right car seat or booster seat for their child. Health Authorities also provide trauma services to children who are injured and rehabilitation for those who are seriously injured.

Community: Community consists of interested stakeholders that are self-mandated to improve the health and well-being of communities for the good of society. Community partners understand what works in their community and are therefore good advocates for local injury prevention.

Example of injury prevention at the community level: Free child seat safety checks are offered by community partners such as fire departments. Organizations such as BC Automobile Association and the United Way of the Lower Mainland provide car seats to eligible NGOs and community groups in BC to use within their programs or provide to families who need them.

Research: Research provides evidence in support of all of the above injury prevention activities. Research examines



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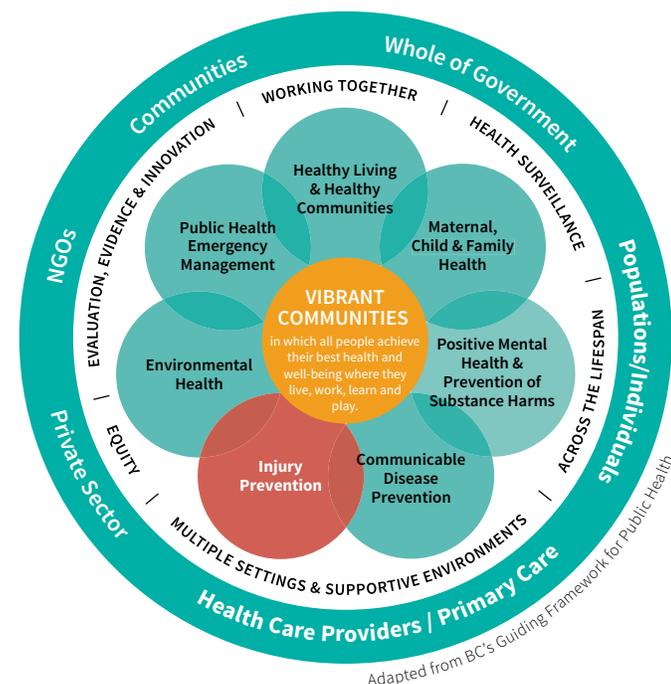
The public health system, including Government, Health Authorities, Communities and Researchers, is ideally situated to reduce injury in BC.

which injuries are common, most serious, who is more likely to be injured and what works to prevent those injuries. Through research, answers can be found to injury prevention questions.

Example of injury prevention research: Research with crash test dummies that represent average sized children helps to inform improved child safety design by child seat and vehicle manufacturers. Policy research informs governments on the best practice elements to include in legislation. Behavioural research identifies what works to get families to use booster seats.

Injury Prevention in BC: The Public Health Approach in Action

Injury prevention has been identified as a priority in BC’s *Guiding Framework for Public Health*. It is one of seven goals to support the vision of “Vibrant communities in which all people achieve their best health and well-being where they live, work, learn and play. The inner ring of the circle illustrates the guiding principles/values for the public health system, and the outer ring symbolizes the critical connections required for the public health system to fulfill its role in improving population health and reducing health inequities.”⁶



The Approach

The following injury prevention approach is outlined in BC’s *Guiding Framework for Public Health* and is widely accepted by injury prevention practitioners. This approach integrates the following four domains and is consistent with the public health approach adopted in BC:

Education: Educating individuals about changing behaviours that can lead to injuries.

Enforcement: Involves safety legislation and policies, including passing, strengthening and enforcing voluntary standards, regulations and laws. Examples include making it mandatory to wear a bicycle helmet and use seatbelts and child car seats.

Engineering and Environmental Design: Making the design, development and manufacturing of products and the built environment safer. Examples include creating dedicated bike lanes and ensuring that playground equipment is safe.

Engagement: For example, the Ministry of Health, the federal government and the First Nations Health Authority work together under the Tripartite First Nations Health Plan on systemic change and improvement in injury prevention and safety promotion for and within First Nations communities.⁶

Understanding the group or population that is most affected by specific causes of injuries informs where to focus our injury prevention efforts.

Injury Patterns

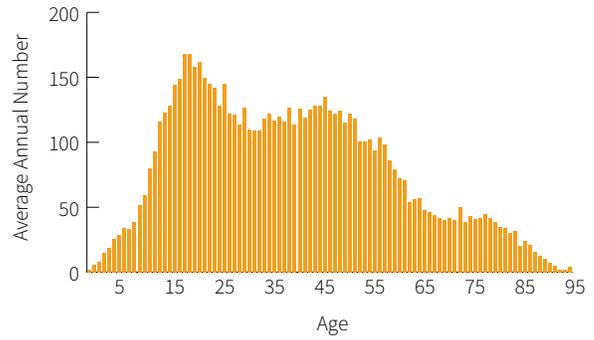
There are many different causes of injury, including falls, motor vehicle crashes, drowning, assaults, and sport or recreation injuries.

There are also patterns in injury that we can identify. These relate to age, sex, gender, alcohol and drug use, geography, and socioeconomic factors. For example, while transport related hospitalizations peak among young adults and then decrease with age, fall-related hospitalizations increase with age, peaking among those in their mid- to late eighties.¹ Looking at suicide patterns, there are more suicides among males than females across all ages.²

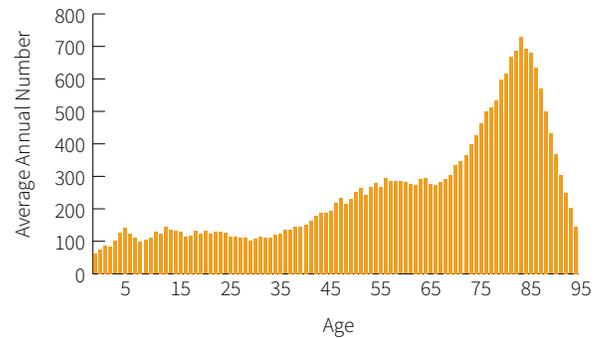
Known Patterns

- » The three leading causes of injury are transportation, falls and suicide.^{1,2}
- » Injury mortality rates are higher for males than females at all ages; elderly males have the highest rates of injury mortality.²
- » Injury hospitalization rates are higher for males than females up to age 65; elderly females have the highest rates of injury hospitalization.¹
- » Injury hospitalization rates increase more dramatically among pre-teen and teenaged males than among females.¹
- » Injury hospitalization rates decline among children, youth and adults as household income increases; however injury hospitalization rates are high across all income ranges among older adults.³
- » Injury mortality and hospitalization rates are generally lower in urban areas and higher in rural and remote areas; this tendency is less pronounced for mortality than for hospitalizations.³

TRANSPORT-RELATED HOSPITALIZATIONS
BC, 2005/06 - 2010/11¹



FALLS-RELATED HOSPITALIZATIONS
BC, 2005/06 - 2010/11¹



SUICIDE DEATHS
BC, 2005 - 2010²

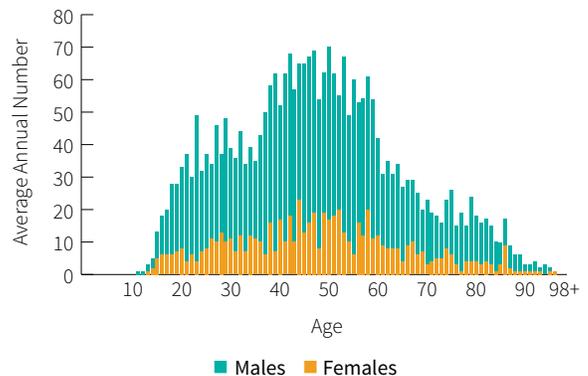


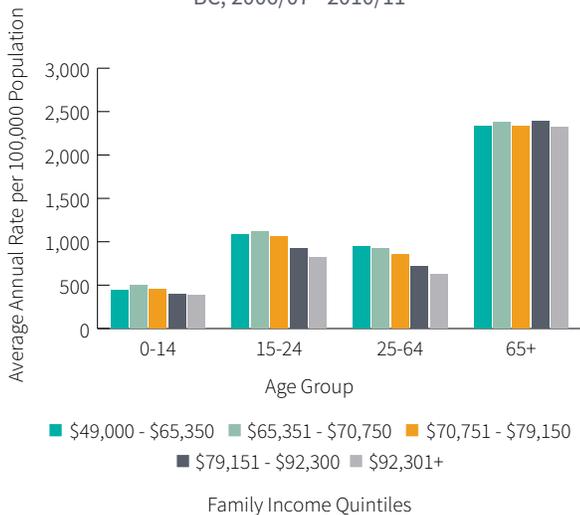


Photo: David Maska/Shutterstock

Injury patterns can be identified because different causes of injury can have varying effects on different groups of people.

INJURY HOSPITALIZATION BY FAMILY INCOME

BC, 2006/07 - 2010/11^{3,4}

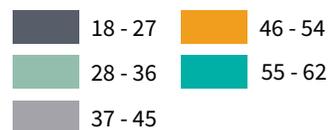


INJURY DEATH RATES BY HEALTH SERVICE DELIVERY AREA

BC, 2006 - 2010³



5-Year Rate per 100,000 Population



(BC Average: 36.2/100,000 persons)

Geographic Differences

Each health authority has its own patterns. Understanding factors related to age, sex, gender, level of education, income, urban/rural, etc., for local populations will inform how to approach injury prevention in each region.

This informed approach along with the use of collaborative and evidence-based solutions can decrease deaths and hospitalizations due to injury.

Injury is the leading cause of death¹ and the 2nd leading cause of hospitalization among 1-44 year olds in BC.²

Injuries in BC

Each day, approximately 1,300 people in BC are injured.³ Of these, five die, making injuries the 4th leading cause of death across all age groups in BC, but the leading cause of death for ages 1-44 years.⁴ Injury is the 2nd leading cause of hospitalization for the under 45 years of age population in BC, after digestive system diseases.²

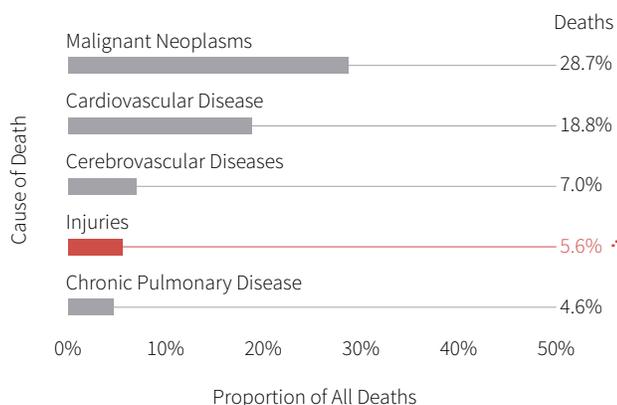
PYLL as a Proportion of All Injury Deaths

Potential Years of Life Lost (PYLL) is an estimate of the average numbers of years a person would have lived if he or she had not died prematurely (i.e. deaths before age 80).⁵ Injury accounts for 40% of the PYLL in BC for those who die at ages 1-44 years.⁴

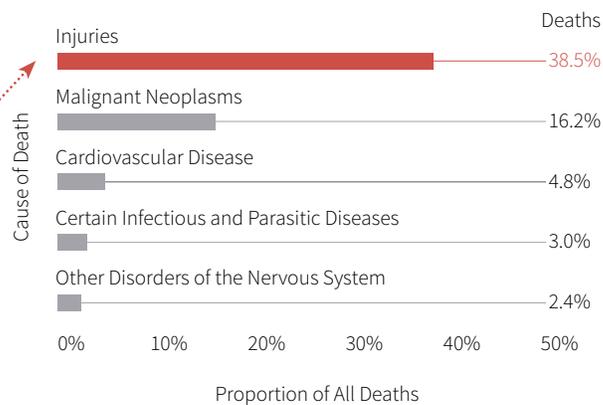
Burden of Injury

Information is readily available on the number of people who die or are hospitalized due to injury. Limited information is available regarding the number people seen in emergency rooms, and it is not known how many are seen in clinics and physicians offices or go untreated by a health care provider.

