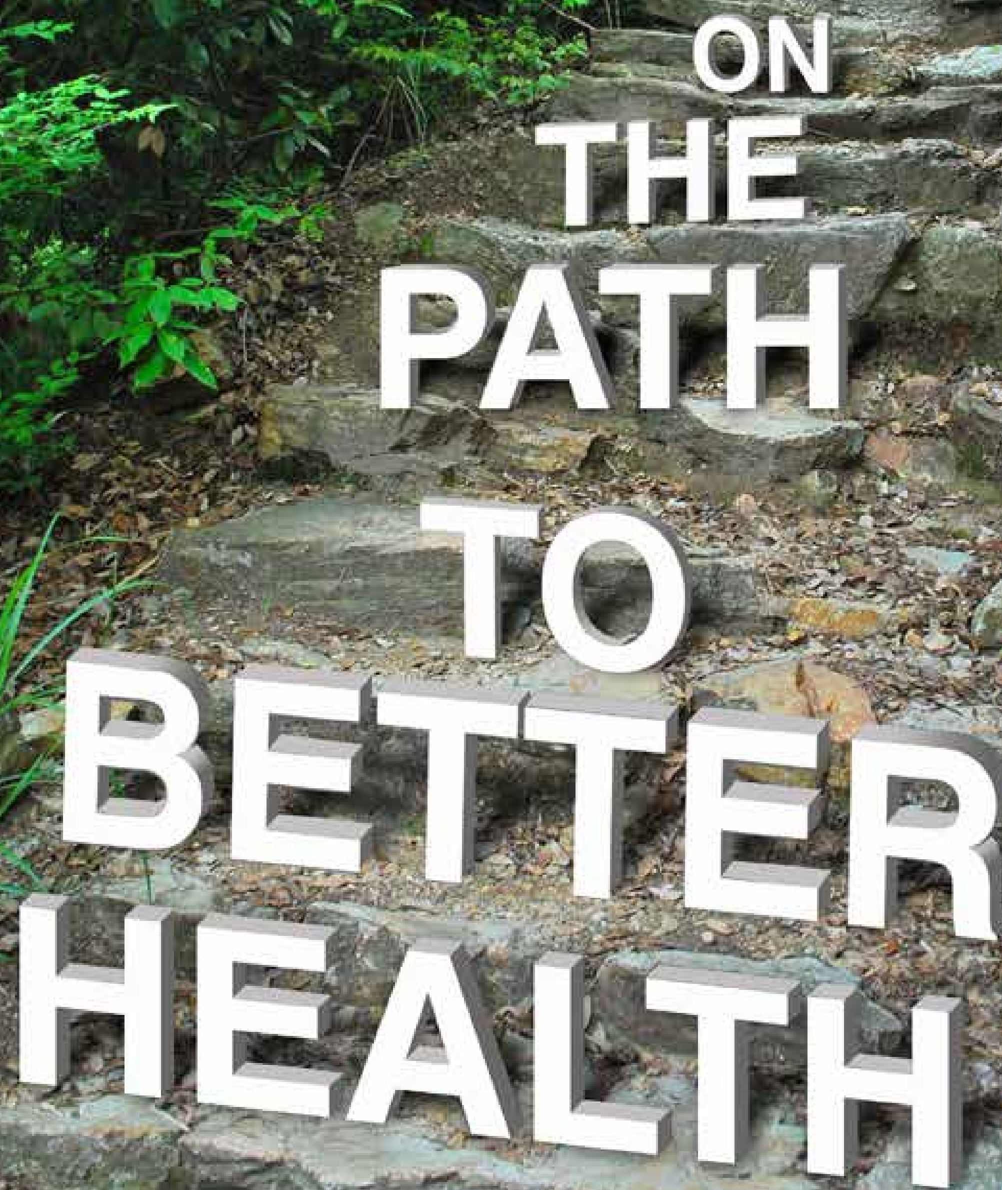


ON THE PATH TO BETTER HEALTH

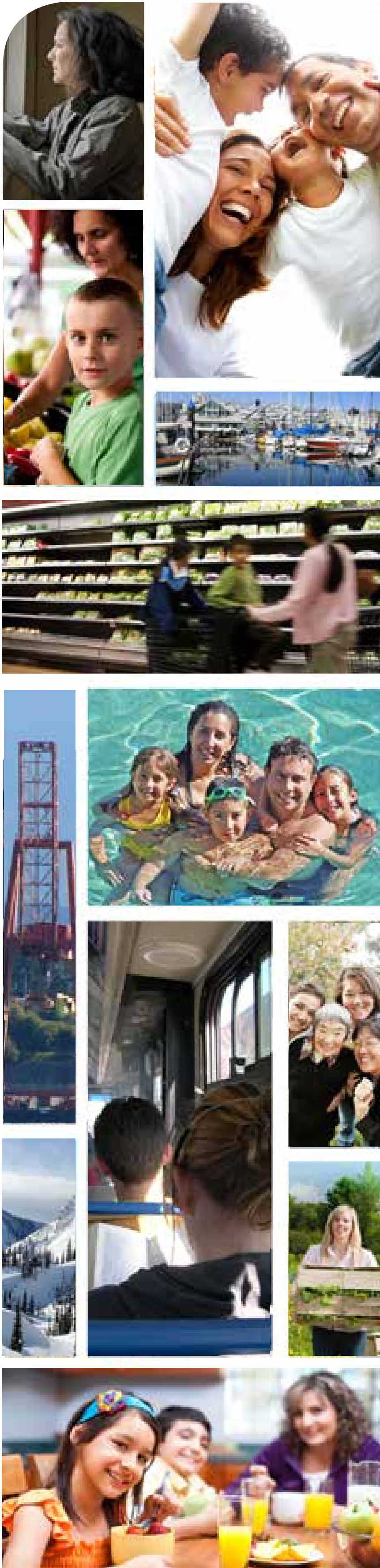
BC Healthy Living Alliance

working together to promote wellness and prevent chronic disease

March 2014

BC Healthy Living Alliance

working together to promote wellness and prevent chronic disease



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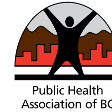
Acknowledgements:

BC Healthy Living Alliance Members



Other members of the BCHLA Coordinating Committee include:

- Fraser Health Authority
- Health Officers Council of British Columbia
- Interior Health Authority
- Ministry of Health
- Northern Health Authority
- Provincial Health Services Authority
- Public Health Agency of Canada / Western Region
- Vancouver Coastal Health Authority
- Vancouver Island Health Authority

BC Healthy Living Alliance Secretariat

- Mary Collins, *Director*
- Rita Koutsodimos, *Manager, Advocacy and Communications*
- Samantha Hartley-Folz, *Manager, Policy and Programs*
- Brenda Bedford, *Executive Assistant*

BCHLA would like to acknowledge and thank the following for their contribution to this report:

- Michelle DeGroot, *Executive Director, Health Actions, First Nations Health Authority*
- Dr. Carolyn Gotay, *Canadian Cancer Society Chair in Cancer Primary Prevention*
- Dr. Hans Krueger, *Principal, H. Krueger and Associates Inc.*
- Mike Pennock, *Population Health Epidemiologist, Ministry of Health*
- Derina Peters, *Policy Analyst, Health Actions, First Nations Health Authority*
- Dr. Drona Rasali, *Director, Population Health Surveillance and Epidemiology, Provincial Health Services Authority*
- Dr. Hui Shen, *Statistician, Cancer Prevention Centre, Faculty of Medicine, School of Population and Public Health, University of British Columbia*
- Dr. Sarah Williams, *Senior Advisor, Health Services, First Nations Health Authority*
- Rita Zhang, *Epidemiologist, Population Health Surveillance and Epidemiology, Provincial Health Services Authority*
- All the participants who attended BCHLA's consultation event, survey respondents and staff in the Ministry of Health who provided thoughtful feedback on earlier drafts of this report.

Partial funding for this publication was provided by the Public Health Agency of Canada.

In 2013, BC Healthy Living Alliance (BCHLA) celebrated its 10-year anniversary. In the ten years since BCHLA's inception, there has been a noticeable shift in public awareness and attitudes towards healthy living along with evident changes in the policy landscape.

The members of the Alliance first came together in 2003 with a shared commitment to work collaboratively to prevent chronic disease and promote better health for all. Today, there are encouraging signs that the work initiated ten years ago with the province and other partners is starting to turn the tide. Chronic diseases have increased over the years but the rate of growth for some chronic diseases have slowed or flat-lined. Improvements in healthy living are modest but they represent an important shift.

More significant improvements - most noticeably in tobacco reduction - show that change is possible. From 2000-2009 lung cancer rates went down for men in most parts of the province. Although lung cancer rates have gone up for women, it is expected that they will start to fall as they already have on Vancouver Island. There is still much we can do to bring down smoking rates in BC and we would be wise to apply the lessons learned from tobacco control to other aspects of prevention – to support healthy eating, physical activity and to bridge the health gap.

Over the past five years the health gap between those with low and high socio-economic status has continued to grow. There are also considerable regional disparities. Programs have been developed to help close these gaps but this remains an area requiring focussed attention and policy action.

Future projections for chronic disease underscore the need to continue on this path and make prevention a priority. In the next ten years the number of new cancer cases in BC is expected to increase by 75%.[1] Diabetes prevalence in BC is expected to increase from now (8.3%) to 2032 (13%)[2]. If nothing changes, there could be over 768,000 British Columbians with Type 2 Diabetes in 2032.[2]

Looking forward, we see that to continue tackling chronic disease and promoting healthy living for all, it will require:

1. Continuing commitment to an 'all of government', 'all of society' approach and active engagement of partners from a range of sectors that contribute to health.
2. Continuing the development of local capacity to address the needs, issues and local conditions for health that are regionally unique.
3. Continuing to adopt health promoting policies and invest in infrastructure that make healthy living attainable for all British Columbians with a focus on those in challenging socio-economic circumstances and others that have a heightened risk for chronic disease.

It takes time for policies, programs, infrastructure or other investments to affect healthy living and even longer for those changes to impact disease rates. The current data provides an indication that although there is further work ahead, we are making progress. We can build on this momentum and look forward to a healthier future.

"…we are making progress. We can build on this momentum and look forward to a healthier future."

Greenhouse in Delta is built with support from BCHLA's Community Capacity Building Initiative

Part One: Celebrating BCHLA’s Journey Over The Past Ten Years

The members of the Alliance first came together in 2003 to see how they could work together to prevent chronic diseases. The non-traditional partners of the Alliance unified under the banner of ‘healthy living’ which emphasized the positive aspect of disease prevention and resulted in the name, ‘BC Healthy Living Alliance’.

Early in 2005, BCHLA released its first policy paper, ‘The Winning Legacy’ with 27 recommendations to improve the health of British Columbians. Later that year, BCHLA had the privilege to meet with Premier Gordon Campbell and explain how the Winning Legacy could help achieve the goal of making BC the healthiest place to host the Olympic and Paralympic Games.

