



# EVERYBODY'S BUSINESS:

The Cost of Multi-Department Involvement in Public Health in Alberta

Version 1.3

*Authors Philip Jacobs, Jessica Moffatt, Egon Jonsson, Arto Ohinmaa, Cathy Gladwin*



INSTITUTE OF  
HEALTH ECONOMICS  
ALBERTA CANADA



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# **Everybody's Business: The Cost of Multi-department Involvement of Public Health in Alberta**

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And once you get started in thinking this way  
It seems that whatever you see  
Is either a house or it lives in a house  
And a house is a house for me.  
Mary Ann Hoberman

September 27, 2011

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## **Competing Interest**

The authors of this report declared no competing interests.

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## Preface

Alberta Health Services (AHS) asked The Institute of Health Economics to conduct a series of forward – looking workshops with a very broad scope, called project 2030. Following discussions with Sherry Thompson, the AHS director of the 2030 project, and John Sproule, who was putting together the workshops, we embarked on a very broad policy scan for public or population health which is the subject of the present document. Our goal was to scope out what public health initiatives were occurring in Alberta. We omitted mental health, as this was the topic of a separate venture that we were working on, with a different sponsor.

As it turned out, the task was much greater than we initially envisioned. We were guided by several very broad literature reviews from Great Britain, conducted by David McDaid, Peter West, Janine Hale, and Ceri Phillips, among others. Work is well underway in Great Britain on the introduction of economics into decision making in public health.

We received early encouragement from several people which was invaluable in the preparation of this document. Tanya Ewashko of AHS gave us very helpful guidance. An early meeting with AHS, which included Gerry Predy, Penny Lightfoot, Joy Edwards, and Sherry Thompson, helped us to formulate our thoughts. Wadieh Yacoub and Deepa Menon, from First Nations and Inuit Health, were instrumental in helping us to focus on the positive benefits of public health and the importance of collaboration between ministries. Barb Olson, Bill Hohn, Don Voaklander, and Anita Hanrahan helped us to broaden our scope and to uncover hard-to-find information. John Rapoport read an early version of the report and provided valuable comments as well.

Beyond this, a large number of people helped us immensely, even when we at times had difficulty explaining the nature of public health in such a broad array of ventures. These people include included:

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Of course, none of these individuals bear any responsibility for the contents of this manuscript - that rests solely with the authors.

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## **LIST OF ABBREVIATIONS**

ACAA	Alberta Capital Airshed Alliance
ACICR	Alberta Centre for Injury Control & Research
ACYS	Alberta Child and Youth Services
AED	Alberta Education
AEI	Alberta Employment & Immigration
AEV	Alberta Environment
AGLC	Alberta Gaming & Liquor Commission
AHW	Alberta Health and Wellness
AHS	Alberta Health Services
AICS	Alberta Injury Control Strategy
ALYs	Adjusted life years
ATRS	Alberta Tobacco Reduction Strategy
AWCB	Alberta Worker's Compensation Board
CADUMS	Canadian Alcohol and Drug Use Monitoring Survey
CASA	Clean Air Strategic Alliance
CCOHS	Canadian Centre for Occupational Safety & Health
CCMATA	Canadian Council of Motor Transport Administrators
CCME	Canada Council of Ministers of the Environment
CHIRPP	Canadian Hospitals Injury Reporting and Prevention Program
CRAZ	Calgary Regional Airshed Zone
CRTC	Canadian Radio & Television Commission
CSA	Canadian Standards Association
CSC	Corrections Services Canada
CTUMS	Canadian Tobacco Use Monitoring Survey
DALYs	Disability adjusted life years
EAF	Environmentally attributable factors
EBD	Environmental burden of disease
EC	Environment Canada
EPS	Edmonton Police Service
FASD	Fetal Alcohol Spectrum Disorder
FDAR	Food and Drug Acts' Regulations
FNIH	First Nations & Inuit Health

FNIHB	First Nations and Inuit Health Branch
FTCS	Federal Tobacco Control Strategy
GTF	Gas Tax Fund
HC	Health Canada
MARD	Medically at Risk Drivers
Nd	No date
PADIS	Poison and Drug Information Service
PAMZ	Parkland Airshed Management Zone
PCAP	Parent-Child Assistance Program
PHAC	Public Health Agency of Canada
ProvLab	Provincial Laboratory for Public Health
PTF	Public Transit Fund
RCMP	Royal Canadian Mounted Police
RSS	Road Safety Strategy
WHO	World Health Organization

# CHAPTER ONE: INTRODUCTION

## INTRODUCTION

There has been a substantial reduction in public health threats, as a result of considerable investments made by governments to prevent communicable and environmental diseases during the last century. In April, 1999 the Centers for Disease Control named the top ten public health achievements of the 20<sup>th</sup> Century. These include vaccinations, other communicable disease control and prevention activities, fluoridation, and tobacco reduction (Table 1.1). Two things should be noted about this list. First, some of these achievements - safer workplaces, safer and healthier foods, and motor vehicle safety - required the intervention of ministries that fell outside the traditional public health system. These include agricultural, environmental, transport, and labour ministries. Second, with the higher level of public health services in these areas, we are now experiencing lower illness burdens in areas such as communicable illnesses and environmental contaminations. However, a low disease burden does not imply a reduced need for public health services.

**Table 1.1: Ten Great Public Health Achievements**

<b>Ten Great Public Health Achievements — United States, 1900–1999</b>
<ul style="list-style-type: none"><li>• Vaccination</li><li>• Motor-vehicle safety</li><li>• Safer workplaces</li><li>• Control of communicable diseases</li><li>• Decline in deaths from coronary heart disease and stroke</li><li>• Safer and healthier foods</li><li>• Healthier mothers and babies</li><li>• Family planning</li><li>• Fluoridation of drinking water</li><li>• Recognition of tobacco use as a health hazard</li></ul>

Source: MMWR, April 02, 1999 / 48(12);241-243

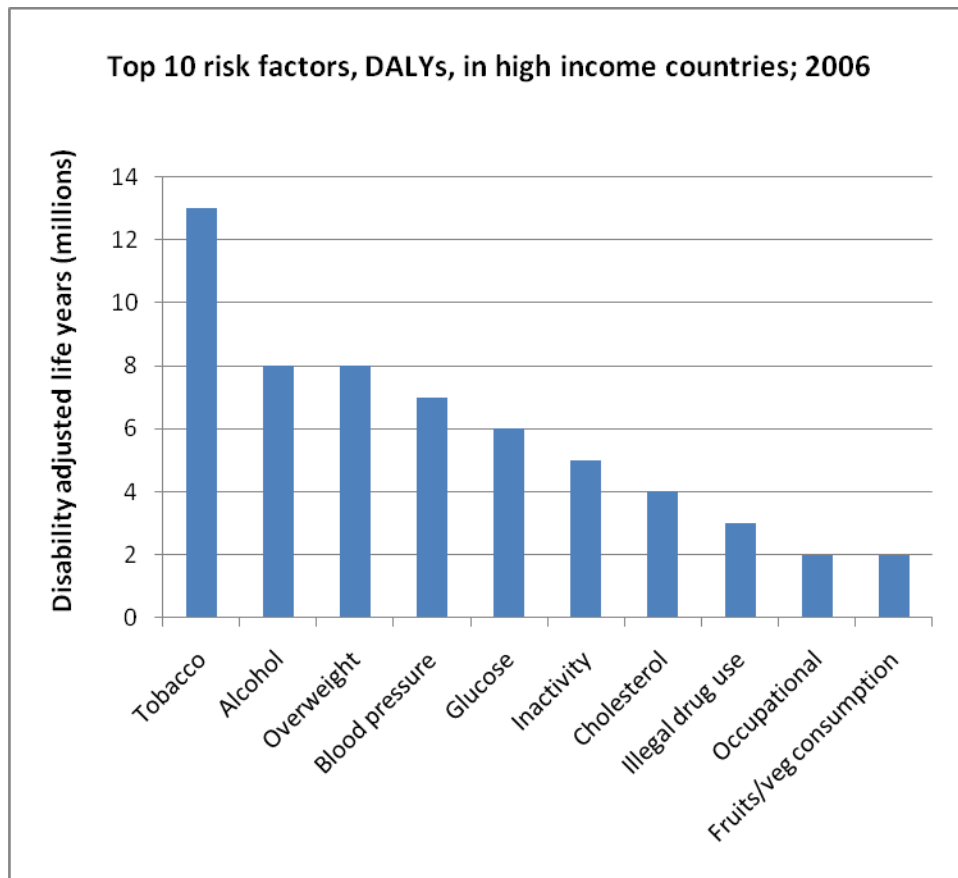
John Last defined public health as “an organized activity of society to promote, protect, improve, and, when necessary, restore the health of individuals, specified groups, or the entire population... It encompasses a wide range of services, institutions, professional groups, trades, and unskilled professions” (Last, 2007). In recent years, governments have broadened their role in preventing illness. In addition to the traditional public health functions mentioned above, health departments are now giving more prominence to the prevention of chronic diseases and injuries. Alberta Health and Wellness’s (AHW) *Framework for a Healthy Alberta* (Alberta Health and Wellness, 2005, pp1) states:

Chronic diseases, such as heart disease, diabetes, cancer and chronic obstructive lung disease, are the leading causes of death in Alberta, and the greatest drain on our health care resources. The most common chronic diseases are linked by a few risk factors—unhealthy diets, lack of exercise, tobacco use and substance abuse as well as other risk-taking behaviors. These risk factors reflect choices we make in our daily lives. If

we make healthier choices, we can move closer to the vision of healthy Albertans in a healthy Alberta.

In Figure 1.1 we show the World Health Organization’s (WHO) estimate of the potential for preventable disease, given current technologies. According to the WHO’s *Global Burden (2008)* project, the prevalence of disease that could be prevented in high income countries, measured in terms of disability – adjusted life years (DALYs), was 13 million DALYs with tobacco cessation, 8 million DALYs each with reductions in excessive alcohol consumption or excessive weight, and 7, 6, and 5 million DALYs with reductions in high blood glucose, inactivity, and high cholesterol (World Health Organization, 2008). Although such estimates are not available for Canada, it is likely that these rankings reflect the Canadian experience.

**Figure 1.1: Top 10 Risk Factors**



Source: World Health Organization (2008). Global Burden of Disease.

The Alberta Health and Wellness Framework (2008), lists a number of public interventions that can be implemented in the health system in order to encourage healthy choices. The alleviations of many health risks can also come from interventions that are traditionally under the jurisdiction of non-health ministries. Parks and Recreation departments provide places for physical activity. Finance departments implement tobacco taxes. The Solicitor General’s office, through the Alberta Gaming and Liquor Commission (AGLC), taxes alcohol and determines what substances are illegal. Municipal governments influence how and where we drink, smoke, and walk. All of these government agencies claim to have our *health* interests at heart when formulating public policy. As

the Public Health Division of the former Capital Health Authority stated in its 2005/06 annual report, *Population Health Priorities*:

“Any attempts to work at a population level must acknowledge the myriad of other players and factors that contribute to the health and well-being of the population.” (Annual Report 2005/2006, pp2)

Health agencies, along with other non-health ministries, have control over resources which they use to implement strategies that can affect our health, either directly by providing services such as counseling, immunizations, and screening, or indirectly by regulating or otherwise influencing behaviors and risk factors. In economic terms, these ministries are engaged in maintaining the public’s health.

The topic of who uses public resources to promote health and prevent illness, and what services they provide, is called public health “supply.” In our analysis, public health suppliers can be any public body whose *stated* purpose of operation includes influencing the health of the population.

The suppliers of public health, then, come from a variety of areas of government, including health, agriculture, transportation, social services, municipal services, environment, and solicitor general offices. This is not a traditional viewpoint of “public health” providers, but there is a growing recognition of the important role that non-health ministries play in influencing health. In many cases, these non-health ministries have asserted some aspect of health as one of their *stated* goals.

Our approach is one of economic surveillance. There are many studies which survey risk behaviors and disease prevalence. But, there are very few reports which document which services the governments are actually producing and the scale on which they are supplying them. In some key areas of public health, we do not have national or provincial pictures of what preventive services we are supplying. Yet without knowledge of what services we are now delivering, how can we say that we have enough, too little, or too much?

## **STUDY OBJECTIVE**

Our task was to document public health supply and cost in Alberta. Public health services are supplied by all three levels of government (federal, provincial, and municipal), and we have included them all in this study. This might seem an anomaly, because many federal programs are national in scope; but many federal services are being produced on behalf of the entire population, and therefore they should be included. Accordingly, we have made appropriate population adjustments to the data to account for it, by recognizing that a federal program serves the entire country, while a provincial one services/ or serves the entire province. Our objective is to identify and measure public health supply in all its economic aspects – its costs and its components.

Cost by itself is not a complete indicator of the governments’ efforts to prevent illness, as costs do not provide a complete measure of these activities. In their efforts to improve the public’s health, government departments place restrictions on peoples’ risk behaviors, through laws and regulations, and encourage others through tax incentives. We have therefore presented supply as a multiproduct entity, including surveillance; standards; information, education, or social marketing; laws, regulations and enforcement; incentives or grants; and direct public health services. We have also adopted a broad perspective on health, including injuries, communicable disease prevention, housing and homelessness, chronic diseases, maternal and infant health, and First Nations and Inuit public health. This document does not contain public health issues relating to mental health. Mental health promotion will be covered in a separate, forthcoming, report.

## DEFINITIONS

The *public's health* is the health status of the population. *Public health* is defined as efforts that are publicly organized with an explicit objective of protecting against health threats and promoting health (Alberta Health and Wellness, 2007). At the provincial level many, but by no means all, of these services are organized through the provincial health department, AHW, and through the regional health departments now organized as AHS. At the federal level, many services are provided by departments and agencies other than the Public Health Agency of Canada (PHAC) and Health Canada (HC).

The *public good* is the underlying rationale for publicly funded preventive services to reduce risk and harm, including economic losses of all members of the society. Traditionally, public health had a communal connotation. In economics, communal effects are called externalities. When one group's consumption behavior or illness confers benefits or losses on another group, the service has taken on a "public" characteristic. For example, a person with a communicable illness can infect others. To reduce this communal phenomenon, public action is taken. This action can take different forms. The government can pass laws and regulations requiring all children to be immunized (at either the governments or the parents' expense), or it can provide vaccine in a public program. A related criteria for the public provision of preventive services is when a service is a "public good." In such a case, a service confers benefits on a number of persons simultaneously and none of these people can be excluded from enjoying the benefits. Examples of public goods are clean air, clean water, and safe roads. When a private market cannot be formed but the service is beneficial to many, then the government can provide the service publicly.

Not all preventive services are publicly provided. Preventive drugs, check-ups, and exercise and weight loss programs are all provided by the private sector, or by the health care system, outside the traditional public health sector. But most governments have taken some responsibility for chronic disease prevention, even though these illnesses do not have the communal characteristics that we discuss below. A path-breaking Canadian policy document that was published on preventive factors for chronic diseases appeared more than 35 years ago in the Lalonde Report, *A new perspective on the health of Canadians*, issued by the Department of National Health and Welfare in 1974. Twelve years later the WHO released its *Ottawa charter for health promotion (1986)* which affirmed the role in health policy of non-medical services for health promotion.

Public health services are often delivered in combinations called programs which are planned as strategies. Generally, no one ministry has all the skills that are needed to provide a complete range of services that would be needed to tackle a complex public health problem such as dangerous driving, alcohol abuse, or tobacco use. Therefore, the programs or strategies often cut across ministries and may be coordinated. For example, the national tobacco reduction strategy is led by HC and includes a number of partner ministries or agencies which are needed to set policies such as taxes or to enforce regulations. Cross-ministerial strategies are common at the provincial level and include the Alberta Tobacco Reduction Strategy, the Alberta Alcohol Strategy, and the Fetal Alcohol Spectrum Disorder Cross-Ministry Committee. Although these combined interventions are needed for successful public health programs, there is very little information on the effectiveness or efficiency of such strategies.

## THE SCOPE OF PUBLIC HEALTH

We identified public health topic areas using several lists of services (McDaid and Needle, 2006; Organization of Economic Cooperation and Development, 2000; London Department of Health,

2009; Alberta Health and Wellness, 2007). Public health suppliers and what they supplied are presented in the following sections. We have organized the areas of public health into categories defined within the 1996 *Report on the Health of Canadians* (<http://dsp-psd.pwgsc.gc.ca/Collection/H39-385-1996-1E.pdf>).

- **Living and Working Conditions:** Occupational health & safety
- **Physical Environment:** Built environment; Environmental health; Housing & homelessness
- **Health Services:** Childhood injury prevention; Consumer product safety; Communicable disease prevention; First Nations and Inuit health; Food Safety; Road safety
- **Health Practices & Coping Skills:** Alcohol; Maternal and infant health; Physical activity & nutrition; Public health in the educational system; Tobacco

## SUPPLIERS OF PUBLIC HEALTH

A public health supplier is a public agency or ministry which provides any of the above mentioned health-related services and which has an explicit purpose that is related to health. Such a purpose would be identified by the agency as a stated objective, strategy, or as a performance measure.

For each public health area on our list we searched government websites. We contacted public health staff in all areas for additional information on each program and to identify additional suppliers. We developed a list of suppliers and verified it with agency staffs.

## IDENTIFYING PUBLIC HEALTH PRODUCTS OF EACH SUPPLIER

Analysts use cost as the most common measure of public health output (London Department of Health, 2009; Canadian Institute for Health Information, 2010). Provincial agencies supply immunization and screening services, safe roads, and information services. All of these require resources and in these instances cost can be considered a rough measure of the scale of services provided, although cost does not provide much information about the effectiveness of the use of these resources. Special studies of performance and outcome in relation to cost are needed to establish the effectiveness of different ways of providing public health services.

In addition to providing services that require resources, public health suppliers place restrictions on the behaviors of persons and companies, thereby reducing the harm imposed on others. Governments set standards, which can vary from one jurisdiction to another; they pass legislation on driving restrictions; develop and enforce safety regulations; and they impose taxes on cigarettes and tobacco, which raise prices and influence smoking and drinking reduction. Most of these services are not measured by the resources governments use, or their costs. In addition, governments provide subsidies, such as tax credits for child physical activity. We must characterize the public health product in a broader sense so that we can include the degree to which public health suppliers impose restrictions on unhealthy behaviors or health hazards, or provide incentives for healthy behaviors.

For each area we used the “best practice” literature to develop a preliminary list of interventions. For each supplier, we obtained the annual report and the performance report or strategic plan. We scanned the department web pages for descriptive information. In some areas governments have developed documents on programs that were specific to a risk factor (e.g., tobacco, alcohol, traffic safety). We also contacted staff in each area for help in identifying strategies and unpublished

materials. From this information, we developed a list of strategies or interventions, which we summarized in terms of service categories.

We report the following information for each government agency, organized according to HC category and major risk group: agency name, agency goals related to health (if a non-health department), a description of surveillance activities and reports, a summary of all strategies used, and expenses (where available) related to prevention. In some instances, data for expenses was not available. We describe ‘services’ broadly, and the following is an explanation of each service category.

**Develop standards:** Some organizations, such as HC, conduct scientific investigations and develop policies, standards, and guidelines in consultation with provinces. These are used or adapted by each province.