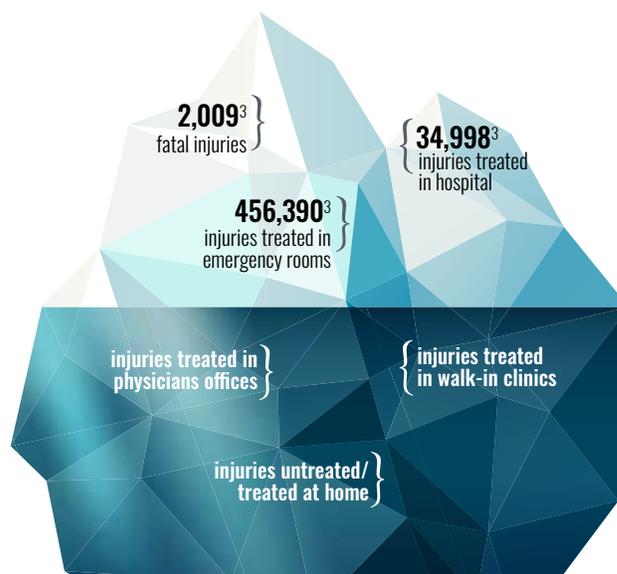
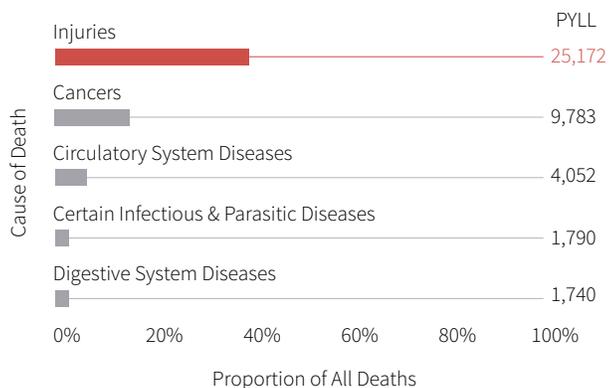
LEADING CAUSES OF DEATH, ALL AGES
BC, 2011⁴



LEADING CAUSES OF DEATH, AGES 1-44
BC, 2011⁴



POTENTIAL YEARS OF LIFE LOST BY LEADING CAUSE OF DEATH, AGES 1-44
BC, 2011⁴



Preventable Injury in BC, in just *one year* (2010)³

There were
2,009 DEATHS
the equivalent of...

one death every³
4 hours and
24 minutes



34,998 people were
HOSPITALIZED for serious injuries,³
requiring...



80 average-sized
hospitals

filled to capacity to
accommodate this number of
injured people

456,390

people³ required

**EMERGENCY
MEDICAL
ATTENTION**

for their
injuries...

the
equivalent of
a line up

278

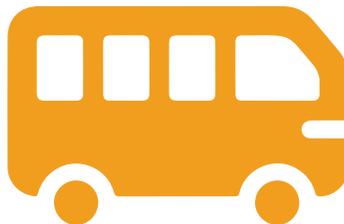
kilometres long,

the distance from
Hope to Whistler,

waiting to get into
the emergency
room to be treated
for their injury



7,948 people suffered a permanent
PARTIAL DISABILITY*
requiring³...



794

more HandiDart buses
to accommodate these
people

634

people³ suffered a permanent
TOTAL DISABILITY†...

or almost

2 people,
EVERY DAY



³Permanently disabled, but able to return to some type of employment.

[†]Permanently disabled and unable to work.

PrYLL is a powerful metric of premature and preventable loss of human potential.

What is Preventable Years of Life Lost?

Preventable Years of Life Lost (PrYLL) is an epidemiologic measure used to estimate the average number of years a person would have lived if s/he had not died prematurely due to a preventable cause of death.¹ As an indicator of premature mortality, PrYLL is closely related to Potential Years of Life Lost (PYLL) in that it gives more weight to deaths that occur among younger people.² Both PYLL and PrYLL represent the total number of years NOT lived by an individual who died prematurely, or before average life expectancy. Unlike PYLL, PrYLL excludes causes of death that aren't deemed to be preventable. PrYLL allows for a comparison of preventable injuries to other preventable causes of death, essentially comparing 'apples to apples'. The majority of intentional and unintentional injuries are included and compared to behaviour-related or lifestyle-related cancers (e.g., skin, lung and stomach cancer), preventable heart disease, preventable infections, and more.

Preventable conditions and ICD-10 codes³

Condition Group and Cause	ICD-10 Codes ⁴
Alcohol and illicit drug use	F10-F16, F18-F19, G31.2, G62.1, I42.6, K29.2, K70, K73, K74 (excl. K74.3-K74.5), K86.0
Behaviour related cancers: cancer of lip, oral cavity, pharynx, oesophagus, stomach, colon and rectum, liver, trachea, bronchus and lung, skin, mesothelioma, breast, and cervix uteri	C00-C16, C18-C22, C33-C34, C43, C45, C50, C53
Cardiovascular diseases: ischaemic heart disease, DVT with pulmonary embolism, aortic aneurysm and dissection	I20-I25, I26, I80.1-I80.3, I80.9, I82.9, I71
Diabetes	E10-14
Infections: tuberculosis, hepatitis C and HIV/AIDS	A15-19, B90, B17.1, B18.2, B20-24
Respiratory diseases: influenza and chronic obstructive pulmonary disorder	J09-J11, J40-J44
Injuries: unintentional and intentional	V01-V99, W00-X59, X60-X84, Y10-Y34, X85-Y09

PYLL helps us to understand which injuries and diseases contribute to the largest number of years not lived due to the premature death of children, youth and adults.

PrYLL allows for a direct comparison of those injuries and diseases resulting in premature death that are deemed to be preventable.

Other cancers (e.g., leukaemia and Hodgkins Disease) and congenital diseases are excluded as they are not considered preventable. Prostate cancer is not included as part of preventable cancers. There is insufficient evidence regarding preventable ways to avoid this form of cancer.

Asthma is deemed to be amenable to treatment, for example with the use of inhalers, but not preventable, although it may be influenced by environmental factors or access to good quality health care.



Photo: oliveromg/Shutterstock



Photo: Monkey Business Images/Shutterstock

From birth to retirement, injuries are the leading cause of Preventable Years of Life Lost (PrYLL).

For example, a person who died at age 20 would contribute 60 preventable years of life lost, using 80 as the upper age reference. Preventable years of life lost correspond to the sum of the PrYLL contributed for each individual.

Why this is Important for BC

Injury is the cause of death with the highest PrYLL, accounting for 74% of the PrYLL in BC for those who die at ages 1-44 years. As such, it should attract the greatest share of research and funding for prevention campaigns.

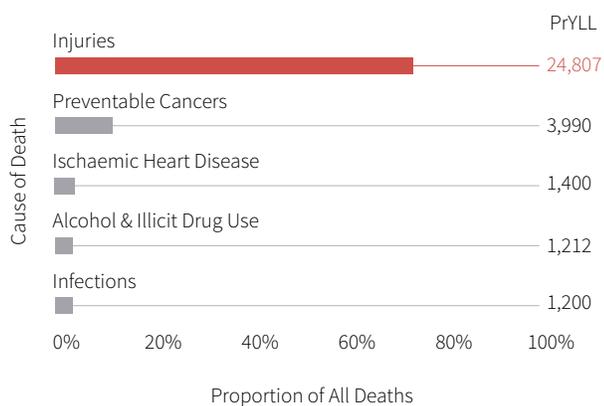
Supporting the prevention of injuries in BC will save lives and reduce the number of people living with disability. For those people who may have been injured at younger ages, the prevention of injuries also ensures increased societal and economic productivity.

“Injuries are a huge burden to society, they are easy to prevent and appropriate risk management enables rather than constrains economic activity.” - Errol Taylor, Deputy Chief Executive, Royal Society for the Prevention of Accidents

“A death is preventable if, in the light of current understanding of the determinants of health, all or most deaths from that cause (subject to age limits if appropriate) could be avoided by public health interventions in the broadest sense”. - The United Kingdom’s Office for National Statistics³

PREVENTABLE YEARS OF LIFE LOST BY PREVENTABLE CAUSES OF DEATH,³ AGES 1-44

BC, 2011⁵



Comparing Preventable Injuries to Preventable Diseases

When we compare only preventable causes of death, ones where initiatives and policy aimed at the general public can make a difference, injuries lead for ages 1-44 years. Based on a life expectancy of 80 years,⁶ injuries drop to second place for women after age 60. Injuries remain the leading cause of PrYLL for men up to age 80.⁷

How is Preventable Years of Life Lost Calculated?

Developed in 2012 by Errol Taylor at the Royal Society for the Prevention of Accidents¹, preventable years of life lost is calculated in the same way as PYLL.⁸ Causes of death that are considered to be preventable are selected and preventable years of life lost are calculated using an upper age reference. Age 80 has been used here to correspond with the average life expectancy in BC⁶, however, age 75 is traditionally used in PYLL calculations and could be used instead.

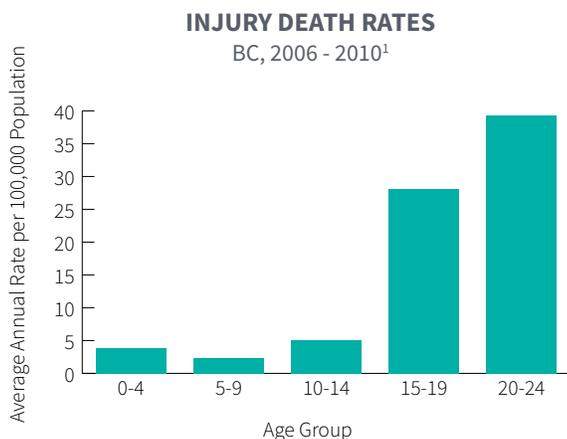
While injury has a significant effect on all age groups, it has a profound impact on children, youth, young adults and their families.

Why Should Children, Youth and Young Adults be a Priority?

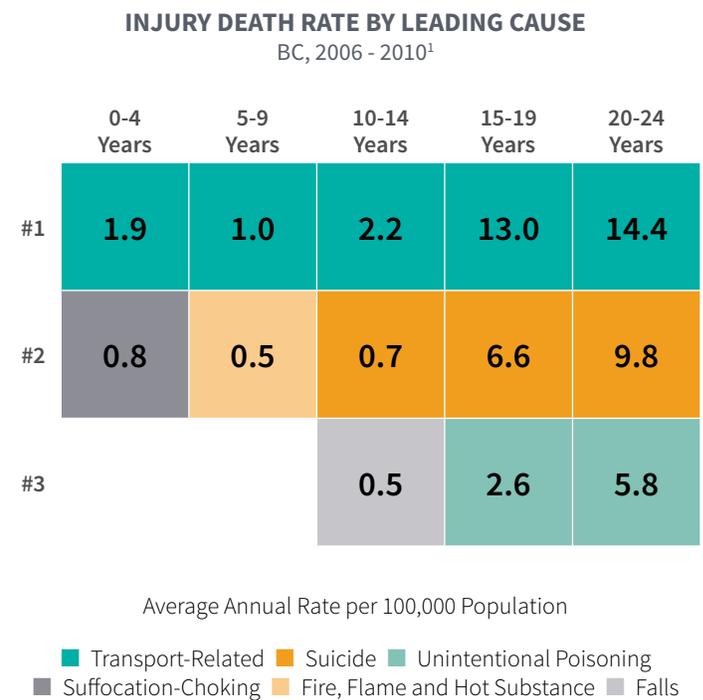
While injury has a significant effect on all age groups, it can have a profound impact on children, youth and young adults as the quality of life lost for young people who are hurt or disabled affects not only them, but also their families and communities, potentially for their whole lives. Their ability to become educated, to enter the work force, to engage in sports and recreational activities and life’s milestones can all be compromised by injury and disability. Adults have a societal responsibility to promote safety and protect children as children are unable to control the environments in which they live, learn and play. The United Nations Convention on the Rights of the Child stipulates that children have the right to live a full life, and that governments should ensure that children survive and develop healthily.

Ages and Stages

Unintentional injuries among children and youth are related to ages and stages—where they are and what they are doing. For example, young children spend a lot of time at home, while older children have increasing engagement in sports



and recreational activities. Also, children spend more time on the road as they get older, commuting to and from school and activities and potentially learning to drive. There is a marked increase in injury death and hospitalization rates during the adolescent period.^{1,2}



The Burden of Injury to Children, Youth and Young Adults

Deaths

Injuries that cause death to children, youth and young adults should be made a priority when deciding which injuries to prevent. The #1 cause of death for ages 0-24 is transport-related injuries.¹ It is most often head injuries due to motor-vehicle crashes that lead to these deaths.¹ The second leading cause of death varies by age. For ages 0-4, asphyxia caused by suffocation or choking is the second leading cause.¹ For ages 5-9, it is burns and asphyxia due to fires. For ages 10-24, the second leading cause is death by suicide.¹



Photo: BlueSkyImage/Shutterstock

Injury prevention resources need to be directed at preventing injuries among children, youth and young adults.

Hospitalizations

Falls are the #1 cause of hospitalization for children and youth of all ages.² These falls cause fractures that are serious enough to require at least one night's stay in hospital. The #2 cause of hospitalization varies by age. For ages 0-4 it is foreign body entering into or through an eye or natural orifice, or an object entering through the skin.² For ages 5-24, transport-related injuries are the second leading cause of hospitalization.² This information is valuable for informing injury prevention efforts.