In 2005, the BC Healthy Living Alliance received a one-time grant of $25.2 million from the BC Government to expand upon the ongoing work of its member organizations. BCHLA set out to address the common risk factors for chronic disease based on best and emerging ‘promising practices’ for healthy living. Fifteen initiatives were developed in four areas: healthy eating, physical activity, tobacco reduction and community capacity building.

With the support of the provincial government and community partnerships, BCHLA introduced new approaches to healthy living in 233 communities. The provincial grant enabled BCHLA to pursue ambitious initiatives, be innovative, and attempt to reach those areas of the province that had been underserved in the past. BCHLA initiatives were particularly active in rural, remote and First Nations communities and concentrated resources to remove barriers and facilitate a shift to healthier living.

Vancouver Community College is just one of ten Tobacco Free Campuses

“One-Quarter of British Columbians were impacted by the activities of the BCHLA initiatives”

One-quarter of British Columbians were impacted by the activities of the BCHLA initiatives.

- **Over 7.3 million web hits** were generated from people seeking information
- **171,355 users accessed the services** provided by BCHLA initiatives, including websites, support from professionals, meetings, workshops and training
- **36,880 participants** actively worked to improve the health of their communities
- **Over 4,000 people participated in Everybody Active** which aimed to get low income, sedentary adults more active
- BCHLA initiatives **supported up to 900 events, workshops, and programs**
- Overall, **298 grants were distributed** across BC bringing meaningful local projects alive – in many cases these grants leveraged significant additional funds magnifying the present and future benefit to the community
- The **over $1.1 million invested** in financial support to communities through the *Community Capacity Building Strategy* **leveraged more than $500,000 in non-financial in-kind support and $820,000 of additional financial support**
- In addition to the **$605,680 in grants** provided by the Built Environment and Active Transportation Initiative, BEAT Communities were able to leverage an **additional 15 grants valued from $36,000 to $1,000,000** from other funders to develop active transportation infrastructure.

Farm to School Salad Bars supported healthy eating in 16 schools

Later in 2010, BCHLA released 'Leading British Columbia Towards a Healthier Future: Healthy Living Initiatives 2007 – 2010' which highlighted the key lessons and policy implications from the 15 initiatives. Many of these have been sustained. *Farm to School Salad Bar, School Guidelines Support* and *Sip Smart! BC* continue to support healthy living in BC schools. *Food Skills for Families, Quitters Unite, Smoke Free Housing* and *Sip Smart! BC* have been adopted in other parts of Canada on the strength of the BC program evaluations. Tobacco-Free Workplaces was further developed by Canadian Cancer Society, BC & Yukon Division into 'Wellness Fits', a comprehensive workplace program provided to BC workplaces in partnership with the Province of British Columbia's Healthy Families BC Initiative. This is currently being adapted and expanded through a project "Working on Wellness (WoW)" led by BCHLA which will take place in Northern BC, the Yukon and Northwest Territories with a $2.38M grant from Coalitions Linking Action and Science for Prevention (CLASP).

In the fall of 2008 and spring of 2009, BCHLA brought together 360 participants representing 202 organizations to participate in a series of regional policy discussions on the social determinants of health. BCHLA's recommendations to improve the social conditions and health outcomes of disadvantaged groups are detailed in 'Healthy Futures for BC Families" which was published in 2009.

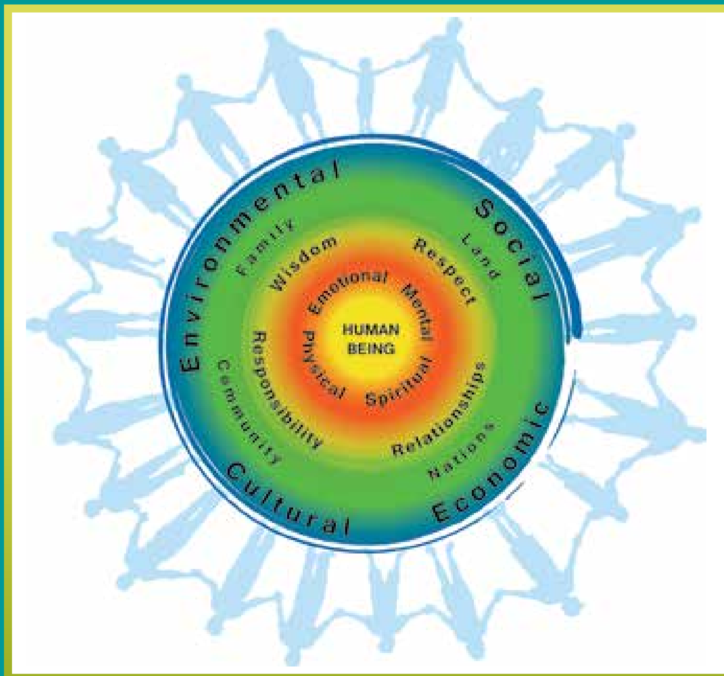
BCHLA continues to focus efforts on knowledge exchange, policy development and advocacy to promote healthy public policy and participates with many other alliances and organizations to advance health and wellness for all. Over the past ten years, BCHLA has moved BC an incredible distance along the path to better health guided by a strong vision, evidence and a commitment to work in collaboration with the leaders and people of British Columbia.

This paper is a synopsis of the health promotion work of BCHLA and its partners over the past few years and is intended to chart the journey ahead over the next decade.

"Over the past ten years, BCHLA has moved BC an incredible distance along the path to better health guided by a strong vision, evidence and a commitment to work in collaboration with the leaders and people of British Columbia"

Part Two: Where Are We On The Path Now?

The First Nations Perspective on Wellness is an appropriate place to start a discussion about the path to better health. Rooted in the traditional teachings of BC First Nations, the holistic vision of wellness depicts the wide range of elements that contribute to health.



A VISION of HEALTH and WELL-BEING

The First Nations Perspective on Wellness is a visual depiction of BC First Nations vision of: Healthy, Self-Determining and Vibrant BC First Nations Children, Families and Communities. Based on the guidance provided by, and the traditional teachings of, BC First Nations, it aims to create a shared understanding of a holistic vision of wellness.

The Centre Circle represents individual human beings, recognizing that wellness starts with individuals.

The Second Circle illustrates the importance of Mental, Emotional, Spiritual, and Physical facets of a healthy, well, and balanced life.

The Third Circle represents the overarching values that support and uphold wellness: Respect, Wisdom, Responsibility, and Relationships.

The Fourth Circle depicts the people that surround us and the places from which we come: Nations, Family, Community, and Land.

The Fifth Circle depicts the Social, Cultural, Economic and Environmental determinants of our health and well-being. The people drawn on the outer circle represent the vision of strong children, families, Elders, and communities.

The Sixth Circle is the people holding hands to demonstrate togetherness, respect and relationships, which in the words of a respected BC Elder can be stated as “one heart, one mind.” Children are included in the drawing because they are the heart of our communities and they connect us to who we are and to our health.

Borrowed with permission from the First Nations Health Authority.

2. a) Chronic Diseases

This report provides a snapshot of chronic disease in BC in recent years, discusses some of the contributing risk factors and health inequities and explores a range of approaches, policies and actions that could further chronic disease prevention in the decade ahead.

Overall the prevalence of diabetes, hypertension and COPD has gone up in every part of the province (see table in Appendix A). There are also disparities in the distribution of chronic disease throughout the province. Some parts of BC have much higher prevalence rates for certain diseases than others while some parts of the province are consistently lower. (see the maps in Appendix B).

Following are three figures and one table that look at the incidence rates of heart disease, hypertension, diabetes and lung cancer. These were chosen to represent chronic diseases that can be modified through healthy living.

We have reason to be encouraged by the slowing growth in the number of new cases (incidence rates). These graphs show that over the past ten years since 2001/02, the incidence rates of heart disease and hypertension are flat-lining or decreasing.

Definitions*

Incidence: Number of new cases in a fixed time period (usually one year)

Prevalence: Total number of people with the disease at a given time

Standardization: is used to help remove the effect of age or other variables that you are not interested in studying when comparing two or more populations.