**Surveillance:** Many agencies conduct surveys, monitor risk factors, or collect data that are related to specific risks in their field of operation. In some cases, these are published. We also include contact investigations for communicable diseases in this category.

**Laws/regulations:** Some government agencies are charged with the role of developing laws and regulations.

**Enforcement:** Organizations such as the RCMP, the Edmonton Police Services (EPS), and AHW are responsible for the enforcement of laws and regulations. When the regulations are related to health promotion or protection, we include them as public health strategies. We include facility inspections, such as those in occupational health and food inspections.

**Direct services (individual):** We include services such as immunizations, and counseling in this category.

**Direct services (infrastructure):** We include facilities for physical activity including walkable areas, road construction related to safety, and any item that is prevention related and is a long term, capital expenditure.

**Incentives/grants:** We include taxes such as those on alcohol and tobacco and fines such as those for speeding.

**Information/education:** We include public advertising campaigns.

**Per capita expenses:** We present our results in terms of cost per capita. We use the following population statistics to calculate per capita values ([www.statcan.ca](http://www.statcan.ca)):

- Alberta, 3.64 million;
- Canada, 33.7 million;
- Alberta First Nation and Inuit population, 98 885;
- Canada First Nations and Inuit population, 748 510.

We separate current from capital expenses (i.e., those with long-lasting uses.) We report capital (long term) expenses in full, rather than applying an annual depreciation factor. As a result, some capital expenses will appear high as they should be spread out over many years. However, in total, the government capital investments in public health investments may not vary substantially between years.

When examining public health expenses we should note the following. First, current practice is largely missing from decision making analyses; yet if we don't know current practice, it will be hard to sell, or give away, economic advice. Second, although information on spending is an important consideration, the level of expenses, by themselves, does not say anything about whether these expenses are too much, too little, or just right. Other indicators, such as the burden of disease and the cost-effectiveness of interventions, are also needed to make such a judgment. Some analysts have even gone so far as to state that cost-effectiveness, by itself, provides enough information to make a judgment. This is rarely the case. Policy makers have continually shown a keen interest in the existing disease burden; the PHACC document *Economic Burden of Illness (1998)* is immensely popular. It is well known and generally understood that economic evaluations rarely make up the sole basis for decision making in health care (Goetghebeur et al, 2008; Erickson, 2005).

Third, the current level of expenditures will show high costs in traditional areas of public health and low in emerging areas, such as chronic disease prevention. As stated above, this reflects success in programs of traditional public health. It is not an argument for moving expenditures from traditional to newer areas. Several decades of studies in vaccine economics indicate that public health has invested well in the past. There may well be a case for "new money", rather than shifting from "old money," in public health.

Finally, there are some agencies whose activities are related indirectly to public health activities. These include policing and other enforcement actions, which follow from government attempts to charge higher prices (taxes) or otherwise restrict availability of products like alcohol, tobacco, and drugs. We include discussions of these activities in our analysis. Public health actions, such as increasing tobacco and alcohol prices, have led to increased contraband supply and increased public resources in crime fighting. If these activities are the direct result of "public health," then these effects and crime-related costs should be factored into the equation of costs in relation to benefits/effectiveness. Because of our inability to connect these expenditures to health, we cannot always link health services to expenditures.

## **CHAPTER TWO: OVERVIEW OF RESULTS**

## **AGENCY GOALS**

Most of the agencies that we identified have stated that they have goals that are related to the population's health. We have cited these in Appendix 1.

## **WHO THE PUBLIC HEALTH SUPPLIERS WERE**

In the fifteen areas of public health that we included, we identified twelve federal ministries, eleven federal agencies, sixteen provincial ministries, five provincial agencies, and municipalities which stated the public's health was one of their operational goals. The agencies and the public health areas that they provide services for are shown in Table 2.1 (federal) and Table 2.2 (provincial). We present the health-related goals of these agencies and ministries in Appendix 1.

**Table 2.1: Federal agencies involved in public health**

	Occupational Health & Safety	Built Environment	Environmental Health	Housing & Homelessness	Childhood Injury	Consumer Product Safety	First Nations and Inuit Public Health	Food Safety	Communicable Disease Prevention	Road Safety	Alcohol	Maternal & Infant Health	Physical Activity & Nutrition	Public Health in Educational System	Tobacco
<b>Federal Ministry</b>															
Agriculture & Agri-Food Canada								•							
Canada Border Services Agency											•				•
Canadian Centre for Occupational Safety & Health	•														
Canadian Council of Motor Transport Administrators										•					
Canada Mortgage and Housing Corporation		•		•			•								
Canadian Radio-Television Telecommunications Commission											•				
Canada Revenue Agency											•	•			•
Citizenship & Immigration Canada									•						
Correctional Services Canada							•		•						
Environment Canada			•		•					•					
Finance Canada			•								•		•		•
Health Canada			•		•	•	•	•	•	•	•	•	•		•
First Nations & Inuit Health Branch (HC)			•	•	•		•	•	•	•	•	•	•	•	•
Canadian Food Inspection Agency (HC)								•					•		
Human Resources & Skill Development Canada															•
Indian & Northern Affairs Canada							•						•		
Infrastructure Canada													•		

**Table 2.1: Federal agencies involved in public health (cont'd)**

	Occupational Health & Safety	Built Environment	Environmental Health	Housing & Homelessness	Childhood Injury	Consumer Product Safety	First Nations and Inuit Public Health	Food Safety	Communicable Disease Prevention	Road Safety	Alcohol	Maternal & Infant Health	Physical Activity & Nutrition	Public Health in Educational System	Tobacco
<b>Federal Ministry (cont'd)</b>															
Public Health Agency of Canada		•	•		•		•	•	•	•	•	•	•	•	•
Public Safety Canada											•			•	•
Royal Canadian Mounted Police									•		•				•
Solicitor General of Canada											•				•
Statistics Canada				•			•		•		•	•	•		•
Transport Canada		•								•		•			

**Table 2.2: Provincial agencies involved in public health**

	Occupational Health & Safety	Built Environment	Environmental Health	Housing & Homelessness	Childhood Injury	Consumer Product Safety	First Nations and Inuit Public Health	Food Safety	Communicable Disease Prevention	Road Safety	Alcohol	Maternal & Infant Health	Physical Activity & Nutrition	Public Health in Educational System	Tobacco
<b>Provincial</b>															
Alberta Aboriginal Relations							•								
Alberta Agriculture & Rural Development					•			•							
Alberta Children & Youth Services					•		•				•	•		•	
Alberta Clean Air Strategic Alliance			•												
Alberta Education					•				•			•	•	•	•
Alberta Employment & Immigration	•											•			
Workers Compensation Board of Alberta (AEI)	•														
Alberta Environment			•												
Alberta Finance & Enterprise															•
Alberta Health Services		•	•	•			•	•	•		•	•	•	•	
Alberta Health & Wellness			•	•	•		•	•	•	•	•	•	•	•	•
Alberta Housing & Urban Affairs				•											
Alberta Justice					•					•					
Alberta Municipal Affairs			•	•	•					•	•		•		•
Alberta Seniors & Community Supports				•			•			•					

**Table 2.2: Provincial agencies involved in public health (cont'd)**

	Occupational Health & Safety	Built Environment	Environmental Health	Housing & Homelessness	Childhood Injury	Consumer Product Safety	First Nations and Inuit Public Health	Food Safety	Communicable Disease Prevention	Road Safety	Alcohol	Maternal & Infant Health	Physical Activity & Nutrition	Public Health in Educational System	Tobacco
<b>Provincial (cont'd)</b>															
Alberta Solicitor General & Public Security					•		•			•					
Alberta Gaming & Liquor Commission (ASG)											•				
Alberta Sustainable Resource Development		•													
Alberta Tourism, Parks & Recreation			•		•					•			•		
Alberta Transportation			•							•		•			
Royal Canadian Mounted Police (provincial divisions)											•				•

At the federal level, HC and the PHAC are involved in the majority of the areas of public health. As for the other ministries and agencies, the involvement in public health depended on the population served and the function of the agency. For example, ministries such as Citizenship and Immigration, Indian and Northern Affairs, and Corrections serve specific populations – immigrants, First Nation’s persons, and convicted persons. Some of their concerns are with the health of these groups, in addition to welfare, and there are specific programs designed to improve health or protect these groups from disease.

One of the interventions of public health is to provide incentives for healthy living. Finance Canada, one of whose function is to develop tax incentives, has been involved in the development of customs duties and excise taxes for alcohol and tobacco and the Children’s Fitness Tax Credit, all of which have a direct public health impact. Environmental and agricultural departments, whose functions deal with specific functions that deal with the environment and agriculture, develop a range of policies and interventions for environmental aspects of health. The Canadian Radio-Television Telecommunications Commission, which regulates advertising, has alcohol advertising included in its mandate. The Canada Mortgage and Housing Corporation, whose function is housing, funds healthy housing initiatives. The same is true at the provincial and municipal levels.

At the provincial level, AHW sets standards and policies, provides significant funding, and monitors performance. Within the province, AHW provides strategic policy to mediate each of the health risks discussed in this document, while AHS provides the bulk of direct services. Within non-health agencies, most ministries have health policy or provide some direct health services.

Following, we present a brief overview of public health supply in the various public health areas.

- In Alberta, **occupational health and safety** practices are regulated by Alberta Employment and Immigration. The Alberta Workers’ Compensation Board is responsible for occupational injuries and illness. It also charges employers a premium and revenues are used to compensate injured workers. The premium is rated according to the employer’s injury experience, in order to provide an incentive for the employer to engage in injury and illness prevention.
- Health information to consumers and planners about the **built environment** is provided federally through the PHAC, the Canadian Mortgage and Housing Corporation, and Transport Canada. Provincially, AHS is engaged in several knowledge transfer initiatives and acts as a consultant to various players working to enhance the built environment. The bulk of the public health supply that is conducted on the built environment is implemented at the municipal level.
- Environment Canada and the Canada Council of Ministers of the Environment monitors, conducts tests, and publish reports on key issues relating to **environmental health** on the federal level, while the Clean Air Strategic Alliance, AHW, and various Zones set and administer the air quality management system at the provincial level. Within Alberta, issues relating to air or water quality and land use are regulated through the *Water Act*, the *Environmental Protection Act and Enhancement Act*, the *Land-use Act*, and the *Alberta Land Stewardship Act*, which are enforced through Alberta Environment. AHS and AHW regulate and control environmental health activities through the *Public Health Act* (for example, safe food practices, and water and air quality). Municipal Affairs and Alberta Environment have the primary responsibility for safe sewage management. Municipalities have their own environmental programs that are linked to public health.

- Most initiatives in **housing and homelessness** occur at the provincial and municipal levels of government; however the Canadian Housing and Mortgage Corporation recommend national standards for healthy housing. National surveillance is conducted by Statistics Canada. Most activities in the healthy housing area occur at the provincial and municipal levels of government. Standards for healthy housing are set by AHW, and enforcement of the Standards occurs through AHS's public health inspectors on a complaint bases. Homelessness is dealt with by a number of agencies through a multi-ministerial provincial initiative.
- **Childhood injury prevention** is promoted by Environment Canada, HC, and the PHACC at the federal level. Participating agencies at the provincial level include Alberta Agriculture and Rural Development (social marketing), Alberta Children and Youth Services and Alberta Education (AED) (social marketing), Alberta Justice (surveillance) and Alberta Tourism, Parks and Recreation (setting standards for safe areas, marketing and providing a safe, built environment).
- Under the Consumer Product Safety Act, HC sets standards and regulates products relating to **Consumer product safety**. HC issues regulations and guidelines, issues warnings, and has a consumer information initiative.
- **First Nations and Inuit public health** is primarily provided by the regional arm of the First Nations and Inuit Health Branch of HC. Corrections Services Canada (CSC) offers direct services and education to federally incarcerated First Nations and Inuit peoples. The Canadian Mortgage and Housing Corporation and Canada Indian and Northern Affairs provide funding to support healthy infrastructure on-reserve. Provincially, Alberta Aboriginal Relations provides funding and grants to support Alberta-based First Nations and Inuit health programs. First Nations and Inuit Health collaborate with AHW and AHS on many health initiatives targeting First Nations and Inuit peoples. Several ministries are involved in the Aboriginal Youth Suicide Prevention Strategy, which is an Alberta-tailored program to address high suicide rates in many First Nations communities.
- HC sets national standards for **food safety** in production, inspection and enforcement. These are the responsibilities of the Canadian Food Inspection Agency of Health Canada. Outbreak surveillance and epidemiology is conducted by both the PHAC and HC, who then provides advice to protect the public's health. Food safety on farms is the responsibility of Alberta Agriculture and Rural Development, with support from Agriculture and Agri-Food Canada. Restaurant and store inspection are the responsibility of AHS, with support from AHW.
- Education of **communicable disease prevention** is provided at the federal level by the PHAC, HC, CSC, and First Nations and Inuit Health Branch. Communicable disease surveillance is primarily provided by the PHAC and, for those in criminal detention, CSC. Citizenship and Immigration Canada, the PHAC, and the Royal Canadian Mounted Police (RCMP) address enforcement issues relating to Communicable Disease Prevention. AHW provides the overall policy framework for communicable disease prevention and control within the province. Vaccine is funded at the provincial level, with supplemental funding from the National Immunization Strategy of the government of Canada. AHS provides the bulk of direct services (for example, the provincial immunization programs).

- **Road safety** is promoted at the federal level by the Canadian Council of Motor Transport Administrators (surveillance, standards, laws and regulations, built environment and information). The federal government also takes a lead in inter-provincial coordination. At the provincial level, Alberta Transport takes the lead role through its comprehensive Traffic Safety Plan, providing surveillance, safety standards, laws and regulations, public information, and a built environment. Other participating agencies include AHW (surveillance and information), Alberta Justice (surveillance), Alberta Seniors and Community Support (setting standards and funding training), and Alberta Solicitor General and Various police services at the provincial and municipal levels.
- Alcohol is treated as a controlled substance, along with illegal drugs, at the federal level. HC and the PHAC are involved in **alcohol control** activities. HC provides alcohol consumption surveillance. There are alcohol excise taxes and duties (Finance Canada, Canada Revenue Agency). As well, there are strict regulations about alcohol advertising, that are set by the Canadian Radio and Television Commission (CRTC). At the provincial level, AHS and the Alberta Liquor and Gaming Commission (AGLC) take the lead in Alberta Alcohol Strategy. There are laws and regulations, largely related to the activities of liquor stores and bars, and provincial taxation, all governed by AGLC. AHS and AGLC provide public marketing services and AHS provides prevention counseling services for high risk persons. Alberta Transportation chairs the Provincial Impaired Driving Strategy - with a wide variety of stakeholders; within this strategy the public health suppliers engage in prevention, detection and prosecution of impaired driving. The law enforcement and corrections departments provide enforcement support. In addition, the municipalities are active in providing public messaging as well as policing services.

The control of alcohol extends into other areas of public health as well. Alberta has developed a cross ministerial committee dealing with the prevention, treatment, and support of Fetal Alcohol Spectrum Disorders (FASD). AHW and Alberta Child and Youth Services (ACYS) are the lead agencies. AHW provides messaging services, and ACYS provides messaging and coordinates preventive counseling. The other agencies involved in the Cross-Ministerial initiative are mostly involved in treatment and support, which are outside the realm of public health.

Alcohol plays an important role in certain chronic liver diseases, although there does not seem to be much public health involvement in this area.

- HC sets standards for **maternal and infant health** issues, while the PHAC makes general recommendations to promote the health of mothers and their babies. Surveillance occurs through a number of PHAC initiatives. Education and funding support is also provided at the federal level through HC and the PHAC. Provincially, AHS provides the bulk of direct services at the Zone level and, therefore, services offered differ across the province. ACYS provide funding to a number of community-based programs.
- **Physical activity and nutrition** is also an important public health activity. At the federal level, HC takes a lead in developing and promoting nutritional policies, standards, and guidelines. The PHAC supports the development of physical activity guidelines. The Canadian Food Inspection Agency is the major participant in the enforcement of the regulations set by HC. Statistics Canada conducts surveillance, and the Department of Indian Affairs and Northern Development provides subsidies for the transport of nutritious foods

to remote communities. At the provincial level AHW, AHS, and AED provides marketing and educational services.

At the federal level, surveillance of nutrition and physical activity is conducted by Statistics Canada. HC also develops nutrition and healthy eating education/awareness and marketing activities and there is a federal tax credit for children's participation in physical activities (Finance Canada). At the provincial level, Alberta Parks and Recreation undertakes surveillance and social marketing. It also takes a lead in providing healthy spaces for physical activity. AHW provides marketing activities.

- **Public health within the educational system** is primarily conducted by AED, which implements standards for curriculum and determines how health education, physical activity, and guidance counseling will be administered in schools. AHS provides education to school children on public health issues such as food safety, proper hand washing, and disease prevention. AED has also partnered with AHW and ACYS to provide public health services to students across the province. The federal government has a minimal role in education; however the PHAC provides the provinces with recommendations on how to best teach sexual education in the classroom and Public Safety Canada provides funding to programs which promote anti-bullying in schools.
- **Tobacco** is the largest public health problem of this century. We identified thirteen agencies that play a significant role in tobacco control. At the federal level, HC leads the Tobacco Control Strategy. The primary interventions that make up the strategy include surveillance (HC), taxation (Finance Canada, Canada Revenue Agency), smoking regulations in federal buildings (Human Resources and Skills Development Canada), and social marketing (HC). A high price for cigarettes due to taxation resulted in an increase in contraband, with the participation of organized criminals. A number of other public agencies, led by the RCMP, became involved in setting laws and regulations and their enforcement. We have excluded prosecution and punishment of offenders from our analysis because we could not separate their public health related services from other services. At the provincial level, AHW was the lead agency for the provincial tobacco reduction strategy. Public health interventions included regulations and laws in relation to the promotion and sale of tobacco products and where one cannot smoke (AHW), social marketing (AHW and AHS), taxation (Alberta Finance and Enterprise), and counseling services (AHS). A non-smoking curriculum in the schools was introduced by AED. The enforcement of laws was undertaken by provincial and municipal law enforcement bodies.

## **COSTS AND SERVICES**

In this section we report on the costs of public health activities that the agencies provide. In order to standardize these, we report them on a per capita basis. We use the total Canadian population for federally provided services, the provincial population for provincial services, and the appropriate First Nations and Inuit population for First Nations expenditures.

We present the costs in four categories. These are the federal government expenditures, which are separated by health ministry or agency (e.g., HC and the PHAC) and non-health ministry or agency (e.g., Agriculture and Agri-Food Canada). We do the same for the provincial ministries and agencies. In addition, costs are divided into three groups: current operating costs, capital costs, and First Nations and Inuit services. We separated out First Nations and Inuit services as First Nations and Inuit people have a different population denominator.

We show the breakdown of costs in Table 2.3. For the general population, costs for current expenditures amounted to \$321.71 per person. This would amount to a total cost of \$1,171 million for a population of 3.64 million. Health departments (the PHAC, HC, AHW, AHS and health agencies) spent 18.9% of the total of current expenses; non-health department spent over three-quarters of the total. The federal government spent about 30% of the total and the provincial government spent about 70%. The risk factors with the most spending were environmental health (\$181.71, roughly 55% of total current spending) and food safety (\$33, about 10% if the total).