Hospitalization Rate per 100,000 Population by Leading Cause, BC, 2009/10-2013/14²

	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years
Falls	148.0	201.6	177.4	176.3	179.9
Transport	13.8	44.3	101.5	172.7	171.0
Unintentional Poisoning	34.0	4.9	9.9	28.3	29.8
Struck by Object	21.0	25.8	80.9	139.6	92.3
Foreign Body	57.3	26.6	11.4	10.5	11.3
Attempted Suicide			35.4	135.8	103.2
Homicide			6.1	69.3	104.3

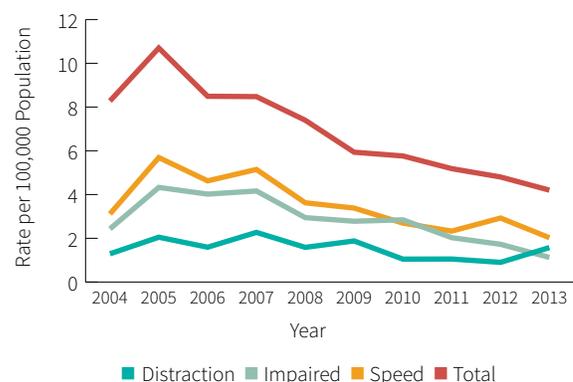
Average Annual Rate per 100,000 Population

What Can Be Done?

Everyone can participate in building a culture that values child, youth and young adult wellness. For example:

- » Changes to policy such as booster seat regulations and immediate roadside prohibition have contributed to a decrease in motor vehicle crash deaths and injuries (chart at right).³⁻⁶
- » Consider enhancing hand-held cell phone legislation to include other types of distracted driving and address issues of enforcement.⁷⁻⁹
- » Hockey Canada banned body checking at the Peewee level starting in the 2013-14 season in an effort to decrease concussions and other serious head and neck injuries in children up to age 12.¹⁰⁻¹²
- » At a local policy level, some municipalities are mandating the use of helmets by children and youth at skating rinks.¹³

MOTOR VEHICLE CRASH DEATHS BY LEADING CONTRIBUTING FACTORS, AGES 0-25 BC, 2004 - 2013¹⁵



- » BC Children's Hospital developed a 'Too Hot for Tots' campaign to prevent burns among young children.¹⁴

Awareness campaigns and the enforcement of injury prevention policies, as well as continued partnerships between government, communities, health authorities and researchers, will enhance the effectiveness of injury prevention initiatives. For more examples of effective injury prevention in action, please see the Case Studies on pages 24-41.

Injuries cost British Columbians **\$3.7 billion** dollars in 2010, the equivalent of **\$422,479** per hour, 24 hours per day, 7 days per week.¹

There were 2,009 lives lost in 2010 due to injury.¹ In addition, 34,998 people were hospitalized and 456,390 were treated in emergency departments as a result of injury.¹ In total, 8,582 people suffered injuries that resulted in permanent disabilities.¹ These injuries cost BC \$3.7 billion dollars in 2010, the equivalent of \$829 for each and every British Columbian.¹

Contributors to the total cost of injury, BC, 2010¹

	Number	\$ Millions
Injury Deaths	2,009	\$649
Hospitalized Treatment	34,998	\$682
Non-Hospitalized Treatment	456,390	\$615
Permanent Disability	8,582	\$1,756
Total Cost		\$3,701

Direct & Indirect Costs of Injury

Direct costs refer to the load on the health care system, including diagnosis, treatment, continuing care, rehabilitation and costs of injury related death. Indirect costs are defined as the value of economic output lost because of illness, injury-related work disability, or premature death.²⁻⁵

Unintentional injuries accounted for \$2 billion or 88% of the direct costs, and \$1 billion or 74% of the indirect costs of all injuries.¹ Intentional injuries accounted for \$239 million or 10% of the direct costs, and \$343 million or 24% of the indirect costs of injuries.¹

Total direct & indirect costs of injury by intent, BC, 2010 (\$ millions)¹

	Total Costs	Direct Costs	Indirect Costs
Unintentional	\$3,062	\$2,018	\$1,044
Intentional	\$581	\$239	\$343
Undetermined Intent/Other	\$57	\$32	\$25
Total Cost	\$3,701	\$2,289	\$1,412



Photo: val lawless/Shutterstock

Beyond these documented costs, there are also significant indirect costs assumed by families, friends, neighbours and private insurers that result in financial hardship and lost societal productivity in many cases. Preventing injuries will preserve the economic productivity of individuals, families and communities.

Which Injuries Cost the Most?

This chapter presents direct costs, referred to as health care costs, by cause of injury in two different ways: by age group and per person, also known as per capita. As injury data are available for age groups, the health care cost of injuries for each cause by age group is presented (bottom right table on next page). However, to determine the ages that incur the most health care cost due to injury, it is valuable to break these costs down per person, also known as per capita. Both ways demonstrate that falls were the single greatest contributor of injury costs, making up over one-third of direct injury costs in BC in 2010.¹

The majority of the injury health care costs per capita are spent on older adults and youth (pie charts on next page). When the health care costs are broken down by cause of injury among older adults, most of the health care costs are spent on fall-related injuries (table at top of next page.) Ages 15-24 years have the highest per capita health care costs associated with transport injuries (such as motor vehicle or ATV crashes, hit while cycling, etc.), suicide/self-harm, injuries due to violence and unintentional poisoning, when compared to other age groups.¹ *When considering Preventable Years of Life Lost (from chapter 5) along with cost, it is clear that injury prevention policies, environmental modification, education and programming need to target ages 15-24 years.*

Falls among older adults were the single greatest contributor of injury costs. Injuries to youth cost the most for all causes other than falls.

Photo: Toa55/Shutterstock

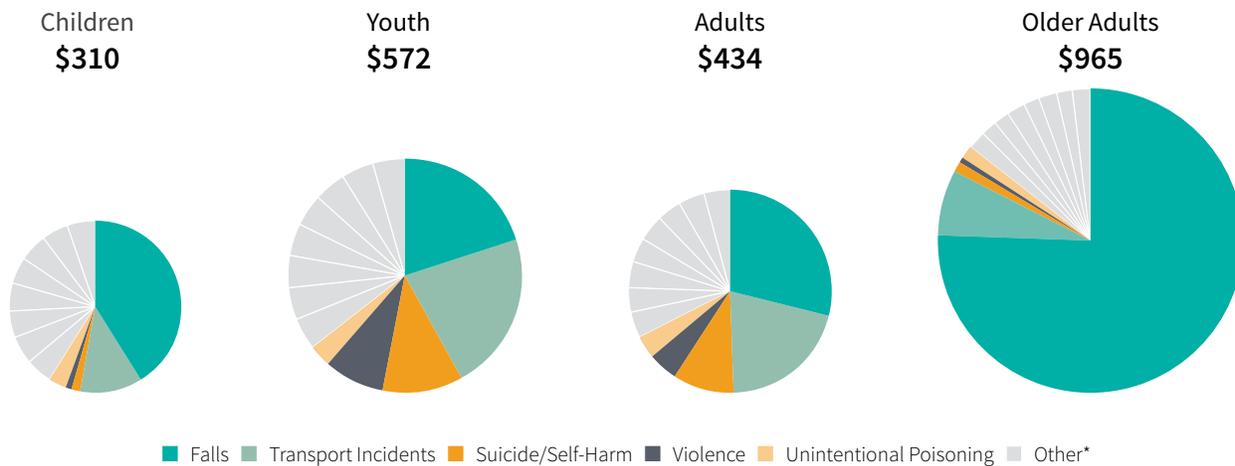
Health care costs^a spent on injury per person, BC, 2010¹

	Children (0-14 yrs)	Youth (15-24 yrs)	Adults (25-64 yrs)	Older Adults (65+ yrs)
Falls	\$127.69	\$114.54	\$126.60	\$729.39
Transport Incidents	\$36.03	\$125.99	\$89.42	\$67.93
Suicide/Self-Harm	\$5.78	\$64.00	\$41.75	\$11.59
Violence	\$3.58	\$47.81	\$20.15	\$3.73
Unintentional Poisoning	\$9.82	\$17.48	\$16.32	\$15.12
Other*	\$127.10	\$202.28	\$140.40	\$137.31
Total	\$310.01	\$572.10	\$434.63	\$965.07

^aHealth care costs are the direct costs.

*Includes drowning, fire/burns and other as defined in the table below.

HEALTH CARE COSTS^a SPENT ON INJURY PER PERSON
BC, 2010¹



^aHealth care costs are the direct costs. *Includes drowning, fire/burns and other as defined below.

Health care costs^a by age group and cause of injury, BC, 2010 (\$ millions)¹

	Children (0-14 yrs)	Youth (15-24 yrs)	Adults (25-64 yrs)	Older Adults (65+ yrs)	Total
Falls	\$88	\$67	\$320	\$485	\$960
Transport Incidents	\$25	\$74	\$226	\$45	\$370
Suicide/Self-Harm	\$4	\$37	\$106	\$8	\$155
Violence	\$2	\$28	\$51	\$2	\$84
Unintentional Poisoning	\$7	\$10	\$41	\$10	\$68
Fire/Burns	\$5	\$3	\$14	\$3	\$25
Drowning	\$1	\$1	\$2	\$0	\$3
Other**	\$82	\$115	\$340	\$88	\$624
Total	\$213	\$335	\$1,099	\$642	\$2,289

^aHealth care costs are the direct costs. **Includes struck by object (excluding sports equipment); exposure to animate mechanical forces; other accidental threats to breathing; exposure to electric current/radiation/extreme air temperature and pressure; contact with venomous animals and plants; exposure to forces of nature; overexertion and strenuous/repetitive movements; and accidental exposure to other and unspecified factors.

Investing in prevention provides an opportunity for positive change: we can save lives, reduce disabilities and save health care resources.

The Office of the BC Provincial Health Officer, the Canadian Public Health Association and the US Centers for Disease Control argue that investments “upstream”, in programs and interventions that focus on prevention and health promotion, will result in decreased demand for “downstream” acute care health facility-based services, **reducing the need for costly treatment.**¹⁻³ Investing in prevention and keeping people healthy can save health care resources.^{1,3}

Forecasted Cost Savings

Parachute, Canada’s national charitable organization dedicated to preventing injuries and saving lives, developed a report in 2015 titled *The Cost of Injury in Canada*.⁴ Parachute worked with The Conference Board of Canada to provide forecasts outlining the proportion of injuries that will *not occur* if specific preventative interventions are in place.

Example #1: Falls Intervention for Community-Based Older Adults

It is conservatively estimated that interventions which include a multifactorial falls risk assessment and a management program tailored to an individual’s risk factors and setting will result in a 20% reduction in falls among older adults by 2035.⁴ Increasing the number of older adults who receive environmental assessments from health care professionals that include: a) modifications of fall risks identified in the home, b) an evaluation of daily activities, and c) an intervention to promote safe performance of those activities is forecasted to reduce injury due to falls.⁵ Over 5 years, this will result in a savings of over \$28 million.⁶ Over 20 years, this will result in a savings of well over \$146 million.⁶



Photo: Tom Wang/Shutterstock

Example #2: Alcohol Consumption Interventions

Persons under the influence of alcohol are more likely to be injured, and when injured are more likely to sustain serious injuries.⁷ There are many best practice interventions, such as regulating the cost of alcohol and the hours of sale, that have an impact on the opportunity for excessive alcohol consumption.^{7,8} Data to support alcohol cost savings is currently unavailable, however based on the evidence, it is conservatively forecasted that an investment in alcohol-related injury prevention will reduce alcohol-related injury by 9%, also resulting in cost savings.^{6,9,10}

Example #3: Helmet Use

Helmets used when cycling or engaging in snow sports reduce the risk of head injury.¹¹⁻¹³ There is a forecasted 25% reduction

Wearing a **ski or snowboard helmet** can reduce⁴ head injury by **35%** generating a savings over 20 years of **\$125 million**



in risk of head injury if bicycle helmets are worn correctly.^{11,12} There is a forecasted 35% reduction in risk of head injury if ski and snowboard helmets are used.^{6,13} Over 5 years, this will result in a savings of over \$28 million.⁶ Over 20 years, this will result in a savings of well over \$125 million.⁶

Example #4: Traffic Speed Control

Speed-cameras, speed calming such as lowered speed limits, and environmental modifications such as road bumps are effective at reducing speed-related injury and death.¹⁴⁻²⁰ It is forecasted that speed calming efforts will result in 30% fewer transport-related deaths and 50% fewer injuries.^{20,21} Speed cameras result in a forecasted reduction of 15% of speed-related injury and death.^{17,19} These reductions rely on an investment in environmental modifications and enforcement of road safety laws, however the benefit of lives saved and injuries avoided is more than four times the cost of enforcement.¹⁸ Over 5 years, over \$61 million will be saved with these investments.⁶ Over 20 years, well over \$266 million will be saved.⁶

Reducing death and injury through **speed calming**

efforts will result in a savings of **\$266 million** over 20 years⁴



Photo: altanaka/Shutterstock

Upstream investment in injury prevention translates to injury costs avoided and financial resources available for reallocation to other important health care areas.