*http://www.med.uottawa.ca

Everybody Active programs reduced barriers for inactive adults

Figure 1: Age Standardized Incidence Rate for Selected Heart Diseases in BC

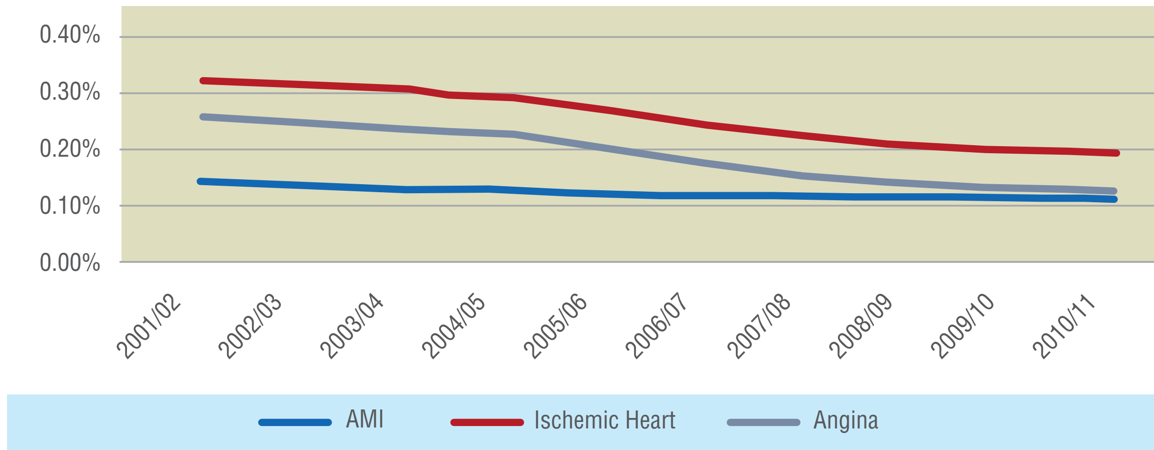


Figure 2: Age Standardized Incidence Rate for Hypertension in BC

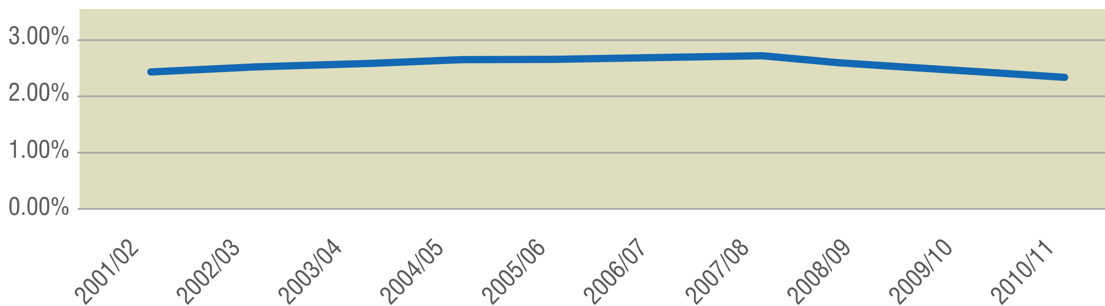


Figure 3: Age Standardized Incidence Rate for Diabetes in BC

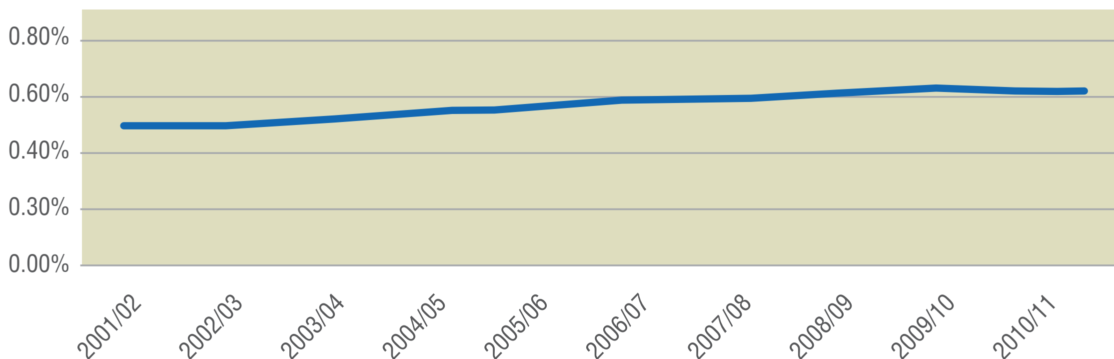


Table 1 shows that lung cancer rates among men have decreased from 2000-2009. However, such a decrease is not consistent across the Health Service Delivery Areas (HSDAs) in the province. Except for Vancouver and Vancouver Island, the incidence of lung cancer among women has decreased only slightly or in some cases increased. However, there is about a 25-year lag between peak smoking rates and reductions in lung cancer. Given that smoking among women did not begin to fall until the nineteen-eighties, we anticipate that lung cancer rates among women should decrease in the years ahead.

Table 1: Age-adjusted Incidence Rates of Lung Cancer per 100,000 Persons by Year, Gender and Health Service Delivery Area in BC

	Gender	2000	2009
BC overall	F	59.3	60.8
	M	73.2	64.5
Interior Health Authority			
East Kootenay	F	55.9	83.9
	M	64.1	60.9
Kootenay Boundary	F	49.2	60.0
	M	83.8	74.2
Okanagan	F	63.5	69.5
	M	69.8	72.0
Thompson Cariboo	F	62.8	68.2
	M	74.8	79.6
Fraser Health Authority			
Fraser East	F	70.6	68.5
	M	58.0	64.4
Fraser North	F	58.4	65.4
	M	81.5	65.1
Fraser South	F	51.2	57.4
	M	61.7	55.5
Vancouver Coastal Health			
Richmond	F	67.6	62.6
	M	75.4	45.6
Vancouver	F	46.8	43.9
	M	78.9	61.4
North Shore/Coast Garibaldi	F	53.9	45.5
	M	71.8	44.3
Vancouver Island Health Authority			
South Vancouver Island	F	65.2	46.8
	M	69.6	68.6
Central Vancouver Island	F	67.6	67.3
	M	71.8	63.6
North Vancouver Island	F	75.1	66.2
	M	96.5	63.0
Northern Health Authority			
Northwest	F	71.5	66.4
	M	67.2	86.7
Northern Interior	F	54.6	92.4
	M	74.7	83.3
Northeast	F	63.8	80.8
	M	123.4	67.1

Source: Analysis from the Cancer Prevention Centre (http://cancerprevent.ca), July, 2013. Source data from BC Cancer Registry 2000-2009

2. b) The Connection between Physical Health and Mental Wellness

There is a dynamic inter-relationship between chronic disease and the continuum of mental health - from illness to wellness. Both good physical and mental health are enhanced by healthy behaviours and are protective against ill health (e.g.: good physical health reduces the risk of poor mental health and vice-versa). Chronic diseases and mental wellness are also both affected by a complex interplay between biological factors and the social determinants of health.

"There is a dynamic inter-relationship between chronic disease and the continuum of mental health - from illness to wellness. Both good physical and mental health are enhanced by healthy behaviours and are protective against ill health…"

Table 2: Associations Between Select Chronic Diseases and Mental Illnesses

Health Status	Current Depression (%)	Lifetime Diagnosis of Depression (%)	Lifetime Diagnosis of Anxiety (%)
Asthma	16.5	27.1	20.2
No Asthma	7.6	14.0	10.0
Cardiovascular Disease	16.8	23.7	17.9
No Cardiovascular Disease	7.9	14.9	10.6
Diabetes	14.5	22.4	15.3
No Diabetes	8.2	15.2	11.0

Source: CDC (2007)

The National Centre for Disease Control and Health Promotion discusses the bi-directional relationship between mental illness, mental health and chronic diseases - describing both positive and negative areas of alignment. "[Mental illness] and chronic disease are frequently associated; the evidence, course, and outcomes of each are affected by the presence of the others. In addition, there is extensive evidence connecting [mental illness] to chronic disease, such as cardiovascular, diabetes, obesity, asthma, arthritis, epilepsy and cancer."[3] Mental wellness can also decline with the onset of chronic diseases, for example depression can be associated with the social isolation experienced by those who are chronically ill.[4]

Going in the other direction, regular physical activity, nutritious food, social connections, emotional resilience and strong foundations in early childhood add up on the positive side of the equation proving to be beneficial to both mental and physical wellbeing. Factors that protect against mental illness share "many features of positive mental health, such as self-esteem, emotional resilience, positive thinking, problem-solving and social skills, stress management skills and feelings of mastery."[5] Studies have shown that interventions that build on those protective factors increase the success of healthy living programming among higher risk populations.[6,7,8]

The strong body of evidence on the associations between mental and physical health as well as protective factors provide a convincing rationale for an integrated approach. An example of an integrated 'whole-of-person' approach can be found in high quality early childhood development programs that foster the cognitive, emotional and physical development of children within a supportive social community and physical environment. It is important to continue building on the foundation of interventions that are proven to strengthen assets and increase protective factors in addition to those that deal with deficits by addressing risk factors. *BC's Healthy Minds, Healthy People* Ten-Year Plan outlines other specific interventions that can enhance protective factors and could also have a positive impact on chronic disease rates.

2. c) The Health Gap

Provincial,[9,10,11,12] national,[13,14,15] and international research[16] have established strong evidence on the health impact of socio-economic conditions. In the research that preceded BCHLA's Winning Legacy initiatives, it became apparent that not everyone has an equal opportunity to make healthy choices. This led BCHLA, in 2008, to develop *Healthy Futures for BC Families*, an evidence-informed policy paper on the social determinants of health.[12]

In their 2013 report on Health Inequities in BC, the Health Officers Council of BC used the Potential Years of Life Lost Index to calculate the difference in premature mortality between the provincial average and Local Health Areas (LHA) with the highest and lowest socio-economic status (SES). "This index represents the ratio between the premature mortality rate for each LHA and the provincial average. For example, a rate of 1.50 indicates that the premature mortality rate for the LHA in question is 50% higher than the provincial rate."[10] Compared to the provincial average, those with the highest socio-economic status are less likely to die prematurely from cancer, diabetes and respiratory, circulatory and digestive diseases. In all these disease categories, those with the lowest socio-economic status are more likely to die prematurely than the provincial average.[10]

Table 3: Potential Years of Life Lost by Socio-economic Status (SES) in BC

Cause of Death	Difference in Premature Mortality Compared to BC Average (1.00)	
	Highest SES	Lowest SES
Cancer	0.94	1.24
Diabetes	0.74	1.91
Circulatory	0.87	1.65
Respiratory	0.74	1.53
Digestive	0.76	2.28

Source: Quantum Analyzer

Food security projects were supported in over 45 communities across BC

The differences in premature mortality among diseases associated with tobacco and alcohol are pronounced. Premature death from diseases caused by smoking is calculated to be 50% higher among those in the lowest socio-economic status compared to those with the highest. Deaths from alcohol-related diseases are 150% higher among those with the lowest socio-economic status compared to those with the highest.[10]

A recent national study, '*Cause-specific mortality by income adequacy in Canada: A 16-year follow-up*' has provided further evidence, by linking mortality and income tax records to examine cause of death by income adequacy. They found that at the individual level, "each successively lower level of income had a higher mortality rate."[15] They also found the health gap to be even wider among conditions associated with health behaviours. Although they add the caveat that, "risk behaviours do not entirely explain the gradient in health outcomes, other research suggests that socio-economic differences persist even when controlling for behavioural risk factors."[15]

The table below illustrates income-related excess mortality as a percentage of total mortality. In other words, if everyone had the same mortality rate as those in the highest income group, the total mortality rate would be this much less.

Table 4: Chronic Diseases and Income-related Excess Mortality

Cause of Death	Income-related Excess Mortality
Non-Communicable Diseases	19.3%
Malignant Neoplasms	16.3%
Liver cancer	21.1%
Trachea, bronchus and lung cancer	32.4%
Diabetes	36.0%
Cardiovascular disease	18.7%
Ischemic heart disease	20.5%
Respiratory diseases	36.9%
Chronic obstructive pulmonary disease	44.7%
Smoking related diseases	35.2%
Alcohol related diseases	38.9%

Source: 1991 to 2006 Canadian census mortality and cancer follow-up study

Langley's Community Activities and Recreation Liaison Project

Most British Columbians are concerned about widening inequalities. It seems that full time employment should provide a basic standard of living and yet "in 2011, 31.8 per cent of the poor children in BC lived in families with at least one adult working full-time, full-year."[17] This is particularly acute among single parent families headed by women, where half the children live in poverty. Canadian studies show that women continue to earn less than men and single mothers earn even less than other women.[17]

Low income has a strong impact on the ability of people to lead healthy lives; it is noted as a barrier to physical activity, safe housing, social inclusion and healthy eating. Food is particularly important as it is the most fundamental of human needs and regular consumption of vegetables and fruit is known to have a protective effect against the development of chronic disease.[18] Dietitians of Canada's '*Cost of Eating Report*' calculates the food costs of a basic, healthy diet in different areas of BC, which in 2011 was $864 per month to feed a family of four.[19] The report shows that it is nearly impossible for those on minimum or a low wage or on income assistance to afford a healthy diet as well as other basics such as housing and transportation.

WHAT IS A LIVING WAGE IN BC?

The living wage calculates what two full-time working adults would have to make to raise two children based on the basic cost of living in their community. It covers basic such as food, housing, utilities, transportation, clothing and childcare as well as modest amounts for continuing education and an emergency fund.

Table 5: Living Wage in Select BC Communities

Calculated Living Wage For Select BC Communities	
Cranbrook	$14.16
Williams Lake	$15.77
Fraser Valley	$16.37
Prince George	$16.90
Regional District of Central Okanagan	$17.17
District of Qualicum	$17.20
Terrace	$17.65
Kamloops	$17.95
Greater Victoria	$18.73
Sunshine Coast	$18.80
Metro Vancouver	$19.62

Source: Living Wages for Families Campaign

2. d) Protective and Risk Factors for Chronic Disease

In 2003, BCHLA started out by promoting action on the behavioural risk factors common to chronic disease, specifically smoking, physical inactivity and unhealthy diets. BCHLA identified the importance of skill-building, access, healthy public policy and supportive environments in addition to education for fostering healthy, active lives.