Capital expenses were about \$247.59 per capita. Spending on housing and homelessness formed most of this amount. First Nations and Inuit spending was \$2122.27 per capita. Most of capital expenditures are for housing and infrastructure on reserves. It should be remembered that the First Nations and Inuit population base is much smaller than the general population base that was used to calculate per capita amounts.

We should also point out that there is missing data. Some public health programs are the responsibility of “Zones” and the Zones do not readily have this data. In particular, we could not get data on immunization procedures; we could only obtain data on vaccines. As well, there are some preventive practices that are embedded into broader units. AHS does have some preventive practices for nutrition; these are embedded in regional nutrition services, but are likely to be small, relatively. We also could not estimate any costs for childhood injury prevention services as these services were always embedded in larger budgets. This is also true for public health initiatives for First National and Inuit Health, which represents a substantial component of First Nations and Inuit expenditures.

## **USING THE INFORMATION**

Researchers of both health care (Goetghebeur et al, 2010) and public health (Erickson, De Wals & Farand, 2005) decision-making have identified budget factors as an important consideration in forming decisions of resource allocation. Other factors which have been identified include disease characteristics and cost-effectiveness results. The current research adds to these results by identifying the societal, or public, perspective of public health.

In most areas of public health there is no single budget authority. Resources in most areas of public health are undertaken by several, or even many, agencies. As well, outcomes cannot always be traced to a single agency intervention, especially within cross-ministerial initiatives. Our goal was to define the pools of resources and costs which result in preventive outcomes. Once this is done, analyses can be conducted to relate societal costs to outcomes. This analysis was provided as a step in that direction.

Table 2.3: Per capita costs for public health functions, 2009/10

PER CAPITA COST OF PUBLIC HEALTH FUNCTIONS, 2009-2010								
	FEDERAL		PROVINCIAL		TOTALS			
	Health Ministries	Non-Health Ministries	Health Ministries	Non-Health Ministries	Health Ministries		Non-Health Ministries	
<b>CURRENT</b>								
Alcohol General			\$1.64	\$0.48				
Alcohol FASD	\$0.64			\$0.85				
Consumer Product Safety	\$0.71							
Environmental Health	\$3.87	\$53.21	\$7.69	\$117.12				
Food Safety	\$18.60	\$2.25	\$7.22	\$5.80				
Infectious Disease Prevention		\$0.57	\$18.33					
Maternal & Infant Health	\$2.74			\$25.33				
Occupational Health & Safety			\$0.17					
Physical Activity & Nutrition	\$0.61	\$4.50		\$15.50				
Road Safety		\$1.08		\$24.70				
Tobacco	\$1.99	\$0.51	\$2.52					
<b>CAPITAL</b>								
Built Environment		\$0.33						
Housing & Homelessness		\$74.85		\$143.97				
Physical Activity (Parks)		\$8.33		\$28.77				
					<b>CURRENT</b>			
					FED.	PROV.	FED.	PROV.
					\$29.16	\$62.29	\$37.40	\$198.51
					<b>CAPITAL</b>			
						PROV.		PROV.
						\$83.51		\$172.74

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## **CHAPTER THREE: DETAILED RESULTS**

## **LIVING AND WORKING CONDITIONS**

### **Occupational Health and Safety Related Strategies**

#### *Economic context*

In 2009 there were 1.988 million persons who were employed in Alberta. There were, in total, 110 occupational health fatalities – 49 with an occupational disease, 20 with a motor vehicle incident, and 41 with a workplace incident (Alberta Employment and Immigration, 2010).

There were 27,000 time – loss claims. This is a rate of 1.69 lost time claims per 100 workers. The rate of disabling injuries, with and without time – loss claims, was 3.63 per 100 workers (Alberta Employment and Immigration, 2010). The annual claims costs for the Workers Compensation Board were \$971 million. This amounts to about \$488 per worker, and \$35.9 thousand per time – loss claim (Alberta Workers' Compensation Board, 2009).

#### *Public health supply*

A number of ministries are involved in occupational health and safety and are summarized in Table 3.1.

The federal government has set up the Canadian Centre for Occupational Safety and Health (CCOHS) whose purpose is to provide information to employers and the public to promote safety practices (<http://www.ccohs.ca/>). Most occupational health and safety activities occur at the provincial level. Alberta Employment and Immigration (AEI) and the Alberta Workers' Compensation Board (AWCB) collect data on occupational injuries and illnesses. AEI has a reporting requirement for serious occurrences and the AWCB collects data that is based on claims.

AEI sets standards, imposes regulations, conducts inspections, and has the authority to enforce deviations from regulated standards. It also promotes safety messages. AWCB is largely an insurance agency; however, its premiums are related to companies' accident records so an incentive system is built into the premiums that companies pay (AWCB, Pricing Workers' Compensation Insurance). AEI and AWCB participate in a combined effort called Partnerships in Injury Reduction. The program awards safety recognition certificates to member employers, who then receive a refund on premiums.

#### *The cost of public health supply*

The annual cost, per person, for CCOHS is \$0.17. The cost for the AEI regulatory and enforcement program is \$8.73 per person.

**Table 3.1: Strategies Related to Occupational Health**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Canadian Centre for Occupational Safety and Health*								•	\$0.17	\$5.0 (1)
Workers' Compensation Board of Alberta	•				•			•		
Alberta Employment and Immigration**	•	•	•	•				•	\$8.73	\$26.2 (2)

\* Total costs for the Canadian Centre for Occupational Safety & Health are directed towards social marketing

\*\* Total costs for the Alberta Employment and Immigration are directed towards surveillance, standard setting, social marketing, and enforcement regulations

**Data sources:**

(1) Treasury Board Secretariat. . 2009-10 main estimates.

(2) 2010-2013 Ministry Business Plan, Alberta Employment and Immigration.

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**PHYSICAL ENVIRONMENT**

**Built Environment Related Strategies**

*Public health context*

The number of Canadians who are considered obese has steadily increased over the last 25 years (Integrated Pan-Canadian Healthy Living Strategy, 2005) and approximately half of Canadians over 12 years of age is considered inactive (Heart and Stroke Foundation, 2007).

The built environment - which can include land use, parks, housing, and road systems - can have profound implications to a society's ability to be active (Heart and Stroke Foundation, 2010), and is increasingly looked upon to promote health and wellbeing. The way a community is designed, the walkability of a neighborhood, the amount of park space, the number of hiking trails or bike lanes, and the density of urban sprawl within a community all contribute to the physical activity levels of Canadians (Public Health Agency of Canada, 2011). People will walk more in communities with high walkability rates, children are more active when parks are located close to their homes, and communities that plan for healthy environments have a higher physical activity rate (Health and Stroke, 2010).

Research suggests the risk of obesity can be decreased by 4.8% of each daily walked kilometer, and can increase by 6% for every hour spent in an automobile (Frank, Andresen & Schmid, 2004); however, approximately 77% of Albertans over the age of 18 years make all, or the majority, of their daily trips by vehicle (Alberta Health Services, 2009). Cities within Alberta are often widespread, with residential neighborhoods located far distances from employment and leisure areas (Focus Edmonton, nd), creating an environment for automobile dependency and, subsequently, higher rates of inactivity and obesity (Saelens, Sallis & Frank, 2003).

### ***Public health supply***

A number of agencies have initiated policies to promote a healthy built environment, and are summarized in Table 3.2. The built environment, as described by the Center for Disease Control, includes all aspect of the physical environment where populations live and work (Center for Disease Control, 2011). The focus of this section will detail built environment initiatives in the two major city centers within Alberta - Edmonton and Calgary - and will focus on physical activity initiatives and policy only. Other aspects of the built environment, for example road safety or environment health, are covered in other sections of this document.

The role of the federal government in the construction and maintenance of the built environment focuses solely on education. The PHAC provides education through reports and documentation, which can be accessed on their website (<http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/be-cb-eng.php>). The Canadian Mortgage and Housing Corporation provides education through their Sustaining Community Development initiative, which can be accessed through their website (<http://www.cmhc-schl.gc.ca/en/inpr/su/sucopl/index.cfm>). Transport Canada, through their ecoMOBILITY Program (<http://www.tc.gc.ca/eng/programs/environment-ecomobility-menu-eng-144.htm>) provides social marketing and education to influence transportation choices such as public transit, cycling, or walking.

The role of the provincial government focuses on education, funding, and standard setting. AHS supports several knowledge transfer strategies, such as lunch and learns or meet and greets, to built environment stakeholders (for example, with academics, developers, engineers, municipal representatives) across the province (Public Health Agency of Canada, nd). AHS, through their Population Health Team, provides consultations with municipalities regarding health and the built environment and provides educational documents such as the Designing Health Places: Land Use Planning and Public Health ([http://www.capitalhealth.ca/AboutUs/ResourceLibrary/Other/Land\\_Use\\_Planning.htm](http://www.capitalhealth.ca/AboutUs/ResourceLibrary/Other/Land_Use_Planning.htm)). AHS also provides funding to support municipal initiatives (for example, the Walkability

Strategy, which aims to improve walkability within Edmonton ([http://www.edmonton.ca/for\\_residents/programs/walkable-edmonton.aspx](http://www.edmonton.ca/for_residents/programs/walkable-edmonton.aspx)).

The ministry of Sustainable Resource and Development is responsible for the implementation of the *Provincial Land Use Framework* (<http://www.landuse.alberta.ca/AboutLanduseFramework/LUFProgress/documents/LanduseFramework-FINAL-Dec3-2008.pdf>), which requires municipalities develop plans that adhere to the standards set within the *Framework*.

The bulk of work conducted on the built environment is implemented at the municipal level. Each municipality constructs and enforces tailor-made policies and programs. Planning and implementation of the built environment within the City of Edmonton is guided by several key policy documents: Transportation Master Plan (The Way We Move); Municipal Development Plan Review (The Way We Grow); Sidewalk Strategy; Bicycle Transportation Plan Update; Walkability Strategy; and the Design Guide for New Neighborhoods Review (Public Health Agency of Canada, nd). Each document contains possible future policy directions which can promote healthier lifestyles through the built environment. For more information on each of the policy documents utilized by the City of Edmonton, see <http://www.phac-aspc.gc.ca/publicat/2009/be-cb/index-eng.php>.

Planning and implementation of the built environment within the City of Calgary is guided by The Municipal Development Plan ([http://www.calgary.ca/docgallery/BU/planning/pdf/municipal\\_development\\_plan/municipal\\_development\\_plan.pdf](http://www.calgary.ca/docgallery/BU/planning/pdf/municipal_development_plan/municipal_development_plan.pdf)), the Integrated Land Use and Mobility Plan ([http://www.calgary.ca/docgallery/BU/planning/pdf/plan\\_it/sustainability\\_principles.pdf](http://www.calgary.ca/docgallery/BU/planning/pdf/plan_it/sustainability_principles.pdf)), and the Transportation Plan ([http://www.calgary.ca/docgallery/BU/planning/pdf/municipal\\_development\\_plan/calgary\\_transportation\\_plan.pdf](http://www.calgary.ca/docgallery/BU/planning/pdf/municipal_development_plan/calgary_transportation_plan.pdf)), which states built environment goals and future policy relating to healthy housing, adequate parks and outdoor recreation centers, and alternative transportation options such as walking trails and biking lanes.

### ***The cost of public health supply***

Transport Canada spends \$10 million, or \$0.33 per capita, on the ecoMOBILITY program.

**Table 3.2: Strategies for Healthy Built Environment**

	Surveillance	Standards/ recommendations	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/ education	Expenses per capita	Total expenses (millions)
Public Health Agency of Canada								•		
Canadian Mortgage and Housing Corporation								•		
Transport Canada*								•	\$0.33	\$10 (1)
Alberta Health Services		•			•			•		
Alberta Sustainable Resource and Development		•								
Municipalities		•								

\* The budget listed for Transport Canada reflects the total expenditures for the ecoMOBILITY Program

**Data Sources:**

- (1) Transport Canada- ecoMOBILITY Program (2010). Annual Review 2008-2010. Available at: [http://www.tc.gc.ca/media/documents/programs/ecoMobility\\_Annual\\_Review\\_2008-2010.pdf](http://www.tc.gc.ca/media/documents/programs/ecoMobility_Annual_Review_2008-2010.pdf)

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## **Environmental Health Related Strategies**

### ***Economic context***

The environment has a significant impact to our everyday life and many aspects are related to public health. We need clean air, water, and food. Environmental pollution can lead to poor air quality (indoor and outdoor) that can affect those with asthma and other pulmonary diseases. Contaminated drinking water can lead to communicable disease outbreaks, poisoning, or an increased risk of other health effects, including some cancers. The quality of soil is linked to agricultural production and the quality of food. Direct health impacts are possible if chemical and biological contaminants enter the ground water, rivers, and lakes.

The environmental health implications are sometimes measured by Environmental Burden of Disease (EBD) studies which try to quantify mortality and morbidity that can be attributed to exposure of preventable environmental hazards (Boyd, Genuis 2008, Prüss-Üstün, Convalan 2006). Based on the WHO's 2004 estimates, 15 Disability Adjusted Life Years (DALYs) per 1,000 persons per year were attributable to the environmental hazards in Canada. From this, 0.4 DALYs were attributable to outdoor air pollution (Ostro 2004) and 0.2 DALYs for water, sanitation and hygiene (see [http://www.who.int/quantifying\\_ehimpacts/national/countryprofile/canada.pdf](http://www.who.int/quantifying_ehimpacts/national/countryprofile/canada.pdf)). The impact of water, sanitation, and hygiene resulted to 800 deaths in Canada in 2004 (0.4% of all deaths), and the majority of them were related to diarrheal diseases (0.3% units) (see: [http://www.who.int/quantifying\\_ehimpacts/publications/ebd5.pdf](http://www.who.int/quantifying_ehimpacts/publications/ebd5.pdf)). The WHO's estimates are based on regional (North America Region) averages, which mean some of these estimates may be over- or underestimates.

A Canadian study which estimated EBD by approximating environmentally attributable factors (EAF), found that within four major disease categories (respiratory diseases, cardiovascular diseases, cancer, and congenital affliction) EBD contributed to 10,000 -25,000 deaths, and 78,000 - 194,000 hospitalizations per year (Boyd, Genuis 2008). The cost burden

was estimated to be between \$3.6 billion and \$9.1 billion per year, with nearly 70% of these being indirect costs from lost productivity (Boyd, Genuis 2008).

However, statistics and conclusions generated by EBD studies are, at best, general estimates and must be considered cautiously. There is little good scientific evidence that can conclusively link diseases to specific environmental exposures. As a result, EBD studies make heroic assumptions when assigning the risk attributed to environmental exposures.

### ***Public health supply***

Public health is related to activities that monitor, protect, enforce, and improve the quality of environmental factors that are linked to health risks. Some of these activities are local while others are provincial, national or even global (like global climate change). As a result, the environmental health related tasks are provided by a large number of organizations. Those of national and provincial in scope are summarized in Table 3.3.

Surveillance occurs through many organizations. Environment Canada (EC) monitors, tests, and publishes reports on key environmental topics (<http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1>). EC also monitors and reports Greenhouse Gas Emissions by province and by firm (<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=1357A041-1>). The Clean Air Strategic Alliance (CASA) recommends strategies to assess and improve air quality in Alberta, using a consensus process (CASA 2008). Alberta Capital Airshed Alliance (ACAA) (<http://www.capitalairshed.ca/>), Parkland Airshed Management Zone (PAMZ) (<http://www.pamz.org/air-quality/>), Calgary Region Airshed Zone (CRAZ) (<http://www.craz.ca/>) and other airshed zones take measurements of air quality within their respected zones. AHW uses data from air, water, fish and wildlife monitoring. The Provincial Laboratory for Public health (ProvLab) tests water quality samples and samples from other environmental media.

The role of the federal government in Environmental Health focuses on setting standards and regulations, and also on funding or grants that have impact on population health. The Canada Council of Ministers of the Environment (CCME), which includes environmental ministers in each province and territory and the federal minister, sets Canadian standards for environmental issues (<http://www.ccme.ca/about>).

Environment Canada provides funding opportunities for municipalities and firms that are directed to reduce Greenhouse Gas Emissions.

The role of the provincial government in environmental health focuses primarily on the enforcement of standards and funding, along with education. In Alberta, air and water quality and land use are regulated by the *Water Act*, the *Environmental Protection Act* and *Enhancement Act*, the *Land-use Act*, and the *Alberta Land Stewardship Act*. AEV is largely responsible for making decisions, monitoring, and enforcement, and gives environmental approvals based on the limits of environmental risk factors identified in the above mentioned Acts (Government of Alberta 2010). AEV can issue or amend administrative penalties, tickets, warning letters, orders, and lay charges under the *Environmental Protection and Enhancement Act* and the *Water Act* for companies that are non-compliant (Government of Alberta 2010). For a complete list of AEV services and programs see <http://environment.alberta.ca/>.

Several other Government of Alberta Ministries and agencies have jurisdiction over or an interest in various aspects of environmental matters. Sustainable Resource Development, Energy, the Energy Resources Conservation Board, and the Natural Resources Conservation Board are involved in different types of activities that are related to oil and gas and other industrial activities that regulate, provide licenses and monitor commercial activities that impacts land, water, air and wildlife. Alberta Agriculture provides environmental information for farmers and public on environmentally sustainable agriculture practices (<http://www.agric.gov.ab.ca/app52/programsservices>). Alberta Transportation and Alberta Municipal Affairs and Infrastructure have environmental programs that are aimed to improve energy efficiency in buildings and transportation, improve sustainability of building roads and buildings, and improve clean water and waste management.

Public health activities in environmental health are regulated by the *Public Health Act* (Province of Alberta 2011 (<http://www.qp.alberta.ca/documents/Acts/P37.pdf>)). The Act defines the responsibilities of AHW and AHS. Within AHS, the Department of Environmental Public Health organizes public health related activities connected to six subject areas of environmental public health: safe food, safe drinking water, safe recreational water, safe indoor air, healthy environments, and safe built environments. AHS receives environmental information through the network of Environmental Health Inspectors (250), AEV and other organizations and, together with the Medical Officer of Health and AEV, they can issue outdoor air quality advisories during poor air quality events. Environmental Health Inspectors, under certain circumstances, investigate indoor air quality in public places and in residential houses. They can order changes - enforcement by fines, or court decisions.

Alberta's Office of the Chief Medical Officer of Health provides direction and guidelines on public health policy to regional health authorities, and gives information to the public about communicable diseases and public health programs (<http://www.health.alberta.ca/services/public-health-services.html>).

AHW provides advice and recommendations on Environmental Impact Assessments to help ensure that new industrial developments don't cause environmental hazards that would affect the health of Albertans. AHW uses ongoing health surveillance and community assessments to monitor the health of communities in Alberta.

AHW uses data from air, water, fish, and wildlife monitoring to protect public health. They work with AHS to issue public alerts or other actions needed to protect the public. AHW produces educational material for the public.

Municipalities have their own environmental programs that are linked to public health.