Why Invest in Injury Prevention?

There is clear evidence that these interventions can reduce the number of people requiring health care services for the treatment of injuries. Prevention reduces the load on the health care system. Upstream investment in injury prevention translates into injury costs avoided and financial resources available for reallocation to other important health care areas.¹⁻³ Investing in prevention provides a potential solution to the rising costs of health care.

Estimated cost savings by select child injury intervention, 2009²²

Every dollar spent on:	...saves society
Childproof Cigarette Lighter	\$80
Booster Seat	\$71
Bicycle Helmet	\$45
Child Safety Seat	\$42
Zero Alcohol Tolerance, Driver Under 21	\$25
Smoke Alarm	\$18
Poison Control Centre	\$8

Injury is not an isolated problem. Injury is associated with many of the same determinants that lead to chronic diseases, communicable diseases, mental illness, substance abuse, and is part of a complex puzzle within public health.

BC’s Guiding Framework for Public Health identifies seven visionary goals for the public health system. Together, these goals support the vision of “*Vibrant communities in which all people achieve their best health and well-being where they live, work, learn and play.*” The visionary goals are largely influenced by and aligned with service lines in the Public Health Strategic Framework, which identifies core public

health functions as part of the public health system renewal that began in BC in 2003.

Injury prevention efforts complement and benefit from work on other public health issues and need to be considered as part of the overall solution to improving the health of individuals, families and communities in BC. Information in the table below demonstrates that supporting injury priorities also has a positive impact on public health and healthy family priorities. Investments in injury prevention support healthy choices and behaviours across the lifespan and across a host of public health issues, in addition to specific injuries.

Goal: Healthy Living & Healthy Communities	Relevant connection to injury prevention:
Physical Activity (Healthy Families BC) Tobacco Control Strategy Chronic Disease	<ul style="list-style-type: none"> » Designing communities where children, youth and adults can easily and safely travel on foot and by bike increases physical activity and decreases injuries.¹⁻³ » By addressing injury prevention and control strategies within physical activity initiatives, barriers for participation due to injury can be eliminated and maximum satisfaction and health benefits through participation of physical activity can be achieved.⁴ » Implementing proven injury prevention initiatives in sport and physical education classes (e.g. FIFA 11+, delayed body checking in hockey, personal protective equipment, quality training for coaches, parents and officials) keeps people injury free, able to remain playing and active, and reduces the burden on the health system.⁵⁻⁸ » BC’s Tobacco Control Strategy aims to decrease the number of people who smoke. As many deaths and injuries from fires are attributable to smoking and smoking-related materials, supporting this strategy may decrease burn injuries and deaths.⁹ Motor vehicle, falls and job related injuries are also significantly higher among smokers and can be reduced with increased tobacco control and smoking cessation efforts.¹⁰ » There is an association between several chronic diseases and injury. Supporting interventions that decrease chronic disease may also decrease injuries: <ul style="list-style-type: none"> a) Those with type 1 or 2 diabetes have an increased risk of suicidal ideation, attempts and deaths.¹¹⁻¹⁵ b) Those with myocardial infarction have an increased risk of depression and suicide.¹⁶ c) Those with asthma and chronic obstructive pulmonary disease (COPD) have an increased risk of depression and suicide.^{17, 18} d) Older drivers with heart disease are more likely to be involved in motor vehicle crashes.¹⁹⁻²¹ e) Diabetes, obesity and cardiovascular disease are all associated with an increased risk of falling.^{22-24, 25-28, 29-31} f) Long-term immobility due to brain and spinal cord injuries give rise to medical complications such as pneumonia, deep vein thrombosis, chronic pain, incontinence, etc. By preventing injuries, the drain on the health care system for these issues can be reduced.^{32, 33}
Goal: Maternal, Child & Family Health	Relevant connection to injury prevention:
Provincial Perinatal Depression Framework Healthy Minds, Healthy People Fetal Alcohol Spectrum Disorder Strategy Healthy Start	<ul style="list-style-type: none"> » Smoking is a known cause of low birth weight.³⁴ Low birth weight is associated with higher crying, which is associated with shaken baby syndrome.³⁵⁻³⁸ Support for BC’s Tobacco Control Strategy may contribute to more infants born at healthy weights. » Promoting Canada’s Low-Risk Alcohol Drinking Guidelines is a way to address the hazardous drinking that is associated with higher injury rates.^{39, 40} » Contributing to actions focused on reducing family poverty, increasing access to affordable housing, and decreasing socio-economic inequalities may achieve health gains in injury and disease prevention.⁴¹⁻⁴⁴ » Safe recreation and play enhance family relationships and bonding with fathers.^{45, 46}

<p>Goal: Positive Mental Health & Prevention of Substance Harms</p> <p>Healthy Minds, Healthy People</p> <p>Promoting a culture of moderation related to alcohol use</p> <p>Policies and programs that address specific social, environmental and individual risk and protective factors</p>	<p>Relevant connection to injury prevention:</p> <ul style="list-style-type: none"> » There is an association between injury and emotional well-being among Canadian youth. Creating a school and community culture that fosters inclusiveness and respect and discourages bullying will help to improve feelings of belonging and safety.⁴⁷ » The association between traumatic brain injury and psychiatric disorders is well established and evidence suggests that these disorders can be partially prevented by preventing head injuries.^{48, 49} » Depression is a major consequence of falls among older adults. The burden of depression can be reduced by preventing falls among older adults.⁵⁰ » Evidence indicates that physician education in depression recognition and treatment, restriction of means, as well as gatekeeper education are promising components of suicide prevention strategies as they impact suicide rates.⁵¹ » Working with public health on community-based health promotion initiatives, including local government policies to promote a culture of moderation related to alcohol use will also address the injuries that are associated with hazardous drinking.^{39, 40} » Services, regulations and programs that address the use and abuse of alcohol, prescription and illicit drugs can contribute to decreasing injuries⁴⁷ and disease.⁵²
<p>Goal: Communicable Disease Prevention</p> <p>Harm Reduction: A British Columbia Community Guide</p> <p>Public Health Act</p>	<p>Relevant connection to injury prevention:</p> <ul style="list-style-type: none"> » Communicable disease prevention requires a comprehensive public health approach, among a variety of systems and sector partners including primary care.⁵³ The same approach works for injury prevention. There is an opportunity to provide injury prevention information at the same time as communicable disease information, e.g. during child vaccinations.
<p>Goal: Injury Prevention</p> <p>Provincial Health Officer's Reports</p> <p>Seniors Action Plan</p> <p>Seniors Healthy Living Framework</p> <p>BC Injury Research and Prevention Unit reports</p>	<p>Relevant connection to injury prevention:</p> <ul style="list-style-type: none"> » There are often opportunities to combine injury prevention messaging and initiatives. For example, Surrey Fire Service offers free smoke alarm installation along with a home inspection that includes information on a variety of fire and general safety topics.⁵⁴ They give priority to homes with children or seniors residing in them.
<p>Goal: Environmental Health</p> <p>Licensed Community Care Facility Inspections</p> <p>Built Environment</p>	<p>Relevant connection to injury prevention:</p> <ul style="list-style-type: none"> » Includes health protection and ensuring safe living environments.⁵³ » Inspections of licensed care facilities include inspecting for hazards to ensure the safety of the residents of those facilities. » BC's Guiding Framework states that "Coordinated data analysis is a best-practice approach to determining which policies will drive improved health outcomes and the protection or development of healthy community environments. This will also inform injury prevention policies and programs.
<p>Goal: Public Health Emergency Management</p> <p>Public Health Act</p>	<p>Relevant connection to injury prevention:</p> <ul style="list-style-type: none"> » Good emergency response plans keep workers from being injured in an emergency or disaster. » When workers are not injured, they can help keep other staff and the public safe in an emergency or disaster. » Using surveillance to monitor hazards to health and reporting on risk can inform injury prevention as well as emergency or disaster response.⁵³ » Injury prevention information can be disseminated at the same time and in the same way as emergency/disaster response information.

It is time to take action in BC so that full lives are lived free of injuries and disabilities.

Injuries have a devastating impact on the physical, psychological and economic health of people living in BC. Injuries take a significant toll in terms of lives lost, lost economic productivity and costs to the healthcare system. However, there is much that can be done to prevent injuries.

The key messages in each chapter provide the rationale for why action is needed, as well as outlining potential actions that can be taken. Selected injury prevention programs currently operating in BC are outlined in the following case studies. Parachute's Horizon solutions website <http://horizon.parachutecanada.org/en/> also provides evidence-based examples of injury prevention work in action.

Injury prevention organizations such as the BC Injury Research and Prevention Unit and Parachute Canada are available to provide more information and guidance for injury prevention action in your jurisdiction.

Why Action is Needed

- » Injury is the leading cause of death¹ and the 2nd leading cause of hospitalization among 1-44 year olds in BC.²
- » From birth to retirement, injuries are the leading cause of Preventable Years of Life Lost (PrYLL).³ PrYLL is a powerful metric of premature and preventable loss of human potential.
- » In just 1 year in BC, there were 2009 deaths due to injury, 34,998 people hospitalized for serious injuries and a further 456,390 people were treated in emergency departments and 8,582 people suffered injuries that resulted in permanent disabilities.⁴
- » Injuries cost British Columbians \$3.7 billion dollars in just 1 year, the equivalent of \$422,479 per hour, 24 hours per day, 7 days per week.⁴
- » The public health system, including government, health authorities, communities and researchers, is ideally situated to reduce injury in BC. Injury prevention efforts complement and benefit from work on other public health issues and need to be considered as part of the overall solution to improving the health of individuals, families and communities in BC.

- » There is a forecasted savings of \$117 million in 5 years and \$537 million in 20 years when specific injury prevention interventions are implemented (see Chapter 8).
- » Injury prevention prevents death and reduces the need for medical treatment so British Columbians can live long lives to the fullest.
- » Supporting injury priorities will have a positive impact on public health and healthy family priorities.
- » Investing in prevention provides an opportunity for positive change: we can save lives, reduce disabilities and save health care resources.

What You Can Do

1. Focus on injury prevention. Consider the role of injury prevention within the scope of your current position, and determine if this role can be expanded.
2. Work collaboratively to implement evidence-based solutions that will save lives and prevent disabilities. Everyone has a role in injury prevention.
3. Develop an understanding of the groups or populations that are most affected by specific causes of injuries to inform where to focus injury prevention efforts.
4. Gain an understanding of the injury patterns within your target population.
5. Build partnerships that use sustained, multi-faceted and reinforcing strategies to conduct injury prevention initiatives.
6. Follow the public health approach when implementing and evaluating injury prevention interventions.
7. Commit resources for evidence-based solutions to prevent falls among older adults as they are the single greatest cause of direct injury costs.
8. Commit resources for evidence-based solutions to prevent injuries among children, youth and young adults as injury has a profound impact on children, youth, young adults and their families. Injuries to youth cost the most for all causes other than falls.⁴
9. Address the social determinants of health to reduce injury rates and influence other public health issues.
10. Determine the upstream investment for injury prevention as it translates to injury costs avoided and financial resources available for reallocation to other important health care areas.⁵⁻⁷



Shaken Baby Syndrome

Shaken Baby Syndrome or Abusive Head Trauma (SBS/AHT) are terms used to describe the constellation of signs and symptoms resulting from violent shaking or shaking with impact to the head of an infant or small child. Among shaken infants, mortality rates range from 15% to 38% with a median of 20% to 25%.^{1,2} It has been recognized that crying is an important stimulus for SBS.

Feature: The Period of PURPLE Crying® Program

The Program

In 2007 *Prevent Shaken Baby Syndrome BC*, a program of BC Children's Hospital, developed a shaken baby syndrome and infant abuse prevention program called the Period of PURPLE Crying. The program title describes the time in a newborn's life when he or she cries more than any other time in infancy. It begins at about two weeks of age and continues until they are about three to four months old. PURPLE stands as an acronym for "Peak of crying/Unexpected/Resists soothing/Pain-like face/Long-lasting/Evening". It's a normal part of every infant's development and all babies go through this period.