There are some encouraging indications that smoking rates are going down and physical activity rates are going up in many parts of BC but the latest data suggest that geographic disparities persist. Despite some fluctuations over the past decade, the number of British Columbians (age 12+) who report being physically active is on the rise in recent years. More detailed information is available in Appendix C.

BEAT supported Qualicum Beach's active transportation plan

Protective Factors: Healthy Eating and Physical Activity

Figure 4: Age Standardized Rate of Vegetable and Fruit Consumption

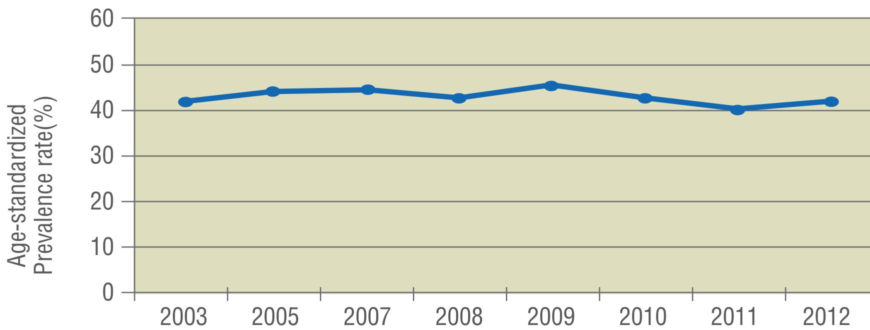
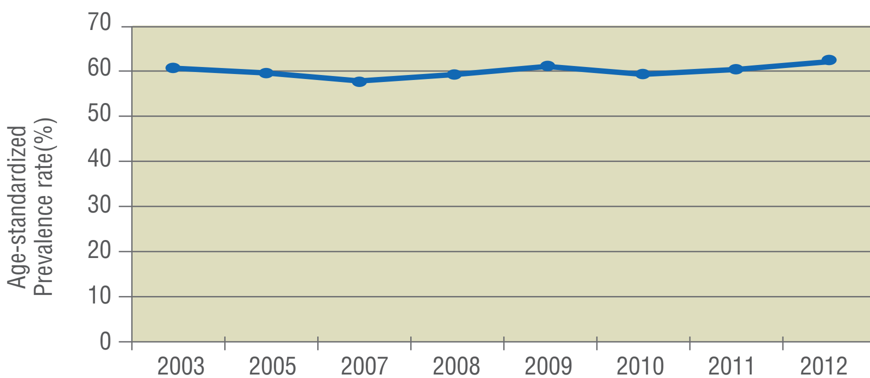


Figure 5: Age Standardized Rate of Leisure Time Physical Activity



> **"There are some encouraging indications that smoking rates are going down and physical activity rates are going up in many parts of BC but the latest data suggest that geographic disparities persist."**

Risk Factors: Smoking and Unhealthy Weight

Figure 6: Age Standardized Prevalence Rate of Current Smokers

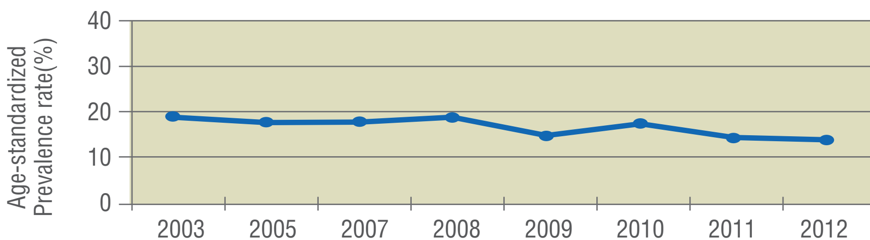
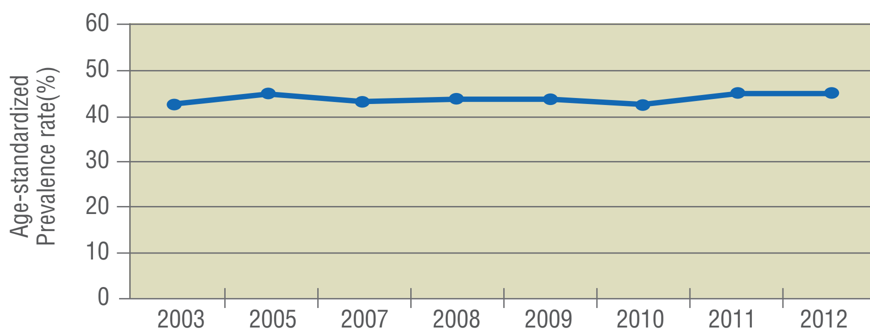


Figure 7: Age Standardized Prevalence Rate of Overweight and Obesity



2. e) Cost of Specific Risk Factors

The calculations in Table 6 provide a strong economic rationale for continuing to address risk factors. Chronic disease consumes a significant portion of the healthcare budget and yet much of the disease burden and cost of treatment could be avoided. Accounting for 34% of the BC population, people with chronic conditions consume approximately 80% of the combined Medical Services Plan, PharmaCare and acute care budgets.[11] A significant proportion of these are preventable, including approximately 50% of cancer and type-2 diabetes as well as 80% of premature heart disease and stroke.[11]

30,000 smokers on 10 campuses were encouraged to 'butt out'

Table 6: Total Economic Burden of Risk Factors (Smoking, Excess Weight and Inactivity)

Estimated Prevalence of RFs, Total Economic Burden for Multifactorial System, and Disaggregated Costs by RF British Columbia, 2012, By Sex Adjusted for Multiple RFs in One Individual								
	% Population with RF	# Individuals with RF	Direct Cost per individual with RF ($'s)	Indirect Cost per Individual with RF ($'s)	Total Cost Individual with RF ($'s)	Total Direct Cost of RF (million$)	Total Indirect Cost of RF (million$)	Total Cost of RF (million$)
Both Sexes								
Smokers								
Light	7.1%	334,999	$612	$1,240	**$1,852**	$205.0	$415.4	$620.4
Moderate	4.6%	211,590	$1,079	$2,188	$3,268	$228.4	$463.0	$691.4
Heavy	3.3%	153,359	$1,547	$3,133	**$4,680**	$237.2	$480.5	$717.8
Subtotal - Smokers	**14.9%**	**699,948**	**$958**	**$1,942**	**$2,900**	**$670.6**	**$1,359.0**	**$2,029.6**
Excess Weight								
Overweight	25.5%	1,200,943	$190	$548	**$737**	$227.9	$657.5	$885.4
Obesity	12.1%	569,071	$675	$1,587	**$2,262**	$384.0	$903.2	$1,287.2
Subtotal - Excess Weight	37.6%	1,770,014	$346	$882	**$1,227**	$611.9	$1,560.7	$2,172.6
Inactive	38.4%	1,803,333	$186	$431	**$617**	$335.0	$777.7	$1,112.7
Total						**$1,617.4**	**$3,697.4**	**$5,314.8**

Source: H. Krueger & Associates Inc. "The Economic Benefits of Risk Factor Reduction in British Columbia: Tobacco Smoking, Excess Weight and Physical Inactivity", July, 2013. Available online at www.krueger.ca.Used by permission.

The potential of health promotion and disease prevention to bend the health cost curve cannot be underestimated. According to the special 2010 report, '*Investing in prevention - improving health and creating sustainability*' by Provincial Health Officer Dr. Perry Kendall, a strengthened provincial strategy and investment in prevention can improve the health of British Columbians and potentially avoid up to $2 billion in yearly healthcare costs.[12]

Part Three: Where Do We Go From Here?

Many Trails through the Forest: from Universal to Targeted Approaches

In disease prevention and health promotion, there are many approaches that can be taken to achieve positive outcomes. Chronic disease prevention is complex. There are a multitude of inter-related behavioural risk factors and socio-economic conditions that can be addressed to reduce risk in an individual or population. There are also protective factors that support health which should be developed and expanded.

This complexity lends itself to a range of approaches.

A **universal approach** is a policy or initiative designed to be available and accessible to a broad population without further distinctions such as all Canadians, all women or all children under eighteen. A universal approach is most appropriate when there is good evidence to support the use of policy, pricing measures, regulation or legislation to achieve specific objectives. For example, tobacco taxes have proven to reduce tobacco use across the population broadly and this suggests taxation could also be applied to reduce excessive consumption of alcohol and sugary drinks.

A **targeted approach** is a policy or initiative that seeks to respond to unmet needs or distinct requirements of a specified population. ***Targeted universalism*** is a hybrid approach that "defines goals for all, identifies the obstacles faced by specific groups, and tailors strategies to address the barriers in those situations."[21] A related concept, ***proportionate universalism*** "recognizes that to level up the gradient, programs and policies must include a range of responses for different levels of disadvantage experienced within the population."[21]

Related to the discussion of targeted and universal approaches, is the question of whether and when to address specific risk factors or utilize an integrated "whole of person" approach. A risk factor approach can apply depth of knowledge in specific content areas such as tobacco cessation or healthy eating. The strength of the 'whole-of-person' approach is that it integrates many aspects of physical and mental wellness which is especially useful for targeted programming or in the development of health-promoting settings.

Settings are the places in our communities where we live, work, learn, play and otherwise gather with others. Creating healthier settings may involve changes to physical environments such as infrastructure, facilities and outdoor spaces. It also impacts social environments, including organizational and management functions such as policies, training, communications and standards of practice. It requires a collective effort to create environments that support physical and mental well-being for all.

Ultimately, building on the progress made in chronic disease prevention in BC will require a range of healthy public policies, infrastructure and programs that employ both targeted and universal approaches.

3. a) Lessons from Tobacco Control

Quitters Unite! Street Team

With a smoking rate estimated between 14.3% and 15.1%, BC is a Canadian leader in tobacco control. Not surprisingly, this is the policy area in which BC has made the most progress. In response to the lead taken by local governments, provincial legislation came into effect in 2008 which prohibited smoking in indoor public places and work sites, and near doorways, open windows and air intakes to these sites. It also banned all tobacco use at

any time on public and private school grounds. It banned the retail display and promotion of tobacco where youth had access and banned the sale of tobacco in all publicly-owned buildings. In 2009, the province banned smoking in cars with children. BC's support for QuitNow in 2004 and the subsidization of smoking cessation medication in 2011 has also provided support for smokers to overcome tobacco addiction.

Education, regulation, legislation and taxation are often cited as the key levers instrumental in the steady decline in smoking rates. Other key concepts include the 'removal of barriers' and 'health-promoting environments.' Collectively these have helped to shift cultural attitudes and behaviours. Through the creation of smoke-free environments and with the provision of QuitNow and medication, these changes in public policy created incentives and supports for smokers to get over the hurdle of tobacco addiction. This helped to make the healthy choice, a feasible choice.