The City of Edmonton (<http://www.edmonton.ca/environmental.aspx>), the City of Calgary ([http://www.calgary.ca/docgallery/bu/environmental\\_management/ehs\\_annual\\_2009.pdf](http://www.calgary.ca/docgallery/bu/environmental_management/ehs_annual_2009.pdf)) and other municipalities have Carbon Dioxide reduction and recycling programs that are aimed to reduce air pollution and waste both by the city and the community by providing information and financial support for targeted energy saving/recycling and other actions. Important parts of the environmental programs in municipalities are also landscape, wastewater, and waste management. In addition to Federal programs, environmental projects in municipalities are also funded through the Federation of Canadian Municipalities' Green Municipal Fund (<http://gmf.fcm.ca/Home/>) and different ministries in the Alberta government such as Environment, Transportation, and Municipal Affairs. While municipalities get support to undertake capital investment for clean water, waste, and other

capital investments, investment in businesses are financed by users of these services, rather than through public funds.

***Cost of public health supply***

The Federal Government, through the Gas Tax Fund (GTF) and the Public Transit Fund (PTF), spends \$121.68 million, or \$33.15 per capita. HC spends \$130.40 million, or \$4.87 per capita.

AEV spends \$235 million, or \$64.56 per Albertan, to support initiatives to address climate change and ongoing environmental management programs. Alberta Transport spends \$190 million, or \$52.20 per capita, to fund capital regional drinking water and wastewater projects. AHS's Environmental Public Health Branch spends approximately \$28 million, or \$7.69 per capita. The CASA expenses were \$1.3 million, or \$0.36 per capita.

**Table 3.3: Environmental health related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives	Direct services	Built environment	Information	Expenses per capita	Total expenses (millions)
Federal Government, The Gas Tax Fund (GTF) and the Public Transit Fund (PTF)*		•			•		•		\$33.15	\$121.68 (3)
Health Canada	•	•	•				•	•	\$3.87	\$130.4 (1)
Environment Canada	•	•	•	•	•	•		•	\$20.06	676.5 (1)
Alberta Environment**	•	•	•	•	•	•	•	•	\$64.56	\$235 (2)
Alberta Transportation***							•		\$52.20	\$190 (2)
Alberta Municipal Affairs							•			
Alberta Health and Wellness	•	•	•	•	•	•	•	•		
Alberta Sustainable Resource Development		•	•				•	•		
Energy Resources Conservation Board		•	•	•				•		
Natural Resources Conservation Board		•	•					•		
Alberta Infrastructure		•			•		•	•		
Alberta Agriculture		•						•		
Alberta Health Services Environmental Public Health	•	•		•		•	•	•	\$7.69	\$28 (4)

**Table 3.3: Environmental health related strategies (cont'd)**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives	Direct services	Built environment	Information	Expenses per capita	Total expenses (millions)
The Clean Air Strategic Alliance	•					•		•	\$0.36	\$1.3 (5)
Provlab	•					•				
Municipalities*****	•	•	•	•			•	•		

\* The Gas Tax Fund (GTF) and the Public Transit Fund (PTF) are Federal government programs designed to channel funds to the municipalities via the Province of Alberta to support the construction, rehabilitation and/or expansion of public infrastructure related to water and wastewater systems and infrastructure, roads and bridges, treatment and management of solid waste, energy systems and public transit.

\*\* Of the AEV's annual expenditures \$121 million is directed towards initiatives to address climate changes; \$97 million for ongoing environmental management programs; and \$17 million for monitoring, science and reporting.

\*\*\*The \$190 million expenditure funds capital regional drinking water and wastewater projects across the province.

\*\*\*\*\* Municipalities get grants for capital investments in environment, the majority of this expense is included in provincial and federal grants above.

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## Housing and Homelessness Related Strategies

### *Public health context*

Improvements in housing have been a major milestone to public health (Jacobs, Kelly & Sobolweski, 2007), and the link between poor housing and poor health has been well established (World Health Organization, 2005). For example, indoor air pollution has been linked to cancer, respiratory disorders, and neurotoxicologic adverse events (Jacobs, Kelly & Sobolweski, 2007), overcrowded homes has been linked to a variety of communicable diseases (Baker et al, 2000; Myers et al 2006), inadequate housing structures has been linked to mental illnesses (Krieger & Higgins, 2002), and homelessness has been linked to a wide array of morbidities such as HIV, dependency issues, and physical traumas (Wright & Tompkins, 2006).

Although the Ottawa Charter for Health Promotion states housing is a basic prerequisite for health, housing inequalities are a major issue within Canada. It is estimated that 150,000 to 300,000 Canadians are currently homeless (Laird, 2007), and of the Canadians who do have permanent homes, 30.5% live in conditions which do not meet all three Canadian housing standards (the structure does not require any major repairs, there are enough bedrooms for

the size of residents, and the housing costs are less than 30% of household income) (Canadian Mortgage and Housing Corporation, 2009a).

Provincially, approximately 11,000 Albertans do not have permanent homes (Alberta Housing and Urban Affairs, nd), and 8,900 Albertans are currently waiting for social or subsidized housing (Alberta Affordable Housing Task Force, 2007). Many of these individuals are forced to sleep on the street or in emergency shelters. Of the individuals who do have permanent homes, Albertans are faced with some of the highest rent and housing costs in the country (Alberta Affordable Housing Task Force, 2007), which means Albertans are now having to direct more of their income to shelter costs rather than other health necessities.

### ***Public health supply***

A number of federal and provincial agencies have initiated policies to promote healthy housing, which are summarized in Table 3.4. The focus of this chapter is to detail housing issues pertaining to public health- access to affordable housing, access to safe housing, and homelessness. We did not cover the mental health component of homelessness.

Statistics Canada provides demographic surveillance at the national level on various issues relating to healthy housing (for example, the number of Canadian homes which require major repairs). The Canadian Mortgage and Housing Corporation provides housing market surveillance (for example, the number of Canadians who spend more than 30% of their income on shelter related costs), at the national level. Within Alberta, Housing and Urban Affairs monitors the number of Albertans accessing shelters on a daily basis, as well as the number of Albertans who are provided social housing. Although AHS monitors the number of homes which violate the Minimum Housing Standards (see below), a formal provincial surveillance system has not been implemented.

The role of the Federal government in housing focuses primarily on grants or financial support and, much more minimally, on education. The Canadian Mortgage and Housing Corporation administer several grant programs at the Federal level. For example, the Municipal Infrastructure Lending Program provides low interest loans to municipalities to fund housing related infrastructure; the Affordable Housing Initiative contributes grant support to projects which provide low cost housing to Canadians; both the Renovation Program and the Emergency Repair Program provides grants to low income homeowners and landlords to repair housing structures to a minimum level of health and safety (Canadian Mortgage and Housing Corporation, 2009b).

The Canadian Mortgage and Housing Corporation provides education to the lay public on a variety of healthy housing-related topics, mainly through the maintenance of their website (<http://www.cmhc-schl.gc.ca>). For example, the Canadian Mortgage and Housing Corporation releases pamphlets to new Canadians describing a variety of housing related issues.

Within Alberta, activities which promote healthy housing can be grouped into three initiatives: grants, construction of standards, and regulation of standards. Alberta Housing and Urban Affairs provides capital grants to support the construction of affordable housing units, operational grants to support homeless prevention initiatives (for example the support of emergency shelters or outreach support services), and grant supplements to subsidize rent programs (Government of Alberta, 2011). Senior and Community Supports, under their

Social Housing Branch, also provide grants to low income Albertans who require subsidization to their housing costs. Examples of programs under the Social Housing umbrella include the Community Housing Program and the Rent Supplement Program.

Housing standards are developed at the provincial level. AHW, through the *Minimum Housing and Health Standards*, regulates the minimum housing conditions required for human habitation (Alberta Health and Wellness, 1999). The Standards are enforced by AHS's public health inspectors on a complaint basis. Alberta Municipal Affairs, through their Public Safety Division, regulates the construction of buildings through the administration of the *Safety Codes Act* (<http://www.safetycodes.ab.ca>). Regulation of construction is enforced through the administration of building permits and through inspections.

### ***The cost of public health supply***

The Canadian Mortgage and Housing Corporation spends over \$22 billion, or approximately \$74.85 per Canadian, to provide low cost loans and grants to provinces and communities. Alberta Housing and Urban Affairs annual spends \$367 million, or \$122.33 per Albertan, on grants directed towards housing initiatives. To subsidize housing costs, Senior and Community Supports spends \$51 million, or \$17 per capita, through their Social Housing Branch. Alberta Municipal Affairs spends \$4.67 million, or \$14 per capita, to regulate and enforce the Safety Codes Act.

**Table 3.4: Housing and homelessness related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Canadian Mortgage and Housing Corporation*	•				•			•	\$74.85	\$2245.4(1)
Statistics Canada	•									
Alberta Housing and Urban Affairs**	•				•				\$122.3	\$367 (2)
Alberta Health & Wellness		•	•							
Alberta Health Services				•				•		
Alberta Municipal Affairs		•	•	•					\$4.67	\$14 (3)
Alberta Seniors and Community Support					•				\$17.00	\$51 (4)

\* Under Canadian Mortgage and Housing Corporation \$125 million is allocated to the Affordable Housing Initiative, \$120.4 million is allocated to the Renovation Program and the Emergency Repair Program initiatives and \$2 billion is allocated to the Municipal Infrastructure Lending Program, which promotes access to low-cost loans which Municipalities can use for a variety of infrastructure programming (for example, green space projects, water and wastewater projects, residential infrastructures, ext). For more information into the Municipal Infrastructure Lending Program please see <http://www.cmhc.ca/housingactionplan/hemubustco/muinleprho.cfm>).

\*\* \$367 is the Annual budget for Alberta Housing and Urban Affairs for 2009/10. Initiatives under the Annual Budget include Increasing Affordable Housing, addressing homelessness, and managing growth in urban centres. For more information, see [http://www.housing.alberta.ca/documents/2009\\_10\\_HUA\\_annualreport.pdf](http://www.housing.alberta.ca/documents/2009_10_HUA_annualreport.pdf).

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## HEALTH SERVICES

### Childhood injury prevention related strategies

#### *Economic Context*

Unintentional injuries are the leading cause of death for Canadian children and youth from one to 19 years of age (Public Health Agency of Canada. Facts on Injury [Online]. Ottawa. [cited 2009 Feb 19]. Available at: [www.phac-aspc.gc.ca/injury-bles/facts-eng.php](http://www.phac-aspc.gc.ca/injury-bles/facts-eng.php)). Injuries were the third leading cause of hospitalizations among all children and youth, behind respiratory and digestive disease (Injury and Child Maltreatment Section analysis of Canadian Institute for Health Information hospitalization data. Public Health Agency of Canada, Ottawa, Ontario, Canada. January 2009).

In Alberta, injuries were the leading cause of death for Alberta children and youth between 1 and 19 years of age in 2007 as they have been for many years. Of all age groups, youths 15 to 19 years had the highest percentage of deaths due to injury with 78%. More than half (52%) of the deaths of youth 10 to 14 years of age were due to injuries (Vital Statistics). In 2008, 49 children died of unintentional injuries other than those caused by motor vehicle collisions while 5,018 were admitted to hospital and 120,873 visited emergency departments for their injuries.

#### *Public health supply*

At this time there is no coordinated national children's' injury prevention strategy. However, in the speech from the throne in May 2010 a commitment was made by the Government of Canada to work in partnership with non-governmental organizations to launch a national strategy on childhood injury prevention (Safe Kids website). The ministries involved in child injury prevention are summarized in Table 3.5.

Working with partners across Canada, including the PHAC, public health units, hospitals, academic institutions, law enforcement, and not-for-profit and voluntary organizations, HC performs several functions to support safety promotion and injury prevention. HC is involved in surveillance and research, consumer product safety and information and messages for the public. HC also operates injury prevention programs aimed at parts of the population that are at higher risk of injury; one of these groups is children. Similarly, the PHAC describes its role as including the prevention and control of injuries.

HC and the PHAC provide injury surveillance through the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), Injury Surveillance On-line, and provide reports such as the Child and Youth Injury Review, 2009.

HC, along with the PHAC, supports childhood injury prevention by developing standards for consumer products which is discussed elsewhere in this report. Related to this are the standards HC oversees for the packaging of drugs and poisonous household products. The standards are set by the Canadian Standards Association (CSA) and legislated by HC in the *Hazardous Products Act* and the new *Consumer Product Safety Act*. These standards and legislation and their enforcement are key to the reduction of poisoning among children.

HC legislates the design of hockey helmets, requiring that all hockey helmets sold in Canada meet the CSA standard. Similar legislation is being considered for ski and snowboard helmets.

HC and the PHAC both provide information for parents and caregivers about childhood injury prevention. Websites and a variety of publications cover all of the major injury risks facing Canadian children. Safety in the home, recreation and sport, roadway safety, and seasonal concerns are all addressed with safety tips and suggestions for safe behavior.

Environment Canada describes itself as “providing weather and environmental predictions to keep Canadians informed and safe” from weather mishaps (Environment Canada website).

The Government of Alberta has several ministries that make a contribution to childhood injury prevention. AHW provides funding to AHS for the Alberta Centre for Injury Control & Research (ACICR) which takes on a leadership role in coordinating injury prevention for all ages in the province. An initiative led by the ACICR called the Alberta Injury Control Strategy (AICS) provides a framework to guide effective planning and implementation of injury control initiatives among all stakeholders in the injury control field in Alberta. The AICS Implementation and Evaluation Plan focuses on the issues to be addressed in each injury priority, the intended results, the current government response, the specific action plan and the target audience for the action plan, and the detailed steps to be taken. The cataloguing of the current government response has given insight into how the various ministries define their role regarding injury prevention.

The ministry with the greatest breadth of involvement in childhood injury prevention, acting in five categories of public health supply, is Municipal Affairs. The ministry provides surveillance on fire-related injuries. It develops standards and regulation for fire prevention, many of which impact the built environment of families and children. It also provides fire safety information.

A total of four ministries contribute to the surveillance of childhood injury. AHW is the primary source of injury data providing injury information using the ICD-10 codes as well as age and geographic information. Alberta Agriculture and Rural Development track and report on farm injuries and Municipal Affairs reports fire injury statistics. Alberta Justice and the Attorney General, through the Office of the Chief Medical Examiner, is a source of injury death data. The office also conducts a pediatric death review which more closely examines injury deaths to children.

Information about childhood injury prevention is provided to professionals and the public on websites and in publications by each of the ministries already mentioned as well as by AED which includes injury prevention topics in its health and wellness curriculum for students.

The ACICR works with AHW, AED, Alberta Tourism, Parks and Recreation, and school boards to develop and maintain the *Safety Guidelines for Physical Activity in Alberta Schools*. This document impacts virtually all of Alberta’s school children as it sets minimum standards for the safe conduct of physical activity in the school setting.

AHW also funds the Poison and Drug Information Service (PADIS). PADIS provides Alberta's public & health professionals with the expertise and advice on the health effects of poisons, chemicals, medications, herbal preparations ([http://www.padis.ca/about\\_us/about\\_us/](http://www.padis.ca/about_us/about_us/)).

Alberta Solicitor General and Public Safety, through the Alberta Liquor and Gaming Commission, has legislation and regulations that control access to liquor and prohibit sales

and advertising of alcohol to minors. The ministry also provides information about the safe and responsible use of liquor.

Alberta Tourism, Parks and Recreation provides information to the public about safety around wildlife in Alberta's parks. The ministry has also developed an education tool for use in schools regarding the safe and environmentally responsible use of all-terrain and off-highway vehicles.

Staff at Alberta Child and Youth Services did not identify any childhood injury prevention activities in the ministry's current response to injury. However, the ministry is named as a partner in steps to be taken in the future including surveillance, reducing childhood falls, poisoning prevention and shifting social culture, and public attitudes toward injury.

### ***Cost of Public Health Supply***

Costs for public health supply of childhood injury prevention strategies were not readily available. Injury prevention activities for all ages were seldom distinguished from other public health initiatives. No sources provided figures for expenditures relating specifically to injury prevention directed at children.

**Table 3.5: Childhood injury prevention strategies\***

	Surveillance	Standards	Law/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total Expenses (millions)
Health Canada	•	•	•	•				•		
Public Health Agency of Canada	•	•	•	•				•		
Environment Canada								•		
Alberta Agriculture and Rural Development	•							•		
Alberta Children and Youth Services										
Alberta Education								•		
Alberta Health and Wellness	•							•		
Alberta Justice	•									
Alberta Municipal Affairs	•	•	•				•	•		
Alberta Solicitor General and Public Safety			•	•				•		
Alberta Tourism, Parks and Recreation		•					•	•		
Poison And Drug Information Service						•		•		

\* No costs were available

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## Consumer product safety related strategies

### *Economic context*

A number of consumer products pose health or safety hazards. Products with safety issues can be detected by the manufacturer or supplier, or by consumers. Although HC has a reporting mechanism in place, there is currently no data available on the magnitude of the problem.

### *Public Health Supply*

HC has for some time had standards and has regulated products such as pesticides and cosmetics. It has also considered the safety of other products on an ad hoc basis. The Government of Canada has recently passed the *Consumer Product Safety Act* which extends the scope of its consumer product oversight. HC issues regulations and guidelines, issues warnings, and has a consumer information initiative.

### *The cost of public health supply*

Annual costs are \$0.71 per capita, all at the federal level.

**Table 3.6: Strategies related to consumer product safety**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada*	•	•	•	•				•	\$0.71	\$25.6 (1)

\* Health Canada costs are directed towards surveillance, standard setting and regulation, and marketing/educational programs

Data Source:

(1) Government of Canada. 2009-10 main estimates.

### **First Nations and Inuit public health related strategies**

#### *Public health context*

There are currently 748,510 Canadians who self identify as First Nations or Inuit (Statistics Canada, 2011) (we did not include Métis in this population as they are not covered under First Nations and Inuit Health). This population experiences unique public health challenges and concerns and is almost always over-represented in many preventable morbidities and mortalities. Currently First Nations and Inuit peoples in Canada are burdened with higher rates of diabetes, heart disease, HIV/AIDS, tuberculosis, COPD, musculoskeletal disorders, and injuries when compared with the non-Aboriginal population (Reading, nd). First Nations people are more likely to live in overcrowded, inadequate housing (Canadian Mortgage and Housing Corporation, 2005), they are disproportionately represented in Canadian prisons (Correctional Services Canada, 2009), and they have a much lower educational attainment than non-Aboriginal Canadians (Sharpe & Arsenault, 2010).

Within Alberta there are 99,885 individuals who self identify as First Nations or Inuit (Statistics Canada, 2011), with approximately 60% of the population residing on-reserve (First Nations and Inuit Health, 2010). The 2009 life expectancy at birth for First Nations and Inuit Albertans is 12.2 years lower than Non-Aboriginal populations (Health Canada, 2011). Both HIV and on-reserve tuberculosis rates are approximately four times higher among First Nations Albertans when compared to the general population (Health Canada,

2011); diabetes prevalence and incidence rates are almost twice as high for First Nations and Inuits in Alberta compared to non-Aboriginal peers (Oster et al, 2009); and the suicide rate for First Nations and Inuit youth across the province is five to seven times higher than their non-Aboriginal peers (Alberta Children and Youth Initiative, 2006).

### ***Public health supply***

A number of federal and provincial agencies have initiated policies to promote First Nations and Inuit health, and are summarized in Table 3.7. The focus of this section is to detail First Nations and Inuit health issues pertaining to public health at the governmental level. For example, it will not include health transfers or non-insured health benefits or the many health activities conducted by grassroots organizations.