The program has three aims:

1. To change the way parents and caregivers are educated about normal infant crying.
2. To improve awareness around the dangers of shaking infants.
3. To reduce the incidence of SBS/AHT and infant abuse in British Columbia.

Delivery

Since February 2009, the Period of PURPLE Crying Program® has been delivered to parents of BC's 42,000 annual births at all 49 birthing hospitals and 112 public health units. This includes exposure to the program through maternity units and midwife-assisted home births; public health materials; and since 2010, through a public education campaign.

The public education campaign was launched through various media and every year the program hosts a province-wide



grass-roots campaign called CLICK for Babies where purple newborn caps are collected and distributed with the program during the months of November and December.

To date almost 9,000 health practitioners, early childhood educators, childcare providers and healthcare students across the province have completed the PURPLE program training and are administering the program. Thirteen post-secondary institutions have incorporated the program into their curriculum and/or course assignments as well.

The Period of PURPLE Crying Program®
has been implemented

PROVINCE-WIDE

with **95%**

of BC parents of newborns receiving the program from maternity & public health

“I read a lot of books but this is the only one that explained that a baby’s crying is normal.”

- Mother of four month old infant

The program resulted in a **cost savings** of **18%** over the years 2009-2011 based on ongoing surveillance

Partnerships

Prevent SBS BC is a program of BC Children’s Hospital and is funded by the BC Ministry of Children and Family Development, the BC Ministry of Health, Provincial Health Services Authority and the Canada Research Chair in Community Child Health Research.

Materials

Parents of newborns receive crying education as well as an informational package which includes a 10-minute crying film, a 17-minute research-based soothing film and a 10-page booklet.

In 2015, the crying film and booklet will be offered in 12 languages: English, French (Canadian), Punjabi, Cantonese, Spanish (Mexican), Korean, Vietnamese, Japanese, Portuguese (Brazilian), Somali, Farsi and Hebrew. The soothing film is available in English, French and Spanish.

Evaluation

The Period of PURPLE Crying Program® is currently being evaluated through quality improvement process measures as well as active and passive surveillance.

Quality improvement measures include: public health nurse administrative forms (February 2009 to September 2011), maternity nurse surveys (September 2009 to March 2014), parent surveys when their infants are 2-4 months of age (January 2010 and ongoing) and public health nurse surveys (October 2012 and ongoing).

For active and passive surveillance, incidence rates of shaken baby syndrome and other forms of physical abuse in 0-2 year olds are collected from the Neurosurgery Department at BC



Resources

- » For professionals: www.dontshake.ca
- » For parents: The Period of PURPLE Crying Program®
- » www.clickforbabies.org



Would you like more information on this case study?
Email: cyambao@cw.bc.ca

Children’s Hospital, Child Protective Services, the BC Coroners Office and Canadian Institute for Health Information and compared pre/post PURPLE program implementation.

The program has reduced the number of **crying cases**

presenting at the BC Children’s Hospital Emergency Room⁴ by **29%↓**



Injury Prevention Messaging

Injuries kill more Canadian children than all other causes combined.¹ Some consider injuries as ‘accidents’, a childhood rite-of-passage, or something that happens to other people. The truth is that injuries happen at an alarming rate and a vast majority of injuries are preventable.^{1,2}

While there has been a positive downward trend in the rates of childhood injuries over the last decade, serious trauma and life-long disability continues to create hardship for children, families and communities across BC. Preventable childhood injuries remain a leading cause of hospitalization and death.³

Evidence-based injury prevention strategies, such as child restraint seats, stair gates and window guards along with broad-based public education on these strategies, are required to support behaviour change.³

Feature: A Million Messages (AMM)

The Program

A Million Messages (AMM) is a childhood injury prevention program designed to support families, parents and caregivers, and to avoid feeling overwhelmed with ‘a million messages’ on child health and wellness. Northern Health provides AMM through Public Health Nursing by delivering simple, consistent and routine messaging to parents and caregivers on injury risk appropriate to their child’s age and developmental milestones.

Delivery

AMM is distributed by public health nurses as part of their regular contact with families, parents and caregivers with children between 0-6 years of age. Embedded into routine public health contact, the program is delivered to families during maternity home visits and regular immunization appointments. With each interaction, parents and caregivers discuss and learn about their child’s developmental stage, associated injury risk factors, and key injury prevention strategies. Written resources specific to injury prevention messages are shared to supplement the verbal discussion.



The goal of AMM is to promote optimal childhood development by decreasing childhood injuries in the home through a consistent, simple education and awareness program. Any setting in which services are provided to families caring for young children will find success with this program.

Partnerships

AMM was developed by Capital Health, Alberta (now Alberta Health) and is recognized by the Public Health Agency of



“Because of the program, I am reminded to speak about safety at every interaction with parents.”

- Public Health Nurse, BC

Canada as a Canadian Best Practice program.⁴ Northern Health partnered with Capital Health and their graphic designer to adapt AMM to reflect the population across northern BC.

Materials

AMM tools support those delivering childhood injury prevention messaging by providing staff with standardized reference guidelines, handouts and displays. The resources are easy to understand and give parents and caregivers clear suggestions on how to keep their children safe and injury-free. Northern Health modified the AMM materials to include appropriate literacy levels and up-beat, colourful graphics and caricatures representing the multicultural demographics of northern BC.

Evaluation

Several evaluations, comprehensive literature reviews, and expert and parent consultations support AMM as a childhood injury prevention program that is simple to implement and meets the needs of the families, parents and caregivers working to keep their children safe.

Process and outcome evaluations of AMM were completed in the Alberta Capital Health region from 2003-2005. These evaluations identified:⁵

- » Repeated AMM messages are simple and reach the targeted audiences.
- » 94% of parents/caregivers surveyed reported receiving injury prevention messages during their previous clinic visit.
- » 60% of parents/caregivers who received AMM messages indicated they had learned something new and 46% reported that this information led to behavior changes.
- » 93% of nurses trained to implement AMM reported it to be an easy to use tool that allowed them to be more efficient in delivering consistent injury prevention messages.
- » 83% of parents/caregivers indicated they noticed information and materials about child injury prevention, especially in the clinic setting.
- » Operations managers did not experience difficulty implementing or operationalizing AMM.



Resources

- » A Million Messages, Northern Health [Link →]
- » Public Health Agency of Canada's Canadian Best Practices Portal [Link →]
- » Safe Kids Canada's Child Safety Good Practice Guide: Good investments in Unintentional Child Injury Prevention and Safety Promotion - Canadian Edition, at Parachute Canada [PDF →]



Would you like more information on this case study?
Email: prevent.injury@northernhealth.ca

AMM is an evidence-based and best-practice program that successfully delivers injury prevention strategies to families, while streamlining the work process for staff.⁴⁻⁶

Concussion Prevention

Once seen as just a knock to the head or ‘getting your bell rung’, concussion is now considered an invisible epidemic and recognized as a traumatic brain injury that requires immediate recognition and management for full recovery. Every day this preventable injury takes people away from school, work and play, costing BC \$2.4 million in hospitalizations alone in 2010.¹

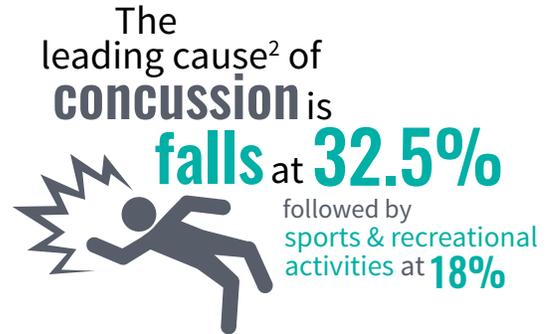
- » In 2011, the leading cause of concussion was falls (32.5%), followed by sports and recreational activities (18%).²
- » Children and youth up to age 19 represented 22% of head injury hospitalizations and almost 40% of concussion emergency department cases across BC.²
- » Children and youth take longer to recover from concussion than do adults.³

How a concussion is handled in the minutes, hours and days following an injury can significantly influence the extent of damage and recovery from that injury.

Feature: The Online Concussion Awareness Training Tool (CATT)

The Tool

BC’s CATT combines public education and awareness for parents, players, coaches and educators, along with resources and support for health care professionals and school professionals. The CATT is available online 24/7 and is updated every two weeks providing free, evidence-based education, tools and resources to help prevent, recognize, and properly manage a concussion.



It has been designed to be learner-centered and is based on the International Consensus Statement on Concussion in Sport.

CATT is designed to help standardize concussion recognition, diagnosis and management. Good concussion management decreases the risk of brain damage and reduces long-term health issues.

Three specialized concussion toolkits can be found at cattonline.com:

- » The Medical Professionals Clinical Toolkit
- » The Parents, Players, and Coaches Awareness Toolkit
- » The School Professionals Toolkit

These toolkits provide quick and easy access to numerous resources including online learning modules (physicians can claim CME Mainpro-M2 credit/parents and coaches receive a downloadable certificate of completion), journal articles, handouts, videos, the online concussion response tool, recommended websites and Sport Concussion Assessment Tool (SCAT) 3 assessment tools (both adult and child).

Know more about **concussion**, the need for proper management and prevention with **CATT** CONCUSSION AWARENESS TRAINING TOOL

Concussions matter!
Visit www.cattonline.com for free up-to-date education, tools and resources.

northern health
the northern way of caring

“I am very pleased at the level of interest the CATT has seen on concussion awareness and training, provincially, nationally and internationally.”

- Dr. Shelina Babul, BCIRPU Associate Director / Sports Injury Specialist

Delivery

In February 2015, the Canada Winter Games came to Prince George and northern BC. Northern Health recognized this multi-sport event would place a spotlight on athletes and provide an opportunity to leave a legacy of knowledge and expertise around concussion.

The *Concussions matter!* campaign was created to build the capacity of Northern Health physicians, staff, community members, parents, players, coaches and educators to prevent, recognize and appropriately manage concussion. In order to achieve this goal and standardize concussion knowledge and care throughout the north, the CATT was chosen as the heart of the campaign.

Concussions matter! was divided into two phases. Phase one focused on increasing the knowledge and expertise of concussion among Northern Health physicians and staff. Phase two concentrated on regional community partners as well as participants and visitors of the Canada Winter Games. Both phases encouraged the completion of the CATT online training tool.

Partnerships

Northern Health partnered with the creators of CATT at the BC Injury Research and Prevention Unit and preventable.ca in the creation of *Concussions matter!* Northern Health also partnered with SportMedBC, Pacific Sport North, and Wellness in Northern BC (WINBC) to bring the Northern Safe Sport Tour (NSST). The NSST offered subsidized, in-person concussion management supporting the CATT and sport injury prevention workshops to over 200 athletes, coaches and sport leaders from 15 communities across northern BC.

Materials

Resources were promoted and made available across the North. Posters, bookmarks, return-to-learn/return-to-play information cards, stickers, magnets and banners were shared at the Games venue blitzes and mailed out to regional hospitals, public health units, physician offices, pharmacies, health clinics, municipalities and First Nations communities. Social media platforms (blog, Facebook and Twitter) and articles drew daily attention to concussion awareness and the CATT.



Resources

» www.cattonline.com



Would you like more information on this case study?
Email: concussion@cw.bc.ca

Evaluation

Good concussion management reduces the risk of further brain damage and decreases health care costs related to long-term associated health issues.⁴ Based on established international principles, CATT has undergone extensive review, both provincially and nationally.

Evaluation of the CATT for medical professionals revealed that physicians have a statistically significant positive change in practice and an increase in knowledge for those who reported seeing more than 10 concussions per year. Nurses also demonstrated statistically significant positive change in practices and attitudes.⁵ Evaluation of the CATT for parents, players and coaches found that parents had a statistically significant positive change in concussion knowledge.⁶ Evaluation of CATT for School Professionals is currently in progress.

Injury Surveillance & Prevention

Injury surveillance is the ongoing and systematic collection, analysis, interpretation, and dissemination of health information. The objective to collecting this information is to detect trends in incidence, identify risk factors or causes, develop preventive and control measures, and evaluate the impact of prevention.