Unique to tobacco control, is the long, sustained and varied efforts to bring down the smoking rate. Although the problem is far from solved, there have been some great successes. This will need to be sustained to keep smoking rates low and expanded if we are to get more people off of tobacco. British Columbia could gain further benefit by applying the lessons from tobacco control to other risk factors.

> **"Data seem to tell me that lower smoking is yielding results and saving lives - but there still is work to do."**

Dr.Carolyn Gotay, the Canadian Cancer Society Chair in Cancer Primary Prevention

OPPORTUNITY: Build on the successes in tobacco control to further reduce access and marketing - especially to youth.	
Multi-sectoral Partners	**What can be done**
BC Government and Health Canada, Ministry of Health, Health Authorities, Local Government, Health NGOs	Ban all flavoured tobacco products not covered by federal legislation including many types of little cigars, water pipe tobacco, and smokeless tobacco.
	Review the evidence on e-cigarettes and consider restrictions to ensure that these new products are not contributing to ill health or are a gateway to smoking tobacco.
	Prohibit the sale of tobacco products in various retail locations, including pharmacies and premises which contain a pharmacy, as well as in bars and restaurants.
	Ban smoking in parks, beaches, sports fields and patios province-wide.
BC Housing, Apartment building owners, Strata Corporations, Condominium Owners , Health NGOs	Encourage an expansion of smoke-free housing options.
Ministry of Justice, BC Film Classification Office	Shift the movie ratings so that films portraying tobacco are rated for adult audiences to discourage tobacco marketing to youth. Smoking in movies is estimated to be responsible for the initiation of 30-50% of teenaged smokers.
Ministry of Finance	Increase tobacco taxes to $50 per carton (200 cigarettes).

3. b) Healthier Communities

Walk BC supported walking groups and activities in 149 communities

Complete communities with shops, services, recreation, food and employment accessible by transit systems and a connected network of pedestrian and cycling infrastructure have been recognized as healthier built environments. They can also be more age-friendly when the mobility and accessibility needs of the very young and elderly are incorporated into the design of the community. This is increasingly important as our population ages to ensure seniors have the ability to stay active and engaged in their community.

“[It] is increasingly important as our population ages to ensure seniors have the ability to stay active and engaged in their community.”

OPPORTUNITY: Research shows that people living in complete connected communities are 2.5 times more likely to use active forms of transportation (such as walking and biking), and are more likely to get the daily recommended level of physical activity and to have access to healthy foods and recreation opportunities.[22]	
Multi-sectoral Partners	What can be done:
Ministry of Community, Sport and Cultural Development, local governments, health and community NGOs, business, planners, developers, health authorities, BC Transit, TransLink	Continue to support local governments to create complete communities with shops, services, food and employment accessible by transit systems and a connected network of pedestrian and cycling infrastructure.
	Prioritize for additional funding: neighbourhoods with low levels of physical activity and places where the infrastructure is inadequate or at full capacity - to expedite expansion of active transportation facilities (i.e.: trails, greenways, bikeways, sidewalks and safe crossings).
Local Governments, grocers and other food retailers, health authorities, dietitians, health and community NGOs	Create healthier food environments through zoning: by encouraging grocers to open stores in disadvantaged, under-served areas; encouraging existing food retailers to offer healthier products; and limiting the proliferation of fast food outlets around schools and low income housing.
Local Government, park and recreation professionals, landscape designers, planners, pediatricians	Develop and promote design guidelines for parks and play spaces that encourage physical activity.
Ministry of Community, Sport and Cultural Development, local governments, Parks and Recreation Leaders, Sport Associations	Ensure recreation and sports facilities are sufficient to meet the multiple demands of community users, including sport associations and recreational participants of all ages.

3. c) Supporting Healthier Eating

Uu-a-thluk Traditional Food Resource Project

Numerous studies link junk foods and sugary drinks to excess weight gain and lowered intakes of healthier foods[23,24] The appeal of unhealthy foods can be counteracted with taxation, consumer information and by limiting marketing to children. Taxation has been shown to shift consumption patterns.[25] Labeling menu items in restaurants with the fat, sugar, sodium and calorie content, makes it easier for consumers to choose healthier options. Marketers should not be allowed to target children since the young have been shown to lack the ability to understand the persuasive intent of advertising messages or even differentiate between advertising and programming.

When it comes to eating healthier, having basic consumer and cooking skills are essential as is access to affordable healthy foods.

3. d) Supporting a Culture of Moderation in Alcohol Use

BCHLA is increasingly concerned about alcohol use in BC. Despite media attention on studies linking regular wine consumption with reduced heart disease, the conclusions from current evidence are that the net benefits of alcohol use are outweighed by the negatives.[26] The amount of alcohol intake needed to impact on chronic diseases, such as breast cancer, gastrointestinal disease and cardiovascular disease are much lower than 'problem drinking' levels.[27] Fetal Alcohol Spectrum Disorder is also the leading known cause of preventable developmental disability among Canadians. Even one to two standard drinks per day over a long period can increase chances of some chronic diseases.

Alcohol consumption in BC has been above the Canadian average for the past decade.[28] According to the Centre for Addictions Research for BC, "the rates of hospitalizations in BC for conditions related to alcohol have shown a significant increase since 2002; reflecting an overall increase in alcohol consumption."[28] Alcohol-related health and public safety costs outweigh the direct revenue to government by about $65M per year.[29] Similar to what has been learned from tobacco control, the evidence show that increased access to alcohol (whether through pricing, increased hours of operation or number of locations) leads to public health impacts.

OPPORTUNITY: Counter-act the food advertising and marketing which encourages unhealthy eating habits and support food skills and access to healthier foods.	
Multi-sectoral Partners	**What can be done:**
Federal and provincial governments, Ministry of Finance, Ministry of Health, Health NGOs, dietitians, pediatricians	Add a substantial tax (of at least 20%) to sugary drinks.
	Ban marketing to children: food and drinks high in sugar, fat and sodium in all media including social media.
	Strengthen the Informed Dining Program so that calories and sodium are clearly marked on menus thereby enhancing consumers access to nutritional information prior to ordering (consider making this mandatory for establishments over a certain size or revenue).
Ministry of Health, Health NGOs, dietitians, Community NGOS	Continue to deliver programs that teach food skills to target populations such as Food Skills for Families.
BC Housing, Non-Profit Housing Association Members, health authorities, dietitians, health and social justice NGOs, local government, Ministry of Health and Ministry Responsible for Housing	Work with social housing providers and tenants to increase food security through programing, policy, and the built environment.
Ministry of Agriculture, Ministry of Health, Ministry of Community, Sport and Cultural Development, Health Authorities, local government, health, environmental and community NGOs	Continue to support local agriculture and other food security strategies such as the Produce Availability Initiative in rural and remote communities.

OPPORTUNITY: Promote a culture of moderation towards alcohol and reduce public health impacts	
Multi-sectoral Partners	**What can be done**
BC Liquor Stores, BC Government, Ministry of Finance hospitality industry pubs and restaurants health and safety NGOS	Promote the Low Risk Alcohol Drinking Guidelines in liquor stores, pubs and bars.
	Maintain the moratorium on private liquor store licenses.
	Make alcohol less affordable by adjusting price mark-ups to create marketing and purchasing incentives for lower strength products and disincentives for higher-strength products.

3. e) Closing the Health Gap

Poverty is considered by many as a critical socio-economic factor and the most pressing policy area requiring action. The Canadian Medical Association (CMA), in their recent report, '*What Makes Us Sick?*' stated that, "poverty is the main issue that must be addressed to improve the health of Canadians and eliminate health inequities". CMA Past-President Anna Reid stresses the need to, "do a better job dealing with issues such as poverty, homelessness, early childhood development and food security, all of which can affect a person's chances of being healthy." The CMA is not alone in recommending action in these issues; there is a growing consensus that these are the priorities for closing the health gap.

The maps in Appendix D show where in British Columbia there are concentrations of families living on low incomes.

Food Skills for Families reached 2,520 families by 2011 and continues today

OPPORTUNITY: Other provinces and territories have effectively used provincial strategies and plans to reduce poverty. Affordable housing and income security measures can lift families above the poverty level and improve conditions for physical and mental health.	
Multi-sectoral Partners	**What can be done**
BC Government, Cabinet, Ministry of Health, Ministry of Social Development, Minister of Children and Family Development, BC Business Council, BC Chambers of Commerce, Ministry of Jobs, Tourism and Skills Training and Responsible for Labour, Labour and Employee Associations, local governments, social service agencies and other NGOs	Develop a Poverty Reduction Strategy with timelines and targets. Work with employers to adopt a 'living wage'.
	Provide a child tax benefit to lift family income so that no BC children live below the poverty line.
	Design income supplemented programs to help lone parents move into full employment and become independent from income assistance (based on the lessons learned from the Self Sufficiency program which allowed for higher earning exemptions during a transition to work).
	Support initiatives to reduce discrimination and improve inclusion of traditionally marginalized groups.
BC Government, Ministry responsible for housing, Minister of Children and Family Development, health and social NGOs, local government, developers, BC Housing, Housing and Tenant advocates	Continue to increase affordable housing options.
	Ensure that emergency, transition and affordable housing meet the needs of specific populations including women and children fleeing violence, families, youth and those with mental health problems and/or addictions.
	Adjust Income Assistance shelter rates so they are based on reasonable market rental costs.

3. f) Place-Based Approaches and Social Pediatrics

'Place-based Approaches' are gaining recognition for mobilizing change in areas where a high percentage of community members experience elevated risk factors, multiple forms of disadvantage and measurable disparities. "Place-based approaches use local actors, knowledge and resources to provide locally-relevant responses to issues that are seen to be too complex to have simple solutions implemented by a lone actor."[30]

The place-based approach is a feature of the 'Promise Neighbourhoods' announced by President Obama in 2007 and based on the successes of Harlem's Children Zone (HCZ) which have closed the gap for children in one of America's most disadvantaged neighbourhoods.[31] "HCZ works to provide an intensive amount of these services to create a tipping point."[31] Children in the area are supported by seamless programs that start in pregnancy and transition into early childhood, then into the school years right up to college preparation. The idea is to weave a safety net so tight that no child falls through the cracks.

A Vancouver example of an innovative place-based approach that employs social pediatrics is RICH-ER (Responsive, Intersectoral -Interdisciplinary, Child Health - Education and Research). RICH-ER provides "primary healthcare access and/or referral to tertiary assessments, [that] seeks to consider the social roots and conditions that contribute to vulnerabilities"[32].

Although this approach has largely been used in urbanized areas where population densities are high, many elements of the RICH-ER Social Pediatric model (such as ongoing community engagement, responsive program and service delivery and inter-disciplinary partnerships), could be practiced in smaller communities as they have in Quebec.