At the national level, Statistics Canada provides surveillance of off-reserve First Nations, Inuit and Métis peoples through their Aboriginal Peoples Survey (Statistics Canada, 2008) and surveillance of both on and off reserve First Nations, Inuit, and Métis children through the Aboriginal Children's Survey (Statistics Canada, 2008). First Nations and Inuit Health Branch (FNIHB) and Indian and Northern Affairs provide surveillance at a national level on a wide variety of demographic and health related issues (First Nations and Inuit Health, 2011). AHW and AHS provide provincial health data regarding notifiable diseases among First Nations and Inuit peoples within the province.

The role of the Federal Government in First Nations and Inuit public health focuses primarily on direct services, education, and grants or contribution agreements. First Nations and Inuit Health (FNIH), which is the regional arm of FNIHB, provides the majority of services to First Nations and Inuit peoples in Canada (for example, immunization, counseling to pregnant mothers on prenatal issues, monitoring of on-reserve environmental health issues, the implementation of the Aboriginal Diabetes Initiative, addictions counseling, and communicable disease control). For a complete list of services provided under FNIHB see the Program Compendium ([http://www.hc-sc.gc.ca/fniah-spnia/alt\\_formats/fnihb-dgspni/pdf/pubs/gen/cs-133\\_compendium-eng.pdf](http://www.hc-sc.gc.ca/fniah-spnia/alt_formats/fnihb-dgspni/pdf/pubs/gen/cs-133_compendium-eng.pdf)). Direct services are also provided through Correctional Services Canada, through their Aboriginal Corrections Continuum of Care which targets incarcerated First Nations and Inuit (Correctional Services Canada, 2009).

FNIH also provides education through brochures, radio announcements, educational guidelines, and websites. An example can be seen in the widely distributed Tuberculosis brochures [http://www.hc-sc.gc.ca/fniah-spnia/alt\\_formats/pdf/pubs/diseases-maladies/tuberculos/tb\\_booklet\\_fn\\_eng.pdf](http://www.hc-sc.gc.ca/fniah-spnia/alt_formats/pdf/pubs/diseases-maladies/tuberculos/tb_booklet_fn_eng.pdf). The PHAC, in collaboration with FNIHB, also provides educational materials (for example, the First Nations, Inuit, and Métis Canada's Food Guide (<http://www.hc-sc.gc.ca/fn-an/pubs/fnim-pnim/index-eng.php>), which is provided in English, Cree, Ojibwe, and Inuktitut languages).

The Canadian Mortgage and Housing Corporation provide grants to support social housing, operating expenses, and other on-reserve housing costs (Canadian Mortgage and Housing Corporation, 2009). Indian and Northern Affairs Canada, through their Community Infrastructure Program, provide grant support for programs which encourage the building and maintenance of community infrastructure (for example, grants can be used for the construction of safe housing or the maintenance of safe water systems). FNIH provides funding through their Aboriginal Head Start Program, which supports up to 9000 children living on-reserve (First Nations and Inuit Health, 2011).

The role of the Provincial government in on-reserve First Nations and Inuit public health focuses on funding or grants and provision of services. The Ministry of Aboriginal Relations provides multiple grants to support a variety of public health initiatives - examples include the Safe Communities Innovation Fund Grants (Government of Alberta, 2010) and The First Nations Development Fund (Government of Alberta, 2010b). AHW and AHS provide some direct services to First Nations and Inuit people off-reserve and often collaborate on health initiatives with FNIH (for example, multi-ministerial collaboration occurs to provide seamless communicable disease control).

Services are also provided through the Aboriginal Youth Suicide Prevention Strategy, which is a cross-ministerial initiative targeting high suicide rates in First Nations communities. The Strategy includes multi-ministerial collaboration between AHW, Alberta Children and Youth Services, Alberta Aboriginal Affairs, Alberta Senior and Community Support, Alberta Solicitor General & Public Security, and the Alberta Alcohol and Drug Commission. For more information, see

[http://justice.alberta.ca/programs\\_services/families/Documents/prevention\\_%20aboriginal\\_youth\\_suicide\\_newsletter.pdf](http://justice.alberta.ca/programs_services/families/Documents/prevention_%20aboriginal_youth_suicide_newsletter.pdf).

Municipalities also provide grants to support First Nations and Inuit public health initiatives (for example, the City of Calgary provides funding support to the Calgary Urban Aboriginal Initiative (<http://www.cuai.ca/domains/detail.asp?ID=163>) and the City of Edmonton provides funding support to the Aboriginal Edmonton Relations Office (City of Edmonton, 2009)).

### ***Cost of public health supply***

FNIH spend \$59 million, or \$78.82 per First Nations and Inuit person on the Aboriginal Head Start Program. The Canadian Mortgage and Housing Corporation spends \$271 million, or \$231 per capita, on social housing, grants for operating expenses, and On-Reserve Housing programs. In a collaborative effort the PHAC and HC spend \$230,000 on the development, printing and distribution of the First Nations and Inuit-tailored Canada's Food Guide. Correctional Services Canada spends annually \$3.7 million, or \$3.15 per capita, on public related health initiatives to their First Nations and Inuit incarcerated population. Indian and Northern Affairs spend \$1051.7 million, or \$1405.06 per capita, on capital-related expenses.

FNIH (Alberta) spends approximately \$16 million, or \$160 per registered First Nations and Inuit person, within the province. Alberta Aboriginal Relations spends \$111.26 million annually, or \$111.39 per capita on the Safe Communities Innovation Fund Grants, the support of Alberta's Friendship Centres, the Urban Aboriginal Strategy, and the First Nations Development Fund.

**Table 3.7: First Nations and Inuit public health related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Statistics Canada	•									
First Nations and Inuit Health Branch**	•					•		•	\$78.82	\$59(1)
Health Canada					•					
Public Health Agency of Canada***								•	\$0.01	\$.23
Canadian Mortgage and Housing Corporation****					•				\$362.05	\$271 (2)
Correctional Services Canada						•			\$4.94	\$3.7 (3)
Indian and Northern Affairs Canada*****	•				•				\$1405.06	\$1051.7 (4)
First Nations and Inuit Health (Alberta)*****	•				•	•		•	\$~160	\$~16 (5)
Alberta Health & Wellness	•					•				
Alberta Health Services	•					•				
Alberta Aboriginal Relations*****					•				\$111.39	\$111.26 (6)
Alberta Children and Youth Services						•				
Alberta Senior and Community Support						•				
Alberta Solicitor General & Public Security						•				
Alberta Alcohol and Drug Commission						•				
Municipalities					•					

\* First Nations and Inuit Health per capita cost is calculated using the total population of First Nations and Inuit peoples in Canada, taken from the 2006 Statistics Canada consensus (748 510 peoples, Canada; 99 885 people, Alberta).

\*\*We were not able to obtain the public health budget for First Nations and Inuit health. The expenditures listed here reflects the annual budget for Aboriginal Head Start Program.

\*\*\* This number reflects the cost to develop and distribute the First Nations and Inuit-specific food guide, which is a collaborative project between Public Health Agency of Canada and Health Canada. The cost reflects the extensive input needed to ensure the document remained culturally sensitive, such as the construction of an advisory group, stakeholder consultations, and end user focus groups.

\*\*\*\*Of the Canadian Mortgage and Housing Corporation's total expenses relating to public health, \$125 million is spent annually on social housing programs, \$17 million is spent annually on operating expenses, and \$129 million is spent on On-Reserve Housing Programs.

\*\*\*\*\*The annual budget listed for Indian and Northern Affairs reflects the money being spent on the Community Infrastructure program activity. This program is responsible for infrastructure and capital maintenance (for example, maintaining housing infrastructure, ensuring infrastructure meets housing standards, providing sage water systems, etc).

\*\*\*\*\*The public health budget was provided through an internal document. Of First Nation and Inuit's Alberta budget, approximately \$2.5 million is spent on tobacco and alcohol control programs (NADDAP and FASD), \$166, 600 is spent on childhood injury prevention, \$371, 700 is spent annually on physical activity and nutrition initiatives, approximately \$3 million is spent on environmental health activities, approximately \$4.3 million is spent on maternal and infant health programs, and approximately \$1.4 million is spent on communicable disease prevention.

\*\*\*\*\*Of the Ministry of Aboriginal Relation's total expenses relating to public health, \$6.13 million is spent annually on the Safe Communities Innovation Fund Grants (which supports initiatives to reduce drug, alcohol, and tobacco consumption, reduce violence, provide counseling services, ext), \$825,000 is directed towards the support of Alberta's Friendship Centres, \$300,000 is spent to support the Urban Aboriginal Strategy, and \$104 million is spent on the First Nations Development Fund (which was used to provide grants to 233 community-based project during 2009/2010).

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## **Food Safety Related Strategies**

### *Economic context*

The problem surrounding food safety is illness caused by enteric (intestinal) food pathogens found in food. The source can be at the manufacturer or farm, commercial transport or storage, or where the food is consumed (institutions, home or restaurant). A number of pathogens have been identified. Cases which reach a health care provider or public health unit are supposed to be reported to a public health lab, where samples are tested.

The most common food borne pathogens are notifiable. The PHAC obtains data on the number of cases from most provinces, and reports these annually on its web page. This outcome measure is used by HC.

### *Public Health Supply*

A number of ministries are involved in food safety, which are summarized in Table 3.8.

At the federal level, HC provides scientific expertise, proposes legislation and regulation for producers, and provides public and producer education. The Canadian Food Inspection Agency maintains an inspection workforce which enforces the laws and regulations, Agriculture and Agri-Food Canada provides support for producer safety practices and surveillance. The PHAC maintains a surveillance system, and becomes involved in cross province and international issues.

At the provincial level, Alberta Agriculture develops producer management strategies, and surveillance strategies, and provides subsidies to encourage the implementation of these strategies. AHW is provincially responsible for surveillance of notifiable diseases and protective policies. AHS provides inspection of retail outlets.

### *The cost of public health supply*

Federal spending is \$20.85 per capita, of which \$6.61 is CFIA food inspection services. Identifiable provincial expenditures are \$18.02. AHS food inspection costs are embedded with other environmental inspections costs and are not included here.

**Table 3.8: Strategies related to food safety**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada		•						•	\$1.99	\$67.1 (1)
Canadian Food Inspection Agency*				•					\$16.61	\$550 (2)
Agriculture and Agri-Food Canada	•								\$2.25	\$75.9 (3)
Public Health Agency of Canada (Foodborne, waterborne, and zoonotic disease program)**	•									
Alberta Health and Wellness***	•							•	\$7.22	\$26.5 (4)
Alberta Health Services****				•				•		
Alberta Agriculture and Rural Development		•	•	•	•				\$5.80	\$20.9 (5)

\*This amount includes nutrition and safety activities

\*\* Alberta Health Services in this area are included with environmental costs

\*\*\* \$20.9 m for food safety and \$5.6 m. for surveillance (2009-10).

\*\*\*\* Alberta Health Services in this area are included with environmental costs

**Data Sources:**

- (1) Health Canada, Department Performance Report 2008 – 2009. Ottawa, Treasury Board Secretariat, 2009.
- (2) Canadian Food Inspection Agency, Department Performance Report 2008 – 2009. Ottawa, Treasury Board Secretariat, 2009.
- (3) Agriculture and Agri-Food Canada. Department Performance Report 2008 – 2009. Ottawa, Treasury Board Secretariat, 2009.
- (4) Alberta Health and Wellness, Department Business Plan, 2009 – 10.
- (5) Alberta Agriculture and Rural Development, Department annual report, 2009-2010.

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## Communicable Disease Prevention Related Strategies

### *Disease context*

Communicable disease rates within Canada have declined over the last 60 years, due in part to preventative controls such as improvements in immunization and sanitation (Kirby, 2002). Although we have seen the improved control of many communicable diseases and the eradication of smallpox, the trend of reemerging diseases (for example the 2008 mumps outbreak in Alberta) and treatment-resistant strains of disease, suggest prevention of communicable diseases still remains an important component of public health.

On a national level influenza, Hepatitis C, STIs, and HIV infections remain a major preventative concern for public health. The Canadian Hepatitis C incidence rate has increased from 1.6 per 100,000 in 2004 to a rate of 2.2 per 100,000 population (Public Health Agency of Canada, 2009b). Reportable Chlamydia rates have also increased by 80.2% over the past decade (Public Health Agency of Canada, 2008). HIV rates have remained comparable to 2005 trends; however the number of women and First Nations or Inuit persons represented in this population continues to climb (Public Health Agency of Canada, 2010).

The picture within Alberta is similar. While the provincial Hepatitis C rate is declining, with 1,130 cases reported in 2009 (Alberta Health and Wellness, 2011), other communicable disease rates continue to increase. The number of HIV positive reported cases increased from 220 positive cases in 2008 (Public Health Agency of Canada, 2009), to 219 positive cases in 2009 (Alberta Health and Wellness, 2011). However, both Chlamydia and Gonorrhoea rates within Alberta have continually increased since 2000 (Alberta Health Services, 2010) and overall Alberta has the highest rates of Gonorrhoea, Chlamydia and Syphilis in Canada (Alberta Health and Wellness, 2008).

### *Public health supply*

A number of federal, provincial, and local agencies have initiated policies to prevent communicable disease. Preventative initiatives are summarized in Table 3.9.

The PHAC, through its Communicable Diseases and Infection Control (<http://www.phac-aspc.gc.ca/centres-eng.php#cidpc>) and the National Microbiology Laboratory (<http://www.nml-lnm.gc.ca/index-eng.htm>) provides surveillance and reference testing for communicable diseases across the country. Several surveillance activities occur through the PHAC (for example, the Canadian Nosocomial Infection Surveillance Program, FluWatch, or the West Nile Virus Surveillance Information). The CSC provides surveillance of inmates on the federal level through their Infectious Disease Surveillance System. At the provincial level, laboratory surveillance within Alberta occurs at the ProvLab (<http://www.provlab.ab.ca/surveillance.htm>).

The role of the Federal Government in preventing communicable disease focuses primarily on education and enforcement. For example, the PHAC has issued a series of pamphlets to educate the public on various communicable diseases (for example STIs), as well as maintaining an educational website (<http://www.phac-aspc.gc.ca/centres-eng.php#cidpc>). HC also maintains a page on their website dedicated to communicable disease education for the public (<http://www.hc-sc.gc.ca/hc-ps/dc-ma/index-eng.php>).

Communicable diseases are a significant problem in Canadian jails, and as such Correctional Services of Canada implements several national education programs targeting inmates and employees working in correctional facilities. An example of such programs includes the Choosing Health in Prisons Programme, which includes education on communicable diseases for incarcerated women. Correctional Services of Canada also offers vaccination for several diseases, as well as the distribution of preventative tools such as bleach and condoms.

Citizenship and Immigration Canada, under their Health Management Branch, ensures that all individuals entering Canada do not bring an communicable disease threat into the country. Under *The Immigration and Refugee Protection Act* the Citizenship and Immigration Canada can deny an individual entry into Canada if they are deemed to be a danger to public health (for example, if an individual is found to have active pulmonary tuberculosis) or can allow entry but require public health follow-up immediately when in Canada (for example, if an individual is found to have treated syphilis infection) (Citizenship and Immigration Canada, 2009).

The PHAC also has a role in enforcement, under the *Canadian Quarantine Act*, which states that individuals deemed a threat to public health may be forcefully confined in a quarantine station (Public Health Agency of Canada, 2006). The Minister of Health is responsible for administering the Act, while the PHAC's Quarantine Officers and Environmental Health Officers are responsible for enforcement.

The RCMP is responsible for the enforcement of the *Quarantine Act*. Under the Canadian Criminal Code ([http://united-canada.org/code\\_criminal/article\\_0950.htm](http://united-canada.org/code_criminal/article_0950.htm)), activities which are deemed to be a violation of public health and safety are considered a criminal offence and are therefore punishable by law. For example, the police may be asked to investigate if an individual with active pulmonary tuberculosis is non-compliant with their drug regime (Coker, 2000), or if an HIV+ individual knowingly transmits the disease through unprotected sex (UNAIDS, 2002).

Within Alberta, communicable disease prevention can be grouped into three initiatives: setting standards, education, and direct services. AHW set standards for communicable disease control within the province. An example can be seen in the Alberta Health and

Wellness Public Health Notifiable Disease Management Guidelines  
(<http://www.health.alberta.ca/professionals/notifiable-diseases-guide.html>).

AHW also provides education on various communicable disease issues. AHS provides education to the lay public, such as STI preventative education, flu prevention, or preventative education for travelers, under their Communicable Disease Control branch. The ProvLab, the provincial public health laboratory, also provides education in a variety of communicable diseases; however their initiatives are primarily directed towards healthcare workers and clinicians.

AED also plays an important preventative role in communicable disease prevention through their Wellness Education framework, administered to grades K-9. Under the Health and Life Skills curriculum, students are taught issues relating to healthy sexuality and safe sex (Bates & Eccles, 2008).

The provincial immunization program is a joint responsibility of AHW and AHS. AHW sets the policy for the program and purchases the vaccines, while AHS is responsible for administering the vaccines to the public through their province-wide immunization clinics and campaigns administered primarily by public health nurses. An example of this joint responsibility can be seen in the annual influenza immunizations, which is a resource intensive, universal program in Alberta.

### ***The cost of public health supply***

We were not able to obtain budgets for PHAC, HC, Citizenship and Immigrant Canada, Provlab, or AEV. Correctional Services Canada spends \$17.2 million, or \$0.57 per capita to prevent communicable disease in Canadian jails. AHS spends approximately \$55 million, or \$18.33 per capita, to immunize Albertans across the province.

**Table 3.9: Communicable disease prevention related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada								•		
Public Health Agency of Canada	•			•				•		
Correctional Services of Canada	•					•		•	\$0.57	\$17.2 (1)
Citizenship & Immigration Canada			•			•				
RCMP				•						
Alberta Health & Wellness	•	•	•					•	\$18.33	~\$55 (2)
Alberta Health Services*						•		•		
Alberta Education								•		
Provlab	•							•		

\*Approximately \$35 million of the Alberta Health Service expenditures is allotted to the Immunization Program and approximately \$20 million is allotted to the Communicable Disease annual budget.

**Data Sources:**

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- (2) Personal communication - Elaine Sartison, Senior Manager Alberta Health & Wellness, Immunization Program

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## Road Safety Related Strategies

### *Economic context*

Unintentional injury is the leading cause of death of Canadians aged 1 to 34 years (<http://www.phac-aspc.gc.ca/publicat/lcd-pcd97/table1-eng.php>) and motor vehicle collisions continue to be the largest cause of unintentional injury deaths ([http://dsol-smed.hc-sc.gc.ca/dsol-smed/is-sb/leadcauses/leading\\_causes\\_inj\\_mort\\_2005-eng.pdf](http://dsol-smed.hc-sc.gc.ca/dsol-smed/is-sb/leadcauses/leading_causes_inj_mort_2005-eng.pdf)), despite the steady decline in traffic collisions and casualties that Canada has seen since 1989. The number of collisions per year has dropped by 30% from 1989 to 2008. During the same period, fatalities per year have dropped by 42% and injuries per year have dropped 37%. In 2008, there were 2,419 traffic fatalities in Canada. This is a rate of 7.3 fatalities per 100,000 population (Canadian Motor Vehicle Traffic Collision Statistics, 2008 <http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2008-1144.htm>). Males are killed at over twice the rate of females. The age group with the highest rate of death from motor vehicle traffic crashes is 80+ at 17.5 per 100,000 followed by a rate of 14.9 per 100,000 for 15 to 19 years and 11.7 per 100,000 for 20 to 39 years of age ([http://dsol-smed.hc-sc.gc.ca/dsol-smed/is-sb/leadcauses/leading\\_causes\\_inj\\_mort\\_2005-eng.pdf](http://dsol-smed.hc-sc.gc.ca/dsol-smed/is-sb/leadcauses/leading_causes_inj_mort_2005-eng.pdf)).