Feature: Secwepemc Injury Surveillance & Prevention Program

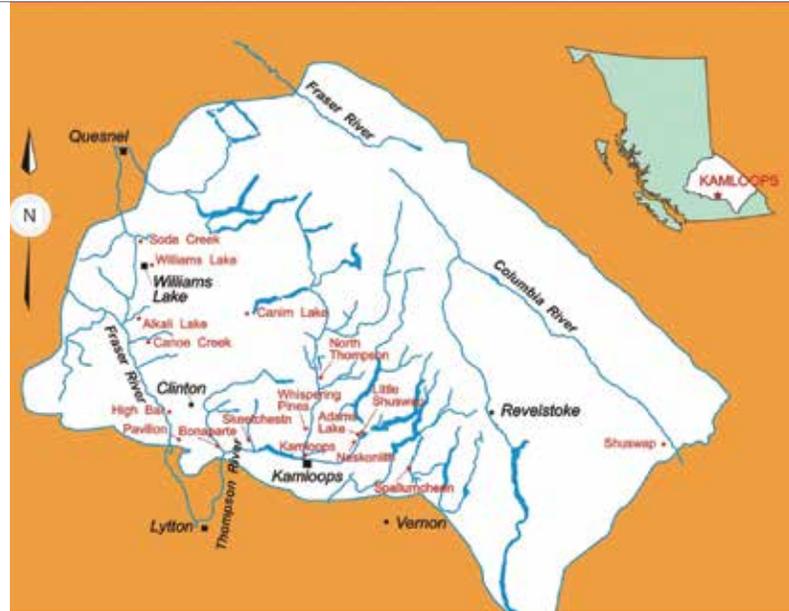
The Program

The Secwepemc Nation Injury Surveillance & Prevention Program is a program in which injury data is collected and analyzed at a community level to determine the trends in injuries happening in each of the participating communities. With the information collected, strategies can be developed in order to prevent many of these injuries from recurring in the future.

The Injury Surveillance Program was started in 2003, when eight Health Directors representing 12 of the Secwepemc communities in the Interior Region, came together to explore the possibility of collecting community specific injury data. They recognized that for prevention strategies to be effective, the strategies needed to be matched to relevant injury problems. The group moved forward with the implementation of the Aboriginal Community Centered Injury Surveillance System (ACCISS). This system collects data on injuries occurring in the community and uses this data to plan prevention activities in the community. This electronic database system was developed to track **who, what, when, where, why,** and **how** injuries happen.

Delivery

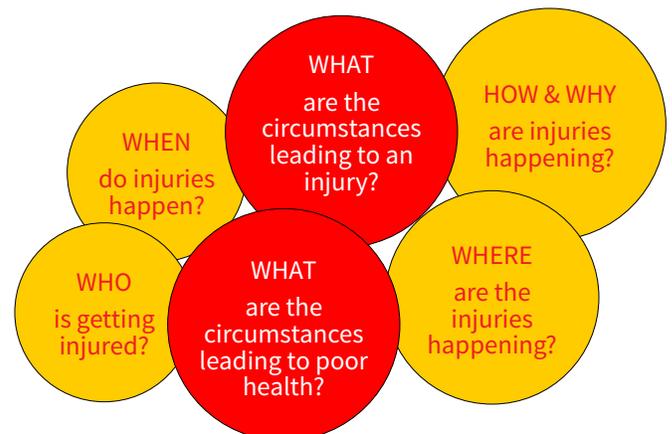
The goal of the program is to gather as much information as possible while keeping the identity of those injured completely anonymous. In order to accomplish this goal, an Injury Surveillance form was developed to record the age, gender, date of injury, time of injury, what happened, etc. and information about the injury itself. Forms are completed by staff and/or other relevant parties such as nurses, RCMP, Home Support, and Community Health Representatives. Completed forms are then given to the Injury Prevention Data Clerks to enter into the ACCISS database.



At the end of each fiscal year, the data collected is summarized and evaluated. The evaluation process allows the clerks and Health Directors in each of the communities determine which areas require prevention initiatives for the next fiscal year. For example, when one community identified that over two thirds of their reported injuries were occurring in and around the home, a Home Safety program was initiated. This included a home safety checklist and support to community members to improve home safety.

Injury prevention relies on knowing...

Promoting health & well-being relies on...



“This project has provided a tool to collect data to inform further program resource and capacity needs at the community level.”

- Secwepemc HUB

Partnerships

Secwepemc Injury Surveillance and Prevention Program is comprised of Esketemc, Three Corners Health Services Society, Q’wemtsin Health Society, Adams Lake Indian Band, Canim Lake Indian Band, Little Shuswap Lake Indian Band, Simpcw First Nation, and Splats’in First Nation. The program’s largest supporting partnership is with First Nations Health Authority. There has also been a partnership developed between the Injury Surveillance Program and Interior Health, where the hospitals associated with the Northern Shuswap communities complete the surveillance forms and the data clerks from each community are responsible for collecting the forms from the hospitals. Without the support of the partners, the program would not be able to develop prevention strategies for their community members.

Evaluation

Since the program’s official start-up in 2005, hundreds of Injury Surveillance forms have been collected from each of our communities. The increase in the numbers of forms that are collected allows the communities to provide more accurate data; this data then leads to more specific prevention initiatives. Some of the initiatives that have been provided include Falls Prevention Workshops, Car Seat Safety, and Bike Rodeos, to name a few.

The Secwepemc Nation Injury Surveillance & Prevention Program continues to actively collect injury surveillance forms from communities and partnering hospitals throughout the year to ensure that the data collected is as accurate as possible.

The use of promotional products will also help to familiarize the program amongst community members.



Photo: Cyclelicious (c) Richard Masoner, CC 2.0

Resources

Information regarding the Secwepemc Injury Surveillance and Prevention Program can be found at any of the following Health Centres:

- » Esketemc, Splats’in, Simpcw
- » Three Corners Health Services Society (Williams Lake, Soda Creek, Canoe Creek)
- » White Feather Family Centre (Canim Lake)
- » Q’wemtsin Health Society (Tkemlups, Skeetchestn, Whispering Pines/Clinton)
- » Sexqeltqin (Adams Lake)
- » Skwlax Wellness Centre (Little Shuswap Lake)

Information can also be found online by visiting:

- » Three Corners Health Services Society [Link →]
- » Q’wemtsin Health Society [Link →]
- » Adams Lake Indian Band [Link →]
- » Aboriginal Community-Centered Injury Surveillance: A Community-Based Participatory Process Evaluation [Link →]



Would you like more information on this case study?
Email: kjasper@threecornershealth.org

Seniors' Falls Prevention

Falls are the leading cause of injury-related deaths and hospitalizations for BC seniors.^{1,2} Due to an aging population, falls-related hospitalizations have been steadily increasing in BC since 2000 for those aged 65 and over.² When an older person falls, it can come at a devastating cost resulting in loss of mobility, a reduced quality of life and in severe cases, death. The cost for seniors to the BC health system is also very high with more than \$485 million in direct health care costs in 2010.³

Feature: The SAIL Adaptation Project

The Program

The Strategies and Actions for Independent Living (SAIL) is a comprehensive fall prevention program for home support service providers in BC. The SAIL Adaptation Project is a modification of this program to be culturally appropriate for fall and fire prevention in First Nations communities for elders who live on reserves and receive home support services. Through the development and implementation of a train-the-trainer education program for home support leaders, the goal of the program is to create a critical mass of providers that can help to reduce the risk of falls or fire affecting Elders on First Nations reserves.

Delivery

Integrating the SAIL materials into existing home support practice in First Nations communities is challenging due to different service delivery methods, lack of available staff and of time, as well as limited resources for home modifications. However, the project aims to work closely with the First Nations Health Authority (FNHA) and local Bands to focus on integrating the newly adapted program into routine home support.

Workshops are facilitated by trained instructors with expertise in fall and fire prevention for older adults from the BC Injury Research and Prevention Unit; the Centre of Excellence on Mobility, Fall Prevention and Injury in Aging (CEMFIA) at the Centre for Hip Health and Mobility; and locally trained Canadian Falls Prevention Curriculum (CFPC) facilitators. The workshop, refreshments, and course materials are offered at no charge—participants are responsible for their own travel and accommodation when needed. Funding for this project



Trainees of the
SAIL program
reduced
their clients' falls by
44%
over six months⁴



is provided by the BC Ministry of Health to the Centre for Hip Health and Mobility.

Instructors have found that the integration of falls prevention programming with other healthcare add-ons, such as a foot care program, to be effective. Referring to it as a “full service health prevention teaching opportunity through foot care,” this example demonstrates a unique way to engage people on a variety of healthcare issues in an effective and culturally competent way.

Partnerships

The program is operated by (CEMFIA)—within the Centre for Hip Health and Mobility—in partnership with the FNHA, the Aboriginal Healthy Living Activities (AHLA) program, the BC Injury Research and Prevention Unit and home support leaders working in First Nations communities across BC.

“Fall-related injuries among Elders in First Nations communities require culturally appropriate solutions that reflect proven prevention strategies.”

- Vicky Scott

Materials

Two guides were developed as part of an initial pilot for the SAIL Adaptation Project - (1) the *Elder Safety Program (ESP): Program Leader’s Guide* and (2) the *Elder Safety Program Checklist & Action Plan*. The *Program Leader’s Guide* was created with a focus on training home support staff on safety and prevention as well as how to work with Elders to identify and modify factors that increase their risk of falls and fires. The *ESP Checklist & Action Plan* was adapted for use in First Nations communities from the SAIL program. It includes fall and fire checklist categories such as clothing and footwear, mobility and equipment and home exercises.

Evaluation

Evaluation of this project includes a follow up visit to one or two communities in each region. A follow-up workshop for CFPC/SAIL trained leaders in those communities is held to present on their progress. The evaluation process is iterative and ongoing throughout the duration of the project. Along with site visits, focus groups with Elders, and staff interviews are conducted. This process is closely monitored by an advisory committee consisting of FNHA representatives, a First Nations Health Director representative, and the fall prevention leads from all of the provincial health authorities.

Community Health Workers and Home Health Professionals trained in fall prevention during the SAIL program were able to reduce their clients’ falls by 44% over six months.⁴

The SAIL Adaptation Project, while still in the pilot stage, has trained over 80 health care professionals and others responsible for the health and safety of Elders, reaching over 300 Elders from Haida Gwaii to Cowichan.

The program continues to experience high demand and a wait list has been established. A full evaluation of the project will be completed once the pilot period ends.



Resources

- » Professional Resources: Fall Prevention Guidelines, Training and Tools: [Link →]
 - » Falls and Related Injuries in Residential Care: A Framework & Toolkit for Prevention
 - » Strategies and Actions for Independent Living (SAIL)
 - » Primary Care Fall Prevention Multimedia Package
 - » Promoting Active Living (PAL): Best Practice Guidelines for Prevention of Falls among Residents of Assisted Living
- » Ministry of Health Fall Prevention Brochures and Pamphlets [Link →]
- » Primary Care Fall Prevention Multimedia Training Package [PDF →]



Would you like more information on this case study?
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Road Safety

Despite improvements in road safety over the past decade, incidents involving transportation are still the number one cause of unintentional injury related deaths in the province.¹ Road conditions, weather, speed, vehicle factors, and use of safety devices all influence whether a crash with resulting injuries will happen.² A driver's age, health and whether they are distracted, impaired, or fatigued are also important. Strategies for the prevention of transportation injuries are not simple, and require input from many stakeholders with varied backgrounds.

Feature: The Capital Regional District (CRD) Traffic Safety Commission (TSC)

The Program

The Capital Regional District Traffic Safety Commission (TSC) was created in 1985 and continues to be unique in British Columbia as an ongoing community collaborative to enhance road safety. The Commission's members are stakeholders from multiple sectors in Greater Victoria and its goal is to "prevent injuries, save lives and contribute positively to a safer traffic environment". The TSC receives annual core funding from the Capital Regional District and undertakes projects that are results-focused, evidence-based, and co-funded on a partnership basis. The TSC was recognized as a valuable road safety partnership by the BC Office of the Superintendent of Motor Vehicles (now RoadSafetyBC).

Program Delivery & Materials

Members of the CRD meet on a monthly basis and work to create results-oriented, community-wide approaches to traffic safety through enforcement, education, and prevention.

The following are a few examples of CRD TSC initiatives:

Older & Wiser Driver: In 2003, the TSC co-developed a program with the University of Victoria's Centre on Aging, titled: "The Older & Wiser Driver: A Self-Assessment Program." Older drivers attended driving self-assessment education sessions, which were arranged in collaboration with agencies serving seniors on the Saanich Peninsula. Senior drivers were asked what would make them safer drivers, and were given information packages including a 74 minute audio CD



Photo: Syda Productions/Shutterstock

The risk of a
collision
or near collision is
**2.5 times
greater**
for an experienced
driver when using a cell phone³



produced by the Commission with input from the RCMP and municipal police forces, ICBC, and the Centre on Aging.