RICH-ER, A PLACE-BASED SOCIAL PEDIATRIC MODEL

RICH-ER delivers healthcare to 'hard to reach', 'disadvantaged' families in Vancouver's Strathcona neighbourhood by building respectful relationships and trust and responding to 'social determinants', by:

1. Embedding Nurse Practitioners in community settings where people naturally gather (schools, daycares, and community centres) to develop relationships in the community and act as the point of care contact for tertiary and specialist services.
2. Partnering with Social Services Agencies/NGOs to work together on 'social determinants' (formalized through an MoU) to address in a practical and more immediate way, the conditions negatively impacting health such as housing and food insecurity.
3. Responding to community needs and being accountable. The RICH-ER model evolved out of ongoing discussions in the community and continues to be open to dialogue with a 'weekly community table' in which residents are welcomed to identify emerging health issues as well as ask questions and make suggestions.

Research on the RICH-ER model has demonstrated that it "not only fosters access for families with multiple forms of disadvantage, but also improves outcomes by empowering parents of particularly vulnerable children to become more active participants in care."[32]

OPPORTUNITIES: Place-based Approaches' are a promising practice for finding solutions in areas where there are elevated risk factors and measurable disparities by engaging community members.	
Multi-sectoral Partners	**What can be done**
Health authorities, social service agencies, NGOs, doctors and other health professionals, researchers, local government, community members	Expand the social pediatric model in areas with high concentrations of disadvantaged families (building on the lessons learned from the RICH-ER model in the downtown eastside and clinics throughout Quebec run by Dr. Julien, the founder of Social Pediatrics). Social service agencies, NGOs, doctors and other health professionals work together with community members to inform the development of locally appropriate programs, services and policy.
	Actively engage communities that have higher risk profiles for chronic disease (including behavioural risk factors and socio-economic status) to develop appropriate programs that address their specific challenges and the local context.
	Provide multi-year funding so that initiatives can be refined, improved and have the time to develop community connections and make an impact.
	Integrate mental health promotion into healthy living programming (this is particularly significant for programs serving disadvantaged groups as the evidence suggests this can help participants to manage stress and develop self-esteem and coping skills which will increase their ability to engage in, and benefit from, healthy living.
	Invest in 'Participatory Action-Based Research' which "differs from most other approaches to health research because it is based on reflection, data collection, and action that aims to improve health and reduce health inequities through involving the people who, in turn, take actions to improve their own health."[33]

3. g) A Healthy Start in Life

Childhood is a critical period for healthy development. While it is necessary to address the underlying issues at all stages of life, interventions aimed at children can stimulate positive health practices that carry into adulthood.

Reducing family poverty is crucial. As family income falls, the likelihood that children will experience problems increases. Rates of poor health, hyperactivity and delayed vocabulary development have been shown to be higher among children in low-income families.[34] Studies show that quality early childhood development and childcare can lead to better outcomes for all children and for disadvantaged children in particular.[35,36]

The Human Early Learning Partnership's (HELP) *Early Development Index* (in Appendix E) provides some insight into where there are concentrations of children with vulnerabilities. This may be useful for planning enhanced activities to encourage healthy child development and re-set the trajectories for children living in conditions challenging to their future prospects.

OPPORTUNITY: Positive early childhood development establishes a foundation that will impact school readiness, educational achievement and high school completion which ultimately contribute to employment, income security and better health.	
Multi-sectoral Partners	**What can be done**
Doctors, nurses, midwives and other health professionals, health authorities, Ministry of Health, parents	Expand the use of pregnancy and early childhood as periods to screen for risk factors and to promote healthy living and positive mental health (such as healthy eating, activity and emotional well-being in pregnancy, encouraging breastfeeding to the age of two, positive parenting and healthy eating and activity guidelines for pre-school children). The Nurse-Family Practitioner program is a promising example of this.
BC Government, Minister of Children and Family Development, early childhood educators and education professionals, school community, pediatricians, parents	Build on the provincial Early Years Strategy by expanding support for early childhood development across BC. Planning should move BC towards a universal childcare model. • Start by employing the Early Development Instrument to assess the state of children's development at kindergarten – to identify priority neighbourhoods for phasing in programs and areas for further expansion in successive waves. • Pro-rate childcare charges according to family income ensuring that fees are very small or waived for low income families.

3. h) Comprehensive School Health

Our children spend an average of 30 – 50 hours per week in the school setting. Schools are a central community hub in the lives of children and should be places that encourage and support health and mental well-being. Comprehensive School Health is a framework that supports this concept and it has been proven to improve health outcomes for children.[37,38]

Education, literacy and training are acknowledged as vehicles for transcending low socio-economic circumstances including health status. "Those who graduate from high school show significantly better health and family functioning than non-graduates."[13]

OPPORTUNITY: Schools are a central hub in the lives of children and an ideal setting for promoting positive physical and mental health	
Multi-sectoral Partners	**What can be done**
Ministry of Education, Ministry of Health, school and school district administrators, teachers, school psychologists and social service / public health agencies	Expand healthy living curriculum in schools that encompass: physical education; food system knowledge, including differentiating between healthy and unhealthy food and beverages; food preparation skills; screen time reduction; and ensuring that students receive at least 30 minutes of physical activity at school and are encouraged to be active for 60 minutes daily.
	Improve access to healthier school breakfast and lunch programs as well as after-school care and activities.
	Commit and fund additional human resources to support the early identification of students who may withdraw from their education prior to graduation.
	Provide intensive individualized instruction including the use of tutoring and mentoring programs delivered by teachers interested and trained to work with at-risk students.
	Integrate the delivery of child and youth assessment and support services to address bullying and inclusion, substance abuse, teen pregnancy and young parenthood, suicide prevention and counselling. Support positive mental health with strategies that increase school connectedness by creating welcoming and caring environments for all.
Health Authorities and school and school district administrators, teachers and Parent Advisory Councils	Create action plans for healthier schools and identify priorities building on local health data and community engagement.
Local governments (planning and engineering) school and school district administrators, teachers, Parent Advisory Councils, parents and students	Develop school transport plans that emphasize active transportation with safe routes, end-use facilities, educational activities and events.

3. i) Working on Healthier Workplaces

The workplace is an important setting to promote health as most adult British Columbians spend half their waking hours at work. Employment and working conditions are also determinants of health.

Workplace Wellness is also a great entry point for starting the larger discussion of corporate social responsibility.

OPPORTUNITY: Create healthier work environments that support employees to make healthy choices.	
Multi-sectoral Partners	**What can be done**
Employers, WorkSafe BC, health NGOs, local government, BC Transit and TransLink	Support employers to provide Workplace Wellness programs through Human Resource policies, facilities and management to offer or promote active commuting options, healthy eating, work/life balance and other elements of a psychologically healthy work environment.

3. j) First Nations

The land mass of what is now known as BC is home to over 40 distinct First Nations language groups[i] and significantly more dialects, holding 60 per cent of all First Nations languages in Canada. Among the 203 First Nations communities, there is a great deal of geographic, communicative and cultural diversity.

Today, First Nations in BC on the whole continue to experience poorer health outcomes than other British Columbians. The state and measure of health statistics for First Nations in BC are directly linked to the living conditions that First Nations people experience on a daily basis. Referred to as the social determinants of health, these conditions include: lower levels of income (unemployment/job security), discrimination within the health and social service systems, lower level of education, lack of access to quality childcare/early education, food insecurity, and overcrowded housing conditions.

In recent years there have been some encouraging gains made in the socio-economic and health status of BC First Nations. Certainly, the creation of the First Nations Health Authority has made a significant contribution to these gains as it has created the environment for First Nations' decision-making in the planning, delivery and measurement of programs and services, as well as involvement in policy and decision-making with Federal and Provincial Governments. The creation of the First Nations Health Authority followed a significant timeline of events which are detailed in Appendix F.

Sahnis Traditional Canoe Project in Kitimaat

Highlights from the First Nations Regional Health Survey (RHS) can be found in Appendix G.
The main objectives of the RHS are to provide scientifically and culturally validated information, while enhancing First Nations capacity and control over research. It provides updated insights into how First Nations communities feel about their wellness, while exploring causal factors that relate to the social determinants of health.

Having First Nations input and direction into health programs means a First Nations perspective of health and wellness is reflected in programs, which are now being designed to be more holistic, incorporate measures of well-being such as revitalization of culture and language; incorporate traditional customs and practices; and strengthening the linkages between the people and the environment. Given the historical context and recent progress, it is critical to continue support for First Nations' self-governance in reducing the gaps in socio-economic and health outcomes.

OPPORTUNITY: the creation of the First Nations Health Authority has made a significant contribution to recent gains as it has created the environment for "First Nations' input and direction into the planning and delivery of programs and services, as well as policies and decision-making

Multi-sectoral Partners	What can be done
BC's First Nations Communities, Leaders and organizers, Province of BC, regional health authorities, and Federal Government departments	Support BC First Nations with governance and decision-making in health and wellness. (First Nations Health Authority, 2013)
	Support BC First Nations with health services and improvements by implementing effective mechanisms to integrate planning and delivery of high quality health services to BC First Nations. (First Nations Health Authority, 2013)
	Support BC First Nations through partnerships and collaborative initiatives with BC First Nations, Province of BC, Regional Health Authorities, and Federal Government departments. (First Nations Health Authority, 2013)
	Support BC First Nations planning to create health and wellness priorities to develop better healthcare services. (First Nations Health Authority, 2013)

i http://maps.fphlcc.ca/language_index

3. k) Impact of Information Technologies

With the explosion of websites, blogs, mobile technology, 'apps' and social media, people are increasingly seeking and finding health information at their fingertips. The Canadian Wireless Telecommunications Association reports there are over 27 million wireless phone subscribers in Canada today. "One quarter of cell phone users (26%) access health and wellness, fitness, or nutritional tools through their device. The most common health related tools used are calorie counters (16%), fitness, workout, and exercise tracker apps (11%), and recipes (10%)."[39]

In BC, 84.4% of households have access to the internet at home. Albeit, those with the lowest incomes have reduced access (66.1%) and the availability of internet rises with income to a high of 97.4%.[40] There are also geographic disparities as not all communities in BC have high speed internet or cell phone coverage. The gradient in access to home internet in BC also serves as a reminder that not all British Columbians will have equal access to these types of services.

The utilization of mobile technology for health promotion is still in its early days but it holds potential. While not a panacea, electronic tools can help make it easier for people to access, simplify and apply the mass of complex health information. There is some research that suggests "inter-active technology can be designed and used to persuade people to modify their attitudes or behaviours and to enhance levels of surveillance over behaviours."[41,42]

The province has already begun to embrace this approach through Healthy Families BC with services such as the 1-800 Physical Activity Line and 'Breastfeeding Buddy'. Looking ahead, the challenges of this rapidly emerging and evolving field are multiple; paramount is quality control and consumer protection. The public needs access to scientifically valid health information and tools from sources they can trust while also requiring protection from bogus claims and products. Other challenges may come from "high participant attrition" in technological interventions which may be "related to reduced levels of human interaction."[42] The increased risk for unhealthy weights that comes with increased screen- time is another issue that should be considered.