While motor vehicle deaths have been trending downwards for several years, from 1999 through 2008, motor vehicle collisions continued to be the leading cause of injury death in Alberta for those between 1 and 29 years of age (Alberta Centre for Injury Control & Research, Injury database February 2010. Unpublished. Data available on request). In 2007, Alberta's motor vehicle-related fatality was 9.6 deaths per billion kilometres travelled. This is higher than the Canadian rate of 8.3 deaths per billion kilometres travelled (Alberta Transportation, Office of Traffic Safety. Alberta Traffic Collision Statistics 2008. Edmonton: Alberta Infrastructure and Transportation; 2008. Available at: <http://www.transportation.alberta.ca/Content/docType47/Production/2008AR.pdf>).

Alberta had the second highest motor vehicle collision hospital admission rate of all provinces at 114.7 admissions per 100,000 population (Saskatchewan had the highest and Quebec was not included). The overall rate of the participating provinces was 74.2 admissions per 100,000 population (Canadian Institute for Health Information (CIHI) National Trauma Registry, Trauma e-Reports. Accessed 20 July 2010).

Adults between 20 and 24 years of age had the highest average number of motor vehicle-related injuries with an average of 5,992 each year. This was closely followed by those between 15 and 19 years of age with an average of 5,744 motor vehicle-related injuries each year (Alberta Centre for Injury Control & Research, Injury database February 2010. Unpublished. Data available on request).

### *Public health supply*

A number of ministries are involved in road safety, which are summarized in Table 3.10.

Canadian provinces/territories are responsible for all matters relating to road safety, driver licensing, vehicle registration and taxation, and commercial vehicle regulations and enforcement. The federal government is responsible for road safety, new vehicle standards, transportation of dangerous goods, and it plays a complimentary role in motor transport administration (<http://www.ccmta.ca/english/lookat/mandate.cfm>).

Transport Canada has responsibilities for safety in transport. It also has a mandate to ensure that people and goods move easily and cost-effectively throughout the country. The ministry is responsible for transportation policies and programs in an attempt to ensure that air, marine, road, and rail transportation are safe, secure, efficient, and environmentally responsible. The Safety and Security Group of Transport Canada is responsible for the development of regulations and national standards, as well as for the implementation of monitoring, testing, inspections, and subsidy programs, which contribute to safety and security in the aviation, marine, rail and road modes of transport. The Road Safety Directorate works to reduce the number of deaths, injuries, damage to property, and the environment as well as impacts on the economy.

Because road safety is a shared responsibility, Transport Canada, governed by the *Canada Motor Vehicle Safety Act*, works with industry, community groups, and government partners to set national safety standards for the design and construction of safe vehicles and safe roads, as well as promote safe drivers and passengers.

Representatives of the provincial, territorial, and federal governments of Canada come together in the Canadian Council of Motor Transport Administrators (CCMTA). The CCMTA, through a collective consultative process, makes decisions on administration and operational matters dealing with licensing, registration, and control of motor vehicle transportation and highway safety.

Members of the CCMTA develop and endorse Canada's road safety strategy. Road Safety Strategy 2015 (RSS) is Canada's third national road safety strategy since the first was launched in 1996. The RSS provides jurisdictions with a framework of best practices which each jurisdiction can adopt or adapt to address its specific road safety challenges (<http://ccmta.ca/crss-2015/index.php>).

Three other federal agencies play a role in road safety: HC, the PHAC, and Environment Canada. Both HC, through its role in national surveillance and research, and the PHAC are active in the surveillance of road traffic injuries to Canadians. The PHAC's *Injury Surveillance On-Line* website gives access to motor vehicle related injury statistics in a variety of formats useful by injury prevention practitioners. In its role to protect children and adolescents from injury, the PHAC provides information on car, pedestrian and cycling safety for this age group in its "Be a Hero" web-based material. The HC website provides links to Transport Canada vehicle safety information on such issues as car seats and impaired driving. Environment Canada provides weather and environmental predictions to keep Canadians informed and safe when using our roadways.

While the national road safety strategies set the direction at a national level, Alberta Transportation, Office of Traffic Safety develops a plan specific to Alberta's traffic safety priorities. Alberta's Traffic Safety Plan outlines the initiatives that Alberta Transportation uses to address its core business number two: managing provincial traffic safety (<http://www.finance.alberta.ca/publications/budget/budget2010/transportation.pdf>). It is a comprehensive strategy designed to reduce traffic-related deaths and injuries in the province. It outlines key initiatives to help prevent motor vehicle collisions, build safer roads, enforce traffic laws, and better educate all Albertans about traffic safety.

In terms of public health strategies to enhance road safety, Alberta Transportation uses surveillance, the development of standards, laws and regulation, and their enforcement. As the ministry is a key constructor of provincial roadways, it shapes the built environment used

by drivers. Alberta Transportation also provides extensive traffic safety information to the public through its website, publications, and campaigns. Transportation also has a Community Mobilization Strategy to reinforce traffic safety at a grassroots level through 14 Regional Traffic Safety Consultants.

The RCMP, provincial traffic sheriffs, and municipal police forces in Alberta enforce the *Alberta Traffic Safety Act* and its regulations. They also provide traffic safety education and information in their communities. When the police attend motor vehicle collisions they complete collision reports which provide the data for each group's collision statistics reports as well as for the annual *Alberta Traffic Collision Statics* report produced by Alberta Transportation.

In addition to the surveillance of roadway injuries collected by law enforcement agencies, health care has a parallel system of surveillance of these injuries. Emergency department visits, hospitalizations, and deaths resulting from motor vehicle incidents are tracked by AHW. With the assistance of the ACICR, this data is made available for the use of injury prevention practitioners throughout the province.

Alberta Justice and the Attorney general, through its Office of the Chief Medical Examiner, investigate motor vehicle deaths and compile statistics and other data useful in the prevention of future roadway incidents.

The Alberta Solicitor General and Public Safety ministry supports traffic safety in two ways. A strategy defined in the business plan of the Alberta Solicitor General and Public Safety ministry is to deliver traffic safety programs as part of the Alberta Traffic Safety Plan. This is the work of the provincial traffic sheriffs who work primarily with the RCMP traffic teams on the highways through rural Alberta. Another contribution the ministry makes to road safety is regulating liquor and encouraging its responsible sale and consumption. The ministry sets standards and guidelines regarding the socially responsible sale and service of liquor products. The standards and guidelines include the use of responsible use programs such as designated drivers to reduce impaired driving.

Alberta Seniors and Community Supports provides funding for the Medically at Risk Drivers (MARD) Centre at the University of Alberta. The MARD Centre works with medically at risk drivers to ensure they have the skills and abilities to safely operate motor vehicles. MARD uses proven standards and screening techniques to test drivers for fitness to operate a motor vehicle safely thereby reducing the number of medically unfit drivers on Alberta roads and increasing safety for all Albertans.

### ***Cost of public health supply***

Alberta Transportation states that its estimated expenses for 2010-2011 are \$89.8 million on its core business of managing provincial traffic safety (<http://www.finance.alberta.ca/publications/budget/budget2010/transportation.pdf>). Transport Canada spends \$35.5 million on road safety (<http://www.tbs-sct.gc.ca/est-pre/20092010/me-bd/TC-CT-eng.asp>). The costs for the activities of other agencies are not readily available because costs related to road safety are not distinguished from other parts of their activities.

**Table 3.10: Road safety related strategies**

Agency	Surveillance	Standards	Law/regulations	Enforcement	Incentives/ grants	Direct services	Built environment	Information/ education	Expenses per capita	Total Expenses (millions)
Health Canada	•							•		
Public Health Agency of Canada	•							•		
Transport Canada	•	•	•				•	•	\$1.08	\$35.8(2)
Environment Canada								•		
Alberta Health and Wellness	•							•		
Alberta Justice	•									
Alberta Seniors and Community Supports		•				•		•		
Alberta Solicitor General and Public Safety		•	•	•				•		
Alberta Transportation*	•	•	•	•			•	•	\$24.70	\$89.8
RCMP Alberta	•			•				•		
Edmonton Police Service	•			•				•		
Calgary Police Service	•			•				•		

\* The \$ 89.8 million Alberta Transportation's total cost is directed towards managing provincial highway systems (other than maintenance and repairs); transportation safety services (includes dangerous goods and a small portion makes up the railway safety); operation of the Transportation Safety Board; non-capital portion of projects such as reconstructions, twinning, widening, grading and bridges; and a portion of ministry support services (HR, communications, finance and administration, etc.)

**Data Sources:**

- (1) Alberta Transportation. (2010). *Transportation Business Plan, 2010 - 2013*. Edmonton: Alberta Transportation.
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## HEALTH PRACTICES & COPING SKILLS

### Alcohol Related Strategies (Excluding Driving)

#### *Economic context*

Alcohol is the most common used tranquilizer and plays an important role in social interactions. The misuse of alcohol, however, has devastating consequences in many areas of life. It is a major public health issue. In 2009, according to the Canadian Alcohol and Drug Use Monitoring Survey (CADUMS), 11% of persons over age 15 in Alberta are heavy drinkers. The comparable statistic for all of Canada is 8.8%.

In 2007, Alberta's sales for alcoholic beverages were \$2.091 billion (\$573 per capita) (<http://www.statcan.gc.ca/daily-quotidien/090420/t090420b2-eng.htm>), excluding taxes. The Alberta Gaming and Alcohol Commission earned \$758 million (\$208 per person) in 2009/10 (*AGLC Annual Report 2009/10*). When taxes are factored in, Albertans spent about \$781 *per capita* on alcoholic beverages.

Alcohol sales yield significant tax revenues. The federal government imposes alcohol import duties and alcohol excise taxes. The Alberta government, through the AGLC, levies a mark-up on sales, which is in effect a tax. In 2009, Statistics Canada reported that the gross profit from alcohol sales going to the AGLC was \$724 million. In 2004 federal excise duties for alcohol, nationwide, were \$1.2 billion (Stockwell, 2006).

Moderate consumption of wine is purported to yield benefits related to cardiovascular (not only heart, more important also stroke and other) diseases. However, binge drinking has significant detrimental effects on several body organs, including the liver, kidneys, bladder, stomach, throat, and brain. Alcohol consumption during pregnancy is also the cause of irreparable brain damages and FASD (Riley et al., 2011; Clarren, Salmon, & Jonsson, 2011). Drinking and driving is a well recognized and a major contributor to motor vehicle injuries; this topic is covered in the Road Safety section of this report.

### ***Public health supply***

A number of federal and provincial agencies have implemented alcohol related policies, which are shown in Table 3.11. In our analysis, we do not consider the *treatment* of alcoholism as a preventive activity.

Alcohol, as well as drug abuse, is frequently associated with crime, which gives rise to increased policing and criminal justice activities. However, we cannot single out the specific public health activities that may be targeted to these events.

At the national level, HC conducts a population survey, The CADUMS (<http://www.hc-sc.gc.ca/hc-ps/drugs-drogues/stat/index-eng.php>). Finance Canada levies alcohol excise taxes (<http://www.fin.gc.ca/toc/1997/eatoc-eng.asp>) and the Canada Border Services Agency collects import duties (<http://www.cbsa-asfc.gc.ca/trade-commerce/tarif-tarif/2011/01-99/ch22-t2011-eng.pdf>) on alcohol products that are not imported under the North American Free Trade Agreement. The CRTC has developed a *Code for broadcast advertising of alcoholic beverages* which is included in its regulations (<http://www.crtc.gc.ca/eng/general/codes/alcohol.htm>).

The AGLC, which is set up under the Alberta Solicitor General, controls the price and availability of alcohol at the provincial level. AGLC sets licensing requirements for retail establishments, bars and special events. Availability is set according to AGLC regulations and includes a minimum age of purchase and the times/days that the establishments can sell alcohol. AGLC also regulates establishment practices regarding the sale of alcohol to intoxicated customers, staff training and practice, and other policies. AGLC sets a mark-up on alcohol products, which influences the price that retailers and bars pay for alcoholic

products. AGLC also provides public service messages about drinking in moderation, and participates in local initiatives regarding problem drinking.

Several provincial agencies and departments have joined with community and hospitality groups to form the Alberta Alcohol Strategy (see AADAC and AGLC, 2007, for an early version). The lead agencies for this strategy are the AGLC, AHS, and AHW. AHS offers a helpline and public messages. AHS also coordinates with municipal and nonprofit organizations to provide preventive services and messages. The helpline includes the prevention of heavy drinking, but is much broader in scope.

Preventive services are also provided by municipalities. Municipalities are responsible for maintaining order and preventing crime and alcohol is a contributing factor to these. Municipalities pass bylaws which relate to the sale and use of alcohol and to public disorder. As an example, the city government of Edmonton has formed the REACH Edmonton Council for Safe Communities ([http://www.edmonton.ca/city\\_government/city\\_organization/reach-report.aspx](http://www.edmonton.ca/city_government/city_organization/reach-report.aspx)). REACH is a community organizing activity; it deals directly with violence, and thus is also concerned with alcohol abuse.

Police divisions enforce the bylaws and engage in preventive activities. For example, the AGLC and EPS and other municipal departments have formed a preventive activity called Responsible Hospitality Edmonton. Responsible Hospitality Edmonton is a community organizing activity, through which the team works with the hospitality industry to create an environment that reduces violence in neighborhoods that have a lot of bars. The component of Responsible Hospitality Edmonton which is responsible for enforcement is called the Public Safety Compliance Team, which is a collaborative team composed of AGLC, EPS, and municipalities.

Alberta Children and Youth Services provide public information and counseling services, called the Parent – Child Assistance Program (PCAP). The provider of PCAP programs targets high risk women before and during pregnancy, and provides mentoring to eliminate alcohol use and prevent FASD. The provincial government has formed the Alberta FASD Cross-Ministry Committee, whose mandate includes prevention, as well as diagnosis, and social support services to people born with FASD. The lead agencies are Alberta Children and Youth Services and AHW, with collaboration from AHS, AGLC, Alberta Aboriginal Relations, Alberta Advanced Education and Technology, Alberta Seniors and Community Supports, AED, Alberta Employment and Immigration, Alberta Justice and Attorney General, Alberta Solicitor General and Public Security, and HC (PHAC and First Nations and Inuit Health Branch).

### ***The cost of public health supply***

To support the pan-Canadian FASD Initiative, HC spends \$16 million annually, or \$0.53 per capita, and the PHAC spends \$3.3 million, or \$0.11 per capita.

AGLC spends \$1.68 million, or \$0.48 per capita, to set licensing requirements, establish serving practices, and provide education to the public. AHS expenditures, which are based on available program data just prior to provincial reorganization, are \$6 million, or \$1.64 per Albertan, on preventative services and education, and the Alberta Alcohol Strategy. Alberta Children and Youth Services spend \$3.1 million, or \$0.85 per capita, on public information and counseling services, and supports the FASD Cross-Ministry Committee.

**Table 3.11: Alcohol related strategies**

Agency	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada*	•					•		•	\$0.53	\$16 (1)
Public Health Agency of Canada**					•				\$0.11	\$3.3 (2)
Finance Canada					•					
Canadian Radio and Television Commission			•	•						
Alberta Gaming and Liquor Commission			•		•			•	\$0.48	\$1.68 (3)
Alberta Health Services***						•		•	\$1.64	\$6.0 (4)
Alberta Health and Wellness								•		
Municipalities				•		•				
Alberta Children and Youth Services****						•		•	\$0.85	\$3.1 (5)
RCMP – K Division				•						

\* Health Canada invests \$16 million annually to support the Pan-Canadian FASD Initiative. This cost is directed towards evidence-based prevention, education, and the development of culturally relative interventions.

\*\*Public Health Agency of Canada spends \$3.3 million annual to support the Pan-Canadian FASD Initiative.

\*\*\* Includes alcohol abuse and drug use prevention.

\*\*\*\* These are expenditures for prevention for the cross – ministerial committee on FASD which is co-led by Alberta Children and Youth Services and AHW and which includes the following ministries: Aboriginal Relations; Advanced Education and Technology; Children and Youth Services; Education; Employment and Immigration; Health and Wellness; Housing and Urban Affairs; Justice and Attorney General; Seniors and Community Supports; Solicitor General and Public Security, including: Alberta Gaming and Liquor Commission and Safe Communities; Public Health Agency of Canada; First Nations and Inuit Health; AHS

**Data sources:**

- (1) Health Canada (2010). Press conference: Message from the Honorable Leona Aglukkaq, Minister of Health. Available at: [http://www.hc-sc.gc.ca/ahc-asc/minist/messages/\\_2010/2010\\_09-eng.php](http://www.hc-sc.gc.ca/ahc-asc/minist/messages/_2010/2010_09-eng.php).
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- (3) Alberta Gaming and Liquor Commission, personal communication.
- (4) These figures come from Alberta Alcohol and Drug Abuse Commission just prior to its being disbanded and folded into ALBERTA HEALTH SERVICES. They include all prevention (\$16.1 million) less estimated tobacco prevention expenses, according to the Ontario Tobacco Reduction Unit (\$9 m) (AADAC, Corporate business plan 2007/2008 – 2009/2010, April 2007). This estimate includes alcohol abuse and drug use prevention.
- (5) The annual budget for the cross – ministry initiative is \$16.5 million (Government of Alberta, Alberta FASD Cross – ministry committee, 2009-10 annual report), of which 19% was budgeted for prevention (Government of Alberta, FASD cross-ministry committee, FASD service network program 2009-10 annual report, page 17), which yields an estimate of \$3.1 m annually.

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## Maternal and infant health related strategies

### *Public health context*

Public health plays an important role in maternal and infant health outcomes. For example, the advancement of childhood vaccination programs has resulted in a significant decline in many vaccine-preventable diseases (Bloom, 2011); the fortification of folic acid in Canadian foods has resulted in a 47% decline in neural tube defects among pregnancies (Health Canada, 2002); and, through the uptake of routine HIV perinatal testing in Canada, HIV+ mothers can now be identified and administered the needed antiretroviral therapies to reduce perinatal transmission (Hughes et al, 2009).