Summer Malahat Safety Project: The Malahat Drive is a 25 kilometre section of Highway #1 that runs along the west side of Saanich Inlet, and is the only major paved connection between the CRD and the rest of Vancouver Island. The winding, steep route has gained a reputation for an increased risk of crashes, fatalities and collision-related road closures. During the summer of 2011, the CRD Integrated Road Safety Unit, a partner in the CRD TSC, undertook a summer safety project on the Malahat which included a notable increase in police presence, notice signs, and increased enforcement of violations, including speeding.

“The Traffic Safety Commission brings regional partners together to reduce traffic fatalities, injuries and crashes in Greater Victoria.”

- Office of the Superintendent of Motor Vehicles

Awareness and Education Campaigns: Used to raise general road safety awareness among targeted groups.

- » **Be Seen and Not Hurt:** Released in the fall of 2010 and aimed at vulnerable road users—pedestrians and cyclists, this campaign includes posters and other promotional materials reminding individuals to wear reflective materials when they are out cycling, walking after dark or out in poor weather.
- » **Stupid Distractions Campaign:** Targeted to drivers of all ages, this campaign is comprised of messages delivered on vinyl displays on the side of a variety of vehicles. Partners included the health authority, municipalities, University of Victoria and BC Transit.

Partnerships

Members of the TSC include RoadSafetyBC, Police and RCMP from area detachments, members of the Integrated Road Safety Unit, School Districts, the media, the University of Victoria, ICBC, Regional District elected official, traffic planners, BCAA Community Impact, Public Health, Medical Health Officer, cycling liaison, ambulance, and the Coroner’s Office.

Evaluation

Older & Wiser Driver: Participants reported that the information provided in the sessions could be useful in helping older adults talk about driving concerns with their families. Many participants reported that as a result of attending the education session they planned to make changes to their driving behaviours.

The three
leading causes
of motor vehicle fatalities are²



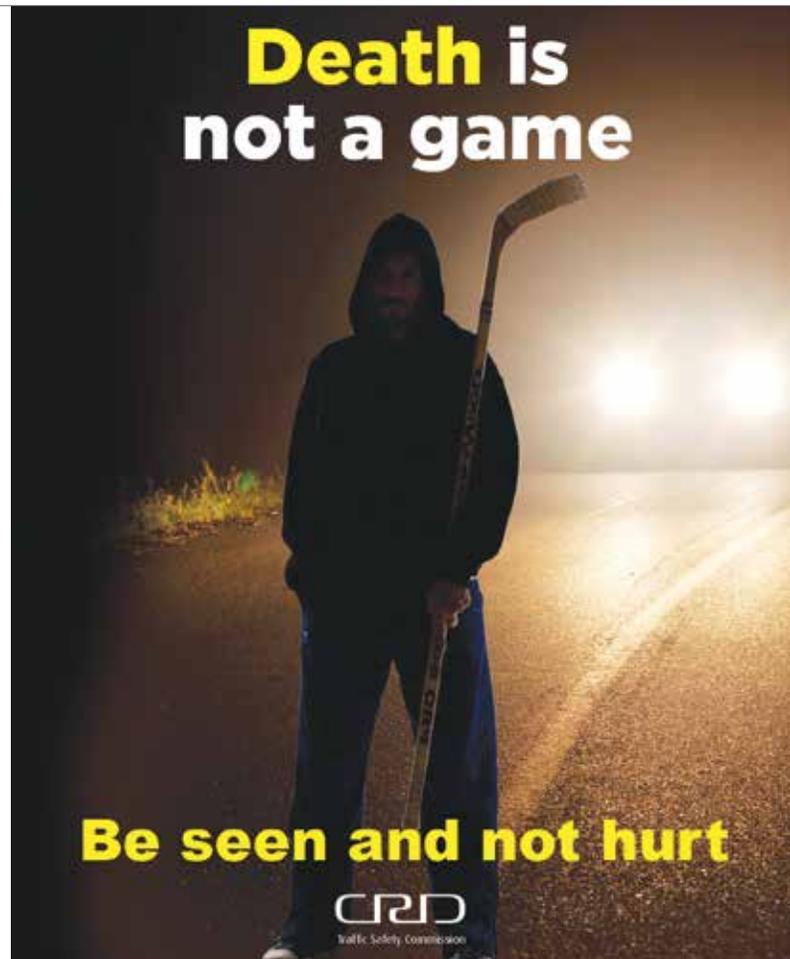
Speed
Related
33%



Distracted
Driving
28%



Impaired
Driving
27%



Resources

- » RoadSafetyBC [Link →]
- » www.icbc.com
- » Canada’s Road Safety Strategy 2015 [Link →]



Would you like more information on this case study?
Email: murray.fyfe@viha.ca

Summer Malahat Safety Project: Excessive speeding was reduced by 30% and no fatal crashes occurred during this 2011 summer safety initiative.⁴

Awareness and Education Campaigns: Evaluation of the vinyl displays on vehicles with road safety messaging found this to be an effective means of raising awareness among vehicle occupants and vulnerable road users. These displays have been used extensively by the TSC for numerous campaigns.

Alcohol-Related Injuries

Alcohol is a leading risk factor for injury.^{1,2} Studies repeatedly demonstrate that a large proportion of patients admitted to trauma centers are under the influence of alcohol.^{1,3-7} Injuries seen as a result of hazardous alcohol consumption levels include falls, burns, assaults, motor vehicle crashes, pedestrian injuries, drownings and intimate partner violence. Addressing alcohol problems with trauma patients is not currently a routine practice across BC's hospitals; however evidence shows an increased receptivity to alcohol counselling following a visit to a hospital therefore providing an opportunity for intervention.^{7,8}

Feature: Screening, Brief Intervention and Referral to Treatment (SBIRT)

The Program

The Screening, Brief Intervention and Referral to Treatment (SBIRT) program is an evidence-based, comprehensive, integrated, public health approach to the delivery of early intervention and treatment services for at-risk substance users before more severe consequences occur.

In 2013 Trauma Services at Vancouver General Hospital (VGH), a Level I trauma centre in BC, began an initiative to implement SBIRT to address alcohol as a risk factor for injury with the long-term objective to reduce alcohol-related injuries. This first phase of the implementation of SBIRT rolled out October 7th, 2014 with patients admitted to Trauma Services.

Delivery

When a trauma patient enters the Emergency Department (ED) at VGH a nurse completes a trauma assessment, which includes an assessment of the patient's alcohol use using a screening tool called the AUDIT-C. If the patient receives a positive score on the AUDIT-C, the patient is then referred to an ED social worker for a brief intervention.

In cases when a patient cannot be screened in the ED and is transferred to a Trauma Unit, alcohol screening is deferred to a nurse on the Trauma Unit. Patients who receive positive scores on the AUDIT-C are then referred to a Trauma Unit social worker for a brief intervention.



Photo: jannoon028/Shutterstock

- Screening** - quickly assesses the severity of substance use and identifies the appropriate level of treatment.
- Brief Intervention** - focuses on increasing insight and awareness regarding substance use and motivation toward behavioral change.
- Referral to Treatment** - provides those identified as needing more extensive treatment with information about supports.

Using the FLO (Feedback, Listen & elicit, Options for change) framework to engage the patient, the social worker:

1. Provides feedback about the patient's screening results, highlighting the link between their alcohol consumption and injury or risk of future injury.
2. Informs the patient about Canada's Low Risk Drinking Guidelines and assesses the patient's readiness to change.
3. Negotiates goals and strategies for change that are patient-centred and arranges follow-up as appropriate.

To enable real-time evaluation of the SBIRT implementation, the patient's AUDIT-C score and the social worker's brief intervention notes are faxed directly to Trauma Services.

Many of the trauma patients are asked to book an appointment with their Trauma surgeon after discharge to make sure that they are healing well and that there are no outstanding concerns. During these appointments, the surgeon asks the patients who received an intervention how they are doing with their behaviour change goals since returning home.

“This program is proven to make a positive difference in people’s lives and to lessen the probability of future alcohol-related injury.”

- Sheri Johnson, Social Worker, Ortho-Trauma Unit, VGH

Partnerships

The planning and implementation of SBIRT could not have been possible without the support of many people. Among those instrumental to the success of SBIRT are: the nurses and social workers in the ED and on the Trauma Units, the Patient Care Coordinators (PCC), the nurse clinical educators, the social work practice leads, the unit clerks, the ED and Trauma Unit managers, the VGH Chronic Pain and Addiction Services team, the Trauma team, the Trauma Registry team, the medical residents, GF Strong’s Alcohol and Drug Worker, the Vancouver Coastal Health (VCH) Regional Trauma Program and VCH Printing Services.

Materials

Colourful reminder stickers were created to ensure that the PPC verify the completion of the AUDIT-C by Trauma nurses, and that referrals to the social worker are occurring as needed. Stickers were also created to remind surgeons to ask SBIRT patients about their behaviour change goals during their follow-up appointment.

A joint RN-SW (nursing - social worker) form was created to document components of SBIRT, supporting data collection by Trauma Services for evaluation purposes. Trauma residents are responsible for documenting patients’ SBIRT scores during daily patient rounds.

There are two brochures on Canada’s Low Risk Drinking Guidelines that the social worker may provide to the patient. A listing of the substance abuse-related supports available in the community is also available.

Evaluation

The first phase of SBIRT ran for approximately 6 months. The purpose of this phase was to evaluate the process and ensure that each trauma patient received the right SBIRT process at the right time by the right provider. Neither the PCC stickers nor the practice of faxing the intervention information to the Trauma Offices were initially part of the SBIRT process, but together they significantly improved the frequency by which patients were screened and referred to a social worker for a brief intervention.

Between October 2014 and April 2015, 262 patients were admitted to Trauma Services and 171 (65.3%) were screened



Nurse administering the AUDIT-C Screening Tool

Resources

- » [Canada’s Low Risk Drinking Guidelines \[PDF →\]](#)
- » [Alcohol Screening, Brief Intervention and Referral to Treatment: Nurse-led SBIRT Practice with Emergency Department Patients \[Link →\]](#)
- » [SBIRT Webinar Library \[Link →\]](#)
- » [Brief Interventions for Heavy Alcohol Users Admitted to General Hospital Wards, Cochrane Review \[Link →\]](#)



Would you like more information on this case study?

Email: zahra.hussein@vch.ca

for alcohol use. Of those screened, 78 (45.6%) received a positive score. Of those with a positive score, 68 (84.6%) were referred to a social worker, and 48 (70.6%) received a brief intervention. The frequency of patients with a positive alcohol use being referred to a social worker and receiving a brief intervention has improved over the course of the implementation. The next step in the evaluation process is to conduct a chart review to identify further opportunities for improvement.

The vision of VGH Trauma Services is that the SBIRT protocol will be rolled out to hospitals across VCH and across BC.

Suicide Prevention

Suicide continues to be the second leading cause of death for young people in British Columbia following motor vehicle crashes.¹ Based on regional data, Interior Health identified youth suicide as one of three injury domains (others were motor vehicle crashes and seniors' falls) to focus on within its Injury Prevention Program.

Feature: Suicide Prevention, Intervention, Postvention (PIP) Community Development Workshops

The Program

In 2009, the *BC Suicide Prevention, Intervention and Postvention (PIP) Report* was published providing a Framework and Planning Template to address suicide across the lifespan using evidence-based practice and community development principles. Seizing the opportunity to use this useful tool as a catalyst for strengthening the safety net for suicide, PIP in the Interior, a planning committee comprised of representatives from the SAFER Program (Suicide Attempt Follow-up, Education and Research), the Ministry for Child and Family Development (MCFD) and Interior Health developed a model for delivering knowledge exchange workshops. This included the development of a one-day facilitators training workshop with 20 participants from across the Interior to support delivery and follow-up, and two sub-regional pilot workshops. The planning committee defined the specific goals of the workshops as:

1. To bring together those organizations in the region whose work is touched by the issue of suicide;
2. To make people aware of existing programs and services in their region/communities as well as resources that might strengthen their work in preventing and responding to suicide and suicidal behaviour;
3. To introduce the BC Suicide Prevention Intervention and Postvention Framework and Planning Template and explore how they could serve to strengthen community efforts to address the issue of suicide.

Delivery

A significant part of the youth suicide prevention work revolved around community development activities led by a



Photo: Edyta Pawlowska/Shutterstock

full-time facilitator. There was a strong focus on collaboration and building community capacity to support healthy youth development and suicide prevention for youth.

In early 2010, community partners from the Cariboo/Chilcotin and West Kootenay regions expressed high levels of readiness and participated in the planning and implementation of the two pilot Suicide PIP community development workshops. These workshops attracted over 120 participants from 15 surrounding communities. Participants came away with a better understanding about evidence informed practice on programs, services and supports, and had the ability to build upon existing dialogue about stakeholder identified priority areas.