OPPORTUNITY: to make valid health information and resources widely available to British Columbians	
Multi-sectoral Partners	**What can be done**
Federal and provincial governments, Ministry of Health, Health NGOs, dietitians, and other health professionals, digital technology sector	Explore options for certifying health and health promotion apps to make it easier for British Columbians to find tools and resources with scientifically valid information.
	Undertake scientific evaluations of the use and impact of new technologies to improve understanding of what works and what doesn't

MHEALTH: QUITNOW

Smokers that are ready to quit receive free services including a personalized 'quit plan' that tracks their progress and milestones as well as support by phone, text or email. A supportive community is fostered through on-line forums where people are encouraged to share advice, tips and stories with other quitters.

QuitNow was built around evidence that shows that text, e-mail and phone support programs can dramatically improve the success of cessation efforts. Studies show that texting can double the success of participants in their efforts to quit.[43] With over 10,000 'likes' on their Facebook Page, QuitNow has proven that social media is an effective tool for engaging the public.

3. I) Whole of Government, Whole of Society Approach

Healthy Futures for BC Families Policy Forum

There are opportunities in a variety of settings – such as schools, workplaces and communities - to put in place policies, programs and environments that support healthy living. In order to improve the prospects for those on the path to poor health and to realize continual improvements in health outcomes, BC should develop a long-range vision and plan using a whole of government, whole of society approach.

Building on the 'Guiding Framework for Public Health', the province could review policies with respect to their impact on the reduction of inequities in health and strengthening chronic disease prevention. Health Impact Assessments are increasingly being adopted by countries and regions to do just this. The activities that arise out of the review should be included in all Ministry Service Plans and evaluated.

Purposeful planning and evaluation can provide accountability and continued progress. Full commitment of the Premier and members of Cabinet would ensure the leadership required and the ultimate success of such a long-range vision and plan.

All sectors of society including non-governmental organizations, business, academia, labour, media, all levels of government and agencies have a role to play in creating healthier communities and a healthier population. The provincial government will benefit by continuing to engage diverse partners in the development of a coordinated and integrated approach to chronic disease prevention. In every community, there are people who are committed to building a healthier future; this is a rich resource which should be maximized.

OPPORTUNITY: A coordinated and integrated approach to chronic disease prevention	
Multi-sectoral Partners	**What can be done**
BC Government, all ministries, First Nations, health authorities, local government, business community, researchers, NGOs	Re-establish an inter-ministerial health committee at the Cabinet level.
	Develop a framework and support unit to administer Health Impact Assessments.
	Invest in population based health promotion and disease prevention strategies by raising public health funding to 6% of the total health budget from its current funding of approximately 3%.
	Increase commitment to corporate social responsibility in the private and public sectors.
	Expand First Nations control over health, social, education and justice policies and funding that disproportionately affect First Nations.

Conclusion

> **The successes and gains made over the past ten years give us confidence that great strides can be made in the journey ahead.**

There has been tremendous growth and interest in healthy living as a topic of discussion in traditional and social media over the past ten years. While this has not led to an even distribution of health outcomes across BC, there have been successes that can be learned from and expanded.

Emerging evidence indicates that more attention needs to be paid to the connections with mental wellness which shares many of the risk factors and population characteristics of other chronic diseases. Recent reports by the Health Officers' Council of BC and Statistics Canada have shown that health inequities and child poverty in BC have worsened over the past several years.[10,39] Given the elevated risks for those with low income, interventions to prevent or mitigate poverty, particularly among households with children, should be a high priority if the ultimate goal of improving the health of British Columbians is to be achieved, and the goals set out in the 'Guiding Framework for Public Health' are to be met.

From the health literature and from BCHLA's own experience, there is a strong case to be made for involving local communities in developing solutions that break down barriers and create health-promoting environments. Those with lived experience or who are involved at the local level are often best positioned to understand the health challenges facing those in the community and have insight about what may work and what won't.

Looking at the next ten years, BCHLA sees the need to focus attention and resources on those who are on a path to poor health. The successes and gains made over the past ten years give us confidence that great strides can be made in the journey ahead.

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Appendices

Appendix A: Age Standardized Prevalence Rates (3-year averages) of select chronic diseases in BC

	Diabetes*		Hypertension**		COPD***	
	2002-05	2008-11	2002-05	2008-11	2002-05	2008-11
BC	**4.23**	**5.47**	**15.65**	**18.29**	**4.33**	**5.02**
Interior	**3.78**	**4.7**	**14.63**	**17.75**	**5.24**	**6.59**
East Kootenay	3.62	4.46	14.02	17.28	5.45	6.19
Kootenay Boundary	3.54	4.28	14.02	17.53	4.82	6.61
Okanagan	3.68	4.60	14.49	17.58	5.07	6.46
Thompson / Cariboo	4.13	5.12	15.31	18.24	5.68	6.96
Fraser	**4.75**	**6.48**	**16.73**	**19.45**	**4.31**	**4.74**
Fraser East	4.77	6.56	16.26	19.39	4.15	5.08
Fraser North	4.57	6.12	16.14	18.73	4.47	4.88
Fraser South	4.92	6.76	17.48	20.11	4.26	4.50
Vancouver Coastal	**4.1**	**5.22**	**14.72**	**17.35**	**3.56**	**4.06**
Richmond	4.51	5.87	15.84	18.56	3.01	3.29
Vancouver	4.42	5.50	15.30	17.42	4.04	4.42
North Shore/Coast Garibaldi	3.24	4.26	12.90	16.43	2.94	3.85
Vancouver Island	**3.91**	**4.84**	**15.95**	**17.94**	**4.1**	**4.72**
South Vancouver Island	3.81	4.67	16.24	17.84	3.51	3.93
Central Vancouver Island	4.04	5.03	15.50	17.91	4.47	5.46
North Vancouver Island	3.94	4.88	15.95	18.19	5.21	5.32
Northern	**4.73**	**5.86**	**16.72**	**20.06**	**5.69**	**6.55**
Northwest	4.89	5.83	16.68	20.32	5.38	5.88
Northern Interior	4.80	5.94	17.07	20.18	5.84	6.52
Northeast	4.32	5.70	15.90	19.47	5.69	7.53

* Source: Primary Health Care Diabetes Mellitus Registry, 2010/11 and population estimates from PEOPLE36, BCSTATS.
** Source: Primary Health Care Hypertension Registry, 2010/11 and population estimates from PEOPLE36, BCSTATS.
*** Source: Primary Health Care Chronic Obstructive Pulmonary Disease (COPD) Registry, 2010/11 and population estimates from PEOPLE36, BCSTATS.

Appendix B: Geographic distribution of select chronic diseases in BC

The following maps illustrate the distribution throughout BC of age standardized prevalence rates of chronic obstructive pulmonary disease (COPD), diabetes and hypertension. They show where there are concentrations of these diseases and potentially provide a guide for targeted interventions.

Map 1: Chronic obstructive pulmonary disease age standardized prevalence rate (per 1,000) 2007-2011 average

Chronic obstructive pulmonary disease (COPD) age standardized prevalence rate (per 1,000), 2007-2011 average - Local Health Area

- 28.1 – 43.1
- 43.1 – 52.3
- 52.3 – 60.1
- 60.1 – 68.9
- 68.9 – 87.8

Classified By: Quintile
BC Average: 48.2

Source: PHSA. (2013). BC Community Health Atlas. Provincial Health Services Authority, British Columbia, Vancouver. Accessed on August 8, 2013 via: http://www.phsa.ca/communityhealthyatlas

Map 2: Diabetes mellitus age standardized prevalence rate (per 1,000) 2007-2011 average

Diabetes mellitus (DM) age standardized prevalence rate (per 1,000), 2007-2011 average - Local Health Area

- 22.2 – 42.5
- 42.5 – 47.6
- 47.6 – 55.3
- 55.3 – 59.9
- 59.9 – 99.9

Classified By: Quintile
BC Average: 53.5

Source: PHSA. (2013). BC Community Health Atlas. Provincial Health Services Authority, British Columbia, Vancouver. Accessed on August 8, 2013 via: http://www.phsa.ca/communityhealthyatlas

Map 3: Hypertension (high blood pressure) age standardized prevalence rate (per 1,000) 2007-2011 average

Hypertension (high blood pressure) age standardized prevalence rate (per 1,000), 2007-2011 average - Local Health Area

- **66.2 – 162.0**
- **162.0 – 171.6**
- **171.6 – 183.2**
- **183.2 – 193.8**
- **193.8 - 223.4**

Classified By: Quintile
BC Average: 180.1

NAIMO

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Duncan

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Source: PHSA. (2013). BC Community Health Atlas. Provincial Health Services Authority, British Columbia, Vancouver. Accessed on August 8, 2013 via: http://www.phsa.ca/communityhealthyatlas

Appendix C: Risk Factors for Chronic Disease

Note: In the first two tables below, a higher number is better, indicating that more people are getting the health benefits from recommended levels of weekly physical activity or daily servings of vegetables and fruit.

Table 1: Percent of population aged 12+ who eat fruit and vegetables 5 times or more per day, 2011-12

Health Region	Health Services Delivery Areas	Percent	95% CI
BC		41.3	(39.8-42.8)
Interior		42.4	(39.5-45.3)
	East Kootenay	44.8	(39.3-50.4)
	Kootenay Boundary	51.2	(44.6-57.8)
	Okanagan	41.0	(36.5-45.4)
	Thompson/Cariboo	40.4	(34.8-46.1)
Fraser		39.3	(36.3-42.3)
	Fraser East	36.2	(31.2-41.2)
	Fraser North	41.1	(35.0-47.2)
	Fraser South	39.0	(34.8-43.1)
Vancouver Coastal		41.7	(38.4-45.1)
	Richmond	38.5	(31.7-45.3)
	Vancouver	40.6	(35.6-45.6)
	North Shore/Coast Garibaldi	46.8	(42.0-51.6)
Vancouver Island		45.8	(42.7-48.9)
	South Vancouver Island	43.9	(39.7-48.1)
	Central Vancouver Island	47.0	(41.2-52.8)
	North Vancouver Island	49.1	(41.9-56.4)
Northern		36.4	(33.5-39.2)
	Northwest	36.4	(30.7-42.0)
	Northern Interior	37.2	(32.6-41.8)
	Northeast	34.6	(29.7-39.4)

Data source: Statistics Canada, Canadian Community Health Survey (CCHS). CANSIM table 105-0502 is an update of CANSIM table 105-0400

Provincial estimates are based on sub-sample weights for 2005 data
Vegetable and Fruit Consumption: Percent of BC population aged 12+ who eat the daily recommended level of fruits and vegetables. Indicates the usual number of times (frequency) per day a person reported eating fruits and vegetables. Measure does not take into account the amount consumed.