The infant mortality rate in Canada currently is 5.0 per 1,000 live births, which remains one of the highest rates among the OECD countries (The Conference Board of Canada, 2009). Of the recent births in Canada, 1.7% of mothers reported smoking more than 10 cigarettes per day during their pregnancy (Public Health Agency of Canada, 2008), and, while a majority of Canadian women believe it is safe to drink moderately during pregnancy (which is not the case for the risk of FASD), 10.5% of mothers reported drinking at least one alcoholic beverage throughout their pregnancy (Public Health Agency of Canada, 2008). Approximately 14.4% of mothers in Canada breastfeed their baby exclusively for at least 6 months (Chalmers, 2009); this is a shorter duration of breastfeeding term infants than for example in Europe and Australia. It has been consistently documented that women who initiate and continue to breastfeed are married, better educated, have higher family incomes, and are older than women who do not breastfeed (Callen & Pinelli, 2004).

Within Alberta there were 49,028 babies born in 2007 (Statistics Canada, 2009), of which 6.7% were born with a birth weight under 5.5 pounds (Canadian Institute for Health Information, 2009). The infant mortality rate in Alberta increased from 5.7 per 1000 live births in 1998-2000, to 5.9 per 1000 live births in 2007-2009 (Alberta Health and Wellness, 2010). Of the pregnancies occurring throughout the province, 19% of women smoked during their pregnancy (Alberta Health and Wellness, 2006), 4% of mothers reported

consuming alcohol while pregnant (Alberta Health and Wellness, 2006), and only 15.8% of Albertan mothers breastfeed their baby exclusively for at least 6 months (Chalmers, 2009). Annually there are about 360 babies born with FASD in Alberta, and the total number of persons living with FASD in Alberta is now about 23,000 (Child and Youth Services, 2011).

### ***Public health supply***

A number of federal and provincial agencies have initiated policies to promote maternal and infant health, and are summarized in Table 3.12. Maternal and infant health refers to the health of infants and their mothers from preconception to the first year of life.

The PHAC provides surveillance through a number of sources: the Canadian Perinatal Surveillance System provides national surveillance on trends and patterns of maternal and infant health (Public Health Agency of Canada, 2011); the Fetal and Infant Study Group provides surveillance on fetal and infant mortalities across Canada (Public Health Agency of Canada, 2008); and the Maternal Health Study Group provides national surveillance on key health trends and outcomes related to maternal health (Public Health Agency of Canada, 2008). AHW provides provincial surveillance on a variety of issues relating to maternal and infant health.

The role of the Federal Government in maternal and infant health focuses primarily on regulations and standards, education, and grants. HC sets standards on a number of infant related safety products; for example, HC sets and regulates the standards for all powdered infant formulas sold in Canada (Health Canada 2011), as well it sets and regulates the standards for food fortification (Health Canada, 2005). The PHAC does not set concrete standards; however the organization does produce a number of recommendations on issues relating to maternal and infant health; for example, the recommended immunization schedule for infants (Public Health Agency of Canada, 2006). Similarly, Transport Canada makes recommendations regarding infant and child car seat safety standards (Transport Canada, 2011); however the decision to implement these standards is left to the provinces.

The PHAC provides education on various issues related to maternal and infant health through pamphlets, posters, and the maintenance of their website. Examples of their education campaigns include Folic Acid education (<http://www.phac-aspc.gc.ca/fa-af/pamphlet-eng.php>) and the Safe Sleep for Your Baby campaign ([http://www.phac-aspc.gc.ca/hp-ps/dca-dea/stages-etapes/childhood-enfance\\_0-2/sids/pdf/sleep-sommeil-eng.pdf](http://www.phac-aspc.gc.ca/hp-ps/dca-dea/stages-etapes/childhood-enfance_0-2/sids/pdf/sleep-sommeil-eng.pdf)). HC also provides similar education through their website on issues such as breast feeding (<http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/index-eng.php>), prenatal nutrition (<http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/index-eng.php>), and healthy weight during pregnancy (<http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/hwgdppspg-eng.php>).

At the federal level, the PHAC provides funding and grants to community-based organizations through both the Community Action Program for Children program and the Canadian Prenatal Nutritional Program (Public Health Agency of Canada, 2010). The Canada Revenue Agency provides tax incentives, through the Canada Child Tax Benefit (<http://www.cra-arc.gc.ca/bnfts/cctb/menu-eng.html>) and the National Child Benefit ([www.nationalchildbenefit.ca/eng/06/chap1.shtml](http://www.nationalchildbenefit.ca/eng/06/chap1.shtml)), which provides low to middle income parents financial support to care for their children. The Canada Revenue Agency provides support for child care through the Universal Child Care Benefit, which is provided monthly

until the child reaches 6 years of age (<http://www.cra-arc.gc.ca/bnfts/uccb-puge/menu-eng.html>).

The role of the provincial government in maternal and infant health focuses on direct services, education, funding, and on standards and regulations. AHW sets provincial strategic policy to support maternal and infant health, and decides and funds the vaccines offered across the province. Direct services are provided by AHS at the Zone level, which includes preventative services such as postpartum home visits for new mothers and infants, and public health clinics (for example, the child health clinics) (Alberta Health Services, 2011a), screening, and, on a smaller scale, community genetics programs (Alberta Health Services, 2011b). Children and Youth Services provide direct services to individuals and families affected by FASD (Alberta Youth Services, 2008).

AHW provides education through the maintenance of their website, brochures, and posters. An example of their education campaigns are the Healthy Eating for Pregnancy booklet ([www.health.alberta.ca/documents/healthy-eating-pregnancy.pdf](http://www.health.alberta.ca/documents/healthy-eating-pregnancy.pdf)) or the Feeding Baby Infant Formula brochure (<http://www.health.alberta.ca/documents/Infant-formula.pdf>). AHS also provides education to new mothers (for example, education on postpartum depression after child birth) (Alberta Health Services, 2011). The FASD Cross-Ministry Committee, which is housed under Children and Youth Services, provides education on FASD within an Alberta-specific framework (Alberta Children and Youth Services, 2008). AED, through their Raising Children website (<http://www.programs.alberta.ca/Living/13294.aspx?N=770+13250>) provides education on a large variety of issues pertaining to maternal and infant health.

Incentives or grants at the provincial level are primarily provided by Alberta Child and Youth Services through the Family and Community Support Services program (Alberta Children's Services, 2011). The cross-ministry Early Childhood Development Strategy provides funding to enhance public health programs for expectant parents, newborns, and infants (Child and Youth Services, 2011b). Alberta Employment and Immigration, through the Alberta Child Health Benefit, provides funding to low income families for expenses relating to health and wellbeing (<http://employment.alberta.ca/AWonline/3821.html>).

At the provincial level, Alberta Transportation sets and enforces the standards for child car seat and safety laws across the province (for more information see the Road Safety and Child Safety sections of this report).

### ***The cost of public health supply***

The PHAC spends \$82.1 million, or approximately \$2.74 per Canadian, on grant support to maternal and infant community-level organizations, which includes some support of FASD.

Alberta Child and Youth Services spend \$76 million, or \$25.33 per Albertan, to support Family and Community Support Services Program. The FASD budget is not included in this cost, as it is presented in the Alcohol Prevention component of the booklet.

**Table 3.12: Maternal and infant health related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada			•					•		
Public Health Agency of Canada*	•		•		•	•		•	\$2.74	\$82.1 (1)
Transport Canada**			•							
Canada Revenue Agency										
Alberta Health and Wellness						•		•		
Alberta Health Services						•		•		
Alberta Child and Youth Services***					•	•		•	\$25.33	\$76 (2)
Alberta Education								•		
Alberta Transportation**		•								
Alberta Employment & Immigration					•					

\* Of the Public Health Agency of Canada's total budget listed here, \$27.2 million is spent annually on the Canada Prenatal Nutrition Program; \$53.4 million is spent of the Community Action Program for Children; and \$1.5 million is spent on the FASD National Strategic Project Fund

\*\* Please see the Driver Safety component to this booklet

\*\*\* Of Alberta Children and Youth Service's total budget \$76 million is directed towards the Family and Community Support Services Program. The FASD is included in the Alcohol section of the booklet.

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## **Physical Activity & Nutrition Related Strategies**

### ***Economic context***

Chronic diseases, such as cardiovascular disease, cancer, and diabetes account for nearly three-quarters of all deaths in Canada (Mirolla, 2004). According to the WHO up to 80% of cardiovascular disease and type 2 diabetes cases and over a third of cancers are preventable through lifestyle activities, including engaging in good nutrition and regular physical activity (World Health Organization, 2009).

On a provincial scale, the direct health care costs attributed to obesity and over-weight Albertans was \$630.1 million (Alberta Health Services, 2010). Using the most recent Canadian Community Health Survey, HC reports that 59.6% of Albertans do not consume the recommended five servings of fruit and vegetables a day, 14.3% of children and 35.8% of adults are considered overweight, and 56% are considered inactive (Health Canada, 2011). The 2008 Alberta Recreation Survey found that 53% of participants indicated they have no desire to take up a new form of physical activity with the main reason cited for not engaging in physical activity was lack of time (Alberta Tourism, Parks and Recreation, 2008).

### ***Public health supply***

A number of federal, provincial, and local agencies have initiated policies to get individuals moving more and making improvements in their eating habits. The various preventative activities and agencies involved are summarized in Table 3.13. Surveillance is conducted at the federal level through Statistics Canada's Canadian Health Measures Survey, Canadian Community Health Survey, and the National Population Survey which monitors indicators relating to physical activity and nutrition (for example Body Mass Index or fitness levels).

The role of the Federal Government when addressing physical activity and nutrition can be grouped into the following actions: policies, including guidelines and regulations, contribution to broader F/P/T strategies, such as the Pan-Canadian Healthy Living Strategy, financial incentives (grants and contributions), knowledge development and exchange, food and nutrition surveillance and education, and awareness strategies. HC establishes and regulates the nutritional content of food, under the Food and Drug Act & Regulations (FDAR), and requires that all pre-packaged foods sold in Canada contain a list of all ingredients. The Canadian Food Inspection Agency enforces other labeling and food advertising regulations that are outside of the FDAR (for example, regulations which are enforced under the Consumer Packaging and Labeling Act). If the standards set out by both Acts and Regulations are not met, the food item cannot be sold in Canada.

Incentives, under the Canadian Department of Finance, include the Child Activity Tax Credit (<http://www.cra-arc.gc.ca/whtsnw/chcklst-eng.html>) where parents or guardians can receive tax reimbursement for eligible children participating in physical activity. A maximum of \$500 per child can be credited through this incentive. Indian and Northern Affairs, under their Nutrition North Canada program, provide incentives and subsidization to retailers to offset the cost of shipping nutritious foods to eligible isolated and northern communities. Infrastructure Canada, through the Recreational Infrastructure Canada Program, provides infrastructure funding to support recreation facilities across Canada.

HC's Office of Nutrition Policy and Promotion serves as a focal point and authoritative source for nutrition and healthy eating policy and promotion in HC. The office develops and promotes guidelines for healthy eating, including *Canada's Food Guide*. These guidelines underpin nutrition and health policies, standards, education programs, and meal planning initiatives across the country and serve as a basis for a wide variety of nutrition initiatives.

The PHAC and HC collaborate on many initiatives to promote healthy eating and physical activity, for example the Eat Well and Be Active Educational Toolkit. Another example of a HC initiative to promote healthy eating and informed food choices is the Nutrition Facts Education Campaign.

Within Alberta, preventative activities to address physical activity and nutrition can also be grouped into three actions: regulation of the physical environment, financial incentives (grants), and education or social marketing strategies. Alberta Tourism, Parks, and Recreation is responsible for ensuring the physical environment supports physical activity, which includes the maintenance and regulation of Alberta's park lands, trails, and corridors. Two key pieces of legislation have been passed to ensure land supports physical activity: The Provincial Parks Act, and the Wilderness Areas, Ecological Reserves, Natural Areas and Heritage Rangelands Act. Both acts are administered and enforced through Alberta Tourism, Parks, and Recreation.

Alberta Tourism, Parks, and Recreation also awards grants to support community-based recreational infrastructure through their Community Facility Enhancement Program (<http://culture.alberta.ca/cfep/default.aspx>). In total, 104 community-based, non-profit recreational organizations and programs receive grants. We include this as a "public health supply" as these activities are publicly funded.

Provincial grants are also awarded by AHW, through the Healthy U Campaign (<http://www.healthyalberta.com>). Although this initiative is primarily an educational tool, Healthy U also awards financial support to food processors, producers and researchers who

maintain a commitment to producing nutritious foods (through the Alberta Food for Health Award) and to employers who integrate health and wellness into their workplace (through the Premiers Award for Healthy Workplaces).

AHW also administers the Alberta Diabetes Strategy which has a large educational component directed at preventative measures. On a smaller scale, AHS leads various educational campaigns which often target specific populations (for example, school aged children or pregnant mothers) and have been created to compliment the larger AHW campaign.

Municipalities (the City of Edmonton and the City of Calgary) also implement their own educational campaigns to address physical activity and nutrition (for example community gardens), and execute municipal bylaws to further regulate the physical environment and support recreation (outside of work being conducted by Alberta Tourism, Parks, and Recreation).

### ***The cost of public health supply***

HC spends \$1.3 million per year, or \$0.04 per capita, to support Canada's Food Guide. In collaborative projects between HC and PHAC, annually \$1.71 million, or \$0.57 per capita is spent on educational campaigns directed towards physical activity and nutrition.

Indian and Northern Affairs annually provides \$60 million, or \$2.00 per capita, on financial incentives supporting nutritional activities in Northern Canada. Finance Canada also provides incentives to parents, which amount to \$75 million annually, or \$2.50 per capita. Infrastructure Canada spends \$250 million on the Recreation Infrastructure Canada Program, or \$8.33 per capita. Alberta Tourism, Parks, and Recreation provides \$46.5 million in grants, or \$15.50 per capita, to support physical activity in Alberta.

Alberta Tourism, Parks, and Recreation also spends \$86.3 million annually, or \$28.77 per capita, too support physical activity within the province through the built environment.

**Table 3.13: Physical activity and nutrition related strategies**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information	Expenses per capita	Total expenses (millions)
Health Canada - Food and Drug Act and Regulation*		•	•					•	\$0.04	\$1.3(1)
Public Health Agency of Canada /Health Canada collaborative initiatives**								•	\$0.57	\$1.71 (2)
Indian and Northern Affairs Canada					•				\$2.00	\$60 (3)
Canadian Food Inspection Agency - Food Safety & Nutritional Risk***		•		•						
Finance Canada	•				•				\$2.50	\$75 (4)
Infrastructure Canada****					•				\$8.33	\$250 (5)
Statistics Canada	•									
Alberta Health and Wellness					•			•		
Alberta Health Services								•		
Alberta Tourism, Parks, and Recreation - Recreational Initiatives	•				•				\$15.50	\$46.5 (6)
Alberta Tourism, Parks, and Recreation - Parks Initiatives							•		\$28.77	\$86.3 (7)
Municipalities			•				•	•		

\* Budget costs for Food Guide only. We were not able to obtain the cost associated with the Food and Drug Act and Regulation.

\*\*\$105,000 is spent on the Eat Well and Be Active Educational Toolkit (\$63,000 from Health Canada and \$42,000 from the Public Health Agency of Canada) and \$1.61 million is spent on the Nutrition Facts Education Campaign (\$610,000 from Health Canada and \$1 million from the Public Health Agency of Canada).

\*\*\* See Food Safety

\*\*\*\* As a part of Canada's Economic Action Plan, Infrastructure Canada will spend \$500 million over two years on the Recreation Infrastructure Canada Program. To date, 718 projects have been funded.

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## Public Health in the Education System

### *Public health context*

While childhood and adolescence are generally viewed as periods of good health and optimism for the future, recent reports have documented the growing prevalence of overweight and obesity in Canadian children and youth. There is a generally accepted recognition that the health and wellness of children and youth is currently under serious threat due to declining physical activity levels, suboptimal eating habits, stress, and mental illness. This has led to predictions of increased levels of lifestyle-related chronic diseases in the coming years.

Supporting children and youth with the skills, knowledge, and confidence to develop healthy active lifestyles is essential if the trend toward overweight, obesity, and mental illness and the early onset of chronic disease is to be halted. Schools by design and purpose can play a key role in providing this type of support. Positive and comprehensive curriculum in schools has been linked to improved mental health, decrease in obesity, and cardiovascular diseases (Veugeliers & Fitzgerald, 2005; O'Dea, 2005).

According to the Kirby Report, a government inquiry into the mental health care system in Canada, it is conservatively estimated that as many as 15% of children and youth are affected with mental illness and largely go untreated (Kirby, 2006). The number of overweight and obese children has increased (Tremblay & Williams, 2000). Estimates suggest that, left unchecked, these concerns will drive the prevalence of chronic diseases such as type 2 diabetes, cancer, and heart disease to substantially higher levels (Marks, 2003).

Within Alberta, approximately 10% to 15% of children and youth are identified as special needs, with 1% of this cohort identified as having complex needs or severe impairment (Alberta Children and Youth Initiative, nd). Alberta reports a suicide rate of 9.9 per 100 000 population for 15-19 years (Alberta Health Services, 2009) and 29% of Albertan children and youth are considered overweight or obese (Alberta Education, 2009).

### ***Public health supply***

A number of provincial agencies have initiated policies to promote public health in the educational system, which are summarized in Table 3.14.

The Joint Consortium for School Health, which is supported by the PHAC, provides federal surveillance on a number of public health issues effecting school children (for example, obesity rates and suicide rates) (JCSH, 2008). AHS, through their Priority Groups at Risk of Suicide in Alberta, provide surveillance on suicide rates of school aged children (Alberta Health Services, 2009).

Involvement of the Federal Government in public health within the provincial educational systems is minimal. The PHAC provides recommendations on how to teach Sexual Health Education in Canadian Schools (<http://www.phac-aspc.gc.ca/publicat/cgshe-ldnemss/index-eng.php>), as well as supporting the School Health Initiative (<http://www.phac-aspc.gc.ca/hp-ps/dca-dea/prog-ini/school-scolaire/index-eng.php>). Public Safety Canada provides some funding to support programs aimed at reducing bullying in schools (Public Safety Canada, 2011).

The majority of public health initiatives implemented in educational systems, occur at the provincial level through AED. AED sets standards for school curriculum across the province, through their AED's Programs of Study (Alberta Education, 2010). The curriculum is designed to help students achieve their individual potential and create a positive future for themselves, their families, and their communities. High quality learning and teaching resources, in the form of student texts, teacher guides, videos, and software programs, contribute to student achievement by supporting implementation of the programs of study and accommodating the diverse learning needs of students. While certain parts of the curriculum are mandatory, other parts are recommended or suggested. This allows teachers considerable room to integrate health related issues and practices into their teaching and to modify the Program to meet the particular needs of their classroom. Schools can adopt certain themes that can be integrated into classroom activities.

The Programs of Study outlines programs from Early Childhood Services through the end of high school. While most Alberta students will typically start school by attending kindergarten on a half time basis, some students who are at high risk can receive early intervention services at as early as 2-1/2 years of age. Early intervention with at risk children has been shown to greatly reduce future academic and social adjustment problems. In 2008 over 11,000 students received these services. These services can be seen as reducing future problems.

In addition to setting standards for curriculum, AED has also adopted many policies which promote wellness. An example can be seen in the Framework for Kindergarten to Grade 12 Wellness Education ([http://education.alberta.ca/media/1124068/framework\\_kto12well.pdf](http://education.alberta.ca/media/1124068/framework_kto12well.pdf)), which encourages physical activity and healthy choices and outlines the fundamental concepts and inherent

values of wellness education and provides guidance for the future development and implementation of K–12 wellness education programs of study. Implementation of high school programming is anticipated to begin in 2014–2015, followed by Kindergarten – grade 9 in 2015–2016.