Three weeks prior to the workshops, participants were asked to complete a survey identifying existing services and supports, collaborations, and challenges and barriers in addressing suicide PIP. The survey information was collated and presented as part of the workshops. Workshops were designed to include:

- » A “safety speech” to create a space for the work.
- » BC and health service delivery area-specific data on suicide death rates and hospitalization rates for self-injury.
- » A spotlight on local/regional programs and services across the PIP continuum.

The Conversation Café format provided participants an opportunity to practice putting the Suicide PIP Framework and Planning Templates into action. It fostered networking with fellow participants and the identification of next steps.

“This workshop has shown me that I do have a part to play in preventing suicide, especially with children and youth.”

- Ambulance Services Staff

By the end of 2012, two more workshops were hosted in the communities of Kamloops and Kelowna, and two smaller workshops were held in North Thompson and the East Kootenays. In total, 382 participants from over 28 communities within the Interior participated in the Suicide PIP community development workshops, resulting in various community actions that continue to this day, including annual World Suicide Prevention Day events, gatekeeper training, and the development of community suicide response protocols for youth.

Partnerships

There was a broad involvement by community stakeholders, including some which might not commonly be identified as having a stake in suicide prevention. Representation included school districts, Child & Youth Mental Health, Adult Mental Health & Substance Use Services, non-profit organizations and community planning committees, First Nations and urban Aboriginal agencies; First Responders, religious leaders, and survivors of suicide.

Evaluation & Results

The Suicide PIP pilot workshops were well attended and positively received by participants. They resulted in the identification of concrete tasks that could be undertaken by the communities represented at the workshops.

The average number of **deaths** by **suicide** per year in BC is



Average number, 2001 - 2011 for ages 0-24¹

Hospital admissions due to **attempted suicide** per year on average in BC are



Average number, 2001 - 2011 for ages 0-24²



Resources

An online Groupsite was created to further engage workshop participants and to maintain a connection to suicide prevention work throughout the Interior. The Strengthening the Safety Net for Suicide PIP (Interior) Groupsite presently has over 200 suicide prevention stakeholders representing the Interior and provincial partners. The community health facilitator with Interior Health continues to moderate this Groupsite and remains the key contact for this work.

- » Groupsite [Link →]
- » Visit www.interiorhealth.ca for more information about Youth Suicide Prevention



Would you like more information on this case study?
Email: jenny.green@interiorhealth.ca

It's believed that the success of the workshops is evidence of the wide-spread recognition of the need for stronger community collaborations and resources to mobilize action around suicide PIP and related mental health issues. Opportunities still exist for evaluation, however capacity and resources remain limited.

Social Marketing for Injury Prevention

The purpose of social marketing is to change people’s attitudes by suggesting that doing something new will be better for them than what they are currently doing. This powerful marketing strategy and has been successfully used to promote physical activity and reduce smoking.

Feature: The Community Against Preventable Injuries (*Preventable*)

The Program

The Community Against Preventable Injuries (*Preventable*) is the first-ever social marketing campaign targeted at reducing the burden of preventable injuries in British Columbia and in Canada. *Preventable* spent three years researching the attitudes behind the behaviours that lead to preventable injuries, and launched its integrated social marketing campaign in British Columbia in 2009.

Preventable’s guiding principles:

- » The approach is based on sound research and analysis, recognizing that the problem must be understood before it can be solved, and working to achieve results which can be measured.
- » It cannot be done without help. *Preventable* relies on its strong network of partners to deliver the message where and when it is most effective. By building relationships, *Preventable* can leverage the unique tools, skills and resources of its partners.
- » *Preventable* targets attitudes. *Preventable* is striving for fundamental societal change, and recognizes that changing the way that people think takes time.

Preventable’s campaign strategy is based upon a continuum that recognizes that changing social attitudes is a long-term process:



In 2006, British Columbians were relatively unengaged with injury prevention. The initial *Preventable* campaign aimed to raise injury awareness and to create *Preventable* as a recognizable and trustworthy brand.

Through focus groups, *Preventable* learned that in general, people know what to do to prevent injuries. They may not always take preventive action because they have not had personal experience with serious injury. Traditional injury prevention social marketing approaches – including scare tactics and lecturing – were largely ignored. *Preventable* learned that British Columbians do not like being told what to do, or made to feel guilty or stupid about their decisions.

For their campaign, *Preventable* chose to use messages that were personal and relevant; creating opportunities for people to use their imagination and draw their own conclusions.

“Our brand is a key component of our strategy; it creates an emotional resonance for people, and shapes how they feel when they interact with Preventable.”

- Kevin La Freniere

This approach empowers people by allowing them to fill in the blanks. *Preventable* took a non-paternalistic approach grounded in the idea that this kind of message can come from anyone, not just government or the insurance industry.

Preventable launched with a mass media blitz supported by ambient and guerrilla messaging in key locations such as school zones, beaches, workplaces and ski hills. The campaign platform was based on the phrase: “You’re probably not expecting to...” completed by messages such as “...need a helmet today.” “...drown today.”

This approach garnered high levels of earned media: in the first year of the campaign *Preventable* invested \$1.5 million and received \$3.0 - \$3.5 million in total value for a return on investment of between 200% and 233%.

Delivery & Materials

Preventable targets British Columbians between 25-55 years of age, who are also the parents of children and youth, and the children of older adults. The majority of funding for a campaign typically focuses on television and online media buys as these have proven to be the most effective channels to reach the target audience. Other campaign elements such as transit shelter ads, newspaper wraps and posters support the media buys by providing connection points to the target audience in their respective community settings. Through its established media network, *Preventable* manages and places all media buys for the campaign.

Partnerships

Preventable is a collaborative and innovative partnership between business, government and community groups, whose combined energy, effort and resources are focused on building awareness, shifting attitudes and changing behaviours towards the causes of serious preventable injuries. Crown corporations, NGOs and leading organizations in both the private and public sectors have all contributed both talents and resources.

Evaluation

The first *Preventable* campaign reached over 2 million British Columbians between June and December 2009, generated over 100 million media impressions. 50,000 people visited the website within the year following the launch.



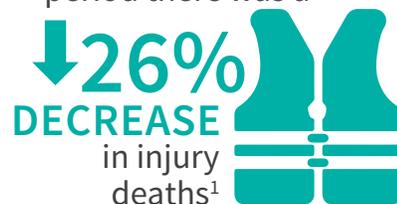
Resources

» www.preventable.ca



Would you like more information on this case study?
Email: info@preventable.ca

During the 2009-10 campaign period there was a



Monitoring indicated a 5-10% positive shift in attitudes and self-reported precautionary actions, as well as support for the *Preventable* brand.¹ Over and above pre-existing trends showing declining injury rates, a 26% reduction in injury deaths was observed during the 2009-10 campaign period among the target group. Furthermore, a significant reduction in deaths was also seen for the 0-24 year age group during the same period, representing children of the target group.¹

Frequently Asked Questions

Why are injuries in the home and community increasing in BC?

Over the years, continuous resource and collaboration directed towards motor vehicle crash prevention such as improved vehicle safety, legislation restricting cell phone use while driving, and changes to enforcement of drinking & driving legislation have resulted in a steady decline in the number of deaths on BC roads from 2000 to 2013. An equal investment has not yet been directed to injuries at home and in the community. Please see page 4 for more information.

What are the advantages of preventing injuries?

The benefits of investment in injury prevention are broadly shared. Children grow up in safe homes and play in hazard-free spaces; adults contribute productively within safe work places; communities are connected by safe roads; saving lives and saving health care resources is the ultimate result. Please see pages 18-19 for more information.

How can I get data on the magnitude of the injury problem in my community/ municipality?

The BC Injury Research and Prevention Unit (BCIRPU) has developed an online injury data tool that provides information on the burden of injury. Please visit www.injuryresearch.bc.ca/resources/injury-data-online-tool-idot/

Whom should I consult if I want to initiate an injury prevention program in my community/ municipality?

Information on how to take action is provided on page 21. In addition, examples of injury prevention initiatives and contact information for each one are provided in the Case Studies, pages 22-39. Evidence-based injury prevention initiatives can also be found at: www.horizon.parachutecanada.org/en/

What is the best injury prevention approach?

Scientific evidence suggests that the public health approach is the best practice for injury prevention when it concurrently targets: Education, Enforcement, Engineering, Environmental Design and Engagement. Please see page 7 for more information.

What is the most cost effective way of preventing injuries?

Acting upon injuries before they ever occur (primary prevention) is the most cost effective method of preventing injuries. This involves preventing exposure to hazards that cause injury, altering unsafe behaviors that can lead to injury and increasing resistance to injury if exposure occurs. Primary prevention of injuries can be achieved through the public health approach that addresses Education, Enforcement, Engineering, Environmental Design and Engagement.

Can we integrate injury prevention into other public health programs?

Yes. Injury prevention efforts complement work being done on other public health issues and vice versa. Please see page 20 for more information.

What are the strengths for injury prevention in BC?

Injury prevention is one of the seven visionary goals of BC's *Guiding Framework for Public Health*. Through the Provincial Health Services Authority, the BC Ministry of Health supports an injury network, injury surveillance system and inter-sectorial collaboration towards injury prevention. These are great strengths for injury prevention in BC.

What are the barriers for injury prevention in BC?

Poor translation of research knowledge into practice, disproportionate allocation of resources for injury prevention compared to other health issues, poor transfer of provincial level injury prevention efforts to the grass-root level and underutilization of proven preventive strategies are the barriers for injury prevention in BC.

Can we learn lessons from others when developing injury prevention interventions and programs in BC?

Yes. Evidence-based approaches to setting priorities, designing interventions that can be implemented and evaluating the impact of those interventions are key to success in any injury prevention program.

Further Resources

Please visit the following links for more evidence-based practices for injury prevention:

Parachute

www.parachutecanada.org

Injury Prevention Centre

www.injurypreventioncentre.ca

Ontario Injury Prevention Resource Centre

www.oninjuryresources.ca

Atlantic Collaborative for Injury Prevention

www.acip.ca

Saskatchewan Prevention Institute

www.skprevention.ca

Winnipeg Health Region

www.wrha.mb.ca/community/publichealth/services-injury-prevention.php

BC Injury Research and Prevention Unit (BCIRPU)

www.injuryresearch.bc.ca

Canadian Pediatric Society

www.cps.ca

Trauma Association of Canada

www.traumacanada.org

Canadian Collaborating Centres for Injury Prevention

www.canadianinjurycurriculum.ca/cccip

Concussion Awareness Training Tool (CATT)Online

www.cattonline.com

McMaster University's Health Evidence

www.healthevidence.org

Health Canada

www.hc-sc.gc.ca

Public Health Agency of Canada

www.phac-aspc.gc.ca

Transport Canada

www.tc.gc.ca

World Health Organization

www.who.int/violence_injury_prevention/en

Safe Kids Worldwide

www.safekids.org

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The Ambulance Down in the Valley

Joseph Malins (1895)

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
So the people said something would have to be done,
But their projects did not at all tally;
Some said, "Put a fence 'round the edge of the cliff,"
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart became full of pity
For those who slipped over the dangerous cliff;
And the dwellers in highway and alley
Gave pounds and gave pence, not to put up a fence,
But an ambulance down in the valley.

"For the cliff is all right, if you're careful," they said,
"And, if folks even slip and are dropping,
It isn't the slipping that hurts them so much
As the shock down below when they're stopping."
So day after day, as these mishaps occurred,
Quick forth would those rescuers sally
To pick up the victims who fell off the cliff,
With their ambulance down in the valley.

Then an old sage remarked: "It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd much better aim at prevention.
Let us stop at its source all this mischief," cried he,
"Come, neighbors and friends, let us rally;
If the cliff we will fence, we might almost dispense
With the ambulance down in the valley."

"Oh he's a fanatic," the others rejoined,
"Dispense with the ambulance? Never!
He'd dispense with all charities, too, if he could;
No! No! We'll support them forever.
Aren't we picking up folks just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence,
While the ambulance works in the valley?"

But the sensible few, who are practical too,
Will not bear with such nonsense much longer;
They believe that prevention is better than cure,
And their party will soon be the stronger.
Encourage them then, with your purse, voice, and pen,
And while other philanthropists dally,
They will scorn all pretense, and put up a stout fence
On the cliff that hangs over the valley.

Better guide well the young than reclaim them when old,
For the voice of true wisdom is calling.
"To rescue the fallen is good, but 'tis best
To prevent other people from falling."
Better close up the source of temptation and crime
Than deliver from dungeon or galley;
Better put a strong fence 'round the top of the cliff
Than an ambulance down in the valley.

BC INJURY research and prevention unit