Table 2: Percent of population aged 12+ who are physically active or moderately active, 2011-12

Health Region	Health Services Delivery Areas	Percent	95% CI
BC		60.4	(59.0-61.7)
Interior		65.5	(62.6-68.3)
	East Kootenay	64.7	(58.5-70.9)
	Kootenay Boundary	69.9	(64.0-75.9)
	Okanagan	65.2	(61.4-69.0)
	Thompson/Cariboo	64.5	(58.2-70.8)
Fraser		55.8	(53.5-58.2)
	Fraser East	54.6	(49.6-59.6)
	Fraser North	56.6	(53.0-60.2)
	Fraser South	55.6	(52.1-59.1)
Vancouver Coastal		59.7	(57.0-62.4)
	Richmond	52.6	(47.3-57.9)
	Vancouver	58.1	(54.2-62.0)
	North Shore/Coast Garibaldi	68.6	(63.6-73.7)
Vancouver Island		66.8	(64.1-69.6)
	South Vancouver Island	66.9	(63.3-70.5)
	Central Vancouver Island	66.7	(61.3-72.1)
	North Vancouver Island	67.0	(60.5-73.6)
Northern		59.0	(55.6-62.5)
	Northwest	60.3	(53.5-67.2)
	Northern Interior	57.1	(52.3-62.0)
	Northeast	61.7	(54.1-69.2)

Data source: Statistics Canada, Canadian Community Health Survey (CCHS). CANSIM table 105-0502 is an update of CANSIM table 105-0400

Physical Activity: Population aged 12 and over who reported a level of physical activity, based on their responses to questions about the nature, frequency and duration of their participation in leisure-time physical activity. Respondents are classified as active, moderately active or inactive based on an index of average daily physical activity over the past three months. For each leisure time physical activity engaged in by the respondent, average daily energy expenditure is calculated by multiplying the number of times the activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 to 2.9 kcal/kg/day = moderately active; less than 1.5 kcal/kg/day = inactive.

Note: In the following two tables, a lower number is better, indicating that fewer people are exposed to the health risks from smoking or from unhealthy weight.

Table 3: Percent of population aged 12+ who are current smokers (daily or occasional), 2011-12

Health Region	Health Services Delivery Areas	Percent	95% CI
BC		15.1	(14.1-16.1)
Interior		21.1	(18.4-23.8)
	East Kootenay	22.1	(18.1-26.2)
	Kootenay Boundary	22.1	(16.5-27.7)
	Okanagan	19.3	(15.0-23.5)
	Thompson/Cariboo	23.4	(18.2-28.6)
Fraser		13.2	(11.3-15.1)
	Fraser East	15.2	(10.7-19.8)
	Fraser North	14.2	(11.3-17.0)
	Fraser South	11.7	(8.5-14.8)
Vancouver Coastal		11.5	(9.7-13.3)
	Richmond	9.9 E	(6.4-13.4) E
	Vancouver	11.8	(9.3-14.4)
	North Shore/Coast Garibaldi	11.9	(9.3-14.4)
Vancouver Island		16.3	(14.5-18.2)
	South Vancouver Island	12.7	(10.3-15.2)
	Central Vancouver Island	18.3	(15.3-21.3)
	North Vancouver Island	23.4	(17.0-29.8)
Northern		23.4	(19.9-26.8)
	Northwest	21.9 E	(14.0-29.8) E
	Northern Interior	23.4	(19.1-27.7)
	Northeast	24.7	(18.0-31.3)

Data source: Statistics Canada, Canadian Community Health Survey (CCHS). CANSIM table 105-0502 is an update of CANSIM table 105-0400

E Estimate: use with caution (coefficient of variation from 16.6% to 33.3%)

Smoking: Percent of BC population aged 12+ who are current smokers (daily or occasional). Daily smoker refers to those who reported smoking cigarettes every day. Does not take into account the number of cigarettes smoked. The CCHS smoking questions refer to smoking of cigarettes.

Table 4: Percent of BC adult population aged 18+ who are overweight or obese, 2011-12

Health Region		Percent	95% CI
BC		46.6	(45.0-48.2)
Interior		52.5	(49.0-55.9)
	East Kootenay	56.9	(49.9-64.0)
	Kootenay Boundary	46.7	(40.4-53.0)
	Okanagan	50.6	(45.4-55.9)
	Thompson/Cariboo	55.9	(50.2-61.6)
Fraser		48.9	(45.9-51.9)
	Fraser East	51.8	(46.9-56.7)
	Fraser North	47.7	(43.7-51.8)
	Fraser South	48.7	(43.4-54.0)
Vancouver Coastal		35.7	(32.2-39.3)
	Richmond	38.2	(31.8-44.6)
	Vancouver	33.5	(28.3-38.6)
	North Shore/Coast Garibaldi	39.7	(34.7-44.7)
Vancouver Island		48.5	(45.6-51.3)
	South Vancouver Island	45.2	(40.4-50.0)
	Central Vancouver Island	52.7	(48.6-56.7)
	North Vancouver Island	49.3	(44.5-54.2)
Northern		61.1	(57.4-64.7)
	Northwest	64.7	(59.0-70.4)
	Northern Interior	59.5	(53.8-65.3)
	Northeast	60.8	(54.2-67.4)

Data source: Statistics Canada, Canadian Community Health Survey (CCHS). CANSIM table 105-0502 is an update of CANSIM table 105-0400

Overweight or Obesity: Percent of BC adult population aged 18+ who are overweight or obese. Body mass index (BMI) is a method of classifying body weight according to health risk. According to the World Health Organization (WHO) and Health Canada guidelines, health risk levels are associated with each of the following BMI categories: normal weight = least health risk; underweight and overweight = increased health risk; obese, class I = high health risk; obese, class II = very high health risk; obese, class III = extremely high health risk.

Body mass index (BMI) is calculated by dividing the respondent's body weight (in kilograms) by their height (in metres) squared. A definition change was implemented in 2004 to conform to the World Health Organization (WHO) and Health Canada guidelines for body weight classification. The index is calculated for the population aged 18 and over, excluding pregnant females and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres). According to the World Health Organization (WHO) and Health Canada guidelines, the index for body weight classification is: less than 18.50 (underweight); 18.50 to 24.99 (normal weight); 25.00 to 29.99 (overweight); 30.00 to 34.99 (obese, class I); 35.00 to 39.99 (obese, class II); 40.00 or greater (obese, class III).

Appendix D: Geographic Distribution of Low Income Persons in BC

Prevalence of low income persons (after tax) (percent), 2005 – , Local Health Area

- 3.2 – 7.1
- 7.1 – 9.2
- 9.2 – 9.8
- 9.8 – 12.7
- 12.7 – 35.6
- No Data

Classified By: Quintile
BC Average: 13.1

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Source: Medical Services and Economic Analysis Branch, Medical Services Division (MSD), Ministry of Health. http://www.phsa.ca/communityhealthyatlas

Appendix E: Geographic Distribution of BC Children Vulnerable on One or More Scales

The following map illustrates the distribution of BC children who have been assessed as being vulnerable on one or more of the scales as measured by the Early Development Index (EDI). The EDI measures five core areas of early child development that are known to be good predictors of health, education and social outcomes in adulthood including: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge.

All School Districts.

Percent of children vulnerable on one or more scales of the EDI.

- 0 – 15
- 15 – 20
- 20 – 25
- 25 – 30
- 30 – 35
- 35 – 40
- 40 – 45
- 45 and above
- No Data/Suppressed (<35 EDI Children)

BC Average: 32.5%

Note: Data are suppressed due to low numbers of children which compromises the accuracy and precision of EDI data.

Source: Early Development Instrument, Human Early Learning Partnership (2013)

Appendix F: Timeline leading up to the creation of the First Nations Health Authority

The creation of the First Nations Health Authority followed a significant timeline of events:

Transformative Change Accord (November 25, 2005), between the First Nations Leadership Council (FNLC), Province of British Columbia (BC) and Government of Canada (Canada),

The Transformative Change Accord: First Nations Health Plan (November 27, 2006) by the FNLC and BC, First Nations Health Plan Memorandum of Understanding (MoU) (November 27, 2006) between the FNLC, Canada and BC

Tripartite First Nation Health Plan (June 11, 2007) between FNLC, Canada, and BC,

Consensus Paper : British Columbia First Nations Perspectives on a New Health Governance Arrangement (May 26th, 2011)

B.C. Tripartite Framework Agreement of First Nation Health (October 13th, 2011)

Consensus Paper: Navigating the Currents of Change –Transitioning to a New First Nations Health Governance Structure

2005 2007 2009 2011 2013

Appendix G: Highlights from the First Nations Regional Health Survey (RHS)

The table below includes highlights from the First Nations Regional Health Survey (RHS), a survey that is culturally defined by First Nations for First Nations. The main objectives of the RHS are to provide scientifically and culturally validated information, while enhancing First Nations capacity and control over research.

It is conducted across the ten regions in Canada, surveying participants in over two hundred First Nation communities. The Regional Health Survey provides an opportunity for BC First Nations, health professionals, policy makers, government, partners, scholars and citizens to get an important updated insight into how First Nations communities feel about their wellness, while exploring causal factors that relate to the Social Determinants of Health.

Table 5: Highlights from the First Nations Regional Health Survey

Traditional Ways, Knowledge and Wellness	• 68% of children and 38% of youth believe that it is very important to learn a First Nations language • The majority of youth and adults reported feeling in balance all or most of the time in their lives physically, emotionally, mentally and spiritually
Social Determinants of Health	• 56% of youth reported that they would like to get a trade or college, university or professional degree as their highest level of education • 63% of adults reported struggling to meet basic food, transportation, utilities, clothing, shelter or childcare needs a few times a year or more
Lifestyle Factors	• The percentage of non-smoking First Nations of all ages reporting that they live in smoke-free homes has risen from 75% to 86% between the 2002-03 and 2008-10 RHS • The percentage of youth age 15-17 who reported smoking daily has decreased since 2002-03 RHS (from 28% to 11%) • The percentage of youth age 15-17 who reported smoking occasionally has increased since the 2002-03 RHS (from 13% to 25%) • 11% of kids, 43% of youth and 33% of adults reported drinking pop once a day or more • 80% of kids, 84% of youth and 62% of adults are categorized as being moderately physically active
Trauma	• Fewer adults reported experiencing racism since the 2002-03 RHS (a decrease from 49% to 33%) • Among adults who attended residential school and reported a negative impact on their health and well-being, the factors that were most commonly reported as being responsible for this negative impact were: loss of language (83%), isolation from family (80%) and loss of cultural identity (80%) • 7% of youth and 10% of adults reported binge drinking once a week or more in the year prior to the 2008-10 RHS
Mental Wellness	• Youth reported that they would turn to their friends, parents, and other family members for emotional or mental health support • 92% of youth reported that they would rate their mental health as being excellent, very good or good • 8% of adults are categorized as being at high risk for depression
Health and Health Care Services	• The percentage of caregivers reporting that their child had excellent or very good health rose between the 2002-03 and 2008-10 RHS (from 69% to 87%) • 9% of adults reported that they have diabetes • 34% of children, 12% of youth and 36% of adults were categorized as obese

Source: 2008-10 First Nations Regional Health Survey (RHS)

BC Healthy Living Alliance

working together to promote wellness and prevent chronic disease