AED, under their Daily Physical Activity Initiative (<http://education.alberta.ca/teachers/resources/dpa.aspx>) requires all students in grades 1-9 to undergo a minimum of 30 minutes of daily physical exercise. Physical activity and extra curricular activities are offered by the schools and are typically coached or supervised by volunteer teachers sometimes with the assistance of parents. They can range from the more formal team sports that play in a school-sanctioned league to the informal after school running or drama club.

Direct services are provided in the form of guidance and counseling services, which is a mandatory service provided for all students. According to AED, school counselors spend a majority of their time in personal and crisis counseling and a minority of their time in college and career counseling. Although schools are mandated to offer counseling to all students, the majority of schools, particularly elementary schools, do not have a trained counselor on staff. School boards are not required to report the number of counselors on staff; those that do, report a ratio of about 650:1, with many of these counselors having minimal or no formal training in counseling. The number of school counselors employed in Alberta appears to be on the decrease, particularly in elementary school.

AED also partners with other agencies to promote public health. The Cross-Ministerial Student Health initiative, which includes partnership with AED, AHW, and Child and Youth Services, provides support to children with special health needs. Special Education students are at particular risk of developing future emotional as well as physical health problems. For many of these students, their individualized programs of instruction are directed more towards social and emotional adjustment rather than traditional academic studies.

Alberta's Bullying Prevention Strategy, which is a collaborative effort between AED and Alberta Children's Services and is strongly tied to the education system, provides education through three websites ([www.teamheroes.ca](http://www.teamheroes.ca); [www.b-free.ca](http://www.b-free.ca); [www.bullyfreealberta.ca](http://www.bullyfreealberta.ca)), as well as the maintenance of a 24hour hotline.

AHS provides education to school children on public health issues such as food safety, proper hand washing, and disease prevention.

### ***Cost of public health supply***

Costs for public health supply within the educational systems were not readily available.

**Table 3.14: Public health in the education system**

	Surveillance	Standards/ recommendations	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/ education	Expenses per capita	Total expenses (millions)
Public Health Agency of Canada	•	•								
Public Safety Canada					•					
Alberta Education		•				•		•		
Alberta Health and Wellness						•		•		
Alberta Health Services	•									
Alberta Child and Youth Services						•		•		

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<http://www.publicsafety.gc.ca/res/cp/res/bully-eng.aspx>.

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## **Tobacco Related Strategies**

### ***Economic context***

The *Canadian Tobacco Use Monitoring Survey* (CTUMS) reports that, in 2009, 18% of Albertans age over 15 were smokers, the same as the national average. In the national survey for Canada for persons aged 15-19, 12% of Albertans were smokers, compared to 13% for the entire country.

We could not find tobacco sales data for Alberta. However, a rough picture of the economic magnitude can be estimated from a variety of statistics. In calendar 2008 cigarette and tobacco products wholesalers Canada-wide had revenues of \$5.7 billion (Statistics Canada, Wholesale Revenues and Expenditures, cigarettes and tobacco product wholesale distributors, NAICS 4133). The retail mark-up is about 11% which would mean that, nationally, tobacco sales before taxes were \$6.32 billion. On a per capita basis, Canadians spend \$187 on tobacco products. Federal tobacco taxes collected in Canada in 2009/10 were \$2.629 billion, about \$78 per person. In Alberta, in 2010 \$864 million were collected in provincial tobacco taxes, about \$ 236 per person (see Alberta government Consolidated Financial Statements). In total, then, Albertans spend about \$423 on tobacco products, 64% of which are for tobacco taxes.

### ***Public health supply***

In Canada, governments have created a systematic and comprehensive matrix of strategies to deal with the production process for tobacco products. HC has taken a leadership role in the Federal Tobacco Control Strategy (FTCS) (<http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/about-apropos/role/federal/strateg-eng.php>). A number of federal departments and agencies have been involved in this strategy. These agencies, and their roles, are summarized in Table 3.15.

The FTCS has four components: prevention, cessation, protection, and product regulation. In addition, HC has funded a surveillance system that is based on two social surveys: the CTUMS and the Youth Smoking Survey (<http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/index-eng.php>).

Prevention includes developing standards for cigarettes such that smoking reduces fire hazards, providing information on the dangers of tobacco, and levying taxes on tobacco products. HC takes responsibility for the first two strategies. With regard to taxation, Finance Canada sets taxation levels and the Canada Revenue Agency collects taxes on cigarettes. High (tax – influenced) cigarette prices have spawned a market for imported and illegal cigarettes. These in turn have generated federal activities to curb the contraband. A number of federal law enforcement agencies have become involved in collecting duties for imported legal cigarettes and in enforcing bans on illegal activity. These include Public Safety Canada, the Canada Border Services Agency, the RCMP, the Solicitor General of Canada, and the Canada Revenue Agency.

Smoking cessation also involves advertising and direct services. HC conducts advertising, while direct services are provided at the provincial level. Protection also refers to the protection of persons from second hand smoke. At the federal level, the Human Resources and Skills Development department regulates federal buildings across the country and enforces regulated bans on second hand smoke.

Provincial tobacco control is coordinated by AHW, which conducts advertising campaigns (<http://www.healthyalberta.com/>). The Alberta Government developed the cross – departmental Alberta Tobacco Reduction Strategy (ATRS) in 2002 and it was updated in 2008 (Alberta Health Services, 2008). The goals focus on Prevention, Cessation, and Protection. Within this framework, specific approaches based on current best practice and stakeholder consultations include school-based programs; community capacity building; marketing/public awareness and communications; cessation programs; policy initiatives; research/evaluation and leadership/support. AHW has legislated a ban on smoking in all public buildings in the province. It has also legislated a ban on sales of tobacco in health facilities, including pharmacies, and on the advertising display of cigarettes in all retail outlets. Provincial tobacco taxes are levied and collected by Alberta Finance and Enterprise. AHS has recently developed a marketing plan to increase Albertan’s knowledge of cessation services which includes the AlbertaQuits Helpline, web based services and a group cessation program.

Laws and regulations are enforced by the RCMP, peace officers and municipal police. In addition, some municipalities have passed by-laws further restricting the display of tobacco products.

### ***The cost of public health supply***

In Table 2.3 we show the per capita expenses for each agency for which we could obtain data. The cost of tobacco reduction for the federal government is roughly \$2.50 per capita and \$2.52 for the provincial government. There are approximately 5.7 million smokers across Canada (Statistics Canada, 2011), and we estimate total smoking expenditures to be \$5.02 per Canadian, or \$26.42 per smoker.

**Table 3.15: Strategies for tobacco control**

	Surveillance	Standards	Laws/regulations	Enforcement	Incentives/grants	Direct services	Built environment	Information/education	Expenses per capita	Total expenses (millions)
Health Canada	•	•	•					•	\$1.90	\$57 (1)
Public Health Agency of Canada									\$0.09	\$3 (1)
Finance Canada			•		•					
Public Safety Canada			•						\$0.02	\$1 (1)
Canada Border Services Agency				•					\$0.33	\$10 (1)
RCMP (federal)				•					\$0.06	\$2 (1)
Solicitor General of Canada				•					\$0.07	\$2 (1)
Canada Revenue Agency				•					\$0.03	\$1 (1)
Human Resources and Skills Development Canada			•	•						
Alberta Health and Wellness			•					•		
Alberta Health Services*						•		•	\$2.52	\$9.1m (2)
RCMP K Division (provincial)										
Alberta Finance and Enterprise					•					
Municipalities			•	•						

\* The \$9.1 million expenditure includes costs are for prevention, advertising, counseling, and funding support for community-based projects.

**Data sources:**

(1) Health Canada, personal communication. Costs are for tobacco strategy.

(2) Estimate is Alberta Alcohol and Drug Abuse Commission for 2008-9, just prior to its being merged into Alberta Health Services. Data obtained from Ontario Tobacco Reduction Unit [http://www.otru.org/pdf/16mr/16mr\\_funding.pdf](http://www.otru.org/pdf/16mr/16mr_funding.pdf).

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# APPENDIX

## **APPENDIX A: OBJECTIVES OF NON-HEALTH GOVERNMENT DEPARTMENTS AND AGENCIES**

### **Federal Government**

#### ***Royal Canadian Mounted Police, K Division***

The RCMP continues to support Road Safety Vision (RSV) 2010, a national undertaking aimed at making Canada's roads the safest in the world. Vision 2010 encompasses broad initiatives that focus on road users, roadways and motor vehicles.

Royal Canadian Mounted Police, K Division, Annual Report, 2006-2007.

#### ***Canada Agriculture and Agri-Food***

SO 2 A competitive agriculture, Agri-Food and agri-based products sector that proactively manages risk.

Canada's capacity to produce, process, and distribute safe, healthy, high-quality, and viable agriculture, Agri-Food, and agri-based products is dependent on its ability to proactively manage and minimize risks and to expand domestic and global markets for the sector by meeting and exceeding consumer demands and expectations. Proactive risk management to ensure food safety, market development, and responsiveness and an improved regulatory environment contribute directly to the economic stability and prosperity of Canadian farmers and provide greater security for the Canadian public regarding the sector.

Agriculture and Agri-Food Canada. Departmental Performance Report 2009-10.

#### ***Canadian Centre for Occupational Safety and Health***

... a mandate to promote health and safety in the workplace and to enhance the physical and mental health of working people.

Treasury Board Secretariat, Annual Performance Report, 2009-2010, Canadian Centre for Occupational Safety and Health.

#### ***Canadian Mortgage and Housing Corp.***

... we're committed to helping Canadians access a wide choice of quality, affordable homes, while making vibrant, healthy communities and cities a reality across the country.

Available at: [http://www.cmhc-](http://www.cmhc-schl.gc.ca/en/corp/about/whwedo/crviheco/crviheco_001.cfm#CP_JUMP_33103)

[schl.gc.ca/en/corp/about/whwedo/crviheco/crviheco\\_001.cfm#CP\\_JUMP\\_33103](http://www.cmhc-schl.gc.ca/en/corp/about/whwedo/crviheco/crviheco_001.cfm#CP_JUMP_33103).

#### ***Correctional Services Canada (2009).***

Strategic Plan for Aboriginal Corrections. Available at: [http://www.csc-](http://www.csc-scc.gc.ca/text/prgrm/abinit/plan06-eng.shtml)

[scc.gc.ca/text/prgrm/abinit/plan06-eng.shtml](http://www.csc-scc.gc.ca/text/prgrm/abinit/plan06-eng.shtml)  
Within the Strategic Plan for Aboriginal Corrections, Corrections Canada vision states, "To ensure a federal correctional system that is responsive to the needs of First Nations and Inuit offenders and that contributes to safe and healthy communities". Under the Continuum of Care, health is listed as a main priority of their Strategic Plan.

#### ***Environment Canada***

The risks of potentially harmful substances will be assessed and managed through the Chemicals Management Plan. This is a world-leading effort to assess chemicals and protect the health of Canadians and their environment.

Environment Canada. Report on Plans and Priorities 2010-2011.

Environment Canada describes itself as "providing weather and environmental predictions

to keep Canadians informed and safe” from weather mishaps. (Environment Canada website)

### ***Human Resources and Skills Development (Canada)***

By monitoring compliance with health and safety laws and regulations and minimum labour standards and by measuring the performance of federally regulated employers in employment equity, we will strive to ensure that workplaces remain both competitive and inclusive.

Human Resources and Skills Development Canada. Report on Plans and Priorities 2010-2011.

### **Indian and Northern Affairs Canada**

Indian and Northern Affairs Canada works with other partners to help First Nations, Inuit, and other Northern individuals, families and communities to improve their health and social well-being.

Indian and Northern Affairs (2011). What is INAC doing? Available at: <http://www.ainc-inac.gc.ca/hb/index-eng.asp>.

### ***Infrastructure Canada***

The 2010-2011 Report on Plans and Priorities states the purpose of the Recreation Infrastructure Canada Program contributes “to the health and quality of life in Communities”.

Infrastructure Canada (2011). 2010-2011 Report on Plans and Priorities. Available at: <http://www.tbs-sct.gc.ca/rpp/2010-2011/inst/wco/wco-eng.pdf>.

### ***Transport Canada***

Guided by the *Motor Vehicle Safety Act* and the *Motor Vehicle Transport Act*, the Road Safety Program Activity of Transport Canada develops standards and regulations, provides oversight and engages in public outreach in order to reduce the number of deaths, injuries and, social costs caused by motor vehicle use and aims to improve public confidence in the safety of Canada’s road transportation system.

Available at: <http://www.tbs-sct.gc.ca/dpr-rmr/2009-2010/inst/mot/mot02-eng.asp#s234>.

## **Provincial Government**

### ***Alberta Aboriginal Relations***

Within the Aboriginal Relations Business Plan 2010-2010 it states, “The ministry will support Aboriginal communities to build capacity and develop economic partnerships; collaborate with other ministries to improve educational, social and health outcomes; and provide advice with respect to provincial government legislation, policy and programs that affect Aboriginal people.”

Alberta Aboriginal Relations (2010). Business Plan 2010-2013. Available at: <http://www.finance.alberta.ca/publications/budget/budget2010/aboriginal-relations.pdf>.

### ***Alberta Children and Youth Services***

Prevention - Promoting the development and well-being of children, youth, and families  
Goal One: Children and youth will have a healthy start in life and the supports they need to reach their potential.

Alberta Children and Youth Services, Annual Report, 2009–2010.

### ***Alberta Education***

Goal Two: Transformed education through collaboration

A performance measure for this goal is: Overall satisfaction of students, parents, teachers and school board members that school provides a safe, caring and healthy learning environment.

Available at: <http://education.alberta.ca/media/6432077/educ.pdf>.

### ***Alberta Environment***

Core Business: Safeguarding Public and Environmental Health Programs; Drinking Water; Monitoring and Evaluation; Standards; Climate Change; Innovation and Policy; Reclamation and Emergency Preparedness; Climate Change and Emissions Management.

Alberta Environment. Annual Report 2008-9.

### ***Alberta Ministry of Agriculture and Rural Development.***

Increased public confidence in the safety of food products through safe production practices continues to be a priority. This involves working towards implementing a traceability system that promotes both food safety assurance and animal health status and working with industry and other levels of government to encourage the adoption of food safety practices. 2009-2010 Annual Report - Ministry of Agriculture and Rural Development

### ***Alberta Agriculture and Rural Development (Farm Safety Program)***

The mission of the Farm Safety Program is to promote agricultural safety and rural health to farm families and workers, enabling them to make informed decisions about managing their personal risk.

Available at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/aet623](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/aet623).

### ***Alberta Employment and Immigration.***

E&I also promoted, regulated, monitored, and informed employers and employees in Alberta about workplace rights and responsibilities, health and safety, and fair and balanced employment standards.

Alberta Employment and Immigration, Annual report 2009-10.

### ***Alberta Justice and Attorney General***

The Office of the Chief Medical Examiner (OCME) is responsible for the investigation and certification of all deaths in Alberta caused by violence, as well as all unexplained and some unattended natural deaths, in accordance with the *Fatality Inquiries Act* and the *Vital Statistics Act*.

Available at:

[http://justice.alberta.ca/programs\\_services/fatality/ocme/Documents/2007\\_annualReview.pdf#page=2](http://justice.alberta.ca/programs_services/fatality/ocme/Documents/2007_annualReview.pdf#page=2).

### ***Alberta Municipal Affairs***

Work with municipalities and other stakeholders, and has begun to coordinate a comprehensive safety system and an effective emergency management system.

Available at: [www.municipalaffairs.alberta.ca/mc\\_mah\\_vision.cfm](http://www.municipalaffairs.alberta.ca/mc_mah_vision.cfm).

### ***Alberta Liquor and Gaming Commission***

Coordinates our social responsibility initiatives to ensure that gaming and liquor activities are conducted in a socially responsible manner. It leads the design of programs, policies, and strategies that promote healthy choices and the responsible use of gaming and liquor

products and delivers these programs in cooperation with AHS and stakeholders in the liquor and gaming industries.

Alberta Liquor and Gaming Commission, Annual report 2010-2011.

### ***Alberta Seniors and Community Supports***

The Ministry's health-related supports and services enhance independence and well-being. The Ministry also supports the Medically-At-Risk Drivers Centre.

Alberta Seniors and Community Supports, Annual report 2009-2010.

### ***Alberta Solicitor General and Public Security***

In partnership with the Ministry of Transportation, reducing injuries and fatalities on Alberta's roadways is a priority for this ministry, and in February 2010, we announced the integration of RCMP and traffic sheriffs to improve traffic safety in Alberta.

Alberta Solicitor General and Public Security, Annual Report, 2009-2010.

### ***Alberta Sustainable Resource Development***

In the 2010-2013 Business Plan, Goal 7 states: "The ministry manages natural resources to enable diverse, enjoyable and healthy recreational opportunities (hunting, fishing, trapping, nature appreciation, and obtaining Christmas trees, for example). Through enforcement, partnerships and information-sharing, the ministry fosters a tradition of stewardship in the recreational community and ensures responsible recreational use of public lands and forests. Albertans realize many social benefits when the ministry helps them enjoy this province's natural resources in a variety of ways."

Sustainable Resource Development, 2010-2013 Business Plan

### ***Alberta Transportation***

As part of our commitment to reduce injuries and fatalities on provincial roads, Transportation continued to implement the Alberta Traffic Safety Plan: Saving Lives on Alberta's roads. The plan addresses all aspects of traffic safety, and promotes safe driving, vehicles and roads.

Alberta Transportation, Annual Report 2009-10.

### ***Alberta Tourism, Parks, and Recreation***

Tourism, Parks and Recreation supports the development and marketing of the province as a world-class tourism destination; manages a network of provincial parks and protected areas to preserve important ecological areas and provide opportunities to enjoy and learn about Alberta's natural heritage; and promotes active, healthy lifestyles and athletic excellence by supporting sport, recreation and training facilities.

Alberta Tourism Parks and Recreation (2011). About Us. Available at:

<http://www.tpr.alberta.ca/about/default.aspx>.

### ***Alberta Workers' Compensation Board***

...foster and reward the right safety and disability management behaviours.

Alberta Workers Compensation Board, Annual Report 2009.

## **Municipal Government**

### *Municipal Police Forces*

The Edmonton Police Service through enforcement, education, and partnering with other important road safety partners strives to improve the safety of our streets for everyone (<http://www.edmontonpolice.ca/trafficvehicles.aspx>).

The Calgary Police Service has several units assigned to the various aspects of traffic safety (<http://www.calgarypolice.ca/sectionsandunits.html#trafficresponse>).

## **EVERYBODY'S BUSINESS:**

The Cost of Multi-Department Involvement in Public Health in Alberta

Starting with a broad view of public health services, this booklet tracks interventions across ministries and agencies – federal, provincial, and municipal – each which had a stated purpose of improving the public's health. The suppliers of public health services, interventions and costs according to the risk factors are examined. In the fifteen areas of public health included in the booklet, twelve federal ministries, eleven federal agencies, sixteen provincial ministries, five provincial agencies, and municipalities were identified, who all state the public's health was one of their operational goals.

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